United States
Environmental Protection
Agency

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

EPA - 454/R-99-018
June 1999

Air

EPA

Secondary Aluminum Industry
Final Emissions Test Report

Culp Aluminum Alloys
Steele, Alabama

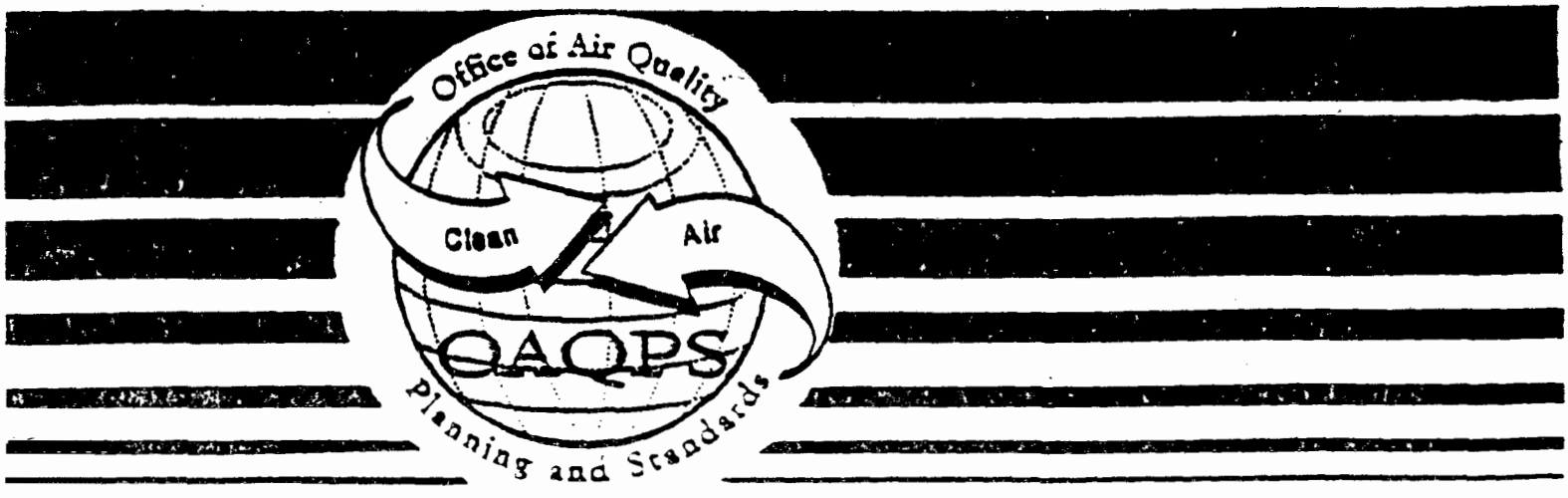


Table of Contents

Page

1.0 INTRODUCTION 1-1
1.1 Objectives 1-2
1.2 Brief Site Discussion 1-3
1.3 Emissions Measurements Program 1-3
1.3.1 Test Matrix 1-3
1.3.2 Test Schedule 1-5
1.4 Test Report 1-5

2.0 SUMMARY OF RESULTS 2-1
2.1 Emissions Test Log 2-1
2.2 Dioxin/Furan Results 2-5
2.2.1 Overview 2-5
2.2.2 Dioxin/Furan Emission Results 2-5
2.3 HCl Results 2-18
2.3.1 Overview 2-18
2.3.2 HCl Emission Results 2-19
2.4 Particulate Results 2-23
2.4.1 Overview 2-23
2.5 FTIR Results 2-26
2.5.1 Overview 2-26
2.5.2 FTIR Emission Results 2-27
2.5.2.1 EPA Method 301 FTIR Validation Results for HCl 2-28
2.5.2.2 FTIR HCl Test Results 2-28
2.5.2.3 FTIR Process Optimization 2-32
2.5.2.4 FTIR Screening Results 2-33
2.5.2.5 FTIR Sampling and Measurement System Response Time Measurement 2-39
2.5.2.6 Comparison of FTIR and Method 26A Results for HCl 2-41

3.0 DESCRIPTION OF FACILITY 3-1

4.0 SAMPLING LOCATIONS 4-1

5.0 SAMPLING AND ANALYTICAL PROCEDURES BY ANALYTE 5-1
5.1 Chlorinated Dibenzo-*p*-Dioxin and Chlorinated Dibenzofuran Emissions Testing Using EPA Method 23 5-1
5.1.1 Method 23 Sampling Equipment 5-1
5.1.2 Method 23 Equipment Preparation 5-1

Table of Contents (Continued)

Page

5.1.2.1 Glassware Preparation 5-3
5.1.2.2 XAD-2® Resin and Filter Preparation 5-3
5.1.2.3 Method 23 Sampling Train Preparation 5-5
5.1.3 Method 23 Sampling Operations 5-6
5.1.3.1 Preliminary Measurements 5-6
5.1.3.2 Assembling the Train 5-6
5.1.3.3 Sampling Procedures 5-7
5.1.4 CDD/CDF Sample Recovery 5-12
5.1.5 CDD/CDF Analytical Procedures 5-15
5.1.5.1 Preparation of Samples for Extraction 5-18
5.1.5.2 Calibration of GC/MS System 5-18
5.1.6 CDD/CDF Analytical Quality Control 5-18
5.1.6.1 CDD/CDF Quality Control Blanks 5-19
5.1.6.2 Quality Control Standards and Duplicates 5-20
5.1.7 Analytes and Detection Limits for Method 23 5-21
5.2 Hydrochloric Acid/Particulate Matter Emissions Testing Using EPA Method 26A 5-23
5.2.1 Method 26A Sampling Equipment 5-23
5.2.2 Method 26A Sampling Equipment Preparation 5-25
5.2.2.1 Glassware Preparation 5-25
5.2.2.2 Reagent Preparation 5-25
5.2.2.3 Equipment Preparation 5-26
5.2.3 Method 26A Sampling Operations 5-28
5.2.3.1 Preliminary Measurements 5-28
5.2.3.2 Assembling the Train 5-28
5.2.3.3 Sampling Procedures 5-29
5.2.4 Method 26A Sample Recovery 5-30
5.2.5 HCl Analytical Procedures 5-37
5.2.6 HCl Analytical Quality Control 5-38
5.2.7 Particulate Analysis 5-38
5.2.8 Quality Control for Gravimetric Procedures 5-40
5.3 FTIR EPA Method 320 5-40
5.3.1 FTIR Sampling Equipment 5-40
5.3.2 Preparation for Sampling 5-43
5.3.3 Sampling 5-45
5.3.4 FTIR Method Data Review, Validation, and Verification Requirements 5-48
5.3.5 QC for the FTIR 5-51

Table of Contents (Continued)

Page

6.0 QUALITY ASSURANCE/QUALITY CONTROL 6-1
6.1 Sampling QC Results 6-1
6.1.1 Leak Checks 6-1
6.1.2 Percent Isokinetics 6-4
6.1.3 Meter Box Calibrations 6-5
6.1.4 Field Blank Results 6-5
6.1.5 FTIR Sampling Quality Control 6-7
6.2 Analytical Quality Control Results 6-9
6.2.1 D/F Analytical Quality Control 6-9
6.2.1.1 D/F Quality Control Blanks 6-9
6.2.1.2 Quality Control Standards 6-10
6.2.2 HCl Analytical Quality Control 6-10
6.2.3 Quality Control for Gravimetric Procedures 6-11
6.2.4 FTIR Analytical Quality Control 6-11

List of Figures

		Page
2-1	FTIR System Response Profile (Measured on 7 December 1997)	2-40
4-1	E1, Chip Dryer Baghouse Inlet	4-2
4-2	E2, Chip Dryer Baghouse Outlet	4-3
4-3	E3, Reverberatory Furnace #1 Baghouse Inlet	4-4
4-4	E4, Reverberatory Furnace #1 Baghouse Outlet	4-5
4-5	Chip Dryer Baghouse Inlet, Traverse Points	4-6
4-6	Chip Dryer Baghouse Outlet, Traverse Points	4-7
4-7	Reverberatory Furnace #1 Baghouse Inlet Traverse Points	4-8
4-8	Reverberatory Furnace #1 Baghouse Outlet Traverse Points	4-9
5-1	Method 23 Sampling Train Configuration	5-2
5-2	Method 23 Field Recovery Scheme	5-13
5-3	Extraction and Analysis Schematic for Method 23 Samples	5-17
5-4	Schematic of Method 26A Sampling Train	5-24
5-5	Method 26A Sample Recovery Scheme	5-34
5-6	Method 5 Preparation and Analysis Scheme (Integral Part of Method 26A)	5-39
5-7	FTIR Sampling and Measurement System	5-42

List of Tables

		Page
1-1	Culp Aluminum Alloys Facility (Steele, Alabama) Test Matrix	1-4
2-1	Emissions Test Log	2-2
2-2	Sample Volume Collected, dscm	2-4
2-3	Flue Gas Volumetric Flow Rate, dscmm	2-4
2-4	Chip Dryer, Inlet D/F Stack Gas Concentration, ng/dscm	2-6
2-5	Chip Dryer, Outlet D/F Stack Gas Concentration, ng/dscm	2-7
2-6	Chip Dryer, Outlet D/F Emission Rate, µg/Mg Feed	2-9
2-7	Chip Dryer, 2,3,7,8-TCDD Toxicity Equivalent Concentrations	2-11
2-8	Reverberatory Furnace #1, Inlet D/F Concentration, ng/dscm	2-13
2-9	Reverberatory Furnace #1, Outlet D/F Concentration, ng/dscm	2-14
2-10	Reverberatory Furnace #1, Outlet D/F Emission Rate, µg/Mg Feed	2-16
2-11	Reverberatory Furnace #1, 2,3,7,8-TCDD Toxicity Equivalent Concentrations	2-17
2-12	HCl and Cl_2 Concentration, µg/dscm	2-20
2-13	HCl and Cl_2 Concentration, ppm	2-20
2-14	HCl and Cl_2 Emission Rate, lbs/hour	2-21
2-15	HCl Removal Efficiency	2-21
2-16	HCl and Cl_2 Emission Rate, lbs/Ton of Feed	2-22
2-17	Stack Gas Particulate Matter Concentration, gr/dscm	2-24
2-18	Particulate Matter Emission Rate, lbs/hour	2-24
2-19	Baghouse Particulate Removal Efficiency,%	2-24
2-20	Particulate Matter Emission Rate, lbs/Ton of Feed	2-25

List of Tables (Continued)

Page

2-21 Summary of EPA Method 301 FTIR Validation Results for HCl 2-28

2-22 Chip Dryer FTIR HCl Results, ppmv 2-30

2-23 Reverberatory Furnace #1 Baghouse FTIR HCl Results During Charging, ppmv ... 2-30

2-24 Reverberatory Furnace #1 Baghouse FTIR HCl Results During Tapping, ppmv 2-31

2-25 Combined Charging and Tapping Reverberatory Furnace #1 Baghouse FTIR HCl Results, ppmv 2-32

2-26 Reverberatory Furnace #1 Baghouse FTIR HCl Results - Grand Average, ppmv ... 2-32

2-27 Reverberatory Furnace #1 Hood Baghouse Outlet HCl Results - Overnight, ppmv .. 2-33

2-28 Other Species Detected by FTIR - Chip Dryer Inlet 2-34

2-29 Other Species Detected by FTIR - Chip Dryer Outlet 2-35

2-30 Other Species Detected by FTIR - Reverberatory Furnace #1 Inlet 2-36

2-31 Other Species Detected by FTIR - Reverberatory Furnace #1 Outlet 2-38

2-32 Comparison of FTIR and Method 26A results for HCl, ppm 2-41

5-1 Method 23 Glassware Cleaning Procedure (Train Components, Sample Containers and Laboratory Glassware) 5-4

5-2 CDD/CDF Sampling Checklist 5-9

5-3 Method 23 Sample Fractions Shipped To Analytical Laboratory 5-15

5-4 CDD/CDF Congeners To Be Analyzed 5-16

5-5 Method 23 Blanks Collected 5-19

5-6 Analytical Detection Limits For Dioxins/Furans 5-22

List of Tables (Continued)

		Page
5-7	CDD/CDF Method Detection Limits	5-22
5-8	Glassware Cleaning Procedure (Method 26A Train Components)	5-26
5-9	Sampling Checklist for EPA Method 26A	5-31
5-10	Typical FTIR Operating Parameters	5-45
5-11	Compounds for Which Reference FTIR Spectra Are Available in the ERG Spectral Library	5-49
6-1	Summary of Dioxin/Furan Test Leak Check Results	6-2
6-2	Summary of HCl/PM Test Leak Check Results	6-3
6-3	Summary of Isokinetic Percentages	6-4
6-4	Dry Gas Meter Post-Test Calibration Results	6-5
6-5	Method 26A Field Blank Analysis Results, µg Detected	6-6
6-6	Method 23 Field Blank Analysis Results, ng Detected	6-7
6-6	QC Spiking Results	6-13
6-7	HCl Gas Standard Analysis Results	6-14
6-8	CO Gas Standard Analysis Results	6-15
6-9	CH_4, NO_x, and CO_2 Gas Standard Analysis Results	6-16

1.0 INTRODUCTION

The purpose of this testing program was to obtain emissions data for uncontrolled and controlled hydrochloric acid (HCl), particulate matter (PM) and speciated hydrocarbon Hazardous Air Pollutants (HAPs) from a secondary aluminum processing plant to support a national emission standard for hazardous air pollutants (NESHAP).

The Culp Aluminum Alloys facility in Steele, Alabama, is a secondary aluminum reclamation facility. The Culp facility accepts many different forms of scrap aluminum feedstock, and operates a chip dryer to volatilize oils and lubricants from scrap aluminum chips prior to the remelting operation. The chip dryer emissions are captured by closed hoods and are ducted to a lime injected baghouse. There is a side-well reverberatory furnace that is used to remelt, flux, and alloy aluminum scrap that has been pre-processed in the chip dryer operation in addition to non-processed purchased aluminum scrap. The side-well reverberatory furnace emissions are captured by a canopy hood located above the charging and refluxing side-well and ducted to a lime injected baghouse. Emissions from the hearth stack are uncontrolled.

The existing total hydrocarbons (THC) emissions test data from secondary aluminum smelting plants had not been speciated to determine HAP content. Additional data were needed to identify HAPs emitted and their respective emission rates from melting furnace and chip drying operations at secondary aluminum smelting plants. Also, information on the HCl, PM, and dioxin/furan (D/F) removal efficiency of baghouses with dry lime injection was needed.

Source tests were required to quantify and characterize the HCl, PM, D/F, and HAP emissions and to assess control device performance from chip drying and side-well reverberatory furnace #1 operations, and to identify, quantify, and assess the performance of a lime injected baghouse at two lime injection rates for HCl from the side-well reverberatory furnace #1 operations. Application of the following stationary source test methods was required to adequately characterize these processes:

- Determination of D/F using EPA Method 23;
- Determination of HCl and PM using EPA Method 26A and EPA Method 320; and
- Screening for speciated hydrocarbon HAPs using EPA Method 320.

The objective of this work assignment was to perform all activities necessary to characterize specified point sources for the parameters listed above. The facility selected for testing, the Culp Aluminum Alloys Plant located in Steele, Alabama, has lime injected baghouses as control technology.

1.1 Objectives

The objective of the testing at the Culp Aluminum Alloys facility, in Steele, Alabama, was to perform all activities necessary to characterize the lime injected baghouses for the following emission components:

- Determination of D/F using EPA Method 23;
- Determination of HCl/PM using EPA Method 26A and EPA Method 320; and
- Screening for speciated hydrocarbon HAPs using EPA Method 320.

For the manual methods, testing was performed simultaneously at the inlet and outlet of the chip dryer lime injected baghouse and simultaneously at the reverberatory furnace #1 lime injected baghouse. FTIR testing was not simultaneous at inlet/outlet; the FTIR alternated between inlet/outlet (for example, ten minutes inlet/ten minutes outlet). In addition, a day of testing was performed using EPA Method 320 to identify, quantify, and assess the performance of the lime injected baghouse associated with the reverberatory furnace #1 for HCl removal at two injection rates of lime. Two additional days were required to perform a Method 301 validation of FTIR for HCl: one day each for the two baghouses.

1.2 Brief Site Discussion

The Culp Aluminum Alloys Plant is located in Steele, Alabama, approximately 4 miles south of Gadsden, Alabama. The plant is a secondary aluminum plant, primarily smelting recycled aluminum. Culp Aluminum Alloys primarily recycles aluminum parts to create a secondary aluminum alloy which is used in cast aluminum. The plant operates 24 hours per day, but the chip dryer process is down Monday from 7 AM to 4 PM, except for the furnaces.

The Culp Aluminum Alloys Plant has two baghouses associated with the furnaces as control devices: the first baghouse is the original one while the second is newer. The exhaust stacks on both are approximately the same size. Furnace #1 and Furnace #2 differ in that Furnace #2 has an additional exhaust from the sweat furnace. The sweat furnace is used to separate plastic parts and metals of higher melting points from the aluminum prior to placing the aluminum into the furnace.

1.3 Emissions Measurements Program

This section provides an overview of the emissions measurement program conducted at the Culp Aluminum Alloys Plant in Steele, Alabama. Included in this section are summaries of the test matrix, sampling locations, sampling methods, and laboratory analysis. Additional detail on these topics are provided in the sections that follow.

1.3.1 Test Matrix

The sampling and analytical matrix that was performed at Culp Aluminum Alloys is presented in Table 1-1, with the schedule that was followed in the field. Manual and Fourier Transform Infrared (FTIR) instrumental emissions tests were performed, with detailed descriptions of these sampling and analytical procedures provided in Section 5.0 of this document.

Table 1-1. Culp Aluminum Alloys Facility (Steele, Alabama) Test Matrix
Industry: Secondary Aluminum
Process: Aluminum Chip Drying and Smelting

Sampling Location	Runs/ Date	Sample Type	Reference Method	Sampling Duration	Analysis Method	Laboratory
E2 Chip Dryer Lime Injected Baghouse Outlet	1 day 12/03/97	HCl Validation	Method 320	4-8 hours	FTIR	ERG
E1/E2 Chip Dryer Lime Injected Baghouse Inlet/Outlet	3 Run 1 12/05/97 Runs 2,3 12/06/97	HCl/PM Dioxins/Furans All species detected by FTIR[1]	Method 26A Method 23 Method 320	4 hours	Method 26A Method 8290 Method 320	Triangle Labs Triangle Labs ERG
E3/E4 Reverberatory Furnace #1 Lime Injected Baghouse	1 day 12/07/97	HCl Removal efficiency study	Method 320	4-8 hours	FTIR	ERG
E3/E4 Reverberatory Furnace #1 Lime Injected Baghouse	1 day 12/07/97	HCl Validation	Method 320	8-10 hours	FTIR	ERG
E3/E4 Reverberatory Furnace #1 Lime Injected Baghouse Inlet/Outlet	6[2] Run 1 12/08/97 Run 2 12/09/97 Run 3 12/10/97 Run 4 12/11/97	HCl/PM Dioxins/Furans All species detected by FTIR[1]	Method 26A Method 23 Method 320	4 hours	Method 26A Method 8290 Method 320	Triangle Labs Triangle Labs ERG

[1] All species detected by FTIR includes all gaseous HAPs (i.e., HCl), as well as criteria pollutants (i.e., NO_2, SO_2, CO).

[2] Work Assignment Manager elected to perform four test runs in the field.

1.3.2 Test Schedule

The daily test schedule is shown in Table 1-1. The test required one day of set-up at the chip dryer lime injected baghouse, two test days at the inlet/outlet of the chip dryer lime injected baghouse, one day of process operating parameter optimization using FTIR, and five test days at the inlet/outlet of the reverberatory furnace #1 lime injected baghouse. One day was allowed as contingency/tear-down. The facility did not operate on Mondays from 7 AM to 4 PM, except for the furnaces; allowance was made for the plant schedule in the test schedule. Each test day was 12 to 16 hours in length. Set-up and tear-down days were 8 to 10 hours in length.

1.4 Test Report

This final report, presenting all data collected and the results of the analyses, has been prepared in six sections and two volumes, as described below:

- Section 1 provides an introduction to the testing effort and includes a brief description of the test site and an overview of the emissions measurements program;
- Section 2 gives a summary of the test results for the PM, HCl, D/F tests, and the FTIR results for HCl and selected HAPs;
- Section 3 provides a description of the process and plant operation during the field test. These data are to be supplied by EPA through Research Triangle Institute to be included at a later date;
- Section 4 gives a discussion of the sampling locations;
- Section 5 presents detailed descriptions of the sampling and analysis procedures; and
- Section 6 provides details of the quality assurance/quality control procedures used on this program and the QC results.

The appendices containing copies of the actual field data sheets and the results of the laboratory analyses are contained in Volume 2.

2.0 SUMMARY OF RESULTS

This section provides the results of the emissions test program conducted at the Culp Aluminum Alloys plant from December 2 to December 11, 1997. Included in this section are the results for the manual tests conducted for PM, HCl, Cl_2, dioxin and furan and for the extractive FTIR test conducted for HCl and screening for selected HAPs. Testing was performed at the inlet and outlet of the baghouse associated with the chip dryer and at the inlet and outlet of the baghouse associated with the reverberatory furnace number 1.

2.1 Emissions Test Log

Twenty eight manual tests were performed over a nine day period (14 D/F and 14 HCl/PM). Table 2-1 presents the emissions test log which shows the test date, location, run number, test type and run times for each method. Concurrent with the manual testing at each location were extractive FTIR measurements for HCl.

Table 2-2 shows the volume of stack gas sampled for each run in dry standard cubic meters (dscm) and Table 2-3 shows the stack gas volumetric flow rate during each run in dry standard cubic meters per minute (dscmm). The percent relative standard deviation (%RSD) calculated for the stack flow rates (shown in Table 2-3) was less than 10 % indicating that each process flow was maintained at a fairly constant rate over the respective test days. All related field data sheets are given in Appendix A.

Table 2-1. Emissions Test Log

Date	Location	Run Number	Test Type	Run Time
12/3/97	Chip Dryer Outlet	NA	FTIR HCl Validation	10:00-15:00
12/4/97	Chip Dryer	Plant Down	NA	NA
12/5/97	Chip Dryer Outlet	1	PM/HCl	08:00-14:40
	Chip Dryer Outlet	1	D/F	08:00-14:40
	Chip Dryer Outlet	1	FTIR (unconditioned)	08:00-11:30
	Chip Dryer Outlet	1	FTIR (conditioned)	12:40-14:30
	Chip Dryer Inlet	1	PM/HCl	10:20-14:40
	Chip Dryer Inlet	1	D/F	08:00-14:40
	Chip Dryer Inlet	1	FTIR (unconditioned)	08:00-11:30
	Chip Dryer Inlet	1	FTIR (conditioned)	12:40-14:30
12/6/97	Chip Dryer Outlet	2	PM/HCl	08:34-13:20
	Chip Dryer Outlet	2	D/F	08:34-13:30
	Chip Dryer Outlet	2	FTIR (unconditioned)	08:35-10:40
	Chip Dryer Outlet	2	FTIR (conditioned)	11:20-13:20
	Chip Dryer Inlet	2	PM/HCl	08:34-13:20
	Chip Dryer Inlet	2	D/F	08:34-13:30
	Chip Dryer Inlet	2	FTIR (unconditioned)	08:34-10:34
	Chip Dryer Inlet	2	FTIR (conditioned)	11:20-13:20
	Chip Dryer Outlet	3	PM/HCl	15:45-20:03
	Chip Dryer Outlet	3	D/F	15:45-20:03
	Chip Dryer Outlet	3	FTIR (unconditioned)	15:46-17:46
	Chip Dryer Outlet	3	FTIR (conditioned)	18:10-20:03
	Chip Dryer Inlet	3	PM/HCl	15:45-20:03
	Chip Dryer Inlet	3	D/F	15:45-20:03
	Chip Dryer Inlet	3	FTIR (unconditioned)	15:45-18:03
	Chip Dryer Inlet	3	FTIR (conditioned)	18:10-20:03
12/7/97	Furnace 1 Outlet	NA	FTIR HCl Validation	12:00-17:00
12/8/97	Furnace 1 Outlet	1	PM/HCl	09:48-15:42
	Furnace 1 Outlet	1	D/F	09:48-15:42
	Furnace 1 Outlet	1	FTIR (unconditioned)[1]	09:45-12:00
	Furnace 1 Outlet	1	FTIR (conditioned)[2]	12:00-13:20
	Furnace 1 Outlet	1	FTIR (unconditioned)[3]	13:20-15:42
	Furnace 1 Inlet	1	PM/HCl	09:48-15:42
	Furnace 1 Inlet	1	D/F	09:48-15:42
	Furnace 1 Inlet	1	FTIR (unconditioned)[1]	09:45-12:00
	Furnace 1 Inlet	1	FTIR (conditioned)[2]	12:00-13:20
	Furnace 1 Inlet	1	FTIR (unconditioned)[3]	13:20-15:42

Table 2-1. (Continued)

Date	Location	Run Number	Test Type	Run Time
12/9/97	Furnace 1 Outlet	2	PM/HCl	12:10-18:18
	Furnace 1 Outlet	2	D/F	12:10-18:18
	Furnace 1 Outlet	2	FTIR (unconditioned)[1]	12:20-14:20
	Furnace 1 Outlet	2	FTIR (conditioned)[2]	14:15-15:50
	Furnace 1 Outlet	2	FTIR (unconditioned)[3]	15:50-18:15
	Furnace 1 Inlet	2	PM/HCl	12:11-18:37
	Furnace 1 Inlet	2	D/F	12:10-18:18
	Furnace 1 Inlet	2	FTIR (unconditioned)[1]	12:20-14:20
	Furnace 1 Inlet	2	FTIR (conditioned)[2]	14:15-15:50
	Furnace 1 Inlet	2	FTIR (unconditioned)[3]	15:50-18:15
12/10/97	Furnace 1 Outlet	3	PM/HCl	11:16-17:03
	Furnace 1 Outlet	3	D/F	11:15-17:03
	Furnace 1 Outlet	3	FTIR (unconditioned)[1]	11:14-13:34
	Furnace 1 Outlet	3	FTIR (conditioned)[2]	13:30-14:16
	Furnace 1 Outlet	3	FTIR (unconditioned)[3]	14:16-17:03
	Furnace 1 Inlet	3	PM/HCl	11:16-17:03
	Furnace 1 Inlet	3	D/F	11:15-17:03
	Furnace 1 Inlet	3	FTIR (unconditioned)[1]	11:14-13:34
	Furnace 1 Inlet	3	FTIR (conditioned)[2]	13:30-14:16
	Furnace 1 Inlet	3	FTIR (unconditioned)[3]	14:16-17:03
12/11/97	Furnace 1 Outlet	4	PM/HCl	06:20-12:55
	Furnace 1 Outlet	4	D/F	06:21-12:56
	Furnace 1 Outlet	4	FTIR (unconditioned)[1]	06:18-08:48
	Furnace 1 Outlet	4	FTIR (conditioned)[2]	08:45-10:05
	Furnace 1 Outlet	4	FTIR (unconditioned)[3]	10:05-12:55
	Furnace 1 Inlet	4	PM/HCl	06:20-12:55
	Furnace 1 Inlet	4	D/F	06:21-12:56
	Furnace 1 Inlet	4	FTIR (unconditioned)[1]	06:18-08:48
	Furnace 1 Inlet	4	FTIR (conditioned)[2]	08:45-10:05
	Furnace 1 Inlet	4	FTIR (unconditioned)[3]	10:05-12:55

[1]Sample not conditioned (moisture not removed) during first half of furnace charging
[2]Sample conditioned (moisture removed) during second half of furnace charging
[3]Sample unconditioned during mixing and tap out

Table 2-2. Sample Volume Collected, dscm

Baghouse Location	Parameter	Run 1	Run 2	Run 3	Run 4	Average	%RSD
Chip Dryer Inlet	PM/HCl	1.98	2.16	2.22	NA	2.12	5.89
Chip Dryer Inlet	D/F	4.38	4.66	4.2	NA	4.41	5.25
Chip Dryer Outlet	PM/HCl	2.78	3.06	2.9	NA	2.91	4.82
Chip Dryer Outlet	D/F	2.81	3.04	2.86	NA	2.90	4.17
Furnace 1 Inlet	PM/HCl	4.01	3.90	3.74	3.72	3.84	3.58
Furnace 1 Inlet	D/F	3.85	3.72	3.9	3.87	3.84	2.07
Furnace 1 Outlet	PM/HCl	7.34	7.54	7.05	7.47	7.35	2.95
Furnace 1 Outlet	D/F	7.22	7.03	6.95	7.58	7.20	3.90

Table 2-3. Flue Gas Volumetric Flow Rate, dscmm

Baghouse Location	Parameter	Run 1	Run 2	Run 3	Run 4	Average	%RSD
Chip Dryer Inlet	PM/HCl	142	162	143	NA	149	7.56
Chip Dryer Inlet	D/F	156	160	148	NA	155	3.95
Chip Dryer Outlet	PM/HCl	153	171	159	NA	161	5.69
Chip Dryer Outlet	D/F	153	174	166	NA	164	6.4
Furnace 1 Inlet	PM/HCl	720	666	674	579	660	8.92
Furnace 1 Inlet	D/F	689	642	688	603	656	6.30
Furnace 1 Outlet	PM/HCl	835	753	723	674	746	9.05
Furnace 1 Outlet	D/F	807	736	748	722	753	4.96

2.2 Dioxin/Furan Results

2.2.1 Overview

Three 4-hour D/F tests were performed at the inlet and outlet of the baghouse associated with the chip dryer operation (total of 6) and four 6-hour tests were performed at the inlet and outlet of the baghouse associated with the reverberatory furnace number 1 (total of 8). The sampling and analysis procedures followed EPA Method 23 protocol. All results except for the 2,3,7,8-tetrachlorodibenzofuran (2,3,7,8-TCDF) were determined by high resolution gas chromatography (HRGC)/high resolution mass spectrometry (HRMS) using a DB-5 capillary gas chromatographic column. The 2,3,7,8-TCDF was determined by HRGC/HRMS using a DB-225 column which gives improved chromatographic resolution for this compound over the DB-5 and thus a more accurate quantitation. Any compound that was not detected is reported as a "less than" value with this value being the instrument detection limit. A "less than" value rather than a "0" is used in all appropriate calculations. All D/F raw data can be found in Appendix B of this report.

2.2.2 Dioxin/Furan Emission Results

Chip Dryer

Tables 2-4 and 2-5 present the concentration, in nanograms per dry standard cubic meter (ng/dscm), of the selected D/F congeners by run number, the average concentration over the three runs and the %RSD for the chip dryer inlet and outlet, respectively. These values were calculated by dividing the reported analytical results, in ng, by the appropriate sample volume collected, in dscm, from Table 2-2. As indicated in Table 2-4 (dryer inlet), the concentration values of several congeners in Runs 1 and 2 are presented as "greater than" values and should be considered estimates. The amount of these analytes detected in the sample extracts exceeded the calibration curve. The observed concentrations for Run 3 are generally lower by a factor of two than those observed for Runs 1 and 2, causing the %RSDs for most analytes to be in the 40 to

Table 2-4. Chip Dryer, Inlet D/F Stack Gas Concentration, ng/dscm

Congener	Inlet Run 1	Inlet Run 2	Inlet Run 3	Average	%RSD
2,3,7,8-TCDD	0.457	0.536	0.205	0.399	43.4
1,2,3,7,8-PeCDD	3.74	3.07	1.50	2.77	41.6
1,2,3,4,7,8-HxCDD	4.29	3.65	1.43	3.12	48.1
1,2,3,6,7,8-HxCDD	9.18	6.70	2.86	6.24	51.0
1,2,3,7,8,9-HxCDD	14.9	11.9	4.48	10.4	51.4
1,2,3,4,6,7,8-HpCDD	>29.9*	21.2	9.60	20.2	50.4
OCDD	24.7	17.1	8.21	16.7	49.4
2,3,7,8-TCDF	14.3	18.2	4.17	12.2	59.3
1,2,3,7,8-PeCDF	10.1	>14.48*	4.55	9.72	51.3
2,3,4,7,8-PeCDF	>18.4*	>20.9*	8.40	15.9	41.6
1,2,3,4,7,8-HxCDF	>22.1*	>27.3*	15.4	21.6	27.6
1,2,3,6,7,8-HxCDF	>13.5*	>17.0*	6.43	12.3	43.7
2,3,4,6,7,8-HxCDF	>18.8*	>23.0*	8.19	16.6	45.7
1,2,3,7,8,9-HxCDF	1.14	1.55	0.357	1.01	59.5
1,2,3,4,6,7,8-HpCDF	>28.8*	>32.6*	18.5	26.6	27.5
1,2,3,4,7,8,9-HpCDF	7.21	8.56	2.17	5.98	56.4
OCDF	11.3	11.2	4.14	8.90	46.3

*Signal above calibration range

Table 2-5. Chip Dryer, Outlet D/F Stack Gas Concentration, ng/dscm

Congener	Run 1	Outlet Run 2	Run 3	Average	%RSD
2,3,7,8-TCDD	0.890	0.461	0.524	0.625	37.1
1,2,3,7,8-PeCDD	3.63	2.17	2.66	2.82	26.3
1,2,3,4,7,8-HxCDD	1.21	0.559	0.839	0.869	37.5
1,2,3,6,7,8-HxCDD	1.60	0.888	1.15	1.21	29.7
1,2,3,7,8,9-HxCDD	2.63	1.25	1.75	1.88	37.3
1,2,3,4,6,7,8-HpCDD	1.92	0.855	0.874	1.22	50.1
OCDD	1.14	0.493	0.455	0.696	55.3
2,3,7,8-TCDF	17.6	8.62	9.93	12.0	40.2
1,2,3,7,8-PeCDF	18.8	10.8	13.1	14.2	28.9
2,3,4,7,8-PeCDF	24.2	14.4	17.8	18.8	26.3
1,2,3,4,7,8-HxCDF	15.3	9.54	12.3	12.4	23.1
1,2,3,6,7,8-HxCDF	7.01	4.21	5.73	5.65	24.8
2,3,4,6,7,8-HxCDF	4.38	2.73	3.32	3.48	24.0
1,2,3,7,8,9-HxCDF	0.242	0.122	0.161	0.175	35.1
1,2,3,4,6,7,8-HpCDF	4.16	2.37	2.87	3.13	29.6
1,2,3,4,7,8,9-HpCDF	0.498	0.257	0.266	0.340	40.3
OCDF	0.605	0.270	0.255	0.377	52.5

50 range. The fact that different feed stocks or combinations of feed stocks were used for each of the runs is the most probable explanation for this. The feed stock for Run 1 was continuous during the run. The feed stock for Run 2 was the remainder of the feed stock used during Run 1 (depleted after approximately the first half of Run 2) plus a portion of a new feed stock of different material and different oily coating. The feed stock for Run 3 was a combination of the remainder of the second feed stock from Run 2 plus a third feed stock material with yet another different oily coating. Each lot of feed stock material used during the testing was added to the loading hopper as needed until it was depleted, followed by the next lot until it was depleted and so on. Each lot of material was processed as a discrete material type and oily coating with no mixing or blending of the three lots. Table 2-5 (dryer outlet) shows concentrations considerably lower than the inlet for Runs 1 and 2, whereas for Run 3 the inlet and outlet values are similar. The %RSDs generally in the 20 to 30 range still reflect the use of three different lots of feed stock.

Table 2-6 shows the D/F stack emission rate from the chip dryer outlet in micrograms of analyte per megagram (μg/Mg) of feed stock for each of the three runs, the average and the %RSD. These values were calculated using standard conversion factors (i.e., pounds to grams) and from the concentrations given in Table 2-5, the stack flow rates given in Table 2-3 and the number of pounds of each feed stock consumed during the test period as supplied by the facility. The latter data set (pounds of feed stock consumed) for each of the three runs was not a straightforward calculation. Mitigating factors included:

- Each lot of feed was processed at a different rate;
- Combinations of feed stock were used during two of the runs; and
- Two of the feed stocks were processed beginning on one day, finishing on the next day with the process shut down over night.

For run number one a single lot of feed stock was used, but it was processed over a two day period (32,000 pounds in 8 hours on the first day during Run 1 and 4,740 pounds in 3.5 hours on the next day during the first part of Run 2). The feed rate of feed stock consumed during Run 1

Table 2-6. Chip Dryer, Outlet D/F Emission Rate, µg/Mg Feed

Congener	Run 1	Outlet Run 2	Run 3	Average	%RSD
2,3,7,8-TCDD	4.50	5.41	3.79	4.57	17.7
1,2,3,7,8-PeCDD	18.3	25.5	19.2	21.0	18.5
1,2,3,4,7,8-HxCDD	6.12	6.56	6.07	6.25	4.36
1,2,3,6,7,8-HxCDD	8.10	10.4	8.35	8.96	14.3
1,2,3,7,8,9-HxCDD	13.3	14.7	12.6	13.5	7.62
1,2,3,4,6,7,8-HpCDD	9.71	10.0	6.32	8.69	23.7
OCDD	5.76	5.79	3.29	4.95	29.0
2,3,7,8-TCDF	88.9	101.2	71.8	87.3	16.9
1,2,3,7,8-PeCDF	94.8	126	94.9	105	17.2
2,3,4,7,8-PeCDF	122	170	129	140	18.3
1,2,3,4,7,8-HxCDF	77.2	112	89.3	92.8	19.0
1,2,3,6,7,8-HxCDF	35.4	49.4	41.5	42.1	16.7
2,3,4,6,7,8-HxCDF	22.1	32.0	24.0	26.1	20.2
1,2,3,7,8,9-HxCDF	1.22	1.43	1.16	1.27	10.9
1,2,3,4,6,7,8-HpCDF	21.0	27.8	20.7	23.2	17.2
1,2,3,4,7,8,9-HpCDF	2.52	3.01	1.92	2.48	22.0
OCDF	3.06	3.17	1.85	2.69	27.2

was therefore calculated by dividing 32,000 by 8. The same logic was followed for Runs 2 and 3, except that two different lots were used during each run and the average feed rate was therefore determined. The feed rate calculations are summarized below:

Run No.	Lot	Feed Time-Date	Pounds of Feed	Feed Rate	Avg. Feed Rate, lbs/hr
1	1	8 hrs-12/5/97	32,000	4,000 lbs/hr	4,000
2	1	3.5 hrs-12/6/97	4,740	1,354	1,959
2	2	8 hrs-12/6/97	20,500	2,563	
3	2	8 hrs-12/6/97	20,500	2,563	3,032
3	3	2 hrs-12/6/97	7,000	3,500	

Table 2-7 shows the D/F congener concentrations in ng/dscm converted to 2,3,7,8-TCDD toxicity equivalents as well as a summation of the values presented as total chlorinated dioxins and total chlorinated furans.

Reverberatory Furnace #1

A total of four tests was performed collecting samples simultaneously at the inlet and outlet of the baghouse associated with furnace number 1. Each test was performed over the duration of a batch cycle starting at the time of the first furnace charge and ending at the time of the last tap out, a period ranging from approximately five and one-half hours to six and one-half hours. The same product was produced during each of the four tests. Each batch followed a three stage process: charging, mixing and tap-out. Charging required approximately four hours to complete, mixing one hour and tap-out one hour. The highest emissions were observed during the charging process (as observed from the real time FTIR data for HCl). A "front-end loader" Caterpillar tractor was used to charge feed stock or flux to the furnace approximately every ten minutes during the charging stage. As each load was added emissions were visible in the form of clouds of black smoke/soot which were captured by an overhead hood and directed to the baghouse.

Table 2-7. Chip Dryer, 2,3,7,8-TCDD Toxicity Equivalent Concentrations

Congener	2,3,7,8 TCDD TEF[1]	ng/dscm			
		Run 1	Run 2	Run 3	Average
Inlet					
2,3,7,8-TCDD	1.0	0.457	0.536	0.205	0.399
1,2,3,7,8-PeCDD	0.5	1.87	1.53	0.750	1.39
1,2,3,4,7,8-HxCDD	0.1	0.429	0.365	0.143	0.312
1,2,3,6,7,8-HxCDD	0.1	0.918	0.670	0.286	0.624
1,2,3,7,8,9-HxCDD	0.1	1.49	1.19	0.448	1.04
1,2,3,4,6,7,8-HpCDD	0.01	0.299	0.212	0.0960	0.202
OCDD	0.001	0.0247	0.0171	0.00821	0.0167
Total PCDD					3.98
2,3,7,8-TCDF	0.1	1.43	1.82	0.417	1.22
1,2,3,7,8-PeCDF	0.05	0.506	0.724	0.227	0.486
2,3,4,7,8-PeCDF	0.5	9.18	10.5	4.20	7.95
1,2,3,4,7,8-HxCDF	0.1	2.21	2.73	1.54	2.16
1,2,3,6,7,8-HxCDF	0.1	1.35	1.70	0.643	1.23
2,3,4,6,7,8-HxCDF	0.1	1.88	2.30	0.819	1.66
1,2,3,7,8,9-HxCDF	0.1	0.114	0.155	0.0357	0.101
1,2,3,4,6,7,8-HpCDF	0.01	0.288	0.326	0.185	0.266
1,2,3,4,7,8,9-HpCDF	0.01	0.0721	0.0856	0.0217	0.0598
OCDF	0.001	0.0113	0.0112	0.00414	0.00890
Total PCDF					15.1
Outlet					
2,3,7,8-TCDD	1.0	0.890	0.461	0.524	0.625
1,2,3,7,8-PeCDD	0.5	1.81	1.09	1.33	1.41
1,2,3,4,7,8-HxCDD	0.1	0.121	0.0559	0.0839	0.0869
1,2,3,6,7,8-HxCDD	0.1	0.160	0.0888	0.115	0.121
1,2,3,7,8,9-HxCDD	0.1	0.263	0.125	0.175	0.188
1,2,3,4,6,7,8-HpCDD	0.01	0.0192	0.00855	0.00874	0.0122

Table 2-7. (Continued)

Congener	2,3,7,8 TCDD TEF[1]	ng/dscm			
		Run 1	Run 2	Run 3	Average
OCDD	0.001	0.00114	0.000493	0.000455	0.000696
Total PCDD					2.44
2,3,7,8-TCDF	0.1	1.76	0.862	0.993	1.20
1,2,3,7,8-PeCDF	0.05	0.94	0.538	0.656	0.710
2,3,4,7,8-PeCDF	0.5	12.1	7.22	8.90	9.40
1,2,3,4,7,8-HxCDF	0.1	1.53	0.954	1.23	1.24
1,2,3,6,7,8-HxCDF	0.1	0.701	0.421	0.573	0.565
2,3,4,6,7,8-HxCDF	0.1	0.438	0.273	0.332	0.348
1,2,3,7,8,9-HxCDF	0.1	0.0242	0.0122	0.0161	0.0175
1,2,3,4,6,7,8-HpCDF	0.01	0.0416	0.0237	0.0287	0.0313
1,2,3,4,7,8,9-HpCDF	0.01	0.00498	0.00257	0.00266	0.00340
OCDF	0.001	0.000605	0.000270	0.000255	0.000377
Total PCDF					13.5

[1]Toxicity Equivalence Factor

Tables 2-8 and 2-9 present the concentration, in ng/dscm, of the selected D/F congeners by run number, the average concentration over the three runs and the %RSD for the reverberatory furnace No. 1 inlet and outlet, respectively. These values were calculated by dividing the reported analytical results, in ng, by the appropriate sample volume collected, in dscm, from Table 2-2. As indicated in Table 2-8 (furnace inlet) the concentration value of the octachlorofuran in Run 2 is presented as a "greater than" value and should be considered an estimate. The amount of this analyte detected in the sample extract exceeded the calibration curve.

Table 2-8. Reverberatory Furnace #1, Inlet D/F Concentration, ng/dscm

Congener	Run 1	Inlet Run 2	Run 3	Run 4	Average	%RSD
2,3,7,8-TCDD	0.177	0.191	0.156	0.132	0.164	15.7
1,2,3,7,8-PeCDD	1.04	1.34	0.872	0.930	1.05	20.1
1,2,3,4,7,8-HxCDD	1.17	1.45	0.949	1.21	1.20	17.2
1,2,3,6,7,8-HxCDD	1.90	2.18	1.46	1.91	1.86	15.9
1,2,3,7,8,9-HxCDD	2.68	3.20	2.13	2.66	2.67	16.4
1,2,3,4,6,7,8-HpCDD	11.2	14.9	8.44	10.3	11.2	24.2
OCDD	18.1	23.4	12.1	16.3	17.5	26.9
2,3,7,8-TCDF	3.01	4.33	2.69	3.46	3.37	21.0
1,2,3,7,8-PeCDF	4.05	4.22	3.54	4.08	3.97	7.53
2,3,4,7,8-PeCDF	7.64	8.58	6.10	7.42	7.43	13.7
1,2,3,4,7,8-HxCDF	26.2	26.6	18.7	25.2	24.2	15.4
1,2,3,6,7,8-HxCDF	9.06	9.54	6.64	8.40	8.41	15.1
2,3,4,6,7,8-HxCDF	13.8	14.5	9.87	12.2	12.6	16.3
1,2,3,7,8,9-HxCDF	0.805	0.833	0.641	0.724	0.751	11.6
1,2,3,4,6,7,8-HpCDF	42.3	53.8	27.4	40.1	40.9	26.4
1,2,3,4,7,8,9-HpCDF	6.44	9.27	4.38	6.61	6.68	30.0
OCDF	37.4	177*	20.4	41.3	68.9	104.9

*Signal above calibration range

Table 2-9. Reverberatory Furnace #1, Outlet D/F Concentration, ng/dscm

Congener	Run 1	Outlet Run 2	Run 3	Run 4	Average	%RSD
2,3,7,8-TCDD	0.00554*	0.00284*	0.00576	0.00264*	0.00419	40.1
1,2,3,7,8-PeCDD	0.0249	0.00711*	0.00863*	0.00396*	0.0112	84.1
1,2,3,4,7,8-HxCDD	0.0235	0.00284*	0.00288*	0.00264*	0.0080	130
1,2,3,6,7,8-HxCDD	0.0374	0.00569*	0.00719*	0.00528*	0.0139	113
1,2,3,7,8,9-HxCDD	0.0568	0.00853*	0.00863*	0.00528*	0.0198	125
1,2,3,4,6,7,8-HpCDD	0.166	0.0228	0.0173	0.0198	0.0565	129
OCDD	0.249	0.0384	0.0230*	0.0317	0.0856	128
2,3,7,8-TCDF	0.115	0.0811	0.0993	0.0356	0.0827	41.5
1,2,3,7,8-PeCDF	0.126	0.0413	0.0547	0.0198	0.0604	76.2
2,3,4,7,8-PeCDF	0.222	0.0569	0.0734	0.0290	0.0952	90.5
1,2,3,4,7,8-HxCDF	0.485	0.0768	0.0806	0.0580	0.175	118
1,2,3,6,7,8-HxCDF	0.180	0.0299	0.0302	0.0198	0.0650	118
2,3,4,6,7,8-HxCDF	0.235	0.0327	0.0317	0.0264	0.0816	126
1,2,3,7,8,9-HxCDF	0.0125*	0.00142*	0.00144*	0.00264*	0.00449	119
1,2,3,4,6,7,8-HpCDF	0.665	0.0967	0.0590	0.0818	0.226	130
1,2,3,4,7,8,9-HpCDF	0.120	0.0156	0.00719*	0.0106*	0.0385	142
OCDF	0.554	0.171	0.0345	0.0607	0.205	117

*Values below calibration curve and/or less than 5 x MDL; should be considered estimates

The observed concentrations for the four runs at the inlet are generally of the same magnitude as indicated by the low %RSDs. Table 2-9 (furnace outlet) shows the concentrations to be considerably lower than those at the inlet by a factor of 10 to 100. Several of the analytes exhibited a concentration level below the calibration curve, less than 5 times the detection limit or not detected. These factors contribute to the high %RSD observed, not unusual in this situation.

Table 2-10 shows the D/F stack emission rate from the furnace number 2 outlet in micrograms of analyte per megagram (µg/Mg) of feed stock for each of the four runs, the average and the %RSD. These values were calculated using standard conversion factors (i.e., pounds to grams), the concentrations given in Table 2-9, the stack flow rates given in Table 2-3 and the number of pounds of feed stock consumed during the test period as supplied by the facility. Although the feed stock was added only during the first four hours of each batch, the feed rate was calculated using the total pounds consumed divided by the length of the total batch process. This calculation process was necessary to correspond with the emissions collected by the integrated sample over the duration of the entire batch process including charging, mixing and tap-out. The latter data set (pounds of feed stock consumed) for each of the four runs is given below:

Run No.	Lot	Batch Time-Date	Feed Consumed, lbs.	Feed Rate, lbs./hr
1	1	6 hrs-12/8/97	70,200	11,700
2	2	6.5 hrs-12/9/97	70,200	10,800
3	3	5.75 hrs-12/10/97	75,600	13,148
4	4	6.5 hrs-12/11/98	81,000	12,462

Table 2-11 shows the congener concentrations in ng/dscm converted to 2,3,7,8-TCDD toxicity equivalents as well as a summation of the values presented as total chlorinated dioxins and total chlorinated furans.

Table 2-10. Reverberatory Furnace #1, Outlet D/F Emission Rate, µg/Mg Feed

Congener	Run 1	Outlet Run 2	Run 3	Run 4	Average	%RSD
2,3,7,8-TCDD	0.0505	0.0256	0.0433	0.0202	0.0349	41.0
1,2,3,7,8-PeCDD	0.227	0.0648	0.0649	0.0303	0.0968	91.4
1,2,3,4,7,8-HxCDD	0.215	0.0259	0.0216	0.0202	0.0706	136
1,2,3,6,7,8-HxCDD	0.341	0.0519	0.0541	0.0404	0.122	120
1,2,3,7,8,9-HxCDD	0.518	0.0778	0.0649	0.0404	0.175	131
1,2,3,4,6,7,8-HpCDD	1.52	0.207	0.130	0.152	0.501	135
OCDD	2.27	0.350	0.173	0.242	0.760	133
2,3,7,8-TCDF	1.05	0.739	0.746	0.273	0.702	45.6
1,2,3,7,8-PeCDF	1.15	0.376	0.411	0.152	0.522	83.1
2,3,4,7,8-PeCDF	2.02	0.519	0.552	0.222	0.828	97.6
1,2,3,4,7,8-HxCDF	4.42	0.700	0.606	0.444	1.54	125
1,2,3,6,7,8-HxCDF	1.64	0.272	0.227	0.152	0.573	125
2,3,4,6,7,8-HxCDF	2.15	0.298	0.238	0.202	0.721	132
1,2,3,7,8,9-HxCDF	0.114	0.0130	0.0108	0.0202	0.0394	126
1,2,3,4,6,7,8-HpCDF	6.06	0.882	0.444	0.626	2.00	135
1,2,3,4,7,8,9-HpCDF	1.10	0.143	0.0541	0.0808	0.344	147
OCDF	5.05	1.56	0.260	0.465	1.83	121

Table 2-11. Reverberatory Furnace #1, 2,3,7,8-TCDD Toxicity Equivalent Concentrations

Congener	2,3,7,8-TCDD TEF[1]	ng/dscm				
		Run 1	Run 2	Run 3	Run 4	Average
Inlet						
2,3,7,8-TCDD	1.0	0.177	0.191	0.156	0.132	0.164
1,2,3,7,8-PeCDD	0.5	0.519	0.672	0.436	0.465	0.523
1,2,3,4,7,8-HxCDD	0.1	0.117	0.145	0.095	0.121	0.120
1,2,3,6,7,8-HxCDD	0.1	0.190	0.218	0.146	0.191	0.186
1,2,3,7,8,9-HxCDD	0.1	0.268	0.320	0.213	0.266	0.267
1,2,3,4,6,7,8-HpCDD	0.01	0.112	0.149	0.084	0.103	0.112
OCDD	0.001	0.0181	0.0234	0.0121	0.0163	0.0175
Total PCDD						1.39
2,3,7,8-TCDF	0.1	0.301	0.433	0.269	0.346	0.337
1,2,3,7,8-PeCDF	0.05	0.203	0.211	0.177	0.204	0.199
2,3,4,7,8-PeCDF	0.5	3.82	4.29	3.05	3.71	3.72
1,2,3,4,7,8-HxCDF	0.1	2.62	2.66	1.87	2.52	2.42
1,2,3,6,7,8-HxCDF	0.1	0.906	0.954	0.664	0.840	0.841
2,3,4,6,7,8-HxCDF	0.1	1.38	1.45	0.987	1.22	1.26
1,2,3,7,8,9-HxCDF	0.1	0.0805	0.0833	0.0641	0.0724	0.0751
1,2,3,4,6,7,8-HpCDF	0.01	0.423	0.538	0.274	0.401	0.409
1,2,3,4,7,8,9-HpCDF	0.01	0.0644	0.0927	0.0438	0.0661	0.0668
OCDF	0.001	0.0374	0.177	0.0204	0.0413	0.0689
Total PCDF						9.39
Outlet						
2,3,7,8-TCDD	1.0	0.00554	0.00284	0.00576	0.00264	0.00419
1,2,3,7,8-PeCDD	0.5	0.0125	0.00356	0.00432	0.00198	0.00558
1,2,3,4,7,8-HxCDD	0.1	0.00235	0.000284	0.000288	0.000264	0.000798
1,2,3,6,7,8-HxCDD	0.1	0.00374	0.000569	0.000719	0.000528	0.00139
1,2,3,7,8,9-HxCDD	0.1	0.00568	0.000853	0.000863	0.000528	0.00198

Table 2-11. (Continued)

Congener	2,3,7,8-TCDD TEF[1]	ng/dscm				
		Run 1	Run 2	Run 3	Run 4	Average
1,2,3,4,6,7,8-HpCDD	0.01	0.00166	0.000228	0.000173	0.000198	0.000565
OCDD	0.001	0.000249	0.000038	0.000023	0.000032	0.0000856
Total PCDD						0.0146
2,3,7,8-TCDF	0.1	0.0115	0.00811	0.00993	0.00356	0.00827
1,2,3,7,8-PeCDF	0.05	0.00630	0.00206	0.00273	0.000989	0.00302
2,3,4,7,8-PeCDF	0.5	0.111	0.0284	0.0367	0.0145	0.0476
1,2,3,4,7,8-HxCDF	0.1	0.0485	0.00768	0.00806	0.00580	0.0175
1,2,3,6,7,8-HxCDF	0.1	0.0180	0.00299	0.00302	0.00198	0.00650
2,3,4,6,7,8-HxCDF	0.1	0.0235	0.00327	0.00317	0.00264	0.00816
1,2,3,7,8,9-HxCDF	0.1	0.00125	0.000142	0.000144	0.000264	0.000449
1,2,3,4,6,7,8-HpCDF	0.01	0.00665	0.000967	0.000590	0.000818	0.00226
1,2,3,4,7,8,9-HpCDF	0.01	0.00120	0.000156	0.000072	0.000106	0.000385
OCDF	0.001	0.000554	0.000171	0.000035	0.000061	0.000205
Total PCDF						0.0944

[1]Toxicity Equivalence Factor

2.3 HCl Results

2.3.1 Overview

Three 4-hour HCl/Cl_2 tests were performed at the inlet and outlet of the baghouse associated with the chip dryer operation (total of 6) and four 6-hour tests were performed at the inlet and outlet of the baghouse associated with the reverberatory furnace number 1 (total of 8). The sampling and analysis procedures followed EPA Method 26A protocol. Prior to testing, the plant personnel replaced all fabric filters in the baghouse with new ones and performed the appropriate leak checks. All analyses were performed by ion chromatography using the samples as received from the field. Any compound that was not detected is reported as a "less than"

value with this value being the instrument detection limit. A "less than" value rather than a "0" is used in all appropriate calculations. All HCl/Cl_2 raw data can be found in Appendix C of this report.

2.3.2 HCl Emission Results

Chip Dryer

The baghouse associated with the chip dryer is injected with lime (hydrated calcium hydroxide) for the purpose of reducing HCl emissions. The reaction between the two compounds forms calcium chloride and water. The lime injection to the baghouse was continuous at a feed rate of approximately 50 pounds per hour. Table 2-12 gives the concentration, in micrograms per dry standard cubic meters (µg/dscm), the average concentration over the three runs and the %RSD for the inlet and outlet, respectively. The results for Run 3 inlet are invalid as the sample was compromised during sample recovery in the field. Chlorine was not detected (at the instrument detection limit) in any samples at either the inlet or the outlet. The HCl results for Runs 1 and 2 inlet and Runs 1 and 2 outlet are very consistent among themselves with the outlet concentrations representing about 3% of the amount entering the baghouse. Table 2-13 gives the concentrations in parts per million (ppm) in order to provide an easy comparison to the FTIR results which are also presented in ppm and provided in Section 2.5 of this report.

The emission rate of HCl/Cl_2, in pounds/hour (lbs/hr), was calculated using the concentration results from Table 2-12 and the stack flow rate data from Table 2-3 and is presented in Table 2-14. Using the average emission rates calculated for the inlet and the outlet, a baghouse percent removal efficiency for HCl was determined to be 96.9%, as shown in Table 2-15. The emission rate of HCl/Cl_2 was also determined as pounds per ton of feed stock using the data given in Table 2-14 and the feed stock feed rates for the chip dryer given in Section 2.2.2 above. These results are given in Table 2-16.

Table 2-12. HCl and Cl_2 Concentration, µg/dscm

Location	Parameter	Run 1	Run 2	Run 3	Run 4
Chip Dryer Inlet[1]	HCl	43704	37254	6102	NA
	Cl_2	<191	<198	<179	NA
Chip Dryer Outlet	HCl	1367	1899	202	NA
	Cl_2	<123	<137	<168	NA
Furnace 1 Inlet	HCl	119887	119768	66034	109455
	Cl_2	188*	4305	783	231*
Furnace 1 Outlet	HCl	689	764	2379	1262
	Cl_2	<66.2	129*	<62.4	<45.6

*Less than 5 x MDL
[1]Run 3 compromised during sample recovery

Table 2-13. HCl and Cl_2 Concentration, ppm

Location	Parameter	Run 1	Run 2	Run 3	Run 4
Chip Dryer Inlet[1]	HCl	29.6	25.3	4.14	NA
	Cl_2	<0.067	<0.069	0.062	NA
Chip Dryer Outlet	HCl	0.927	1.288	0.137	NA
	Cl_2	<0.043	<0.048	<0.058	NA
Furnace 1 Inlet	HCl	81.3	81.2	44.8	74.2
	Cl_2	0.066*	1.50	0.273	0.081*
Furnace 1 Outlet	HCl	0.467	0.518	1.61	0.856
	Cl_2	<0.023	0.045*	<0.022	<0.016

*Less than 5 x MDL
[1]Run 3 compromised during sample recovery

Table 2-14. HCl and Cl_2 Emission Rate, lbs/hour

Location	Parameter	Run 1	Run 2	Run 3	Run 4	Average	%RSD
Chip Dryer Inlet[1]	HCl	0.820	0.798	0.115	NA[2]	0.809	NA
	Cl_2	<0.00359	<0.00423	<0.00338	NA	0.00391	NA
Chip Dryer Outlet	HCl	0.0276	0.0429	0.00424	NA	0.0249	78.1
	Cl_2	<0.00249	<0.00310	<0.00352	NA	0.00304	17.1
Furnace 1 Inlet	HCl	11.4	10.5	5.88	8.38	9.05	27.3
	Cl_2	0.0179*	0.379	0.0698	0.0177*	0.121	143.4
Furnace 1 Outlet	HCl	0.0760	0.0760	0.227	0.112	0.123	58.3
	Cl_2	<0.00731	0.0128*	<0.00596	<0.00407	0.00754	50.0

*Less than 5 x MDL; should be considered an estimate
[1]Run 3 compromised during sample collection; Runs 1 and 2 used to calculate average
[2]NA=Not Applicable

Table 2-15. HCl Removal Efficiency

Location	Average Emission Rate, lbs/hour		Removal Efficiency, %[3]
	Inlet	Outlet	
Chip Dryer	0.809	0.0249	96.9
Furnace #1, Cond. 1[1]	10.97	0.0760	99.3
Furnace #1, Cond. 2[2]	7.13	0.170	97.6

Condition 1 = continuous lime feed, Runs 1 and 2
Condition 2 = 50 lbs. lime every 2 hours, Runs 3 and 4
[1]Average of runs 1 and 2
[2]Average of runs 3 and 4
[3]Removal Efficiency = (inlet-outlet/inlet) x 100

Table 2-16. HCl and Cl_2 Emission Rate, lbs/Ton of Feed

Location	Parameter	Run 1	Run 2	Run 3	Run 4	Average	%RSD
Chip Dryer Inlet[1]	HCl	0.410	0.814	0.0759	NA[2]	0.612	NA
	Cl_2	0.00180	0.00432	0.00222	NA	0.00306	NA
Chip Dryer Outlet	HCl	0.0138	0.0438	0.00279	NA	0.0201	105
	Cl_2	0.00124	0.00317	0.00232	NA	0.00224	42.9
Furnace 1 Inlet	HCl	1.95	1.95	0.895	1.34	1.54	33.5
	Cl_2	0.00305	0.0702	0.0106	0.00284	0.0217	150
Furnace 1 Outlet	HCl	0.0130	0.0141	0.0346	0.0180	0.0199	50.3
	Cl_2	0.00125	0.00238	0.000908	0.000653	0.00130	58.7

[1]Run 3 compromised during sample collection, Runs 1 and 2 used to calculate average
[2]NA, Not Applicable

Reverberatory Furnace Number 1

The results for the reverberatory furnace #1 are given in Tables 2-12 through 2-16 following the same sequence as the chip dryer. During Test Runs 1 and 2, lime was fed continuously to the baghouse (Condition 1). During Test Runs 3 and 4, lime was added to the lime feed hopper at the rate of one 50 lb bag every two hours (Condition 2). Lime was consumed at the rate of approximately 50 pounds per 30 minutes during the test period. The concentration results presented in Tables 2-12 and 2-13 for HCl for Runs 1 and 2 are consistent among themselves for both the inlet and outlet. Run 4 inlet results were consistent with Runs 1 and 2. However, the outlet results were approximately a factor of 2 higher than for Runs 1 and 2. The fact that one of the four baghouse modules (module 4) had developed a leak and was off-line could be a possible explanation for this observation. The Run 3 inlet HCl concentration was observed to be approximately half that for the other runs, possibly because furnace Cl_2 flow supply was not turned on until at least an hour into the test.

The baghouse removal efficiency for HCl was determined for Condition 1 using the average of the emission rate results from Runs 1 and 2 and for Condition 2 using the average of Runs 3 and 4. The results are presented in Table 2-15. The removal efficiency for Condition 2 was slightly less than that for Condition 1, with both well above 95%. The emission rate of HCl/Cl_2 was also determined as pounds per ton of feed stock using the data given in Table 2-14 and the feed stock feed rates for the furnace given in Section 2.2.2, above. These results are given in Table 2-16.

2.4 Particulate Results

2.4.1 Overview

Particulate matter emissions were determined from the same sampling trains used for the determination of HCl emissions. PM collected on the filter and in the front half acetone rinse (nozzle, probe, front-half filter holder) was analyzed gravimetrically. PM stack concentrations in grains per dry standard cubic meter (gr/dscm), PM emission rate in pounds per ton of feed (lbs/Ton) and pounds per hour (lbs/Hr), and the PM removal efficiency of each baghouse as a percent (%) for the chip dryer and furnace number 1 operations are presented below. The results of the PM testing are presented in Tables 2-17 through 2-20. All raw data for the PM determinations can be found in Appendix D.

2.4.2 Particulate Emission Results

Chip Dryer

Table 2-17 gives the concentration, in gr/dscm, the average concentration over the three runs and the %RSD for the inlet and outlet. The average of the three runs was 20.3 and 0.778 for the inlet and outlet, respectively.

Table 2-17. Stack Gas Particulate Matter Concentration, gr/dscm

Baghouse Location	gr/dscm					%RSD
	Run 1	Run 2	Run 3	Run 4	Average	
Chip Dryer Inlet	27.8	19.3	13.9	NA	20.3	34.5
Chip Dryer Outlet	2.07	0.529	1.10	NA	1.23	63.2
Furnace 1 Inlet	7.33	5.06	3.21	3.86	4.86	37.3
Furnace 1 Outlet	0.142	0.0242	0.0103	0.00599	0.0455	142

Table 2-18. Particulate Matter Emission Rate, lbs/hour

Baghouse Location	lbs/hour					%RSD
	Run 1	Run 2	Run 3	Run 4	Average	
Chip Dryer Inlet	33.8	26.8	17.0	NA	25.9	32.6
Chip Dryer Outlet	2.71	0.775	1.49	NA	1.66	59.0
Furnace 1 Inlet	45.2	28.9	18.5	19.1	27.9	44.6
Furnace 1 Outlet	1.01	0.156	0.0637	0.0346	0.317	147

Table 2-19. Baghouse Particulate Removal Efficiency,%

Location	lbs/hr		
	Avg. Inlet Rate	Avg. Outlet Rate	Removal Efficiency %
Chip Dryer Baghouse	25.9	1.66	93.6
Furnace 1 Baghouse	27.9	0.317	98.9

Table 2-20. Particulate Matter Emission Rate, lbs/Ton of Feed

Baghouse Location	lbs/ton of Feed					%RSD
	Run 1	Run 2	Run 3	Run 4	Average	
Chip Dryer Inlet	16.9	27.3	11.190	NA	18.5	44.3
Chip Dryer Outlet	1.35	0.791	0.982	NA	1.04	27.5
Furnace 1 Inlet	7.73	5.35	2.82	3.07	4.74	48.3
Furnace 1 Outlet	0.173	0.0289	0.00970	0.00555	0.0543	147

The emission rate of PM, in lbs/hr, was calculated using the concentration results from Table 2-17 and the stack flow rate data from Table 2-3 and is presented in Table 2-18. Using the average emission rates calculated for the inlet and the outlet, a baghouse percent removal efficiency for PM was determined to be 93.6%, as shown in Table 2-19. The emission rate of PM was also determined as pounds per ton of feed stock using the data given in Table 2-18 and the feed stock feed rates for the chip dryer given in Section 2.2.2 above. These results are given in Table 2-20.

Reverberatory Furnace Number 1

Table 2-17 gives the concentration, in gr/dscm, the average concentration over the four runs and the %RSD for the inlet and outlet. The average of the four runs was 4.68 and 0.0455 for the inlet and outlet respectively. The inlet PM concentrations for Runs 1 and 2 (condition 1) are noticeably higher than for Runs 3 and 4 (condition 2), possibly due to the lower lime injection rate that occurred during Runs 3 and 4. The high variability between the outlet results is due to the low mass of PM present on the filters. Values near the limit of detection have inherent increased variability.

The emission rate of PM, in lbs/hr, was calculated using the concentration results from Table 2-17 and the stack flow rate data from Table 2-3 and is presented in Table 2-18. Using the

average emission rates calculated for the inlet and the outlet, a baghouse percent removal efficiency for PM was determined to be 98.9%, as shown in Table 2-19. The emission rate of PM was also determined as pounds per ton of feed stock using the data given in Table 2-18 and the feed stock feed rates for furnace number 2 given in Section 2.2.2 above. These results are given in Table 2-20.

2.5 FTIR Results

2.5.1 Overview

FTIR data for HCl and other species were collected at the inlet and outlet of the baghouses associated with the chip dryer and reverberatory furnace 1. FTIR data collection was synchronized with manual HCl and dioxin/furan testing to allow semi-quantitative comparison of the FTIR and manual HCl results. Due to partitioning of FTIR analysis time between unconditioned and conditioned inlet/outlet samples, only 25% of FTIR data during a given run on the chip dryer and 38% on the furnace were collected simultaneously with the corresponding inlet or outlet manual train sampling.

FTIR data were collected at each location by alternating sample analysis between inlet and outlet every 10 minutes. Both inlet and outlet sampling systems continuously withdrew sample from their respective location. Each 10 minute measurement period contained ten 1 minute average data points. The first two data points from each period were discarded to eliminate data for samples containing both inlet and outlet sample gas. Two data points correspond to the measured response time of the complete FTIR sampling and analysis system (see below for details on measurement of system response time) A 1 minute average data point is generated by analysis of a composite spectrum consisting of an average of 43 FTIR spectra collected over the 1 minute time period.

Section 2.1 gives the schedule of the tests performed at the Culp facility. Both unconditioned samples and conditioned samples were analyzed. Conditioned samples were

generated by passing the raw sample gas through a water vapor/carbon dioxide scrubbing system (See Section 5.3 for details). Unconditioned and conditioned samples extracted from the chip dryer baghouse were measured during the first and last two-hour periods for each four hour run, respectively. At the reverberatory furnace #1, the sampling order went as follows: 2 hours unconditioned, 1 hour conditioned, and 2 hours unconditioned. Two unattended unconditioned overnight runs were also conducted to look continuously at reverberatory furnace #1 hood baghouse outlet emissions. Those results are reported in Section 2.5.2.2.

Baghouse removal efficiency for HCl was measured from the inlet/outlet data from each location and is reported in Section 2.5.2.2. Optimization of the reverberatory furnace 1 baghouse for HCl removal was also carried out. The removal efficiency was found to exceed 90% for all tests at all lime injection rates tested.

EPA Method 301 validation tests for HCl were carried out on the chip dryer baghouse outlet, and reverberatory furnace #1 baghouse inlet and outlet. In all three tests, the Method 301 statistical calculations showed that the FTIR method demonstrated acceptable precision and no statistically significant bias for HCl. Details of the validation results can be found in Section 2.5.2.1.

A comparison of the FTIR and Method 26A results for both the chip dryer and furnace tests are presented in Section 2.5.2.6

2.5.2 FTIR Emission Results

This section contains the FTIR EPA Method 301 HCl validation results, HCl test results, and screening results for the chip dryer and reverberatory furnace #1 hood baghouse inlet and outlet. Also included are results for the reverberatory furnace #1 hood baghouse HCl removal efficiency optimization tests.

2.5.2.1 EPA Method 301 FTIR Validation Results for HCl

EPA Method 301 validation testing for HCl was performed on the chip dryer outlet, and reverberatory furnace #1 hood inlet/outlet. The spiking procedure is given in Section 5.3.2. Five-minute measurement periods were used for the chip dryer outlet, while 1-minute measurement periods for both inlet and outlet of the reverberatory furnace #1 were used. The 1-minute periods were used because of the rapidly fluctuating nature of the furnace emissions. Table 2-21 summarizes the validation results.

Table 2-21. Summary of EPA Method 301 FTIR Validation Results for HCl

Location	Date	Spiked/Unspiked Precision Acceptable?	Statistically Significant Bias?
Chip Dryer Outlet	12/03/97	Yes/Yes	No
Furnace 1 Inlet	12/07/97	Yes/Yes	No
Furnace 1 Outlet	12/07/97	Yes/Yes	No

Note: Acceptable precision is equal to or less than 50% RSD.

Detailed results of the validation testing can be found in Appendix E.

2.5.2.2 FTIR HCl Test Results

The estimated FTIR HCl detection limit for this study is 0.05 ppmv.

While it is instructive to compare HCl results from both FTIR and manual methods, care must be taken in interpreting the two sets of results. The FTIR system measured HCl at a given inlet or outlet only 25 % of the time; the corresponding manual method was integrated over the entire sampling period. Half of the FTIR instrument analysis time was split equally between inlet and outlet as unconditioned and conditioned samples. Since HCl was measured only in

unconditioned samples, this sampling scheme results in a 25% duty cycle for the total run for HCl measurement at a given inlet or outlet. The potential difference between FTIR and manual results will increase with greater fluctuations in the HCl concentration during the run, since the FTIR captures 25% of the manual method sample for a given inlet or outlet run. Greatest fluctuation in HCl was observed during charging operations on the furnace #1 inlet to the baghouse.

Results given below are organized by location. HCl removal efficiency was also calculated for each run.

Chip Dryer Baghouse Outlet/Inlet HCl Results—Table 2-22 gives a summary of the chip dryer baghouse outlet/inlet FTIR HCl results. The average inlet concentrations were consistent between runs, but the outlet concentrations varied by a factor of 10.

During Run 1, a large slug of particulate matter filled the FTIR inlet heated filter assembly which prevented sampling of the inlet gas. The FTIR system was allowed to measure the outlet while the inlet filter system was cleaned; thirty more data points were therefore measured on the outlet versus the inlet. These extra 30 data points were reported in the preliminary data, but they are not included in the results presented in Table 2-22. The removal of the extra 30 data points does not cause any significant changes in the Run 1 results, however.

Reverberatory Furnace 1 Baghouse Outlet/Inlet HCl Results—Table 2-23 gives the FTIR HCl results for the reverberatory furnace baghouse inlet and outlet during charging of the furnace with scrap aluminum. Table 2-24 shows the FTIR HCl results for the reverberatory furnace #1 hood baghouse inlet and outlet during tapping operations. In all cases, HCl removal efficiency due to the lime-injected baghouse was greater than 90 percent.

Table 2-22. Chip Dryer FTIR HCl Results, ppmv

	Run 1		Run 2		Run 3	
Date	12/05/97		12/06/97		12/06/97	
Time	0800 - 0900 0930 - 1130		0835 - 1040		1546 - 1746	
Location	inlet	outlet	inlet	outlet	inlet	outlet
Average	8.91	0.65	8.25	5.30	6.79	2.42
SD	6.42	0.54	11.67	4.17	4.44	2.72
Maximum	22.89	2.54	52.05	19.28	20.40	13.37
Minimum	2.11	0.10	1.22	1.16	0.77	0.86
NDP	72	72	48	48	48	48
RE	92.7		35.8		64.4	

SD - Standard Deviation
NDP - Number of data points measured
RE- Removal Efficiency in percent: 100 X (Avg. inlet- Avg. outlet)/Avg. inlet

Table 2-23. Reverberatory Furnace #1 Baghouse FTIR HCl Results During Charging, ppmv

	Run 1		Run 2		Run 3		Run 4	
Date	12/08/97		12/09/97		12/10/97		12/11/97	
Time	945 - 1200		1220 - 1420		1114 - 1334		0618 - 0848	
Location	inlet	outlet	inlet	outlet	inlet	outlet	inlet	outlet
Average	136.94	5.20	58.48	2.72	42.27	3.64	132.42	4.57
SD	145.00	4.80	122.37	1.15	71.67	1.65	159.55	3.46
Maximum	645.4	21.50	756.72	6.76	330.79	9.40	634.60	14.39
Minimum	9.80	0.73	7.59	1.14	4.07	1.59	12.25	1.36
NDP	51	56	48	48	56	56	64	56
RE	96.2		95.3		91.4		96.6	

SD - Standard Deviation
NDP - Number of data points measured
RE-Removal Efficiency in percent: 100 X (Avg. inlet- Avg. outlet)/Avg. inlet

Table 2-24. Reverberatory Furnace #1 Baghouse FTIR HCl Results During Tapping, ppmv

	Run 1		Run 2		Run 3		Run 4	
Date	**12/08/97**		**12/09/97**		**12/10/97**		**12/11/97**	
Time			**1555 - 1825**		**1430 - 1710**		**0958 - 1258**	
Location	**inlet**	**outlet**	**inlet**	**outlet**	**inlet**	**outlet**	**inlet**	**outlet**
Average	57.95	2.17	54.54	1.96	46.84	1.59	41.09	1.58
SD	19.84	0.66	34.67	0.68	21.47	0.48	15.57	0.58
Maximum	89.16	3.85	155.58	3.85	84.51	3.07	63.45	3.59
Minimum	13.83	1.30	0.93	1.06	2.27	0.94	0.94	0.72
NDP	56	64	64	56	64	64	72	72
RE	96.3		96.4		96.6		96.2	

SD - Standard deviation
NDP - Number of data points measured
RE-Removal Efficiency percent: 100 X (Avg. inlet- Avg. outlet)/Avg. inlet

Tables 2-23 and 2-24 clearly show that the respective inlet and outlet concentrations during charging are somewhat higher on average than during tapping. This result is expected, due to the nature of the loading process, where hydrocarbons from oils coated on the charge material provide the source of hydrogen for HCl production. Tapping operations do not involve the addition of any material to the furnace, so the HCl levels would be expected to be lower.

Further examination of the data shows that the standard deviation of HCl inlet and outlet levels during loading is significantly higher than during tapping. This variation stems from the greater variation in the HCl emissions during loading due to the periodic addition of hydrocarbon material to the furnace. During tapping operations, the furnace is not charged, and less variation is expected.

Tables 2-25 and 2-26 are the combined loading and tapping results and a grand average of all 4 runs, respectively. The combined results were generated by an average of the respective

Table 2-25. Combined Charging and Tapping Reverberatory Furnace #1 Baghouse FTIR HCl Results, ppmv

	Run 1		Run 2		Run 3		Run 4	
Date	12/08/97		12/09/97		12/10/97		12/11/97	
Location	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Average	95.60	3.58	56.23	2.31	44.71	2.55	84.07	2.89
RE	96.25		95.89		94.30		96.56	

RE- Removal Efficiency in percent: 100 X (Avg. inlet- Avg. outlet)/Avg. inlet

Table 2-26. Reverberatory Furnace #1 Baghouse FTIR HCl Results - Grand Average, ppmv

Location	Inlet	Outlet
Average	70.15	2.83
RE	95.96	

RE- Removal Efficiency in percent: 100 X (Avg. inlet- Avg. outlet)/Avg. inlet

data in Tables 2-23 and 2-24 weighted by the number of sample points. Computation of the grand average was a simple unweighted average of the 4 runs.

Table 2-27 gives the FTIR HCl results of the unconditional reverberatory furnace 1 baghouse outlet during two overnight periods. Five minute averages were collected for each data point, instead of the usual 1 minute average collected in all other tests.

2.5.2.3 FTIR Process Optimization

The reverberatory furnace #1 hood baghouse HCl destruction efficiencies were measured as a function of lime injection rate. Examination of Table 2-23 shows there is no apparent effect of lime injection rate on the measured removal efficiency. Runs 1 and 2 utilized a continuous lime injection at a rate of 50 lbs per half hour. Runs 3 and 4 examined the emissions during a lime

Table 2-27. Reverberatory Furnace #1 Hood Baghouse Outlet HCl Results - Overnight, ppmv

	Run 1	Run 2
Date	**12/(09-10)/97**	**12/(10-11)/97**
Time	**1947 - 1015**	**1815 - 0415**
Location	**Outlet**	**Outlet**
Average	0.40	0.45
Standard Deviation	0.44	0.48
Maximum	2.09	2.60
Minimum	0.00	0.00
Number of Data Points	174	120

injection rate of 50 lbs per half hour period with 50 lb being added every 2 hours. In all cases, 90+ percent HCl removal efficiency was obtained.

2.5.2.4 FTIR Screening Results

Screening data for species other than HCl were collected concurrently with the HCl data. FTIR spectral data were examined for any other species present in the samples. Conditioned samples were measured to estimate concentrations of aromatic and some hydrocarbon species. Unconditioned samples were analyzed for other hydrocarbon and criteria species.

Tables 2-28 and 2-29 give summary statistics on the dominant species detected besides HCl for the chip dryer inlet and outlet, respectively. Tables 2-30 and 2-31 are the screening results for the furnace 1 inlet and outlet, respectively. In addition to HAP species, non-HAP species are also reported to aid in understanding of the process chemistry, if desired.

Table 2-28. Other Species Detected by FTIR - Chip Dryer Inlet

Parameter	Ethylene	Acetylene	Benzene	Methanol	Formaldehyde	Acetaldehyde	CO_2 (%)	CO	NO	NO_2	CH_4	N_2O	C_4+	H_2O (%)
U/C	C	C	C	C	U	U	U	U	U	U	U	U	U	U
Average	5.97	0.86	0.74	3.51	3.12	2.49	1.66	184.47	13.22	4.16	12.08	4.53	1.99	6.86
Std. Dev.	4.25	0.60	0.47	4.00	8.63	9.77	0.39	90.81	4.52	4.67	16.15	1.94	5.81	1.65
Max.	17.15	2.03	1.87	18.46	59.64	56.14	2.48	391.87	23.95	14.63	125.62	10.32	33.32	10.44
Min.	< 0.2	0.11	< 0.1	< 0.2	0.25	< 0.5	0.04	49.14	< 3.5	< 0.8	4.45	< 0.8	< 0.1	3.18
NDP	144	144	144	144	168	168	168	168	168	168	168	168	168	168
EDL	0.2	0.05	0.1	0.2	0.1	0.5	0.04	0.08	3.5	0.8	2.0	0.8	0.1	0.0001

All values are estimated ppmv, except CO_2 and H_2O in percent
Statistics of three runs combined
U/C - Unconditioned (U) or Conditioned (C) Sample
C_4+ - Total aliphatic hydrocarbons larger than 3 carbons (ppmv hexane equivalent)
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

Table 2-29. Other Species Detected by FTIR - Chip Dryer Outlet

Parameter	Ethylene	Acetylene	Benzene	Methanol	Formaldehyde	Acetaldehyde	CO_2 (%)	CO	NO	NO_2	CH_4	N_2O	C_4 +	H_2O (%)
U/C	C	C	C	C	U	U	U	U	U	U	U	U	U	U
Average	5.99	0.87	0.76	3.45	1.35	0.49	1.64	174.31	14.49	1.17	8.16	4.30	0.96	6.73
Std. Dev.	4.05	0.59	0.48	4.59	0.76	0.62	0.27	84.61	3.09	2.23	3.07	1.69	1.47	1.71
Max.	17.50	2.19	2.06	20.84	4.65	4.39	2.35	355.41	22.53	8.06	19.37	9.01	11.50	10.17
Min.	0.42	0.09	< 0.1	< 0.2	0.37	< 0.5	0.89	8.41	8.37	< 0.8	< 2.0	< 0.8	< 0.1	2.97
NDP	142	142	142	142	198	198	198	198	198	198	198	198	198	198
EDL	0.2	0.05	0.1	0.2	0.1	0.5	0.04	0.08	3.5	0.8	2.0	0.8	0.1	0.0001

All values are estimated ppmv, except CO_2 and H_2O in percent
Statistics of three runs combined
U/C - Unconditioned (U) or Conditioned (C) Sample
C_4+ - Total aliphatic hydrocarbons larger than 3 carbons (ppmv hexane equivalent)
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

Table 2-30a. Other Species Detected by FTIR - Reverberatory Furnace #1 Inlet

Parameter	Ethylene	Acetylene	Benzene	Methanol	Formaldehyde	Acetaldehyde	CO_2 (%)	CO	NO	1,3 - butadiene	CH_4	N_2O	C_4+	H_2O (%)
U/C	C	C	C	C	U	U	U	U	U	C	U	U	U	U
Average	2.16	4.08	1.73	0.48	0.46	0.05	0.14	45.01	2.18	0.17	12.25	0.84	0.61	1.43
Std. Dev.	3.34	7.74	2.87	0.62	1.10	0.39	0.23	73.88	5.77	0.64	12.49	0.57	0.80	0.59
Max.	17.17	39.16	12.48	3.76	9.66	6.79	1.96	425.92	48.90	6.01	91.75	5.92	15.02	4.58
Min.	< 0.2	< 0.05	< 0.1	< 0.2	< 0.1	< .5	< 0.04	1.76	< 2.0	< 0.8	< 2.0	< 0.3	< 0.1	0.49
NDP	104	104	104	104	473	473	473	473	473	104	473	473	473	473
EDL	0.2	0.05	0.1	0.2	0.1	0.5	0.04	0.08	2.0	0.8	2.0	0.3	0.1	0.0001

All values are estimated ppmv, except CO_2 and H_2O in percent
Statistics of four runs during loading and tapping combined
U/C - Unconditioned (U) or Conditioned (C) Sample
C_4+ - Total aliphatic hydrocarbons larger than 3 carbons (ppmv hexane equivalent)
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

Table 2-30b. Other Species Detected by FTIR - Reverberatory Furnace #1 Inlet, continued

Parameter	Ammonia	Propylene	Sulfur dioxide
U/C	U	C	U
Average	0.04	0.39	6.10
Std. Dev.	0.16	1.63	10.79
Max.	3.15	16.01	74.85
Min.	< 0.1	< 0.4	< 1.2
NDP	473	104	473
EDL	0.1	0.4	1.2

All values are estimated ppmv
Statistics of four runs during loading and tapping combined
U/C - Unconditioned (U) or Conditioned (C) Sample
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

Table 2-31a. Other Species Detected by FTIR - Reverberatory Furnace #1 Outlet

Parameter	Ethylene	Acetylene	Benzene	Methanol	Formaldehyde	Acetaldehyde	CO_2 (%)	CO	NO	1,3 - butadiene	CH_4	N_2O	C_4 +	H_2O (%)
U/C	C	C	C	C	U	U	U	U	U	C	U	U	U	U
Average	2.51	4.82	1.58	0.49	0.32	0.15	0.13	46.34	1.83	0.15	11.14	0.82	0.52	1.44
Std. Dev.	3.00	7.44	2.30	0.64	0.37	1.46	0.18	71.04	4.11	0.50	9.70	0.49	0.64	0.65
Max.	13.50	31.31	9.57	2.24	2.71	31.26	1.20	385.37	24.72	3.03	86.53	4.08	13.07	3.84
Min.	< 0.2	< 0.05	< 0.1	< 0.2	< 0.1	< 0.4	< 0.04	0.99	< 2.0	< 0.6	< 0.6	< 0.1	< 0.04	0.42
NDP	88	88	88	88	477	477	477	477	477	88	477	477	477	477
EDL	0.2	0.05	0.1	0.2	0.1	0.5	0.04	0.06	0.8	0.6	2.0	0.1	0.04	0.0001

All values are estimated ppmv, except CO_2 and H_2O in percent
Statistics of four runs during loading and tapping combined
U/C - Unconditioned (U) or Conditioned (C) Sample
C_4+ - Total aliphatic hydrocarbons larger than 3 carbons (ppmv hexane equivalent)
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

Table 2-31b. Other Species Detected by FTIR - Reverberatory Furnace #1 Outlet, continued

Parameter	Ammonia	Propylene	Sulfur dioxide
U/C	U	C	U
Average	0.06	0.55	0.91
Std. Dev.	0.17	1.77	2.84
Max.	2.92	12.96	24.88
Min.	< 0.1	< 0.4	< 1.2
NDP	477	88	477
EDL	0.1	0.4	1.2

All values are estimated ppmv
Statistics of four runs during loading and tapping combined
U/C - Unconditioned (U) or Conditioned (C) Sample
NDP - Number of data points
EDL - Estimated detection limit for spectral region used for analysis

2.5.2.5 FTIR Sampling and Measurement System Response Time Measurement

FTIR system sampling and measurement system response time was determined by measurement of concentration versus time of a dynamic spike of the sample gas. HCl and SF_6 spike gas were introduced via a remote-controlled solenoid valve located upstream of the heated probe filter. The time required to obtain 90 percent response was measured three times. Figure 2-1 illustrates data gathered on-site which show the three measurements. It is clear from the figure that the 90 percent response time is approximately 2 minutes (i.e., two data points). The figure also shows that the SF_6 and HCl response times are approximately the same, with HCl slightly lagging relative to SF_6.

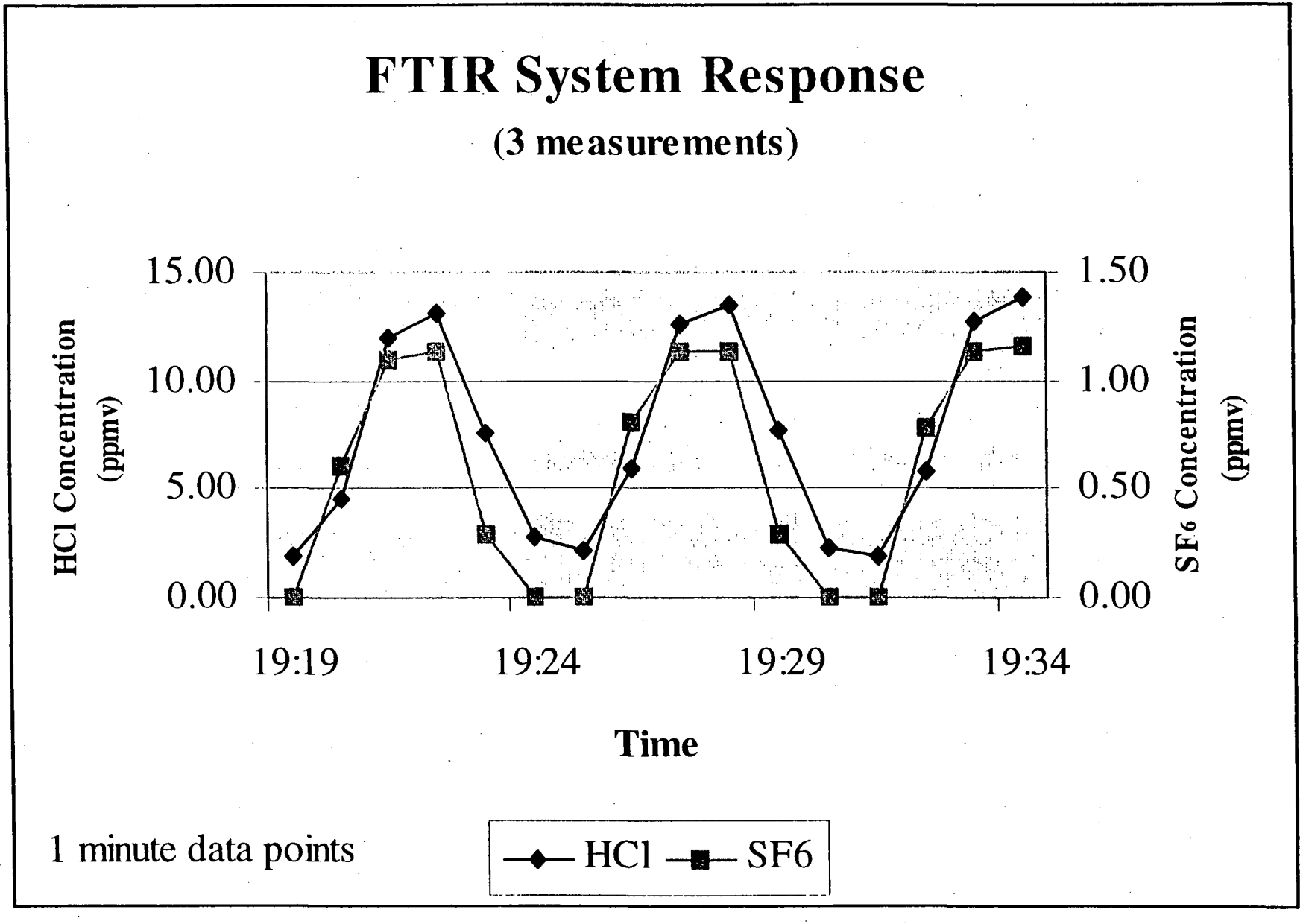


Figure 2-1. FTIR System Response Profile (Measured on 7 December 1997)

2.5.2.6 Comparison of FTIR and Method 26A Results for HCl

Table 2-32 shows the comparison between the two sets of results for both the chip dryer and furnace.

Table 2-32. Comparison of FTIR and Method 26A results for HCl, ppm[1]

Location	FTIR	Method 26A
Chip Dryer Inlet	8.12	27.45
Chip Dryer Outlet	2.48	1.10
Furnace 1 Inlet	70.15	70.37
Furnace 1 Outlet	2.83	0.862

[1]Average of test runs at each location

While it is instructive to compare HCl results from both FTIR and manual methods, care must be taken in interpreting the two sets of results. For the chip dryer, the FTIR system measured HCl at a given inlet or outlet only 25 % of the time compared to the corresponding manual method which was integrated over the entire sampling period, due to splitting half of the FTIR instrument analysis time equally between inlet and outlet as unconditioned and conditioned samples. Since HCl was measured only in unconditioned samples, this sampling scheme results in a 25% duty cycle for the total run for HCl measurement at either the chip dryer inlet or outlet. The corresponding FTIR data capture for either the furnace inlet #1 or outlet was approximately 38%.

Future testing which incorporates both FTIR and Method 26A should include full concurrent sampling to facilitate unbiased comparison between the two methods.

3.0 DESCRIPTION OF FACILITY

(To be supplied by Research Triangle Institute).

4.0 SAMPLING LOCATIONS

The sampling locations that were used during the emissions testing program at Culp Aluminum Alloys are described in this section. Flue gas samples were collected at the inlet and at the outlet of the lime-injected baghouses using manual methods and FTIR, with two 4" ID ports to allow for the operation of two manual sampling methods and one 3" ID port for the FTIR. The configurations of the sampling locations are shown in Figures 4-1 (E1, chip dryer baghouse inlet), 4-2 (E2, chip dryer baghouse outlet), 4-3 (E3, reverberatory furnace #1 baghouse inlet), and 4-4 (E4, reverberatory furnace #1 baghouse outlet).

The chip dryer operated at approximately 150° F, with a slightly negative pressure at the fan inlet and a slightly positive pressure at the outlet. At the inlet and outlet of the reverberatory furnace #1 baghouse, 4" ports were available. FTIR ports were installed horizontally and upstream from manual ports. The baghouse operated at approximately 175° F, with a slightly positive pressure.

The inlet of the lime-injected baghouse for the chip dryer was a circular duct 18" in diameter, and the outlet was a circular duct 25" in diameter. Two 4" ID ports were installed at 90 degrees to each other, one horizontally and one vertically on top of the duct, and a third 3" ID port was installed upstream of the other ports for the FTIR sampling probe.

The inlet to the reverberatory furnace #1 baghouse was a circular duct 42" in diameter. Two 4" ports and one 3" port were installed; the two 4" ports were 90 degrees to each other. The outlet was an exhaust stack 48" in diameter, approximately 30 feet above the ground. The outlet had two 4" ports; a third port (3" ID) was installed for the FTIR upstream of the other two ports. The position and number of traverse points for each location are shown in Figures 4-5 through 4-8. For stacks having diameters greater than 0.61 m (24 in.), no traverse points were located within 2.5 cm (1.00 in.) of the stack walls.

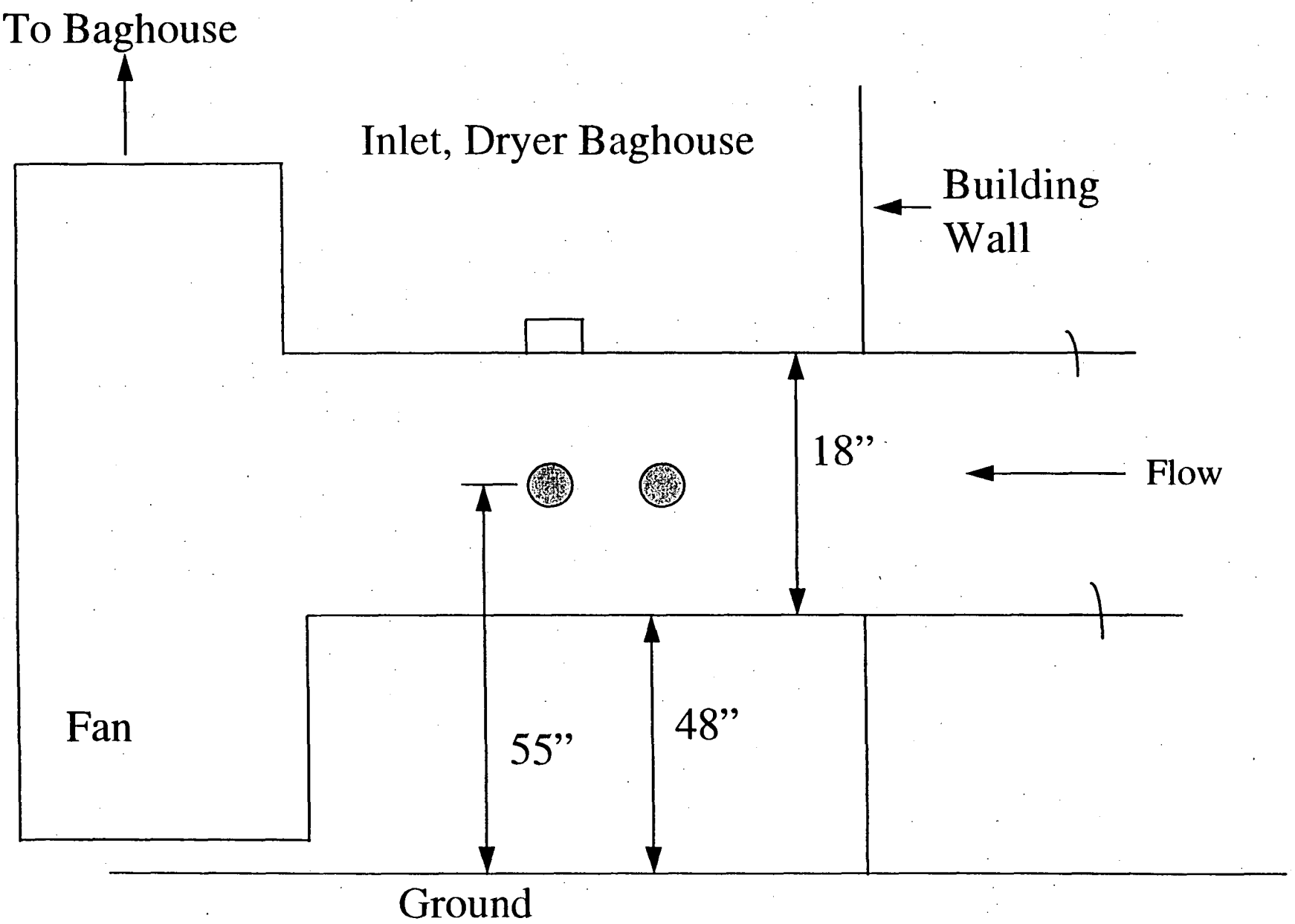


Figure 4-1. E1, Chip Dryer Baghouse Inlet

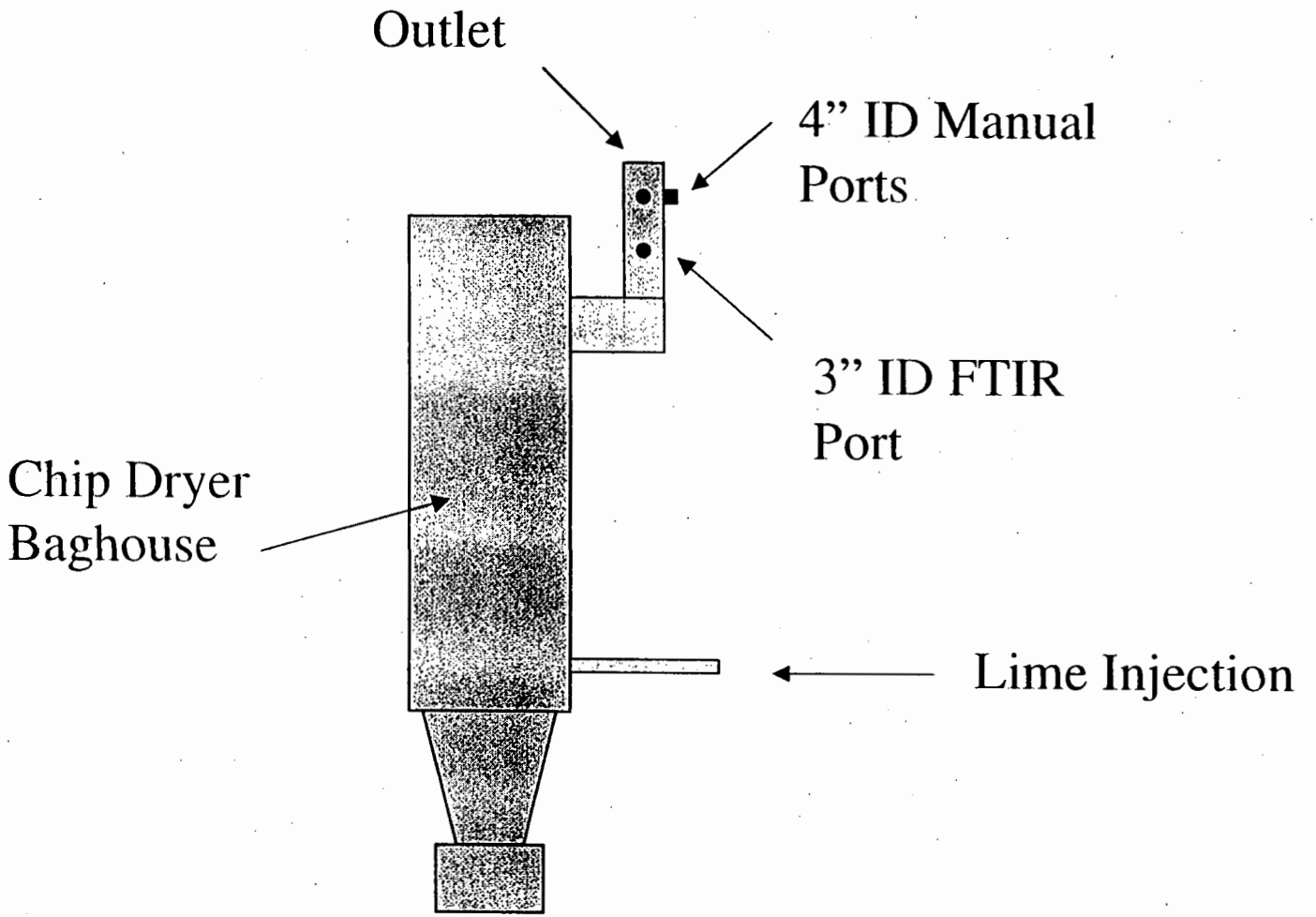


Figure 4-2. E2, Chip Dryer Baghouse Outlet

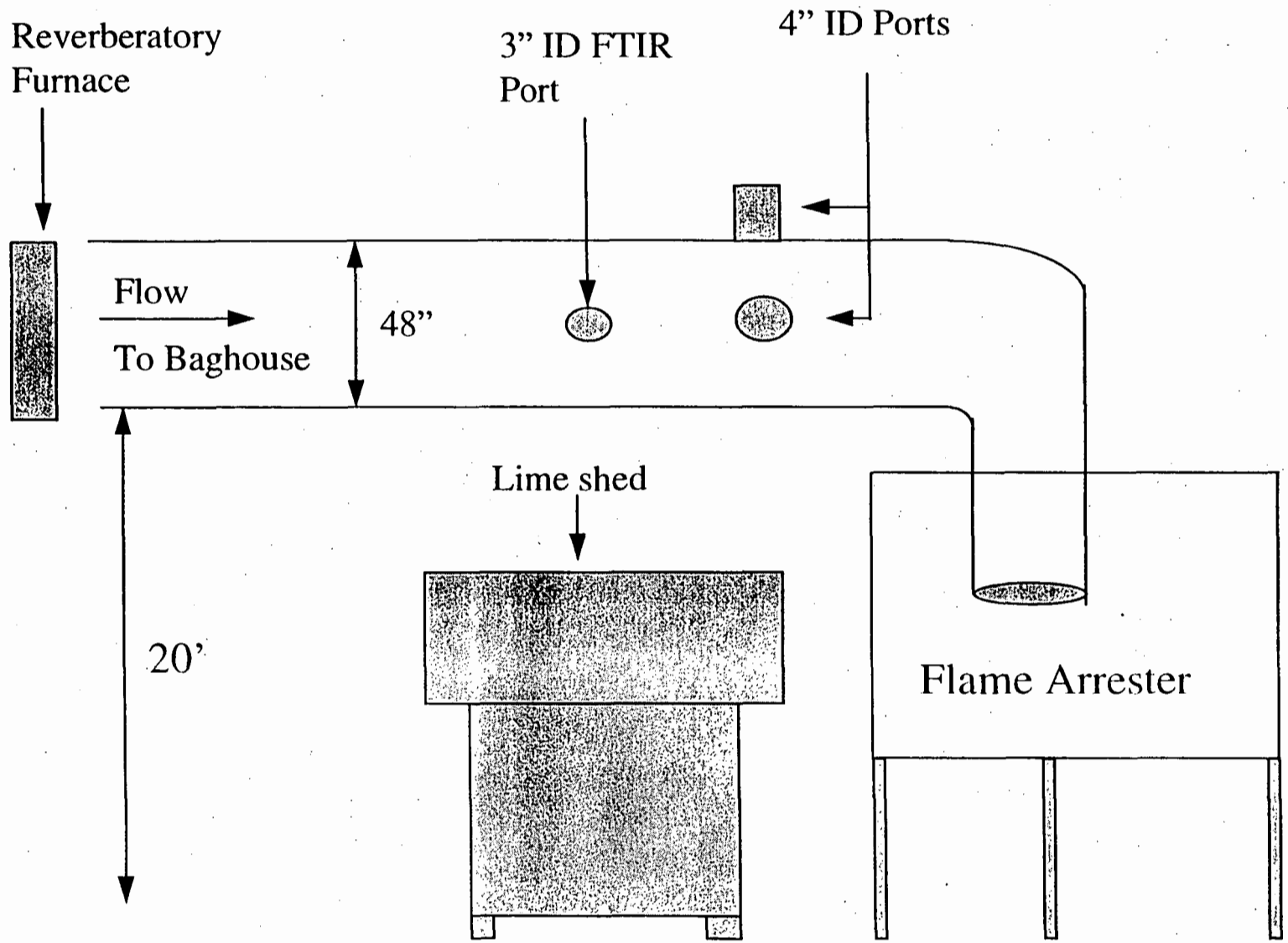


Figure 4-3. E3, Reverberatory Furnace Baghouse Inlet

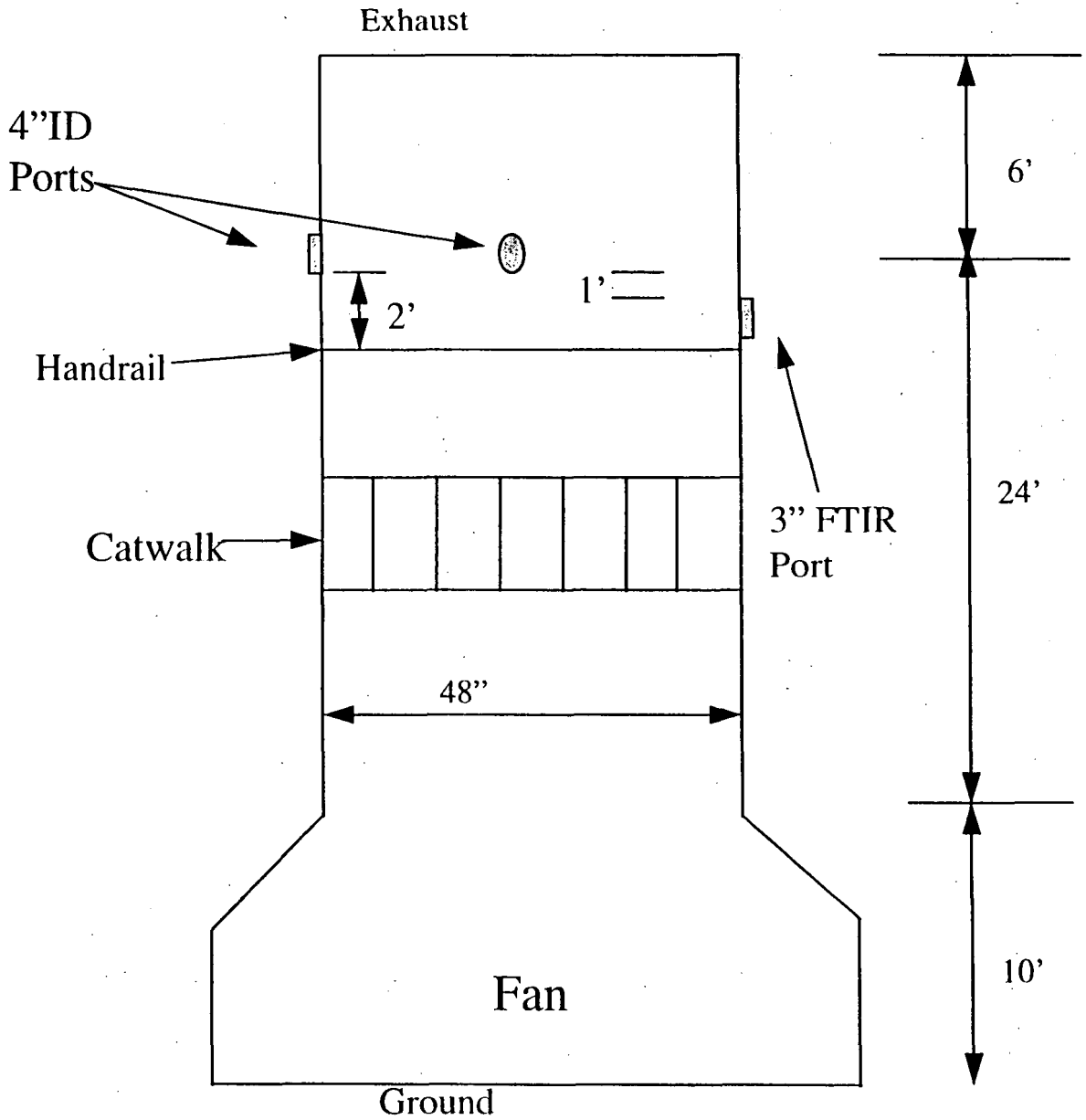


Figure 4-4. E4, Reverberatory Furnace Baghouse Outlet

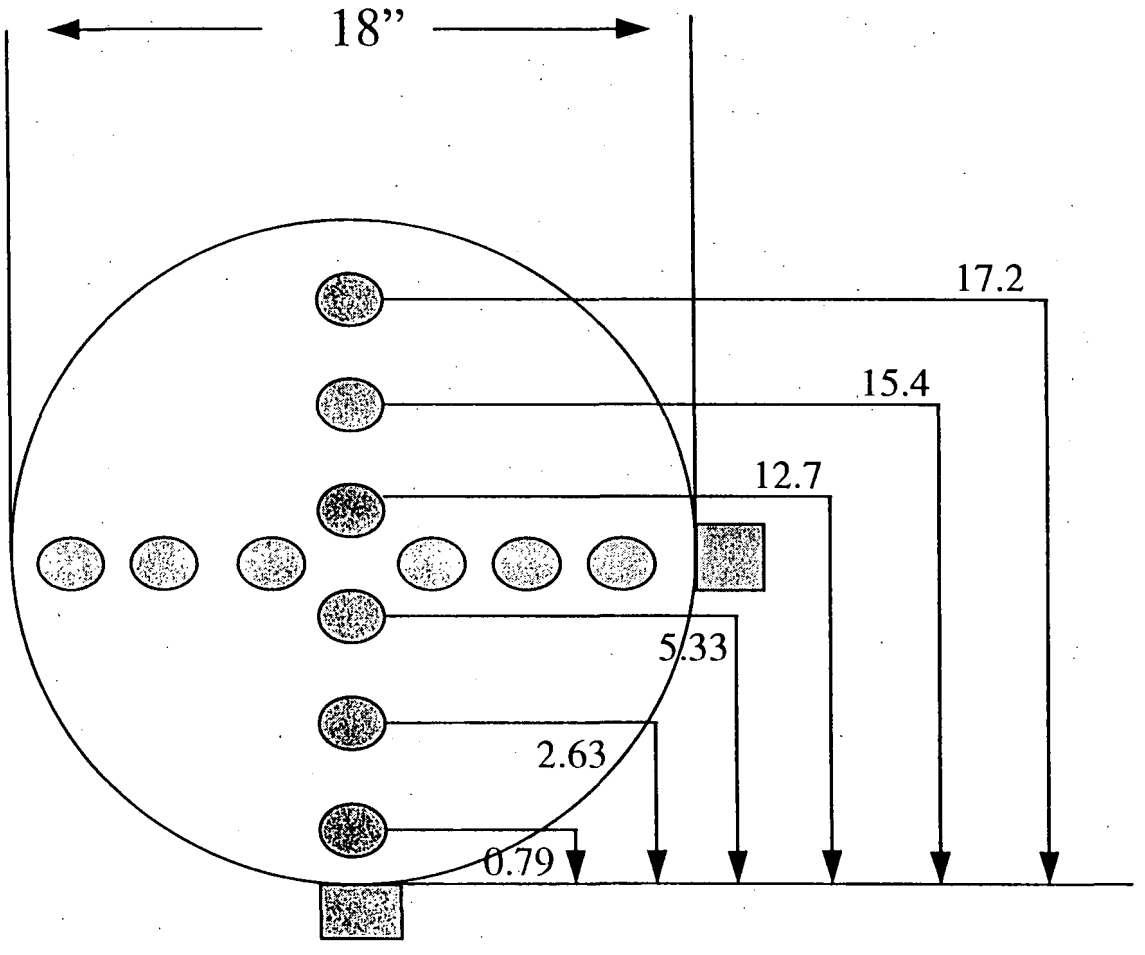


Figure 4-5. Chip Dryer Baghouse Inlet, Traverse Points

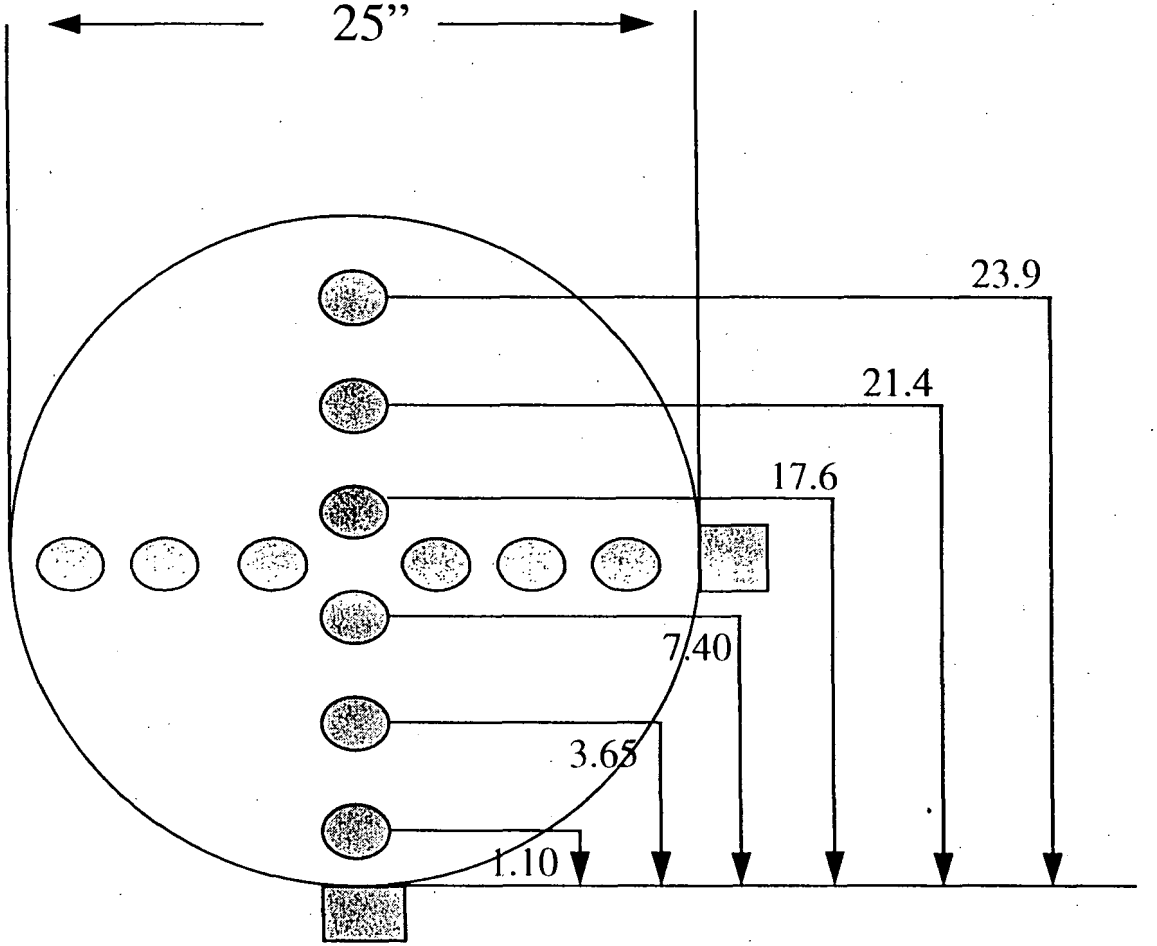


Figure 4-6. Chip Dryer Baghouse Outlet, Traverse Points

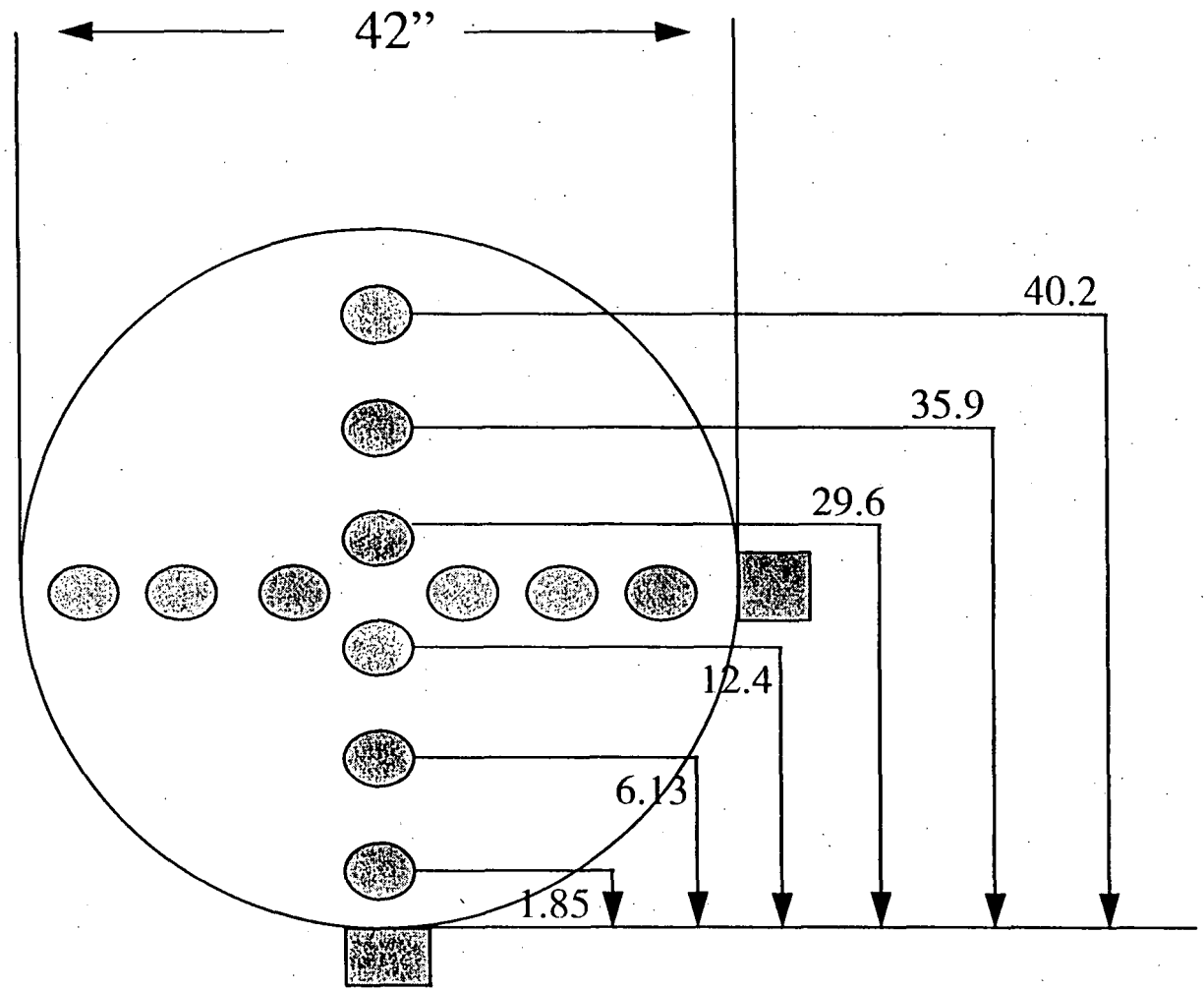


Figure 4-7. Reverberatory Furnace Baghouse Inlet Traverse Points

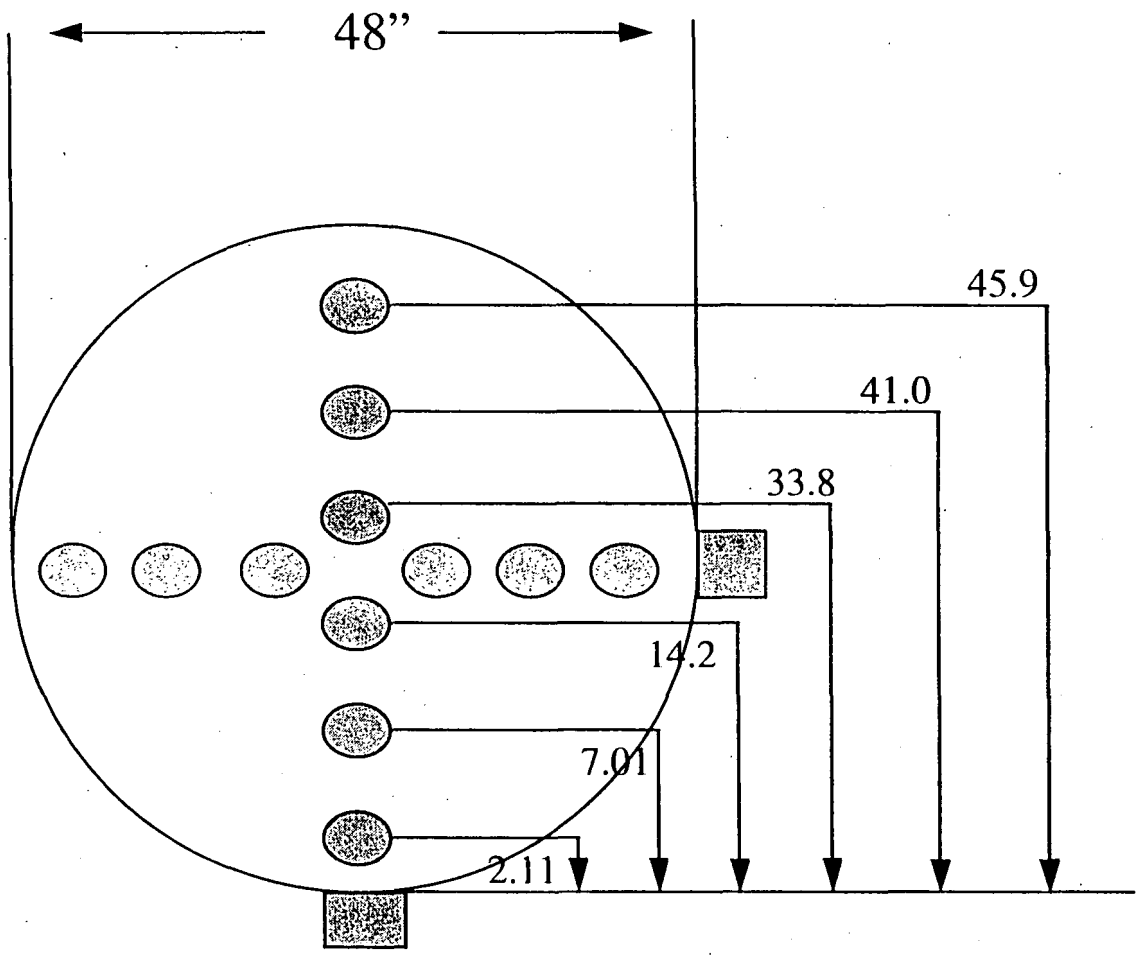


Figure 4-8. Reverberatory Furnace Baghouse Outlet Traverse Points

For stack diameters equal to or less than 0.61 m (24 in.), no traverse points was located within 1.3 cm (0.50 in.) of the stack walls. When any of the traverse points fell within 2.5 cm (1.00 in.) of the stack walls, they were relocated to a distance of 2.5 cm (1.00 in.) or a distance equal to the nozzle inside diameter, whichever was larger.

All test ports and their locations met the requirements of EPA Method 1.

5.0 SAMPLING AND ANALYTICAL PROCEDURES BY ANALYTE

The sampling and analytical procedures used for the Culp Aluminum Alloys plant test program are the most recent revisions of the published EPA methods. In this section, descriptions of each sampling and analytical method by analyte are provided.

5.1 Chlorinated Dibenzo-*p*-Dioxin and Chlorinated Dibenzofuran Emissions Testing Using EPA Method 23

The sampling and analytical method for determining flue gas emissions of Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans (CDD/CDF) is EPA Method 23.

5.1.1 Method 23 Sampling Equipment

The method uses the sampling train shown in Figure 5-1. The Method 23 sampling system is similar to a Method 5 train with the following exceptions:

- All components (glass probe/nozzle liner, all other glassware, filters) are pre-cleaned using solvent rinses and extraction techniques; and
- A condensing coil and XAD-2® resin absorption module are located between the filter and impinger train.

5.1.2 Method 23 Equipment Preparation

In addition to the standard EPA Method 5 requirements, Method 23 includes several unique preparation steps which ensure that the sampling train components are not contaminated with organics that may interfere with analysis. The glassware, glass fiber filters and absorbing resin are cleaned and the filters and resin are checked for 42 residuals before they are packed.

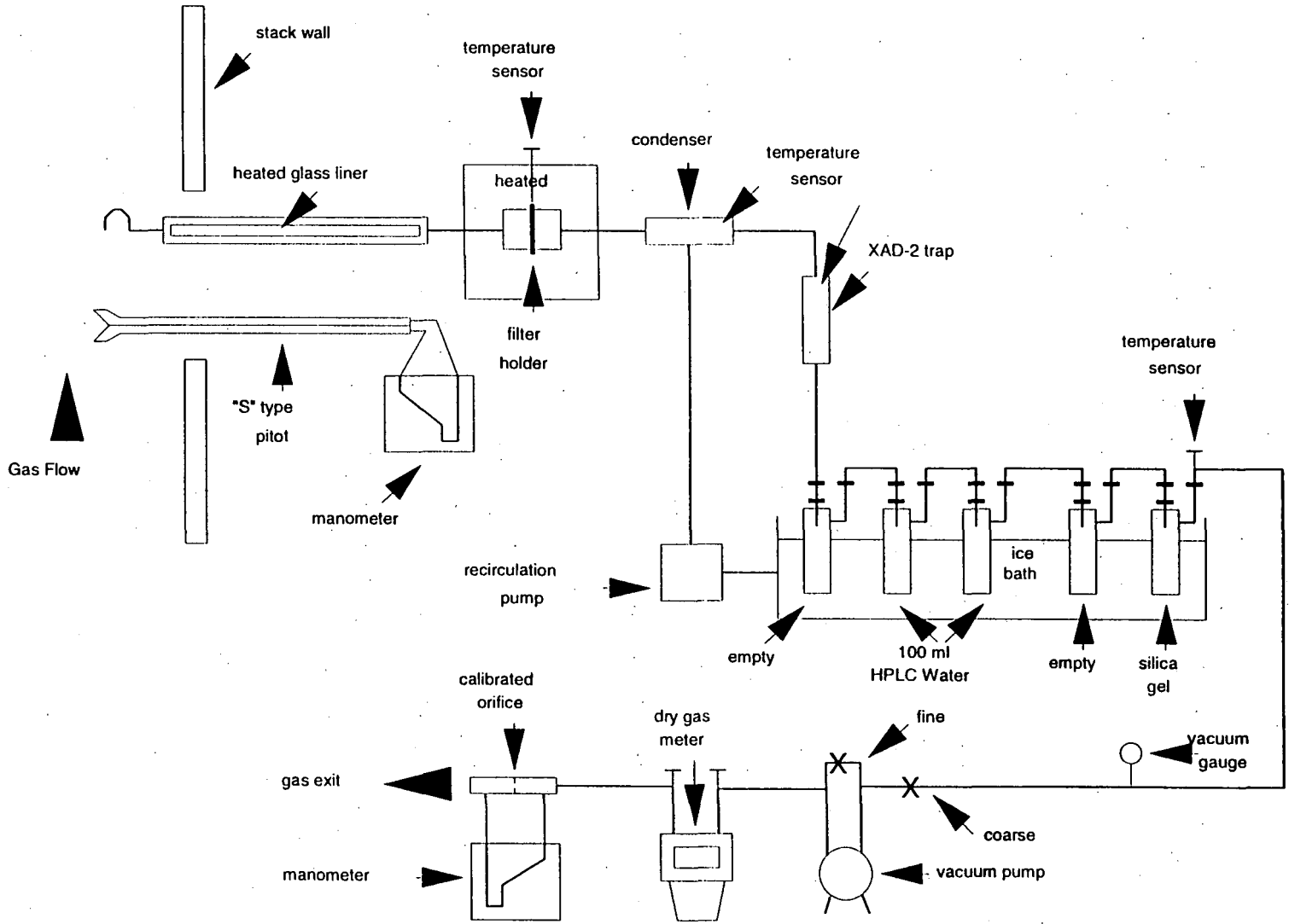


Figure 5-1. Method 23 Sampling Train Configuration

5.1.2.1 Glassware Preparation

The glassware preparation procedure is shown in Table 5-1. Glassware is washed in soapy water, rinsed with distilled water, baked and then rinsed with acetone followed by methylene chloride. Clean glassware is allowed to dry under a hood loosely covered with foil to prevent laboratory contamination. Once the glassware is dry, the air exposed ends are sealed with methylene chloride rinsed aluminum foil. All the glass components of the sampling train including the glass nozzles plus any flasks, petri dishes, graduated cylinders and pipets that are used during sampling and recovery will be cleaned according to this procedure. Non-glass components (such as the Teflon®-coated filter screens and seals, tweezers, Teflon® squeeze bottles, Nylon® probe brushes and Nylon® nozzle brushes) are cleaned following the same procedure except that no baking is performed.

5.1.2.2 XAD-2® Resin and Filter Preparation

XAD-2® absorbing resin and glass fiber filters are pre-cleaned by separate procedures according to the specified method. Only pesticide grade solvents and HPLC grade water are used to prepare for organic sampling, and to recover these samples. The lot number, manufacturer and grade of each reagent used are recorded in the laboratory notebook.

To prepare the filters, a batch of 50 is placed in a Soxhlet extractor pre-cleaned by extraction with toluene. The Soxhlet is charged with fresh toluene and refluxes for 16 hours. After the extraction, the toluene is analyzed as described in Sections 5.1 and 5.3 of the reference method (EPA Method 23) for the presence of tetrachlorodibenzo-*p*-dioxins (TCDD) and tetrachlorodibenzofurans (TCDF). If these analytes are found, the filters are re-extracted until the analyte is not detected. The filters are then dried completely under a clean nitrogen (N_2) stream. Each filter is individually checked for holes, tears, creases or discolorations, and if any are found, the filter is discarded. Acceptable filters are stored in a pre-cleaned petri dish, labeled by date of analysis and sealed with Teflon® tape.

Table 5-1. Method 23 Glassware Cleaning Procedure (Train Components, Sample Containers and Laboratory Glassware)

NOTE: USE VITON® GLOVES AND ADEQUATE VENTILATION WHEN RINSING WITH SOLVENTS
1. Soak all glassware in hot soapy water (laboratory detergent).
2. Rinse with tap water to remove soap.
3. Rinse with HPLC-grade H_2O, three times
4. Bake at 450° F for 2 hours.[a]
5. Rinse with acetone (pesticide grade), three times.
6. Rinse with methylene chloride (pesticide grade), three times.
7. Cap glassware with clean glass plugs or methylene chloride rinsed aluminum foil.
8. Mark cleaned glassware with color-coded identification sticker.
9. Rinse glassware immediately before using with acetone and methylene chloride (laboratory proof).

[a] Step (4) has been added to the cleanup procedure to replace the dichromate soak specified in the reference method. ERG has demonstrated in the past that baking glassware sufficiently removes organic artifacts. Step 4 is not used for probe liners and non-glass components of the train that cannot withstand 450° F (i.e., Teflon®-coated filter screen and seals, tweezers, Teflon® squeeze bottles, Nylon® probe and nozzle brushes).

To prepare the absorbing resin, the XAD-2® resin is cleaned in the following sequential order:

- Rinse with HPLC grade water, discard water;
- Soak in HPLC grade water overnight, discard water;
- Extract in Soxhlet with HPLC grade water for 8 hours, discard water;
- Extract with methanol for 22 hours, discard solvent;
- Extract with methylene chloride for 22 hours, discard solvent;
- Extract with methylene chloride for 22 hours, retain an aliquot of solvent for analysis of CDDs and CDFs by HRGC/HRMS; and
- Dry resin under a clean N_2 stream.

Once the resin is completely dry, it is checked for the presence of methylene chloride, CDDs and CDFs as described in Section 3.1.2.3.1 of the reference method. If any analytes are found, the resin is re-extracted. If methylene chloride is found, the resin is dried until the excess solvent is removed. The absorbent is to be used within four weeks of cleaning.

The cleaned XAD-2® resin is spiked before shipment to the field with five CDD/CDF internal standards. Due to the special handling considerations required for the internal standards, the spiking is performed by Triangle Laboratories. For convenience and to minimize contamination, Triangle Laboratories also performs the resin and filter cleanup procedures and loads the resin into the glass traps.

5.1.2.3 Method 23 Sampling Train Preparation

The remaining preparation includes calibration and leak checking of all sampling train equipment, including meter boxes, thermocouples, nozzles, pitot tubes, and umbilicals.

Referenced calibration procedures are followed when available. The results are properly documented in a laboratory notebook or project file and retained.

5.1.3 Method 23 Sampling Operations

5.1.3.1 Preliminary Measurements

Prior to sampling (data collected during presurvey), preliminary measurements are required to ensure isokinetic sampling. These measurements include determining the traverse point locations, performing a preliminary velocity traverse, cyclonic flow check and moisture determination. These measurements are used to calculate a "K factor." The K factor is used to determine an isokinetic sampling rate from stack gas flow readings taken during sampling.

Measurements are then made of the duct inside diameter, port nozzle length, and the distances to the nearest upstream and downstream flow disturbances. These measurements are then used to determine sampling point locations by following EPA Reference Method 1 guidelines. The distances are then marked on the sampling probe using an indelible marker.

5.1.3.2 Assembling the Train

Method 23 sampling train components are collected in the recovery trailer and final train assembly is performed at the stack location. First, the empty, clean impingers are assembled and laid out in the proper order in the recovery trailer. Each ground glass joint is carefully inspected for hairline cracks. The first impinger is a knockout impinger which has a short tip. The purpose of this impinger is to collect condensate which forms in the coil and XAD-2® resin trap. The next two impingers are modified tip impingers which each contain 100 mL of HPLC grade water. The fourth impinger is empty, and the fifth impinger contains 200 to 300 grams of blue indicating silica gel. After the impingers are loaded each impinger is weighed, the initial weight and contents of each impinger are recorded on a recovery data sheet. The heights of all the impingers are approximately the same to obtain a leak free seal. The open

ends of the train are sealed with methylene chloride-rinsed aluminum foil, or clean ground glass caps.

The second step is to load the filter into the filter holder in the recovery trailer. The filter holder is then capped off and placed with the resin trap and condenser coil (capped) into the impinger bucket. A supply of precleaned foil and socket joints is also placed in the bucket in a clean plastic bag for the convenience of the samplers. Sealing greases are not used to avoid contamination of the sample. The train components are transferred to the sampling location and assembled as previously shown in Figure 5-1. The heated probe and filter box will be a single unit mounted on a vertical monorail. The chilled impinger box with the condenser and XAD-2® trap will be placed on the floor of the scaffolding.

5.1.3.3 Sampling Procedures

After the train is assembled, the heaters for the probe liner and heated filter box are turned on and the sorbent module/condenser coil recirculating pump is turned on. When the system reaches the appropriate temperatures, the sampling train is ready for pre-test leak checking. The temperature of the sorbent module resin must not exceed 50° C (120° F) at any time and during testing it must not exceed 20° C (68° F). The filter temperature is maintained at 120 ±14° F (248 ±25° F). The probe temperature is maintained above 100° C (212° F).

The sampling trains are leak checked at the start and finish of sampling. (Method 5/23 protocol only requires post-test leak checks and recommends pre-test leak checks.) ERG protocol also incorporates leak checks before and after every port change. An acceptable pre-test leak rate is less than 0.02 acfm (ft^3/min) at approximately 15 inches of Hg. If during testing, a piece of glassware needs to be emptied or replaced, a leak check is performed before the glassware piece is removed, and after the train is re-assembled.

To leak check the assembled train, the nozzle end is capped off and a vacuum of 15 inches Hg is pulled in the system. When the system is evacuated, the volume of gas flowing

through the system is timed for 60 seconds. After the leak rate is determined, the cap is slowly removed from the nozzle end until the vacuum drops off, and then the pump is turned off. If the leak rate requirement is not met, the train is systematically checked by first capping the train at the filter, at the first impinger, etc., until the leak is located and corrected.

After a successful pre-test leak check has been conducted, all train components are at their specified temperatures and initial data are recorded (DGM reading), the test can be initiated. Sampling train data are recorded periodically on standard data forms. A checklist for CDD/CDF sampling is included in Table 5-2. A sampling operation that is unique to CDD/CDF sampling is that the gas temperature entering the resin trap must be below 20° C (68° F). The gas is cooled by a water jacket condenser through which ice water is circulated.

The leak rates and sampling start and stop times are recorded on the sampling task log. Also, any other events that occur during sampling are recorded on the task log such as sorbent module heat excursions, pitot cleaning, thermocouple malfunctions, heater malfunctions or any other unusual occurrences.

If the probe liner breaks while DGM is not running (i.e., during port changes or after the run is completed), the probe liner is replaced, the run is completed, and sample recovery done on both the broken sections of the glass liner and the replacement liner. If the break occurs while the DGM is running and the exact time of the break is noted, the test is stopped so that the probe liner can be replaced. The run is then completed and sample recovery done on all liner sections. If the recovered sample appears unusual, the sample is discarded and an additional run is performed later. If the recovered sample appears normal, the run is tentatively acceptable.

At the conclusion of the test run, the sample pump (or flow) is turned off, the probe is removed from the duct, a final DGM reading is taken, and a post-test leak check is completed. The procedure is identical to the pre-test procedure. However, the vacuum should be at least one inch Hg higher than the highest vacuum attained during sampling. An acceptable leak rate is less than 4% of the average sample rate or 0.02 acfm (whichever is lower).

Table 5-2. CDD/CDF Sampling Checklist

Before test starts:

1. Check impinger set to verify the correct order, orientation and number of impingers. Verify probe markings, and remark if necessary.

2. Check that you have all the correct pieces of glassware. Have a spare probe liner, probe sheath, meter box and filter ready to go at location.

3. Check for data sheets and barometric pressure.

4. Prepare bag sampling equipment for CO_2/O_2, except when using CEMs for CO_2/O_2 determinations.

5. Examine meter box - level it, zero the manometers and confirm that the pump is operational.

6. Verify the filter is loaded correctly and as tightly as possible; place filter in line with the train and leak check at 15 inches Hg.

7. Add probe to train.

8. Check thermocouples - make sure they are reading correctly.

9. Conduct pitot leak check, recheck manometer zero.

10. Do final leak check; record leak rate and vacuum on sampling log.

11. Turn on variacs and check to see that the heat is increasing.

12. Check that cooling water is on and flowing. Add ice to impinger buckets.

13. Check isokinetic K-factor - make sure it is correct. (Refer to previous results to confirm assumptions. Two people should calculate this independently to double check it.)

Table 5-2. CDD/CDF Sampling Checklist (continued)

During Test:

1. Notify field task leader of any sampling problems ASAP. Train operator should fill in sampling log and document any abnormalities.

2. Perform simultaneous/concurrent testing with other locations (if applicable). Maintain filter temperature between 248° F ±25° F. Keep temperature as steady as possible. Maintain the resin trap and impinger temperatures below 68° F. Maintain probe temperature above 212° F.

3. Leak check between ports and record on data sheet. Leak check if the test is stopped to change silica gel, to decant condensate, or to change filters.

4. Record sampling times, rate, and location for the fixed gas bag sampling (CO, CO_2, O_2), if applicable.

5. Blow back pitot tubes periodically if moisture entrapment is expected.

6. Change filter if vacuum suddenly increases or exceeds 15 inches Hg.

7. Check impinger solutions every ½ hour; if the knockout impinger is approaching full, stop test and empty it into a pre-weighed bottle and replace it in the train.

8. Check impinger silica gel every ½ hour; if indicator color begins to fade, request a prefilled, preweighed impinger from the recovery trailer.

9. Check the ice in the impinger bucket frequently. If the stack gas temperatures are high, the ice will melt at the bottom rapidly. Maintain condenser coil and silica gel impinger gas temperatures below 20° C (68° F).

After test is completed:

1. Record final meter reading.

2. Do final leak check of sampling train at maximum vacuum during test.

Table 5-2. CDD/CDF Sampling Checklist (continued)

3. Do final pitot leak check.

4. Check completeness of data sheet. Verify the impinger bucket identification is recorded on the data sheets. Note any abnormal conditions.

5. Leak check, check functions (level, zero, etc.) of pitot tubes and inspect for tip damage.

6. Disassemble train, cap sections, and take each section and all data sheets down to recovery trailer.

7. Probe recovery (use 950 mL bottles)
   a) Bring probes into recovery trailer (or other enclosed area).
   b) Wipe the exterior of the probe to remove any loose material that could contaminate the sample.
   c) Carefully remove the nozzle/probe liner and cap it off with prerinsed aluminum foil.
   d) For acetone rinses (all trains)
      - Attach precleaned cyclone flask to probe to catch rinses
      - Wet all sides of probe interior with acetone
      - While holding the probe in an inclined position, put precleaned probe brush down into probe and brush it in and out
      - Rinse the brush, while in the probe, with acetone
      - Do this at least 3 times until all the particulate has been recovered.
      - Recover acetone into a preweighed, prelabeled sample container
   e) Follow the procedure outlined in (d) using methylene chloride. Recover the solvent into the same acetone recovery bottle.
   f) Follow the procedure outlined in (d) using toluene. Recover this solvent into a separate preweighed prelabeled sample container.

8. Cap both ends of nozzle/probe liner for the next day, and store in dry safe place.

9. Make sure data sheets are completely filled out, legible, and give them to the field task leader.

5.1.4 CDD/CDF Sample Recovery

To facilitate transfer from the sampling location to the recovery trailer, the sampling train is disassembled into the following sections: the probe liner, filter holder, filter to condenser glassware, condenser and sorbent module, and the impingers in their bucket. Each of these sections is capped with methylene chloride rinsed aluminum foil or ground glass caps before removal to the recovery trailer. Once in the trailer, field recovery follows the scheme in Figure 5-2. The samples are recovered and stored in cleaned amber glass bottles to prevent light degradation.

The probe and nozzle are first rinsed with approximately 100 mL of acetone and brushed to remove any particulate. This first rinse is followed with a rinse of methylene chloride. Both of these rinses are collected in the same bottle. The same two solvents are used to rinse the cyclone, front/back half filter holder, filter support, connecting glassware and condenser. These rinses are added to the probe rinse bottle. All of the components listed above are again rinsed with toluene, but collected in a separate container. In addition, the Teflon® transfer line used with the vertical sampler will be filled with toluene and allowed to stand for 5 minutes before adding to the toluene rinses. The filter is carefully removed from the filter holder, placed in a pre-labeled petri dish and sealed with Teflon® tape for transport to the laboratory.

The contents of impingers 1-4 (H_2O) and impinger 5 (silica gel) are weighed to 0.5 mg and then discarded.

The solvents used for train recovery are all pesticide grade. The use of the highest grade reagents for train recovery is essential to prevent the introduction of chemical impurities which interfere with the quantitative analytical determinations.

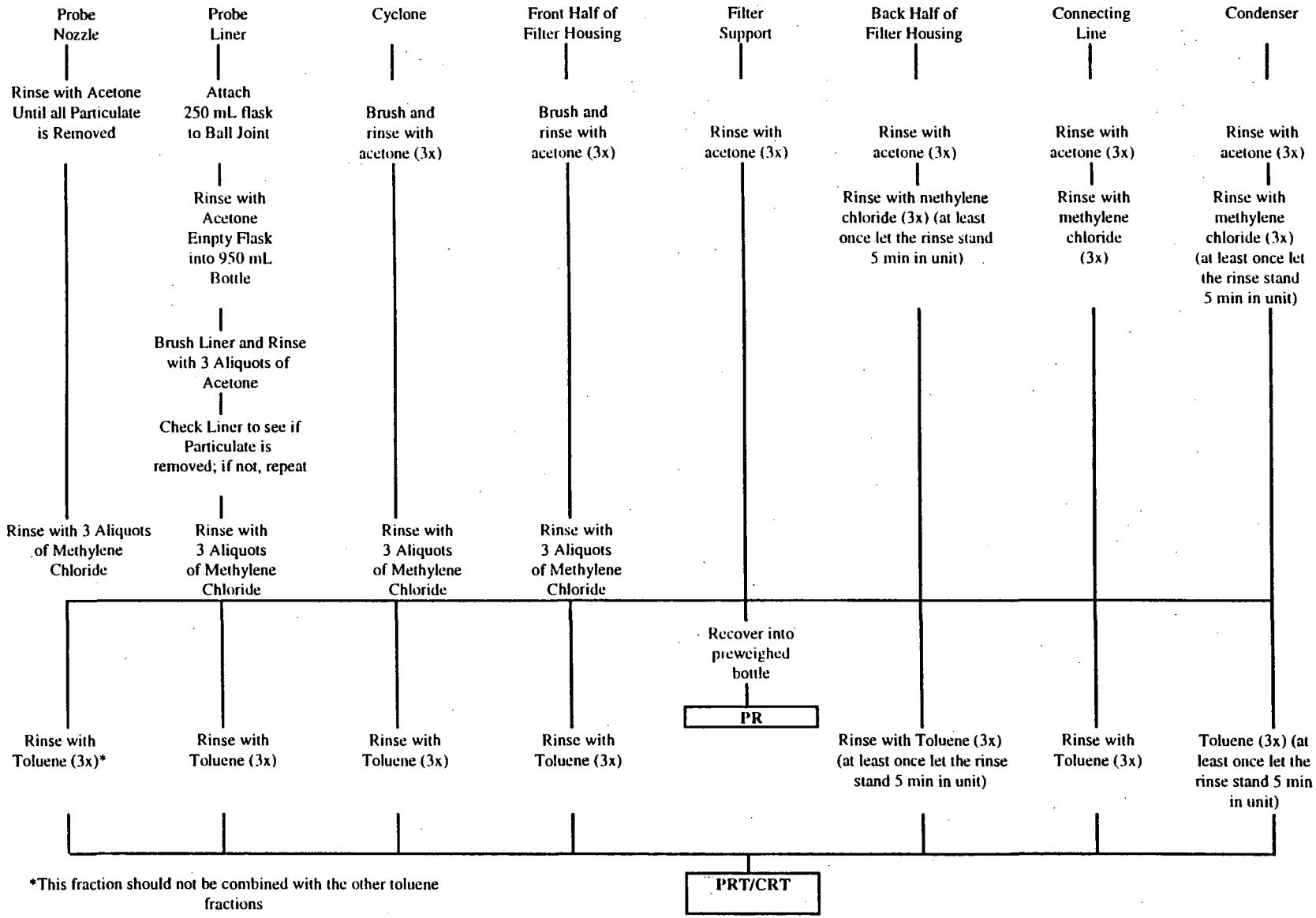


Figure 5-2. Method 23 Field Recovery Scheme

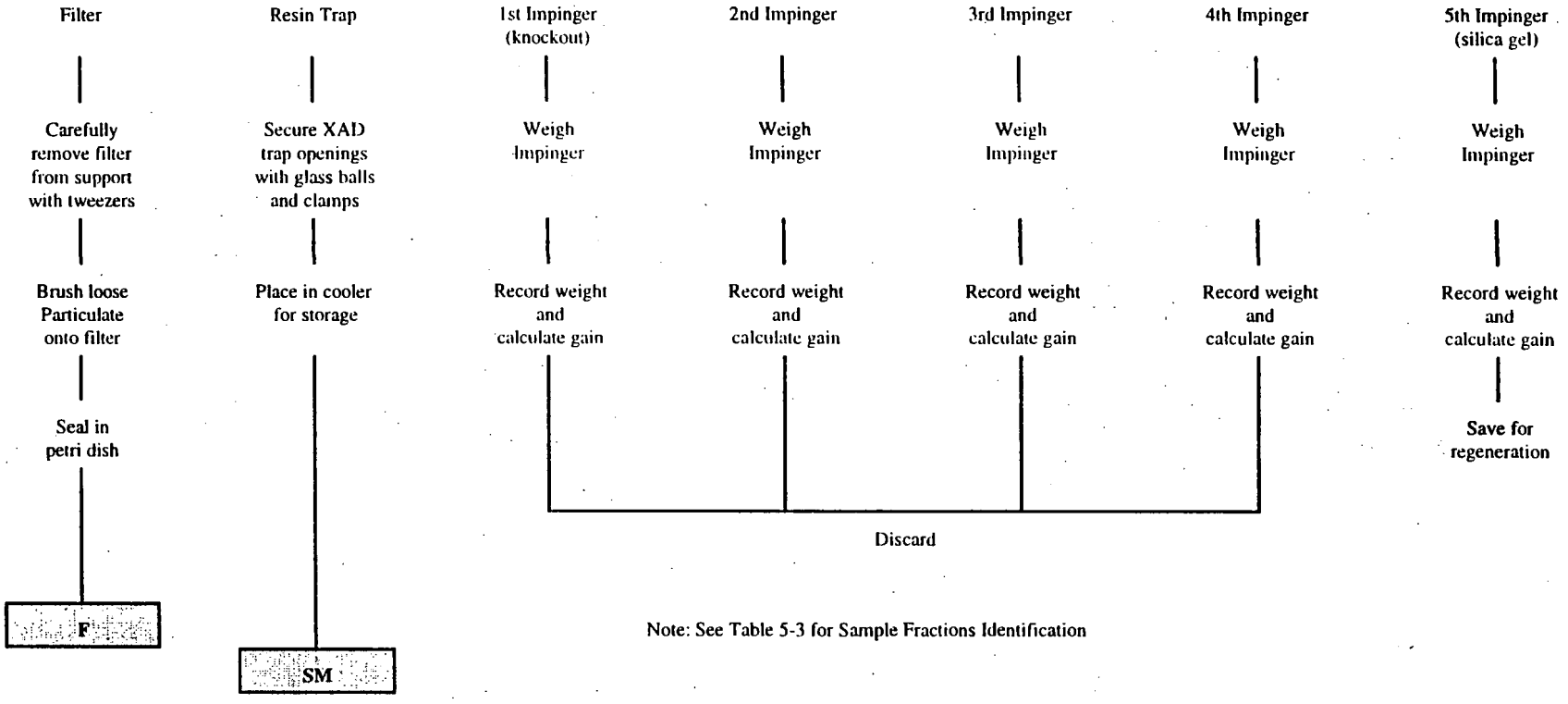


Figure 5-2. Method 23 Field Recovery Schedule (continued)

The train components recovered in the field are listed in Table 5-3. All recovered samples are stored in coolers on ice at all times. The samples will be delivered to the analytical laboratory upon return to ERG accompanied by written information designating target analytes.

Table 5-3. Method 23 Sample Fractions Shipped To Analytical Laboratory

Container/ Component	Code	Fraction
1	F	Filter(s)
2	PR[a]	Acetone and methylene chloride rinses of nozzle/probe, cyclone, front half/back filter holder, filter support, connecting glassware, condenser
3	PRT CRT	Toluene rinse of nozzle/probe, cyclone, front half/back half filter holder, filter support, connecting line and condenser
4	SM	XAD-2® resin trap (sorbent module)

[a]Rinses include acetone and methylene chloride recovered into the same sample bottle.

5.1.5 CDD/CDF Analytical Procedures

The analytical procedure used to obtain analyte concentrations from a single flue gas sample is high resolution gas chromatography (HRGC) and high resolution mass spectrometry (HRMS) (resolution from 8000-10000 m/z). The target CDD/CDF congeners are listed in Table 5-4. The analysis was performed by Triangle Laboratories, Inc., by Method 23/8290.

The Method 23 samples are prepared and analyzed according to the scheme in Figure 5-3. The XAD-2® and filter (along with the concentrated acetone/methylene chloride rinses) are placed in a Soxhlet extractor and extracted with toluene. This extract is added to the toluene train rinses and then concentrated by rotary evaporation. This concentrated sample extract is added to the toluene train rinses and then concentrated by rotary evaporation. This concentrated sample is subjected to a sample cleanup procedure before analysis. For the

Table 5-4. CDD/CDF Congeners To Be Analyzed

DIOXINS:

2,3,7,8-tetrachlorodibenzo-*p*-dioxin (2,3,7,8-TCDD)
Total tetrachlorinated dibenzo-*p*-dioxins (TCDD)
1,2,3,7,8-pentachlorodibenzo-*p*-dioxin (1,2,3,7,8-PeCDD)
Total pentachlorinated dibenzo-*p*-dioxins (PeCDD)
1,2,4,5,7,8-hexachlorodibenzo-*p*-dioxin (1,2,3,4,7,8-HxCDD)
1,2,3,6,7,8-hexachlorodibenzo-*p*-dioxin (1,2,4,5,7,8-HxCDD)
1,2,3,7,8,9-hexachlorodibenzo-*p*-dioxin (1,2,3,7,8,9-HxCDD)
Total hexachlorinated dibenzo-*p*-dioxins (HxCDD)
1,2,3,4,6,7,8-heptachlorodibenzo-*p*-dioxin (1,2,3,4,6,7,8-HpCDD)
Total heptachlorinated dibenzo-*p*-dioxins (HpCDD)
Total octachlorinated dibenzo-*p*-dioxin (OCDD)

FURANS:

2,3,7,8-tetrachlorodibenzofurans (2,3,7,8-TCDF)
Total tetrachlorinated dibenzofurans (TCDF)
1,2,3,7,8-pentachlorodibenzofuran (1,2,3,7,8-PeCDF)
2,3,4,7,8-pentachlorodibenzofuran (2,3,4,7,8-PeCDF)
Total pentachlorinated dibenzofurans (PeCDF)
1,2,3,4,7,8-hexachlorodibenzofuran (1,2,3,4,7,8-HxCDF)
1,2,3,6,7,8-hexachlorodibenzofuran (1,2,3,6,7,8-HxCDF)
2,3,4,6,7,8-hexachlorodibenzofuran (2,3,4,6,7,8-HxCDF)
1,2,3,7,8,9-hexachlorodibenzofuran (1,2,3,7,8,9-HxCDF)
Total hexachlorinated dibenzofuran (HxCDF)
1,2,3,4,6,7,8-heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)
1,2,3,4,7,8,9-heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)
Total heptachlorinated dibenzofurans (HpCDF)
Total octachlorinated dibenzofuran (OCDF)

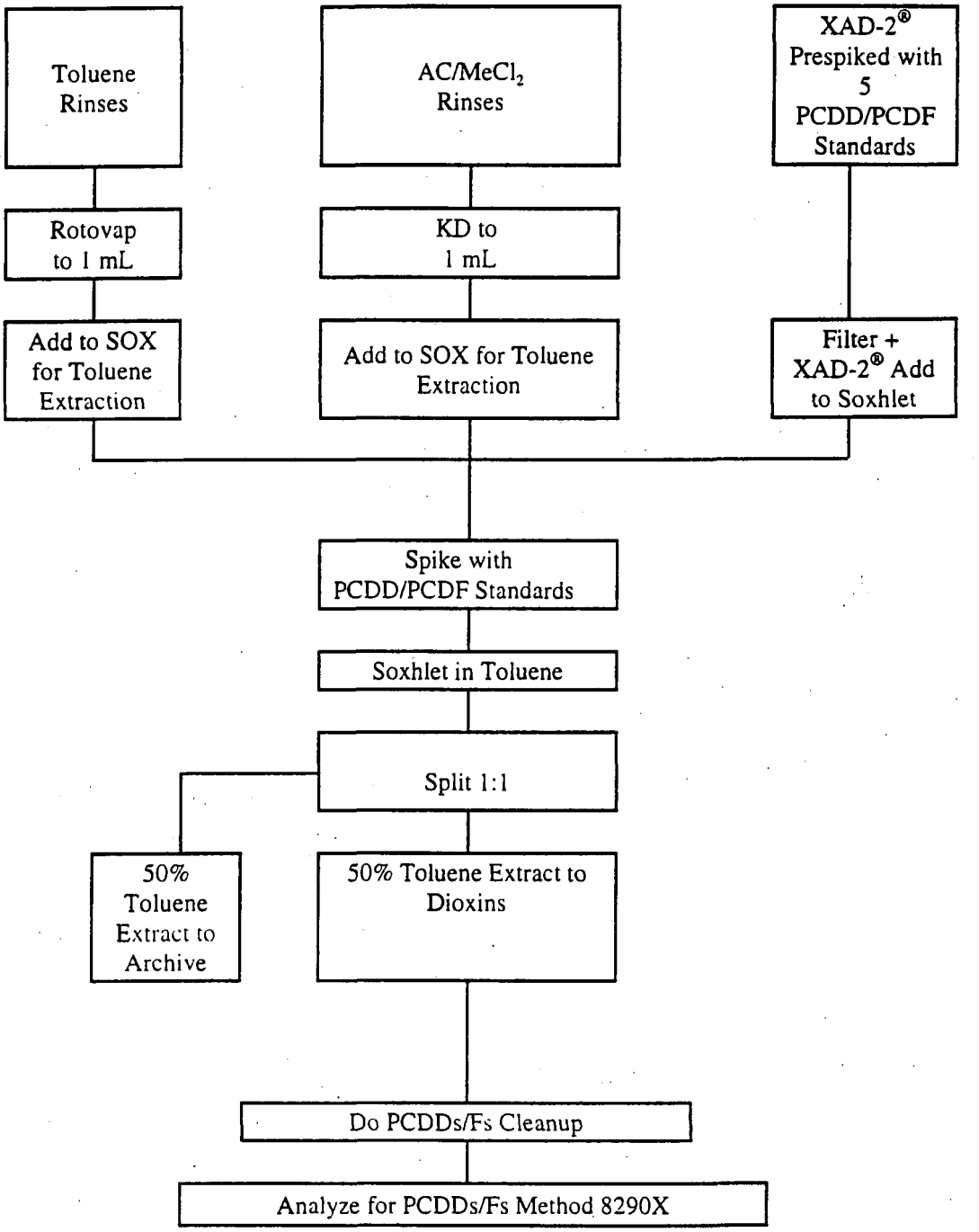


Figure 5-3. Extraction and Analysis Schematic for Method 23 Samples

CDD/CDF analysis, isotopically-labeled surrogate compounds and internal standards and surrogates that are used are described in detail in EPA Method 23.

Data from the mass spectrometer are recorded and stored on a computer file as well as printed on paper. Results such as amount detected, detection limit, retention time, and internal standard and surrogate standard recoveries are calculated by computer. The chromatograms are retained by the analytical laboratory and also included in the analytical report delivered to ERG.

5.1.5.1 Preparation of Samples for Extraction

Upon receiving the sample shipment, the samples are checked against the chain-of custody forms and then assigned an analytical laboratory sample number. Each sample component is reweighed to determine if leakage occurred during travel. Color, appearance, and other particulars of the samples are noted. Samples are extracted within 21 days of collection and processed through cleanup procedures before concentration and analysis.

5.1.5.2 Calibration of GC/MS System

A five-point calibration of the GC/MS system is performed to demonstrate instrument linearity over the concentration range of interest. Relative response factors are calculated for each dioxin/furan congener or compound of interest. The response factors are verified on a daily basis using a continuing calibration standard consisting of a mid-level standard. The instrument performance is acceptable only if the measured response factors for the labeled and unlabeled compounds and the ion-abundance ratios are within the allowable limits specified in the method.

5.1.6 CDD/CDF Analytical Quality Control

All quality control procedures specified in the test method are followed. Blanks are used to determine analytical contamination, calibration standards are used for instrument calibration and linearity checks, internal standards are used to determine isomer recoveries and

adjust response factors for matrix effects, surrogate standards are used to measure the collection efficiency of the sampling methodology and an alternate standard is used as a column efficiency check.

5.1.6.1 CDD/CDF Quality Control Blanks

Four different types of sample blanks are collected for CDD/CDF analysis. The types of blanks that are required are shown in Table 5-5.

Table 5-5. Method 23 Blanks Collected

Blank	Collection	Analysis
Field Blanks	One run collected for each sample location) and analyzed	Analyze with field samples
Glassware Proof Blank	Each train to be used (2) will be loaded and quantitatively recovered prior to sampling	Archive for potential analysis
Method Blank	At least one for each analytical batch (laboratory generated)	Analyze with each analytical batch of field samples
Reagent Blanks	One 500 mL sample for each reagent and lot	Archive for potential analysis

Reagent blanks of 500 mL of each reagent used at the test site are saved for potential analysis. Each reagent blank is of the same lot as was used during the sampling program. Each lot number and reagent grade is recorded on the field blank label and in the laboratory notebook (acetone, methylene chloride, toluene, filter, XAD-2®).

A glassware blank (proof blank) is recovered from each set of sample train glassware that is used to collect the organic samples. The precleaned glassware, which consists of a probe liner, filter holder, condenser coil, and impinger set, is loaded as if for sampling and then quantitatively recovered exactly as the samples will be. Analysis of the generated fractions will be used to check the effectiveness of the glassware cleaning procedure only if sample analysis indicates a potential contamination problem.

A field blank is collected from a set of CDD/CDF glassware that has been used to collect at least one sample and has been recovered. The train is re-loaded, leak checked and left at a sampling location during a test run. The train is then recovered. The purpose of the field blank is to measure the level of contamination that occurs from handling, loading, recovering, leak checking, and transporting the sampling train. The field blanks are analyzed with the flue gas samples. If they are unsatisfactory in terms of contamination, reagent blanks may be analyzed to determine the specific source of contamination.

In addition to the three types of blanks that are required for the sampling program, the analytical laboratory will analyze a method blank with each set of flue gas samples. This method blank will consist of preparing and analyzing an aliquot of toluene by the exact procedure used for the samples analysis. The purpose of this method blank is to verify that there is no laboratory contamination of the field samples.

5.1.6.2 Quality Control Standards and Duplicates

Recoveries of the internal standards must be between 40 to 130% for the tetra- through hexachlorinated compounds and in the range of 25 to 130% for the hepta- and octachlorinated homologs. If these requirements are not met, the data will be acceptable if the signal to noise ratio is greater than or equal to ten. If these requirements are met, the results for the native (sampled) species are adjusted according to the internal standard recoveries.

Surrogate standard recoveries must be between 70 to 130%. If the recoveries of all standards are less than 70%, the project director will be notified immediately to determine if the surrogate results will be used to adjust the results of the native species.

Duplicate analysis is performed for every ten samples. The purpose of this duplicate analysis is to evaluate the precision of the combined sample preparation and analytical methodology.

5.1.7 *Analytes and Detection Limits for Method 23*

The target analytes are the tetra- through octachlorinated dibenzodioxins and chlorinated dibenzofurans. The detection limit of the individual compounds is dependent on the detection limit of the analytical method, the volume of the final extract and the total volume of gaseous sample collected in the sampling trains. Following the protocol of Method 23, the fractions to be collected for analysis from each train are:

- Fraction 1—Filter;
- Fraction 2—XAD-2® sorbent module;
- Fraction 3—Acetone and methylene chloride rinses of all train components prior to sorbent module and;
- Fraction 4—Toluene rinses of all train components prior to the sorbent module.

Following the sample preparation protocol outlined in Method 23, a single combined sample is presented for analysis for D/F by high resolution gas chromatography/high resolution mass spectrometry. (The individual samples will no longer be available for analysis.) The final volume of this sample is 200 μL of which a 2 μL aliquot is injected into the instrument. Using an instrument detection limit of 50 pg for tetra-, 250 pg for penta- through hepta-, and 500 pg for octachlorinated D/F, the total minimum detectable amounts can be calculated and are given in Table 5-6.

Using a four hour sampling time at an assumed sampling rate of 0.65 to 0.75 cfm, the MDLs shown in Table 5-7 are possible. The sampling flow rate at the outlet location will be dictated by the flow rate of the stack gas since isokinetic sampling will be performed.

Table 5-6. Analytical Detection Limits For Dioxins/Furans

Analyte	Total Detectable Amount, ng
Tetra CDDs	5
Penta CDDs	25
Hexa CDDs	25
Hepta CDDs	25
Octa CDD	50
Tetra CDFs	5
Penta CDFs	25
Hexa CDFs	25
Hepta CDFs	25
Octa CDF	50

NOTE: D/F analysis by High Resolution Mass Spectrometry assumes a 2 μL injection of a 200 μL sample extract.

Table 5-7. CDD/CDF Method Detection Limits

Sampling Time, Hours	4
Sampling Rate, cfm	0.75
Sample Volume, m^3	5.1
	MDL, ng/m^3
Tetra CDDs	0.98
Penta CDDs	4.9
Hexa CDDs	4.9
Hepta CDDs	4.9
Octa CDD	9.8
Tetra CDFs	0.98
Penta CDFs	4.9
Hexa CDFs	4.9
Hepta CDFs	4.9
Octa CDF	9.8

5.2 Hydrochloric Acid/Particulate Matter Emissions Testing Using EPA Method 26A

Hydrogen chloride (HCl) sampling is accomplished using EPA Method 26A, Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources - Isokinetic Method. Method 26A is particularly suited for sampling at sources emitting acid particulate matter (i.e., hydrogen chloride dissolved in water droplets). In this method, a gas sample is extracted isokinetically from the stationary source and passed through acidified water. In acidified water, HCl solubilizes and forms chloride (Cl^-) ions. Ion chromatography (IC) is used to detect the chloride ions present in the sample. In addition, sampling for Particulate Matter (PM) is also performed according to the EPA Method 26A protocol. This method is applicable to the determination of particulate mass emissions collected on a glass fiber filter and any material that condenses at or above the filter temperature of 120±14°C (248±25°F) from various types of process controls and combustion sources. The particulate mass, which includes any material that condenses at or above the filter temperature, is determined gravimetrically after removal of uncombined water.

Particulate concentrations are based on the weight gain of the filter and any condensible PM recovered from the acetone rinses of the probe, nozzle, and front half of the filter.

5.2.1 Method 26A Sampling Equipment

The EPA Method 26A methodology uses the sampling train shown in Figure 5-4. The 5-impinger train consists of a borosilicate glass nozzle/probe liner followed by a heated filter assembly with a Teflon® filter support, a series of impingers and a meter box and vacuum pump as specified in EPA Method 5. The sample is not exposed to any metal surfaces in this train.

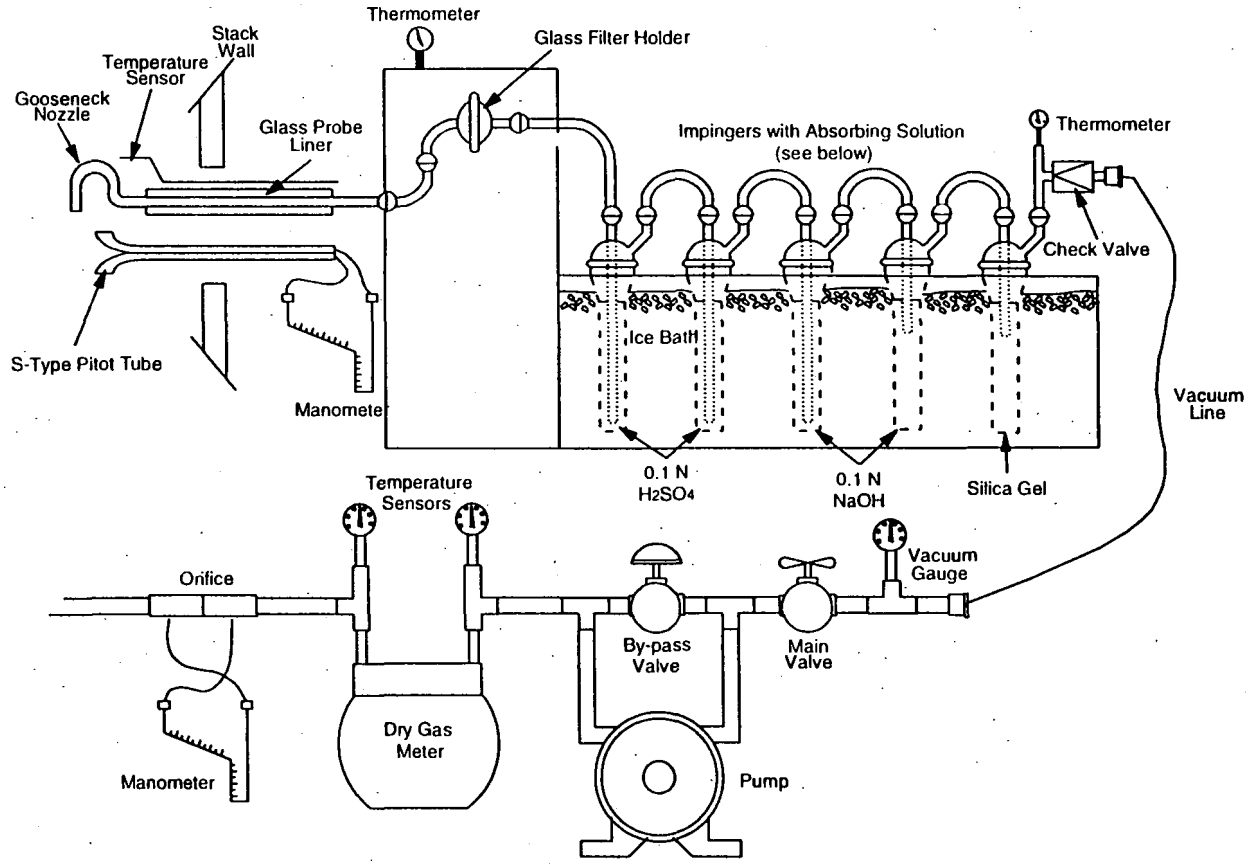


Figure 5-4. Schematic of Method 26A Sampling Train

The contents of the sequential impingers are:

- Impinger #1 (Greenburg-Smith) and Impinger #2 (Greenburg-Smith), known volumes of 0.1N H_2SO_4 (nominal 100 mL);
- Impinger #3 (modified Greenburg-Smith) and Impinger #4 (modified Greenburg-Smith), known volumes of 0.1 N NaOH;
- Impinger #5 (modified Greenburg-Smith), indicating silica gel.

5.2.2 Method 26A Sampling Equipment Preparation

5.2.2.1 Glassware Preparation

Glassware is washed in soapy water, rinsed with hot tap water, rinsed with Type II water, rinsed with acetone to remove the water, rinsed three times with acetone and then air dried. This procedure is used on all the glass components of the sampling train including the glass nozzles plus any sample bottles, Erlenmeyer flasks, petri dishes, and graduated cylinders. Non-glass components (such as the Teflon®-coated filter screens and seals, tweezers, Teflon® squeeze bottles, Teflon® probe brushes) are cleaned following the same procedure. The cleaning procedure is summarized in Table 5-8.

5.2.2.2 Reagent Preparation

The sample train filters are Pallflex® TX40HI45 Teflon® mat filters that meet the criteria specified in Section 3.1.1 of EPA Method 5. These filters are used as received from the vendor. The acetone is purchased as HPLC grade to ensure a low residue after evaporation. The reagent water is distilled/deionized grade that meets the requirements of ASTM Type 3 water or equivalent. The lot number, manufacturer and grade of each reagent that is used are recorded in the laboratory notebook.

Table 5-8. Glassware Cleaning Procedure (Method 26A Train Components)

NOTE: USE DISPOSABLE GLOVES AND ADEQUATE VENTILATION
1. Soak all glassware in hot soapy water (laboratory detergent).
2. Rinse with tap water to remove soap.
3. Rinse with HPLC grade water (three times).
4. Rinse with acetone (three times).
5. Air dry.
6. Cap glassware with clean glass plugs or Parafilm.®
7. Mark cleaned glassware with color-coded identification sticker.

The analyst wears both safety glasses and protective gloves when the reagents are mixed or handled. Each reagent has its own designated transferTeflon® squeeze bottle and is marked for identification and used only for the reagent for which it is designated.

5.2.2.3 Equipment Preparation

The remaining preparation includes calibration and leak checking of all of the train equipment, including meter boxes, thermocouples, nozzles, pitot tubes, and umbilicals. Referenced calibration procedures are followed when available, and the results are properly documented and retained. A discussion of the techniques used to calibrate this equipment is presented below.

Type-S Pitot Tube Calibration. The EPA has specified guidelines concerning the construction and geometry of an acceptable Type-S pitot tube. If the specified design and

construction guidelines are met, a pitot tube coefficient of 0.84 is used. Information pertaining to the design and construction of the Type-S pitot tube is presented in detail in Section 3.1.1 of EPA Document 600/4-77-027b. Only Type-S pitot tubes meeting the required EPA specifications are used. Pitot tubes are inspected and documented as meeting EPA specifications prior to field sampling.

Sampling Nozzle Calibration. Glass nozzles are used for isokinetic sampling. Calculation of the isokinetic sampling rate requires that the cross sectional area of the sampling nozzle be accurately and precisely known. All nozzles are thoroughly cleaned, visually inspected and calibrated according to the procedure outlined in Section 3.4.2 of EPA Document 600/4-77-027b.

Temperature Measuring Device Calibration. Accurate temperature measurements are required during source sampling. Bimetallic stem thermometers and thermocouple temperature sensors are calibrated using the procedure described in Section 3.4.2 of EPA Document 600/4-77-027b. Each temperature sensor is calibrated at a minimum of two points over the anticipated range of use against a NIST-traceable mercury-in-glass thermometer. All sensors are calibrated prior to field sampling.

Dry Gas Meter Device Calibration. Dry gas meters (DGMs) are used in the Method 5 sampling trains to monitor the sampling rate and to measure the sample volume. All DGMs are calibrated to document the volume correction factor just prior to shipping of the equipment to the field. Post-test calibration checks are performed as soon as possible after the equipment has been returned to the ERG Laboratory. Pre- and post-test calibration should agree to within 5%.

Prior to calibration, a positive pressure leak check of the system is performed using the procedure outlined in Section 3.3.2 of EPA Document 600/4-77-237b. The system is placed under approximately 10 inches of water pressure and a gauge oil manometer is used to determine if a pressure decrease can be detected over a one-minute period. If leaks are detected, they are eliminated before actual calibration are performed.

After the sampling console is assembled and leak checked, the pump is to run for 15 minutes, to allow the pump and DGM to warm up. The valve is then adjusted to obtain the desired flow rate. For the pre-test calibration, data are collected at orifice manometer settings (ΔH) of 0.5, 1.0, 1.5, 2.0, 3.0 and 4.0 in H_2O. Gas volumes of 5 ft^3 are used for the two lower orifice settings, and volumes of 10 ft^3 are used for the higher settings. The individual gas meter correction factors (Y_i) are calculated for each orifice setting and averaged. The method requires that each of the individual correction factors fall within ±2% of the average correction factor or the meter is cleaned, adjusted, and recalibrated. In addition, ERG requires that the average correction factor be within 1.00 ±1%. For the post-test calibration, the meter is calibrated three times at the average orifice setting and vacuum which were used during the actual test.

5.2.3 Method 26A Sampling Operations

5.2.3.1 Preliminary Measurements

Prior to sampling, preliminary measurements are required to ensure isokinetic sampling. These preliminary measurements include determining the traverse point locations, performing a preliminary velocity traverse and a cyclonic flow check. These measurements are used to calculate a "K factor." The K factor is used to determine an isokinetic sampling rate from stack gas flow readings taken during sampling.

Measurements are then made of the duct inside diameter, port nozzle length, and the distances to the nearest upstream and downstream flow disturbances. These measurements are then used to determine sampling point locations by following EPA Reference Method 1 guidelines. The distances are then marked on the sampling probe using an indelible marker.

5.2.3.2 Assembling the Train

Assembling the Method 26A sampling train components is begun in the recovery trailer and final train assembly is performed at the stack location. First, the empty, clean impingers are

assembled and laid out in the proper order in the recovery trailer. Each ground glass joint is carefully inspected for hairline cracks. After the impingers are loaded, each impinger is weighed, and the initial weight and contents of each impinger are recorded on a recovery data sheet. The impingers are connected together using clean glass U-tube connectors and arranged in the impinger bucket. The height of all the impingers is approximately the same to obtain a leak free seal. The open ends of the train are sealed with Parafilm® or clean ground glass caps.

The second step is to load the filter into the filter holder in the recovery trailer. The filter holder is then capped off and placed into the impinger bucket. To avoid contamination of the sample, sealing greases are not used. The train components are transferred to the sampling location and assembled as previously shown in Figure 5-4.

5.2.3.3 Sampling Procedures

After the train is assembled, the heaters are turned on for the probe liner and heated filter box. When the system reaches the appropriate temperatures, the sampling train is ready for pre-test leak checking. The gas stream exiting the heated filter is maintained at a temperature of 120 ±14°C (248 ±25°F). The filter temperature is initially set at 120 ±14°C (248 ±25°F) and the probe temperature at 100°C (212°F). The temperature of these two heated zones will be regulated as necessary to maintain the proper temperature of the gas exiting the filter.

The sampling trains are leak checked at the start and finish of sampling. (Method 26A protocol requires post-test leak checks and recommends pre-test leak checks.) ERG protocol also incorporates leak checks before and after every port change. An acceptable pre-test leak rate is less than 0.02 acfm (ft^3/min) at approximately 15 inches of mercury (in. Hg). If, during testing, a piece of glassware needs to be emptied or replaced, a leak check is performed before the glassware piece is removed, and after the train is re-assembled.

To leak check the assembled train, the nozzle end is capped off and a vacuum of 15 in. Hg is pulled in the system. When the system is evacuated, the volume of gas flowing

through the system is timed for 60 seconds. After the leak rate is determined, the cap is slowly removed from the nozzle end until the vacuum drops off, and then the pump is turned off. If the leak rate requirement is not met, the train is systematically checked by first capping the train at the filter, at the first impinger, etc., until the leak is located and corrected.

After a successful pre-test leak check has been conducted, all train components are at their specified temperatures and initial data are recorded (dry gas meter (DGM) reading), the test can be initiated. Sampling train data are recorded periodically (specific interval to be determined) on standard data forms. A checklist for sampling is included in Table 5-9.

The leak rates and sampling start and stop times are recorded on the sampling task log. Also, any other events that occur during sampling are recorded on the task log, such as pitot cleaning, thermocouple malfunctions, heater malfunctions, or any other unusual occurrences.

At the conclusion of the test run, the sample pump (or flow) is turned off, the probe is removed from the duct, a final DGM reading is taken, and a post-test leak check is completed. The procedure is identical to the pre-test procedure; however, the vacuum should be at least one inch Hg higher than the highest vacuum attained during sampling. An acceptable leak rate is less than 4% of the average sample rate or 0.02 acfm (whichever is lower). If a final leak rate on-site does not meet the acceptance criterion, the test run may still be accepted upon approval of the EPA test administrator. If so, the measured leak rate is reduced by subtracting the allowable leak rate from it and then multiplied for the period of time in which the leak occurred. This "leaked volume" is then subtracted from the measured gas volume in order to determine the final gas sample volume.

5.2.4 Method 26A Sample Recovery

Recovery procedures begin as soon as the probe is removed from the stack and the post-test leak check is completed.

Table 5-9. Sampling Checklist for EPA Method 26A

Before Test Starts:

1. Check impinger set (right order and number). Verify probe markings, and re-mark if necessary.
2. Check that you have all the correct pieces of glassware.
3. Check for data sheets and barometric pressure.
4. Sampling equipment needs to be ready for Method 3 analysis.
5. Leak check pitot tubes.
6. Examine meter box - level it and confirm that the pump is operational.
7. Assemble train to the filter and leak check at 15 in. Hg. Attach probe to train and do final leak check; record leak rate and pressure on sampling log.
8. Check out thermocouples - make sure they are reading correctly.
9. Turn on heaters and check to see that their temperatures are increasing.
10. Check that cooling water is on and flowing (if required). Add ice to impinger buckets.
11. Check isokinetic K-factor - make sure it is correct. (Refer to previous results to confirm assumptions). (Two people should calculate this independently to double check it).
12. Have a spare probe liner, probe sheath, meter box and filter ready to go at location.

Table 5-9. Sampling Checklist for EPA Method 26A (continued)

During Test:

1. Notify crew chief of any sampling problems ASAP. Train operator should fill in sampling log.

2. Perform simultaneous/concurrent testing with other locations (if applicable). Maintain filter temperature at 120 ±14° C (248 ±25° F). Keep temperature as steady as possible. Maintain impinger temperatures below 68° F. Maintain probe temperature above 100° C (212° F) or as required to maintain the proper filter temperature.

3. Leak check between ports and record on sampling log.

4. Record sampling rate times and location for the fixed gas (CO_2, O_2) sample (if applicable).

5. Blow back pitot tubes at inlet location every 15 minutes.

6. Change filter if pressure drop exceeds 20 in. Hg.

7. Check impinger silica gel every ½ hr; if indicator changes color request a pre-filled impinger from van lab and replace.

8. Check manometer fluid levels and zero every hour.

After Test is Completed:

1. Record final meter reading.

2. Check completeness of data sheet.

3. Do final leak check of sampling train at maximum vacuum during test.

4. Leak check each leg of pitot tubes.

5. Disassemble train. Cap sections. Take sections to recovery trailer.

Table 5-9. Sampling Checklist for EPA Method 26A (continued)

6. Probe/cyclone recovery (use 500 mL bottles)
   For acetone rinses (all trains)
   - Attach flask to end of probe (separate recovery containers will be used for each sampling location)
   - Add 50 mL of acetone
   - Put a brush down probe, and brush back and forth
   - Rinse back and forth in probe
   - Empty out acetone in sample jar
   - Do this 3 times so that the final combined acetone rinse volume is ≤ 150 mL.

7. Reattach nozzle and cap for next day, store in dry safe place.

8. Make sure data sheets are completely filled out and give to location leader.

To facilitate transfer from the sampling location to the recovery trailer, the sampling train is disassembled into three sections: the nozzle/probe liner, filter holder and impingers in their bucket. Each of these sections is capped with Teflon® tape or Parafilm® before removal to the recovery trailer. All train components are rinsed and the samples collected in separate, prelabeled, precleaned sample containers to avoid cross contamination of inlet and outlet samples. Trains of each type are recovered in separate areas of the mobile laboratory to avoid cross contamination or mistakes in recovery sequences.

Once in the trailers, the sampling train is recovered as separate front and back half fractions. A diagram illustrating front half and back half sample recovery procedures is shown in Figure 5-5. No equipment with exposed metal surfaces is used in the sample recovery procedures. The weight gain in each of the impingers is recorded to determine the moisture content in the flue gas. Following weighing of the impingers, the front half of the train is recovered, which includes the filter and all sample-exposed surfaces forward of the filter. The

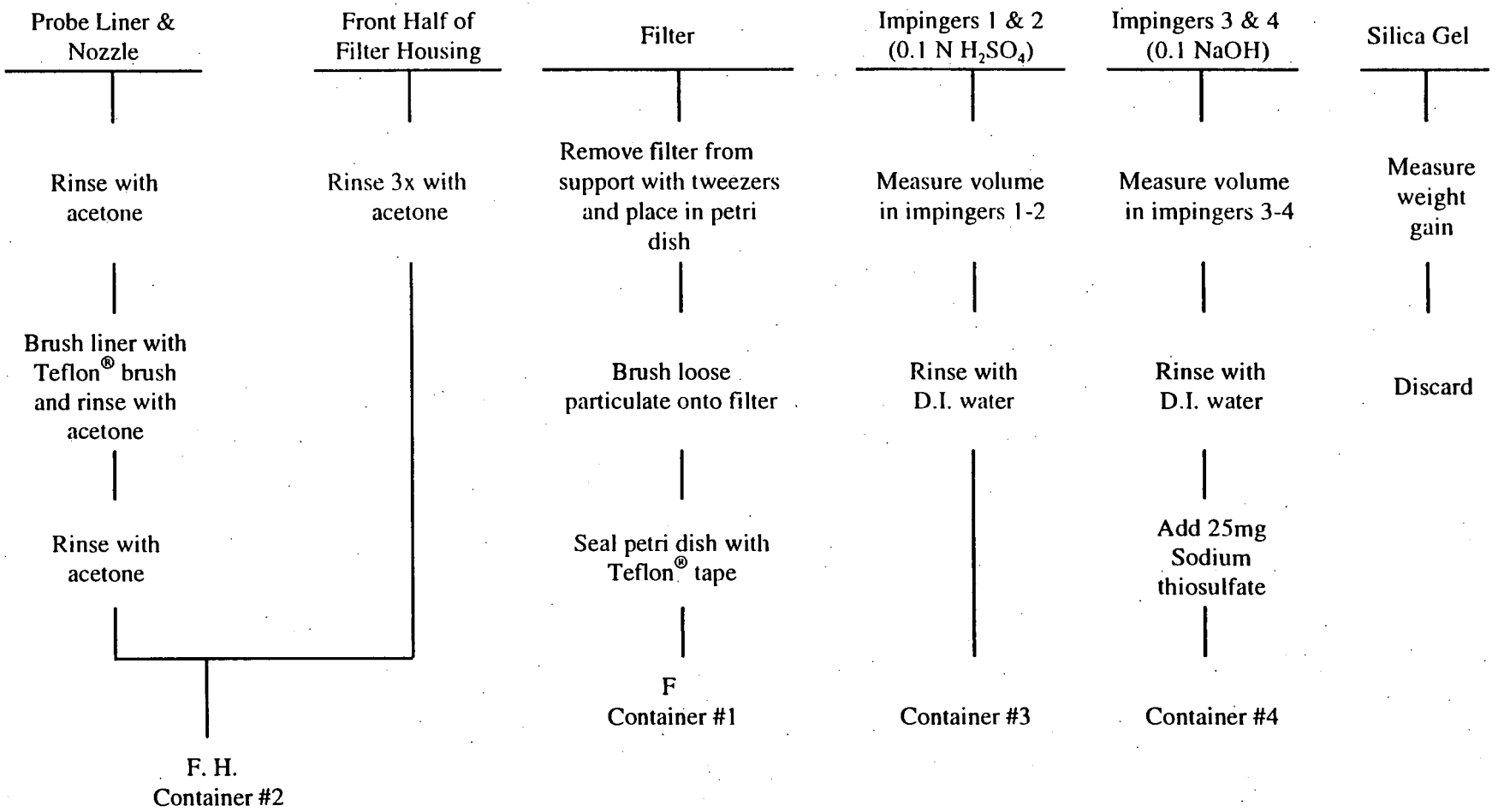


Figure 5-5. Method 26A Sample Recovery Scheme

probe liner is rinsed with acetone by tilting and rotating the probe while squirting acetone into its upper end so that all inside surfaces are wetted. The acetone will be quantitatively collected into the appropriate bottle. This rinse is followed by additional brush/rinse procedures using a non-metallic brush; the probe is held in an inclined position and acetone is squirted into the upper end as the brush is pushed through with a twisting action. All of the acetone and particulate will be caught in the sample container. This procedure is repeated until no visible particulate remains and finished with a final acetone rinse of the probe and brush. The front half of the glass filter holder is also rinsed with acetone until all visible particulate is removed. These rinses are added to the probe rinses. After all front half acetone washes are collected, the cap is tightened, the liquid level marked and the bottle weighed to determine the acetone rinse volume. This sample is Container #2. The method specifies that a nominal volume of 100 mL of acetone must be used for rinsing these components. For blank correction purposes, the exact weight or volume of acetone used is measured. An acetone reagent blank of approximately the same volume as the acetone rinses is analyzed with the samples.

The filter is carefully removed from the filter support and placed in a clean, well-marked glass petri dish (Container # 1) and sealed with Teflon® tape.

After measuring the volume of liquid in the first four impingers and determining the weight gain of the desiccant in the fifth impinger the contents of the first four impingers are recovered.

The contents of the first and second impingers (0.1 N H_2SO_4) and the water rinses of the impingers and connecting glassware are transferred to a separate container labeled "Container No. 3." The contents of the third and fourth impingers (0.1 N NaOH) and the water rinses of the impingers and connecting glassware are transferred to a separate container labeled "Container No. 4." Add 25 mg of sodium thiosulfate to Container No. 4 and mix well. Seal the sample bottles and package for transport to the laboratory for analysis.

A reagent blank is recovered in the field for each of the following reagents:

- Acetone—200 mL sample size;
- Filter blank—one each;
- 0.1 N H_2SO_4 - 200 mL sample size; and
- 0.1 N NaOH - 200 mL sample size, containing 50 mg of sodium thiosulfate.

Each reagent blank is of the same lot as was used during the sampling program. The volumes collected are greater than that required for sample preparation in order to provide sufficient amounts in case of sample loss during preparation or to compensate for larger volumes of train rinses. Each lot number and reagent grade is recorded on the reagent blank label.

One field blank was collected at each lime-injected baghouse inlet, and one at each lime-injected baghouse outlet. A field blank is generated by preparing a sampling train as if for actual sample collection, performing a leak check at the sampling location, then sealing the inlet and outlet of the train and leaving it at the sampling location during the length of an actual test run.

One glassware proof blank will be collected for each train prior to sampling. A proof blank is generated by rinsing the components of a train, prior to use, with the recovery solvent(s) specified in the method.

The liquid level of each sample container is marked on the bottle in order to determine if any sample loss occurred during shipment. If sample loss has occurred, the sample may be voided or a method may be used to incorporate a correction factor to scale the final results depending on the volume of the loss.

Following the protocol of Method 26A, the fractions to be collected for analysis from each train are:

- Fraction 1—Filter;
- Fraction 2—Probe/nozzle/cyclone and filter front half acetone rinses;
- Fraction 3 - Contents of Impingers 1 and 2 plus water rinses; and
- Fraction 4 - contents of Impingers 3 and 4 plus water rinses.

5.2.5 HCl Analytical Procedures

Before analysis, the samples are checked against the chain of custody forms, logged into the laboratory sample tracking system, and assigned a laboratory sample number. Each sample is then examined to determine if any leakage occurred and any color or other particulars of the samples are noted.

The samples are analyzed using ion chromatography (IC). Analytical conditions are determined by the type of analytical column used and whether suppressed or nonsuppressed IC is used. Prior to sample analysis, a stable baseline is established and water samples are injected until no chloride, bromide, or fluoride appears in the chromatogram. The IC is then calibrated using standards spanning the appropriate concentration range, starting with the standard at the lowest concentration. Next, a check sample is injected in duplicate, followed by a water blank and field samples. The calibration standards are re-injected at the end of the analyses to allow compensation for any drift in the instrument response during analysis of the field samples. The chloride sample concentrations are calculated from either the ion peak area or the peak height and the calibration curve.

5.2.6 HCl Analytical Quality Control

The IC is calibrated with a minimum of three concentrations, not including zero. A correlation coefficient of greater than or equal to 0.995 must be achieved to have an acceptable calibration. At least 10 percent of the total number of samples are analyzed in duplicate. Ion concentrations in the duplicates must agree to within ± 20 percent.

5.2.7 Particulate Analysis

The general gravimetric procedure described in Method 5, Section 4.3 is followed. Both filters and precleaned beakers are weighed to a constant weight before use. The same balance used for taring is used for weighing the samples. The balance room is maintained at a constant temperature and humidity. The preparation and analysis scheme for Method 5 is shown in Figure 5-6. The particulate was determined as part of the Method 26A Train samples.

The filter (Container #1) is desiccated to a constant weight for a minimum of 24 hours and then an initial weighing is performed. Weight gain is reported to the nearest 0.1 mg. A second weight determination is made after again desiccating for a minimum of 6 hours. "Constant weight" means a difference of no more than 0.5 mg or 1% of the total weight less tare weight, whichever is greater, between two consecutive weighings made 6 hours apart. Report the final weight as the average of these two values. The filter tare and final weights will be determined under the same conditions of temperature and humidity.

The acetone rinses (Container #2) are transfer to a tared beaker, along with three acetone rinses of Container #2, and evaporated to dryness at ambient temperature, placed in a desiccator for 24 hours and weighed to a constant weight. The total volume of acetone used in preparation of the sample is duplicated for the preparation of a reagent blank.

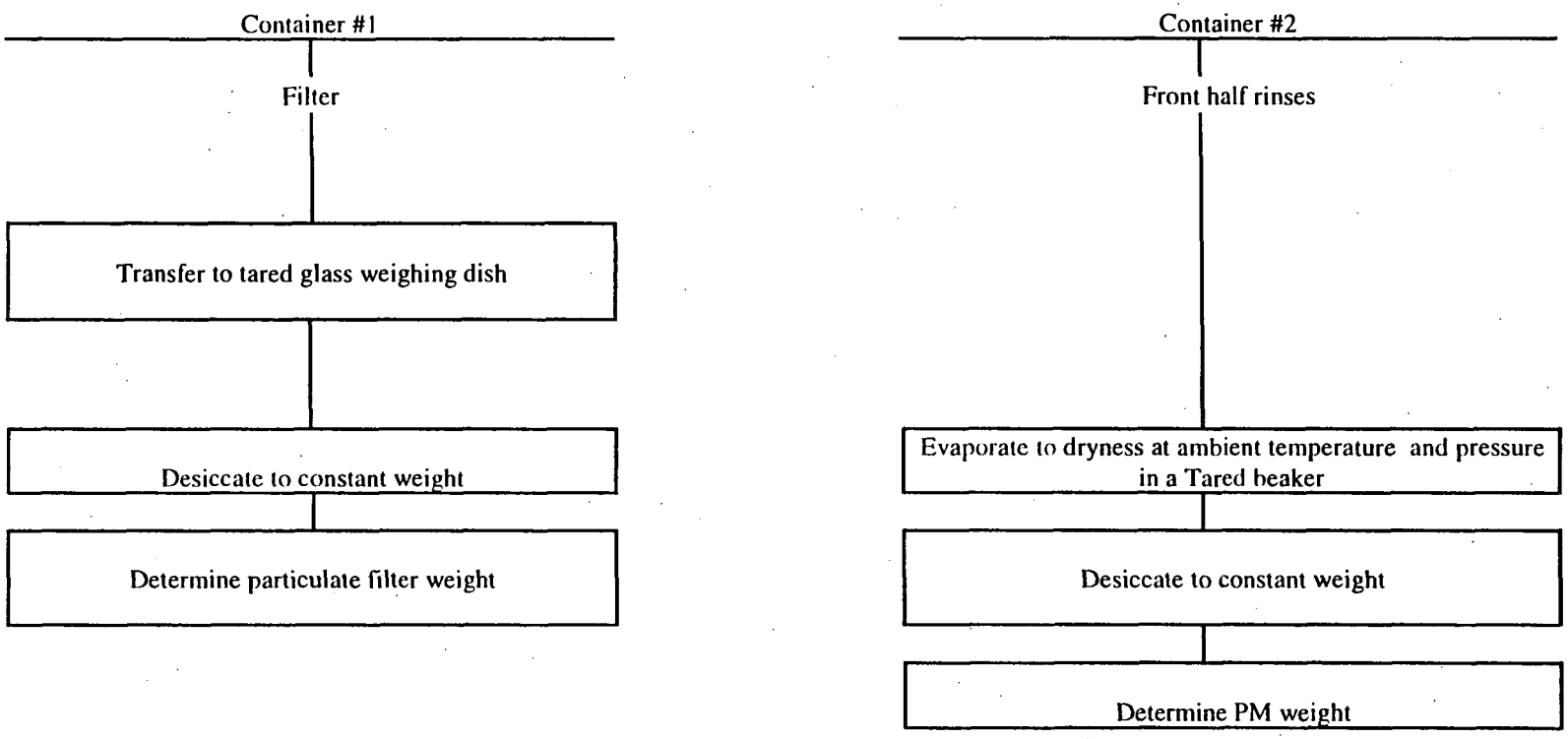


Figure 5-6. Method 5 Preparation and Analysis Scheme (Integral Part of Method 26A)

5.2.8 *Quality Control for Gravimetric Procedures*

All quality control procedures specified in the test method are followed. All field reagent blanks are processed and analyzed as specified in the test method. Prior to each gravimetric determination, the balance calibration is verified using a series of certified weights covering the range of weights encountered for the samples.

5.3 FTIR EPA Method 320

The extractive FTIR measurement method is based on continuous extraction of sample gas from the stack, transporting the sample to the FTIR spectrometer and performing real-time spectral measurement of the sample gas. The sample gas spectra are analyzed in real-time for target analytes, archived and possibly re-analyzed at a later date for other target analytes.

5.3.1 *FTIR Sampling Equipment*

The FTIR measurement system met the sampling and analysis requirements set forth in EPA Draft Method 320, "Measurement of Vapor Phase Organic and Inorganic Emissions By Extractive Fourier Transform Infrared Spectroscopy". This system has been used with complete success with many source categories, and can also be adapted to switch quickly between two sources (i.e., inlet and outlet) with a single FTIR spectrometer.

The sampling and measurement system consists of the following components:

- Heated probe;
- Heated filter;
- Heat-traced Teflon® sample line;
- Teflon® coated, heated-head sample pump;
- FTIR spectrometer;

- FTIR sample conditioning system; and
- QA/QC apparatus.

Figure 5-7 illustrates the FTIR sampling and measurement system. In operation at a stationary source, the sample is continuously extracted from the stack through the heated probe. Sample gas is then sent into a heated filter assembly which will remove any particulate matter from the sample stream to protect the remainder of the sampling and analysis system. The probe liner and filter body are made of glass, and the filter element is polytetrafluoroethylene (PTFE or Teflon®). In addition to providing an inert surface, the glass body filter allows the operator to observe the filter loading during sampling operations. The probe and filter are contained in a heated box which is mounted on the stack and maintained at a temperature of 121° C (250° F).

After passing through the filter assembly, the sample gas is transported to the FTIR spectrometer by a primary heat-traced PTFE sample line maintained at 149° C (300° F) driven by a heated- PTFE head sample pump maintained at 204° C (400° F). The sampling flow rate through the probe, filter, and sampling line is a nominal 20 liters per minute (Lpm). Sample gas then enters an atmospheric pressure heated PTFE distribution manifold where it is sent to the FTIR spectrometer via a slipstream flowing at 9 Lpm. Other slipstreams can be sent to other instruments, if necessary. Excess sample gas not used by instruments is vented to atmosphere.

FTIR spectrometer sample gas is taken from the distribution manifold by a secondary heated PTFE head sample pump maintained at 204° C (400° F) and directed into the FTIR sample cell maintained at 185° C (365° F) for real-time analysis. The cell is made of nickel-plated aluminum, with gold-plated glass substrate mirrors and potassium chloride windows. Exhaust gas from the cell is vented to the atmosphere.

Sample conditioning (when required) is achieved by passing raw sample gas through a PermaPure® drier and a series of impingers filled with sodium (or lithium) hydroxide pellets. The PermaPure® drier selectively removes water vapor and the sodium hydroxide pellets remove CO_2 and other acid gases. The sample conditioning apparatus is switched into the FTIR sample

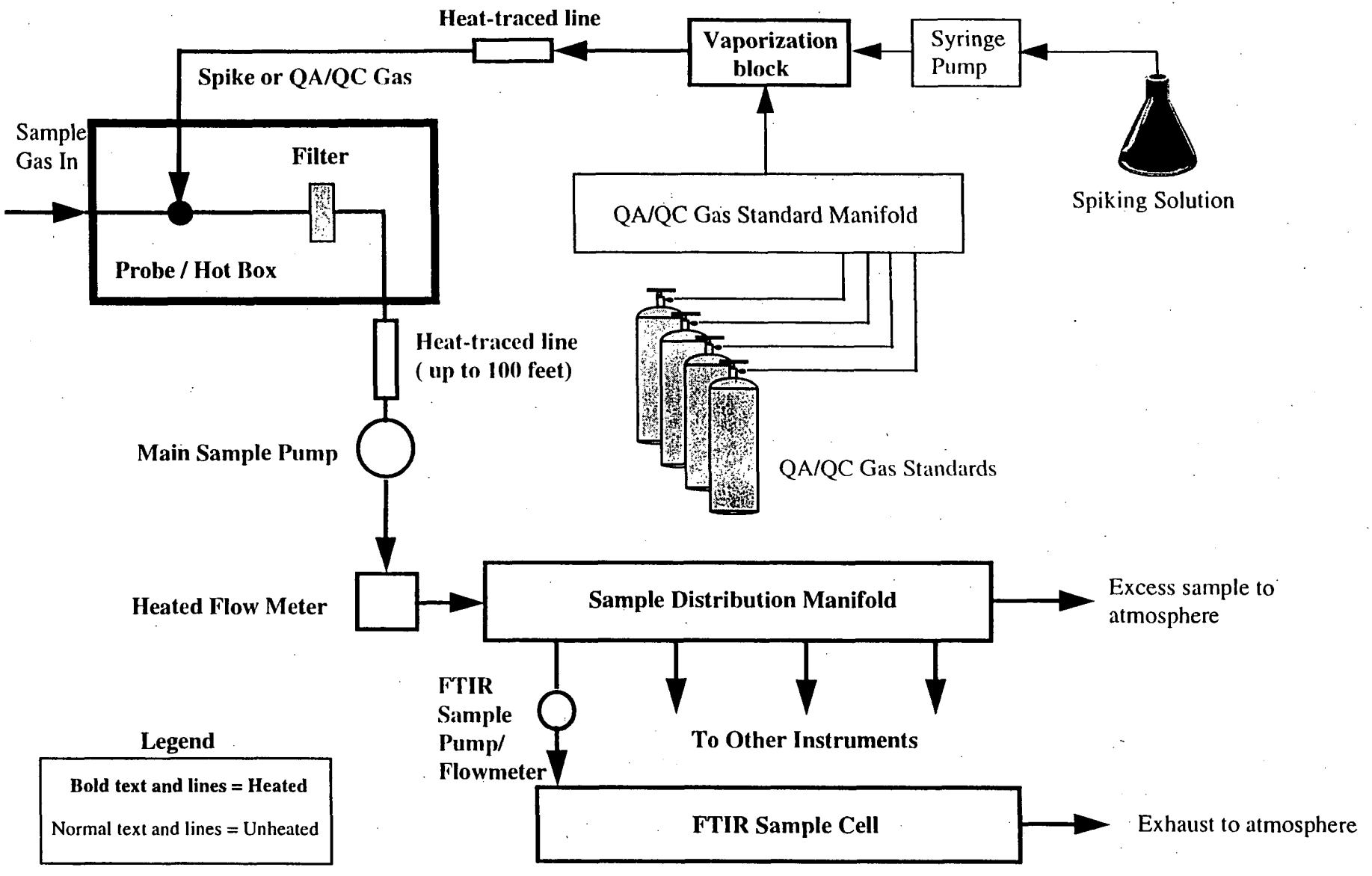


Figure 5-7. FTIR Sampling and Measurement System

path by a valving system. Lower detection limits for some compounds can be achieved with a conditioned sample.

5.3.2 Preparation for Sampling

The heated sampling lines, probes, and heated filter were positioned at the inlet and outlet locations. All heated components were brought to operating temperature, and a leak check of both inlet and outlet sampling systems was performed. The leak check was performed by plugging the end of the probe and watching the main sample rotameter to see that the value goes to zero.

A background spectrum was measured using zero air or zero nitrogen through the cell. Next the QC gases were measured by flushing the cell and they must agree to within ±10% of target value. The QC gases used for this program included:

- Halocarbon 22, used to calibrate the pathlength. Halocarbon 22 is used for its highly linear response due to the lack of sharp spectral features, and is an extremely stable compound.

- Carbon monoxide (CO); used for frequency calibration. Carbon monoxide is directly injected into the sample cell to measure photometric accuracy, validity of the non-linear correction algorithm and serve as a frequency (i.e., wavelength) calibration. Acceptable limits for CO standard analysis are ±5 percent of certified concentration;

- Methane/nitric oxide/carbon dioxide mixture, used for overall system performance check (calibration transfer standard) (acceptance limits are ±5% of the certified concentration); and

- Hydrogen chloride standard, analyzed to verify the instrumental response of HCl, a key target analyte (acceptance limits are ±10% of certified concentration).

The sampling and measurement system spike test was used to perform validation and directly challenge the complete system and provide information on system accuracy and bias. This test is conducted to satisfy the requirements set in EPA Draft Method 320 entitled

"Measurement of Vapor Phase Organic and Inorganic Emissions By Extractive Fourier Transform Infrared Spectroscopy". Section B.1.C of Method 320 gives a description of the dynamic spiking apparatus.

The FTIRS spiking procedure used was the following:

- Measure native stack gas for a 5 minute period;
- Start spike gas flow into sample stream, upstream of the heated filter;
- Let system equilibrate for 5 minutes;
- Measure spiked sample stream for 5 minutes;
- Turn off spike gas flow;
- Let system equilibrate with native stack gas for 5 minutes; and
- Repeat cycle, two more times.

The above procedure produces 3 spiked/unspiked sample pairs per hour. Spike recovery and three relative standard deviations for 3 spiked/unspiked sample pairs were computed from the procedure given in Section 8.6.2 of EPA Draft Method 320. The recovery must be 70-130% and the Percent Relative Standard Deviation must be less than or equal to 50% for the method to be valid for this source category.

The spiked/unspiked pairs are not simultaneously recorded, since only one FTIRS system will be available, but due to the expected steady nature of the source, this procedure produced acceptable results.

The FTIR sampling and analysis system was validated for HCI at the outlet of the chip dryer baghouse and the inlet and outlet of the reverberatory furnace #1 and was used as a screening tool for the other HAPs.

5.3.3 Sampling

FTIR sampling was performed simultaneously with the manual testing. The start and stop times, as well as port change times, were coordinated with the FTIR operator, so that FTIR data files could be coordinated with manual method start and stop times. FTIR inlet/outlet sampling was accomplished using two heated transfer lines, using a valving system to switch from one to the other.

Table 5-10 gives typical FTIR operating conditions. These parameters provide detection limits of 0.1-1 ppm for typical FTIR analytes, while providing adequate dynamic range (nominally 1-1000 ppm). Some of these parameters are sample matrix dependent.

Table 5-10. Typical FTIR Operating Parameters

Parameter	Value
Spectral Range (cm^{-1})	400 - 4000
Spectral Resolution (cm^{-1})	0.5 (or better)
Optical Cell Pathlength (m)	3.2 (variable -- 1-10)
Optical Cell Temperature (° C)	185
Sample Flow Rate (liters/minute)	9 (3.0 optical cell volumes/minute)
Integration Time (minutes)	1 (Average of 40 spectra)

Sample flow rate was determined by the data averaging interval and FTIR spectrometer sample cell volume. A minimum of 3 sample cell volumes of gas must flow through the system to provide a representative sample during a single integration period. Typically, a 1 minute averaging period with a 3 liter volume sample cell gives a minimum flow rate of 9 liters per minute (LPM). Typically a flow rate of 20 standard Lpm is used to accommodate the FTIR and other instrumentation on-site, and to minimize sample residence time in the sampling system.

The temperature of all sampling system components were nominally 221-204° F (250-400° C) to prevent condensation of water vapor or other analytes in the sampling system. The FTIR sample cell temperature was maintained at 365° F (185° C) to ensure that condensation of high-boiling point analytes on the cell optics is minimized.

FTIR sample cell pressure was monitored in real-time in order to calculate analyte concentration in parts-per-million. It is normally operated near atmospheric pressure with the cell pressure continuously monitored.

Stack gas temperature was also be monitored to provide information on potential sample analyte condensation in the sampling system. If the stack gas temperature is higher than the lowest sampling system component temperature, then an assessment by the spectroscopist or field team leader must be made whether any analytes of interest may condense within the sampling system, resulting in measurement bias.

Sampling probe location was determined by the requirements set in EPA Method 1 in terms of duct diameters upstream and downstream of disturbances. Concurrent EPA Method 2 velocity measurements were carried out at the same process stream location as the FTIR sampling point to provide mass emission rate determination. The stack gas velocity and flow rate were determined by the manual test methods.

Before testing, sample matrix effects were assessed on-site by the spectroscopist and adjustments to the optical pathlength and spectral analysis regions were made. Once the adjustments have been made, they rarely need to be further refined at a given source type.

Sampling and analysis procedures are straightforward for a single-source measurement. Once QA/QC procedures have been completed for a given test day, the sample is allowed to flow continuously through the FTIR spectrometer cell and the software is instructed to start spectral data collection. Usually, the spectrometer collects one interferogram per second and averages a number of interferograms to form a time-integrated interferogram. Typical averaging times

range from 1 to 5 minutes. The interferogram is converted into a spectrum and analyzed for the target analytes. After spectral analysis, the spectrum is stored on the computer and later permanently archived. Spectral data collection is stopped after a pre-determined time, corresponding to a "run". Typical runs were 4 hours long, giving 240 one-minute averaged points for each target analyte. At the end of the test day, the end-of-day QA/QC procedures were conducted.

Before any testing is started at a given site, an initial "snapshot" of the stack gas is taken with the FTIR measurement and analysis system to determine the true sample matrix. If any target analytes are present at significantly higher levels than expected, adjustments will be made to the cell pathlength and/or the spectral analysis regions used for quantitative analysis. These adjustments will minimize interferences due to unexpectedly high levels of detected analytes.

Since sample conditioning was required for certain analytes, the FTIR spectrometer divided its analysis time between conditioned and unconditioned samples. Usually, the analysis time is split into blocks to minimize dead time due to switching between sample types. For example, the first half of the run period is dedicated to conditioned samples, and the last half of the run is committed to unconditioned samples. The order used at Culp Aluminum Alloys is shown in the table below.

Sampling Conditions	**Sampling Time**	**Inlet**	**Outlet**
Chip Dryer Unconditioned	First half of Test	2 minute cell purge 8 minute sample collection	2 minute cell purge 8 minute sample collection
Chip Dryer Conditioned	Second half of Test	2 minute cell purge 8 minute sample collection	2 minute cell purge 8 minute sample collection
Furnace Unconditioned	First half of Charging	2 minute cell purge 8 minute sample collection	2 minute cell purge 8 minute sample collection
Furnace Conditioned	Second half of Charging	2 minute cell purge 8 minute sample collection	2 minute cell purge 8 minute sample collection
Furnace Unconditioned	Duration of Mixing Top Out	2 minute cell purge 8 minute sample collection	2 minute cell purge 8 minute sample collection

The sample being delivered to the FTIR cell alternated between the inlet and the outlet. The switching valve, located just upstream of the common manifold, was manually activated every 10 minutes to provide twelve ten-minute sample collections during each two-hour period.

FTIR method performance is gauged from the results of the QA/QC procedures given in Section B5 of Draft EPA Method 320. Acceptable spiking tests must meet acceptance criteria of 50 percent relative standard deviation (RSD) and accuracy of within ± 30 percent. The acceptable instrument diagnostic and system response check accuracy must be within ± 5 percent of target. Acceptable system response check precision was 5 percent RSD.

The ERG validated spectral database includes the compounds shown in Table 5-11. These spectra were validated in the laboratory at a cell temperature of 185° C against certified gaseous standards. Any compounds identified in the stack gas and not included in the ERG database can be quantified if necessary after subsequent laboratory spectral acquisition.

5.3.4 FTIR Method Data Review, Validation, and Verification Requirements

Quantitative analysis is performed by a mathematical method called multi-variate least squares (commonly known as Classical Least Squares or CLS). CLS constructs an optimized linear combination (or 'fit') of the reference spectra to duplicate the sample spectrum, utilizing the Beer-Lambert Law. The Beer-Lambert Law states that the absorbance of a particular spectral feature due to a single analyte is proportional to its concentration. This relationship is the basis of FTIR quantitative analysis. The coefficients of each compound in the linear fit yield the concentration of that compound. If it is found that the quantitative analysis of a given compound responds non-linearly to concentration, a calibration curve is developed by measuring a series of reference spectra with differing optical depths (concentration times pathlength) and using them in the linear fit. Low molecular weight species such as water vapor and carbon monoxide require non-linear correction, possibly even at levels as low as 100 ppm-meters (concentration times pathlength). Analytes greater than 50-60 amu molecular weight usually do not require non-

Table 5-11. Compounds for Which Reference FTIR Spectra Are Available in the ERG Spectral Library[a]

1,3-butadiene	cyclohexane
1-butene	ethylbenzene
2-methyl-2-propanol	formaldehyde
2-methylbutane	water vapor
2-methoxyethanol	hydrogen chloride
2-methylpropane	hydrogen fluoride
2-propanol	isobutylene
4-vinylcyclohexane	methylene chloride
acetic acid	methyl ethyl ketone
acetone	*m*-xylene
acrolein	*p*-xylene
benzene	*o*-xylene
acetylene	phenol
cis-2-butene	*o*-cresol
trans-2-butene	*m*-cresol
ethylene	*p*-cresol
ethane	nitrous oxide
propylene	*n*-butane
propane	*n*-butanol
chlorobenzene	ammonia
acetaldehyde	nitric oxide
methanol	nitrogen dioxide
methane	*n*-pentane
carbon monoxide	carbonyl sulfide
carbon dioxide	sulfur dioxide
cyclopropane	styrene
cyclopentane	toluene

[a] Spectra were collected at a cell temperature of 185° C.

linear corrections. An experienced spectroscopist can determine whether non-linear corrections are necessary for an analyte in a given source testing scenario.

The following procedures were conducted to review the FTIR data:

A. Post-test Data Review procedure (on-site)

1. Examine the concentration vs. time series plot for each compound of interest, and identify regions with the following characteristics:
   - sudden change in concentration;
   - unrealistic concentration values;
   - significant changes in 95 percent confidence intervals reported by software; and
   - sudden increase of noise in data.
2. Select representative spectra from the time periods indicated from Step 1.
3. Subtract from each representative spectrum chosen in Step 2 a spectrum which was taken immediately prior in time to the indicated time region.
4. Manually quantitate (including any non-linear corrections) for the species in question and compare the result to the difference in software-computed concentrations for respective spectra.
5. If concentration values in Step 4 do not agree to within 5 percent, determine whether the difference is due to a recoverable or non-recoverable error.

6 (i). If the error is non-recoverable, the spectra in the indicated time region are declared invalid.

6 (ii). If the error is recoverable, and time permits, determine possible source(s) of error and attempt to correct. If time is critical, proceed with measurement. If correction is achieved, conduct QA/QC checks before continuing.

7. Determine the peak-to-peak scatter or the root mean square (RMS) noise-equivalent-absorbance (NEA) for the representative spectra.
8. If the NEA exceeds 1×10^{-3} absorbance units, the spectra in the time region are declared invalid (due to non-recoverable error).
9. Data found invalid are subject to re-measurement.

B. Final Data Review (off-site)

The procedures for final data review included those given above; however, if a non-recoverable error was found during this phase, the data were considered invalid. In addition, the following procedures were carried out by the spectroscopist to perform a final data validation:

1. If any recoverable data errors are detected from the procedure, determine the cause and perform any necessary corrections.

2. For analytes which were not detected or detected at low levels:
   a) estimate detection limits from validated data;
   b) check for measurement bias.

5.3.5 QC for the FTIR

The FTIR QA/QC apparatus was used to perform two functions:

- Dynamic analyte spiking; and
- Instrumental performance checks.

Dynamic analyte spiking is used for quality control/quality assurance of the complete sampling and analysis system. Dynamic spiking is continuous spiking of the sample gas to provide information on system response, sample matrix effects, and potential sampling system biases. Spiking is accomplished by either:

- Direct introduction of a certified gas standard; or
- Volatilization of a spiking solution.

Certified gas standards are preferred due to simplicity of use, but many target analytes cannot be obtained as certified gas standards, and must be spiked using standards generated by volatilized solutions.

Gaseous spiking is carried out by metering the spike gas into the sample stream at a known rate. Spike levels are calculated from mass balance principles. When certified gas standards are used, a dilution tracer, such as sulfur hexafluoride, is used to directly measure the fraction of spike gas spiked into the sample. This technique can be used instead of mass balance calculations.

Before any testing is started at a given site, an initial "snapshot" of the stack gas is taken with the FTIRS measurement and analysis system to determine the true sample matrix. If any target analytes are present at significantly higher levels than expected, adjustments will be made to the cell pathlength and/or the spectral analysis regions used for quantitative analysis. These adjustments will minimize interferences due to unexpectedly high levels of detected analytes.

FTIRS method performance is gauged from the results of the QA/QC. Acceptable spiking tests will meet Method 301 criteria (i.e., 50 percent relative standard deviation (RSD) and accuracy of within ± 30 percent) or a statistical equivalent when less than 12 spiked/unspiked pairs are collected. The acceptable instrument diagnostic and system response check accuracy will be within ± 5 percent of target. Acceptable system response check precision will be 5 percent RSD.

6.0 QUALITY ASSURANCE/QUALITY CONTROL

Specific Quality Assurance/Quality Control (QA/QC) procedures were strictly followed during this test program to ensure the production of useful and valid data throughout the course of the project. A detailed presentation of QC procedures for all sampling and analysis activities can be found in the Site Specific Test Plan and Quality Assurance Project Plan for this project. This section reports all QC results so that the data quality can be ascertained.

In summary, a high degree of data quality was maintained throughout the project. All train leak checks met the QC criteria as specified in the methods. Isokinetic sampling rates were kept within 10% of 100% for all test runs. Acceptable spike recoveries and close agreement between duplicate analyses were shown for the sample analyses. The data completeness was better than 95%.

6.1 Sampling QC Results

The following sections discuss the QC results of the sampling methods employed during this project.

6.1.1 Leak Checks

Tables 6-1 and 6-2 list the pre- and post-test and port change leak checks results for the chip dryer and furnace tests. The acceptance criterion that all post-test leak checks must be less than 0.02 cfm or 4 percent of the average sampling rate (which ever is less) at the highest vacuum achieved during sampling was met for all test runs.

Table 6-1. Summary of Dioxin/Furan Test Leak Check Results

Location	Run # / Port	Initial Leak Check	Port Change	Final Leak Check
CD Outlet	1/A	0.018@15"	0.01@10"	
CD Outlet	1/B		0.01@10"	0.01@15"
CD Inlet	1/A	0.006@15"	0.008@23"	
CD Inlet	1/B		0.01@23"	0.005@8"
CD Outlet	2/A	0.02@15"	0.01@10"	
CD Outlet	2/B		0.01@10"	0.01@15"
CD Inlet	2/A	0.016@23"	0.016@21"	
CD Inlet	2/B		0.018@18"	0.01@8"
CD Outlet	3/A	0.00@10"	0.01@10"	
CD Outlet	3/B		0.01@10"	0.01@10"
CD Inlet	3/A	0.00@14"	0.00@11"	
CD Inlet	3/B		0.00@11"	0.003@10"
RF Outlet	1/A	0.01@10"	Not Recorded	
RF Outlet	1/B		Not Recorded	0.00@10"
RF Inlet	1/A	0.018@16"	0.008@8"	
RF Inlet	1/B		0.008@8"	0.006@7"
RF Outlet	2/A	0.01@12	Not Recorded	
RF Outlet	2/B		Not Recorded	0.005@11"
RF Inlet	2/A	0.018@15"	0.005@10"	
RF Inlet	2/B		0.005@10"	0.00@10"
RF Outlet	3/A	0.01@11"	Not Recorded	
RF Outlet	3/B		Not Recorded	0.005@5"
RF Inlet	3/A	0.015@11"	0.00@7"	
RF Inlet	3/B		0.00@7"	0.00@6"
RF Outlet	4/A	0.01@10"	0.015@15"	
RF Outlet	4/B		0.015@15"	0.005@10"
RF Inlet	4/A	0.011@10"	0.006@5"	
RF Inlet	4/B		0.006@5"	0.004@8"

Table 6-2. Summary of HCl/PM Test Leak Check Results

Location	Run # / Port	Initial Leak Check	Port Change	Final Leak Check
CD Outlet	1/A	0.01@10"	0.01@10"	
CD Outlet	1/B		0.01@10"	0.01@15"
CD Inlet	1/A	0.011@13"	Not Recorded	
CD Inlet	1/B		Not Recorded	0.00@13"
CD Outlet	2/A	0.01@15"	0.01@10"	
CD Outlet	2/B		0.01@10"	0.01@10"
CD Inlet	2/A	0.01@15"	0.009@7"	
CD Inlet	2/B		0.009@7"	0.007@11"
CD Outlet	3/A	0.01@10"	0.01@10"	
CD Outlet	3/B		0.01@10"	0.01@10"
CD Inlet	3/A	0.005@14"	0.00@6"	
CD Inlet	3/B		0.00@6"	0.0046@8"
RF Outlet	1/A	0.01@10"	0.01@10"	
RF Outlet	1/B		0.01@10"	0.00@12"
RF Inlet	1/A	0.02@15"	0.016@6"	
RF Inlet	1/B		0.016@6"	0.004@8"
RF Outlet	2/A	0.01@9"	Not Recorded	
RF Outlet	2/B		Not Recorded	0.01@10"
RF Inlet	2/A	0.005@10"	0.00@8"	
RF Inlet	2/B		0.00@10"	0.008@8"
RF Outlet	3/A	0.01@10"	Not Recorded	
RF Outlet	3/B		Not Recorded	0.005@10"
RF Inlet	3/A	0.004@10"	0.00@5"	
RF Inlet	3/B		0.00@5"	0.00@5"
RF Outlet	4/A	0.02@12"	0.01@10"	
RF Outlet	4/B		0.01@10"	0.015@12"
RF Inlet	4/A	0.012@9"	0.009@9"	
RF Inlet	4/B		0.009@9"	0.00@7"

6.1.2 Percent Isokinetics

Table 6-3 presents the isokinetic sampling rates percentages for the D/F and HCl/PM sampling runs. The acceptance criteria that the average sampling rate must be within 10% of 100% isokinetic was met for all sampling runs.

Table 6-3. Summary of Isokinetic Percentages

Location/Method	Run #	Percent Isokinetic
CD Inlet D/F	1	97.5
	2	101
	3	98.4
CD Outlet D/F	1	102
	2	98.5
	3	96.9
CD Inlet HCl/PM	1	104
	2	100
	3	101
CD Outlet HCl/PM	1	102
	2	101
	3	103
RF Outlet D/F	1	97.9
	2	98.3
	3	98.5
	4	96.9
RF Inlet D/F	1	101
	2	102
	3	101
	4	101
RF Outlet HCl/PM	1	96
	2	103
	3	103
	4	102
RF Inlet HCl/PM	1	102
	2	102
	3	101
	4	106

6.1.3 Meter Box Calibrations

All dry gas meters are fully calibrated every six months against an EPA approved intermediate standard. The full calibration is used to correct the actual metered sample volume to the true sample volume. To verify the full calibration, a post-test calibration is performed. The full and post-test calibrations must be within 5% to meet ERG's internal QA/QC acceptance criterion. As shown in Table 6-4, the dry gas meters used for this testing met this criterion.

Table 6-4. Dry Gas Meter Post-Test Calibration Results

Sampling Train[1]	Meter Box #	Full Calibration Factor	Post-Test Calibration Factor	Post-Test[2] Deviation, %
D/F CD Outlet	A-38	0.981	0.978	-0.30
D/F CD Inlet	A-40	0.98	0.979	-0.10
HCl CD Outlet	A-37	0.988	0.995	-0.70
HCl CD Inlet	A-39	0.994	0.974	-2.00
D/F RF Outlet	A-37	0.988	0.995	-0.70
D/F RF Inlet	A-39	0.994	0.974	-2.00
HCl RF Outlet	A-38	0.981	0.978	-0.30
HCl RF Inlet	A-40	0.98	0.979	-0.10

[1]CD=Chip Dryer, RF=Reverberatory Furnace

[2]$\frac{\text{Post-Full}}{\text{Full}} \times 100$

6.1.4 Field Blank Results

Field Blanks are collected to determine the level, if any, of sample contamination resulting from the exposure of the sampling train to ambient conditions in the vicinity of the sampling locations or to sample "carry over" from one run to the next. A field blank train for each test method and for each location was assembled as if for sampling, leak checked at the

sampling location, left at the sampling location for the duration of a test run and then recovered. The samples were returned to the laboratory for analysis along with the test samples. The results of the analysis for the Method 26A field blanks are shown in Table 6-5. A small amount of HCl was detected in the Chip Dryer field blank, but represents less than 1% of the amount detected in most of the test samples and less than 5% of that detected in all samples. Because the level of contamination was so low, no blank corrections were made on the emission results. No HCl above the instrument detection limit was detected in the furnace field blanks.

Table 6-5. Method 26A Field Blank Analysis Results, µg Detected

Location	µg HCl Detected
Chip Dryer Inlet	20.0
Chip Dryer Outlet	Not Required
Reverberatory Furnace Inlet	< 14.0
Reverberatory Furnace Outlet	< 14.0

Table 6-6 shows the results of the analysis of the D/F field blanks. The levels detected in the blank are less than 1% of that detected for any congener in the chip dryer inlet samples and less than 1% for most and less than 5% for all detected in the chip dryer outlet samples except for OCDD and OCDF. The levels detected in the furnace inlet field blank were less than 1% for most congeners and less than 5% for all except for 2,3,7,8-TCDD and 1,2,3,7,8-TCDD which were less than 10%. Trace amounts of all but three congeners were detected in the furnace outlet field blank. Of the ones detected all but seven were less than 5 times the detection limit and the others were less than 10 times the detection limit. All but six of the congeners were at levels equivalent to those found in the furnace outlet samples and all were detected at levels less than one nanogram. Since the levels detected were insignificant, no blank correction to the data was performed.

Table 6-6. Method 23 Field Blank Analysis Results, ng Detected

Congener	Chip Dryer Inlet	Furnace Inlet	Furnace Outlet
2,3,7,8 -TCDD	<0.006	0.07	<0.004
1,2,3,7,8-PeCDD	0.04	0.48	0.02
1,2,3,4,7,8-HxCDD	0.02	0.26	<0.01
1,2,3,6,7,8-HxCDD	0.04	0.46	0.02
1,2,3,7,8,9-HxCDD	0.05	0.57	0.03
1,2,3,4,6,7,8-HpCDD	0.12	1.2	<0.09
1,2,3,4,6,7,8,9-OCDD	0.25	0.65	0.16
2,3,7,8-TCDF	0.45	7.6	0.29
1,2,3,7,8-PeCDF	0.14	1.7	0.07
2,3,4,7,8-PeCDF	0.22	2.9	0.12
1,2,3,4,7,8-HxCDF	0.31	6.0	0.23
1,2,3,6,7,8-HxCDF	0.12	2.3	0.09
2,3,4,6,7,8-HxCDF	0.14	2.4	0.12
1,2,3,7,8,9-HxCDF	0.02	0.15	<0.007
1,2,3,4,6,7,8-HpCDF	1.2	6.1	0.43
1,2,3,4,7,8,9-HpCDF	0.17	0.72	<0.05
1,2,3,4,6,7,8,9-OCDF	0.41	1.5	0.31

6.1.5 FTIR Sampling Quality Control

FTIR sampling system quality control procedures used in this test program were:

- Sampling system leak check;
- Dynamic spiking (also analytical quality control); and
- Monitoring of all pertinent system temperatures and flow rates.

Sampling system leak checks were carried out before and after each run. The leak check procedure used is identical to that given in EPA Method 320. The sample gas inlet to the probe was covered and the total sample flow rate rotameter was monitored to observe zero flow (i.e., indicator ball sits on bottom of scale). In all cases in this program, the system passed both before and after run leak checks for all runs performed.

Dynamic spiking was carried out to test the complete FTIR sampling and analysis system. Spiking was carried out twice daily on both inlet and outlet for HCl, and three EPA Method 301 validation tests were carried out. The Method 301 tests were carried out on the following locations:

- Chip dryer outlet;
- Furnace hood inlet; and
- outlet.

Method 301 validation results are given in Section 2.5.2.1. Daily spiking results are given below in Section 6.2.4.

To insure that the sampling system was performing correctly during all measurement operations, selected temperatures and flows were monitored during each run. Temperature data were recorded every 15 minutes on a data sheet. Sample flows were monitored but not recorded. The following data were monitored or recorded:

- Inlet/outlet stack temperature;
- Inlet/outlet probe temperature;
- Inlet/outlet filter temperature;
- Inlet/outlet heat-traced sample line temperature;
- Inlet/outlet main sample pump head temperature;

- FTIR sample pump head temperature;
- Sample pump enclosure temperature;
- Sample manifold temperature;
- Controller electronics box temperature;
- Heated sample line jumper temperature(2);
- Main sample flow rate;
- FTIR sample flow rate; and
- Excess sample flow rate.

FTIR cell temperature was controlled at 185°C sample gas temperature (not cell wall temperature), and cell pressure was recorded. No unusual readings of any parameter were found during testing.

6.2 Analytical Quality Control Results

6.2.1 D/F Analytical Quality Control

All quality control procedures specified in the test method were followed. Blanks were used to determine analytical contamination, calibration standards were used for instrument calibration and linearity checks, internal standards were used to determine isomer recoveries and adjust response factors for matrix effects, surrogate standards were used to measure the collection efficiency of the sampling methodology and an alternate standard was used as a column efficiency check.

6.2.1.1 D/F Quality Control Blanks

Reagent blanks of 500 mL of each liquid reagent used at the test site were saved for analysis. Each reagent blank was of the same lot as was used during the sampling program.

Each lot number and reagent grade was recorded on the field blank label and in the laboratory notebook (acetone, methylene chloride, toluene, filter, XAD-2®). Two reagent blanks were collected in the field. The analysis results showed the absence of any analytes, at the detection limit, for approximately half of the congeners with the remaining being detected at less than 5 times the detection limit. These insignificant amounts are most likely due to laboratory contamination.

6.2.1.2 Quality Control Standards

Recoveries of the internal standards must be between 40 to 130% for the tetra- through hexachlorinated compounds and in the range of 25 to 130% for the hepta- and octachlorinated homologs. These requirements were met for all of the D/F samples except for the following: chip dryer inlet Run 1, isotopically labeled HpCDD (134%).

Surrogate standard recoveries must be between 70 to 130%. The recoveries of all standards met this requirement except for the following: isotopically labeled HxCDD for chip dryer outlet run 1 (158%), chip dryer outlet run 2 (137%) and chip dryer outlet run 3 (142%). These % recoveries were all just outside of the recovery limits and will not have an effect on the analysis results.

6.2.2 HCl Analytical Quality Control

The IC is calibrated with a minimum of three concentrations, not including zero. A correlation coefficient of greater than or equal to 0.995 must be achieved to have an acceptable calibration. At least 10 percent of the total number of samples are analyzed in duplicate. Ion concentrations in the duplicates must agree to within ± 20 percent. All QC results were within the acceptance criteria

Reagent blanks were collected in the field and returned to the laboratory for analysis. HCl, as Cl^{-1}, was not detected in any of the blanks at the detection limit.

Every sample was analyzed in duplicated with the relative percent difference for every sample duplicate less than 5.

A matrix spike and matrix spike duplicate analysis was performed on the chip dryer outlet run 1 sample. The percent recoveries were 106 and 104, respectively.

6.2.3 Quality Control for Gravimetric Procedures

All quality control procedures specified in the test method are followed. All field reagent blanks were processed and analyzed as specified in the test method. Prior to each gravimetric determination, the balance calibration was verified using a series of certified weights covering the range of weights encountered for the samples.

6.2.4 FTIR Analytical Quality Control

Dynamic analyte spiking was used for quality control/quality assurance of the complete sampling and analysis system. Dynamic spiking is continuous spiking of the sample gas to provide information on system response, sample matrix effects, and potential sampling system biases. Spiking was accomplished by direct introduction of a certified gas standard.

Gaseous spiking was carried out by metering the spike gas into the sample stream at a known rate. A sulfur hexafluoride dilution tracer was used to directly measure the fraction of spike gas spiked into the sample. EPA Method 320 limits the dilution of the sample gas to 10 percent.

Before any testing was started at a given site, an initial "snapshot" of the stack gas is taken with the FTIR measurement and analysis system to determine the true sample matrix. If any target analytes are present at significantly higher levels than expected, adjustments were made to the cell pathlength and/or the spectral analysis regions used for quantitative analysis. These adjustments minimized interferences due to unexpectedly high levels of detected analytes.

FTIR method performance is gauged from the results of the QA/QC. All spiking tests met Method 301 criteria (i.e., 50 percent relative standard deviation (RSD) and accuracy of within ± 30 percent). The acceptable instrument diagnostic and system response check accuracy will be within ± 6 percent of target.

Analytical QC checks for the FTIR system consisted of the following:

- Dynamic spiking of HCl;
- direct measurement of a HCl gas standard;
- direct measurement of a CO gas standard; and
- direct measurement of a CH_4, NO_x, and CO_2 standard.

Dynamic spiking runs were conducted twice daily: before and after testing. Three spiked/unspiked data pairs were collected. Statistical calculations consistent with EPA Method 301 were performed on the data. Recovery of 70-130 percent and less than 50 percent RSD were the acceptance criteria. Table 6-6 summarizes the dynamic spiking results. All dynamic spiking tests met the above acceptance criteria. In all runs, sample gas was diluted 10 percent or less.

Direct instrumental measurement of HCl, CO, and a CH_4, NO_x and CO_2 mixture was conducted before and after daily testing activities. Acceptance criteria are normally ±6 percent of target, using EPA protocol gases. However, since the HCl standard was obtained at a ±5 percent analytical tolerance, the acceptance criteria was set at ±10 percent. FTIR NO_x is measured as NO + NO_2. Examination of Tables 6-7 through 6-9 shows that all QC checks met the above criteria.

Table 6-6. QC Spiking Results

Run	Date	Time	Inlet/outlet	% Recovery
1	12/5/97	AM	outlet	97.61
1	12/5/97	AM	inlet	112.85
2	12/5/97	PM	outlet	102.62
2	12/5/97	PM	inlet	98.09
3	12/6/97	AM	inlet	93.71
3	12/6/97	AM	outlet	101.91
4	12/6/97	PM	outlet	105.34
5	12/6/97	PM	inlet	103.53
6	12/8/97	AM	outlet	99.97
6	12/8/97	AM	inlet	96.34
7	12/8/97	PM	outlet	95.40
7	12/8/97	PM	inlet	89.50
8	12/9/97	AM	inlet	94.54
8	12/9/97	AM	outlet	100.85
9	12/9/97	PM	inlet	106.45
9	12/9/97	PM	outlet	103.16
10	12/10/97	AM	inlet	96.21
10	12/10/97	AM	outlet	103.44
11	12/10/97	PM	inlet	104.00
12	12/10/97	PM	outlet	110.78
13	12/11/97	AM	inlet	101.36
13	12/11/97	AM	outlet	102.84
14	12/11/97	PM	inlet	107.16
14	12/11/97	PM	outlet	118.67

Sample gas dilution was held to 10 percent or less in all runs.

Table 6-7. HCl Gas Standard Analysis Results

Date	Time	Result(ppm)	%Recovery	Comments
12/3/97	9:38:24	219.7	104.6	
12/3/97	14:52:23	222.0	105.7	
12/4/97	7:26:33	217.3	103.5	no testing on 12/4/97
12/5/97	7:27:29	220.5	105.0	
12/5/97	15:45:50	223.1	106.3	
12/6/97	7:04:56	224.5	106.9	
12/6/97	14:13:21	222.9	106.1	
12/6/97	21:16:03	218.8	104.2	
12/7/97	12:25:31	216.3	103.0	
12/7/97	20:15:53	217.0	103.3	
12/8/97	8:21:37	221.7	105.6	
12/8/97	16:41:13	218.3	104.0	
12/9/97	8:27:25	222.1	105.8	
12/9/97	19:32:06	221.2	105.3	
12/10/97	10:42:01	215.3	102.5	
12/10/97	18:11:01	221.4	105.4	
12/11/97	4:54:59	221.0	105.2	
12/11/97	13:41:01	212.9	101.4	

HCl Target: 210 ppm
Gas Standard Accuracy: ±5 percent
Acceptance Criteria: ±10 percent of target

Table 6-8. CO Gas Standard Analysis Results

Date	Time	Result(ppm)	%Recovery	Comments
12/3/97	9:32:55	103.0	100.6	
12/3/97	14:47:42	103.2	100.8	
12/4/97	7:21:45	101.8	99.5	no testing on 12/4/97
12/5/97	7:23:00	102.5	100.2	
12/5/97	15:38:26	103.5	101.2	
12/6/97	7:02:07	104.0	101.7	
12/6/97	21:13:08	102.3	100.0	
12/7/97	12:21:32	100.8	98.6	
12/7/97	20:12:12	100.8	98.5	
12/8/97	8:18:46	103.5	101.2	
12/8/97	16:37:33	101.5	99.2	
12/9/97	8:21:25	101.2	99.0	
12/9/97	19:28:43	102.8	100.4	
12/10/97	10:39:04	101.3	99.0	
12/10/97	18:08:03	102.9	100.6	
12/11/97	4:53:14	104.2	101.9	
12/11/97	13:38:05	99.9	97.6	

CO Target: 102.3 ppm
Gas Standard Accuracy: ±1 percent
Acceptance Criteria: ±6 percent of target

Table 6-9. CH_4, NO_x, and CO_2 Gas Standard Analysis Results

Date	Time	CH_4 Result (ppm)	CH_4 %Recovery	No_x Result (ppm)	No_x %Recovery	NO Result (ppm)	NO_2 Result (ppm)	CO_2 Result(%)	CO_2 %Recovery	Comments
12/3/97	9:28:22	488.0	99.4	503.3	100.1	463.8	39.4	4.88	97.8	
12/3/97	14:40:13	488.4	99.5	500.0	99.4	499.6	0.4	4.74	95.1	
12/4/97	7:17:04	485.0	98.8	492.5	97.9	492.1	0.3	4.73	94.8	no testing on 12/4/97
12/5/97	7:15:23	488.3	99.5	498.9	99.2	498.9	0.0	4.88	97.9	
12/5/97	15:34:43	492.4	100.3	503.3	100.1	503.3	0.0	4.81	96.4	
12/6/97	6:58:08	491.6	100.1	505.9	100.6	505.9	0.0	4.85	97.2	
12/6/97	21:09:53	489.7	99.7	493.9	98.2	493.9	0.0	4.93	98.7	
12/7/97	12:15:26	490.7	99.9	492.3	97.9	492.3	0.0	4.97	99.5	
12/7/97	20:09:07	485.9	99.0	487.6	96.9	487.6	0.0	4.69	94.0	
12/8/97	8:14:50	491.0	100.0	499.8	99.4	499.8	0.0	4.97	99.6	
12/8/97	16:31:29	489.2	99.6	492.5	97.9	492.5	0.0	4.93	98.9	
12/9/97	8:17:58	485.0	98.8	488.9	97.2	488.9	0.0	4.83	96.9	
12/9/97	19:25:11	486.7	99.1	498.5	99.1	498.5	0.0	4.76	95.5	
12/10/97	10:37:01	482.6	98.3	492.4	97.9	492.4	0.0	4.73	94.8	
12/10/97	18:06:04	485.9	99.0	496.2	98.6	496.2	0.0	4.67	93.5	
12/11/97	4:51:19	489.4	99.7	503.4	100.1	503.4	0.0	4.86	97.4	
12/11/97	13:36:01	488.7	99.5	472.6	94.0	472.6	0.0	4.84	97.0	

CH_4 Target= 491ppm
NO_x Target= 503 ppm
CO_2 Target= 4.99%
Gas Standard Accuracy: ±1 percent
Acceptance Criteria: ±6 percent of target

Appendix A

Field Data Sheets

Facility:	Culp Alum. Alloy
Date:	12/05/97
Location:	Dryer In
Run Number:	1
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.39
Absolute Stack Pressure (in Hg)	29.02
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	244.13
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	70.339
Average Meter Pressure (in H2O)	0.24
Average Meter Temperature (°F)	60.00
Moisture Collected (g)	110.10
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.131
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.291
Standard Metered Volume (dscf)	69.785
Standard Metered Volume (dscm)	1.976
Stack Moisture (%V)	6.92
Mole Fraction Dry Stack Gas	0.931
Dry Molecular Weight	28.88
Wet Molecular Weight	28.13
Stack Gas Velocity (fpm)	4428.45
Stack Gas Velocity (mpm)	1349.79
Volumetric Flow Rate (acfm)	7396.99
Volumetric Flow Rate (acmm)	209.48
Volumetric Flow Rate (dscfm)	5007.09
Volumetric Flow Rate (dscmm)	141.80
Percent Isokinetic	103.63
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

Run 1

MODIFIED METHOD 5 DATA SHEET

Run Dia-HCl-01
Page 1 of ____

Plant	Culp	XAD Trap Number	NA	Meter Box Number	A-39
Date	12-5-97	Filter Heater Setting (°F)	250	Meter delta H @	1.72
Operator	MAO	Probe Length & Type	4' Glass	DGM Factor (Y)	.994
Sampling Location	Dryer Baghouse in	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	.131
Sample Type	HCl	Minimum Sample Volume (ft3)	NA	Ambient Temperature (°F)	45
Run Number	1	Initial Leak Check	0 1/2 @ 13"	Assumed Moisture (% H2O)	0.7
Static Pressure (±) (in. H2O)	~~-4~~ -5.0	Final Leak Check	0 @ 17"	K-Factor	.97
Barometric Pressure (in. H2O)	29.39				

O_2: 20
CO_2: 5

Diagram of Duct

Schematic of Traverse Point Layout

Filter # 112097.2

27.161

Read and record all data every 5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1020	~~26.552~~											
A 1	5	1025	28.72	1.4	236	NA	.27	250	~~247~~	NA	55	53	47	2
	10	1030	30.34	1.4	239		.27	248	249		62	53	46	1.5
	15	1035	31.87	1.4	241		.27	249	244		62	53	46	1.5
2	20	1040	33.34	1.3	238		.25	249	255		63	54	45	1.5
	25	1045	34.83	1.3	239		.25	251	254		63	54	46	1.5
	30	1050	36.33	1.3	235		.25	252	249		63	54	46	1.5
3	35	1055	37.85	1.4	234		.27	250	~~251~~		63	54	47	1.5
	40	1100	39.31	1.4	239		.27	252	250		63	54	47	1.5
	45	1105	40.72	1.2	240		.23	252	254		63	54	47	1.5
4	50	1110	42.14	1.2	239		.23	253	251		63	54	48	1.5
	55	1115	43.49	1.2	237		.23	254	252		63	54	48	1.5
	60	1120	44.8	1.2	237		.23	253	251		64	55	49	1.5
5	65	1125	46.29	1.2	238		.23	254	252		64	55	49	1.5
	70	1130	47.74	1.2	237		.23	253	251		64	55	49	1.5
	75	1135	49.12	1.2	236		.23	253	250		64	55	49	1.5
6	80	1140	50.78	1.5	238		.29	255	256		62	55	50	1.5
	85	1145	52.38	1.5	238		.29	254	252		62	54	50	1.5
	90	1150	54.05	1.5	238		.29	248	252		62	53	51	1.5
7	95	1155	55.73	1.6	237		.31	249	251		60	57	50	1.5
	100	1200	57.28	1.6	238		.31	251	247		60	57	50	1.5
	105	1205	58.93	1.5	235		.29	250	249		60	57	50	1.5
8	110	1210	60.55	1.5	236		.29	251	247		61	56	52	1.5
	115	1215	62.1	1.5	238		.29	250	249		61	56	52	1.5
	120	1220	63.881	1.5	238		.29	251	248		61	56	52	1.5

Comments:

Plant	Culp	Location	Dryer baghouse inlet	Run Number	1
Date	12-5-97	Sample Type	HCl	Operator	MLAD

5ft Vol = 64.185

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	120	1240	~~63.800~~											
B 1	125	1245	65.54	1.05	234	NA	.2	242	251	NA	63	55	51	1.5
	130	1250	66.82	1.0	236		.195	249	248		63	52	51	1.5
	135	1255	68.16	.97	236		.19	253	251		63	51	54	1.5
2	140	1300	69.45	.95	235		.18	251	254		63	57	55	1.5
	145	1305	70.76	.96	235		.18	251	255		63	57	55	1.5
	150	1310	72.16	1.1	230		.21	250	251		65	57	56	1.5
3	155	1315	73.65	1.1	232		.21	254	254		64	58	56	1.5
	160	1320	75.14	1.1	241		.21	255	259		64	58	57	1.5
	165	1325	76.4	1.1	234		.21	256	250		64	58	57	1.5
4	170	1330	77.67	1.1	240		.21	254	249		64	57	55	1.5
	175	1335	79.04	1.1	240		.21	253	251		64	59	56	1.5
	180	1340	80.42	1.1	240		.21	254	250		64	59	52	1.5
5	185	1345	81.75	1.1	236		.21	253	257		64	59	55	1.5
	190	1350	83.01	1.1	236		.21	253	254		65	59	53	1.5
	195	1355	84.44	1.0	236		.19	256	252		65	59	53	1.5
6	200	1400	85.88	1.3	238		.25	254	261		66	59	53	1.5
	205	1405	87.35	1.2	237		.23	253	260		66	55	53	1.5
	210	1410	88.83	1.3	238		.25	254	257		66	60	54	1.5
7	215	1415	90.23	1.2	238		.23	253	254		66	60	54	1.5
	220	1420	91.63	1.2	238		.23	254	253		66	60	52	1.5
	225	1425	93.06	1.2	238		.23	253	256		66	60	52	1.5
8	230	1430	94.6	1.4	235		.27	251	258		66	60	52	1.5
	235	1435	96.23	1.4	235		.27	251	256		66	60	52	1.5
	240	1440	97.804	1.4	236		.27	251	253		66	60	52	1.5
							Leak	V = 0.00	10@13"					

Comments:

Research Group, Inc.

CDB IN

MOISTURE RECOVERY FORM FOR METHOD 4 26A

~~Run 2~~

RUN 1

Plant	Cudo Aluminum Alloys
Date	
Sampling Location	Chip Dryer Baghouse Inlet
Sample Type	Method 26A
Run Number	~~2~~
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gutkin
Recovery Rinses	
Sample Identification	
Filter Number	112097-2
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	659.3 ~~621.6~~ CB	594.9 480.0	64.4
2	0.1N H_2SO_4	100 mls	Greensburg Smith	621.6	590.3 467.1	31.3
3	0.1N NaOH	100 mls	Modified Greensburg Smith	598.0	594.2 477.5	3.8
4	0.1N NaOH	100 mls	Modified Greensburg Smith	550.1 558.9	~~595~~ 486.5	Less -45.8
5	Silica Gel	200-300g	Modified Greensburg Smith	802.6	746.2 460.7	56.4
6						
7						
					Total Weight Gain (g)	110.1 ~~109.1~~

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer In
Run Number:	2
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.51
Absolute Stack Pressure (in Hg)	29.14
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	238.46
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	74.692
Average Meter Pressure (in H2O)	1.22
Average Meter Temperature (°F)	47.94
Moisture Collected (g)	60.70
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.130
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.318
Standard Metered Volume (dscf)	76.206
Standard Metered Volume (dscm)	2.158
Stack Moisture (%V)	3.62
Mole Fraction Dry Stack Gas	0.964
Dry Molecular Weight	28.88
Wet Molecular Weight	28.49
Stack Gas Velocity (fpm)	4833.21
Stack Gas Velocity (mpm)	1473.16
Volumetric Flow Rate (acfm)	8073.08
Volumetric Flow Rate (acmm)	228.63
Volumetric Flow Rate (dscfm)	5728.25
Volumetric Flow Rate (dscmm)	162.22
Percent Isokinetic	100.45
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run 02
Page 1 of 2

Plant	Clulp	Aluminum	XAD Trap Number	N/A	Meter Box Number	A-39	
Date		12-6-97	Filter Heater Setting (°F)	250	Meter delta H @	1.72	
Operator		MAD	Probe Length & Type	4' Glass	DGM Factor (Y)	.994	
Sampling Location	Dryer baghouse in		Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	.130	
Sample Type		HCl	Minimum Sample Volume (ft3)	NA	Ambient Temperature (°F)	36	
Run Number		02	Initial Leak Check	.010@15"	Assumed Moisture (% H2O)	6.5	
Static Pressure (±) (in. H2O)		-.5	Final Leak Check	.007@11"	K-Factor		
Barometric Pressure (in. H2O)		29.51					

Schematic of Traverse Point Layout

Diagram of Duct

$O_2 = 20$
$CO_2 = 0.5$

Read and record all data every 5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0834	0.379											
B 1	5	0839	1.605	1.3	240	NA	.24	251	248	NA	46	42	36	1.5
	10	0844	3.08	1.3	239		.24	255	247		50	42	36	1.5
	15	0849	4.525	1.3	238		.24	254	246		49	42	36	1.5
2	20	0854	5.99	1.4	239		.26	251	244		49	42	36	1.5
	25	0859	7.42	1.4	238		.26	251	244		49	42	36	1.5
	30	0904	8.89	1.4	238		.26	251	246		49	42	36	1.5
3	35	0909	10.35	1.3	237		.24	252	247		48	42	36	1.5
	40	0914	11.77	1.3	239		.24	253	253		48	42	36	1.5
	45	0919	13.2	1.3	239		.24	256	280		48	42	36	1.5
4	50	0924	14.84	1.6	237		.3	254	254		47	42	36	1.5
	55	0929	16.41	1.6	237		.3	255	253		47	42	38	1.5
	60	0934	17.98	1.6	237		.3	254	256		47	42	38	2
5	65	0939	19.64	1.7	234		.32	249	257		47	42	38	2
	70	0944	21.27	1.7	235		.32	248	254		47	42	38	2
	75	0949	22.9	1.7	236		.32	247	253		49	42	38	2
6	80	0954	24.66	1.8	236		.34	248	254		47	42	38	2
	85	0959	26.43	2.0	236		.38	247	255		50	42	38	2
	90	1004	28.09	1.8	236		.34	252	256		50	42	38	2
7	95	1009	29.96	2.1	237		.4	251	257		50	42	39	2
	100	1014	31.84	2.1	237		.4	253	254		50	42	39	2
	105	1019	33.63	2.0	238		.38	254	256		50	42	39	2
8	110	1024	35.43	2.0	240		.38	253	252		50	42	39	2
	115	1029	37.23	2.0	240		.38	250	255		50	42	39	2
	120	1034	39.195	2.0	240		.38	250	248		50	42	39	2
				LEAK CK .009 @ 7"										

Comments:

Plant	Pulp	Location	Dryer baghouse inlet	Run Number	9
Date	12-6-97	Sample Type	Air	Operator	MAD

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
A	0	1120	39.548											
A 1	5	1125	41.13	1.6	240	NA	.3	246	243	NA	43	42	38	2
	10	1130	42.73	1.6	240		.3	249	253		43	42	37	2
	15	1135	44.30	1.6	240		.3	249	256		43	42	37	2
2	20	1140	45.87	1.6	240		.3	251	253		43	42	39	2
	25	1145	47.53	1.6	241		.3	253	251		43	42	37	2
	30	1150	49.06	1.6	240		.3	253	252		48	45	39	2
3	35	1155	50.65	1.6	238		.28	250	247		51	46	40	2
	40	1200	52.20	1.5	237		.28	253	249		51	46	40	2
	45	1205	53.88	1.5	238		.28	253	253		54	48	40	2
4	50	1210	55.24	1.2	238		.23	254	251		54	48	41	2
	55	1215	56.68	1.2	240		.23	253	251		56	49	41	2
	60	1220	58.06	1.2	240		.23	252	250		56	49	41	2
5	65	1225	59.46	1.2	240		.23	256	248		58	51	41	2
	70	1230	60.87	1.3	240		.25	254	247		58	51	42	2
	75	1235	62.31	1.3	240		.25	251	248		58	51	42	2
6	80	1240	63.83	1.3	240		.25	252	247		57	51	43	2
	85	1245	65.49	1.3	240		.25	252	246		57	51	43	2
	90	1250	67.01	1.3	241		.25	253	247		57	51	43	2
7	95	1255	68.56	1.3	240		.25	254	249		57	51	43	2
	100	1300	69.85	1.2	238		.23	253	247		57	51	43	2
	105	1305	71.32	1.2	237		.23	254	249		57	51	43	2
8	110	1310	72.76	1.2	239		.23	253	247		58	51	43	2
	115	1315	74.08	1.2	240		.23	254	247		56	51	44	2
	120	1320	75.484	1.2	240		.23	256	245		58	51	44	2
				1.604 in .007 @ 11 "Hg										

Comments:

Eastern Research Group, Inc.

CDBI

MOISTURE RECOVERY FORM FOR METHOD 4

Run 2

Plant	Cudo Aluminum Alloys
Date	12-6-97
Sampling Location	Inlet Chip Dryer Run 2
Sample Type	Method 23A
Run Number	
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	~~120977-7~~ 111897-30
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	655.5	614.0 506.2	41.5
2	0.1N H_2SO_4	100 mls	Greensburg Smith	585.0	578.6 467.7	6.4
3	0.1 N NaOH	100 mls	Modified Greensburg Smith	594.0	592.4 474.0	1.6
4	0.1N NaOH	100 mls	Modified Greensburg Smith	624.3	624.3 498.7	0
5	Silica Gel	200-300g	Modified Greensburg Smith	778.9	767.7	11.2
6						
7						
			Total Weight Gain (g)			60.7

119(?)

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer In
Run Number:	3
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.51
Absolute Stack Pressure (in Hg)	29.14
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	235.63
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	77.350
Average Meter Pressure (in H2O)	1.11
Average Meter Temperature (°F)	51.47
Moisture Collected (g)	136.80
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	80.0
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.140
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.326
Standard Metered Volume (dscf)	78.344
Standard Metered Volume (dscm)	2.219
Stack Moisture (%V)	7.61
Mole Fraction Dry Stack Gas	0.924
Dry Molecular Weight	28.80
Wet Molecular Weight	27.98
Stack Gas Velocity (fpm)	4426.55
Stack Gas Velocity (mpm)	1349.21
Volumetric Flow Rate (acfm)	7393.83
Volumetric Flow Rate (acmm)	209.39
Volumetric Flow Rate (dscfm)	5049.75
Volumetric Flow Rate (dscmm)	143.01
Percent Isokinetic	101.01
Percent Excess Air	1760.56
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run 3
Page 1 of 2

Plant	Culp Aluminum	XAD Trap Number	NA	Meter Box Number	A-39
Date	12-6-97	Filter Heater Setting (°F)	250	Meter delta H @	1.72
Operator	MMD	Probe Length & Type	4' Glass	DGM Factor (Y)	.994
Sampling Location	Dryer baghouse inlet	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	.190 @ 140
Sample Type	Wet	Minimum Sample Volume (ft3)	NA	Ambient Temperature (°F)	46
Run Number	3	Initial Leak Check	.005 @ 14"	Assumed Moisture (% H2O)	.075
Static Pressure (±) (in. H2O)		Final Leak Check	.004 @ 8"	K-Factor	.27
Barometric Pressure (in. H2O)					

Diagram of Duct

Schematic of Traverse Point Layout

O_2 = 20
CO_2 = 0

Read and record all data every 5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0 0	1545	76.072											
A 1	7.5	1555.5	78.65	1.4	240	NA	35	253	251	140	52	50	40	1.5
	15	1600	81.27	1.4	236		.35	254	252		52	50	40	1.5
2	22.5	1607.5	83.5	1.4	237		.35	255	252		52	50	40	1.5
	30	1615	86.01	1.4	236		.35	254	256		52	50	40	1.5
3	37.5	1622.5	88.38	1.2	227		.3	252	249		52	50	40	1.5
	45	1630	90.89	1.2	237		.3	251	247		52	50	40	1.5
4	52.5	1637.5	93.25	1.2	238		.3	252	246		52	50	40	1.5
	60	1645	95.7	1.2	238		.3	252	246		54	49	41	1.5
5	67.5	1652.5	98.08	1.2	233		.3	251	247		54	48	41	1.5
	76	1700	100.55	1.2	230		.3	254	249		54	48	41	2
6	82.5	1707.5	103.12	1.3	227		.33	253	245		54	48	41	2
	90	1715	105.47	1.3	228		.33	254	246		58	49	42	2
7	97.5	1722.5	107.92	1.2	227		.3	255	247		58	49	42	2
	105	1730	110.38	1.2	229		.3	254	249		58	49	42	2
8	112.5	1737.5	112.78	1.2	234		.3	256	250		58	49	42	2
	120	1745	115.265	1.2	232		.3	253	252		58	49	42	2
	120	1803	115.442				LEAK ✓ = 0.000 @ 16"							
BB	127.5	1810.5	117.54	.95	236		.24	256	247		53	48	39	2
	135	1818	119.79	.97	238		.25	254	249		55	47	39	2
2	142.5	1825.5	121.95	.97	238		.25	260	254		55	47	39	2
	150	1833	124.15	.97	239		.25	258	251		55	47	39	2
3	157.5	1840.5	126.37	1.2	238		.3	256	249		55	47	39	2
	165	1848	128.56	1.2	237		.3	254	249		55	47	39	2
4	172.5	1855.5	131.10	1.1	230		.285	268	252		55	44	39	2
	180	1903	133.13	1.1	232		.295	263	257		55	48	40	2
5	187.5	1910.5	135.53	1.2	240		.3	265	243		55	47	40	2
	195	1918	137.98	1.2	238	✓	.3	268	247	✓	56	49	40	2
6	202.5	1926.5	140.53	1.4	234		.326	270	248		56	48	41	2

Comments:

Plant	Culp	Location	Dryer baghouse outlet	Run Number	03
Date	12-6-97	Sample Type	Gas	Operator	MAO

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	202.5	1925.5	140.58											
B6	210	1933	143.10	1.4	236	NO	.36	267	247	NA	56	47	40	2
B7	217.5	1940.5	145.77	1.5	240		.39	264	247		55	47	41	2
	225	1948	148.45	1.4	240		.36	258	250		55	47	41	2
B8	232.5	1955.5	150.87	1.5	240		.39	253	249		55	47	41	3
	240	2003	153.599	2.8	240		.39	247	249		55	47	41	3
						.046	8" H							

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Run 2 Inlet

Plant	Cudp Aluminum Alloys
Date	
Sampling Location	Chip Dryer Inlet
Sample Type	Method 2loA
Run Number	
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	Run 3, Inlet Chip Dryer
Filter Number	111897-23
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	724.1	623.0 508.5	101.1
2	0.1N H_2SO_4	100 mls	Greensburg Smith	596.4	579.0 471.0	17.4
3	0.1N NaOH	100 mls	Modified Greensburg Smith	594.8	591.0 476.0	3.8
4	0.1N NaOH	100 mls	Modified Greensburg Smith	628.8	627.7 502.0	1.1
5	Silica Gel	200-300g	Modified Greensburg Smith	770.3	756.9	13.4
6						
7						
			Total Weight Gain (g)			136.8

Facility:	Culp Alum. Alloy
Date:	12/05/97
Location:	Dryer In
Run Number:	1
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.39
Absolute Stack Pressure (in Hg)	29.02
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	236.29
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	157.093
Average Meter Pressure (in H2O)	1.36
Average Meter Temperature (°F)	58.28
Moisture Collected (g)	216.90
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.192
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.644
Standard Metered Volume (dscf)	154.653
Standard Metered Volume (dscm)	4.380
Stack Moisture (%V)	6.20
Mole Fraction Dry Stack Gas	0.938
Dry Molecular Weight	28.88
Wet Molecular Weight	28.21
Stack Gas Velocity (fpm)	4765.28
Stack Gas Velocity (mpm)	1452.46
Volumetric Flow Rate (acfm)	7959.61
Volumetric Flow Rate (acmm)	225.42
Volumetric Flow Rate (dscfm)	5490.84
Volumetric Flow Rate (dscmm)	155.50
Percent Isokinetic	97.50
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run In-01 MM5
Page 1 of 2

Plant	CAA	XAD Trap Number		Meter Box Number	A40
Date	12/5/97 12/4/97	Filter Heater Setting (°F)	248±25	Meter delta H @	1.784
Operator	DOERLE	Probe Length & Type	4' G/Glass	DGM Factor (Y)	.980
Sampling Location	Dryer Inlet	Probe Heater Setting (°F)	248±25	Nozzle Type & ID (in.)	.192
Sample Type	MM5	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	~~50~~ 40
Run Number	1	Initial Leak Check	0.004@15	Assumed Moisture (% H2O)	8.5
Static Pressure (±) (in. H2O)	-5	Final Leak Check	0.004@13"	K-Factor	
Barometric Pressure (in. H2O)	29.~~39~~				

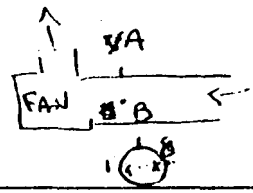


Diagram of Duct

K = .9801 .192 @B6

BS. 262

Schematic of Traverse Point Layout

O_2 = 20
CO_2 = .5

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	802	~~85.658~~											
B-8	5	807	88.6	1.9	217	1.8		240	239	40	55	45	38	5
8	10	812	91.98	1.9	241	1.9		228	239	40	57	45	38	6
8	15	817	95.78	1.8	216	1.8		225	235	40	62	46	38	6
B-7	20	822	99.29	1.7	214	1.7		235	239	40	63	47	40	6
7	25	827	103.0	1.7	219	1.7		245	241	41	63	47	40	7
7	30	832	106.59	1.7	219	1.7		242	243	41	63	47	41	7
B 6	35	837	110.5	2.1	236	1.9		248	244	41	63	48	43	11
6	40	842	114.6	2.1	236	1.9		257	250	41	62	48	43	11
6	45	847	117.76	2.1	237	1.9		252	249	42	62	48	43	12
B5	46	848	119.158	2.1		1.9	Stop -	Ice from maintenance						
B1	51	~~1021~~ 1026	123.1	2.0	237	1.8		260	252	40	60	48	38	11
B1	56	1031	126.8	2.0	238	1.8		266	252	41	67	49	38	13
B1	61	1036	130.47	1.9	237	1.7		256	256	39	64	50	38	15
B2	66	1041	134.08	1.8	239	1.6		244	240 252	40	64	50	40	16
2	71	1046	137.69	1.7	238	1.6		256	254	40	62	51	41	18
2	76	1051	141.34	1.7	240	1.6		258	256	41	60	51	43	20
B3	81	1056	144.911	1.7	238	1.6		253	260	43	58	51	44	21
3	Change Filters		Leak V=	0.008@23" Hg post										
3			Leak √ =	0.010@23" Hg pre										
	81	1111	145.537	Restart	1111									
B3	86	1116	149.19	1.9	241	1.7		246	237	43	66	50	42	7
3	91	1121	152.85	1.9	238	1.7		249	248	44	68	51	41	8
B4	96	1126	156.116	1.5	240	1.4		230	261	43	69	51	42	8
4	101	1131	159.48	1.4	240	1.3		255	256	42	68	52	44	8
4	106	1136	162.70	1.4	242	1.3		259	256	43	69	52	41	9
B5	111	1141	166.10	1.4	237	1.3		252	259	41	69	53	40	10
B5	116	1146	169.24	1.4	238	1.3		232	260	43	67	53	40	11
B5	120	1150	171.880	1.4	233	1.3		231	253	42	64	53	40	12

Comments:

LEAK V = 0.004 @ 13"

Plant	Cliffs AL, AL	Location	Dryer Inlet	Run Number	1
Date	12/5/97	Sample Type	M23	Operator	[illegible]

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
A-1	120/125	1240/1245	172.148	1.5	234	1.4		230	252	41	65	52	37	7
1	130	1250	175.95	1.4	238	1.3		244	262	43	67	53	40	8
1	135	1255	178.83	1.4	238	1.3		255	262	42	67	53	40	9
			182.05											
A2	140	1300	185.33	1.4	233	1.3		257	263	41	67	53	42	11
2	145	1305	188.77	1.5	235	1.4		255	258	43	67	54	42	13
2	150	1310	192.03	1.4	240	1.3		257	263	43	66	54	43	13
A 3	155	1315	195.22	1.3	239	1.2		260	262	44	67	54	45	15
3	160	1320	198.33	1.3	240	1.2		261	265	43	67	54	42	15
3	165	1325	201.39	1.3	239	1.2		259	260	42	66	55	43	16
A 4	170	1330	204.4	1.1	239	1.0		262	264	43	64	55	42	16
4	175	1335	207.3	1.1	237	1.0		246	266	43	64	55	42	17
4	180	1340	210.17	1.1	240	1.0		262	264	43	64	55	43	17
A 5	185	1345	212.9	.96	237	.88		248	257	44	62	55	43	17
5	190	1350	215.64	.96	231	.88		251	260	44	62	55	44	18
5	195	1355	218.42	.95	232	.87		254	259	44	61	55	43	19
A 6	200	1400	121.103	1.0	233	.92		255	259	43	60	55	43	20
~~6~~	~~210~~	~~1405~~				CHK V = 0.010 @ 23" Hg Post								
~~6~~	~~215~~	~~1410~~	STOP - FILTER CHANGE			LEAK V = 0.00 @ 12 Pre								
	200	1411	121.252											
A6	205	1416	124.2	1.1	232	1.0		240	239	45	65	54	43	4
A6	210	1421	127.0	1.1	229	1.0		246	242	42	71	55	42	5
A7	215	1426	129.95	1.1	230	1.0		239	245	43	70	55	42	5
7	220	1431	132.74	1.0	235	.92		242	248	44	69	55	42	5
7	225	1436	135.42	.92	232	.85		244	256	43	68	55	43	4
A8	230	1441	138.14	.92	231	.85		248	259	43	66	55	43	4
8	235	1446	140.91	.90	233	.83		254	267	46	69	56	44	4
8	240	1451	143.398	.83	228	.76		254	268	44	68	56	44	4
					0.005 @ 8 Hg									

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cudo Aluminum Alloy
Date	12-4-97
Sampling Location	CHIP DRYER INLET
Sample Type	Method 23
Run Number	#1
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	ACE/$MeCl_2$
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	665.9	496.7	169.2
2	HPLC H_2O	100 mls	Modified	624.0	624.7	-.7
3	HPLC H_2O	100mls	Modified	612.8	613.7	-.9
4	EMPTY	/	Modified	496.1	495.3	.8
5	Silica Gel	200-300g	Modified	812.4	763.9	48.5
6						
7						
			Total Weight Gain (g)			216.9

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer In
Run Number:	2
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.51
Absolute Stack Pressure (in Hg)	29.14
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	236.91
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	163.784
Average Meter Pressure (in H2O)	1.24
Average Meter Temperature (°F)	49.86
Moisture Collected (g)	119.50
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.192
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.686
Standard Metered Volume (dscf)	164.544
Standard Metered Volume (dscm)	4.660
Stack Moisture (%V)	6.98
Mole Fraction Dry Stack Gas	0.930
Dry Molecular Weight	28.88
Wet Molecular Weight	28.12
Stack Gas Velocity (fpm)	4932.08
Stack Gas Velocity (mpm)	1503.30
Volumetric Flow Rate (acfm)	8238.23
Volumetric Flow Rate (acmm)	233.31
Volumetric Flow Rate (dscfm)	5654.20
Volumetric Flow Rate (dscmm)	160.13
Percent Isokinetic	100.73
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run 1ACOA-02
Page 1 of 2

Plant	Cullr Pk. AL.	XAD Trap Number		Meter Box Number	A40	See Run 1 for points
Date	12/02/97	Filter Heater Setting (°F)	248	Meter delta H @	1.764	
Operator	DENNIE	Probe Length & Type	4' Glass	DGM Factor (Y)	.980	
Sampling Location	Dryer Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.192	
Sample Type	CDD	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	36	
Run Number	2	Initial Leak Check	0.016@23	Assumed Moisture (% H2O)	6.2	
Static Pressure (±) (in. H2O)	~~29.51~~ -5	Final Leak Check	0.010@8'	K-Factor		
Barometric Pressure (in. H2O)	29.51					

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0835 ~~40~~	48.350											
A1	7.5	842.5	54.92	2.2	239		2.0	251	242	36	46	39	35	5
1	15	850	60.76	2.1	237		1.9	259	247	37	57	39	38	7
A2	22.5	902.5	66.42	2.1	237		1.9	254	247	37	53	40	40	8
2	30	910	71.85	2.0	242		1.8	261	246	40	51	41	37	10
A3	37.5	917.5	77.07	1.5	243		1.4	248	244	38	49	40	41	10
3	45	925	82.09	1.4	243		1.3	244	246	38	48	40	40	11
A4	52.5	932.5	86.77	1.4	245		1.3	245	244	38	50	40	40	11
4	60	940	91.84	1.4	241		1.3	242	237	40	48	40	38	12
A5	67.5	947.5	96.98	1.6	232		1.5	250	241	39	48	40	42	14
5	75	955	102.26	1.6	232		1.5	246	253	40	48	40	42	15
A6	82.5	1002.5	107.52	1.7	234		1.6	230	241	40	46	40	45	17
6	90	1010	112.752	1.7	231		1.6	247	239	40	44	40	44	20
A7				FILTER	CHANGE	LEAK	✓=0.016	@21"						
7	90	1042	113.671			LEAK	✓=0.018	@ 18"						
A7	97.5	1049.5	118.69	1.4	234		1.3	257	240	40	49	41	42	3
7	105	1057	123.01	1.4	235		1.3	265	261	45	53	42	45	5
A8	112.5	1104.5	128.00	1.4	233		1.3	268	265	41	52	42	44	5
8	120	1112	133.056	1.4	235		1.3	259	257	40	53	42	43	5
	120	1121	133.118		LEAK ✓=	0.009@8'								
B8	127.5	1128.5	137.49	1.2	230		1.1	268	243	40	51	42	42	4
8	135	1136	142.14	1.2	239		1.1	260	236	43	54	43	41	5
B7	142.5	1143.5	146.78	1.2	240		1.1	243	246	45	57	43	46	5
7	150	1151	151.38	1.2	235		1.1	248	252	47	59	45	50	5
B6	157.5	1158.5	156.4	1.3	236		1.2	267	258	47	61	46	52	5
6	165	1206	161.67	1.3	239		1.2	264	260	50	61	48	55	5
B5	172.5	1213.5	166.15	1.5	239		1.4	247	259	49	61	48	56	5
5	180	1220	171.23	1.5	235		1.4	240	261	52	61	48	59	6

Comments:

Plant	C44	Location	Dryer Inlet	Run Number	2
Date	12/6/97	Sample Type	CDD	Operator	Dusek

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
B4	187.5	1224.5	175.9	1.3	233		1.2	232	263	42	60	48	52	5
4	195	1236	180.51	1.3	241		1.2	230	256	482	60	49	49	5
B3	202.5	1243.5	185.91	1.7	239		1.6	241	254	41	60	48	45	6
3	210	1251	191.42	1.6	239		1.5	253	257	41	61	49	42	6
B2	217.5	1258.5	197.0	1.8	235		1.6	255	261	43	62	49	44	6
2	225	1306	202.6	1.8	237		1.6	261	261	44	62	50	42	7
B1	232.5	1313.5	208.4	1.8	235		1.6	248	263	43	63	50	47	7
1	240	1321	213.615	1.7	236		1.6	253	264	45	64	50	48	7
							LEAK	✓ = 0.010	@ 8"					

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cuyo Aluminum Alloy
Date	12/5/97
Sampling Location	CD13 INLET
Sample Type	Method 23
Run Number	#2
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	582.1	500.2	81.9
2	HPLC H_2O	100 mls	Modified	603.7	604.1	-.4
3	HPLC H_2O	100mls	Modified	630.4	632.3	-1.9
4	EMPTY	/	Modified	493.2	492.3	.9
5	Silica Gel	200-300g	Modified	824.3	785.3	39
6						
7						
				Total Weight Gain (g)		119.5

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer In
Run Number:	3
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.51
Absolute Stack Pressure (in Hg)	29.14
Stack Static Pressure (in H2O)	-5.00
Average Stack Temperature (°F)	236.41
Stack Area (sq in)	240.53
Actual Meter Volume (cu ft)	148.612
Average Meter Pressure (in H2O)	1.14
Average Meter Temperature (°F)	52.30
Moisture Collected (g)	202.90
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	80.0
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.192
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.619
Standard Metered Volume (dscf)	148.463
Standard Metered Volume (dscm)	4.204
Stack Moisture (%V)	6.05
Mole Fraction Dry Stack Gas	0.939
Dry Molecular Weight	28.80
Wet Molecular Weight	28.15
Stack Gas Velocity (fpm)	4506.95
Stack Gas Velocity (mpm)	1373.72
Volumetric Flow Rate (acfm)	7528.11
Volumetric Flow Rate (acmm)	213.20
Volumetric Flow Rate (dscfm)	5222.01
Volumetric Flow Rate (dscmm)	147.89
Percent Isokinetic	98.41
Percent Excess Air	1760.56
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run M23-in-03
Page 1 of 2

Plant	Cliff AL AL	XAD Trap Number		Meter Box Number	A40		
Date	12/6/17	Filter Heater Setting (°F)	248	Meter delta H @	1.784		
Operator	Derek	Probe Length & Type	4' Glass	DGM Factor (Y)	.980		
Sampling Location	Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.192		
Sample Type	M23	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	45		
Run Number	3	Initial Leak Check	0.00@14	Assumed Moisture (% H2O)	6.2		
Static Pressure (±) (in. H2O)	-.5	Final Leak Check	0.0003@10"	K-Factor	+92		
Barometric Pressure (in. H2O)							

Schematic of Traverse Point Layout

Diagram of Duct

O_2: 20
CO_2: 0
WA: 114

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1545	14.028											
B1	7.5	1558.5	19.31	1.2	236		1.1	262	245	43	54	46	37	5
1	15.0	1600	22.76	1.2	236		1.1	259	242	44	58	46	38	5
B2	22.5	1607.5	26.89	1.4	233		1.3	269	244	47	54	46	39	7
2	30	1615	31.27	1.4	233		1.3	262	247	48	59	46	38	7
B3	37.5	1622.5	36.26	1.4	232		1.3	253	257	45	60	47	39	7
3	45	1630	41.27	1.4	231		1.3	254	256	47	60	47	39	7
B4	52.5	1637.5	46.13	1.3	233		1.2	256	258	39	59	47	39	7
4	60	1645	51.05	1.4	235		1.3	254	254	39	59	47	39	7
B5	67.5	1652.5	55.76	1.4	234		1.3	265	253	40	60	47	39	8
5	75	1700	60.66	1.4	237		1.3	266	256	40	60	47	39	8
B6	82.5	1707.5	65.70	1.5	238		1.4	268	260	41	61	47	41	8
6	90	1715	70.81	1.5	238		1.4	272	260	40	63	47	40	8
B7	97.5	1722.5	76.45	1.7	237		1.6	261	262	41	63	47	40	9
7	105	1730	81.54	1.7	238		1.6	265	261	41	62	47	42	9
B8	112.5	1737.5	87.2	1.7	239		1.6	261	258	42	63	47	42	9
8	120	1745	92.359	1.7	236		1.6	248	259	40	63	47	41	9
	120	1800	92.525				LEAK CHK: 0.02 @ 11"							
A1	127.5	1810.5	97.37	1.4	236		1.3	234	266	40	57	45	37	8
1	135	1818	102.21	1.4	237		1.3	237	268	41	61	45	39	8
A2	142.5	1825.5	107.08	1.4	238		1.3	240	264	42	61	46	40	9
2	150	1833	111.35	1.4	239		1.3	238	268	41	61	46	42	9
A3	157.5	1846.5	116.50	1.3	240		1.2	249	261	40	60	46	41	9
3	165	1848	121.38	1.3	241		1.2	243	259	41	59	45	42	9
A4	172.5	1855.5	125.76	1.1	246		1.0	245	258	44	58	45	44	8
4	180	1903	130.03	1.1	243		1.0	247	261	44	58	44	44	8
A5	187.5	1910.5	134.15	.96	233.334		.88	255	262	47	58	44	46	8
5	195	1918	138.20	.96	230		.88	256	263	43	59	45	45	8

Comments:

Plant	CAA	Location	Inlet - Dry	Run Number	3
Date	12/16/97	Sample Type	M23	Operator	DC/EG

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
A6	202.5	1925.5	142.65	1.1	236		1.0	241	263	44	59	45	45	9
6	210	1933	146.8	1.1	236		1.0	234	260	43	58	45	45	9
A7	217.5	1940.5	150.7	.94	233		.86	235	257	44	58	45	45	8
7	225	1948	154.81	.95	234		.87	236	262	44	58	44	47	8
A8	232.5	1955.5	158.82	.95	234		.87	240	260	45	59	44	47	9
8	240	2003	162.780	.94	235		.86	230		46	57	44	47	9
						LEAK	√=0.02	360/10"						

Comments:

ERG
Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Custom Aluminum Alloy
Date	12/6/97
Sampling Location	CDB INLET
Sample Type	Method 23
Run Number	#3
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	662.6	496.7	165.9
2	HPLC H_2O	100 mls	Modified	647.1	647.0	.1
3	HPLC H_2O	100mls	Modified	614.4	615.0	-.6
4	EMPTY	/	Modified	495.1	495.0	.1
5	Silica Gel	200-300g	Modified	777.2	761.8	37.4
6						
7						
			Total Weight Gain (g)			203.9

Facility:	Culp Alum. Alloy
Date:	12/05/97
Location:	Dryer Out
Run Number:	1
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.38
Absolute Stack Pressure (in Hg)	29.30
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	186.44
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	98.879
Average Meter Pressure (in H2O)	0.56
Average Meter Temperature (°F)	59.04
Moisture Collected (g)	133.90
Carbon Dioxide Concentration (%V)	1.0
Oxygen Concentration (%V)	19.0
Nitrogen Concentration (%V)	80.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.409
Standard Metered Volume (dscf)	98.146
Standard Metered Volume (dscm)	2.779
Stack Moisture (%V)	6.04
Mole Fraction Dry Stack Gas	0.940
Dry Molecular Weight	28.92
Wet Molecular Weight	28.26
Stack Gas Velocity (fpm)	2112.59
Stack Gas Velocity (mpm)	643.92
Volumetric Flow Rate (acfm)	7201.48
Volumetric Flow Rate (acmm)	203.95
Volumetric Flow Rate (dscfm)	5411.99
Volumetric Flow Rate (dscmm)	153.27
Percent Isokinetic	102.17
Percent Excess Air	889.51
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

90 O2 = 19.0 CO2 = 1.0

Run ____
Page 1 of ____

Plant	CULP A/A	XAD Trap Number	____	Meter Box Number	A-37
Date	12/5/97	Filter Heater Setting (°F)	250	Meter delta H @	1.813
Operator	MWH / JS	Probe Length & Type	6' Pyrex	DGM Factor (Y)	0.988
Sampling Location	Dryer BH OUT	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.215
Sample Type	PM / HCL	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	30°
Run Number	1	Initial Leak Check	.01 @ 10"	Assumed Moisture (% H2O)	8%
Static Pressure (±) (in. H2O)	-1.0"	Final Leak Check	.016 @ 15"	K-Factor	1.62
Barometric Pressure (in. H2O)	29.~~55~~39				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
		0	~~18~~866											
A-1	0	0800	20,077											
1-1	10	08:10	30.0	1.3	202	2.11	2.11	238	265	—	48	46	41	7.5
2	20	08:20	37.5	1.7	206	2.76	2.70	251	225	—	53	46	43	11.5
3	30	08:30	45.1	1.1	202	1.79	1.79	225	225	—	52	46	44	7.5
4	40	08:40	51.1	0.74	199	1.20	1.20	275	240	—	54	47	43	5.0
5	~~50~~41	08:~~47~~51	55.207	0.52	199	0.84	0.84	210	229	—	57	46	43	4.0
6	6050	~~08:50~~10	2357.0	0.52	199	0.84	0.84	237	239	—	60	56	47	3.0
6	60	00 03	60.4	0.21	196	0.34	0.34	243	241	—	62	56	45	2.0
7	70	10:43	61.8	0.02	196	0.04	0.04	234	246	—	63	58	47	0
8	80	10:53	63.1	0.02	203	0.04	0.04	240	247	—	61	58	48	0
9	90	11 03	64 6	0.02	178	0.04	0.04	250	252	—	61	59	48	0
10	100	11:13	66.1	0.02	152	0.04	0.04	247	251	—	62	58	47	0
11	110	11 23	67 6	0.02	127	0 04	0.04	249	252	—	61	59	49	0
12	120	11:33	69.141	0.02	114	0.04	0.04	251	253	—	62	59	48	0
						leak	check	0 ci @ 10"						
	120	12:40	69.383											
B-1	130	12:50	75.0	0.79	203	1.29	1.24	252	251	—	68	58	46	5.0
11	140	13:00	81.2	0.72	205	1.17	1.17	258	250	—	67	60	46	5.0
10	150	13:10	87.4	0.64	206	1.04	1.04	265	253	—	68	58	48	4.5
9	160	13:20	92.1	0.44	207	0.71	0.71	267	255	—	68	61	47	3.5
8	170	13:30	96.2	0.30	198	0.49	0.49	263	260	—	68	61	48	2.5
7	180	13:40	99.7	0.17	192	0.28	0.28	260	258	—	67	60	50	2.0
6	190	13:50	101.4	0.07	206	0.11	0.11	253	257	—	64	60	48	1.0
5	200	14:00	104.0	0.11	192	0.18	0.18	254	261	—	64	60	51	2.0
4	210	14:10	107.0	0.17	193	0.28	0.28	253	258	—	64	58	49	2.0
3	220	14:20	111.0	0.27	177	0.44	0.44	257	258	—	64	57	48	2.5
2	230	14:30	115.0	0.31	161	0.50	0.50	253	260	—	66	58	48	2.5
1	240	14:40	119.138	0.28	148	0.45	0.45	255	258	—	65	58	48	2.5

Comments:

0.01@10

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

CDB 0
Run 1

esearch Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 26A

Plant	Cudp Aluminum Alloys
Date	
Sampling Location	Chip Dryer Baghouse Out
Sample Type	Method 26A
Run Number	1
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	111897-1
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	671.0	574.4 474.1	96.6
2	0.1N H_2SO_4	100 mls	Greensburg Smith	623.0 637.5	~~619.7~~ 461.3	14.5
3	0.1 N NaOH	100 mls	Modified Greensburg Smith	587.9 ~~654~~	585.6 483.7	2.3
4	0.1N NaOH	100 mls	Modified Greensburg Smith	578.5	576.6 473.9	1.9
5	Silica Gel	200-300g	Modified Greensburg Smith	758.7	483.3 740.1	4 18.6
6						
7						
				Total Weight Gain (g)		133.9

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer Out
Run Number:	2
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.50
Absolute Stack Pressure (in Hg)	29.42
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	181.83
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	108.753
Average Meter Pressure (in H2O)	0.14
Average Meter Temperature (°F)	57.27
Moisture Collected (g)	80.00
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	19.5
Nitrogen Concentration (%V)	80.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.451
Standard Metered Volume (dscf)	108.124
Standard Metered Volume (dscm)	3.062
Stack Moisture (%V)	3.37
Mole Fraction Dry Stack Gas	0.966
Dry Molecular Weight	28.86
Wet Molecular Weight	28.49
Stack Gas Velocity (fpm)	2270.87
Stack Gas Velocity (mpm)	692.16
Volumetric Flow Rate (acfm)	7741.05
Volumetric Flow Rate (acmm)	219.23
Volumetric Flow Rate (dscfm)	6050.61
Volumetric Flow Rate (dscmm)	171.35
Percent Isokinetic	100.67
Percent Excess Air	1191.93
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

HC

$O_2 = 19\%$
$CO_2 = 1\%$

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	Cliff Dr AL	XAD Trap Number	—	Meter Box Number	A-37
Date	12/6/97	Filter Heater Setting (°F)	250	Meter delta H @	1.813
Operator	MWH / JS	Probe Length & Type	6' Pyrex	DGM Factor (Y)	0.998
Sampling Location	Dryer Baghouse OUT	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.215
Sample Type	HCL PM	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	30°
Run Number	2	Initial Leak Check	.01@15"	Assumed Moisture (% H2O)	8°
Static Pressure (±) (in. H2O)	-1.00"	Final Leak Check	.01@10"	K-Factor	1.62
Barometric Pressure (in. H2O)	29.51				

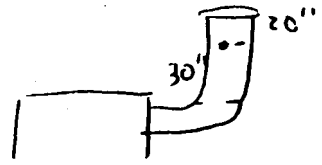


Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0535	119,377											
B-1	10	0545	124.2	0.54	135	0.88	0.88	249	258	—	48	43	38	2.0
2	20	0855	129.4	0.51	142	0.83	0.83	237	253	—	52	44	33	2.0
3	30	0905	134.7	0.51	167	0.53	0.53	229	251	—	53	45	36	2.0
4	40	0915	138.7	0.36	182	0.58	0.58	242	258	—	54	47	39	1.5
5	50	0925	142.3	0.26	191	0.42	0.42	246	254	—	55	49	39	1.0
6	60	0935	145.3	0.16	192	0.26	0.26	253	254	—	55	51	39	1.0
7	70	0945	149.2	0.28	194	0.45	0.45	249	259	—	56	51	42	1.5
8	80	0955	154.7	0.53	195	0.86	0.86	255	260	—	59	52	42	2.0
9	90	1005	160.3	0.77	190	1.25	1.25	258	261	—	62	54	44	2.5
10	100	1015	167.7	0.96	192	1.56	1.56	256	258	—	63	54	45	3.0
11	110	1020	175.4	1.10	199	1.79	1.79	256	254	—	65	55	46	3.5
12	120	1030	182,916	1.10	199	1.79	1.79	252	254	—	65	55	48	3.5
						Leak check	0.01	@ 10"						
	120	1120	183,122											
A-12	130	1130	191.0	1.20	201	1.95	1.95	267	260	—	68	58	46	4.0
11	140	1140	198.1	0.97	201	1.58	1.58	256	258	—	68	56	44	4.0
10	150	1150	204.0	0.67	199	1.09	1.09	254	258	—	68	57	47	3.0
9	160	1200	209.4	0.45	198	0.73	0.73	254	256	—	67	56	47	2.0
8	170	1210	213.6	0.36	195	0.58	0.58	258	260	—	70	58	48	2.0
7	180	1220	218.0	0.31	196	0.50	0.50	262	260	—	67	58	47	1.5
6	190	1230	219.7	0.02	193	0.04	0.04	267	261	—	64	58	48	1.0
5	200	1240	221.5	0.02	189	0.04	0.04	260	255	—	62	57	47	1.0
4	210	1250	223.2	0.02	184	0.04	0.04	245	250	—	61	56	46	1.0
3	220	1300	224.9	0.02	180	0.04	0.04	244	252	—	61	56	46	1.0
2	230	1310	226.6	0.02	125	0.04	0.04	251	249	—	60	58	46	1.0
1	240	1320	228,336	0.02	125	0.04	0.04	252	247	—	60	58	46	1.0
						Leak check	= 0.01	@ 10"						

Comments:

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

CDBG

Run 2

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 26A

Plant	Cudp Aluminum Alloys
Date	
Sampling Location	Chip Dryer Baghouse Outlet
Sample Type	Method 26A
Run Number	2
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gutkin
Recovery Rinses	
Sample Identification	
Filter Number	111897-2
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	633.8	609.8 493.6	24.0
2	0.1N H_2SO_4	100 mls	Greensburg Smith	632.1	603.0 496.3	29.1
3	0.1 N NaOH	100 mls	Modified Greensburg Smith	594.9	586.6 481.1	8.3
4	0.1N NaOH	100 mls	Modified Greensburg Smith	592.8	590.7 479.2	2.1
5	Silica Gel	200-300g	Modified Greensburg Smith	741.7	725.2 475.7	16.5
6						
7						
			Total Weight Gain (g)			80.0

preliced

(133.9

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	dryer out
Run Number:	3
Sample Type:	M26

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.35
Absolute Stack Pressure (in Hg)	29.28
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	187.92
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	102.267
Average Meter Pressure (in H2O)	0.58
Average Meter Temperature (°F)	51.52
Moisture Collected (g)	151.40
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.427
Standard Metered Volume (dscf)	102.390
Standard Metered Volume (dscm)	2.900
Stack Moisture (%V)	6.52
Mole Fraction Dry Stack Gas	0.935
Dry Molecular Weight	28.88
Wet Molecular Weight	28.17
Stack Gas Velocity (fpm)	2212.16
Stack Gas Velocity (mpm)	674.27
Volumetric Flow Rate (acfm)	7540.91
Volumetric Flow Rate (acmm)	213.56
Volumetric Flow Rate (dscfm)	5620.93
Volumetric Flow Rate (dscmm)	159.18
Percent Isokinetic	102.62
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CLP AC. AL	XAD Trap Number	–	Meter Box Number	A-37
Date	12/6/97	Filter Heater Setting (°F)	250°	Meter delta H @	1.813
Operator	MWH / JS	Probe Length & Type	6' PYREX	DGM Factor (Y)	0.988
Sampling Location	DRYER B/H OUT	Probe Heater Setting (°F)	250°	Nozzle Type & ID (in.)	0.215
Sample Type	HCL/PM	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	35°
Run Number	3	Initial Leak Check	0.01@10"	Assumed Moisture (% H2O)	8%
Static Pressure (±) (in. H2O)	-1.00"	Final Leak Check	0.01@10"	K-Factor	1.62
Barometric Pressure (in. H2O)	29.36				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	15:45	228.555											
A-12	10	15:55	234.9	.93	198	1.51	1.51	263	248	–	61	51	43	5.0
11	20	16:05	241.7	.74	196	1.20	1.20	255	249	–	59	51	43	4.5
10	30	16:15	246.9	.59	198	0.96	0.96	257	253	–	61	49	46	4.0
9	40	16:25	252.7	.58	198	0.94	0.94	255	252	–	60	49	47	4.0
8	50	16:35	258.1	.54	195	0.88	0.88	261	252	–	58	48	46	4.0
7	60	16:45	262.7	.48	193	0.46	0.46	257	255	–	57	47	45	2.0
6	70	16:55	264.4	.08	190	0.13	0.13	261	255	–	55	47	45	1.0
5	80	17:05	266.3	.06	188	0.10	0.10	259	255	–	52	46	44	1.0
4	90	17:15	267.8	.04	183	0.06	0.06	267	258	–	51	48	45	1.0
3	100	17:25	269.2	.04	176	0.06	0.06	244	259	–	51	48	45	1.0
2	110	17:35	271.1	.04	165	0.00	0.00	258	261	–	51	46	44	1.0
1	120	17:45	272.740	.04	165	0.00	0.00	267	262	–	51	47	45	1.0
						leak check		.01@	10"					
	120	18:03	272.880											
1	130	18:13	276.9	.22	160	.38	.38	272	266	–	51	47	48	1.0
2	140	18:23	280.9	1.26	153	.44	.44	267	271	–	57	47	47	1.5
3	150	18:33	285.2	.32	181	.52	.52	260	262	–	57	45	47	2.0
4	160	18:43	288.8	.36	184	.58	.58	259	261	–	56	45	44	2.5
5	170	18:53	293.5	.36	191	.58	.58	248	257	–	56	45	45	2.5
6	180	19:03	298.0	.36	192	.58	.58	251	259	–	55	44	46	2.5
7	190	19:13	301.7	.22	201	.38	.38	258	259	–	54	44	49	2.0
8	200	19:23	306.1	.36	200	.58	.58	262	261	–	56	45	50	3.0
9	210	19:33	311.6	1.62	199	1.01	1.01	261	261	–	58	45	49	5.0
10	220	19:43	318.4	.77	198	1.25	1.25	263	264	–	60	46	52	5.5
11	230	19:53	324.0	.86	201	1.40	1.40	263	255	–	61	46	53	6.0
12	240	20:03	330.962	.91	200	1.48	1.48	252	263	–	61	46	54	6.5
						leak check - 0.01 @			10"					

Comments:

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

CDB 9a
Run 3

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4 26A

Plant	Cudp Aluminum Alloys
Date	
Sampling Location	Chip Dryer Baghouse Outlet
Sample Type	Method 26A
Run Number	3
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	111897-3 111897-7
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	0.1 N H_2SO_4	100 mls	Greensburg Smith	678.9	590.4 477.3	88.5
2	0.1N H_2SO_4	100 mls	Greensburg Smith	633.8	596.0 466.4	37.8
3	0.1 N NaOH	100 mls	Modified Greensburg Smith	606.8	598.4	8.4
4	0.1N NaOH	100 mls	Modified Greensburg Smith	604.8	603.3	1.5
5	Silica Gel	200-300g	Modified Greensburg Smith	768.4	753.2	15.2
6						
7						
					Total Weight Gain (g)	151.4

Facility:	Culp Alum. Alloy
Date:	12/05/97
Location:	Dryer Out
Run Number:	1
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.38
Absolute Stack Pressure (in Hg)	29.30
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	193.16
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	99.354
Average Meter Pressure (in H2O)	0.56
Average Meter Temperature (°F)	54.78
Moisture Collected (g)	122.50
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.414
Standard Metered Volume (dscf)	99.258
Standard Metered Volume (dscm)	2.811
Stack Moisture (%V)	5.50
Mole Fraction Dry Stack Gas	0.945
Dry Molecular Weight	28.88
Wet Molecular Weight	28.28
Stack Gas Velocity (fpm)	2142.78
Stack Gas Velocity (mpm)	653.12
Volumetric Flow Rate (acfm)	7304.40
Volumetric Flow Rate (acmm)	206.86
Volumetric Flow Rate (dscfm)	5464.34
Volumetric Flow Rate (dscmm)	154.75
Percent Isokinetic	102.33
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run DUCTCND-01
Page 1 of 1

Plant	CULP N/A	XAD Trap Number	OUT - 1		Meter Box Number	A-36	O_2: 20
Date	12/5/97	Filter Heater Setting (°F)		250	Meter delta H @	1.816	
Operator	MWH/JS	Probe Length & Type		6' Pyrex	DGM Factor (Y)	0.981	CO_2: 5
Sampling Location	DRYER BH OUT	Probe Heater Setting (°F)		250	Nozzle Type & ID (in.)	0.215	
Sample Type	DIOXIN	Minimum Sample Volume (ft3)		60	Ambient Temperature (°F)	~~50~~ 30	
Run Number	1	Initial Leak Check		.018 @ 15"	Assumed Moisture (% H2O)	8	
Static Pressure (±) (in. H2O)	-1.0"	Final Leak Check		.01 @ 15"	K-Factor	1.62	
Barometric Pressure (in. H2O)	29.~~58~~39						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

AVG

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
		0	~~36.571~~											
	0	08:00	38.396											
B-1	10	08:10	45.10	0.61	202	0.99	0.99	247	252	46	45	41	39	3.5
2	20	08:20	49.1	0.49	206	0.80	0.80	281	251	48	48	43	39	4.5
3	30	08:30	53.4	.35	202	.57	.57	216	241	42	48	44	40	4
4	40	08:40	57.3	.36	199	.58	.58	282	245	42	48	44	41	4
5	~~90~~	08:~~50~~	60.383	.31	202	.50	.50	200	243	44	49	44	42	4
5 6	50 60	~~08:00~~	61.4	.22	197	.36	.36	259	242	49	53	50	42	3.9
6	60 70	~~9:00~~	64.33	.14	197	~~.~~ .23	.23	266	241	46	53	50	41	3
7	70 80	10:43	67.6	.21	199	.34	.34	260	243	50	55	51	42	4
8	80 90	10:53	72.33	.31	199	.83	.83	264	245	45	56	52	41	4
9	90 ~~100~~	11:03	80.4	.69	201	1.12	1.12	270	256	41	59	53	42	6.5
10	100	11:13	86.2	1.01	193	1.64	1.64	255	260	46	58	54	44	7.5
11	110	11:23	93.0	1.0	198	1.62	1.62	249	251	49	59	53	46	7.5
12	120	11:33	99.888	1.1	200	1.~~8~~79	1.79	242	259	48	60	54	47	7
						Leak	Leak .0 @ 10"							
~~A T~~	120	12:40	100.104	~~.~~										
A R1	130	12:50	101.5	.02	151	0.04	0.04	240	236	48	59	58	47	2.0
B 2	140	13:00	103.1	.02	160	0.04	0.04	249	246	48	58	57	45	2.0
1 3	150	13:10	104.601	.02	167	0.04	0.04	253	255	48	57	~~57~~ 56	47	2.0
2 4	160	13:20	106.009	.02	185	0.04	0.04	255	263	52	58	57	47	2.0
4 5	170	13:30	107.405	.02	189	0.04	0.04	259	262	54	60	58	48	2.0
3 6	180	13:40	109.302	.02	192	0.04	0.04	252	257	50	61	59	48	2.0
8 7	190	13:50	112.1	.15	196	.24	.24	254	250	53	61	59	~~48~~ 47	4.0
1 8	200	14:00	115.207	.21	199	.34	.34	250	250	50	62	59	46	4.0
10 9	210	14:10	119.~~2~~05	.31	199	.50	.50	246	254	47	62	58	46	4
11 10	220	14:20	125.1	.59	199	.96	.96	247	252	47	62	58	45	5
12 11	230	14:30	131.3	.82	199	1.33	1.33	253	254	46	62	58	44	7
12	240	14:40	137.966	.91	198	1.48	1.48	252	255	49	59	57	43	7

Comments:

Leak ✓ .00 @ 10

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cu-Ip Aluminum Alloy
Date	
Sampling Location	CDS OUTLET
Sample Type	Method 23
Run Number	#1
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	MeCl$_2$/Ace
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	567.7	467.6	100.1
2	HPLC H_2O	100 mls	Modified	573.5	573.8	-.3
3	HPLC H_2O	100mls	Modified	586.3	586.3	0
4	EMPTY	/	Modified	454.0	454.3	-.3
5	Silica Gel	200-300g	Modified	777.6	754.6	23.0
6						
7						
			Total Weight Gain (g)			122.4 122.5

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	Dryer Out
Run Number:	2
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.50
Absolute Stack Pressure (in Hg)	29.42
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	188.29
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	107.848
Average Meter Pressure (in H2O)	0.83
Average Meter Temperature (°F)	55.38
Moisture Collected (g)	74.70
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	19.5
Nitrogen Concentration (%V)	80.0
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.447
Standard Metered Volume (dscf)	107.267
Standard Metered Volume (dscm)	3.038
Stack Moisture (%V)	3.18
Mole Fraction Dry Stack Gas	0.968
Dry Molecular Weight	28.86
Wet Molecular Weight	28.51
Stack Gas Velocity (fpm)	2321.94
Stack Gas Velocity (mpm)	707.73
Volumetric Flow Rate (acfm)	7915.15
Volumetric Flow Rate (acmm)	224.16
Volumetric Flow Rate (dscfm)	6137.20
Volumetric Flow Rate (dscmm)	173.81
Percent Isokinetic	98.47
Percent Excess Air	1191.93
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

DIOXIN
DRYER OUT

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CUDAHY	XAD Trap Number	-	Meter Box Number	A-38		
Date	12/6/97	Filter Heater Setting (°F)	250	Meter delta H @	1.816		
Operator	MWH/JS.	Probe Length & Type	6' PYREX	DGM Factor (Y)	0.981		
Sampling Location	DRYER B/H OUT	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.215		
Sample Type	DIOXIN	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	30°		
Run Number	2	Initial Leak Check	.02@15"	Assumed Moisture (% H2O)	8		
Static Pressure (±) (in. H2O)	-1.00"	Final Leak Check	.01@15"	K-Factor	1.62		
Barometric Pressure (in. H2O)	29.51						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

AUX

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	08:35	139.266											
A 12	10	08:45	148.65	2.0	209	3.24	3.24	241	240	37	49	42	37	5.5
11	20	08:55	157.0	1.4	207	2.27	2.27	252	253	43	50	~~39~~ 43	39	6
10	30	09:05	165.05	1.25	205	2.03	2.03	246	250	39	51	44	42	6
9	40	09:15	170.503	.6	201	.97	.97	244	253	37	51	45	42	4
8	50	09:25	174.85	.48	198	.78	.78	244	260	40	54	46	42	3
7	60	09:35	178.703	.23	195	.37	.37	248	250	41	55	47	42	1
6	70	09:45	180.108	.04	193	.06	.06	248	252	40	53	49	40	1
5	80	09:55	181.501	.02	192	.04	.04	253	250	38	52	49	38	1
4	90	10:05	182.806	.02	176	.04	.04	248	240	40	54	51	38	1
3	100	10:15	184.305	.02	148	.04	.04	264	249	40	55	52	38	1
2	110	10:25	185.903	.02	119	.04	.04	251	248	40	56	53	39	1
1	120	10:35	187.407	.02	114	.04	.04	248	251	40	56	53	38	1
						leak check	0.01@		0"					
B 1	120	11:20	187.716	.42	188	.68	.68	260	267	44	61	56	48	3
1	130	11:30	192.680	.36	193	.58	.58	250	255	44	63	56	44	3
2	140	11:40	196.9	.32	193	.52	.52	252	258	46	62	56	45	3
3	150	11:50	201.130	.32	193	.52	.52	260	248	43	64	57	44	3
4	160	12:00	205.590	.22	195	.36	.36	259	253	43	64	57	45	3
5	170	12:10	209.970	.17	198	.28	.28	253	252	40	63	58	44	2.5
6	180	12:20	212.390	.21	199	.34	.34	256	251	42	64	58	44	2.5
7	190	12:30	215.320	.34	198	.55	.55	245	248	41	64	58	43	3
8	200	12:40	220.230	.59	199	.96	.96	245	243	41	63	57	42	4
9	210	12:50	226.0	.87	202	1.41	1.41	250	246	41	64	57	41	4.8
10	220	13:00	232.4	1.1	202	1.79	1.79	253	245	40	65	57	41	5
11	290	13:10	239.620	1.2	203	1.95	1.95	250	249	39	66	58	42	6
12	240	13:20	247.423											
						leak check 0.01@15"								

Comments:

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

ERG
Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cyclo Aluminum Alloy
Date	12/5/97
Sampling Location	CAB OUTLET
Sample Type	Method 23
Run Number	#2
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	$MeCl_2$/ACE
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	536.2	482.5	53.7
2	HPLC H_2O	100 mls	Modified	589.3	589.2	.1
3	HPLC H_2O	100mls	Modified	583.7	583.7	0
4	EMPTY	/	Modified	483.8	483.3	.5
5	Silica Gel	200-300g	Modified	795.8	775.4	20.4
6				2980.8	2914.1	
7						
			Total Weight Gain (g)			74.7

Facility:	Culp Alum. Alloy
Date:	12/06/97
Location:	dryer out
Run Number:	3
Sample Type:	M23

Total Sampling Time (min)	240.0
Corrected Barometric Pressure (in Hg)	29.35
Absolute Stack Pressure (in Hg)	29.28
Stack Static Pressure (in H2O)	-1.00
Average Stack Temperature (°F)	191.00
Stack Area (sq in)	490.87
Actual Meter Volume (cu ft)	101.063
Average Meter Pressure (in H2O)	0.60
Average Meter Temperature (°F)	49.60
Moisture Collected (g)	114.00
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.215
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.420
Standard Metered Volume (dscf)	100.847
Standard Metered Volume (dscm)	2.856
Stack Moisture (%V)	5.06
Mole Fraction Dry Stack Gas	0.949
Dry Molecular Weight	28.88
Wet Molecular Weight	28.33
Stack Gas Velocity (fpm)	2282.33
Stack Gas Velocity (mpm)	695.65
Volumetric Flow Rate (acfm)	7780.10
Volumetric Flow Rate (acmm)	220.33
Volumetric Flow Rate (dscfm)	5861.72
Volumetric Flow Rate (dscmm)	166.00
Percent Isokinetic	96.92
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CWIP AM AL	XAD Trap Number	–	Meter Box Number	A-38		
Date	12/6/97	Filter Heater Setting (°F)	250	Meter delta H @	1.516		
Operator	MWH/IS	Probe Length & Type	6' pyrex	DGM Factor (Y)	.981		
Sampling Location	Duct Between Outlet	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.215		
Sample Type	DUCT	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	35		
Run Number	3	Initial Leak Check	.01@10"	Assumed Moisture (% H2O)	8		
Static Pressure (±) (in. H2O)	-1.00"	Final Leak Check	.01@10"	K-Factor	1.62		
Barometric Pressure (in. H2O)	29.36						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every ____ minutes

AUX

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	15:45	248.191											
B-1	10	15:55	252.49	-39	179	.63	.63	240	246	42	54	49	40	2
2	20	16:05	257.0	.37	188	.60	.60	266	255	40	55	49	40	2
3	30	16:15	261.1	.36	189	.58	.60	259	250	40	56	49	41	3
4	40	16:25	264.55	.3	195	.49	.49	240	244	39	55	49	41	2.5
5	50	16:35	268.46	.22	196	.36	.36	239	240	39	54	48	40	2
6	60	16:45	271.95	.15	196	.24	.24	240	242	39	52	47	41	1.7
7	70	16:55	275.3	.32	199	.52	.52	251	244	39	52	46	41	3
8	80	17:05	280.4	.5	202	.81	.81	254	241	39	53	46	40	3.5
9	90	17:15	286.61	.65	204	1.06	1.06	273	250	39	56	46	41	4
10	100	17:25	292.4	.93	202	1.51	1.51	255	245	38	56	47	39	5
11	110	17:35	299.85	1.05	204	1.71	1.71	262	245	39	57	47	40	5
12	120	17:45	306.579	1.1	205	1.79	1.79	265	245	39	57	47	42	5
A	120	18:03	306.905		Leak ✓	.010	10"							
12	130	18:13	312.57	.69	205	1.12	1.12	255	245	40	45	52	43	4
11	140	18:23	318.3	.61	205	.99	.99	253	245	41	56	46	38	4
10	150	18:33	323.85	.59	207	.96	.96	239	245	39	56	46	38	4
9	160	18:43	329.69	.54	203	.88	.88	247	245	42	55	46	39	4
8	170	18:53	333.78	.48	201	.78	.78	245	245	41	54	45	39	4
7	180	19:03	337.35	.29	199	.47	.47	241	245	45	53	45	39	2.5
6	190	19:13	342.67	.5	195	.81	.81	252	245	40	53	45	40	4
5	200	19:23	343.96	.04	192	.06	.06	252	245	42	50	45	41	1
4	210	19:33	345.23	.03	186	.05	.05	254	245	42	47	44	41	1
3	220	19:43	346.79	.03	172	.05	.05	258	245	42	46	44	43	1
2	230	19:53	348.0	.04	139	.06	.06	259	245	41	46	44	41	1
1	240	20:03	349.48	.04	121	.06	.06	251	245	41	47	44	42	1
					.01@10"	Leak	Check							

Comments:

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cyclo Aluminum Alloy
Date	12/6/97
Sampling Location	CDG OUTLET
Sample Type	Method 23
Run Number	#3
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	562.4	468.7	93.7
2	HPLC H_2O	100 mls	Modified	522.5	589.2	-.4
3	HPLC H_2O	100mls	Modified	594.4	595.8	-1.4
4	EMPTY	/	Modified	454.1	454.6	-.5
5	Silica Gel	200-300g	Modified	768.2	745.6	22.6
6						
7						
			Total Weight Gain (g)			113.7 / 114.0

Facility:	Culp Alum. Alloy
Date:	12/8/97
Location:	Furnace Inlet
Run Number:	1
Sample Type:	M26

Total Sampling Time (min)	327.0
Corrected Barometric Pressure (in Hg)	29.33
Absolute Stack Pressure (in Hg)	29.20
Stack Static Pressure (in H2O)	-1.70
Average Stack Temperature (°F)	95.39
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	143.623
Average Meter Pressure (in H2O)	0.54
Average Meter Temperature (°F)	54.71
Moisture Collected (g)	31.50
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.155
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.433
Standard Metered Volume (dscf)	141.734
Standard Metered Volume (dscm)	4.014
Stack Moisture (%V)	1.04
Mole Fraction Dry Stack Gas	0.990
Dry Molecular Weight	28.88
Wet Molecular Weight	28.77
Stack Gas Velocity (fpm)	3515.91
Stack Gas Velocity (mpm)	1071.65
Volumetric Flow Rate (acfm)	27690.62
Volumetric Flow Rate (acmm)	784.20
Volumetric Flow Rate (dscfm)	25425.75
Volumetric Flow Rate (dscmm)	720.06
Percent Isokinetic	102.46
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run in HCl 01
Page 1 of 2

Plant	Culp Hollow	XAD Trap Number		Meter Box Number	A40		
Date	12/18/97	Filter Heater Setting (°F)	248	Meter delta H@	1.784		
Operator	Dozier	Probe Length & Type	4' Glass	DGM Factor (Y)	.980		
Sampling Location	Furn. Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.245 .255		
Sample Type	HCl	Minimum Sample Volume (ft3)		Ambient Temperature (°F)			
Run Number	1	Initial Leak Check	0.020@15"	Assumed Moisture (% H2O)			
Static Pressure (±) (in. H2O)	-1.7	Final Leak Check	.0040@8"	K-Factor	~~3.03~~ 3.80		
Barometric Pressure (in. H2O)	29.33						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0948	37.581											
B1	10	~~0958~~ 1008	42.56	1.3	200		.72	228	232		47	42	33	~~2.5~~ 3
B	20	1008	46.76	1.1	113		.53	223	228		53	42	33	~~3.2~~ 3
B	30	1018	51.37	1.1	97		.61	237	238		57	43	34	3
B1	40	1028	56.33	1.3	88		.49,72	240	232		60	45	36	3
2	50	1038	60.76	1.2	156		.59	250	231		60	46	56	3
2	60	1048	65.36	1.2	150		.59	253	237		61	46	58	4
B4	70	1058	70.16	1.4	80		.76	243	232		62	47	38	4
4	80	1108	75.68	1.4	90		.78	234	234		63	47	35	5
4	90	1118	80.74	1.4	100		.74	237	239		63	48	40	5
B3	100	1128	85.0	1.0	60		.55	252	231		63	48	40	4
3	110	1138	89.116	1.0	120		.49	246	231		61	48	39	4
3	120	1148	93.35	1.0	85		.55	249	231		62	49	38	5
B2	130	1158	97.163	.80	90		.44	260	236		61	48	35	4
2	140	1208	101.59	.80	85		.44	263	236		61	48	39	4
2	150	1218	105.63	.82	77		.45	262	237		61	48	39	4
B1	160	1228	109.36	.73	71		.39	266	237		61	48	38	4
1	170	1238	113.4	.75	120		.38	269	237		61	48	39	4
1	180	1248	116.70	.67	90		.37	273	232		61	48	39	
					Leak	V = 0.016@16"								

Comments:

Plant		Location		Run Number	
Date		Sample Type		Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O)		Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter		Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
						Desired	Actual				Inlet (Tm in)	Outlet (Tm out)		
	180	1345	117.390											
				.87	120		.48							

Comments:

Plant	CWLP	Location	Furnace Inlet	Run Number	1
Date	12/8/97	Sample Type	HCl	Operator	Mike

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	~~1315~~	117.390											
A1	190	1325	121.48	.37	120		.48	236	266		64	47	37	4
1	200	1335	125.61	.87	90		.48	233	263		162	48	35	5
1	210	1345	129.92	.9	80		.50	233	252		62	49	37	5
A2	220	1355	134.21	.93	83		.51	230	249		63	49	38	5
2	230	1405	138.46	.90	79		.50	238	247		63	50	40	5
2	240	1415	142.68	.90	75		.50	242	241		63	50	40	5
A3	250	1425	10147.2	1.05	77		.58	243	242		64	50	39	5
3	260	1435	15185	1.05~~89~~	77		.58~~5~~	234	237		64	50	40	5
3	270	1445	152.53	1.1	77		.61	236	240		65	50	41	5
A4	280	1455	161.08	1.05	80		.58	236	238		64	50	41	5
4	290	1505	165.73	1.1	83		.61	239	244		~~59~~64	6650	42	5
4	300	1515	170.27	1.05	82		.58	242	243		64	50	42	5
A~~5~~	310	1525	174.64	.98	83		.54	235	243		64	50	41	5
~~5~~	320	1535	178.82	.88	82		.49	238	244		64	50	42	5
~~5~~	~~330~~	~~1545~~	181.894	.95	84		.53	233	239		64	50	41	5
	327	1542												
					Leak✓	=0.004	@ 8"							

Comments:

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run [redacted]
Page 1 of _____

Plant		XAD Trap Number		Meter Box Number		
Date		Filter Heater Setting (°F)		Meter delta H @		
Operator		Probe Length & Type		DGM Factor (Y)		
Sampling Location		Probe Heater Setting (°F)		Nozzle Type & ID (in.)		
Sample Type		Minimum Sample Volume (ft3)		Ambient Temperature (°F)		
Run Number		Initial Leak Check		Assumed Moisture (% H2O)		
Static Pressure (±) (in. H2O)		Final Leak Check		K-Factor		
Barometric Pressure (in. H2O)						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)

Comments:

Facility:	Culp Alum. Alloy
Date:	12/9/97
Location:	Furnace Inlet
Run Number:	2
Sample Type:	m26

Total Sampling Time (min)	340.0
Corrected Barometric Pressure (in Hg)	29.29
Absolute Stack Pressure (in Hg)	29.19
Stack Static Pressure (in H2O)	-1.40
Average Stack Temperature (°F)	113.15
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	141.637
Average Meter Pressure (in H2O)	0.95
Average Meter Temperature (°F)	62.09
Moisture Collected (g)	40.80
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.156
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.405
Standard Metered Volume (dscf)	137.578
Standard Metered Volume (dscm)	3.896
Stack Moisture (%V)	1.38
Mole Fraction Dry Stack Gas	0.986
Dry Molecular Weight	28.88
Wet Molecular Weight	28.73
Stack Gas Velocity (fpm)	3369.28
Stack Gas Velocity (mpm)	1026.96
Volumetric Flow Rate (acfm)	26535.74
Volumetric Flow Rate (acmm)	751.49
Volumetric Flow Rate (dscfm)	23518.44
Volumetric Flow Rate (dscmm)	666.04
Percent Isokinetic	102.09
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run F1A-HCL-02
Page 1 of 2

Plant	Cmlp Al. Alloy	XAD Trap Number		Meter Box Number	A-40		
Date	121997	Filter Heater Setting (°F)	248	Meter delta H @	1.764		
Operator	Dottie	Probe Length & Type	4' Glass	DGM Factor (Y)	.980		
Sampling Location	Furn. Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.156		
Sample Type	HCl	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	45		
Run Number	2	Initial Leak Check	0.005@10	Assumed Moisture (% H2O)	4		
Static Pressure (±) (in. H2O)	-1.4	Final Leak Check	.00028"	K-Factor			
Barometric Pressure (in. H2O)	29.3						

Diagram of Duct

Schematic of Traverse Point Layout

Filter # 111897-11
111897-14

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1211	85.095											
A1	10	1221	88.74	.75	150		.37	240	262		54	49	46	2
1	20	1231	92.55	.96	230		.43	241	264		59	50	46	2
1	30	1241	96.29	.77	150		.38	243	263		63	51	46	2
A2	40	1251	100.58	1.0	120		.49	236	253		66	52	46	2
2	50	1261	105.02	.97	98		.54	233	250		68	54	47	2
2	60	1311	109.10	.90	160		.44	231	250		69	54	48	2
A3	70	1321	113.47	.95	90		.53	235	250		69	55	49	2
3	80	1331	117.51	.90	115		.44	232	249		69	56	50	2
3	90	1341	121.56	.93	160		.46	234	247		69	56	50	3
A4	100	1351	125.91	1.0	120		.49	240	249		70	56	50	3
4	110	1401	130.33	1.1	120		.54	240	251		70	56	50	3
4	120	1411	134.74	1.05	150		.53	241	252		70	56	50	3
A5	130	1421	138.82	.90	160		.44	241	253		70	57	51	3
5	140	1431	143.07	.90	90		.50	242	254		70	57	51	3
5	150	1441	146.35	.85	140		.42	244	256		70	57	51	3
A6	160	1451	151.14	.90	130		.44	244			70	57	51	3
6	170	1461	155.4	.90	94		.52	245	258		71	57	51	4
6	180	1511	159.662	.85	100		.47	245	258		70	57	51	4
						LEAK = 0.00 @ 8"								
						FILTER CHANGE								
						LEAK ✓ = 0.00 @ 10"								

Comments:

Plant	Culp	Location	Fugn. Inlet	Run Number	2
Date	12/9/97	Sample Type	HCl	Operator	

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	1537	160.518											
B6	190	1547	164.56	.80	110		.44	268	263		67	56	44	0
6	200	1557	168.43	.80	113		.44	259	249		70	56	40	0
6	210	1607	172.47	.82	85		.45	262	250		70	57	40	1
B5	220	1617	176.60	.82	90		.45	267	253		70	57	41	1
5	230	1627	180.65	.80	90		.45	255	255		71	58	41	1
5	240	1637	184.3	.83	83		.46	266	258		70	57	42	1
B4	250	1647	189.02	.90	86		.50	268	258		70	57	43	1
4	260	1657	193.32	.92	80		.51	276	262		70	57	43	1
4	270	1707	197.96	.92	79		.51	269	260		70	57	43	1
B3	280	1717	202.0	.92	82		.51	261	259		70	57	43	1
3	290	1727	206.23	.92	82		.51	256	260		69	57	43	1
3	300	1737	210.53	.92	82		.51	252	261		69	56	44	1
B2	310	1747	214.7	.92	83		.51	246	258		69	56	44	1
2	320	1757	219.0	.92	86		.51	256	258		69	56	44	1
2	330	1807	223.3	.92	85		.51	253	260		68	56	44	1
B1	340	1817	227.650	.88	91		.49	250	260		70	56	45	1
1	350	1827		.89	75		.50	252						
1	360	1837			LEAK		@4"/Hg							

Comments:

Facility:	Culp Alum. Alloy
Date:	12/10/97
Location:	Furnace Inlet
Run Number:	3
Sample Type:	M26

Total Sampling Time (min)	332.0
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.22
Stack Static Pressure (in H2O)	-1.40
Average Stack Temperature (°F)	114.85
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	138.653
Average Meter Pressure (in H2O)	0.96
Average Meter Temperature (°F)	73.00
Moisture Collected (g)	42.20
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.155
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.398
Standard Metered Volume (dscf)	132.051
Standard Metered Volume (dscm)	3.740
Stack Moisture (%V)	1.48
Mole Fraction Dry Stack Gas	0.985
Dry Molecular Weight	28.88
Wet Molecular Weight	28.72
Stack Gas Velocity (fpm)	3417.98
Stack Gas Velocity (mpm)	1041.80
Volumetric Flow Rate (acfm)	26919.36
Volumetric Flow Rate (acmm)	762.36
Volumetric Flow Rate (dscfm)	23786.58
Volumetric Flow Rate (dscmm)	673.64
Percent Isokinetic	100.50
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run Fly Ash-02
Page 1 of 2

Plant	Culp AL Alloy	XAD Trap Number		Meter Box Number	A 40		
Date	12/10/97	Filter Heater Setting (°F)	248	Meter delta H @	1.784		
Operator	Dennis	Probe Length & Type	5' Glass	DGM Factor (Y)	.980		
Sampling Location	Furn. In	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.155		
Sample Type	HCl	Minimum Sample Volume (ft3)		Ambient Temperature (°F)			
Run Number	3	Initial Leak Check	0.004@10	Assumed Moisture (% H2O)			
Static Pressure (±) (in. H2O)	-1.4	Final Leak Check	.006@5"	K-Factor			
Barometric Pressure (in. H2O)							

Schematic of Traverse Point Layout

Filter 111897-027

Diagram of Duct

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1116	30.210											
A1	10	1126	34.4	1.0	130		.49	231	225		67	67	59	2
1	20	1136	38.4	.90	130		.45	240	262		75	67	52	2
1	30	1146	42.65	.88	110		.49	240	269		78	68	52	2
A2	40	1156	46.73	.92	170		.45	243	269		79	68	52	2
2	50	1206	50.79	.87	150		.43	250	268		80	68	54	2
2	60	1216	55.20	1.0	105		.53	249	267		81	69	54	2
A3	70	1226	59.19	.93	200		.42	251	264		82	70	55	2
3	80	1236	65.23	.90	200		.40	245	266		81	70	57	2
3	90	1246	67.32	.95	120		.48	255	268		81	70	58	2
A4	100	1256	71.59	1.0	120		.49	254	265		82	70	57	2
4	110	1306	75.75	.87	120		.44	252	261		81	70	58	3
4	120	1316	80.14	.93	110		.51	250	260		82	70	52	3
A5	130	1326	84.2	.86	110		.44	235	252		82	70	52	3
5	140	1336	88.3	.80	110		.44	240	251		81	70	52	3
5	150	1346	92.2	.85	110		.43	246	257		81	70	54	3
A6	160	1356	96.13	.83	110		.42	243	253		80	70	56	3
6	170	1406	100.12	.86	150		.42	253	252		80	69	56	3
6	180	1416	104.266	.96	130		.47	253	258		80	70	57	3
	180	1431	104.318		LEAK CK	0.00@5"								
B6	190	1441	108.35	.80	100		.44	242	247		76	68	55	3
6	200	1451	112.82	1.0	95		.55	256	254		81	68	52	3
6	210	1501	117.07	.9	95		.50	260	260		82	69	50	3
B5	220	1511	121.33	.9	100		.50	263	262		81	69	51	3
5	230	1521	125.60	.90	100		.50	243	259		81	69	55	3
5	240	1531	129.86	.90	100		.50	247	257		80	68	54	3
B4	250	1541	133.99	.87	95		.48	247	258		79	67	54	3
4	260	1551	137.79	.95	90		.50	241	262		78	66	53	3
4	270	1601	142.42	.95	95		.52	255	252		77	65	52	3

Comments:

Plant	CWLP	Location	Furn Inlet	Run Number	3
Date	12/10/97	Sample Type	HCl	Operator	[illegible]

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
B#3	280	1611	146.64	.95	90	.50		248	259		76	64	52	3
3	290	1621	152.83	.95	90	.50		249	257		76	63	51	3
3	300	1631	155.01	.95	90	.50		242	256		75	63	50	3
B#2	310	1641	159.9	1.0	90	.55		249	253		75	62	51	3
2	320	1651	163.78	1.0	95	.55		253	254		74	62	51	3
2	330	1701	~~163.78~~ →	.95	100	.53		257	256		74	61	51	3
B#1	~~0440332~~	1703	168.915	1.0	95	.53		256	256		74	61	51	3
1	350													
1	360		168.6 DD			LEAK V	= 0.00	@ 5"						

Comments:

Facility:	Culp Alum. Alloy
Date:	12/11/97
Location:	Furnace Inlet
Run Number:	4
Sample Type:	m26

Total Sampling Time (min)	380.0
Corrected Barometric Pressure (in Hg)	29.99
Absolute Stack Pressure (in Hg)	29.87
Stack Static Pressure (in H2O)	-1.70
Average Stack Temperature (°F)	106.66
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	130.367
Average Meter Pressure (in H2O)	0.82
Average Meter Temperature (°F)	54.59
Moisture Collected (g)	79.30
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9800
Nozzle Diameter (in)	0.152
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.346
Standard Metered Volume (dscf)	131.501
Standard Metered Volume (dscm)	3.724
Stack Moisture (%V)	2.76
Mole Fraction Dry Stack Gas	0.972
Dry Molecular Weight	28.88
Wet Molecular Weight	28.58
Stack Gas Velocity (fpm)	2870.78
Stack Gas Velocity (mpm)	875.01
Volumetric Flow Rate (acfm)	22609.70
Volumetric Flow Rate (acmm)	640.31
Volumetric Flow Rate (dscfm)	20447.60
Volumetric Flow Rate (dscmm)	579.08
Percent Isokinetic	105.78
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	Pulp	Aluminum	XAD Trap Number	NA	Meter Box Number	A-40	
Date		12-11-97	Filter Heater Setting (°F)	252	Meter delta H @	1.748	
Operator		MAD	Probe Length & Type	4' (GAS)	DGM Factor (Y)	.98	
Sampling Location		Flora Inlet	Probe Heater Setting (°F)	252	Nozzle Type & ID (in.)	.152	
Sample Type		HCL	Minimum Sample Volume (ft3)	NA	Ambient Temperature (°F)	32	
Run Number		4	Initial Leak Check	0.012 @ 7	Assumed Moisture (% H2O)	.04	
Static Pressure (±) (in. H2O)		+1.7	Final Leak Check	0.007 @ 7	K-Factor		
Barometric Pressure (in. H2O)		30					

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0621	69.936											
BL	10	0631	73.11	.54	220	NA	.24	252	229	NA	46	44	39	0
	20	0640	76.21	.48	171		.24	254	232		52	45	40	1
*	30	0651	78.73	.42	195		.24	253	241		52	45	40	1
5	40	0701	82.83	1.0	147		.49	252	246		54	47	41	1
	50	0711	87.13	1.0	76		.55	251	245		56	48	41	1
	60	0721	90.62	.7	125		.34	250	249		63	49	42	1
4	70	0731	94.15	.72	96		.36	251	252		62	49	42	1
	80	0741	97.53	.72	197		.32	246	253		62	49	43	1
	90	0751	101.02	.68	114		.33	245	254		62	49	43	1
3	100	0801	104.43	.68	89		.33	242	255		63	50	43	1
	110	0811	108.2	.76	87		.42	241	256		62	50	43	1
	120	0821	110.98	.71	105		.37	243	252		63	50	43	1
2	130	0831	* 115.06	.69	101		.33	242	257		63	50	44	2
	140	0841	118.68	.71	99		.37	246	256		63	50	44	2
	150	0851	122.26	.78	130		.39	247	251		62	50	44	2
A 1	160	0901	125.57	.66	97		.33	246	253		63	50	43	3
	170	0911	129.16	.72	97		.36	245	254		63	50	43	3
	180	0921	132.693	.72	90		.36	255	253		63	50	43	3
STOP	186	0936	132.764		LEAK	CL 0.09 @ 7								
A 1	190	0946	136.14	.72	83		.37	254	253		62	49	43	3
	200	0956	139.46	.75	135		.37	256	254		57	49	43	3
3	210	1006	142.83	.66	103		.34	254	251		63	50	43	3
2	220	1016	146.35	.71	127		.35	253	254		63	50	43	3
	230	1026	149.66	.68	95		.36	254	257		61	50	43	3
4	240	1036	153.17	.75	78		.41	253	256		61	50	42	3
3	250	1046	156.72	.74	88		.39	256	249		63	50	41	3
	260	1056	160.54	.72	80		.37	254	252		62	50	42	3
*	270	1106	164.02	.7	82		.37	253	251		61	50	43	3

Comments: * 115.07

Plant	Culp	Location	Furn Id	Run Number	04
Date	12-11-97	Sample Type	M26	Operator	MMD

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), In.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, In.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm In)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (In.Hg)
	276	1106	164.02											
A-4	280	1110	167.65	.60	85	NA	.36	255	243	42	63	51	44	3
	290	1120	171.17	.66	85		.35	254	246	43	63	51	44	3
	300	1130	174.73	.68	83		.36	253	247	42	63	51	44	3.5
B	310	1140	178.21	.66	83		.35	254	246	41	63	51	44	3.5
	320	1150	181.46	.56	82		.29	255	252	41	63	51	44	3.5
	330	1206	184.75	.71	83		.37	253	251	42	63	50	44	3.5
C	340	1216	187.72	.49	83		.32	254	250	42	58	52	44	3.5
	350	1226	191.02	.53	83		.29	254	251	41	57	52	44	3.5
	360	1236	194.08	.5	81		.27	252	252	41	57	50	44	3.5
	370	1246	197.2	.5	81		.26	254	254	41	57	52	44	3.5
	380	1256	200.374	.60	83		.33	251	252	43	58	52	45	3.5
	~~370~~	~~1306~~		.69										
					LEAK	in .006 @ 7"Hg								

Comments:

Facility:	Culp Alum. Alloy
Date:	12/8/97
Location:	Furnace Inlet
Run Number:	1
Sample Type:	M23

Total Sampling Time (min)	327.0
Corrected Barometric Pressure (in Hg)	29.33
Absolute Stack Pressure (in Hg)	29.20
Stack Static Pressure (in H2O)	-1.70
Average Stack Temperature (°F)	101.76
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	135.625
Average Meter Pressure (in H2O)	0.50
Average Meter Temperature (°F)	53.92
Moisture Collected (g)	30.10
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.156
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.416
Standard Metered Volume (dscf)	135.966
Standard Metered Volume (dscm)	3.851
Stack Moisture (%V)	1.03
Mole Fraction Dry Stack Gas	0.990
Dry Molecular Weight	28.88
Wet Molecular Weight	28.77
Stack Gas Velocity (fpm)	3404.80
Stack Gas Velocity (mpm)	1037.78
Volumetric Flow Rate (acfm)	26815.50
Volumetric Flow Rate (acmm)	759.41
Volumetric Flow Rate (dscfm)	24344.11
Volumetric Flow Rate (dscmm)	689.43
Percent Isokinetic	101.35
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run Furn. In-01
Page 1 of 2

Plant	CuLiAC HILL	KAD Trap Number		Meter Box Number	A31
Date	12/18/97	Filter Heater Setting (°F)	248	Meter delta H @	1.72
Operator	JOERUE	Probe Length & Type	4' 6165	DGM Factor (Y)	.994
Sampling Location	Furn. Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.156
Sample Type	METALS	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	34
Run Number	1	Initial Leak Check	0.018@16	Assumed Moisture (% H2O)	4
Static Pressure (±) (in. H2O)	-1.7	Final Leak Check	.006@7"	K-Factor	2.02
Barometric Pressure (in. H2O)	29.33				

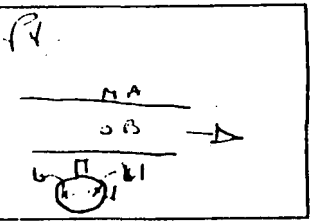


Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0947	54.002										1	
A1	10	0957	58.62	1.2	200		.64	238	242	41	47	41	36	3
1	20	1007	62.59	.96	92		.46	240	243	41	51	42	36	2
1	30	1017	66.81	1.1	140		.53	249	239	42	55	43	37	3
A2	40	1027	71.48	1.2	98		.65	244	242	43	56	44	38	4
2	50	1037	75.76	1.1	130/80	.53	.49	238	244	42	57	46	41	4
2	60	1047	80.13	1.1	120		.55	229	244	42	58	47	41	5
A3	70	1057	84.62	1.1	83		.54	228	247	42	58	47	41	5
3	80	1107	89.2	1.1	100		.54	229	246	42	58	48	42	6
3	90	1117	93.63	1.1	140/120		.55	229	245	43	59	48	43	5
A4	100	1127	98.2	1.2	100		.62	237	236	44	60	49	44	5
4	110	1137	102.67	1.2	180/150		.57	231	234	43	59	49	44	6
4	120	1147	107.05	1.1	85		.59	242	239	43	59	49	44	6
A5	130	1157	111.64	1.1	95		.59	245	236	44	59	49	45	7
5	140	1207	116.21	1.1	85		.59	245	230	45	60	48 49	46	6
5	150	1217	120.78	1.1	80		.59	245	231	43	60	50	46	6
A6	160	1227	125.02	.95	75		.51	242	240	43	60	50	46	6
6	170	1237	129.2	1.0	180		.48	242	241	42	60	50	45	6
6	180	1247	133.165	.88	106		.47	253	244	43	59	50	45	6
						LEAK	L' = 0.00	@@8						

Comments:

Plant	CCLP	Location	Furn. Inlet	Run Number	1
Date	12/8/97	Sample Type	M23	Operator	Cook

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0+180	1318	133.5											
B6	10	1328	137.25	.75	120		.46	250	241	43	58	49	40	5
6	20	1338	140.70	.71	100		.38	258	243	43	58	49	39	6
6	30	1348	144.59	.78	85		.42	247	244	42	59	49	38	6
B5	40	1354	148.3	.74	80		.40	258	244	43	60	50	39	6
5	50	1364	152.17	.75	80		.40	258	246	44	60	50	40	6
5	60	1414	156.13	.73	77		.42	252	246	44	60	51	41	6
B4	70	1424	159.43	.95	78		.51	254	249	44	61	51	41	6
4	80	1434	164.73	1.0	77		.55	260	251	44	62	51	42	6
4	90	1444	168.67	.79	80		.43	260	249	44	62	52	42	6
B3	100	1454	172.57	.78	82		.43	267	251	43	62	52	42	5
3	110	1464	176.47	.78	84		.43	266	253	43	62	52	42	5
3	120	1514	180.34	.77	84		.42	264	255	43	62	52	41	5
B2	130	1524	183.91	.67	82		.36	267	259	43	61	52	42	5
2	140	1534 OK	187.6	.67	83		.36	266	259	44	61	52	42	5
2	150	1544	189.562	.67	83		.36	246	259	43	61	52	42	5
	147	1541												
					LEAK	✓=0.006 @ 7"								

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cudo Aluminum Alloy
Date	12/8/97
Sampling Location	RF1 INLET
Sample Type	Method 23
Run Number	# 1
Impinger Box Number	
Recovery Person	Marc Ayde / Carol Gurkin
Recovery Rinses	MeCl$_2$/ACE
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	—	Knockout (short tip)	502.0	500.8	1.2
2	HPLC H_2O	100 mls	Modified	602.3	609.0	(6.7)
3	HPLC H_2O	100mls	Modified	615.1	616.8	(1.7)
4	EMPTY	—	Modified	493.7	492.9	.8
5	Silica Gel	200-300g	Modified	829.5	793.0	36.5
6						
7						
			Total Weight Gain (g)			30.1

Facility:	Culp Alum. Alloy
Date:	12/9/97
Location:	Furnace Inlet
Run Number:	2
Sample Type:	M23

Total Sampling Time (min)	342.0
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.22
Stack Static Pressure (in H2O)	-1.40
Average Stack Temperature (°F)	114.14
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	134.327
Average Meter Pressure (in H2O)	0.91
Average Meter Temperature (°F)	59.53
Moisture Collected (g)	42.20
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.155
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.384
Standard Metered Volume (dscf)	131.206
Standard Metered Volume (dscm)	3.716
Stack Moisture (%V)	1.49
Mole Fraction Dry Stack Gas	0.985
Dry Molecular Weight	28.88
Wet Molecular Weight	28.72
Stack Gas Velocity (fpm)	3255.36
Stack Gas Velocity (mpm)	992.23
Volumetric Flow Rate (acfm)	25638.52
Volumetric Flow Rate (acmm)	726.08
Volumetric Flow Rate (dscfm)	22680.61
Volumetric Flow Rate (dscmm)	642.31
Percent Isokinetic	101.67
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run F1A-S10-02
Page 1 of 2

Plant	Cane AL Hdwy	XAD Trap Number		Meter Box Number	A 39		
Date	12/9/97	Filter Heater Setting (°F)	248	Meter delta H @	1.72		
Operator	Dottie	Probe Length & Type	4' Glass	DGM Factor (Y)	.994		
Sampling Location	Fun Inlet	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.1565		
Sample Type	CONDOF	Minimum Sample Volume (ft3)		Ambient Temperature (°F)			
Run Number	2	Initial Leak Check	0.018@15"	Assumed Moisture (% H2O)			
Static Pressure (±) (in. H2O)	-1.4	Final Leak Check	0.00@10"	K-Factor			
Barometric Pressure (in. H2O)	29.30						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1210	91.595											
B1	10	1220	95.54	1.1	150		.49	231	248	46	54	49	48	3
B	20	1230	99.50	.90	210		.49	231	252	42	57	49	48	3
B	30	1240	103.05	.80	170		.38	234	254	43	61	51	45	3
B1	40	1250	107.04	.95	140		.45	227	251	42	63	52	44	4
B	50	1300	111.10	.87	104		.47	241	253	42	65	54	44	6
B	60	1310	114.97	.85	150		.41	242	254	42	64	55	43	7
B1	70	1320	119.15	.90	90		.49	256	255	44	66	56	44	7
B	80	1330	123.14	.90	130		.43	252	258	46	67	57	45	7
B	90	1340	127.09	.95	160		.45	246	257	46	67	57	45	7
B3	100	1350	131.10	.95	150		.45	255	253	47	67	57	45	7
3	110	1400	135.16	.95	120		.45	254	259	47	68	58	46	7
3	120	1410	139.02	.85	140		.41	251	264	47	67	58	49	7
B3	130	1420	143.0	.90	145		.45	251	260	47	67	58	48	7
2	140	1430	147.04	.87	90		.47	260	263	48	67	59	50	7
2	150	1440	151.10	.87	180		.38	260	265	49	67	58	52	7
B2	160	1450	154.43	.87	180		.38	270	263	50	67	58	52	7
1	170	1500	158.35	.84	90		.45	275	266	51	67	58	54	7
1	180	1510	162.272	.80	110		.43	276	260	52	67	58	57	7
	180	1536	162.583			Leak ✓	≤0.005	@10"						
A1	190	1546	166.34	.73	191		.39	254	268	35	65	57	48	7
1	200	1556	169.99	.73	163		.39	247	266	37	67	57	44	7
1	210	1606	173.76	.73	90		.39	246	262	37	67	58	43	8
A2	220	1616	177.55	.73	90		.39	244	259	37	67	58	43	8
2	230	1626	181.35	.73	90		.39	237	259	38	67	58	43	8
2	240	1636	184.78	.73	80		.39	239	257	38	67	58	43	8
A3	250	1646	189.20	.85	90		.46	249	257	38	66	58	44	8
3	260	1656	193.37	.85	80		.46	252	256	40	67	58	45	9
3	270	1706	197.95	.80	80		.47	245	254	42	67	58	46	9

Comments:

Plant	Pulp	Location	Inlet Furnace	Run Number	02
Date	12-9-97	Sample Type	M23	Operator	MW/PM

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
A 1	280	1716	201 (191.95)	.84	82	NA	.42	245	253	46	66	58	48	8.5
5 1	290	1726	205.3	.80	84		.47	243	253	47	66	58	49	9
4 1	300	1736	209.59	.80	84		.47	240	252	49	67	58	50	9
SA 1	310	1746	213.75	.80	84		.47	252	250	51	67	58	52	9
5 1	320	1756	~~221.4~~ 218.4	.80	85		.47	260	251	53	67	58	53	9
5 1	330	1806	221.9	.82	91		.44	252	252	55	67	58	55	8
A 6	340	1816	125.78	.80	90		.43	249	252	56	67	58	56	8
6	~~350~~ 341	1818	126.228	.80	92		.43	241	252	57	67	58	57	8
6	360					(ΔH/K)=0.0050		10"						

Comments:

ERG
Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Curtis Aluminum Alloy
Date	
Sampling Location	RF2 INLET
Sample Type	Method 23
Run Number	#2
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	502.3	497.3	5.0
2	HPLC H_2O	100 mls	Modified	598.2	603.6	(5.4)
3	HPLC H_2O	100mls	Modified	645.7	647.2	(1.5)
4	EMPTY	/	Modified	496.2	495.1	1.1
5	Silica Gel	200-300g	Modified	789.6	746.6	43
6						
7						
			Total Weight Gain (g)			42.2

Facility:	Culp Alum. Alloy
Date:	12/10/97
Location:	Furnace Inlet
Run Number:	3
Sample Type:	M23

Total Sampling Time (min)	333.0
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.22
Stack Static Pressure (in H2O)	-1.40
Average Stack Temperature (°F)	116.47
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	142.514
Average Meter Pressure (in H2O)	0.98
Average Meter Temperature (°F)	72.44
Moisture Collected (g)	32.30
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.156
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.414
Standard Metered Volume (dscf)	137.833
Standard Metered Volume (dscm)	3.903
Stack Moisture (%V)	1.09
Mole Fraction Dry Stack Gas	0.989
Dry Molecular Weight	28.88
Wet Molecular Weight	28.76
Stack Gas Velocity (fpm)	3486.72
Stack Gas Velocity (mpm)	1062.75
Volumetric Flow Rate (acfm)	27460.70
Volumetric Flow Rate (acmm)	777.69
Volumetric Flow Rate (dscfm)	24293.10
Volumetric Flow Rate (dscmm)	687.98
Percent Isokinetic	101.10
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run FIN-CDO-03
Page 1 of 2

Plant	Culp	XAD Trap Number		Meter Box Number	A39		
Date	12/10/97	Filter Heater Setting (°F)	248	Meter delta H @	1.72		
Operator	Dave	Probe Length & Type	4' Glass	DGM Factor (Y)	.994		
Sampling Location	Train In	Probe Heater Setting (°F)	248	Nozzle Type & ID (in.)	.156		
Sample Type	M23	Minimum Sample Volume (ft3)		Ambient Temperature (°F)	63		
Run Number	3	Initial Leak Check	0.015@11	Assumed Moisture (% H2O)			
Static Pressure (±) (in. H2O)	-1.9	Final Leak Check	0.00@6"	K-Factor			
Barometric Pressure (in. H2O)							

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	1115	27.978											
A4	10	1125	32.38	1.1	130		.49	257	268	56	69	67	59	2
4	20	1135	36.59	1.0	150		.48	258	265	67	72	67	58	2
4	30	1145	41.05	.98	110		.53	235	265	51	75	68	51	2
A5	40	1155	45.09	.90	150		.43	232	253	51	77	69	50	2
5	50	1205	48.93	.88	140		.42	240	257	52	77	69	50	2
5	60	1215	53.42	.9590	110		.51	236	249	51	79	70	48	4
A6	70	1225	57.39	.90	130		.40	245	253	51	79	71	49	3
6	80	1235	61.29	.95	120		.43	243	259	51	78	71	51	3
6	90	1245	65.49	.90	120		.47	246	262	51	77	71	51	3
B3	100	1255	69.01	1.0	150		.48	247	261	51	78	71	51	4
3	110	1305	72.00	.92	120		.45	239	259	53	78	71	53	5
3	120	1315	78.48	.96	110		.52	242	253	49	78	71	50	5
B2	130	1325	82.84	.95	110		.52	241	249	50	78	71	49	5
2	140	1335	87.10	.95	120		.47	246	250	52	77	70	52	5
2	150	1345	91.27	.90	110		.46	246	248	51	77	71	51	5
B1	160	1355	95.1	.73	105		.39	248	248	52	76	71	52	4
1	170	1405	98.65	.70	150		.33	254	255	53	77	70	54	4
1	180	1415	102.429	.70	120		.35	247	252	53	76	70	55	4
	180	1430	102.511	Leak = 0.00 @ 7"										
A1A1	180190	1440	106.77	.90	100		.48	236	241	54	76	70	56	5
A1	200	1450	111.43	1.1	90		.59	244	239	50	78	70	52	6
1	210	1500	116.02	1.05	95		.57	244	242	50	78	70	51	6
A2	220	1510	120.39	.95	100		.51	258	249	45	79	70	52	5
2	230	1520	124.65	.90	95		.48	242	245	52	78	71	54	4
2	240	1530	129	.95	100		.51	244	243	52	77	70	55	4
A3	250	1540	133.48	1.0	95		.53	245	244	53	76	69	55	4
3	260	1550	137.45	1.0	90		.53	253	247	51	76	69	55	4
3	270	1600	142.29	1.0	95		.53	250	255	52	76	68	55	4

Comments:

Plant	Culp	Location	Furnace	Run Number	3
Date	12/10/97	Sample Type	CDD/CDF	Operator	Dave

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
A4	280	1610	146.90	1.1	95	.59		251	248	53	75	67	57	4
4	290	1620	151.42	1.1	90	.53		242	243	54	74	67	59	4
4	300	1630	155.95	1.05	90	.57		245	246	56	75	66	60	4
A5	310	1640	160.78	1.0	90	.53		238	237	52	73	64	60	4
5	320	1650	164.64	1.0	90	.53		240	238	50 48	73	65	56	4
5	330	1700	169.4	1.05	95	.57		244	240	48	73	65	57	4
A6	338	1703	170.574	1.05	95	.57		245	243	48	73	64	54	4
6					LEAK	=0.00	@6"							
6														

Comments:

ERG
Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Curtiss Aluminum Alloy
Date	12/10/97
Sampling Location	RF1 INLET
Sample Type	Method 23
Run Number	#3
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	—	Knockout (short tip)	484.1	483.1	1.0
2	HPLC H_2O	100 mls	Modified	565.3	568.6	(3.3)
3	HPLC H_2O	100mls	Modified	595.7	596.5	(.8)
4	EMPTY	—	Modified	483.9	483.7	.2
5	Silica Gel	200-300g	Modified	831.7	796.5	35.2
6						
7						
			Total Weight Gain (g)			32.3

Facility:	Culp Alum. Alloy
Date:	12/11/97
Location:	Furnace Inlet
Run Number:	4
Sample Type:	M23

Total Sampling Time (min)	380.0
Corrected Barometric Pressure (in Hg)	29.99
Absolute Stack Pressure (in Hg)	29.87
Stack Static Pressure (in H2O)	-1.70
Average Stack Temperature (°F)	101.08
Stack Area (sq in)	1134.11
Actual Meter Volume (cu ft)	133.655
Average Meter Pressure (in H2O)	0.83
Average Meter Temperature (°F)	55.03
Moisture Collected (g)	23.70
Carbon Dioxide Concentration (%V)	0.5
Oxygen Concentration (%V)	20.0
Nitrogen Concentration (%V)	79.5
Dry Gas Meter Factor	0.9940
Nozzle Diameter (in)	0.155
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.360
Standard Metered Volume (dscf)	136.643
Standard Metered Volume (dscm)	3.870
Stack Moisture (%V)	0.81
Mole Fraction Dry Stack Gas	0.992
Dry Molecular Weight	28.88
Wet Molecular Weight	28.79
Stack Gas Velocity (fpm)	2902.14
Stack Gas Velocity (mpm)	884.57
Volumetric Flow Rate (acfm)	22856.65
Volumetric Flow Rate (acmm)	647.30
Volumetric Flow Rate (dscfm)	21296.01
Volumetric Flow Rate (dscmm)	603.10
Percent Isokinetic	101.49
Percent Excess Air	1992.23
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	Culp	Aluminum	XAD Trap Number		Meter Box Number	A-39	
Date		12-11-97	Filter Heater Setting (°F)	252	Meter delta H @	1.72	
Operator		MAT	Probe Length & Type	4' Glass	DGM Factor (Y)	.974	
Sampling Location	Furnace 174		Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	155	
Sample Type		M23	Minimum Sample Volume (ft3)	NA	Ambient Temperature (°F)	38	
Run Number		4	Initial Leak Check	0.011 @ 10	Assumed Moisture (% H2O)	5	
Static Pressure (±) (in. H2O)			Final Leak Check	.004 @ 15	K-Factor		
Barometric Pressure (in. H2O)							

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 10 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0620	71.206											
1	10	0630	74.97	.58	185	NA	.235	258	225	42	45	45	42	0
	20	0640	77.85	.52	140		.24	256	236	42	50	46	43	1
	30	0650	80.42	.52	184		.24	254	239	43	52	46	43	1
2	40	0700	84.72	1.1	145		.52	251	240	43	53	47	43	1
	50	0710	88.92	1.0	105		.53	252	241	44	57	49	44	1
	60	0720	92.75	.84	124		.40	251	246	43	60	49	44	1
3	70	0730	96.42	.81	98		.38	250	247	44	61	49	44	1
	80	0740	100.07	.85	107		.37	247	248	44	60	50	42	1
	90	0750	103.64	.74	100		.35	250	245	44	60	50	42	1
4	100	0800	107.16	.75	86		.36	256	250	46	60	51	43	1
	110	0810	110.76	.76	89		.36	294	252	46	60	53	43	1
	120	0820	114.17	.72	99		.34	253	250	45	60	53	42	1
5	130	0830	117.58	.69	100		.32	254	247	46	60	52	41	2.5
	140	0840	121.13	.71	95		.35	253	246	46	61	52	41	2.5
	150	0850	124.6	.73	90		.37	251	245	45	61	52	42	2.5
6	160	0900	128.06	.66	93		.33	247	252	45	61	52	43	3
	170	0910	131.53	.66	97		.33	246	251	46	56	53	43	3
	180	0920	134.958	.69	102		.35	246	250	46	56	53	43	3
STOP	186	0935	135.127			CHK	CHK	.006 @ 5	11H					
1	190	0945	136.58	.71	84		.36	247	252	46	56	52	43	3
	200	0955	141.94	.69	135		.34	245	251	46	59	51	43	3
	210	1005	145.32	.62	105		.32	246	252	47	59	57	43	3
5	220	1015	148.65	.65	133		.32	247	251	48	61	50	43	3
	230	1025	152.11	.65	90		.34	245	252	44	60	51	43	3
	240	1035	155.53	.74	77		.39	246	251	44	60	51	43	3
4	250	1045	159.0	.74	96		.39	247	255	44	60	51	43	3.5
	260	1055	162.69	.65	82		.34	246	252	43	60	51	43	3.5
	270	1105	166.25	.65	83		.34	247	251	43	60	51	43	3.5

Comments:

Page ___ of ___

Plant	Cutler AL.	Location	Firebee Inlet	Run Number	04
Date	12-11-97	Sample Type	M23	Operator	MD

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	~~270~~	~~1105~~	~~166.25~~											
3	~~290~~	~~1115~~	~~169.84~~	.66	85	NA	.35	239	254	42	61	53	43	3.5
	~~290~~	~~1125~~	~~173.4~~	.64	82		.37	240	250	43	61	53	43	3.5
	~~300~~	~~1135~~	~~176.71~~	.66	81		.35	240	253	43	61	53	43	3.5
2	~~310~~	~~1146~~	~~180.46~~	.66	82		.35	241	257	44	61	53	43	3.5
	~~330~~	~~1156~~	~~183.92~~	.64	80		.34	242	257	43	61	53	43	3.5
	~~330~~	~~1206~~	~~187.20~~	.64	84		.34	241	256	43	61	53	43	3.5
1	~~340~~	~~1216~~	~~190.56~~	.64	83		.34	242	249	43	61	53	43	3.5
	~~350~~	~~1226~~	~~194.44~~	.65	84		.34	241	245	43	61	53	43	3.5
	~~360~~	~~1236~~	~~197.88~~	.65	84		.34	241	246	43	61	53	43	3.5
2	~~370~~	~~1245~~	~~201.64~~	.65	86		.34	242	247	43	61	54	43	3.5
	~~380~~	~~1255~~	~~205.024~~	.66	88		.35	249	253	43	61	54	43	3.5
	~~390~~	~~1305~~		.72	85		.38	251	254	44	61	54	43	3.5
3														
					.0042	8 ml								

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cu/Al Aluminum Alloy
Date	12/10/97
Sampling Location	RF2 INLET
Sample Type	Method 23
Run Number	4
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	—	Knockout (short tip)	520.2	520.4	(.2)
2	HPLC H_2O	100 mls	Modified	563.9	571.0	(7.1)
3	HPLC H_2O	100mls	Modified	583.5	585.4	(1.9)
4	EMPTY	—	Modified	454.4	454.8	(.4)
5	Silica Gel	200-300g	Modified	793.8	760.6	33.2
6						
7						
				Total Weight Gain (g)		23.7

Facility:	Culp Alum. Alloy
Date:	12/08/97
Location:	Furnace out
Run Number:	1
Sample Type:	m26

Total Sampling Time (min)	321.5
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.29
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	89.35
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	264.338
Average Meter Pressure (in H2O)	0.73
Average Meter Temperature (°F)	60.55
Moisture Collected (g)	91.50
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.807
Standard Metered Volume (dscf)	259.294
Standard Metered Volume (dscm)	7.343
Stack Moisture (%V)	1.64
Mole Fraction Dry Stack Gas	0.984
Dry Molecular Weight	28.84
Wet Molecular Weight	28.66
Stack Gas Velocity (fpm)	2535.47
Stack Gas Velocity (mpm)	772.81
Volumetric Flow Rate (acfm)	31861.67
Volumetric Flow Rate (acmm)	902.32
Volumetric Flow Rate (dscfm)	29491.94
Volumetric Flow Rate (dscmm)	835.21
Percent Isokinetic	96.14
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

HCL OUT FURN.

Moisture Calculated 18.5

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CYLPHAL	XAD Trap Number	—	Meter Box Number	A-38		
Date	12	Filter Heater Setting (°F)	250	Meter delta H @	1.816		
Operator	MW/SS	Probe Length & Type	6' PyRex	DGM Factor (Y)	0.981		
Sampling Location	FURNACE OUT	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.256		
Sample Type	PM HCL	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	30°		
Run Number	1	Initial Leak Check	.01@10"	Assumed Moisture (% H2O)	47.		
Static Pressure (±) (in. H2O)	-0.3	Final Leak Check	.00@12"	K-Factor	4.16		
Barometric Pressure (in. H2O)	993 29.33						

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0945	356.43											
B-12	7.5	0952.5	363.3	.72	90	3.0	3.0	226	230	—	64	45	35	5.0
12	15	1000	371.1	.72	100	3.0	3.0	244	233	—	65	46	35	5.0
11	22.5	1007.5	377.56	.75	90	3.12	3.12	277	245	—	66	47	38	6.0
11	30	1015	385.5	.75	97	3.12	3.12	252	251	—	68	49	35	6.0
10	37.5	1022.5	393.8	.84	95	3.50	3.50	251	226	—	69	50	38	5.5
10	45	1030	400.0	.72	94	3.0	3.0	232	228	—	69	51	39	5.0
9	52.5	1037.5	406.8	.67	100	2.79	2.79	252	239	—	69	51	40	5.0
9	60	1045	414.1	.62	109	2.58	2.58	235	252	—	68	51	41	4.5
8	67.5	1052.5	420.17	.72	96	3.00	3.00	256	236	—	68	51	42	5.0
8	75	1100	428.1	.53	103	2.20	2.20	252	236	—	68	51	43	4.0
7	82.5	1107.5	433.4	.53	89	2.20	2.20	246	236	—	66	51	43	4.0
7	90	1115	444.2	.53	92	2.20	2.20	250	236	—	65	51	43	4.0
6	97.5	1122.5	448.1	.53	99	2.20	2.20	256	238	—	65	50	44	4.0
6	105	1130	452.1	.51	96	2.12	2.12	256	236	—	65	50	45	4.0
5	112.5	1137.5	457.5	.56	95	2.33	2.33	253	237	—	65	51	45	4.0
5	120	1145	464.2	.56	86	2.33	2.33	261	238	—	66	50	44	4.0
4	127.5	1152.5	470.5	.55	111	2.29	2.24	256	238	—	66	51	46	4.0
4	135	1200	477.0	.57	89	2.37	2.37	260	240	—	67	51	46	4.0
3	142.5	1207.5	483.2	.57	83	2.37	2.37	253	238	—	67	51	47	4.0
3	150	1215	489.4	.57	81	2.37	2.37	256	238	—	67	52	48	4.0
2	157.5	1222.5	495.7	.53	79	2.20	2.20	256	236	—	67	52	48	4.0
2	165	1230	502.0	.53	102	2.20	2.20	257	237	—	69	52	50	3.5
1	172.5	1237.5	507.18	.40	106	1.67	1.67	260	237	—	69	52	50	3.5
1	180	1245	513.196	.44	90	1.83	1.83	258	240	—	69	52	50	3.0
				Leak Check		.01 @ 10"								

Comments:

Plant	CLP AL AL	Location	OUTLET	Run Number	1
Date	12/8/97	Sample Type	HCL - MS	Operator	MWM/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
~~A-12~~	180	15:12.5	513.36											
A-12	187.5	13:20	518.8	.49	102	2.04	2.04	280	256	—	69	49	42	3.5
A-12	195	13:27.5	525.2	.49	112	2.04	2.04	268	256	—	70	50	42	3.5
11	202.5	13:35	532.0	.52	93	2.17	2.17	264	256	—	72	52	45	3.8
11	210.0	42.5	536.8	.52	84	2.17	2.17	263	257	—	72	53	49	3.8
10	217.5	13:50	543.5	.53	83	2.21	2.21	262	255	—	72	54	49	4.0
10	2:25	57.5	550.2	.52	83	2.17	2.17	262	254	—	72	54	49	4.0
9	232.5	14:05	556.1	.51	81	2.12	2.12	258	255	—	73	54	50	4.0
9	2:40	12.5	563.0	.51	78	2.12	2.12	262	257	—	72	55	50	4.0
8	2:47.5	14:20	568.0	.47	78	1.96	1.96	257	259	—	72	54	50	3.8
8	2:55	27.5	573.4	.47	78	1.96	1.96	260	258	—	72	54	51	3.8
7	2:62.5	14:35	579.4	.47	77	1.96	1.96	260	259	—	72	55	52	4.0
7	2:70	42.5	585.9	.43	77	1.79	1.79	264	259	—	72	55	52	3.5
6		14:50	590.2	.41	78	1.70	1.70	267	259	—	72	55	53	3.3
6	285	57.5	595.5	.39	78	1.62	1.62	265	258	—	72	55	53	3.2
5		15:05	600.8	.39	79	1.62	1.62	271	260	—	72	56	54	3.2
5	300	12.5	606.1	.40	79	1.66	1.66	269	260	—	72	56	54	3.1
4		15:20	611.2	.37	79	1.54	1.54	268	260	—	72	56	54	3.0
4	315	27.5	617.0	.37	79	1.54	1.54	277	261	—	72	56	55	3.0
3	1534	~~15:35~~	620.932	.35	78	1.46	1.46	266	260	—	72	56	56	2.5
3	330	42.5												
2		15:50			Small	leak check		0.00 @ 12"						
2	345													
1		16:05												
1	360	16:12.5												

Comments:

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	2
Sample Type:	m26

Total Sampling Time (min)	341.5
Corrected Barometric Pressure (in Hg)	29.29
Absolute Stack Pressure (in Hg)	29.26
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	99.91
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	254.658
Average Meter Pressure (in H2O)	0.67
Average Meter Temperature (°F)	70.20
Moisture Collected (g)	130.80
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.780
Standard Metered Volume (dscf)	266.319
Standard Metered Volume (dscm)	7.542
Stack Moisture (%V)	2.26
Mole Fraction Dry Stack Gas	0.977
Dry Molecular Weight	28.84
Wet Molecular Weight	28.59
Stack Gas Velocity (fpm)	2346.44
Stack Gas Velocity (mpm)	715.20
Volumetric Flow Rate (acfm)	29486.27
Volumetric Flow Rate (acmm)	835.05
Volumetric Flow Rate (dscfm)	26580.24
Volumetric Flow Rate (dscmm)	752.75
Percent Isokinetic	103.15
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Moisture 48.5

Run ____
Page 1 of ____

Plant	CULP	AL. AL.	XAD Trap Number	—	Meter Box Number	A-37	
Date		12/9/97	Filter Heater Setting (°F)	250	Meter delta H @	1.813	
Operator		MWH / JS	Probe Length & Type	6' PYREX	DGM Factor (Y)	0.988	
Sampling Location	FURNACE B#	OUTLET	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.256	
Sample Type		PM / HCL	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	40°	
Run Number		2	Initial Leak Check	.01@9"	Assumed Moisture (% H2O)	1%	
Static Pressure (±) (in. H2O)		-0.3"	Final Leak Check	.01@10"	K-Factor	4.43	
Barometric Pressure (in. H2O)		29.30					

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 7.5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	↑	593.812											
B-1	7.5	12:07 50	600.0	.52	105	2.30	2.30	258	242		74	59	47	5
1	15	12:15	606.35	.63	104	2.79	2.79	255	245		78	59	46	6
2	22.5	12:22.5	614.2	.65	125	2.87	2.87	249	244		78	59	47	6.5
2	30	12:30	621.6	.70	122	3.1	3.10	261	247		79	59	49	7.1
3	37.5	12:37.5	629.0	.71	105	3.15	3.15	249	246		79	61	52	7.1
3	45	12:45	636.7	.74	119	3.27	3.27	252	245		79	62	53	7.5
4	52.5	12:52.5	644.55	.74	105	3.27	3.27	246	245		79	62	55	7.7
4	60	13:00	653.4	.76	119	3.37	3.37	242	245		79	62	57	8
5	67.5	13:07.5	658.2	.80	102	3.54	3.54	235	247		80	62	59	8.5
5	75	13:15	667.1	.46	111	2.03	2.03	239	248		79	62	59	5
6	82.5	13:22.5	672.88	.43	106	1.90	1.90	243	243		75	62	58	5
6	90	13:30	678.9	.42	115	1.86	1.86	247	247		79	62	56	5
7	97.5	13:37.6	684.4	.41	109	1.82	1.82	253	248		79	62	58	5.0
7	105	13:45	691.0	.42	103	1.86	1.86	252	248		80	62	58	5.0
8	112.5	13:52.5	696.0	.44	98	1.95	1.95	257	248		79	62	58	5.0
8	120	14:00	703.0	.44	99	1.95	1.95	260	250		79	62	58	5.0
9	127.5	07.5	708.21	.41	115	1.82	1.82	260	249		80	63	59	5.0
9	135	14:15	714.0	.41	111	1.82	1.82	262	250		78	62	59	5.0
10	142.5	22.5	719.254	.32	117	1.42	1.42	260	248		79	62	59	4.0
10	150	14:30	724.6	.34	114	1.51	1.51	261	248		78	63	58	4.0
11	157.5	37.5	729.7	.29	125	1.28	1.28	251	246		79	63	57	4.0
11	165	14:45	734.9	.32	117	1.42	1.42	261	246		79	63	56	4.0
12	172.5	52.5	739.65	.35	104	1.55	1.55	258	247		79	63	57	4.0
12	180	15:00	745.08	.31	113	1.37	1.37	255	249		78	64	57	4.0
		15:07.5												

Comments:

Page ___

Plant	EKAA	Location	FUEN. 1 OUT	Run Number	2
Date	12/9/92	Sample Type	HCL	Operator	MWH/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	15:35	745.197											
A-12	187.5	15:42.5	751.1	.44	96	1.95	1.95	252	251	—	76	62	45	5.0
12	195	15:50	757.05	.42	99	1.86	1.86	237	246	—	78	62	46	5.0
11	~~197.5~~	15:57.5	763.09	.41	99	1.87	1.86	235	244	—	77	62	47	4.5
11	210	16:05	769.0	.43	92	1.90	1.90	233	244	—	79	62	48	5
10	217.5	16:12.5	774.5	.46	91	2.04	2.04	247	242	—	79	62	54	5.0
10	225	16:20	780.91	.49	91	2.17	2.17	236	241	—	79	62	50	5.0
9	232.5	~~16:27.5~~	787.5	.48	89	2.13	2.13	241	242	—	79	62	51	5
9	240	16:35.5	793.5	.49	88	2.17	2.17	237	242	—	79	62	50	5.0
8	247.5	16:42.5	799.3	.46	88	2.04	2.04	237	243	—	79	62	51	5.0
8	255	16:50.5	806.0	.46	86	2.04	2.04	238	243	—	79	63	51	5.0
7	262.5	16:57.5	813.1	.43	86	1.90	1.90	248	243	—	79	62	51	5.0
7	270	17:00	818.6	.42	85	1.86	1.86	240	243	—	78	62	51	4.9
6	277.5	17:07.5	823.63	.38	84	1.68	1.68	239	242	—	78	62	51	4.5
6	285	17:15	831.54	.37	84	1.64	1.64	237	242	—	77	62	50	4.0
5	292.5	17:22.5	834.72	.33	84	1.42	1.42	242	240	—	78	63	50	4.0
5	298	17:30	839.80	.35	85	1.42	1.42	248	243	—	79	63	47	4.0
4	297.5	17:37.5	845.00	.34	84	1.51	1.51	247	243	—	78	63	46	4.0
4	310	17:42.5	850.3	.34	84	1.51	1.51	255	243	—	79	63	46	4.0
3	317.5	17:50	855.5	.34	85	1.51	1.51	257	245	—	79	62	47	4.0
3	325	17:57.5	860.99	.34	85	1.51	1.51	254	245	—	86	65	48	4.0
2	332.5	18:02.5	866.11	.33	86	1.46	1.46	265	247	—	79	64	49	4.0
2	~~340~~341.5	18:10.5	868.975	.32	87	1.42	1.42	262	246	—	78	64	48	4.0
1	347.5	18:17.5								—				
1	355	18:25								—				
					Leak check		.01 @ 10"							

Comments:

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	3
Sample Type:	m26

Total Sampling Time (min)	331.5
Corrected Barometric Pressure (in Hg)	29.20
Absolute Stack Pressure (in Hg)	29.17
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	108.18
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	261.702
Average Meter Pressure (in H2O)	1.84
Average Meter Temperature (°F)	77.58
Moisture Collected (g)	88.60
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.751
Standard Metered Volume (dscf)	248.892
Standard Metered Volume (dscm)	7.049
Stack Moisture (%V)	1.65
Mole Fraction Dry Stack Gas	0.983
Dry Molecular Weight	28.84
Wet Molecular Weight	28.66
Stack Gas Velocity (fpm)	2280.82
Stack Gas Velocity (mpm)	695.19
Volumetric Flow Rate (acfm)	28661.64
Volumetric Flow Rate (acmm)	811.70
Volumetric Flow Rate (dscfm)	25541.80
Volumetric Flow Rate (dscmm)	723.34
Percent Isokinetic	103.34
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CWLP AL AL	XAD Trap Number	—	Meter Box Number	A-37
Date	12/10/97	Filter Heater Setting (°F)	250	Meter delta H @	1.813
Operator	MWH/SS.	Probe Length & Type	6' Pyrex	DGM Factor (Y)	0.988
Sampling Location	FURN. BH OUT.	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	.256
Sample Type	PM/HCL	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	50°
Run Number	3	Initial Leak Check	.010@10"	Assumed Moisture (% H2O)	1
Static Pressure (±) (in. H2O)	-0.3" H_2O	Final Leak Check	.005@10"	K-Factor	4.43
Barometric Pressure (in. H2O)	29.21				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 7.5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap. Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	11:15	870.257											
A-12	7.5	11:22.5	876.5	.56	111	2.48	2.48	234	215	—	77	72	55	5.0
12	15	11:30	882.97	.57	117	2.30	2.30	236	223	—	85	73	48	5.0
11	22.5	11:37.5	889.28	.51	119	2.26	2.26	240	231	—	85	72	51	5.0
11	30	11:45	896.4	.53	109	2.35	2.35	237	239	—	85	72	54	5.0
10	37.5	11:52.5	903.1	.5	118	2.21	2.21	233	244	—	84	72	57	5.0
10	45	12:00	909.21	.5	122	2.21	2.21	278	257	—	86	74	58	5.0
9	52.5	12:07.5	915.9	.49	117	2.17	2.17	262	255	—	86	73	59	5.0
9	60	12:15	922.3	.49	110	2.17	2.17	274	254	—	86	74	62	5.0
8	67.5	12:22.5	928.55	.40	130	1.77	1.77	276	259	—	86	74	64	4.5
8	75	12:30	934.35	.45	128	1.99	1.99	262	245	—	84	73	64	4.5
7	82.5	12:37.5	940.15	.40	126	1.77	1.77	266	242	—	86	73	66	4.5
7	90	12:45	948.0	.38	127	1.68	1.68	262	239	—	85	72	64	4.5
6	97.5	12:52.5	953.0	.36	144	1.59	1.59	271	235	—	85	73	62	4.0
6	105	13:00	958.0	.39	130	1.73	1.73	270	233	—	86	73	61	4.0
5	112.5	13:07.5	963.254	.43	121	1.90	1.90	265	235	—	86	73	61	4.0
5	120	13:15	969.77	.44	115	1.95	1.95	258	234	—	86	73	59	4.5
4	127.5	13:22.5	974.75	.42	119	1.86	1.86	258	233	—	85	73	59	4.5
4	135	13:30	980.7	.40	117	1.77	1.77	248	234	—	84	73	59	4.1
3	142.5	13:37.5	986.12	.42	109	1.86	1.86	261	243	—	85	72	59	4.1
3	150	13:45	992.4	.42	105	1.86	1.86	216	239	—	86	71	60	4.1
2	157.5	13:52.5	998.81	.30	111	1.33	1.33	258	241	—	84	72	60	4.2
2	165	14:00	1003.5	.27	125	1.20	1.20	235	240	—	85	73	60	3.2
1	172.5	14:07.5	1008.16	.30	115	1.33	1.33	238	238	—	84	73	66	3.4
1	180	14:15	1013.082	.28	121	1.24	1.24	214	239	—	85	73	66	3.4

Comments:

Plant	CULP AA	Location	FURNACE OUT	Run Number	#3
Date	10/10/97	Sample Type	HCL PARTICULATE	Operator	M.A./M.H

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180 -	14:30	1013.208											
B-12	187.5	14:37.5	1018.0	.40	105	1.77	1.77	240	236	—	83	73	54	4.0
12	195	14:45	1025.2	.46	99	2.04	2.04	225	243		87	73	52	4.5
11	202.5	14:52.5	1031.5	.46	98	2.04	2.04	234	244		87	73	52	4.6
11	210	15:00	1037.6	.47	98	2.08	2.08	232	248		88	73	53	4.8
10	217.5	15:07.5	1044.3	.48	101	2.13	2.13	231	242		87	73	55	4.8
10	225	15:15	1051.0	.49	100	2.17	2.17	214	237		87	73	016	4.9
9	232.5	15:22.5	1056.9	.50	98	2.22	2.22	225	234		85	72	56	5.0
9	240	15:30	1063.0	.44	97	2.08	2.08	243	245		85	72	56	5.0
8	247.5	15:37.5	1069.8	.44	96	1.95	1.95	235	246		85	71	57	4.8
8	255	15:45	1076.0	.45	96	1.99	1.99	248	250		85	70	58	4.8
7	262.5	15:52.5	1082.1	.43	95	1.90	1.90	253	251		83	68	57	4.8
7	270	16:00	1088.0	.40	94	1.77	1.77	250	253		84	68	55	4.1
6	277.5	16:07.5	1093.5	.36	93	1.59	1.59	259	254		82	67	54	4.0
6	285	16:15	1099.0	.36	92	1.59	1.59	258	248		81	67	55	4.0
5	292.5	16:22.5	1103.5	.35	92	1.55	1.55	268	250		81	66	55	4.0
5	300	16:30	1109.6	.36	92	1.59	1.59	263	250		82	66	55	4.0
4	307.5	16:37.5	1115.0	.34	91	1.51	1.51	263	252		81	66	55	3.9
4	315	16:45	1120.4	.34	91	1.51	1.51	264	252		80	65	55	3.9
3	322.5	16:52.5	1125.5	.33	91	1.46	1.46	265	250		80	65	55	3.9
3	330	17:00	1131.1	.34	92	1.51	1.51	264	248		79	64	55	3.9
2	337.5	17:07.5	1132.085	.32	91	1.42	1.42	2166	250		79	64	54	3.8
2	345	17:15												
1	352.5	17:22.5												
1	360	17:30				Leak check		0.005 @ 10"						
	331.5													

Comments:

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	4
Sample Type:	m26

Total Sampling Time (min)	381.5
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.29
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	93.69
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	268.961
Average Meter Pressure (in H2O)	1.56
Average Meter Temperature (°F)	63.24
Moisture Collected (g)	76.60
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.691
Standard Metered Volume (dscf)	263.800
Standard Metered Volume (dscm)	7.471
Stack Moisture (%V)	1.35
Mole Fraction Dry Stack Gas	0.986
Dry Molecular Weight	28.84
Wet Molecular Weight	28.69
Stack Gas Velocity (fpm)	2055.67
Stack Gas Velocity (mpm)	626.57
Volumetric Flow Rate (acfm)	25832.33
Volumetric Flow Rate (acmm)	731.57
Volumetric Flow Rate (dscfm)	23792.76
Volumetric Flow Rate (dscmm)	673.81
Percent Isokinetic	102.17
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CULP	XAD Trap Number	-	Meter Box Number	A-37
Date	12/11/97	Filter Heater Setting (°F)	250	Meter delta H @	1.813
Operator	Mark / JS	Probe Length & Type	6' Pyrex	DGM Factor (Y)	.988
Sampling Location	FURNACE outlet	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.256
Sample Type	HCL	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	45°
Run Number	4	Initial Leak Check	.026@12"	Assumed Moisture (% H2O)	1%
Static Pressure (±) (in. H2O)	-0.30	Final Leak Check	.015@8"	K-Factor	4.43
Barometric Pressure (in. H2O)	29.33				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 7.5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	6:20	133.343											
A-12	7.5	6:27.5	138.75	.33	91	1.46	1.46	250	237	—	63	54	44	3.2
12	15	6:35	144.1	.37	112	1.64	1.64	245	237	—	70	54	40	3.7
11	22.5	6:42.5	149.3	.40	112	1.77	1.77	241	243	—	71	55	42	4.0
11	30	6:50	155.0	.41	112	1.82	1.82	238	243	—	72	55	44	4.1
10	37.5	6:57.5	162.0	.67	106	2.97	2.97	238	241	—	72	55	45	4.0
10	45	7:05	169.0	.60	121	2.66	2.66	230	239	—	73	55	48	4.0
9	52.5	7:12.5	176.5	.71	99	3.15	3.15	242	242	—	73	52	51	4.5
9	60	7:20	182.7	.50	112	2.22	2.22	235	244	—	73	56	53	6.0
8	67.5	7:27.5	188.3	.45	104	1.99	1.99	242	245	—	71	55	55	5.2
8	75	7:35	194.6	.45	98	1.99	1.99	254	248	—	71	55	54	5.2
7	82.5	7:42.5	200.2	.39	104	1.73	1.73	258	243	—	70	56	54	4.6
7	90	7:50	205.7	.38	102	1.68	1.68	252	245	—	68	54	54	4.5
6	97.5	7:57.5	210.6	.36	95	1.59	1.59	260	245	—	68	54	53	4.1
6	105	8:05	217.0	.36	98	1.59	1.59	246	244	—	68	55	52	4.0
5	112.5	8:12.5	220.8	.26	102	1.15	1.15	244	244	—	68	55	52	3.6
5	120	8:20	226.0	.32	104	1.42	1.42	240	243	—	68	55	61	3.6
4	127.5	8:27.5	230.7	.29	103	1.28	1.28	241	242	—	69	55	52	3.6
4	135	8:35	235.6	.28	104	1.24	1.24	252	240	—	69	56	51	3.8
3	142.5	8:42.5	240.5	.29	92	1.28	1.28	242	242	—	70	56	51	3.10
3	150	8:50	245.1	.23	95	1.02	1.02	246	239	—	72	56	51	3.1
2	157.5	8:57.5	249.2	.24	100	1.06	1.06	252	240	—	72	57	50	3.0
2	165	9:05	253.7	.22	101	.97	.97	234	239	—	73	57	50	3.0
1	172.5	9:12.5	258.2	.24	93	1.06	1.06	244	243	—	70	56	49	3.0
1	180	9:20	262.532	.23	90	1.02	1.02	251	245		69	55	50	3.0
						leak check		.01 @ 10"						

Comments:

Page ___

Plant	CUCP AA	Location	SURFACE OUTLET	Run Number	#4
Date	12/11/97	Sample Type	HCl	Operator	M.A/M.A.

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	9:35	262.718											
B-12	187.5	9:41.5	268.0	.43	84	1.90	1.90	239	246		70	55	46	4.9
12	195	9:50	274.4	.44	84	1.95	1.95	248	248		69	55	46	4.9
11	202.5	9:57.5	279.6	.34	93	1.51	1.51	232	245		72	55	46	4.1
11	210	10:05	285.2	.39	105	1.73	1.73	238	244		70	55	48	4.1
10	217.5	10:12.5	290.8	.38	101	1.68	1.68	232	243		71	55	48	4.2
10	225	10:20	296.4	.37	102	1.64	1.64	234	238		71	55	48	4.2
9	232.5	10:27.5	301.8	.34	92	1.73	1.73	225	236		72	56	48	4.2
9	240	10:35	307.6	.40	85	1.77	1.77	218	237		72	56	49	4.2
8	247.5	10:42.5	312.6	.36	85	1.59	1.59	204	235		72	55	48	4.2
8	255	10:50	318.3	.35	85	1.55	1.55	230	238		71	56	50	4.1
7	262.5	10:57.5	323.5	.33	85	1.46	1.46	240	241		72	56	49	4.0
7	270	11:05	328.5	.33	84	1.46	1.46	243	242		72	57	49	4.0
6	277.5	11:12.5	333.9	.33	84	1.46	1.46	238	238		71	55	48	4.0
6	285	11:20	339.1	.33	83	1.46	1.46	244	242		72	56	44	4.0
5	292.5	11:27.5	344.5	.32	83	1.42	1.42	245	244		72	57	49	4.0
5	300	11:35	349.5	.32	82	1.42	1.42	237	242		72	56	45	4.0
4	307.5	11:42.5	354.7	.35	82	1.55	1.55	248	244		71	56	46	4.0
4	315	11:50	360.1	.34	82	1.51	1.51	238	241		71	57	45	4.0
3	322.5	11:57.5	364.9	.27	82	1.20	1.20	231	240		72	57	46	3.8
3	330	12:05	369.0	.28	83	1.24	1.24	239	242		70	56	46	3.5
2	329.5	12:12.5	374.4	.26	83	1.15	1.15	237	243		72	56	46	3.5
2	335	12:20	379.3	.26	83	1.15	1.15	238	241		72	59	46	3.5
1	342.5	12:27.5	383.7	.27	82	1.20	1.20	233	243		69	55	47	3.5
1	350	12:35	388.4	.27	83	1.20	1.20	231	238		70	56	47	3.5
1	359.5	12:41.5	393.2	.29	83	1.29	1.29	227	239		71	56	47	3.5
1	365	12:50	397.7	.28	84	1.24	1.24	230	240		70	56	48	3.5
2	382.5	12:58.5	402.490	.29	84	1.29	1.29	228	240		72	57	47	3.5
2	380	1:05			84			234	242		71	56	48	
3	387.5	1:12.5												
3	395	1:20	↓			Leak check.		0.015 @ 8"						
			12:58.5											
		373.5												

Comments:

Facility:	Culp Alum. Alloy
Date:	12/08/97
Location:	Furnace out
Run Number:	1
Sample Type:	M23

Total Sampling Time (min)	321.5
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.29
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	88.14
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	257.992
Average Meter Pressure (in H2O)	0.70
Average Meter Temperature (°F)	60.03
Moisture Collected (g)	48.50
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9880
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.793
Standard Metered Volume (dscf)	254.874
Standard Metered Volume (dscm)	7.218
Stack Moisture (%V)	0.89
Mole Fraction Dry Stack Gas	0.991
Dry Molecular Weight	28.84
Wet Molecular Weight	28.74
Stack Gas Velocity (fpm)	2424.85
Stack Gas Velocity (mpm)	739.10
Volumetric Flow Rate (acfm)	30471.60
Volumetric Flow Rate (acmm)	862.96
Volumetric Flow Rate (dscfm)	28482.29
Volumetric Flow Rate (dscmm)	806.62
Percent Isokinetic	97.85
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

ERG Eastern Research Group, Inc.

DIOXIN

O_2 = 20%

CO = 0.5%

MODIFIED METHOD 5 DATA SHEET

Run ___

Page 1 of ___

Plant	AL AC	Train Number	—	Meter Box Number	M-37
Date	12 [illegible].09	Filter Heater Setting (°F)	250	Meter delta H @	1.843
Operator	MWD	Probe Length & Type	6' Pyrex	DGM Factor (Y)	0.988
Sampling Location	FURNACE STACK OUT	Probe Heater Setting (°F)	260	Nozzle Type & ID (in.)	.256
Sample Type	DIOXIN	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	30°
Run Number	1	Initial Leak Check	.010@10"	Assumed Moisture (%,H2O)	4%
Static Pressure (±) (in. H2O)	-0.3"	Final Leak Check	.000@10"	K-Factor	4.17
Barometric Pressure (in. H2O)	29.33				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every ___ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading (Vm) (ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	0945	333.573											
1-1	7.5	[illegible]	339.0	.42	80	1.79	1.79	233	237	35	58	46	34	3.5
1	15.0	[illegible]	344.75	.39	98	1.62	1.62	246	246	[illegible]	63	47	35	3.0
2	22.5	10 [illegible]	350.2	.41	89	1.71	1.71	255	251	38	64	48	38	3.0
2	30	[illegible]	355.45	.39	87	1.62	1.62	254	253	39	65	48	39	3
3	37.5	10 22.5	361.4	.58	93	2.42	2.42	292	290	39	67	49	41	4.5
3	45	10.30	366.7	.44	93	1.83	1.83	275	256	39	65	49	42	4
4	52.5	10.37.5	372.3	.45	100	1.87	1.87	290	261	39	65	49	44	4.5
4	60	10.45	378.6	.45	107	1.87	1.87	249	255	39	67	49	46	4.5
5	67.5	10 52.5	383.9	.46	89	1.91	1.91	231	251	45	66	49	47	4.5
5	75	11:00	391.2	.46	101	1.91	1.91	225	254	47	67	49	48	4.5
6	82.5	11 07.5	396.42	.48	88	2.00	2.00	271	239	49	67	50	49	4.0
6	90	11:15	406.5	.48	91	2.00	2.00	240	241	49	67	50	49	4.0
7	97.5	11:22.5	410.7	.48	95	2.00	2.00	215	250	52	68	49	52	4.0
7	105	11:30	414.0	.53	100	2.20	2.20	225	236	50	67	50	51	4.5
8	112.5	11:37.5	420.62	.56	102	2.33	2.33	230	238	50	69	50	50	4.5
8	120	11:45	426.18	.59	88	2.45	2.45	240	235	50	68	50	47	4.5
9		11:45	434.3	.53	109	2.20	2.20	240	237	47	68	51	48	4.5
9	135	12:00	439.8	.57	89	2.37	2.37	245	239	47	69	51	47	4.5
10		12:07	446.0	.56	84	2.33	2.33	241	239	46	68	50	46	4.5
10	150	12:15	455.5	.58	81	2.42	2.42	234	238	45	69	51	45	4.5
11		12:22.5	459.7	.56	79	2.33	2.33	229	238	45	70	50	45	4.5
11	165	12:30	466.1	.56	78	2.33	2.33	232	239	45	70	51	45	4.5
12		12:37.5	472.3	.43	103	1.79	1.79	245	239	45	68	50	44	3.5
12	180	12:45	[illegible]	.48	88	2.00	2.00	251	243	45	69	51	45	3.5
			477.695											

Comments:

Page ___ of ___

Plant	CULP ALA	Location	OUTLET	Run Number	1
Date	12/8/97	Sample Type	DIOXIN	Operator	MM/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
13	180	13:12.5	478.21	.46		1.97								4.0
1	187.5	13:20	485	.46	101	1.92	1.92	252	251	41	68	51	41	4.0
2	195	13:27.5	491.2	.39	110	1.62	1.62	253	248	42	68	51	42	4.0
2	202.5	13:35	496.5	.46	92	1.92	1.92	254	255	42	71	52	43	4.5
2	210	13:42.5	500.9	.45	84	1.89	1.84	248	258	44	71	52	44	4.5
3	217.5	13:50	508.72	.52	83	2.17	2.17	246	253	43	71	51	43	5.0
3	225	13:57.5	514.1	.53	82	2.20	2.20	242	256	43	70	52	44	5.0
4	232.5	14:05	520.6	.53	81	2.20	2.20	254	256	45	71	52	44	5.0
4	240	14:12.5	528.6	.59	79	2.25	2.25	254	255	45	71	52	45	4.5
5		14:20	533.2	.53	79	2.20	2.20	255	241	45	70	52	45	4.5
5	255	14:27.5	540.0	.54	79	2.25	2.25	256	243	45	71	53	46	4.5
6		14:35	545.9	.49	78	2.04	2.04	256	243	47	71	53	47	4.0
6	270	14:42.5	551.5	.49	78	2.04	2.04	252	253	47	71	53	47	4.0
7		14:50	557.5	.42	78	1.75	1.75	256	242	48	72	54	48	3.5
7	285	14:57	563.3	.42	78	1.75	1.75	263	245	48	72	55	50	3.5
8		15:05	569.1	.44	80	1.85	1.85	265	246	50	73	54	51	3.5
8	300	15:12.5	575.0	.44	79	1.85	1.85	265	245	50	73	54	52	3.5
9		15:20	580.6	.47	79	1.96	1.96	261	244	52	73	54	53	3.5
9	315	15:27.5	587.96	.48	80	1.99	1.99	265	245	52	74	55	49	4
10		15:35	592.08	.50	80	2.08	2.08	262	245	52	75	56	48	3.5
10	330													
11						Leak check OK 00 @ 10"									
11	345													
12														
12	360													

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cyclo Aluminum Alloy
Date	12/8/97
Sampling Location	RF1 OUTLET
Sample Type	Method 23
Run Number	# 1
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	$MeCl_2$/Ace
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	484.7	482.6	2.1
2	HPLC H_2O	100 mls	Modified	565.5	568.2	-2.7
3	HPLC H_2O	100mls	Modified	578.7	580.2 ~~609.1~~ BROKEN	-1.5
4	EMPTY	/	Modified	484.2	483.6	.6
5	Silica Gel	200-300g	Modified	840.0	790.0	50
6						
7						
				Total Weight Gain (g)		48.5

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	2
Sample Type:	m23

Total Sampling Time (min)	341.5
Corrected Barometric Pressure (in Hg)	29.29
Absolute Stack Pressure (in Hg)	29.26
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	99.80
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	243.113
Average Meter Pressure (in H2O)	0.65
Average Meter Temperature (°F)	70.61
Moisture Collected (g)	72.20
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.727
Standard Metered Volume (dscf)	248.281
Standard Metered Volume (dscm)	7.031
Stack Moisture (%V)	1.35
Mole Fraction Dry Stack Gas	0.986
Dry Molecular Weight	28.84
Wet Molecular Weight	28.69
Stack Gas Velocity (fpm)	2272.85
Stack Gas Velocity (mpm)	692.76
Volumetric Flow Rate (acfm)	28561.48
Volumetric Flow Rate (acmm)	808.86
Volumetric Flow Rate (dscfm)	25991.57
Volumetric Flow Rate (dscmm)	736.08
Percent Isokinetic	98.34
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

$O_2 = 20.9$
$CO_2 = 0$

Run ____
Page 1 of ____

Plant	CULP	XAD Trap Number	–	Meter Box Number	A-38
Date	12/9/97	Filter Heater Setting (°F)	250	Meter delta H @	1.816
Operator	MWH/SS	Probe Length & Type	6' PYREX	DGM Factor (Y)	0.981
Sampling Location	FURN. BH OUTLET	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	.256
Sample Type	DIOXIN	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	40°
Run Number	2	Initial Leak Check	.01@12"	Assumed Moisture (% H2O)	1.0 %
Static Pressure (±) (in. H2O)	-0.3" H_2O	Final Leak Check	.005@11"	K-Factor	4.43
Barometric Pressure (in. H2O)	29.30				

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every 7.5 minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	12:07.5	623.258											
A-1	7.5	12:15	627.5	.42	104	1.86	1.86	258	236	47	70	56	45	5.5
1	15	12:22.5	632.6	.36	106	1.59	1.59	256	242	47	74	57	44	6.0
2	22.5	12:30	637.8	.31	120	1.37	1.37	246	245	49	75	59	48	5.0
2	30	12:37.5	642.6	.32	117	1.42	1.42	247	248	47	75	60	52	5.5
3	37.5	12:45	648.1	.40	106	1.77	1.77	247	246	40	77	60	46	6.0
3	45	52.5	653.2	.36	115	1.59	1.56	245	248	42	77	61	46	6.0
4	52.5	13:00	659.0	.41	104	1.82	1.82	239	248	45	77	61	45	6.0
4	60	13:07.5	664.2	.36	118	1.59	1.59	240	249	49	78	62	47	6.0
5	67.5	13:15	670.1	.41	100	1.82	1.82	234	250	50	79	62	51	6.0
5	75	22.5	676.9	.40	102	1.77	1.77	235	249	51	80	63	53	6.0
6	82.5	13:30	682.4	.39	107	1.73	1.73	234	245	53	80	65	57	6.0
6	90	37.5	688.0	.36	113	1.59	1.59	232	246	56	80	63	60	4.5
7	97.5	13:45	692.4	.43	108	1.90	1.90	231	246	49	78	63	57	5.0
7	105	52.5	698.4	.45	102	1.99	1.99	237	243	49	78	63	56	5.0
8	112.5	14:00	703.8	.45	98	1.99	1.99	243	244	49	80	63	55	5.0
8	120	07.5	711.0	.46	96	2.04	2.04	243	243	45	80	63	54	5.0
9	127.5	14:15	715.5	.42	113	1.86	1.86	246	245	43	79	63	54	7.0
9	135	22.5	721.6	.45	112	1.99	1.99	246	245	44	79	63	52	7.0
10	142.5	14:30	727.2	.43	119	1.90	1.90	240	248	45	80	63	52	7.0
10	150	37.5	732.6	.46	119	2.04	2.04	242	249	45	79	64	52	7.0
11	157.5	14:45	739.0	.43	128	1.90	1.90	239	249	46	80	64	54	7.0
11	165	52.5	744.9	.45	122	1.99	1.99	244	250	47	79	64	54	7.0
12	172.5	15:00	750.8	.47	109	2.08	2.08	242	250	46	80	64	54	7.0
12	180	15:07.5	756.995	.45	116	1.99	1.99	239	248	47	80	64	55	7.0

Comments:

Plant	CMA	Location	FURN. OUT	Run Number	2
Date	12/9/97	Sample Type	DIOXIN	Operator	MWH/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	15:35	761.324											
B-1	187.5	15:42.5	766.5	.37	97	1.64	1.64	229	264	41	78	61	45	4.5
1	195	15:50	771.5	.35	99	1.55	1.55	221	265	42	79	62	45	4.5
2	202.5	15:57.5	777.0	.35	100	1.55	1.55	241	263	42	78	62	45	5.0
2	210	16:05	783.0	.39	92	1.73	1.73	248	261	44	78	63	44	6.0
3	217.5	16:12.5	787.5	.39	91	1.73	1.73	256	267	41	78	63	45	6.0
3	225	16:20	793.2	.40	91	1.77	1.77	244	252	43	79	63	45	6.0
4	232.5	27.5	798.0	.42	89	1.86	1.86	252	246	42	79	63	45	6.3
4	240	16:35	804.9	.42	88	1.86	1.86	246	245	43	79	63	46	6.5
5		42.5	811.3	.41	88	1.81	1.81	249	246	43	79	63	46	6.3
5	255	16:50	816.9	.42	86	1.86	1.86	249	246	44	79	63	47	5.5
6		57.5	822.1	.41	85	1.81	1.81	256	246	44	79	63	47	5.5
6	270	17:05	827.8	.41	85	1.81	1.81	255	246	45	79	63	48	5.5
7		12.5	833.6	.41	83	1.81	1.81	253	238	45	79	63	49	5.5
7	285	17:20	840.3	.42	84	1.86	1.86	254	229	46	79	64	49	5.0
8		27.5	845.5	.44	83	1.95	1.95	255	227	47	79	64	51	5.0
8	300	17:35	851.1	.45	83	1.99	1.99	255	231	46	79	64	50	5.0
9		42.5	857.2	.49	83	2.17	2.17	255	230	46	79	64	49	5.5
9	315	17.50	863.12	.49	84	2.17	2.17	255	234	47	80	64	49	5.5
10		57.5	869.5	.51	84	2.26	2.26	248	236	47	80	64	48	6.0
10	330	18:05	875.8	.49	85	2.17	2.17	251	239	48	80	64	48	6.0
11		12.5	881.9	.49	86	2.17	2.17	252	241	49	81	65	48	6.0
11	345	18:20.5	885.242	.49	86	2.17	2.17	254	244	50	81	65	48	6.0
12	~~A~~	~~27.5~~												
12	~~360~~	~~18:35~~												
	18:16.5					Leak check .005@ 11"								

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Custo Aluminum Alloy
Date	12/8/97
Sampling Location	RFT outlet
Sample Type	Method 23
Run Number	#2
Impinger Box Number	
Recovery Person	Marc Adde / Carol Gurkin
Recovery Rinses	Ace / $MeCl_2$
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	530.7	520.0	10.7
2	HPLC H_2O	100 mls	Modified	585.5	585.7	-.2
3	HPLC H_2O	100mls	Modified	550.6	553.6	-3
4	EMPTY	/	Modified	454.5	454.8	-.3
5	Silica Gel	200-300g	Modified	834.0	769.0	65
6						
7						
			Total Weight Gain (g)			72.2

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	3
Sample Type:	m23

Total Sampling Time (min)	331.5
Corrected Barometric Pressure (in Hg)	29.20
Absolute Stack Pressure (in Hg)	29.17
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	107.27
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	258.286
Average Meter Pressure (in H2O)	1.95
Average Meter Temperature (°F)	74.50
Moisture Collected (g)	53.50
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.740
Standard Metered Volume (dscf)	245.451
Standard Metered Volume (dscm)	6.951
Stack Moisture (%V)	1.02
Mole Fraction Dry Stack Gas	0.990
Dry Molecular Weight	28.84
Wet Molecular Weight	28.73
Stack Gas Velocity (fpm)	2340.11
Stack Gas Velocity (mpm)	713.27
Volumetric Flow Rate (acfm)	29406.74
Volumetric Flow Rate (acmm)	832.80
Volumetric Flow Rate (dscfm)	26416.98
Volumetric Flow Rate (dscmm)	748.13
Percent Isokinetic	98.54
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

MODIFIED METHOD 5 DATA SHEET

Run _____
Page 1 of _____

Plant	CULP	AL AL	XAD Trap Number	—	Meter Box Number	A-38	
Date		12/10/97	Filter Heater Setting (°F)	250	Meter delta H @	1.816	
Operator		MWH / JS	Probe Length & Type	6' PyRex	DGM Factor (Y)	0.981	
Sampling Location	FURNACE	B/H OUT	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.256	
Sample Type		DIOXIN	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	50°	
Run Number		3	Initial Leak Check	.010@11	Assumed Moisture (% H2O)	1%	
Static Pressure (±) (in. H2O)		-0.3" H2O	Final Leak Check	.005@5"	K-Factor	4.43	
Barometric Pressure (in. H2O)		29.21					

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	11:15	885.670											
B-1	7.5	11:22.5	890.8	.34	108	1.51	1.51	242	227	52	74	68	56	2.5
1	15	11:30	895.5	.32	118	1.42	1.42	252	249	51	82	69	47	2.5
2	22.5	11:37.5	900.6	.32	117	1.42	1.42	240	246	53	81	70	50	2.5
2	30	11:45	905.7	.33	108	1.46	1.46	231	249	54	80	70	52	2.5
3	37.5	52.5	910.7	.31	118	1.37	1.37	234	247	57	80	70	55	2.5
3	45	12:00	915.7	.33	121	1.46	1.46	246	245	59	80	70	56	2.5
4	52.5	07.5	920.9	.36	120	1.59	1.59	244	251	59	81	70	58	2.5
4	60	12:15	926.6	.37	110	1.64	1.64	252	252	59	82	71	59	3.0
5	67.5	22.5	931.7	.30	133	1.33	1.33	254	258	56	82	70	61	2.5
5	75	12:30	936.7	.35	122	1.55	1.55	245	255	54	81	70	60	2.5
6	82.5	37.5	941.7	.35	127	1.55	1.55	243	239	54	81	70	59	2.5
6	90	12:45	944.6	.34	130	1.51	1.51	244	239	54	81	70	57	2.5
7	97.5	52.5	954.0	.34	127	1.51	1.51	243	234	53	81	70	52	2.5
7	105	13:00	957.9	.46	130	2.04	2.04	246	243	51	81	70	49	4.5
8	112.5	07.5	964.2	.47	124	2.08	2.08	243	242	52	82	70	49	5.0
8	120	13:15	970.9	.49	114	2.17	2.17	244	248	51	82	70	49	5.0
9	127.5	22.5	977.1	.53	110	2.35	2.35	229	243	51	82	70	50	5.0
9	135	13:30	983.0	.50	117	2.21	2.21	225	242	52	81	70	50	5.0
10	142.5	37.5	989.8	.52	110	2.30	2.30	245	242	51	81	70	51	5.0
10	150	13:45	997.6	.54	105	2.39	2.39	230	242	52	81	70	51	5.0
11	157.5	52.5	1003.4	.49	115	2.17	2.17	231	237	52	81	70	51	5.0
11	165	14:00	1009.4	.50	126	2.21	2.21	234	236	52	82	70	52	5.0
12	172.5	07.5	1015.4	.50	115	2.21	2.21	230	238	52	82	70	52	5.0
12	180	14:15	1021.729	.50	123	2.21	2.21	234	234	52	81	70	54	5.0

Comments:

Plant	CULP AA	Location	FURNACE OUTLET	Run Number	3
Date	12/10/97	Sample Type	DIOXIN	Operator	MWH/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	14:30	1021.862											
A-1	187.5	14:37.5	1026.7	.36	100	1.59	1.59	236	225	53	75	67	52	4.0
1	195	14:45	1032.5	.43	97	1.90	1.90	247	228	51	80	68	49	4.5
2	212.5	52.5	1038.3	.41	95	1.82	1.82	249	236	50	83	69	49	4.0
2	210	15:00	1044.3	.40	98	1.77	1.77	267	247	53	84	70	49	4.0
3	217.5	07.5	1049.5	.38	97	1.68	1.68	250	236	53	85	70	50	4.0
3	225	15:15	1055.6	.44	98	1.95	1.95	232	232	53	84	71	51	4.0
4	232.5	22.5	1061.4	.44	98	1.95	1.95	219	221	51	82	71	52	4.2
4	240	15:30	1066.2	.49	97	2.17	2.17	234	232	51	82	71	51	5.0
5	247.5	37.5	1074.0	.47	96	2.08	2.08	234	230	52	81	70	51	4.0
5	255	15:45	1080.1	.47	95	2.08	2.08	245	238	51	80	69	52	4.0
6	262.5	52.5	1085.4	.43	93	1.90	1.90	236	233	51	80	68	52	4.0
6	270	16:00	1091.2	.41	93	1.82	1.82	250	241	48	79	67	50	4.0
7	277.5	07.5	1097.3	.47	93	2.08	2.08	252	241	48	78	67	48	4.0
7	285	16:15	1103.7	.48	91	2.12	2.12	241	242	48	78	66	47	4.0
8	292.5	22.5	1109.8	.53	91	2.35	2.35	250	246	47	78	66	46	4.0
8	300	16:30	1116.9	.53	91	2.35	2.35	247	244	48	78	65	46	4.5
9	307.5	37.5	1123.0	.56	91	2.48	2.48	240	246	47	77	65	46	4.5
9	315	16:45	1129.6	.56	91	2.48	2.48	226	242	48	77	65	47	4.5
10	322.5	52.5	1136.0	.56	91	2.48	2.48	230	242	48	76	64	47	4.5
10	330	17:00	1142.7	.56	92	2.48	2.48	232	243	47	76	64	47	4.5
11	337.5	17:07.5	1144.089	.56	91	2.48	2.48	226	244	48	76	64	48	4.5
11	~~345~~	~~17:15~~												
12	~~352.5~~	~~22.5~~												
12	~~360~~	~~17:30~~				leak check	.00 @ 10"							
	331 ✓													

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cu-Ip Aluminum Alloy
Date	
Sampling Location	RF1 OUTLET
Sample Type	Method 23
Run Number	#3
Impinger Box Number	
Recovery Person	Marc Auble / Carol Gurkin
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	505.9	501.1	4.8
2	HPLC H_2O	100 mls	Modified	633.5	639.6	-6.1
3	HPLC H_2O	100mls	Modified	598.3	597.8	.5
4	EMPTY	/	Modified	494.8	493.3	1.5
5	Silica Gel	200-300g	Modified	858.0	805.2	52.8
6						
7						
			Total Weight Gain (g)			53.5

Facility:	Culp Alum. Alloy
Date:	12/09/97
Location:	Furnace out
Run Number:	4
Sample Type:	m23

Total Sampling Time (min)	381.0
Corrected Barometric Pressure (in Hg)	29.32
Absolute Stack Pressure (in Hg)	29.29
Stack Static Pressure (in H2O)	-0.30
Average Stack Temperature (°F)	93.47
Stack Area (sq in)	1809.56
Actual Meter Volume (cu ft)	274.335
Average Meter Pressure (in H2O)	1.79
Average Meter Temperature (°F)	61.97
Moisture Collected (g)	43.40
Carbon Dioxide Concentration (%V)	0.0
Oxygen Concentration (%V)	21.0
Nitrogen Concentration (%V)	79.0
Dry Gas Meter Factor	0.9810
Nozzle Diameter (in)	0.256
Pitot Constant	0.84
Average Sampling Rate (dscfm)	0.703
Standard Metered Volume (dscf)	267.746
Standard Metered Volume (dscm)	7.583
Stack Moisture (%V)	0.76
Mole Fraction Dry Stack Gas	0.992
Dry Molecular Weight	28.84
Wet Molecular Weight	28.76
Stack Gas Velocity (fpm)	2188.59
Stack Gas Velocity (mpm)	667.08
Volumetric Flow Rate (acfm)	27502.66
Volumetric Flow Rate (acmm)	778.88
Volumetric Flow Rate (dscfm)	25493.20
Volumetric Flow Rate (dscmm)	721.97
Percent Isokinetic	96.91
Percent Excess Air	-16380.66
Concentration (g/dscm)	0.00
Concentration (kg/hr)	0.00
Concentration (ppmv)	0.00
Emissions (lb/hr)	0.00

Eastern Research Group, Inc.

0% O_2
21% O_2

MODIFIED METHOD 5 DATA SHEET

Run ____
Page 1 of ____

Plant	CULP	AL AL	XAD Trap Number	—	Meter Box Number	A-38	
Date		12/11/97	Filter Heater Setting (°F)	250	Meter delta H @	1.816	
Operator		MUSIL/SS	Probe Length & Type	6' PYREX	DGM Factor (Y)	.981	
Sampling Location	FURN	OUTLET	Probe Heater Setting (°F)	250	Nozzle Type & ID (in.)	0.256	
Sample Type		DIOXIN	Minimum Sample Volume (ft3)	60	Ambient Temperature (°F)	45°	
Run Number		4	Initial Leak Check	.01 @ 10"	Assumed Moisture (% H2O)	1	
Static Pressure (±) (in. H2O)		-0.30	Final Leak Check	.005 @ 10"	K-Factor	4.43	
Barometric Pressure (in. H2O)		29.33					

Diagram of Duct

Schematic of Traverse Point Layout

Read and record all data every _____ minutes

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	0	06:20	145.946											
B-1	7.5	06:27.5	149.8	.20	93	.89	.89	258	251	38	57	49	39	2.5
1	15	6:35	153.7	.20	106	.89	.89	249	262	38	65	51	38	2.5
2	22.5	42.5	157.7	.20	112	.89	.89	245	255	38	65	52	40	2.5
2	30	6:50	161.7	.20	107	.89	.89	246	255	42	64	52	42	2.5
3	37.5	57.5	165.6	.37	105	1.64	1.64	236	242	41	64	53	43	4.0
3	45	7:05	172.4	.39	115	1.73	1.73	237	244	40	68	54	46	4.0
4	52.5	12.5	174.2	.42	98	1.86	1.86	243	252	42	65	55	48	5.0
4	60	7:20	183.8	.33	110	1.46	1.46	242	238	45	68	55	55	4.0
5	67.5	27.5	188.9	.35	102	1.55	1.55	247	252	45	67	55	56	4.2
5	75	7:35	194.5	.36	96	1.59	1.59	250	245	44	67	54	54	4.2
6	82.5	42.5	199.4	.34	103	1.50	1.50	250	252	42	66	53	52	4.0
6	90	50	204.7	.35	102	1.55	1.55	246	246	44	66	54	52	4.0
7	97.5	57.5	210.2	.36	95	1.59	1.55	254	251	44	65	53	53	4.0
7	105	8:05	215.5	.35	96	1.55	1.55	250	253	42	67	53	53	4.0
8	112.5	12.5	220.8	.46	102	2.04	2.04	246	240	44	68	54	53	4.5
8	120	8:20	226.45	.45	106	2.00	2.00	240	240	44	69	54	54	4.5
9	127.5	27.5	232.5	.45	103	2.00	2.00	233	230	44	71	55	55	4.5
9	135	8:35	238.3	.45	103	2.00	2.00	234	238	43	72	56	54	4.8
10	142.5	42.5	245.1	.52	93	2.30	2.30	231	238	49	73	56	56	5.0
10	150	8:50	251.5	.48	104	2.13	2.13	229	233	44	74	56	57	5.0
11	157.5	57.5	256.4	.48	100	2.13	2.13	237	235	43	74	57	55	5.0
11	165	9:05	262.6	.48	102	2.13	2.13	239	236	43	74	58	52	5.0
12	172.5	12.5	269.1	.48	94	2.13	2.13	245	240	42	72	57	51	5.0
12	180	9:20	275.050	.48	91	2.13	2.13	246	239	48	71	94	48	5.0
						.015 @ 15"								

Comments:

Plant	CWP N/A	Location	TURN	OUTLET	Run Number	4
Date	12/11/97	Sample Type		DIOXIN	Operator	MW/JS

Traverse Point Number	Sampling Time (min)	Clock Time (24hr)	Gas Meter Reading ((Vm),ft3)	Velocity Head ((delta Ps), in.H2O)	Stack Ts (°F)	Orifice Pressure Differential (delta H, in.H2O) Desired	Orifice Pressure Differential (delta H, in.H2O) Actual	Probe Temp. (°F)	Filter Temp. (°F)	Adsorbent Trap Temp. (°F)	Dry Gas Meter Inlet (Tm in)	Dry Gas Meter Outlet (Tm out)	Impinger Exit Temp. (°F)	Pump Vacuum (in.Hg)
	180	0935	275.223											
A-1	187.5	09:42.5	279.5	.23	83	1.02	1.02	242	235	40	61	53	42	3.0
1	195	09:50	283.9	.23	83	1.02	1.02	245	234	40	60	53	40	2.9
2	202.5	9:59.5	287.5	.19	101	.84	.84	236	230	41	60	53	40	2.1
2	210	10:05	291.4	.19	103	.84	.84	238	233	41	60	54	41	2.1
3	217.5	10:12.5	295.7	.22	98	.97	.97	233	229	42	65	54	41	2.8
3	225	10:20	300.2	.22	101	.97	.97	225	228	42	66	54	41	2.8
4	232.5	10:29.5	304.3	.26	91	1.15	1.15	230	232	43	67	54	42	2.8
4	240	10:35	309.1	.26	85	1.15	1.15	233	235	43	67	55	42	3.0
5	247.5	10:425	313.5	.28	85	1.24	1.24	235	242	43	67	55	43	3.0
5	255	10:50	318.3	.26	86	1.15	1.15	246	239	43	68	55	43	3.0
6	262.5	10:57.5	322.5	.24	85	1.29	1.29	250	241	44	68	55	43	3.0
6	270	11:05	327.8	.30	84	1.33	1.33	252	243	44	69	55	44	3.0
7	277.5	11:12.5	332.95	.35	83	1.55	1.55	252	244	44	68	56	45	3.5
7	285	11:20	338.0	.36	83	1.59	1.59	256	261	44	69	56	46	3.5
8	292.5	11:27.5	344.1	.47	83	2.08	2.08	261	248	45	70	56	47	4.5
8	300	11:35	350.2	.48	82	2.13	2.13	252	248	44	72	56	45	4.5
9		11:42.5	356.3	.53	82	2.35	2.35	251	248	45	70	56	44	5.0
9	315	11:50	362.6	.53	82	2.35	2.35	230	241	45	71	56	42	5.0
10		11:57.5	367.1	.57	83	2.52	2.52	242	245	45	72	56	42	5.3
10	330	12:05	375.8	.56	83	2.48	2.48	237	246	45	71	57	42	5.2
11		12:125	382.1	.54	83	2.39	2.39	238	247	45	72	57	42	6.4
11	345	12:20	388.8	.56	83	2.48	2.48	234	244	45	72	57	42	5.5
12		12:29.5	394.0	.56	83	2.48	2.48	237	243	46	71	57	43	5.5
12	360	12:35	400.5	.56	83	2.48	2.48	229	262	44	72	57	43	5.5
12		12:425	408.2	.55	83	2.44	2.44	228	241	46	72	57	43	5.5
12	375	12:50	414.6	.55	84	2.44	2.44	235	252	44	71	57	44	5.5
11	12:56	~~1:05~~	420.454	.53	84	2.35	2.35	231	252	45	73	57	43	5.5
~~11~~	~~390~~	~~1:05~~												
		~~1:125~~												
		~~1:30~~				leak check @ .005 @ -10								

Comments:

Eastern Research Group, Inc.

MOISTURE RECOVERY FORM FOR METHOD 4

Plant	Cu-Ag Aluminum Alloy
Date	12/10/97
Sampling Location	RF OUTLET
Sample Type	Method 23
Run Number	#4
Impinger Box Number	
Recovery Person	Marc Ruble / Carol Gurka
Recovery Rinses	
Sample Identification	
Filter Number	
XAD Number	

Impinger Number	Impinger Solution	Amount of Solution (g)	Impinger Tip Configuration	Impinger Weight		
				Final (g)	Initial (g)	Weight Gain (g)
1	EMPTY	/	Knockout (short tip)	443.7	443.5	.2
2	HPLC H_2O	100 mls	Modified	625.3	637.8	-12.5
3	HPLC H_2O	100mls	Modified	604.9	607.8	-2.9
4	EMPTY	/	Modified	498.4	497.5	.9
5	Silica Gel	200-300g	Modified	837.5	779.8	57.7
6						
7						
				Total Weight Gain (g)		43.4

Appendix B

Dioxin/Furan
Laboratory Analysis Data

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 23 (6/93)

Date:	January 12, 1998
Client ID:	Eastern Research Group
P.O. Number:	
TLI Project Number:	44376A

This report should only be reproduced in full. Any partial reproduction of this report requires permission from Triangle Laboratories, Inc.

Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in Method 23 (6/93). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results only from the Method 23 dioxin/furan analyses of ten M23 samples.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples. A TLI Cleanup Blank was also processed along with the samples to prove that contamination was not introduced during the cleanup procedures.

Quality Control Remarks

This release of this particular set of Eastern Research Group analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Twenty-five M23 samples were received from Eastern Research Group in good condition on December 17, 1997 at ambient temperature and stored in a refrigerator at 4 °C. Samples CAA-206 and CAA-207 were not included in the shipment.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: Due to the limitations of the software, the "CAA" portion of the sample identification numbers was not listed on the reports.

The ion abundance ratios for the 1234678-HpCDF internal standards and 1234789-HpCDF surrogate standards in samples 177/182-184/209 and 193-196 were outside QC limits, most likely due to matrix-related interferents in these samples. The percent recovery of the 1234678-HpCDF internal standard is significantly lower than the recoveries of the other internal standards. However, the percent recoveries for all internal standards are sufficient to quantitate the associated analyte concentrations in the samples.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank or TLI Cleanup Blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of EPA Method 23 (6/93). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Eastern Research Group have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Released By,

Kenneth Varley
Report Preparation Chemist

The total number of pages in the data package is : 407.

TRIANGLE LABS

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Accredidation pending. Certificate Number 0226-01. Accreditation for technical competence in Environmental Testing.(Including Waste Water, Sol/Haz Waste, Pulp/Paper, and Air Matrices) Parameters are AOX/TOX, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1998. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1998. Certificate number OS-00397. Dioxin in drinking water.

State of Arizona, Department of Health Services. Expires May 26, 1998. Certificate #AZ0423. Drinking Water for Dioxin, Dioxin in WW and S/H Waste.

State of Arkansas, Department of Pollution Control and Ecology. Expires February 18, 1998. Pulp/paper, soil, water, and Hazardous Waste for Dioxin/Furan; AOX/TOX, Volatiles, Semi-volatiles, and Metals.

State of California, Department of Health Services. Expires August 31, 1999. Certificate #1922. Selected Metals in Waste Water; Volatiles, Semi-volatiles, and Dioxin/furan in WW and Sol/Haz Waste. Dioxin in drinking water.

State of Connecticut, Department of Health Services. Expires September 30, 1999. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1998. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1998.Dioxin in DW. Drinking Water ID HRS# 87424. Metals, Extractable Organics (GC/MS), Pesticides/PCB's (GC) and Volatiles (GC/MS) in Environmental Samples. Environmental water ID HRS# E87411.

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Hawaii Department of Health. Expires March 1, 1998. Dioxin in drinking water. "Accepted" status for regulatory purposes .

Idaho Department of Health and Welfare. Expires December 31, 1998. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non portable Water and Solid and Hazardous Waste. Method 1613 for drinking water. ID #'s - Drinking water and/or pollution control - E-215. Solid or Hazardous Waste - E-1209.

Commonwealth of Kentucky, Department for Environmental Protection. Expires December 31, 1998. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30, 1998. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires June 3, 1998. Drinking water by Method 1613.

Mississippi State Department of Health. No expiration date. Dioxin in drinking water.

Montana Department of Health and Environmental Services. Expires December 31, 1998. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Expires June 30, 1998. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Recertification pending. Dioxin in drinking water.

New York State Department of Health. Expires April 1, 1998. ID #11026. Environmental Analyses of non-potable Water, Solid and Hazardous Waste. Method 1613 in DW.

State of North Carolina, Department of Environment Health and Natural Resources Expires August 31, 1999. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 2000. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1998. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Revised 1/6/98 RM
y:certific\certlist.mem

Oklahoma Department of Environmental Quality. Expires August 31, 1998. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires April 1, 1998. Certificate number #99040001 (drinking water). Expires August 31, 1999. Certificate number #99040002 (other parameters). Dioxin/Furans, BNA, Volatiles, and PCBs/pesticides under Clean Water Act, 2,3,7,8-TCDD for Drinking Water, and Organic extractables for Solid and Hazardous Waste.

State of Tennessee. Department of Environment and Conservation. Expires February 5, 1999. ID #02992. Method 1613 Drinking water only.

U.S. Department of Agriculture Soil Permit. Expires September 30, 2001. Permit No. S-3790. Under the authority of the Federal Plant Pest Act, permission is granted to receive foreign soil samples for use in laboratory analysis.

U.S. Army Corps of Engineers. Recertification Pending. Validated to perform methods 8280 & 8290 for Lockbourne Landfill Site Investigation, Defense Distribution Depot Projects, and assorted projects for the USACE North Pacific Division Laboratory.

U.S. EPA Region V. Expires November 14, 1999. Dioxin in drinking water.

U.S. EPA Region VIII, for the State of Wyoming. Expires November 12, 1998. Dioxin in drinking water.

State of Utah, Department of Health. Expires December 31, 1998. Certificate Number E-166. Certification for the following parameters: Semi-Volatiles and Volatiles under RCRA; Volatiles under Clean Water Act; Dioxin/furans by Method 8280; Drinking water for Dioxin by Method 1613; Metals including Mercury and Microwave Digestion.

Commonwealth of Virginia, Department of General Services, Division of Consolidated Laboratory Services. Expires June 30, 1998. ID # 00341. Dioxin in drinking water.

State of Washington, Department of Ecology. Expires September 11, 1998. Lab Accreditation Number C067. Scope of Accreditation applies to water analyses for Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans, BNA Extr (Semivolatile) Organics and Purgeable (Volatile) Organics.

State of Washington, Department of Health. Expires April 30, 1998. Dioxin in drinking water. Lab I.D. 129

State of West Virginia, Department of Health. Expires December 31, 1998. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires August 31, 1998. Laboratory ID Number 999869530. Certification for the following categories of Organics: Purgeable, Base/Neutral, Acid, PCBs, and Dioxin. Expires November 14, 1999. Laboratory ID 999869530. Dioxin in drinking water.

PHARMACEUTICAL

Drug Enforcement Agency (DEA). Expires November 30, 1998. Registration number RT01195835. Controlled substance registration for schedules 1,2,3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1998. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires June 1998. ID #'s 001500 1053481. Annual registration of drug establishment. Annual registration of drug establishment.

OTHER

Clinical Laboratory Improvement Amendments (CLIA) Registration. Expires May 30, 1999. ID # 34D0705123. Department of Health & Human Services. Health Care Financing Administration.

U.S. EPA Large Quantity Hazardous Waste Generator. No expiration date. EPA ID #NCD982156879. Permit indicates that the laboratory is a large generator of hazardous waste.

North Carolina General License for Radiation Protection. No. expiration date. License No. 032-875-OG. The general license applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with specific requirements.

DOCUMENT CONTROL

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

CZ 12/18/97

Eastern Research Group COC

COPY

Culp Aluminum Alloys
CHAIN OF CUSTODY

RELINQUISHED BY = Marc Culble DATE = 12/17/97 RECEIVED BY: [signature] DATE: 12/18/97
RELINQUISHED BY = DATE = RECEIVED BY: DATE:

SAMPLE ID	FIELD ID						SAMPLE TYPE	PRESERVATIVE	COMMENTS	ANALYSIS
CAA-105	CAA-	120597	M23-	CDBOUT-	FILTER	1	METHOD 23, CDBOUT, RUN 1	FILTER		DIOXIN / FURAN
CAA-106	CAA-	120597	M23-	CDBOUT-	PR	1	METHOD 23, CDBOUT, RUN 1	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-107	CAA-	120597	M23-	CDBOUT-	PRT/CRT	1	METHOD 23, CDBOUT, RUN 1	TOLUENE RINSE		DIOXIN / FURAN
CAA-108	CAA-	120597	M23-	CDBOUT-	XAD	1	METHOD 23, CDBOUT, RUN 1	XAD TRAP		DIOXIN / FURAN
CAA-109	CAA-	120697	M23-	CDBOUT-	FILTER	2	METHOD 23, CDBOUT, RUN 2	FILTER		DIOXIN / FURAN
CAA-110	CAA-	120697	M23-	CDBOUT-	PR	2	METHOD 23, CDBOUT, RUN 2	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-111	CAA-	120697	M23-	CDBOUT-	PRT/CRT	2	METHOD 23, CDBOUT, RUN 2	TOLUENE RINSE		DIOXIN / FURAN
CAA-112	CAA-	120697	M23-	CDBOUT-	XAD	2	METHOD 23, CDBOUT, RUN 2	XAD TRAP		DIOXIN / FURAN
CAA-113	CAA-	120797	M23-	CDBOUT-	FILTER	3	METHOD 23, CDBOUT, RUN 3	FILTER		DIOXIN / FURAN
CAA-114	CAA-	120797	M23-	CDBOUT-	PR	3	METHOD 23, CDBOUT, RUN 3	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-115	CAA-	120797	M23-	CDBOUT-	PRT/CRT	3	METHOD 23, CDBOUT, RUN 3	TOLUENE RINSE		DIOXIN / FURAN
CAA-116	CAA-	120797	M23-	CDBOUT-	XAD	3	METHOD 23, CDBOUT, RUN 3	XAD TRAP		DIOXIN / FURAN
CAA-117	CAA-	120597	M23-	CDBIN-	FILTER	1	METHOD 23, CDBIN, RUN 1	FILTER		DIOXIN / FURAN
CAA-118	CAA-	120597	M23-	CDBIN-	PR	1	M23, CDBIN, RUN 1 (Bottle 1 of 2)	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-119	CAA-	120597	M23-	CDBIN-	PRT/CRT	1	METHOD 23, CDBIN, RUN 1	TOLUENE RINSE		DIOXIN / FURAN
CAA-120	CAA-	120597	M23-	CDBIN-	XAD	1	METHOD 23, CDBIN, RUN 1	XAD TRAP		DIOXIN / FURAN
CAA-121	CAA-	120697	M23-	CDBIN-	FILTER	2	METHOD 23, CDBIN, RUN 2	FILTER		DIOXIN / FURAN
CAA-122	CAA-	120697	M23-	CDBIN-	PR	2	METHOD 23, CDBIN, RUN 2	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-123	CAA-	120697	M23-	CDBIN-	PRT/CRT	2	METHOD 23, CDBIN, RUN 2	TOLUENE RINSE		DIOXIN / FURAN
CAA-124	CAA-	120697	M23-	CDBIN-	XAD	2	METHOD 23, CDBIN, RUN 2	XAD TRAP		DIOXIN / FURAN
CAA-125	CAA-	120797	M23-	CDBIN-	FILTER	3	METHOD 23, CDBIN, RUN 3	FILTER		DIOXIN / FURAN
CAA-126	CAA-	120797	M23-	CDBIN-	PR	3	METHOD 23, CDBIN, RUN 3	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-127	CAA-	120797	M23-	CDBIN-	PRT/CRT	3	METHOD 23, CDBIN, RUN 3	TOLUENE RINSE		DIOXIN / FURAN
CAA-128	CAA-	120797	M23-	CDBIN-	XAD	3	METHOD 23, CDBIN, RUN 3	XAD TRAP		DIOXIN / FURAN
CAA-129	CAA-	120897	M23-	RF1-OUT-	FILTER	1	METHOD 23, RF1-OUT, RUN 1	FILTER		DIOXIN / FURAN
CAA-130	CAA-	120897	M23-	RF1-OUT-	PR	1	METHOD 23, RF1-OUT, RUN 1	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-131	CAA-	120897	M23-	RF1-OUT-	PRT/CRT	1	METHOD 23, RF1-OUT, RUN 1	TOLUENE RINSE		DIOXIN / FURAN

Eastern Research Group COC

CAA-132	CAA-	120897	M23-	RF1-OUT-	XAD	1	METHOD 23, RF1-OUT, RUN 1	XAD TRAP	DIOXIN / FURAN
CAA-133	CAA-	120997	M23-	RF1-OUT-	FILTER	2	METHOD 23, RF1-OUT, RUN 2	FILTER	DIOXIN / FURAN
CAA-134	CAA-	120997	M23-	RF1-OUT-	PR	2	METHOD 23, RF1-OUT, RUN 2	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-135	CAA-	120997	M23-	RF1-OUT-	PRT/CRT	2	METHOD 23, RF1-OUT, RUN 2	TOLUENE RINSE	DIOXIN / FURAN
CAA-136	CAA-	120997	M23-	RF1-OUT-	XAD	2	METHOD 23, RF1-OUT, RUN 2	XAD TRAP	DIOXIN / FURAN
CAA-137	CAA-	121197	M23-	RF1-OUT-	FILTER	3	METHOD 23, RF1-OUT, RUN 3	FILTER	DIOXIN / FURAN
CAA-138	CAA-	121197	M23-	RF1-OUT-	PR	3	METHOD 23, RF1-OUT, RUN 3	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-139	CAA-	121197	M23-	RF1-OUT-	PRT/CRT	3	METHOD 23, RF1-OUT, RUN 3	TOLUENE RINSE	DIOXIN / FURAN
CAA-140	CAA-	121197	M23-	RF1-OUT-	XAD	3	METHOD 23, RF1-OUT, RUN 3	XAD TRAP	DIOXIN / FURAN
CAA-141	CAA-	121197	M23-	RF2-OUT-	FILTER	4	METHOD 23, RF2-OUT, RUN 4	FILTER	DIOXIN / FURAN
CAA-142	CAA-	121197	M23-	RF2-OUT-	PR	4	METHOD 23, RF2-OUT, RUN 4	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-143	CAA-	121197	M23-	RF2-OUT-	PRT/CRT	4	METHOD 23, RF2-OUT, RUN 4	TOLUENE RINSE	DIOXIN / FURAN
CAA-144	CAA-	121197	M23-	RF2-OUT-	XAD	4	METHOD 23, RF2-OUT, RUN 4	XAD TRAP	DIOXIN / FURAN
CAA-153	CAA-	120997	M23-	RF1-IN-	FILTER	1	METHOD 23, RF1-IN, RUN 1	FILTER	DIOXIN / FURAN
CAA-154	CAA-	120997	M23-	RF1-IN-	PR	1	METHOD 23, RF1-IN, RUN 1	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-155	CAA-	120997	M23-	RF1-IN-	PRT/CRT	1	METHOD 23, RF1-IN, RUN 1	TOLUENE RINSE	DIOXIN / FURAN
CAA-156	CAA-	120897	M23-	RF1-IN-	XAD	1	METHOD 23, RF1-IN, RUN 1	XAD TRAP	DIOXIN / FURAN
CAA-157	CAA-	120997	M23-	RF1-IN-	FILTER	2	METHOD 23, RF1-IN, RUN 2	FILTER	DIOXIN / FURAN
CAA-158	CAA-	120997	M23-	RF1-IN-	PR	2	M 23, RF1-IN, RUN 2 (Bottle 1 of 2)	ACETONE/MECL RINSE(1 of 2)	DIOXIN / FURAN
CAA-159	CAA-	120997	M23-	RF1-IN-	PRT/CRT	2	METHOD 23, RF1-IN, RUN 2	TOLUENE RINSE	DIOXIN / FURAN
CAA-160	CAA-	120997	M23-	RF1-IN-	XAD	2	METHOD 23, RF1-IN, RUN 2	XAD TRAP	DIOXIN / FURAN
CAA-161	CAA-	121197	M23-	RF1-IN-	FILTER	3	METHOD 23, RF1-IN, RUN 3	FILTER	DIOXIN / FURAN
CAA-162	CAA-	121197	M23-	RF1-IN-	PR	3	METHOD 23, RF1-IN, RUN 3	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-163	CAA-	121197	M23-	RF1-IN-	PRT/CRT	3	METHOD 23, RF1-IN, RUN 3	TOLUENE RINSE	DIOXIN / FURAN
CAA-164	CAA-	121197	M23-	RF1-IN-	XAD	3	METHOD 23, RF1-IN, RUN 3	XAD TRAP	DIOXIN / FURAN
CAA-165	CAA-	121197	M23-	RF2-IN-	FILTER	4	METHOD 23, RF2-IN, RUN 4	FILTER	DIOXIN / FURAN
CAA-166	CAA-	120997	M23-	RF1-IN-	PR	2	M 23, RF1-IN, RUN 2(Bottle 2 of 2)	ACETONE/MECL RINSE(2 of 2)	DIOXIN / FURAN
CAA-167	CAA-	121197	M23-	RF2-IN-	PRT/CRT	4	METHOD 23, RF2-IN, RUN 4	TOLUENE RINSE	DIOXIN / FURAN
CAA-168	CAA-	121197	M23-	RF2-IN-	XAD	4	METHOD 23, RF2-IN, RUN 4	XAD TRAP	DIOXIN / FURAN
CAA-177	CAA-	120797	M23-	RBLK1	FILTER	1	METHOD 23, REAGENT BLANK	FILTER	DIOXIN / FURAN
CAA-178	CAA-	121597	M23-	RBLK2	PR	2	METHOD 23, REAGENT BLANK	ACETONE	DIOXIN / FURAN
CAA-179	CAA-	121597	M23-	RBLK2	PRT/CRT	2	METHOD 23, REAGENT BLANK	TOLUENE	DIOXIN / FURAN

Eastern Research Group COC

CAA-180	CAA-	121597	M23-	RBLK2	XAD	2	METHOD 23, REAGENT BLANK	XAD TRAP	DIOXIN / FURAN
CAA-181	CAA-	120797	M23-	RBLK2	FILTER	2	METHOD 23, REAGENT BLANK	FILTER	DIOXIN / FURAN
CAA-182	CAA-	120397	M23-	RBLK1	PR	1	METHOD 23, REAGENT BLANK	ACETONE	DIOXIN / FURAN
CAA-183	CAA-	120397	M23-	RBLK1	PRT/CRT	1	METHOD 23, REAGENT BLANK	TOLUENE	DIOXIN / FURAN
CAA-184	CAA-	120997	M23-	RBLK1	XAD	1	METHOD 23, REAGENT BLANK	XAD TRAP	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKOUT	FILTER	1	GLASSWARE BLK CDBOUTLET	FILTER	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKOUT	PR	1	GLASSWARE BLK CDBOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKOUT	PRT/CRT	1	GLASSWARE BLK CDBOUTLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKOUT	set1	1	GLASSWARE BLK RFOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKIN	set1	1	GLASSWARE BLK RFINLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKIN	PR	1	GLASSWARE BLK CDBINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKIN	PRT/CRT	1	GLASSWARE BLK CDBINLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKIN	set1	1	GLASSWARE BLK RFINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-193	CAA-	120697	M23-	FBLKCDBOUT	FILTER	1	M23 FIELD BLANK CDBOUTLET	FILTER	DIOXIN / FURAN
CAA-194	CAA-	120697	M23-	FBLKCDBOUT	PR	1	M23 FIELD BLANK CDBOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-195	CAA-	120697	M23-	FBLKCDBOUT	PRT/CRT	1	M23 FIELD BLANK CDBOUTLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-196	CAA-	120697	M23-	FBLKCDBOUT	XAD	1	M23 FIELD BLANK CDBOUTLET	XAD TRAP	DIOXIN / FURAN
[redacted]	CAA-	_____	M23-	FBLKCDBIN	FILTER	1	M23 FIELD BLANK CDBINLET	FILTER	DIOXIN / FURAN
CAA-198	CAA-	121097	M23-	FBLKRF1IN	PR	1	M23 FIELD BLANK RF1INLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-199	CAA-	121097	M23-	FBLKRF1IN	PRT/CRT	1	M23 FIELD BLANK RF1INLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	_____	M23-	FBLKCDBIN	XAD	1	M23 FIELD BLANK CDBINLET	XAD TRAP	DIOXIN / FURAN
CAA-201	CAA-	120997	M23-	FBLKRFOUT	FILTER	2	M23 FIELD BLANK RFOUTLET	FILTER	DIOXIN / FURAN
CAA-202	CAA-	120997	M23-	FBLKRFOUT	PR	2	M23 FIELD BLANK RFOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-203	CAA-	120997	M23-	FBLKRFOUT	PRT/CRT	2	M23 FIELD BLANK RFOUTLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-204	CAA-	121097	M23-	FBLKRFOUT	XAD	2	M23 FIELD BLANK RFOUTLET	XAD TRAP	DIOXIN / FURAN
CAA-205	CAA-	121097	M23-	FBLKRFIN	FILTER	2	M23 FIELD BLANK RFINLET	FILTER	DIOXIN / FURAN
CAA-206	CAA-	_____	M23-	FBLKRFIN	PR	2	M23 FIELD BLANK RFINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-207	CAA-	_____	M23-	FBLKRFIN	PRT/CRT	2	M23 FIELD BLANK RFINLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-208	CAA-	121097	M23-	FBLKRFIN	XAD	2	M23 FIELD BLANK RFINLET	XAD TRAP	DIOXIN / FURAN
CAA-209	CAA-	120397	M23-	REAGENT BL	MeCL	1	M23 REAGENT BLANK 1 (MeCL)	REAGENT BLANK (MeCL)	DIOXIN / FURAN
CAA-216	CAA-	120597	M23-	CDBIN	FILTER	1	M23 CDBIN RUN 1 (FILTER 2 OF 3)	FILTER	DIOXIN / FURAN
CAA-217	CAA-	120597	M23-	CDBIN	FILTER	1	M23 CDBIN RUN 1 (FILTER 3 OF 3)	FILTER	DIOXIN / FURAN

Eastern Research Group COC

CAA-218	CAA-	120597 M23-	CDBIN	PR	1	M23 CDBIN RUN 1 (PR 2 OF 2)	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-219	CAA-	120697 M23-	CDBIN	FILTER	2	M23 CDBIN RUN 2 (FILTER 2 OF 2)	FILTER	DIOXIN / FURAN
CAA-225	CAA-	121197 M23-	RF1 IN	PR	4	Method23 RF1 INLET RUN 4	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-226	CAA-	121597 M23-	REAGENT BL	MeCL	2	M23 REAGENT BLANK 2 (MeCL)	REAGENT BLANK (MeCL)	DIOXIN / FURAN

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44376 | Book 194
Chain of Custody : Present | Container...: Intact | Client: ELS01 - Eastern Laboratory Services, Inc.
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A | Date Received 12/17/97 | By | Page 59

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED

TLI Number.. mR/H:CFM.	Client Sample ID..... Client COC ID.....*	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-1A	CAA-105	FILTER	DB 12-28-97	DB 12-28-97	12-29-97						
	CAA-105	C02									
194-59-1B	CAA-106	ACE/MECL2 RINSE									
	CAA-106	C02		USED							
194-59-1C	CAA-107	TOLUENE									
	CAA-107	C02									
194-59-1D	CAA-108	XAD									
	CAA-108	C02									
194-59-2A	CAA-109	FILTER									
	CAA-109	C02									
194-59-2B	CAA-110	ACE/MECL2 RINSE									
	CAA-110	C02		USED							
194-59-2C	CAA-111	TOLUENE									
	CAA-111	C02									
194-59-2D	CAA-112	XAD									
	CAA-112	C02				USED					
194-59-3A	CAA-113	FILTER									
	CAA-113	C02									
194-59-3B	CAA-114	ACE/MECL2 RINSE									
	CAA-114	C02		USED							
194-59-3C	CAA-115	TOLUENE									
	CAA-115	C02									
194-59-3D	CAA-116	XAD									
	CAA-116	C02									
194-59-4A	CAA-117	FILTER									
	CAA-117	C02									
194-59-4B	CAA-118	ACE/MECL2 RINSE	DB 12-28-97	DB USED 12-28-97							
	CAA-118	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44376 | Book
Chain of Custody : Present | Container...: Intact | Client: ELS01 - Eastern Laboratory Services, Inc.
Sample Tags : Absent | 194
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A | Date Received 12/17/97 | By [signature] | Page
Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED | 59

TLI Number.. / mR/H:CPM.	Client Sample ID / Client COC ID / Location	Matrix	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-4C	CAA-119	TOLUENE	LDB 12-28-97	DB 12-28-97	12-29-97	12-29-97					
	CAA-119 C02										
194-59-4D	CAA-120	XAD	✓								
	CAA-120 C02		✓								
194-59-5A	CAA-121	FILTER									
	CAA-121 C02		✓								
194-59-5B	CAA-122	ACE/MECL2 RINSE		USED							
	CAA-122 C02		✓								
194-59-5C	CAA-123	TOLUENE									
	CAA-123 C02		✓								
194-59-5D	CAA-124	XAD									
	CAA-124 C02		✓								
194-59-6A	CAA-125	FILTER				USED					
	CAA-125 C02		✓								
194-59-6B	CAA-126	ACE/MECL2 RINSE		USED							
	CAA-126 C02		✓								
194-59-6C	CAA-127	TOLUENE									
	CAA-127 C02		✓								
194-59-6D	CAA-128	XAD									
	CAA-128 C02		✓								
194-59-7A	CAA-129	FILTER									
	CAA-129 C02		✓								
194-59-7B	CAA-130	ACE/MECL2 RINSE		USED							
	CAA-130 C02		✓								
194-59-7C	CAA-131	TOLUENE									
	CAA-131 C02		✓								
194-59-7D	CAA-132	XAD	LDB 12-28-97	DB 12-28-97							
	CAA-132 C02		✓								

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent	Sample Seals: Absent	TLI Project Number 44376	Book
Chain of Custody : Present	Container...: Intact	Client: ELS01 - Eastern Laboratory Services, Inc.	194
Sample Tags : Absent			
Sample Tag Numbers: Not Listed on Chain of Custody			
SMO Forms : N/A		Date Received 12/17/97 By	Page
Ice Chest NO COOLANT		Carrier and Number HAND DELIVERED	59

TLI Number.. ....Client Sample ID..... .....Matrix mR/H:CPM. .....Client COC ID.....* Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-8A CAA-133 FILTER	DB 12-28-97	DB 12-29-97	12-29-97	12-29-97					
CAA-133 C02									
194-59-8B CAA-134 ACE/MECL2 RINSE		USED							
CAA-134 C02									
194-59-8C CAA-135 TOLUENE									
CAA-135 C02									
194-59-8D CAA-136 XAD									
CAA-136 C02									
194-59-9A CAA-137 FILTER									
CAA-137 C02									
194-59-9B CAA-138 ACE/MECL2 RINSE		USED		USED					
CAA-138 C02									
194-59-9C CAA-139 TOLUENE									
CAA-139 C02									
194-59-9D CAA-140 XAD									
CAA-140 C02									
194-59-10A CAA-141 FILTER									
CAA-141 C02									
194-59-10B CAA-142 ACE/MECL2 RINSE		USED							
CAA-142 C02									
194-59-10C CAA-143 TOLUENE									
CAA-143 C02									
194-59-10D CAA-144 XAD									
CAA-144 C02									
194-59-11A CAA-153 FILTER									
CAA-153 C02									
194-59-11B CAA-154 ACE/MECL2 RINSE	DB 12-28-97	DB USED 12-28-97							
CAA-154 C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent
Chain of Custody : Present | Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376 | Book 194
Client: ELS01 - Eastern Laboratory Services, Inc.

Date Received 12/17/97 | By [signature] | Page 59

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID..... *	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-11C	CAA-155	TOLUENE	DB 12-28-97	DB 12-28-97	12-29-97	12-29-97					
	CAA-155	C02									
194-59-11D	CAA-156	XAD									
	CAA-156	C02									
194-59-12A	CAA-157	FILTER									
	CAA-157	C02									
194-59-12B	CAA-158	ACE/MECL2 RINSE 1OF2		USED							
	CAA-158	C02									
194-59-12C	CAA-166	ACE/MECL2 RINSE 2OF2									
	CAA-166	C02									
194-59-12D	CAA-159	TOLUENE									
	CAA-159	C02									
194-59-12E	CAA-160	XAD									
	CAA-160	C02									
194-59-13A	CAA-161	FILTER				USED					
	CAA-161	C02									
194-59-13B	CAA-162	ACE/MECL2 RINSE		USED							
	CAA-162	C02									
194-59-13C	CAA-163	TOLUENE									
	CAA-163	C02									
194-59-13D	CAA-164	XAD									
	CAA-164	C02									
194-59-14A	CAA-165	FILTER									
	CAA-165	C02									
194-59-14C	CAA-167	TOLUENE									
	CAA-167	C02									
194-59-14D	CAA-168	XAD	DB 12-28-97	DB 12-28-97							
	CAA-168	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44376 | Book
Chain of Custody : Present | Container...: Intact | Client: ELS01 - Eastern Laboratory Services, Inc.
Sample Tags : Absent | 194
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A | Date Received 12/17/97 | By | Page
Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED | 59

TLI Number.. / mR/H:CPM.	Client Sample ID / Client COC ID / Location	Matrix	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-15A	CAA-177	FILTER	DB 12-23-97	DB 12-28-97	KH 12-29-97	KH 12-29-97					
	CAA-177 C02										
194-59-15B	CAA-178	ACETONE		USED							
	CAA-178 C02										
194-59-15C	CAA-179	TOLUENE									
	CAA-179 C02										
194-59-15D	CAA-180	XAD									
	CAA-180 C02										
194-59-16A	CAA-181	FILTER									
	CAA-181 C02										
194-59-16B	CAA-182	ACETONE		USED							
	CAA-182 C02										
194-59-16C	CAA-183	TOLUENE				USED					
	CAA-183 C02										
194-59-16D	CAA-184	XAD									
	CAA-184 C02										
194-59-17A	CAA-193	FILTER									
	CAA-193 C02										
194-59-17B	CAA-194	ACE/MECL2 RINSE		USED							
	CAA-194 C02										
194-59-17C	CAA-195	TOLUENE									
	CAA-195 C02										
194-59-17D	CAA-196	XAD									
	CAA-196 C02										
194-59-18A	CAA-198	ACE/MECL2 RINSE		USED							
	CAA-198 C02										
194-59-18B	CAA-199	TOLUENE	DB 12-24-97	DB 12-28-97							
	CAA-199 C02										

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44376 | Book
Chain of Custody : Present | Container...: Intact | Client: ELS01 - Eastern Laboratory Services, Inc.
Sample Tags : Absent | 194
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A | Date Received 12/17/97 | By | Page

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED | 59

TLI Number.. ....Client Sample ID..... .....Matrix mR/H:CPM. .....Client COC ID.....* Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-19A CAA-201 FILTER CAA-201 C02	DB 12-29-97	DB 12-29-97							
194-59-19B CAA-202 ACE/MECL2 RINSE CAA-202 C02		USED	12-29-97	12-29-97					
194-59-19C CAA-203 TOLUENE CAA-203 C02									
194-59-19D CAA-204 XAD CAA-204 C02									
194-59-20A CAA-205 FILTER CAA-205 C02									
194-59-20B CAA-208 XAD CAA-208 C02									
194-59-21 CAA-209 REAGENT BLANK MECL2 CAA-209 C02		USED							
194-59-22A CAA-216 FILTER CAA-216 C02				USED					
194-59-22B CAA-217 FILTER CAA-217 C02									
194-59-22C CAA-218 ACE/MECL2 RINSE CAA-218 C02		USED							
194-59-23 CAA-219 FILTER CAA-218 * C02									
194-59-24 CAA-225 ACE/MECL2 RINSE CAA-225 C02		USED							
194-59-25 CAA-226 REAGENT BLANK MECL2 CAA-226 C02	DB 12-29-97	DB 12-29-97 USED							

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC.
SAMPLE TRACKING AND PROJECT MANAGEMENT FORM

----------ADMINISTRATIVE INFORMATION----------

TLI Proj#: 44376-A	Samples: 10	TurnAround.: 21 Day(s)
Prod Code: D23061	Matrix.: M23Train	Hold Time..: 30 Day(s)
DetectLim: .05 ng	Type...: A	Start Date.: 12/17/97
	Recvd..: 12/17/97	Ship By....: 01/05/98
		DWL Due Dt.: 12/24/97

Analyte List.: Method 23:T-O (Toluene combined

Method.....: Method 23:Tetra-Octa (Tol Combined)
Client Proj..: Culp Aluminum Alloys
Client.....: Eastern Research Group (ERG02)

P.O. No.....: Signed OA	Collect Dt/Tm: SeeCOC
Contact.....: Jim McGaughey	Phone.....: 919/461-1209
Proj. Mgr....: Amy J. Boehm	Fax.....: 919/461-1579
	Sample Origin: NC

----------SPECIAL INSTRUCTIONS / QA REQUIREMENTS----------

Prespike Standard: USD-C, USD-S
Prespike Amount..: 4.0ng

----------REPORTING REQUIREMENTS----------

Reporting Format: Report Option II

See MILES for Instructions/Communications.

Completed by: _____ DATE: _____

Reviewed by: _____ DATE: 12/26/97 (PMGT0197)

Received w/ 12/24/97 - 14:0
19

PROJECT COMMUNICATION TRACKING FORM page ___ of ___

TLI Project Number: 44376A

Use this form to record all exchanges of information between production units as well as personnel handling this project. Decisions, corrective actions and recommendations must also appear on this tracking document.

Date -	Name	Comment / Decision / Resolution / Action / Observation			
12-29-97		PrepProject	XAD	FILTER	GLASSWOOL
	1	04047	WHITE	GRAY	WHITE
	2		White/Yellow	BLACK	WHITE / Yellow
	3		White/Yellow	Black	White / Yellow
	4		White/Yellow	Black	white / Yellow
	5		White	Black	White
	6		White	White	White
	7		White	White	White
	8		White	White	White
	9		White	White	white
	10		White	white	white
	BLANK	↓	WHITE	N/A	N/A

ALL RINSES WERE FILTERED PRIOR TO CONCENTRATION DUE TO AMOUNT OF PARTICULATE IN THE RINSES.

Triangle Laboratories, Inc.
TLI PROJECT# 04047 - BLANK
DATE 11/25/97 TLI BLANK
SPIKE-4.0ng USF-C USF-S
SPIKER GL
PREPARER G.L.
EASTERN RES.GRP.

TRIANGLE LABORATORIES, INC.
Wet Lab MM5/PUF Observations
Project: 44376-A

Sample #	crd	TLI_Number..	Customer.Sample.Id.....	F. No	XAD Color.....	Filter Color.....	Glass Wool Color.....	PUF Color.....	Odor.....	Air Q.No.	Entered.By.....	Date....	Time....	S
020		TLI LCS	TLI LCS	0	LOT P-1078	NA	NA	NA	NA	NA	HILLKT	12/29	13:45	F
021		TLI LCSD	TLI LCSD	0	LOT P-1078	NA	NA	NA	NA	NA	HILLKT	12/29	13:45	F
000		TLI Blank	TLI M23 Blank	0	WHITE	NA	NA	NA	NONE	04047	WHIGHAM	12/29	16:13	F
001		194-59-10A-D	141-144	1	WHITE	GRAY	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
002		194-59-11A-D	153-156	1	WHT./YELLO	BLACK	WHT./YELLO	NA	NONE	04047	WHIGHAM	12/29	16:13	F
003		194-59-12A-E	157-160/166	1	WHT/YELLOW	BLACK	WHT/YELLOW	NA	NONE	04047	WHIGHAM	12/29	16:13	F
004		194-59-13A-E	161-164	1	WHT/YELLOW	BLACK	WHT/YELLOW	NA	NONE	04047	WHIGHAM	12/29	16:13	F
005		194-59-14ACD	165,167,168/225	1	WHITE	BLACK	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
006		194-59-15A	177/182-184/209	1	WHITE	WHITE	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
007		194-59-15B-D	178-181/226	1	WHITE	WHITE	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
008		194-59-17A-D	193-196	1	WHITE	WHITE	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
009		194-59-19A-D	201-204	1	WHITE	WHITE	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F
010		194-59-18A/B	198/199/205/208	1	WHITE	WHITE	WHITE	NA	NONE	04047	WHIGHAM	12/29	16:13	F

*** End of Report ***

TRIANGLE LABORATORIES, INC. PAGE 1 OF 2

Dioxin Sample Preparation Tracking & Management Form

Project: 44376A Client: Eastern Research Group (ERG02)

Solvent(s)/Acid(s): TOLUENE / _____ / _____ Method: Method 23:Tetra-Octa (Tol Combined) Matrix: MS1RA

Lot Numbers: 976052 / _____ / _____ Extraction Date: 12/29/97

IS Spike: 40 µl conc: 0.1000 ng/µl

SS Spike: ___ µl conc: __.___ ng/µl

MS Spike: 0 µl conc: 0.0000 ng/µl

LCS Spike: 0 µl conc: 0.0000 ng/µl

OPR Spike: 20 µl conc: 0.01 ng/µl

					LA	SBM				Chemist
					5675C	5595A				Spike #
					OF-I	WSF-A				" ID
				TCAIN	12/04/98	10/6/98	__/__/__	__/__/__		" Expir
					12/29/97	12/30/97	__/__/__	__/__/__		" Date
					15 : 30	9 : 44 AM	__ : __	__ : __		" Time
S#.crd	TLI / SAMPLE ID	CLIENT SAMPLE ID	GROSS WEIGHT Before	After	SAMPLE SIZE g / ml	0.1 ng/µl 40 µl	0.1 ng/µl 40 µl	____ng/µl ____ µl	____ng/µl ____ µl	" Conc. / " Vol.
A 000	TLI Blank	TLI M23 Blank	JA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 001	194-59-10A-D	141-144	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 002	194-59-11A-D	153-156	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 003	194-59-12A-E	157-160/166	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 004	194-59-13A-E	161-164	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 005	194-59-14A/24	165,167,168/225	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
	AP 12/21/97									
A 006	194-59-15A/16B-D/21	177/182-184/209	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
	AP 12/21/97									
A 007	194-59-15B-D/16A/25	178-181/226	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
	AP 12/21/97									
A 008	194-59-17A-D	193-196	NA	NA	1	TLW	SBM J.L.			Any Left yes/no
A 009	194-59-19A-D	201-204	NA	NA	1	TLW	SBM J.L.			Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal. TLW 12/29/97

Comments: Batched with Project # ~~44376A~~. 1.2 44376.

Initials: _____ Date: __/__/__

Initials of both SPIKER AND OBSERVER must be entered. XXXXX = Gross Weight not provided for WATER Samples.

REV 05/27/97 (PSTMF 7)

Dioxin Sample Preparation Tracking & Management Form

Project: 44376A Client: Eastern Research Group (ERG02)

Solvent(s)/Acid(s): TOLUENE / _____ / _____ Method: Method 23:Tetra-Octa (Tol Combined) Matrix: MEDIA

Lot Numbers: 976050 / _____ / _____ Extraction Date: 12/29/97

IS Spike: 40 µl conc: 0.1000 ng/µl
SS Spike: ___ µl conc: __.___ ng/µl
MS Spike: 0 µl conc: 0.0000 ng/µl
LCS Spike: 0 µl conc: 0.0000 ng/µl
OPR Spike: 20 µl conc: 0.01 ng/µl

S#.crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	GROSS WEIGHT Before	GROSS WEIGHT After	SAMPLE SIZE g / ml					
					LA	SBm			Chemist
					5675C	5595A			Spike #
					05F-I	11SF-A			" ID
					12/04/99	11/16/98	__/__/__	__/__/__	" Expir
					12/29/97	12/30/97	__/__/__	__/__/__	" Date
					15 : 30	9 : 46 AM	__ : __	__ : __	" Time
					0.1 ng/µl	0.1 ng/µl	____ng/µl	____ng/µl	" Conc.
					40 µl	40 µl	____ µl	____ µl	" Vol.
A 010	194-59-18A/B 204B 198/199/205/208	NA	NA	1	PLW	SA JL.			Any Left yes/no
	~~SP 12/26/97~~								
011	TLI Cleanup BK			4.0ml	SBm L.B. 1/5/98 10:57	SBm L.B. 1/5/98 10:57			Any Left yes/no
									Any Left yes/no
									Any Left yes/no
									Any Left yes/no
									Any Left yes/no
									Any Left yes/no
									Any Left yes/no
									Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal.

Comments: Batched with Project 44376.

Project # 44376A, sample # 2 - Acid layer was still dirty after the fourth Shake. SBm 12/31/97.

_____ Initials: _____ Date: __/__/__

Initials of both SPIKER AND OBSERVER must be entered. XXXXX = Gross Weight not provided for WATER Samples.

REV 05/27/97 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 44376 A

Ext S#.crd and TLI Number	1	2	4A	6	3	4b	7	8a	9	8B DSP260	10	11
A 000 TLI Blank	Mark Shiner 11:11, Kevin & Bill Leonard 12/19/97		JL	JL.	JL.	WL	WL	WL	JBm 12/31/97	SK 1/2/98	FG 1/2/98	MH 1/5/98
A 001 194-59-10A-D												
A 002 194-59-11A-D												
A 003 194-59-12A-E												
A 004 194-59-13A-E	Tajuba Williams											
A 005 194-59-14ACD				12/30/97								
A 006 194-59-15A				WL								
A 007 194-59-15B-D	Completed by											
A 008 194-59-17A-D												
A 009 194-59-19A-D	THF 12/29/97		12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	JBm DSP 115 12/31/97	SK 1/2/98		

Enter the procedure number below into the box at the top of each column to signify the step performed.
Initial and date each sample for each numbered procedure performed.

#..	....PROCEDURE....	SOP.#.	.v..	DETAILS (circle)
(1)	EXTRACTION	111	8	Time On 16:15 Time Off 8:15 am
				(Soxhlet) / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
(2)	SPIKE AFTER EXT'N			
(3)	ADD TRIDECANE			Lot# TRI-1-3-90
(4)	ROTOVAP	DSP124	v.8	40mL (a) 10mL (b) Dryness
5)	COMBINE			
(6)	DIV./LIP. DETERM.	DSP111	v.8	20%/80% (50%/50%) 5mL/20mL Other_____
(7)	SOLVENT EXCHANGE			Iso-Octane Lot# 977164 Heptane Lot#_____
(8)	CLEANUP			(DSP 260) (B) / DSP 225 / (DSP 115) (A) / DSP 215 / DSP 267 / Other _____
(9)	TRANSFER	972	2	
(10)	ADDITIONAL CLEANUP			(Mod. DSP 260) / DSP 225 / DSP 115 / DSP 215 / DSP 267 / DSP260(10g)
11)	FINAL TRANSFER			

Comments: Toluene Lot # 976050 used to rinse for division C - Dried 12/30/97 (1-5).

Rev 11/25/97 (PSTMF 4)

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 44376 A

Ext S#.crd and TLI Number	1	2	4	6	3	4b	7	8a	9	8	11
A 010	4R 1'									DSP 260	
194-59-18A/B	HLW 12/24/97	JL	JL.	WL 12/30/97	WL 12/30/97	WL 12/30/97	WL 12/30/97	Z BMT D 12/31/97	SK 1/2/98	FG 1/2/98	
011 TL cleanup BLK		12/30/97 SBM	12/30/97								1/5/98
		L.B. 1/5/98									

Enter the procedure number below into the box at the top of each column to signify the step performed.
Initial and date each sample for each numbered procedure performed.

#..	....PROCEDURE....	SOP.#.	.v..	DETAILS (circle)
(1)	EXTRACTION	111	8	Time On 16 : 15 Time Off 8 : 15 am
				(Soxhlet) / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
(2)	SPIKE AFTER EXT'N			
(3)	ADD TRIDECANE			Lot# TRI-1-3-40
(4)	ROTOVAP	DSP124	V.8	40mL / (a 10mL / b Dryness)
5)	COMBINE			
(6)	DIV./LIP. DETERM.	DSP 111	V.8	20%/80% (50%/50%) 5mL/20mL Other_____
(7)	SOLVENT EXCHANGE			Iso-Octane Lot# 977164 Heptane Lot#_____
(8)	CLEANUP			(DSP 260) / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
(9)	TRANSFER	222	2	
10)	ADDITIONAL CLEANUP			Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / DSP260(10g)
11)	FINAL TRANSFER			

Comments: Toluene Lot # 976250 used to rinse flask for division J. Lewis 12/30/97 (0-5).

Rev 11/25/97 (PSTMF 4)

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 44376-A

Transfer From: DWLH5 To: DMS5

	Initials..	Date.....	Time...
Released by:	LR	1/5/98	10:15
Accepted by:	MS	1/5/98	23:05

MILES.ID.....		TLI_No.....	Cust.Id.....
44376-A	-000	TLI Blank	TLI M23 Blank
44376-A	-001	194-59-10A-D	141-144
44376-A	-002	194-59-11A-D	153-156
44376-A	-003	194-59-12A-E	157-160/166
44376-A	-004	194-59-13A-E	161-164
44376-A	-005	194-59-14ACD	165,167,168/225
44376-A	-006	194-59-15A	177/182-184/209
44376-A	-007	194-59-15B-D	178-181/226
44376-A	-008	194-59-17A-D	193-196
44376-A	-009	194-59-19A-D	201-204
44376-A	-010	194-59-18A/B	198/199/205/208
44376-A	-011	TLI Clean-Up	CleanUp Blk

XfrCOC (Rev 11/01/94)

Additional comments or instructions:

TRIANGLE LABORATORIES, INC.

Method: Method 23:Tetra-Octa (Tol Combined) HR GC/HRMS ANALYSIS

Required Detection Limit: .05 ng

PROJECT: 44376A

S#.crd	TLI SAMPLE ID / CLIENT SAMPLE ID	SAMPLE INFORMATION 1ST COLUMN GC/MS FILENAME COLUMN: DB5	CONFIRM	2ND COLUMN CONFIRM FILENAME COLUMN: DB225	RS Conc 20 µl @ 100.0 PG/µl USF-RS VOLUME SOLN ID	USF-RS INIT. DATE	ANALYSIS COMMENTS
A 000	TLI Blank / TLI M23 Blank	U980026	Y	P98W94	20ml 576EC	1/6/98	
A 001	194-59-10A-D 141-144	U980027	Y	P98W95			
A 002	194-59-11A-D 153-156	U980028	Y	P98W96			
A 003	194-59-12A-E 157-160/166	U980029	Y	P98W97			
A 004	194-59-13A-E 161-164	U980030	Y	P98W98			
A 005	194-59-14ACD 165,167,168/225	U980031	Y	P98W99			
A 006	194-59-15A 177/182-184/209	U980032	Y	P980100			
A 007	194-59-15B-D 178-181/226	U980033	Y	P980101			
A 008	194-59-17A-D 193-196	U980034	Y	P980102			
A 009	194-59-19A-D 201-204	U98W35	Y	103			
A 010	194-59-18A/B 198/199/205/208	U98W36	Y	104			
A 011	Cleanup Blank	U98W37	N	—			MS 1/5/98

Comments: _____

Type: A

Spike File: SPX23704

Amt of Extract: 50%

REV 03/07/95 (PSTMF 6)

Triangle Labc[redacted]les, Inc.
Run L[redacted]

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
700	DB-5	7.38412225	T02	2.0uL	NDB545	NDB545

Brandy Bonyecki
Signature

1/5/98
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
U980016	1/5/98	—	—	57777	—	8240/mit/1613 ical #4	T-O #4	—	BB 1/5/98	Computer CRASH BB 1/5/98
U980017	↓	15:40	—	5777	—	8240/mit/1613 ical #4	+-O #4	2.1 ug	BB 1/5/98	
U980018	↓	16:26	—	5778	—	8240/mit/1613 ical #5	+-O #5	Rio 2.1	BB 1/5/98	
U980019	↓	17:15 18:0 PDS 1/5/98	—	5779	—	8240/mit/1613 ical #6	+-O #6	3.2 ug	BB 1/6/98	
U980020		19:00	—	5781	—	↓ #3	+-O #3		↓	Ical needs to be reprocessed
U980021	1/6/98	12:50				RTCHK	RTCHK	24%	MC 1/6/98	
22	↓		—	5781	—	CONCAL 10	M-O #3		MC 1/6/98	NO VIBRATION on MS gave - deflation
23	↓		—	5781	—	8240 CONCH 10	M-O #7		MC 1/6/98	
24	↓	—	—	—	—	— NOT U[redacted]	U[redacted]		MC 1/6/98	
25	↓	15:49	—	5781	—	8240 CONCH 10	M-O #3	3.3 ug	MC 1/6/98	
26	1/6/98	17:15	44376A	TH BLNK	0	TH 1613 BLNK	U1048	1.5 ug	KAS 1/6/98	
U980027	1/6/98	18:07	44376A	194-95-10D-D	1	1411-144	U1048	2.2 ug	KAS 1/6/98	
U980028	1/6/98	18:57	44376A	194-59-11AD	2	153-156	U1048	2.0 ug	KAS 1/6/98	

Transcribed from chromatographic data
* Dated Initials required

ConCal Due: _____
ConCal Due: _____

8240 - UF51058 1613 - UF61058

Page: _____

Triangle Labo ries, Inc.
Run L

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	GC
704	DB5	73842223	TB2	2.0ul	NDB545	NDB545

Brandy Bonifield
Signature

1/6/98
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
U980029	1/6/98	19:43	44376A	194-59-12A-2	3	157 - 160/166	U104B	2.3 97	BB 1/6/98	
U980030		20:29	44376A	194-59-13A-2	4	161 - 164	U104B	2.4 47	BB 1/6/98	
U980031		21:15	44376A	194-59-14 ACD	5	165, 167, 168/225	U104B	2.8 12	BB 1/6/98	
U980032		22:01	4437A	194-59-15A	6	177/182 - 184/209	U104B	2.2 72	BB 1/6/98	
U980033	1/6/98	22:51	4437A	194-59-15B0	7	178/181/226	U104B	2.4 87	BB 1/6/98	
U980034	1/6/98	23:38	4437A	194-59-17A-2	8	193 - 196	U104B	2.6 66	BB 1/6/98	
U980035	1/7/98	00:29	44376A	194-59-19A0	9	201 - 204	U104B	1.7 67	jm 1/7/98	
U980036	1/7/98	01:28	44376A	194-59-18A/B	10	198/199/205/206	U104B	1.1 87	jm 1/7/98	
U980037	1/7/98	02:18	4437A	Cleanup Blank	11	Cleanup Blank	U104B	1.1 67	jm 1/7/98	
U980038	1/7/98	03:09	44338B	TL1 Blank	0	TL1 MAS Blank	U104B	1.5 E7	jm 1/7/98	
U980039		04:36	—	5633	-	Retention Window Check	RTCHK	21%	jm 1/7/98	0.02 Lyn 1-7-98
U980040		05:29	—	5781	—	8290 ConCal 10.0	M-D #3	1.1 E7	KS 1/7/98	
U980041	1/7/98	7:01	—	5768C	-	RS-100	U104B	2.3 C7	KS 1/7/98	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 3:49
ConCal Due: _____

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70P	DB-225	357 2c135	TT1	2.0ul	DB225	DB225

Brandy Bonfeele
Signature

1/6/98
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P98 0090	1/6/98	—				mass Calibration	—	—	BB 1/6/98	
P980091	"	21:33	—	5633	—	P-Chk	P-blk	10%	BB 1/6/98	
P980092	✓	2208	—	4497	—	tetr Cal 50	tetra 50	6.0 2C	BB 1/6/98	
P980093		23:02	—	5768C	—	RS-100	U1068	5.0 2C	BB 1/6/98	
P980094	1/6/98	23:49	44376A	Tra Blank	0	Tra 1123 Blank	U1068	2.6	BB 1/6/98	
P980095	1/7/98	00:57	44376A	194-55-10A-D	1	141-144	U1068	1.6	Jm 1/7/98	
P980096	1/7/98	01:44	44376A	194-55-11A-D	2	153 156	U1068	1.6	Jm 1/7/98	
P980097	1/7/98	02:28	44376A	194-55-12A-B	3	157-160/166	U1068	1.8	Jm 1/7/98	
P980098	1/7/98	03:23	44376A	194-55-13A-C	4	161-164	U1061	1.8	Jm 1/7/98	
P980099	1/7/98	04:09	44376A	194-55-14A-D	5	165, 167, 168/225	U1068	1.9	Jm 1/7/98	
P980100	1/7/98	04:54	44376A	194-55-15A	6	177/182-184/209	U1061	1.6	Jm 1/7/98	
P980101	1/7/98	05:43	44376A	194-55-15B-D	7	178-181/226	U1061	1.5	Jm 1/7/98	
P980102	"	06:29	44376A	194-55-17A-D	8	193-196	U1061	1.4 BC	Jm 1/7/98	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70P	DB 225	7572935	TT1	2.0 ul	DB 225	DB 225

Signature

1-7-98
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P980103	1/7/98	07:56	44437-CA	194-59-1HA	9	201-204	0106	2.3 FC	WA 1/7/98	
104	1	08:31	1	1 -18A/B	10	198/199/205	1	2.5 E6	1	
105	1	10:15	"	5633	—	KYC-1U	Dich	11%	1	AS-11 WA 1/7/98
106	1	11:33	—	5787	-	TRIPLE CONCLUSION	TRIP 5.0	3.1 FC	1	NO ROLLOFF WA 1/7/
107	1	12:30	—	5787	-	1	1	2.5 GC	1	GOOD WA 1/7/98
108	1	13:30	44222B1	TH BLANK	0	TH GB PLATE BLK	P106	1.5 BR	WA 1/7/98	
109	1	14:22	1	193-4-3	1	C.C. W.B. (DIOXIN)	1	1.9 E6	1	Method 551
P980110	1	1622	1	193-11-1	2	W.I. W. (DIOXIN)	1	1.2 E6	1	
P980111	1/7/98	1713	44220A1	193-4-1	1	Grits Placebo (GP) (Dioxin)	P1068	1.2 E6	BB 1/7/98	
P980112		1801	44222A1	193-4-2	2	Liver BLANK (LB) (Dioxin)	P1061	2.0 E6	ML 1/7/98	
P980113		1853	44222B1	LCS	3	TH LCS	P1061	1.8 E6	ML 1/7/98	
P980114		1944	44222B1	LCSD	4	TH LCSD	P1061	2.1 E6	ML 1/7/98	
P980115		2033	—	5790	—	Tetra 500	5790 5.0	2.6 E6	ML 1/7/98	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

SAMPLE DATA

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Sample Result Summary for Project 44376A 01/10/98

Method MIT2 Analysis (DB-5)

Data File	U980026	U980027	U980028	U980029
Sample ID	TLI M23 Blank	141-144	153-156	157-160/166
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/06/98
Instrument	U	U	U	U
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDD	(0.004)	0.02 PRJ	0.68 PR	0.71 PR
12378-PeCDD	(0.006)	0.03 J	4.0	5.0
123478-HxCDD	(0.01)	0.02 J	4.5	5.4
123678-HxCDD	(0.008)	0.04 J	7.3	8.1
123789-HxCDD	(0.008)	{0.04} J	10.3	11.9
1234678-HpCDD	(0.01)	0.15	43.1 E	55.4 E
OCDD	0.03 J	0.24 B	69.6	87.1 E
2378-TCDF	0.02	1.5	65.2 E	76.6 E
12378-PeCDF	(0.005)	0.15	15.6	15.7
23478-PeCDF	(0.005)	0.22	29.4	31.9
123478-HxCDF	(0.006)	0.44	101 E	98.8 E
123678-HxCDF	(0.005)	0.15	34.9	35.5
234678-HxCDF	(0.006)	0.20	53.2 E	53.9 E
123789-HxCDF	(0.007)	0.02 PRJ	3.1 PR	3.1 PRX
1234678-HpCDF	(0.008)	0.62	163 E	200 E
1234789-HpCDF	(0.01)	0.08 J	24.8	34.5
OCDF	(0.01)	0.46	144 E	>40.0 SE
TOTAL TCDD	(0.004)	2.8	72.0 E	143 QE
TOTAL PeCDD	(0.006)	0.47	65.7	103 E
TOTAL HxCDD	(0.008)	0.37	93.7	154 E
TOTAL HpCDD	(0.01)	0.31	86.7 E	114 E
TOTAL TCDF	0.04	12.8	364 E	441 E
TOTAL PeCDF	(0.005)	3.7	398 E	419 E
TOTAL HxCDF	(0.006)	1.8	413 E	417 E
TOTAL HpCDF	(0.008)	0.98	270 E	346 E
Other Standards Percent Recovery Summary (% Rec)				
37Cl-TCDD	85.7	84.8	87.9	80.6
Other Standards Percent Recovery Summary (% Rec)				
13C12-PeCDF 234	99.5	89.0	90.7	91.2
13C12-HxCDF 478	84.0	98.1	109	99.2
13C12-HxCDD 478	89.8	90.8	93.8	96.7
13C12-HpCDF 789	84.3	84.9	97.7	97.9
Other Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 789	52.6	73.2	65.0	72.1
13C12-HxCDF 234	60.7	73.1	63.5	75.0
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	46.0	64.4	61.0	62.7
13C12-2378-TCDD	51.1	64.1	53.3	63.2

Data File	U980026	U980027	U980028	U980029
Sample ID	TLI M23 Blank	141-144	153-156	157-160/166
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/06/98
Instrument	U	U	U	U
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Internal Standards Percent Recovery Summary (% Rec)				
13C12-PeCDF 123	45.2	69.9	59.1	66.4
13C12-PeCDD 123	50.6	66.9	50.0	63.0
13C12-HxCDF 678	55.3	70.9	58.4	67.6
13C12-HxCDD 678	59.4	80.0	74.3	77.1
13C12-HpCDF 678	49.9	73.3	69.6	77.2
13C12-HpCDD 678	56.5	75.4	68.7	74.0
13C12-OCDD	48.8	66.1	61.3	78.3

Data File	U980030	U980031	U980032	U980033
Sample ID	161-164	165,167,168/225	177/182-184/209	178-181/226
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/06/98
Instrument	U	U	U	U
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDD	0.61 PR	0.51 PR	(0.004)	(0.005)
12378-PeCDD	3.4	3.6	(0.006)	(0.008)
123478-HxCDD	3.7	4.7	(0.007)	(0.01)
123678-HxCDD	5.7	7.4	(0.006)	0.01 J
123789-HxCDD	8.3	10.3	(0.006)	{0.01} J
1234678-HpCDD	32.9	40.0 E	0.02 J	0.04 J
OCDD	47.1	63.1	0.06 JB	0.14 JB
2378-TCDF	53.8 E	64.6 E	{0.03} B	0.07 B
12378-PeCDF	13.8	15.8	0.01 J	{0.02} J
23478-PeCDF	23.8	28.7	0.01 J	0.03 J
123478-HxCDF	72.8 E	97.5 E	0.03 J	0.08 J
123678-HxCDF	25.9	32.5	0.01 J	0.03 J
234678-HxCDF	38.5	47.4 E	0.02 J	0.04 J
123789-HxCDF	2.5 PR	2.8 PR	(0.006)	(0.009)
1234678-HpCDF	107 E	155 E	0.13	0.14
1234789-HpCDF	17.1	25.6	(0.01)	(0.01)
OCDF	79.7	160 E	0.11 J	0.10 J
TOTAL TCDD	68.1 E	76.5 E	0.01	0.04
TOTAL PeCDD	55.0	58.1	0.01	0.01
TOTAL HxCDD	92.0 E	114 E	0.02	0.03
TOTAL HpCDD	68.8	80.3 E	0.02	0.08
TOTAL TCDF	288 E	370 E	0.05	0.30
TOTAL PeCDF	324 E	391 E	0.07	0.36
TOTAL HxCDF	300 E	403 E	0.11	0.28
TOTAL HpCDF	180 E	262 E	0.13	0.18
Other Standards Percent Recovery Summary (% Rec)				
37Cl-TCDD	79.4	82.9	82.4	83.1
Other Standards Percent Recovery Summary (% Rec)				
13C12-PeCDF 234	85.6	85.5	93.9	98.4
13C12-HxCDF 478	99.9	104	92.5	92.4
13C12-HxCDD 478	84.6	97.1	90.3	97.0
13C12-HpCDF 789	100	93.7	95.1 RO	85.2
Other Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 789	53.0	80.7	77.7	63.7
13C12-HxCDF 234	54.7	79.9	78.0	68.9
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	46.2	75.3	62.5	60.5
13C12-2378-TCDD	44.7	68.4	68.1	63.7

Data File	U980030	U980031	U980032	U980033
Sample ID	161-164	165,167,168/225	177/182-184/209	178-181/226
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/06/98
Instrument	U	U	U	U
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Internal Standards	Percent Recovery Summary (% Rec)			
13C12-PeCDF 123	46.1	74.6	72.1	59.5
13C12-PeCDD 123	44.1	71.4	79.7	67.7
13C12-HxCDF 678	50.6	77.0	73.9	64.3
13C12-HxCDD 678	66.3	80.8	92.1	75.3
13C12-HpCDF 678	61.4	85.0	39.7 RO	63.2
13C12-HpCDD 678	64.3	88.5	87.4	76.3
13C12-OCDD	61.7	80.0	86.9	75.6

Data File	U980034	U980036	U980035	U980037
Sample ID	193-196	198/199/205/208	201-204	CleanUp Blk
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	01/05/98
Analysis Date	01/06/98	01/07/98	01/07/98	01/07/98
Instrument	U	U	U	U
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	SOLVENT
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDD	{0.006} PRJ	0.07 PR	(0.004)	(0.002)
12378-PeCDD	0.04 J	0.48	0.02 J	(0.004)
123478-HxCDD	0.02 J	0.26	(0.01)	(0.005)
123678-HxCDD	0.04 J	0.46	0.02 J	(0.004)
123789-HxCDD	0.05 J	0.57	0.03 J	(0.004)
1234678-HpCDD	0.12	1.2	{0.09} J	(0.005)
OCDD	0.25 B	0.65	0.16 JB	0.01 J
2378-TCDF	0.45 B	7.6	0.29 B	(0.002)
12378-PeCDF	0.14	1.7	0.07 J	(0.002)
23478-PeCDF	0.22	2.9	0.12	(0.002)
123478-HxCDF	0.31	6.0	0.23	(0.004)
123678-HxCDF	0.12	2.3	0.09 J	(0.003)
234678-HxCDF	0.14	2.4	0.12	(0.004)
123789-HxCDF	0.02 J	0.15 PR	(0.007)	(0.004)
1234678-HpCDF	1.2	6.1	0.43	(0.004)
1234789-HpCDF	0.17	0.72	{0.05} J	(0.004)
OCDF	0.41	1.5	0.31	(0.005)
Total MCDD				(0.0)
Total DCDD				(0.0)
Total TriCDD				(0.0)
TOTAL TCDD	0.31	13.2	0.22	(0.002)
TOTAL PeCDD	0.52	11.0	0.24	(0.004)
TOTAL HxCDD	0.53	9.2	0.33	(0.005)
TOTAL HpCDD	0.23	2.8	{0.18}	(0.005)
Total MCDF				(0.0)
Total DCDF				(0.0)
Total TriCDF				(0.0)
TOTAL TCDF	2.2	41.5	1.5	(0.002)
TOTAL PeCDF	2.9	44.2	1.6	(0.002)
TOTAL HxCDF	1.4	25.8	0.96	(0.003)
TOTAL HpCDF	1.9	10.3	0.65	(0.004)
Other Standards Percent Recovery Summary (% Rec)				
37Cl-TCDD	85.2	79.1	82.8	
Other Standards Percent Recovery Summary (% Rec)				
13C12-PeCDF 234	93.6	86.9	92.0	
13C12-HxCDF 478	92.8	79.7	82.6	
13C12-HxCDD 478	98.0	78.9	86.8	
13C12-HpCDF 789	107 RO	88.3	93.8	
Other Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 789	79.0	84.6	81.4	80.8

Data File	U980034	U980036	U980035	U980037
Sample ID	193-196	198/199/205/208	201-204	CleanUp Blk
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	01/05/98
Analysis Date	01/06/98	01/07/98	01/07/98	01/07/98
Instrument	U	U	U	U
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	SOLVENT
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Other Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 234	77.2	85.6	82.8	84.4
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	60.0	82.3	73.1	66.8
13C12-2378-TCDD	79.6	81.4	75.1	68.8
13C12-PeCDF 123	78.7	86.0	76.4	76.3
13C12-PeCDD 123	86.0	66.4	68.3	59.6
13C12-HxCDF 678	72.7	90.4	85.4	68.7
13C12-HxCDD 678	85.3	98.6	89.4	78.9
13C12-HpCDF 678	40.6 RO	80.7	79.9	81.0
13C12-HpCDD 678	95.1	80.9	86.7	87.2
13C12-OCDD	92.1	73.2	81.3	84.3

{Estimated Maximum Possible Concentration}, (Detection Limit).

Sample Result Summary for Project 44376A 01/09/98

Method 23X (DB-225)

Data File	P980094	P980095	P980096	P980097
Sample ID	TLI M23 Blank	141-144	153-156	157-160/166
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/07/98	01/07/98	01/07/98
Instrument	P	P	P	P
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDF	0.02	0.27 B	11.6	16.1
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	63.6	78.9	65.5	71.0

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Data File	P980098	P980099	P980100	P980101
Sample ID	161-164	165,167,168/225	177/182-184/209	178-181/226
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/07/98	01/07/98	01/07/98	01/07/98
Instrument	P	P	P	P
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDF	10.5	13.4	0.02 B	0.03 B
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	48.9	79.8	72.0	76.5

Data File	P980102	P980104	P980103
Sample ID	193-196	198/199/205/208	201-204
Units	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97
Analysis Date	01/07/98	01/07/98	01/07/98
Instrument	P	P	P
Matrix	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet
Analytes			
2378-TCDF	0.10 B	1.4	0.07 B
Internal Standards Percent Recovery Summary (% Rec)			
13C12-2378-TCDF	93.9	92.1	89.7

Method 23 Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$Amt_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$Amt_{(\sigma)}$	=	amount of a given analyte, expressed in nanograms (ng) or picograms (pg).
A_σ	=	integrated current for the characteristic ions of the analyte
A_β	=	integrated current of the characteristic ions of the corresponding internal standard
Q_β	=	amount of internal standard added to the sample before extraction
$RRF_{(\sigma)}$	=	mean analyte relative response factor from the initial calibration
W	=	sample weight or volume (W = 1.0 for Method 23 samples)

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$	=	estimated detection limit for a target analyte, expressed in ng or pg
2.5	=	minimum response required for a GC signal
F	=	an empirical number that approximates the area to height ratio for a GC signal. (F = 3.7 for all dioxin/furan analyses)
H	=	height of the noise
A_β	=	integrated current of the characteristic ions of the corresponding internal standard
Q_β	=	amount of internal standard added to the sample before extraction
$RRF_{(\sigma)}$	=	mean analyte relative response factor from the initial calibration
W	=	sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A **'B'** flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag is used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample.

An **'E'** flag is used to indicate a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values which are outside the calibration curve are estimates only.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'J'** flag is used to indicate a concentration based on an analyte to internal standard ratio which is below the calibration curve. Values which are outside the calibration curve are estimates only.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

An **'S'** flag indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. When the 'S' qualifier is used in the reporting of 'totals', there is saturation of one (not necessarily from a specific isomer) or more saturated signals for a given class of

compounds. Results for saturated analytes are reported as greater than the upper calibration limit.

A 'U' flag is used to indicate that a specific isomer cannot be resolved from a large, co-eluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

An 'X' flag is used to indicate that a polychlorodibenzofuran (PCDF) peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is at least ten percent of the total PCDF peak intensity. Total PCDF values are flagged 'X' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are either reported as "estimated maximum possible concentration (EMPC) values without regard to the isotopic abundance ratio, or are included in the detection limit value depending on the analytical method

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: TLI M23 Blank — Analysis File: U980026

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPMIT204
TLI ID:	TLI Blank	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.004				
1,2,3,7,8-PeCDD	ND	0.006				
1,2,3,4,7,8-HxCDD	ND	0.01				
1,2,3,6,7,8-HxCDD	ND	0.008				
1,2,3,7,8,9-HxCDD	ND	0.008				
1,2,3,4,6,7,8-HpCDD	ND	0.01				
1,2,3,4,6,7,8,9-OCDD	0.03			0.76	39:37	J
2,3,7,8-TCDF	0.02			0.87	24:39	
1,2,3,7,8-PeCDF	ND	0.005				
2,3,4,7,8-PeCDF	ND	0.005				
2,3,4,7,8-HxCDF	ND	0.006				
1,2,3,6,7,8-HxCDF	ND	0.005				
2,3,4,6,7,8-HxCDF	ND	0.006				
1,2,3,7,8,9-HxCDF	ND	0.007				
1,2,3,4,6,7,8-HpCDF	ND	0.008				
1,2,3,4,7,8,9-HpCDF	ND	0.01				
1,2,3,4,6,7,8,9-OCDF	ND	0.01				

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	ND		0.004		
Total PeCDD	ND		0.006		
Total HxCDD	ND		0.008		
Total HpCDD	ND		0.01		
Total TCDF	0.04	2			
Total PeCDF	ND		0.005		
Total HxCDF	ND		0.006		
Total HpCDF	ND		0.008		

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:15 01/10/98

TLI Project: 44376A
Client Sample: TLI M23 Blank

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980026

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	1.8	46.0	40%-130%	0.74	24:38	
$^{13}C_{12}$-2,3,7,8-TCDD	2.0	51.1	40%-130%	0.80	25:21	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.8	45.2	40%-130%	1.48	28:34	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.0	50.6	40%-130%	1.48	29:37	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.2	55.3	40%-130%	0.50	32:09	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.4	59.4	40%-130%	1.22	32:49	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.0	49.9	25%-130%	0.43	35:01	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.3	56.5	25%-130%	0.98	36:03	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	3.9	48.8	25%-130%	0.84	39:36	

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.0	99.5	40%-130%	1.55	29:16	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.4	84.0	40%-130%	0.51	32:03	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.6	89.8	40%-130%	1.22	32:44	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.4	84.3	40%-130%	0.44	36:33	

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	85.7	25:22	

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.1	52.6	40%-130%	0.50	33:23	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.4	60.7	40%-130%	0.48	32:37	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:10	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.20	33:07	

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.0

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:15 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 3.33

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980026B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00	RO	1.14	14.37			0.000			
				24:16		0.68	39.12	15.80	23.32	0.985			J
				24:39		0.87	64.58	30.03	34.55	1.001	2378-TCDF	AN	
304-306			2 Peaks				103.70						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00		0.84	12.68			0.000			
	DC	WL		23:36		0.69	220.36			0.958			
				23:53	RO	0.57	22.80	9.92	17.26	0.970			
				24:15		0.74	67.57	28.78	38.79	0.984			
				24:38		0.74	8,771.67	3,743.99	5,027.68	1.000	13C12-2378-TCDF	ISO	
				25:34	RO	0.44	24.64	10.72	24.29	1.038			
	DC	WH		26:12	RO	2.18	5.19			1.064			
	DC	WH		26:26	RO	3.39	3.40			1.073			
316-318			4 Peaks				8,886.68						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	1.05	3.43			0.000			
N	DC	WL		22:49	RO	0.42	3.52			0.900			
	DC	WL		23:25	RO	2.88	2.09			0.924			
	DC	WL		23:33	RO	1.30	3.58			0.929			
	DC	WL		23:41		0.76	2.08			0.934			
	DC	WL		24:04	RO	1.17	3.35			0.949			
	DC	WL		24:14	RO	2.38	1.27			0.956			
	DC	SN		24:38	RO	5.14	2.87			0.972			
	DC	SN		25:00	RO	1.00	4.44			0.986			
	DC	SN		25:23	RO	0.42	9.10			1.001	2378-TCDD	AN	
	DC	SN		25:32	RO	1.15	1.63			1.007			
	DC	SN		25:37		0.87	5.30			1.011			
	DC	SN		26:01	RO	0.54	2.18			1.026			
	DC	SN		26:17	RO	0.34	3.45			1.037			
	DC	SN		26:51		0.72	6.17			1.059			
320-322			0 Peaks				0.00						
37Cl-TCDD										0.921-1.079			
328	DC	NL		0:00			1.99			0.000			
				24:01			38.33	38.33		0.947			
				25:22			6,364.27	6,364.27		1.001	37Cl-TCDD	CLS	
				25:45			45.79	45.79		1.016			
				25:53			16.95	16.95		1.021			
				25:53			37.57	37.57		1.021			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags
328			5 Peaks				6,502.91						
13C12-TCDD				0.65-0.89						0.921-1.079			
332-334	DC	NL		0:00	RO	2.99	15.49			0.000			
				25:10		0.82	12,991.13	5,864.48	7,126.65	0.993	13C12-1234-TCDD		RS1
				25:21		0.80	7,420.26	3,308.59	4,111.67	1.000	13C12-2378-TCDD		IS1
				25:41	RO	1.03	248.58	145.33	140.44	1.013			
332-334			3 Peaks				20,659.97						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF				1.32-1.78						0.925-1.065			
340-342	DC	NL		0:00	RO	0.58	3.80			0.000			
	DC	SN		26:37		1.34	6.70			0.932			
D	D	SN		27:46	RO	1.18	12.08			0.972			
340-342			0 Peaks				0.00						
13C12-PeCDF				1.32-1.78						0.860-1.140			
352-354	DC	NL		0:00	RO	1.21	1.33			0.000			
				27:43		1.62	355.95	219.85	136.10	0.970			
				28:34		1.48	6,703.64	3,995.19	2,708.45	1.000	13C12-PeCDF 123		IS2
				28:52	RO	1.03	124.42	75.63	73.17	1.011			
				29:01	RO	1.16	38.17	23.20	20.01	1.016			
				29:16		1.55	6,444.78	3,916.29	2,528.49	1.025	13C12-PeCDF 234		SUR1
				29:45	RO	1.79	47.40	33.25	18.59	1.041			
352-354			6 Peaks				13,714.36						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.935-1.022			
356-358	DC	NL		0:00	RO	4.15	1.02			0.000			
	DC	SN		27:46	RO	0.18	3.01			0.938			
	DC	SN		28:20	RO	1.13	1.86			0.957			
	DC	SN		28:26	RO	7.00	0.43			0.960			
D	D	SN		28:34	RO	1.26	9.69			0.965			
	DC	SN		28:53	RO	0.93	1.55			0.975			
	DC	SN		29:09		1.54	3.60			0.984			
	DC	SN		29:37	RO	0.38	2.32			1.000	12378-PeCDD		AN
	DC	SN		29:57	RO	2.57	2.75			1.011			
	DC	SN		30:07	RO	0.49	1.43			1.017			
356-358			0 Peaks				0.00						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	5.09	0.89			0.000			
	DC	SN		27:44		1.75	2.20			0.936			
	DC	SN		27:48	RO	3.68	1.28			0.939			
	DC	SN		28:02	RO	4.67	1.94			0.947			
	DC	SN		28:32	RO	2.63	8.70			0.963			
				28:40		1.67	14.16	8.85	5.31	0.968			
	DC	SN		28:54	RO	2.10	4.00			0.976			
	DC	SN		29:13	RO	1.30	1.84			0.986			
	DC	SN		29:20	RO	2.19	2.70			0.990			

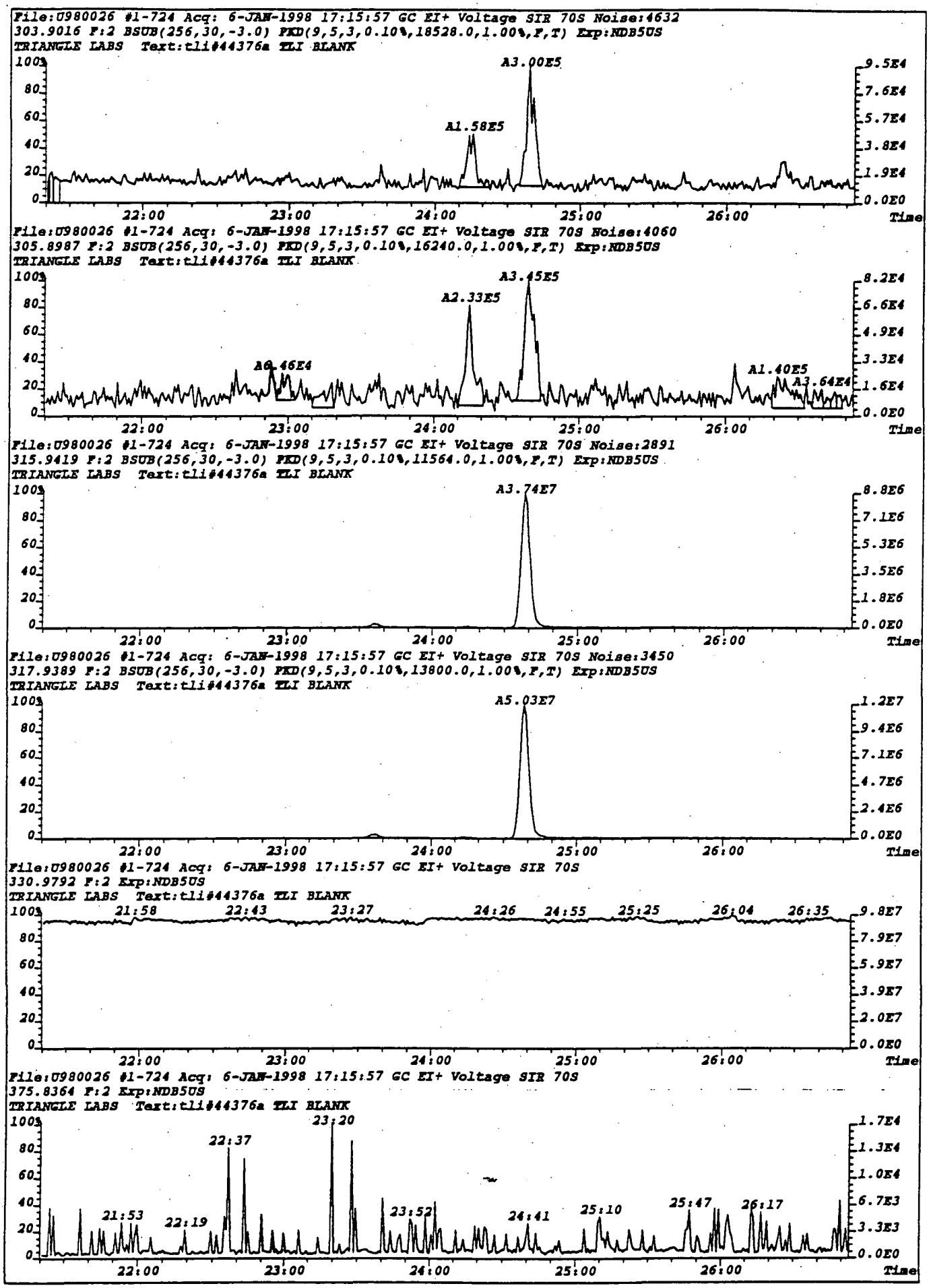
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:37		1.48	3,875.54	2,311.28	1,564.26	1.000	13C12-PeCDD 123	IS3	
				29:44		1.59	596.05	366.33	229.72	1.004			
				29:55		1.65	33.82	21.04	12.78	1.010			
				30:00		1.43	35.75	21.06	14.69	1.013			
				30:07	RO	2.06	36.82	29.76	14.44	1.017			
				30:21	RO	1.30	9.51	5.78	4.44	1.025			
				30:25	RO	2.88	13.39	15.13	5.25	1.027			
368-370			8 Peaks				4,615.04						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376	DC	NL		0:00		1.38	3.93			0.000			
	DC	SN		31:05	RO	1.01	2.82			0.967			
	DC	SN		31:17	RO	2.09	5.20			0.973			
	DC	SN		31:19	RO	0.86	1.82			0.974			
	DC	SN		32:04		1.37	8.29			0.997	123478-HxCDF	AN	
	DC	SN		32:07		1.17	5.24			0.999	123678-HxCDF	AN	
	DC	SN		32:15	RO	0.98	2.15			1.003			
	DC	SN		32:19	RO	1.52	2.91			1.005			
	DC	SN		32:26		1.25	1.73			1.009			
	DC	SN		32:36	RO	2.14	5.44			1.014	234678-HxCDF	AN	
	DC	SN		32:50	RO	0.93	0.98			1.021			
	DC	SN		32:58		1.33	1.61			1.025			
	DC	SN		33:02	RO	0.73	0.96			1.027			
	DC	SN		33:09	RO	4.35	1.48			1.031			
	DC	SN		33:18	RO	12.76	0.38			1.036			
	DC	SN		33:24		1.10	3.62			1.039	123789-HxCDF	AN	
	DC	SN		33:39	RO	1.53	1.75			1.047			
	DC	SN		33:43	RO	5.73	0.58			1.049			
	DC	SN		33:53	RO	1.70	1.34			1.054			
374-376			0 Peaks				0.00						
13C12-HxCDF						0.43-0.59				0.876-1.124			
384-386	DC	NL		0:00	RO	0.75	5.35			0.000			
				31:05	RO	0.41	33.78	11.41	28.11	0.967			
				31:12		0.46	86.40	27.11	59.29	0.970			
	DC	SN		31:19	RO	0.24	2.61			0.974			
				32:03		0.51	3,963.06	1,343.56	2,619.50	0.997	13C12-HxCDF 478	SUR2	
				32:09		0.50	5,720.12	1,900.96	3,819.16	1.000	13C12-HxCDF 678	IS4	
				32:37		0.48	5,659.83	1,845.34	3,814.49	1.015	13C12-HxCDF 234	ALT2	
				32:57	RO	0.29	66.50	22.46	77.17	1.025			
				33:23		0.50	3,778.14	1,261.42	2,516.72	1.038	13C12-HxCDF 789	ALT1	
384-386			7 Peaks				19,307.83						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL		0:00	RO	0.67	2.31			0.000			
	DC	SN		31:52	RO	0.78	1.45			0.971			
	DC	SN		31:57	RO	0.94	0.83			0.974			
	DC	SN		32:14		1.24	3.04			0.982			

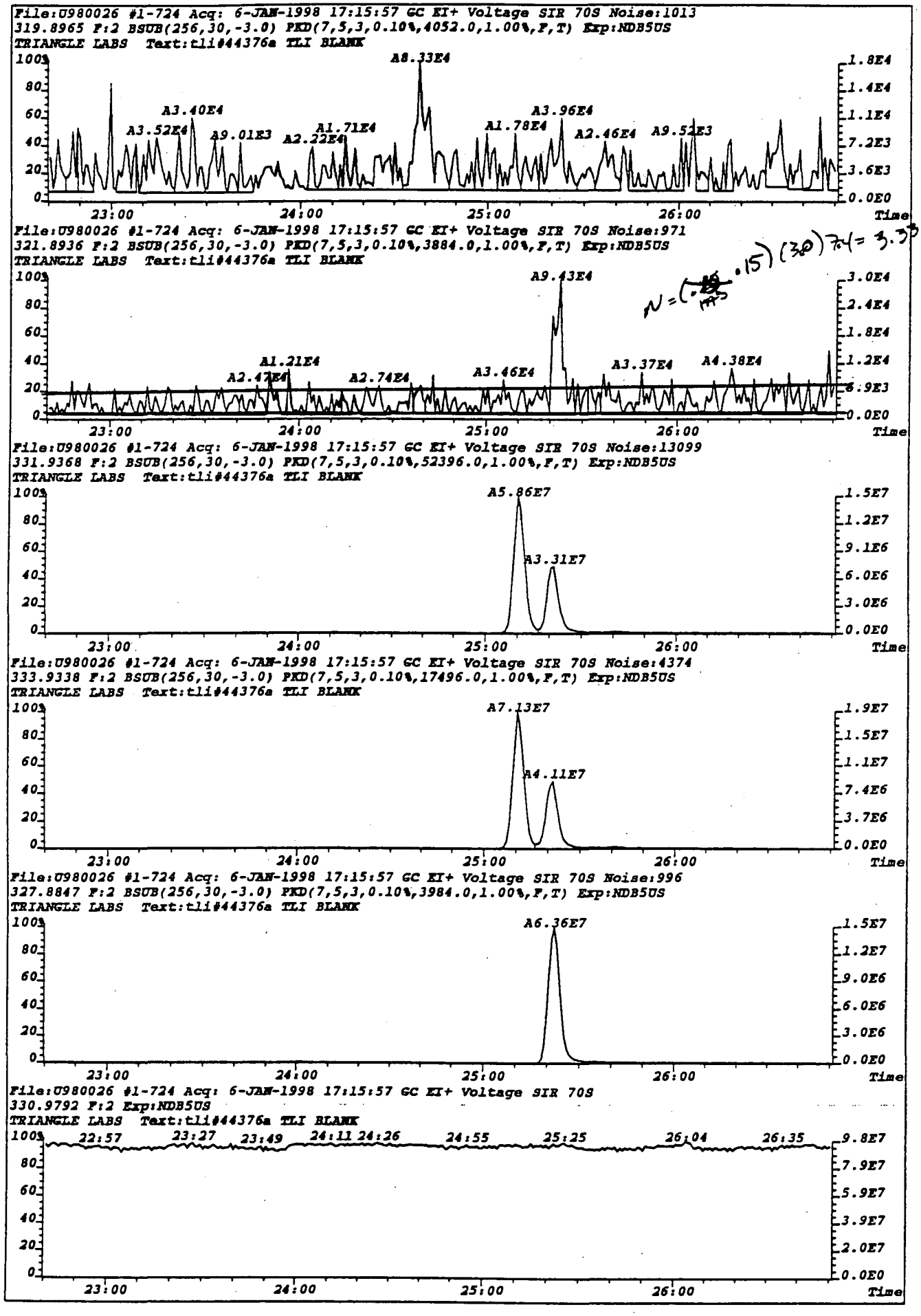
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		33:03	RO	0.54	0.52			1.007			
	DC	SN		33:11	RO	0.81	3.38			1.011	123789-HxCDD	AN	
	DC	SN		33:30	RO	0.37	0.76			1.021			
390-392			0 Peaks				0.00						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	1.47	6.63			0.000			
				32:14	RO	1.57	14.54	10.17	6.49	0.982			
				32:44		1.22	2,984.31	1,638.26	1,346.05	0.997	13C12-HxCDD 478		SUR3
				32:49		1.22	4,541.57	2,496.74	2,044.83	1.000	13C12-HxCDD 678		IS5
				33:07		1.20	7,683.47	4,188.38	3,495.09	1.009	13C12-HxCDD 789		RS2
				33:32	RO	3.03	42.76	57.79	19.09	1.022			
402-404			5 Peaks				15,266.65						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	77.00	0.06			0.000			
	DC	SN		35:03	RO	0.25	2.55			1.001	1234678-HpCDF	AN	
	DC	SN		35:16		1.02	4.02			1.007			
	DC	SN		36:03	RO	0.65	1.04			1.030			
	DC	SN		36:24	RO	1.61	1.80			1.040			
408-410			0 Peaks				0.00						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	0.82	8.02			0.000			
				35:01		0.43	3,153.18	942.30	2,210.88	1.000	13C12-HpCDF 678		IS6
				36:33		0.44	2,130.88	652.89	1,477.99	1.044	13C12-HpCDF 789		SUR4
				36:55	RO	0.35	27.16	8.30	23.43	1.054			
				37:00	RO	0.70	24.35	11.79	16.91	1.057			
418-420			4 Peaks				5,335.57						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00		1.00	0.04			0.000			
	DC	SN		35:19	RO	1.28	3.86			0.980			
	DC	SN		35:27	RO	0.80	2.79			0.983			
	DC	SN		36:03	RO	2.16	4.49			1.000	1234678-HpCDD	AN	
	DC	SN		36:21	RO	1.97	0.61			1.008			
	DC	SN		36:30	RO	0.27	1.49			1.012			
424-426			0 Peaks				0.00						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00	RO	2.16	6.06			0.000			
				35:17	RO	0.71	17.30	8.82	12.36	0.979			
				36:03		0.98	3,149.06	1,557.61	1,591.45	1.000	13C12-HpCDD 678		IS7
436-438			2 Peaks				3,166.36						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
OCDF						0.76-1.02				0.899-1.101			
442-444	DC	NL		0:00	RO	1.75	0.08			0.000			
	DC	WL		34:35		0.85	3.41			0.873			
	DC	WL		34:50	RO	0.73	1.64			0.880			
	DC	WL		35:15	RO	2.87	0.87			0.890			
	DC	SN		35:43	RO	0.07	0.36			0.902			
	DC	SN		36:03	RO	0.55	1.78			0.910			
	DC	SN		36:13		0.87	3.48			0.915			
	DC	SN		36:53	RO	1.36	1.80			0.931			
	DC	SN		37:10	RO	3.24	0.62			0.939			
	DC	SN		37:19		0.78	1.35			0.942			
	DC	SN		37:34	RO	0.34	2.78			0.949			
	DC	SN		37:41	RO	0.35	0.87			0.952			
	DC	SN		37:53	RO	1.20	2.97			0.957			
	DC	SN		38:03	RO	3.10	1.57			0.961			
	DC	SN		38:19	RO	0.73	2.53			0.968			
	DC	SN		38:26	RO	0.37	0.98			0.971			
	DC	SN		38:36	RO	0.27	1.47			0.975			
	DC	SN		39:29		0.91	2.20			0.997			
	DC	SN		39:39	RO	0.58	4.06			1.001			
	DC	SN		40:00	RO	0.39	0.68			1.010			
	DC	SN		40:03		0.91	0.86			1.011			
	DC	SN		40:23	RO	1.41	1.55			1.020			
	DC	SN		40:29	RO	0.57	1.66			1.022			
442-444			0	Peaks			0.00						
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00		1.00	0.08			0.000			
				39:37		0.76	17.82	7.72	10.10	1.000	OCDD	AN	J
458-460			1	Peak			17.82						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00		1.00	0.06			0.000			
				39:36		0.84	4,083.66	1,868.54	2,215.12	1.000	13C12-OCDD	IS8	
				39:58		0.88	76.37	35.66	40.71	1.009			
470-472			2	Peaks			4,160.03						

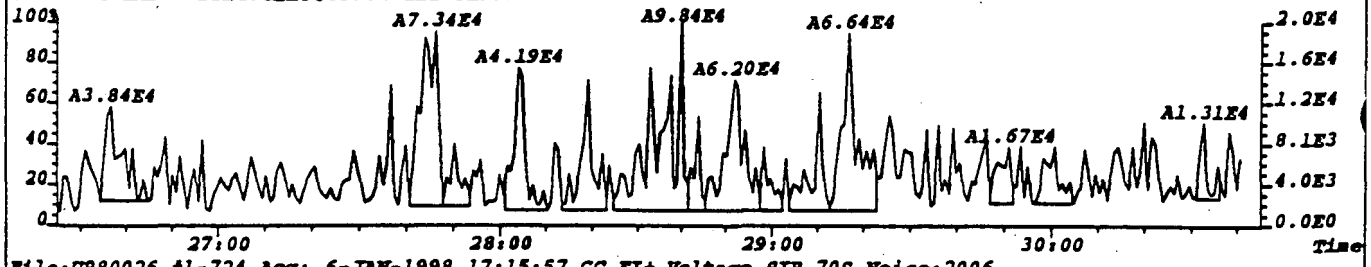
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

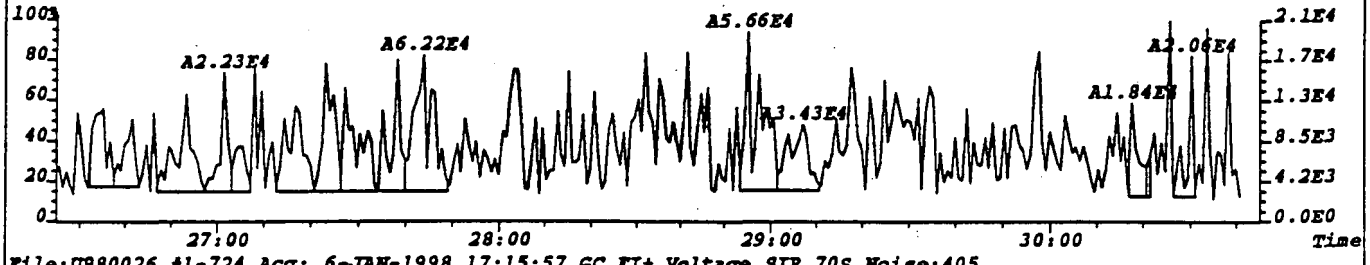

File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:4632
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,18528.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.00E5
A1.58E5
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:4060
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,16240.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.45E5
A2.33E5
A1.40E5
A3.64E4
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:2891
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,11564.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.74E7
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:3450
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,13800.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.03E7
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
21:58
22:43
23:27
24:26
24:55
25:25
26:04
26:35
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
23:20
22:37
21:53
22:19
23:52
24:41
25:10
25:47
26:17
22:00
23:00
24:00
25:00
26:00
Time


File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1013
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4052.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A8.33E4
A3.40E4
A3.52E4
A9.01E3
A2.22E4
A1.71E4
A1.78E4
A3.96E4
A2.46E4
A9.52E3
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:971
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A9.43E4
A1.21E4
A2.42E4
A2.74E4
A3.46E4
A3.37E4
A4.38E4
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:13099
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,52396.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.86E7
A3.31E7
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:4374
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,17496.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A7.13E7
A4.11E7
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:996
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3984.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A6.36E7
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
22:57
23:27
23:49
24:11
24:26
24:55
25:25
26:04
26:35
23:00
24:00
25:00
26:00
Time

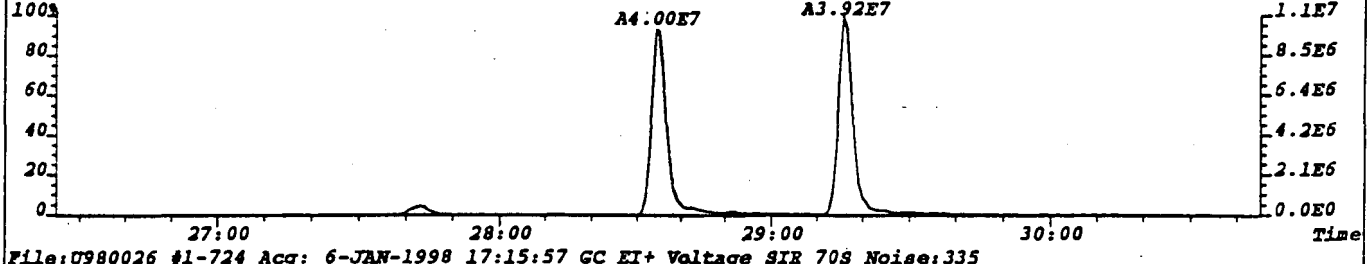
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1156
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



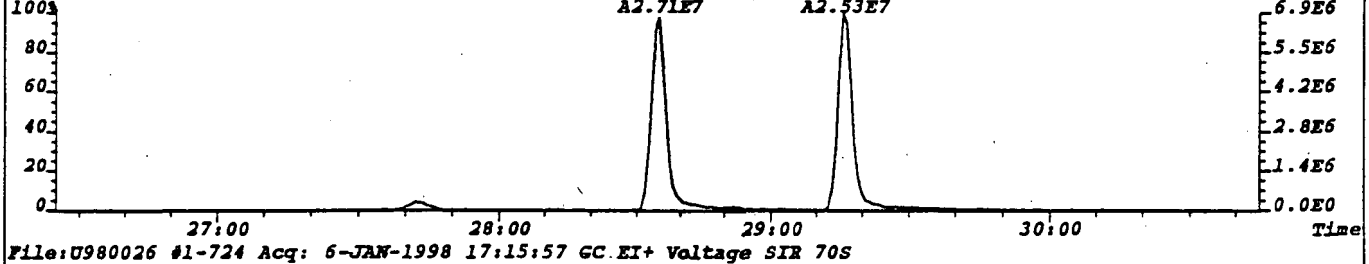
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:2006
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8024.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



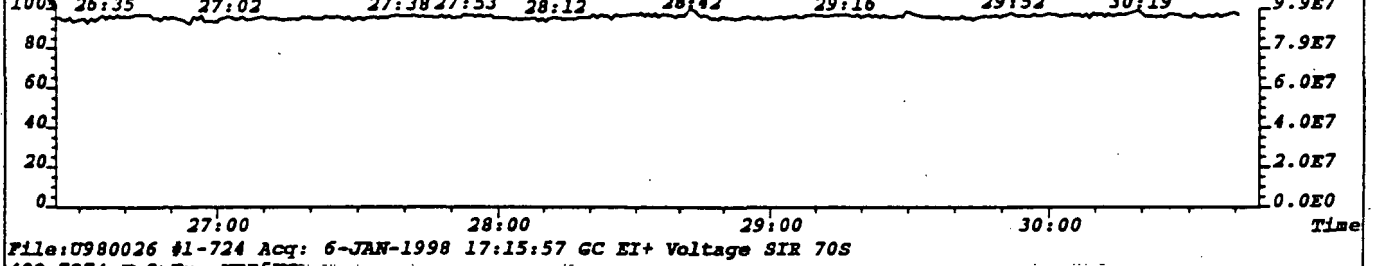
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:405
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1620.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



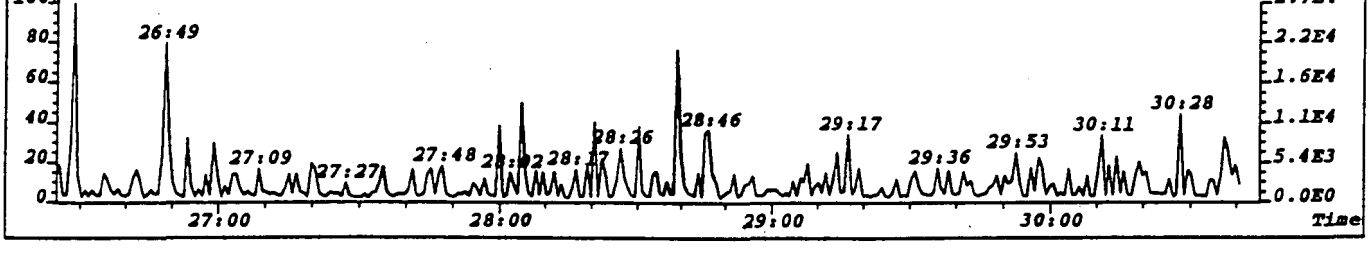
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:335
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1340.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

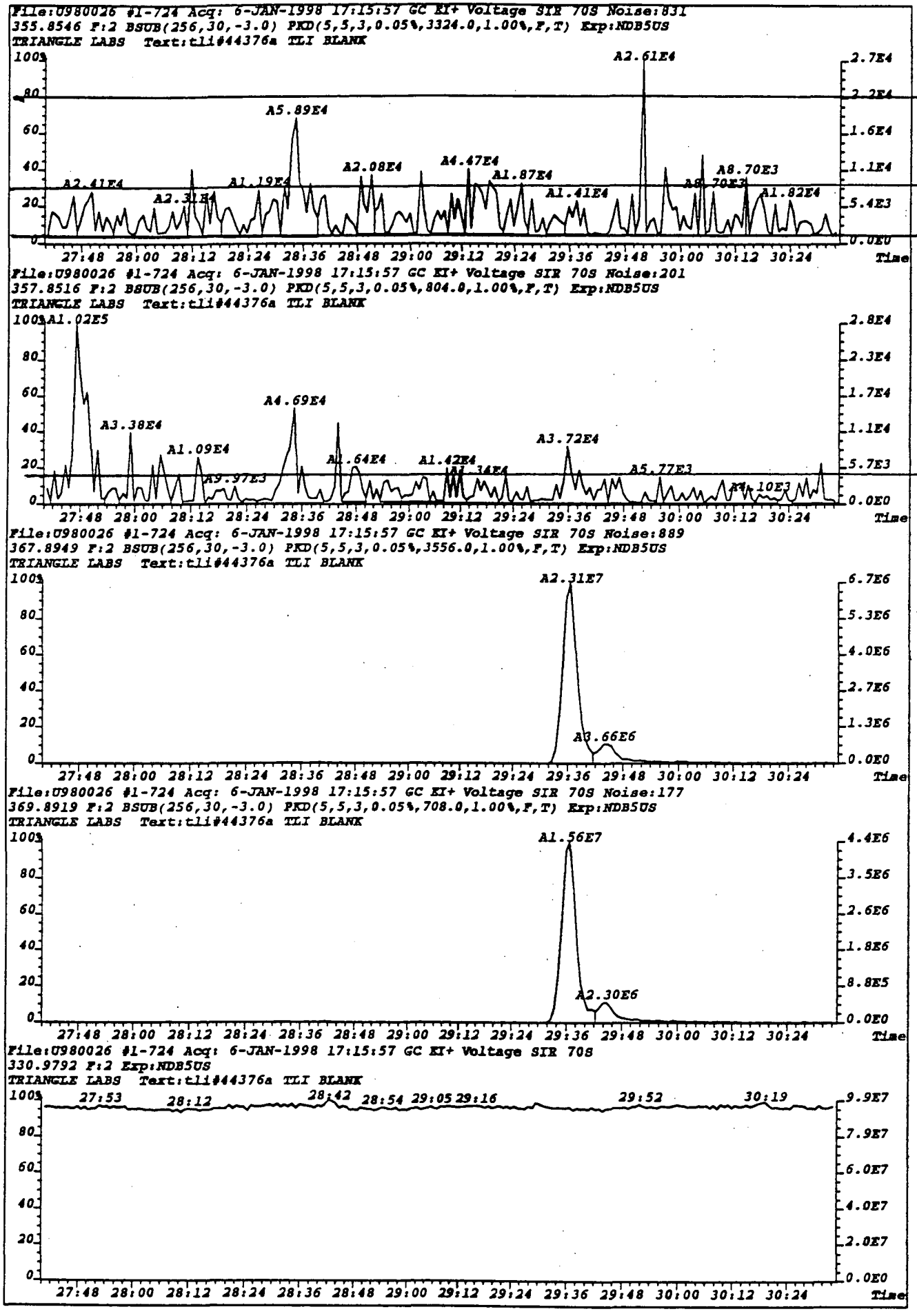


File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

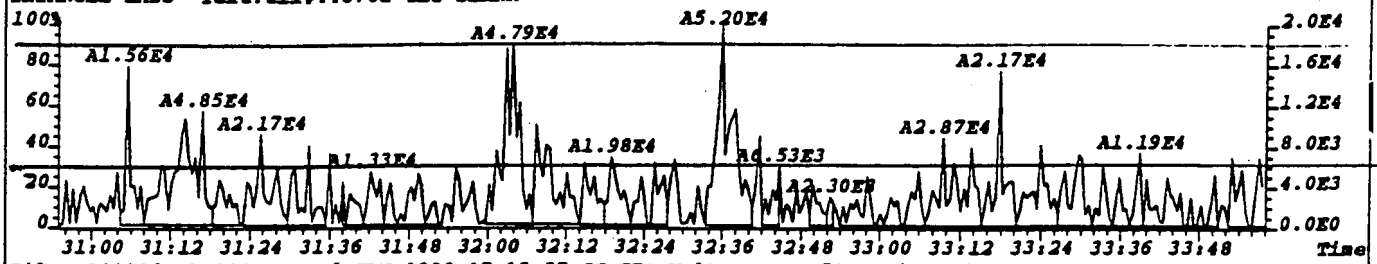


File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

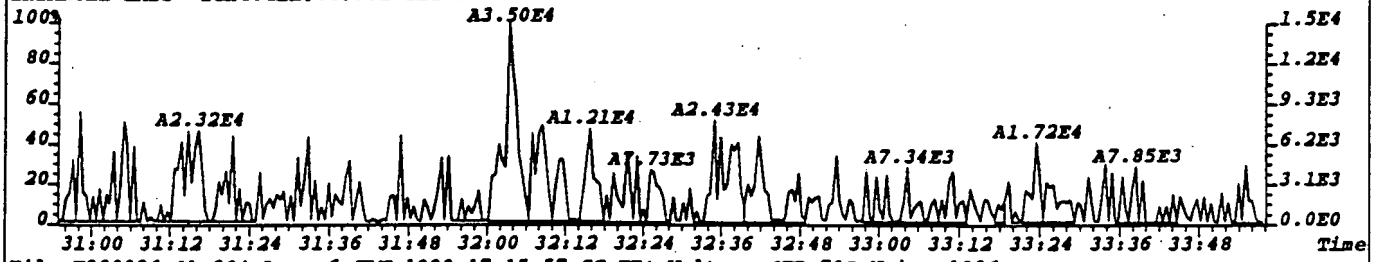



File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:831
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,3324.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.61E4
A5.89E4
A2.08E4
A4.47E4
A1.87E4
A8.70E3
A2.41E4
A1.19E4
A1.41E4
A1.82E4
Time
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:201
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,804.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.02E5
A3.38E4
A4.69E4
A1.09E4
A3.72E4
A5.77E3
Time
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:889
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,3556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.31E7
A3.66E6
Time
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:177
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.56E7
A2.30E6
Time
File:U980026 #1-724 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
27:53
28:12
28:42
28:54
29:05
29:16
29:52
30:19
Time

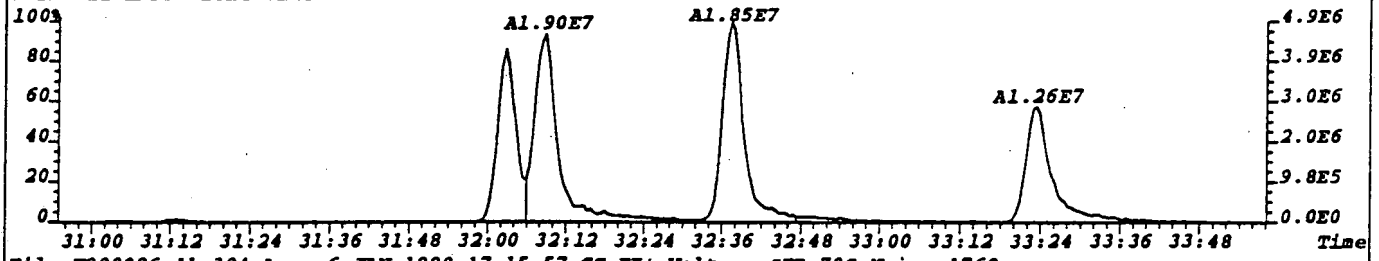
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1139
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



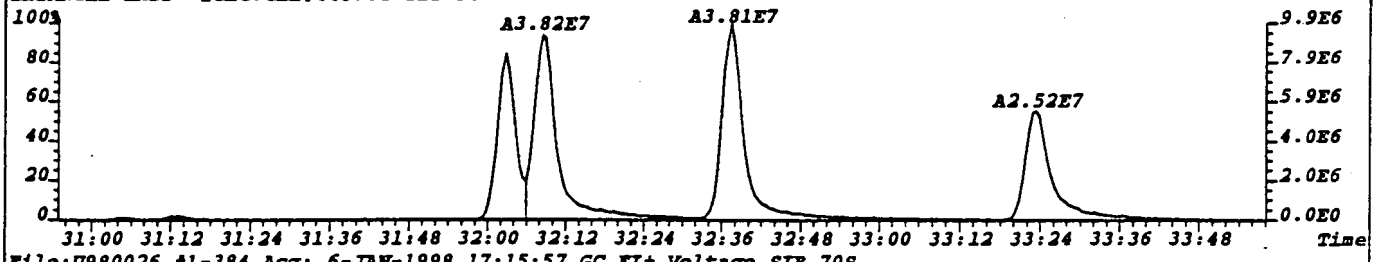
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:824
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3296.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



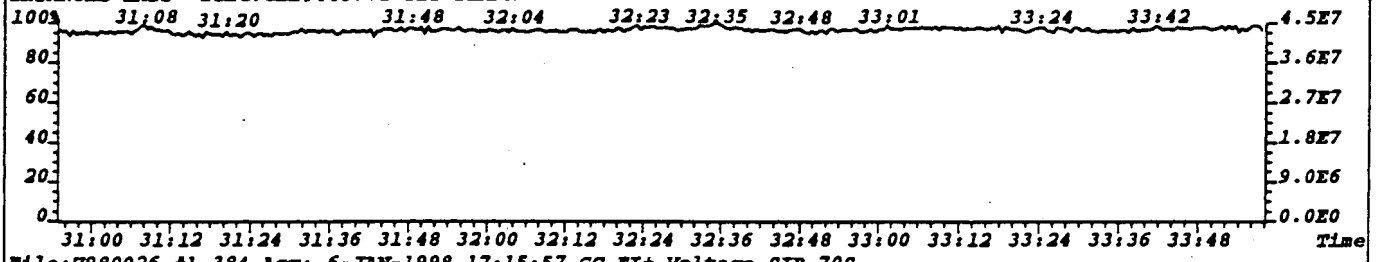
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1336
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5344.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



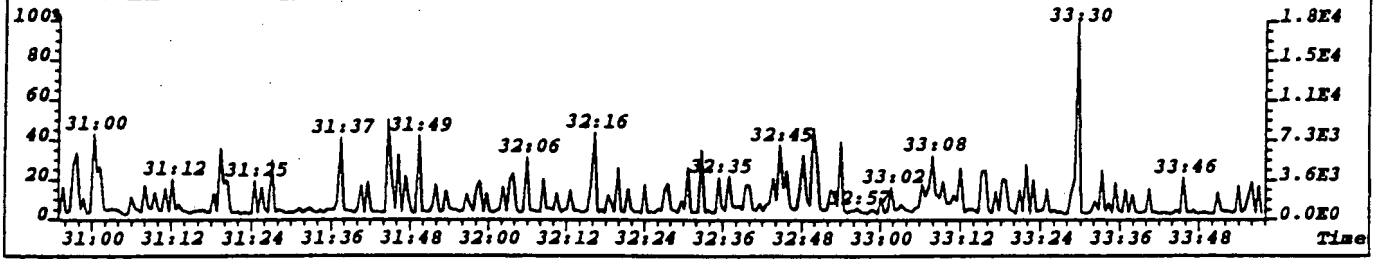
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1769
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7076.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

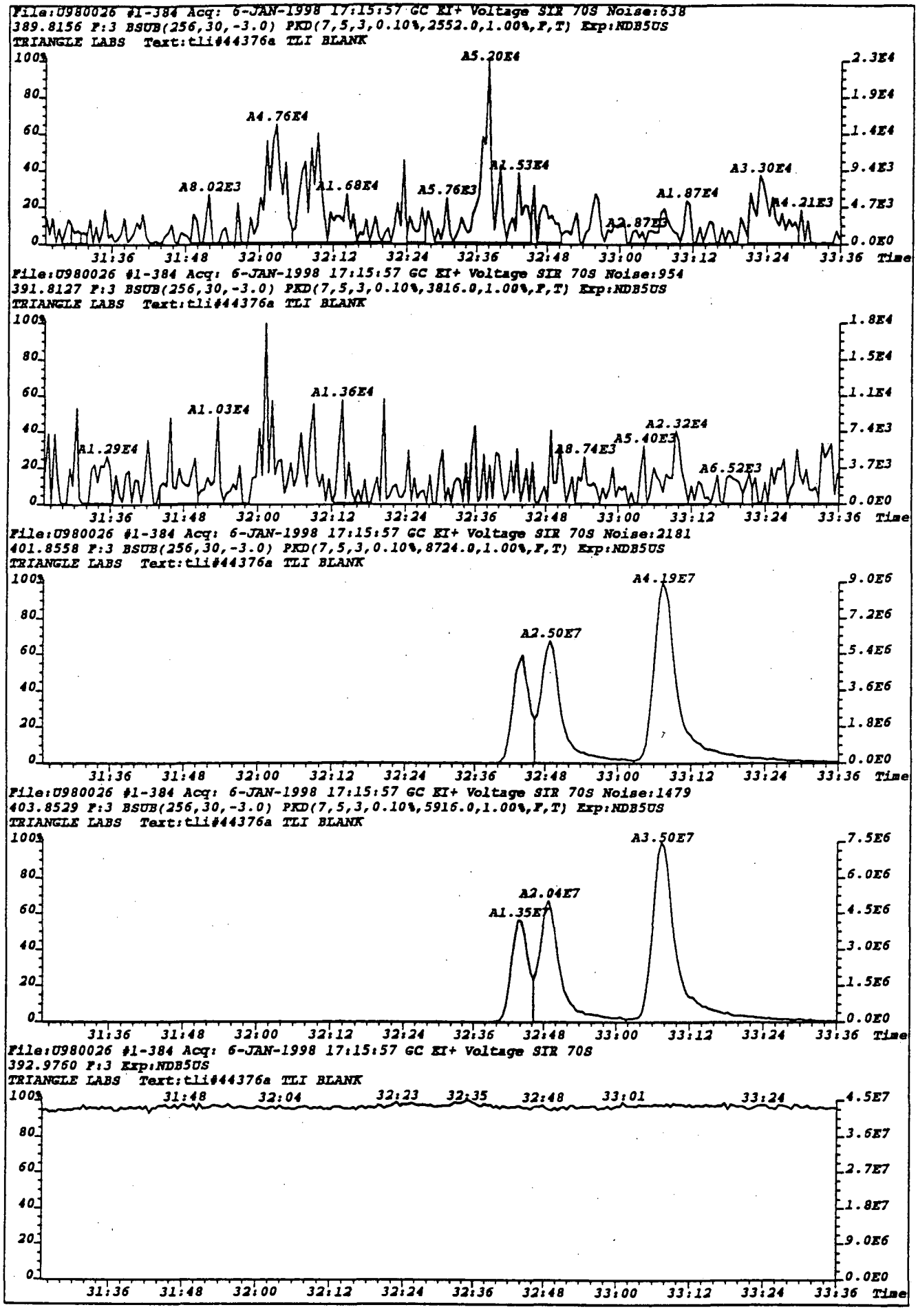


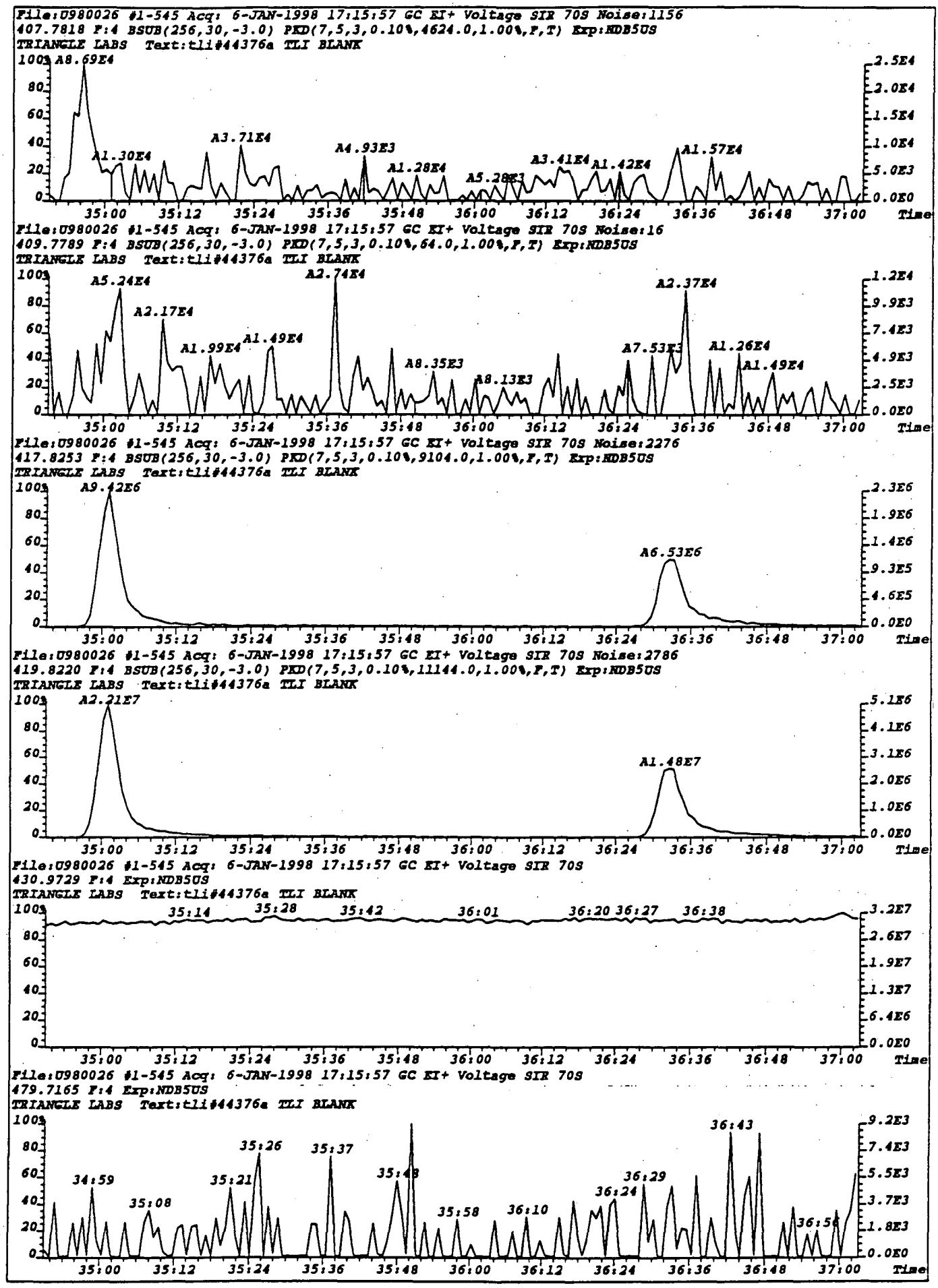
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

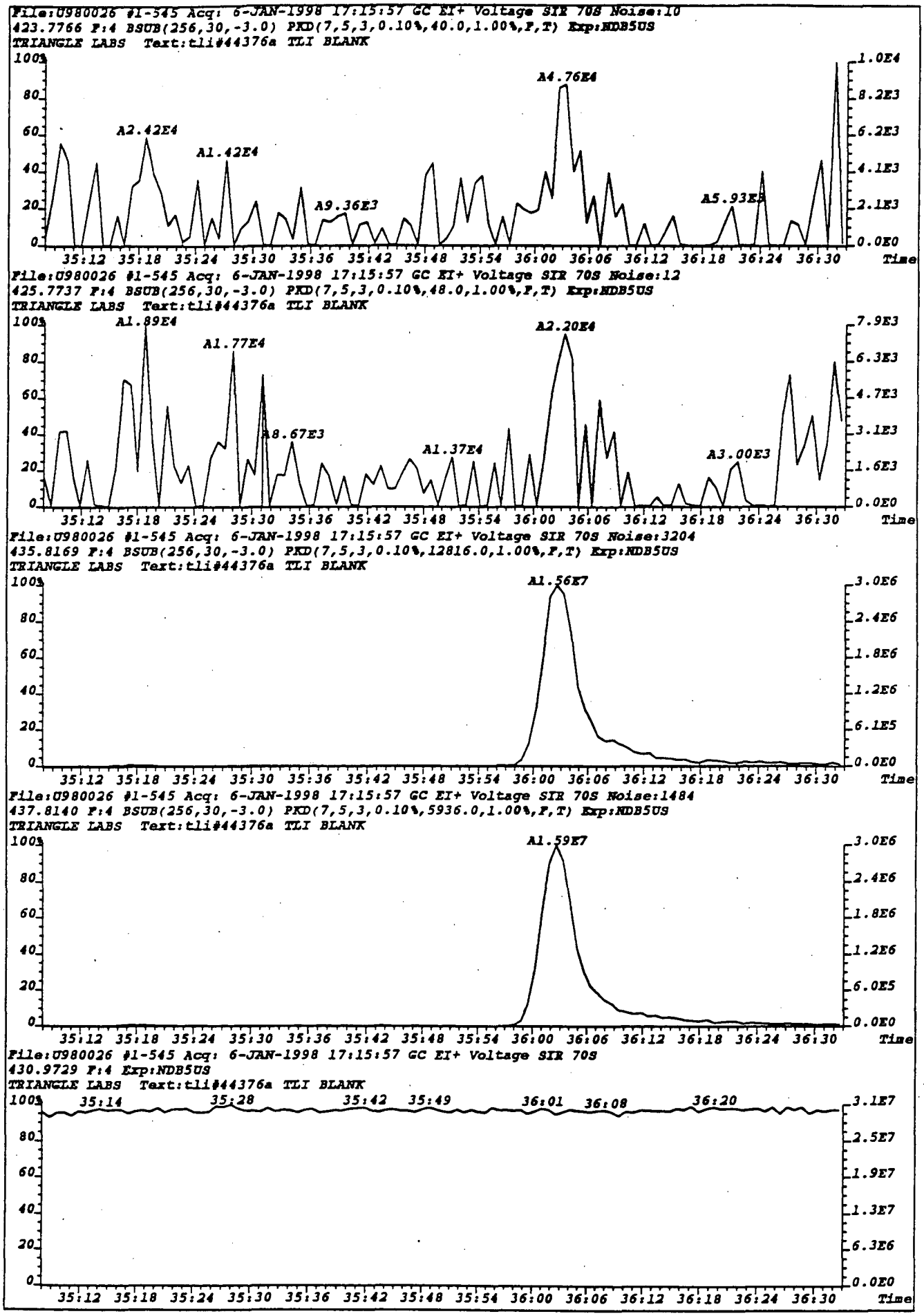


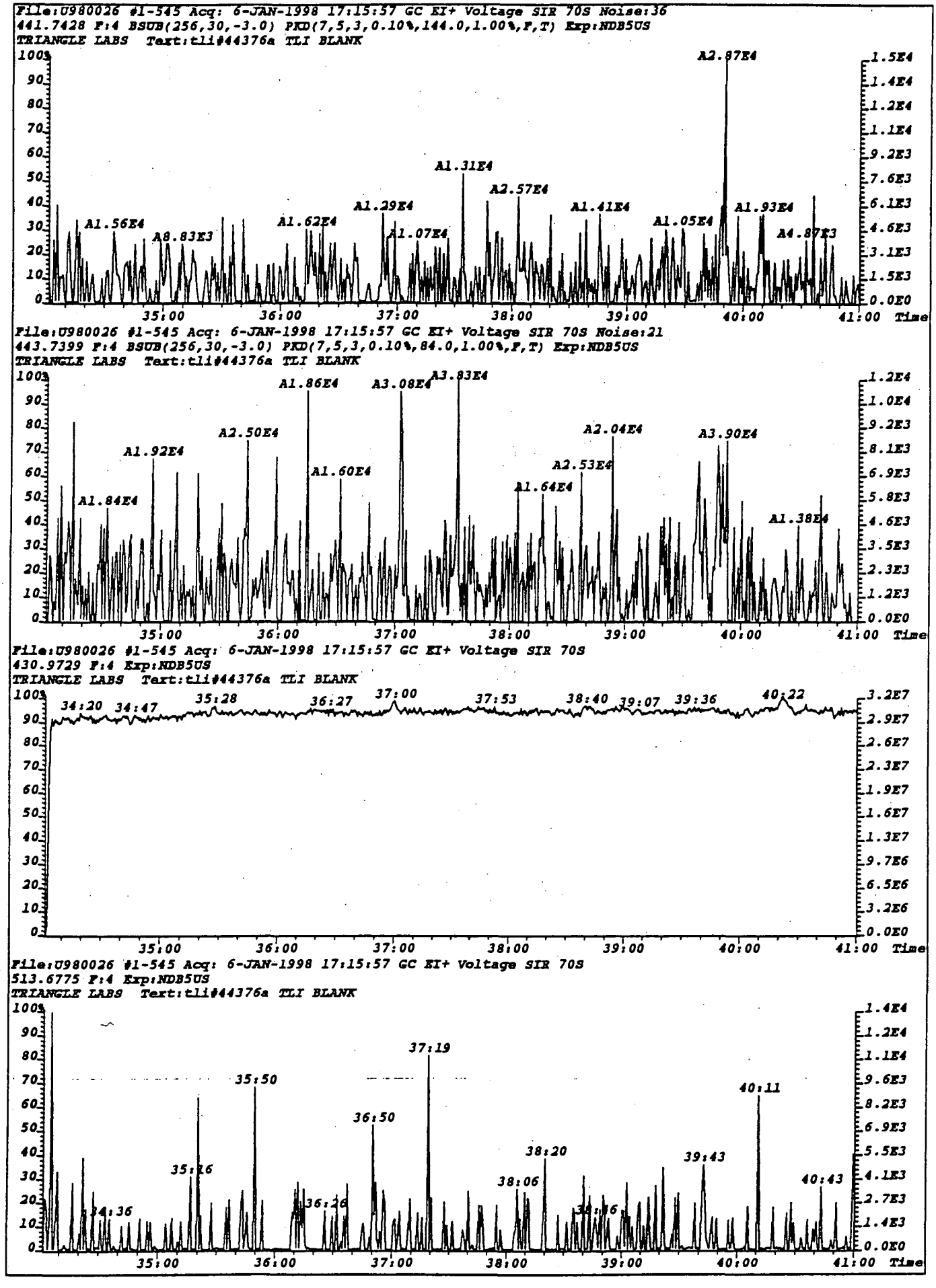
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

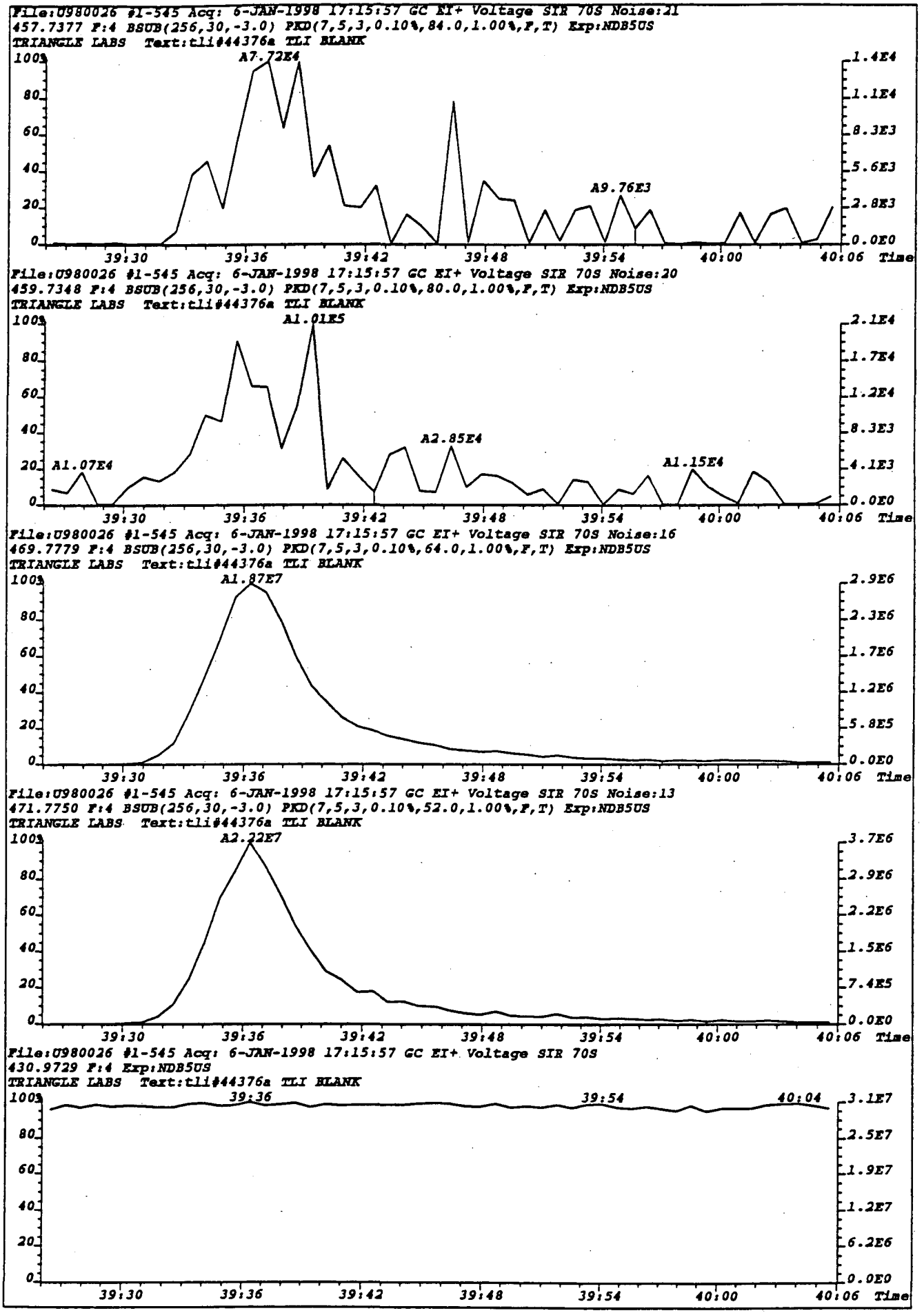


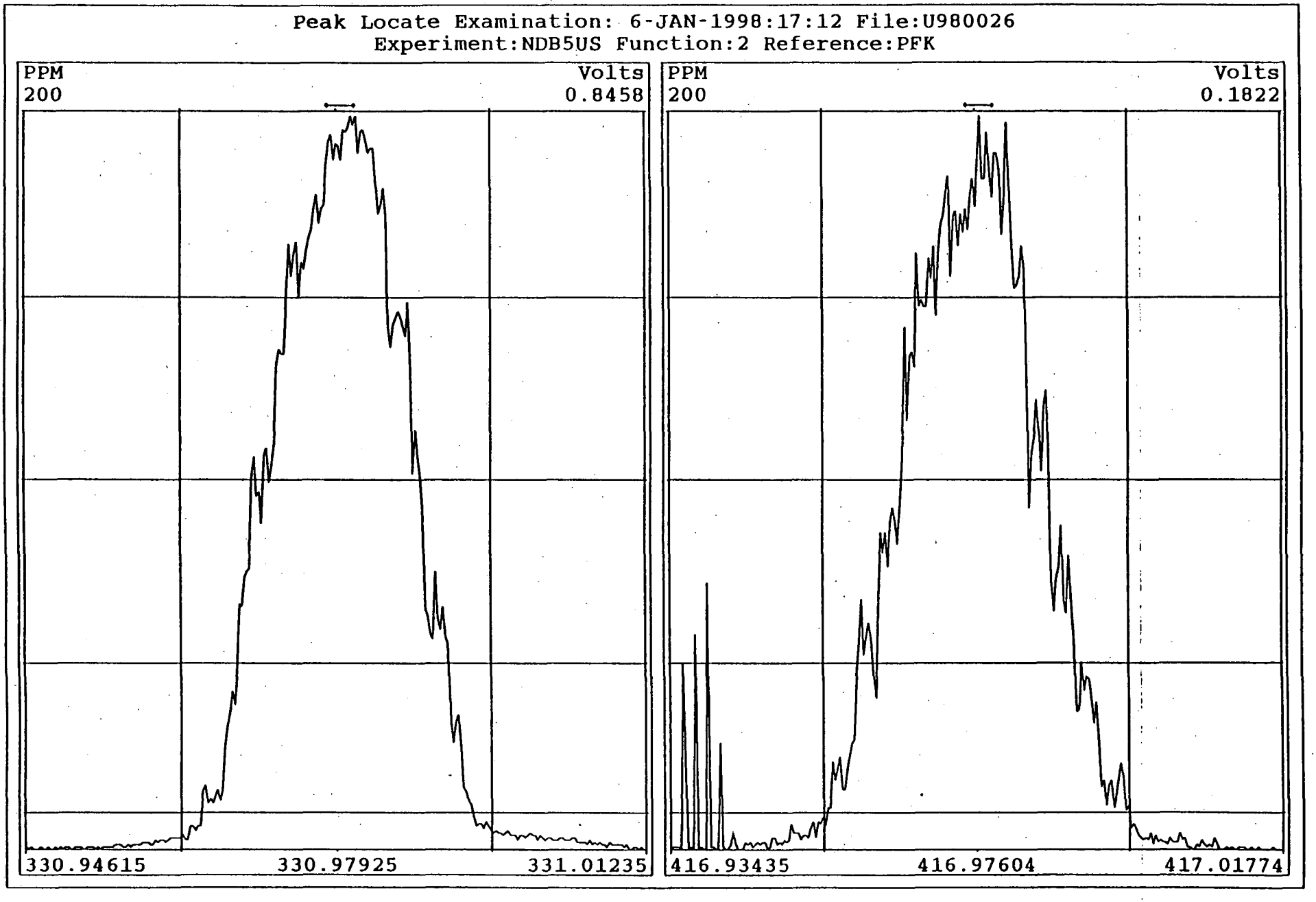

File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:638
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2552.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.20E4
A4.76E4
A8.02E3
A1.68E4
A5.76E3
A1.53E4
A1.87E4
A3.30E4
A4.21E3
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:954
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.03E4
A1.36E4
A1.29E4
A2.32E4
A5.40E3
A6.52E3
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:2181
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8724.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A4.19E7
A2.50E7
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1479
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5916.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.50E7
A2.04E7
A1.35E7
File:U980026 #1-384 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
Time


File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1156
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A8.69E4
A1.30E4
A3.71E4
A4.93E3
A1.28E4
A5.28E3
A3.41E4
A1.42E4
A1.57E4
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:16
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,64.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.24E4
A2.17E4
A1.99E4
A1.49E4
A2.74E4
A8.35E3
A8.13E3
A7.53E3
A2.37E4
A1.26E4
A1.49E4
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:2276
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9104.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A9.42E6
A6.53E6
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:2786
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11144.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.21E7
A1.48E7
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
35:14
35:28
35:42
36:01
36:20
36:27
36:38
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
34:59
35:08
35:21
35:26
35:37
35:48
35:58
36:10
36:24
36:29
36:43
36:56
35:00
35:12
35:24
35:36
35:48
36:00
36:12
36:24
36:36
36:48
37:00
Time


File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:10
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,40.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.42E4
A1.42E4
A9.36E3
A4.76E4
A5.93E3
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:12
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,48.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.89E4
A1.77E4
A8.67E3
A1.37E4
A2.20E4
A3.00E3
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:3204
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.56E7
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:1484
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5936.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.59E7
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
35:14
35:28
35:42
35:49
36:01
36:08
36:20
Time


File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:36
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,144.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.87E4
A1.31E4
A2.57E4
A1.29E4
A1.41E4
A1.93E4
A1.56E4
A1.62E4
A1.07E4
A1.05E4
A8.83E3
A4.87E3
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:21
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,84.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.86E4
A3.08E4
A3.83E4
A2.50E4
A2.04E4
A3.90E4
A1.92E4
A1.60E4
A2.53E4
A1.84E4
A1.64E4
A1.38E4
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
34:20
34:47
35:28
36:27
37:00
37:53
38:40
39:07
39:36
40:22
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
37:19
35:50
40:11
36:50
38:20
39:43
35:16
38:06
40:43
34:36
36:26
38:16
35:00
36:00
37:00
38:00
39:00
40:00
41:00
Time


File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:21
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,84.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A7.72E4
A9.76E3
Time
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:20
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.01E5
A2.85E4
A1.07E4
A1.15E4
Time
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:16
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,64.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.87E7
Time
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S Noise:13
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,52.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.22E7
Time
File:U980026 #1-545 Acq: 6-JAN-1998 17:15:57 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
39:36
39:54
40:04
Time


Peak Locate Examination: 6-JAN-1998:17:12 File:U980026
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.8458
330.94615
330.97925
331.01235
PPM
200
Volts
0.1822
416.93435
416.97604
417.01774

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: TLI M23 Blank — Analysis File: P980094

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPC2NF04
TLI ID:	TLI Blank	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/06/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.02			0.65	23:06	—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.5	63.6	40%-130%	0.76	23:05	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:55	—

Data Reviewer: CM 01/09/98

C2NF_PSR v2.01, LARS 6.10.0X1

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:14 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980094B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00	RO	0.91	1.61			0.000			
	DC	SN		18:42		0.88	0.96			0.810			
	DC	SN		20:40	RO	0.53	0.69			0.895			
	DC	SN		21:16	RO	0.26	0.39			0.921			
				21:37		0.83	7.82	3.54	4.28	0.936			J
	DC	SN		21:46	RO	1.32	0.44			0.943			
				23:06		0.65	9.74	3.85	5.89	1.001	2378-TCDF	AN	
	DC	SN		25:17	RO	0.37	0.76			1.095			
	DC	WH		25:40	RO	0.52	1.10			1.112			
304-306			2 Peaks				17.56						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.04	2.09			0.000			
	DC	WL		21:08	RO	0.49	3.08			0.916			
	DC	WL		21:36		0.80	13.44			0.936			
	DC	WL		21:51		0.81	42.85			0.947			
				23:05		0.76	1,564.48	674.65	889.83	1.000	13C12-2378-TCDF	IS0	
				23:42		0.74	5.77	2.45	3.32	1.027			
	DC	WH		25:10	RO	0.99	18.67			1.090			
316-318			2 Peaks				1,570.25						

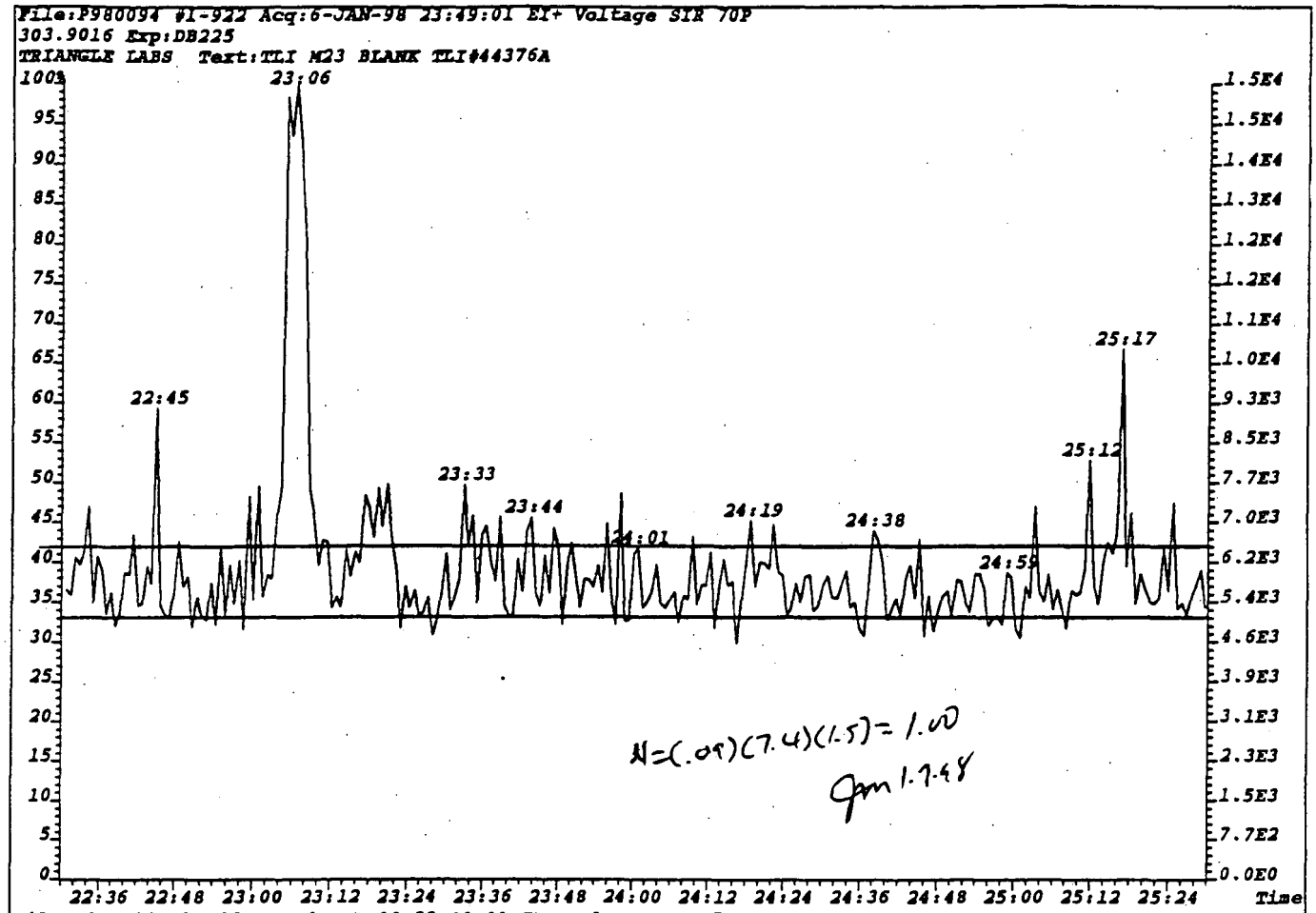
---------- Above: TCDF / TCDD Follows ----------

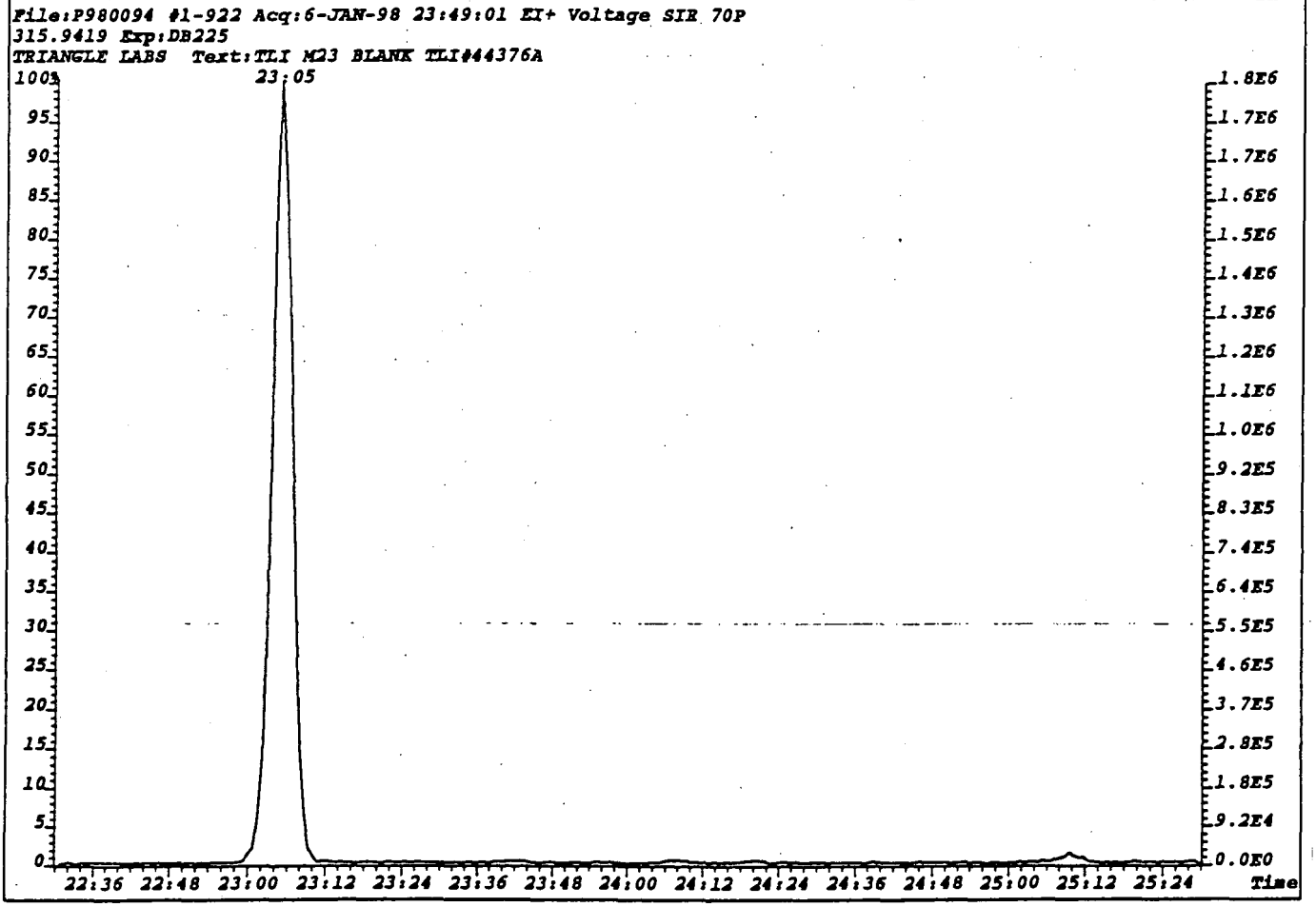
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC	NL		0:00	RO	1.82	1.38			0.000			
				20:30	RO	0.47	3.61	1.57	3.37	0.948			
				21:37		0.79	1,110.48	490.07	620.41	1.000	13C12-2378-TCDD	IS1	
				21:55		0.82	1,771.78	796.54	975.24	1.014	13C12-1234-TCDD	RS1	
				22:41		0.77	15.06	6.55	8.51	1.049			
				23:14	RO	2.15	2.28	2.77	1.29	1.075			
	DC	WH		24:10	RO	0.52	3.10			1.118			
	DC	WH		24:27	RO	0.52	6.53			1.131			
	DC	WH		24:47	RO	1.56	0.97			1.146			
332-334			5 Peaks				2,903.21						

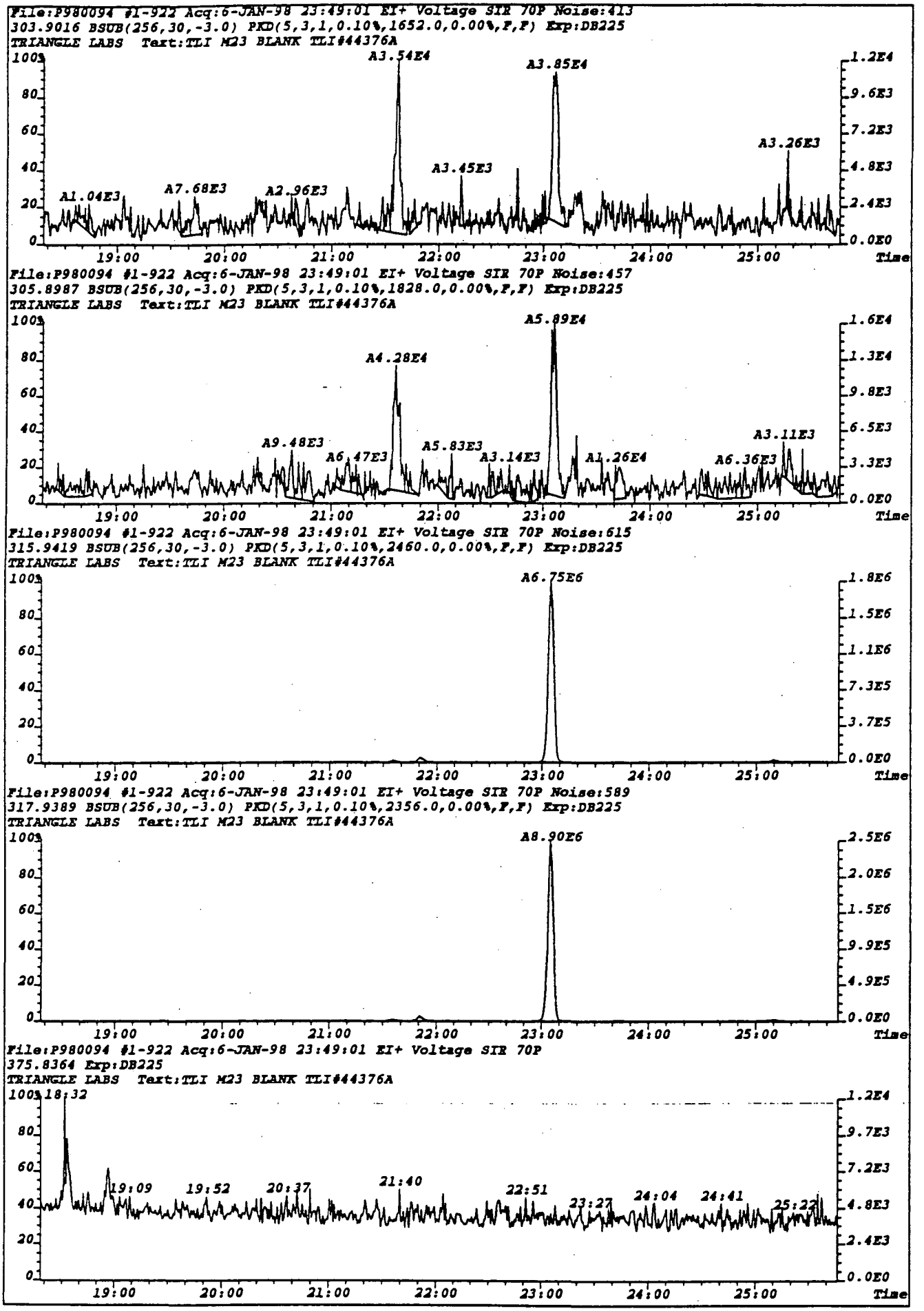
Compound/
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

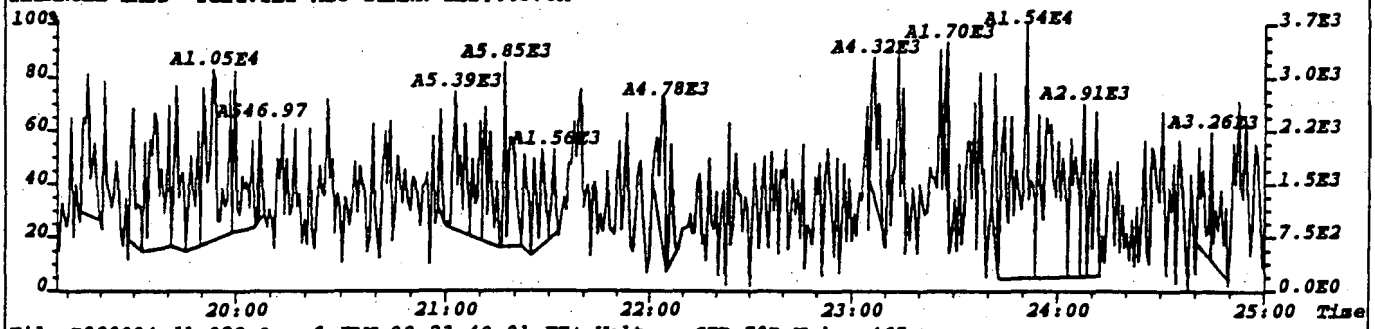
*** End of Report ***


File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
23:06
22:45
23:33
23:44
24:01
24:19
24:38
24:59
25:12
25:17
N=(.09)(7.4)(1.5)= 1.00
gm 1.7.98
Time

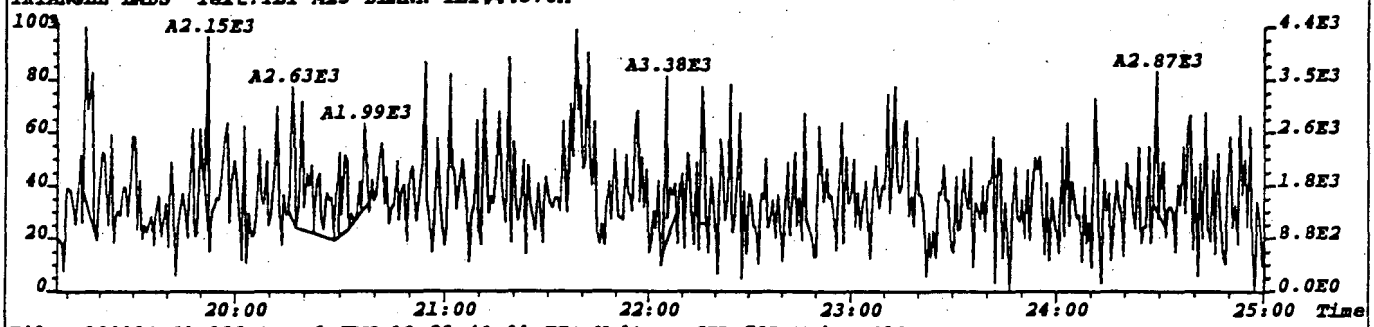

File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
23:05
Time


File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:413
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1652.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
A3.54E4
A3.85E4
A3.26E3
A3.45E3
A1.04E3
A7.68E3
A2.96E3
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:457
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1828.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
A5.89E4
A4.28E4
A9.48E3
A6.47E3
A5.83E3
A3.14E3
A1.26E4
A3.11E3
A6.36E3
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:615
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2460.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
A6.75E6
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:589
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2356.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
A8.90E6
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
18:32
19:09
19:52
20:37
21:40
22:51
23:27
24:04
24:41
25:22
Time

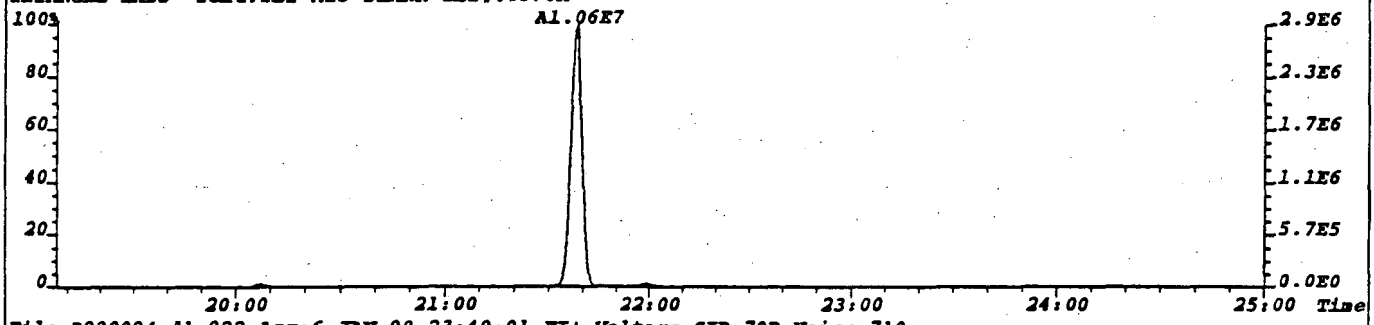
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:397
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1588.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A



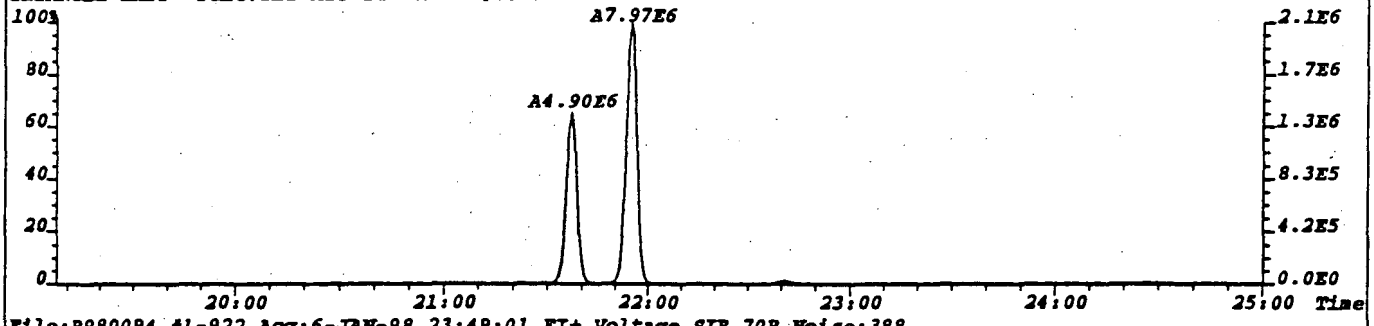
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:465
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1860.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A



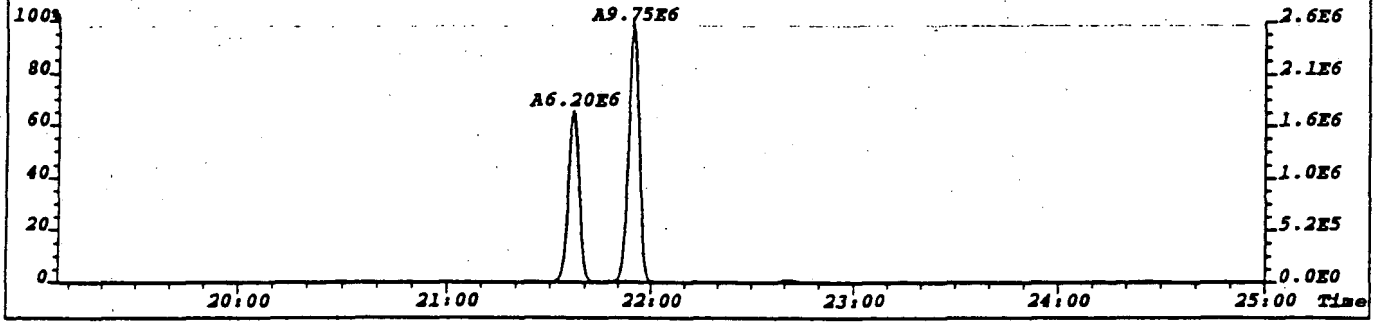
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:498
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1992.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A

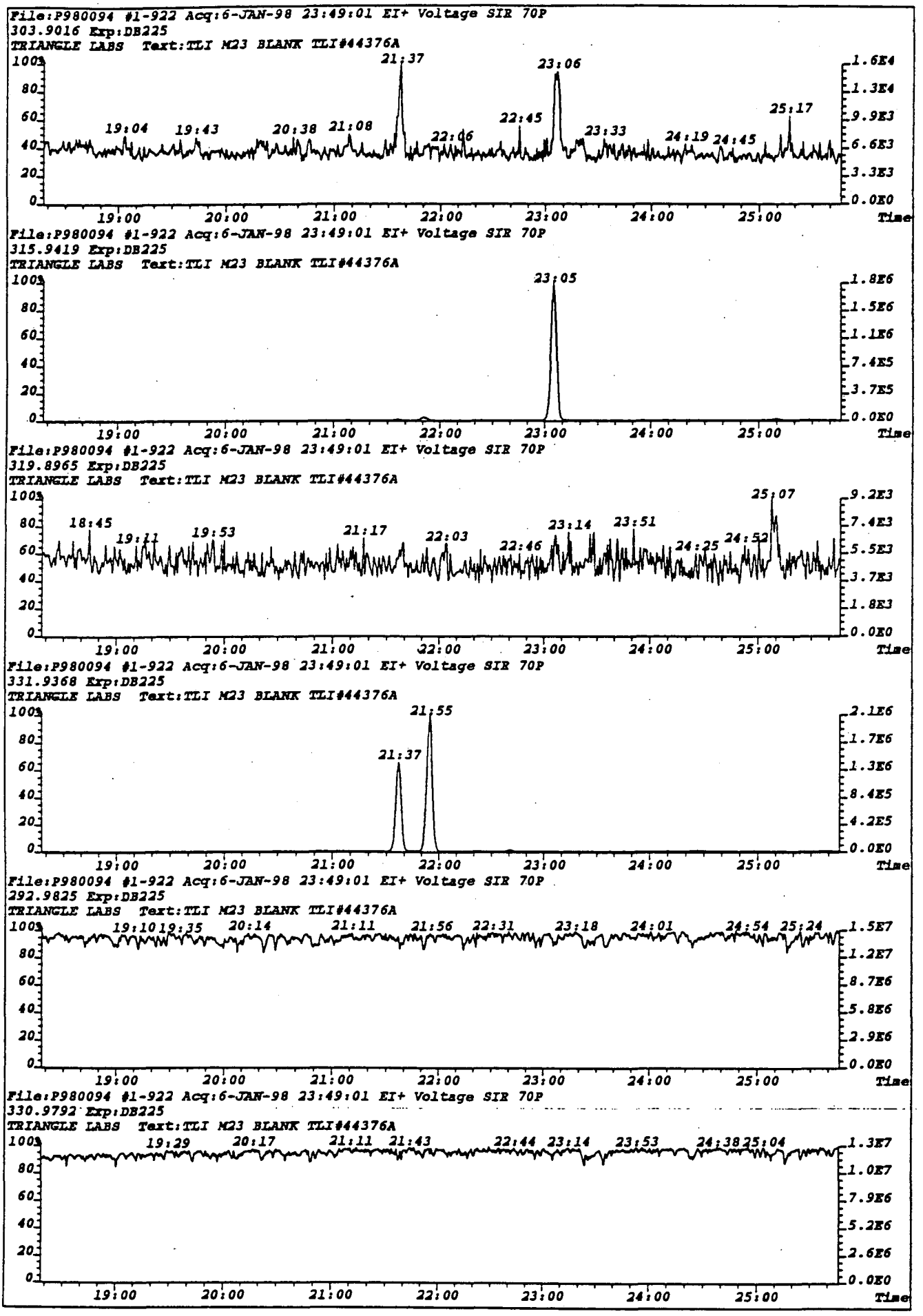


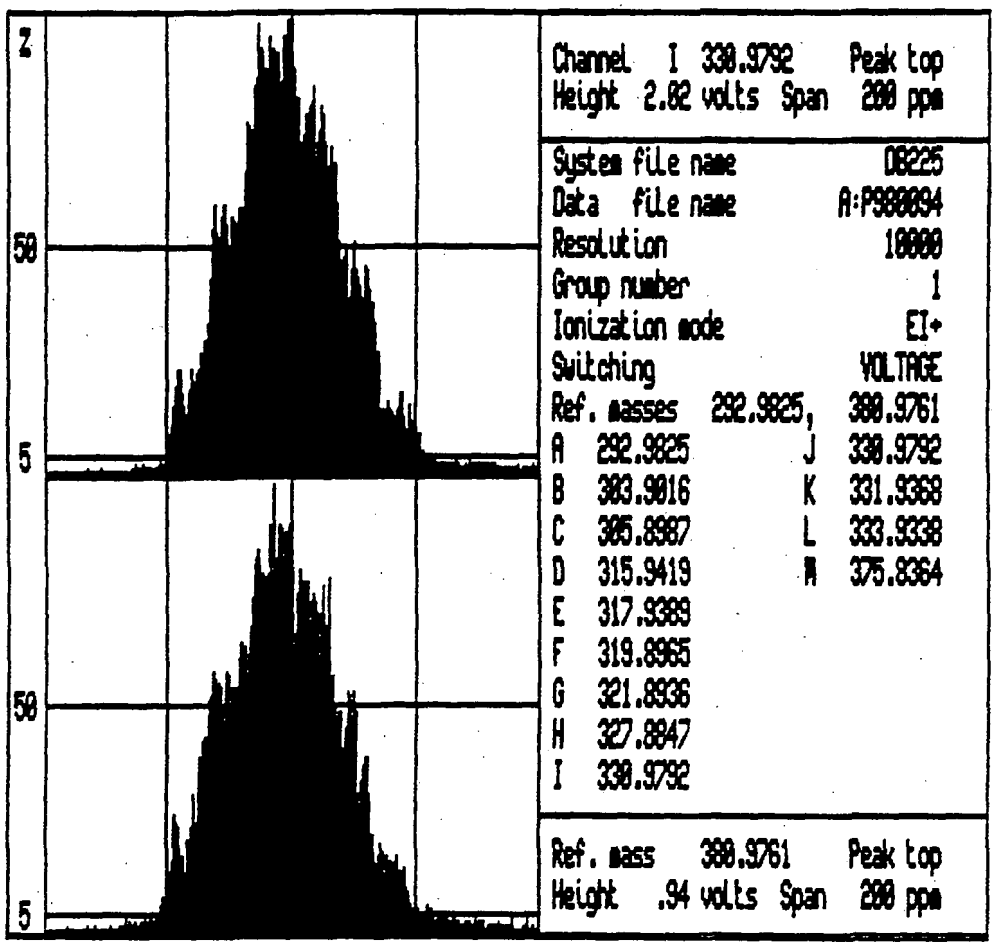
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:710
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2840.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A



File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P Noise:388
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1552.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A




File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
21:37
23:06
19:04
19:43
20:38
21:08
22:46
22:45
23:33
24:19
24:45
25:17
1.6E4
1.3E4
9.9E3
6.6E3
3.3E3
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
23:05
1.8E6
1.5E6
1.1E6
7.4E5
3.7E5
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
25:07
18:45
19:11
19:53
21:17
22:03
22:46
23:14
23:51
24:25
24:52
9.2E3
7.4E3
5.5E3
3.7E3
1.8E3
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
21:55
21:37
2.1E6
1.7E6
1.3E6
8.4E5
4.2E5
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
19:10
19:35
20:14
21:11
21:56
22:31
23:18
24:01
24:54
25:24
1.5E7
1.2E7
8.7E6
5.8E6
2.9E6
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time
File:P980094 #1-922 Acq:6-JAN-98 23:49:01 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#44376A
19:29
20:17
21:11
21:43
22:44
23:14
23:53
24:38
25:04
1.3E7
1.0E7
7.9E6
5.2E6
2.6E6
0.0E0
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


Z
50
5
50
5
Channel I 330.9792 Peak top
Height 2.82 volts Span 200 ppm
System file name 08225
Data file name A:P980894
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Ref. mass 380.9761 Peak top
Height .94 volts Span 200 ppm

Eastern Research Group

TLI Project: **44376A** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **141-144** — Analysis File: **U980027**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPMIT204**
TLI ID:	**194-59-10A-D**	Date Extracted:	**12/29/97**	ICal:	**UF51058**
		Date Analyzed:	**01/06/98**	ConCal:	**U980025**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**U980026**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**KAS**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.02			0.73	25:21	PRJ
1,2,3,7,8-PeCDD	0.03			1.32	29:37	J__
1,2,3,4,7,8-HxCDD	0.02			1.09	32:45	J__
1,2,3,6,7,8-HxCDD	0.04			1.31	32:49	J__
1,2,3,7,8,9-HxCDD	EMPC		0.04			J__
1,2,3,4,6,7,8-HpCDD	0.15			1.17	36:03	___
1,2,3,4,6,7,8,9-OCDD	0.24			0.84	39:36	B__
2,3,7,8-TCDF	1.5			0.75	24:41	___
1,2,3,7,8-PeCDF	0.15			1.60	28:35	___
2,3,4,7,8-PeCDF	0.22			1.57	29:17	___
1,2,3,4,7,8-HxCDF	0.44			1.23	32:02	___
1,2,3,6,7,8-HxCDF	0.15			1.33	32:09	___
2,3,4,6,7,8-HxCDF	0.20			1.20	32:37	___
1,2,3,7,8,9-HxCDF	0.02			1.05	33:22	PRJ
1,2,3,4,6,7,8-HpCDF	0.62			1.02	35:01	___
1,2,3,4,7,8,9-HpCDF	0.08			1.03	36:33	J__
1,2,3,4,6,7,8,9-OCDF	0.46			0.93	39:49	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	2.8	9		2.9	___
Total PeCDD	0.47	7		0.85	___
Total HxCDD	0.37	5		0.51	___
Total HpCDD	0.31	2			___
Total TCDF	12.8	16			___
Total PeCDF	3.7	13		3.7	___
Total HxCDF	1.8	11		1.9	___
Total HpCDF	0.98	4			___

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:16 01/10/98

TLI Project: **44376A** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **141-144** Analysis File: **U980027**

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.6	64.4	40%-130%	0.75	24:38	___
$^{13}C_{12}$-2,3,7,8-TCDD	2.6	64.1	40%-130%	0.81	25:21	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.8	69.9	40%-130%	1.50	28:34	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.7	66.9	40%-130%	1.46	29:36	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.8	70.9	40%-130%	0.51	32:09	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.2	80.0	40%-130%	1.20	32:48	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.9	73.3	25%-130%	0.44	35:00	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.0	75.4	25%-130%	1.05	36:03	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.3	66.1	25%-130%	0.87	39:36	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.6	89.0	40%-130%	1.50	29:16	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.9	98.1	40%-130%	0.51	32:02	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.6	90.8	40%-130%	1.21	32:44	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.4	84.9	40%-130%	0.44	36:32	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	84.8	25:22	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.9	73.2	40%-130%	0.50	33:23	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.9	73.1	40%-130%	0.51	32:37	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:10	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	33:07	___

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:16 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 3.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980027B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00		0.81	125.83			0.000			
	KN			21:30		0.77	3,102.66	1,347.18	1,755.48	0.873			
	K			22:01		0.74	2,589.17	1,104.95	1,484.22	0.894			
	K			22:14		0.76	1,998.81	861.72	1,137.09	0.903			
	K			22:38		0.74	12,407.67	5,263.06	7,144.61	0.919			
	K			22:57		0.74	7,660.13	3,264.01	4,396.12	0.932			
	K			23:21		0.73	7,082.06	2,977.47	4,104.59	0.948			
	K			23:37		0.73	4,393.62	1,849.50	2,544.12	0.959			
				23:56		0.73	5,303.84	2,233.61	3,070.23	0.972			
				24:04		0.75	8,779.06	3,757.28	5,021.78	0.977			
				24:14		0.72	2,545.21	1,062.80	1,482.41	0.984			
				24:29		0.75	2,597.34	1,110.82	1,486.52	0.994			
				24:41		0.75	7,981.71	3,408.46	4,573.25	1.002	2378-TCDF	AN	
				25:05		0.72	1,704.17	714.97	989.20	1.018			
				25:17		0.73	1,460.68	617.82	842.86	1.026			
				25:33		0.70	317.56	130.77	186.79	1.037			
				26:23		0.78	207.51	91.01	116.50	1.071			J
304-306			16 Peaks				70,131.20						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.19	16.21			0.000			
	DC	WL		22:26	RO	1.43	13.33			0.911			
	DC	WL		23:01		0.86	41.84			0.934			
				24:13	RO	0.37	72.55	31.56	85.62	0.983			
				24:38		0.75	17,628.79	7,570.49	10,058.30	1.000	13C12-2378-TCDF	IS0	
				25:04	RO	0.26	69.83	30.38	117.68	1.018			
316-318			3 Peaks				17,771.17						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	0.38	9.24			0.000			
	KN			22:49		0.78	5,487.47	2,412.32	3,075.15	0.900			
	KN			23:13		0.78	3,130.87	1,369.82	1,761.05	0.916			
	K			23:30		0.70	336.73	138.81	197.92	0.927			
	K			24:12		0.76	951.42	411.12	540.30	0.955			
				24:26		0.75	517.65	221.37	296.28	0.964			
				24:51		0.82	218.99	98.44	120.55	0.980			J
	M			25:14		0.77	939.00	408.00	531.00	0.995			
	AN			25:21		0.73	65.50	27.60	37.90	1.000	2378-TCDD	AN	PRJ
				25:32	RO	0.60	86.11	37.46	62.79	1.007			J
				25:42		0.80	96.75	43.10	53.65	1.014			J
	D	D	SN	25:53	RO	1.10	27.05			1.021			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	D	D	SN	26:09	RO	1.84	9.77			1.032			
	D	D	SN	26:21	RO	1.00	27.24			1.039			
320-322			10 Peaks				11,830.49						
37Cl-TCDD										0.921-1.079			
328		DC	NL	0:00			7.49			0.000			
		DC	WL	22:50			33.91			0.901			
		DC	WL	22:59			8.84			0.907			
		DC	WL	23:07			204.08			0.912			
				24:00			1,668.99	1,668.99		0.947			
				24:13			41.00	41.00		0.955			
				24:41			11.17	11.17		0.974			
				25:22			11,362.90	11,362.90		1.001	37Cl-TCDD	CLS	
				25:45			482.43	482.43		1.016			
328			5 Peaks				13,566.49						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334		DC	NL	0:00	RO	2.88	18.25			0.000			
				25:10		0.82	18,667.15	8,431.25	10,235.90	0.993	13C12-1234-TCDD	RS1	
				25:21		0.81	13,386.86	6,010.87	7,375.99	1.000	13C12-2378-TCDD	IS1	
				25:41		0.89	380.66	179.02	201.64	1.013			
332-334			3 Peaks				32,434.67						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF						1.32-1.78				0.925-1.065			
340-342		DC	NL	0:00	RO	0.80	6.12			0.000			
				26:36		1.49	1,836.97	1,099.71	737.26	0.931			
	D	D	SN	26:52	RO	0.43	18.72			0.940			
	D	D	SN	26:56	RO	1.81	30.98			0.943			
	D	D	SN	27:04	RO	0.78	21.68			0.947			
	D	D	SN	27:14		1.57	30.62			0.953			
	D	D	SN	27:21		1.74	29.31			0.957			
				27:36		1.54	562.55	340.72	221.83	0.966			
				27:43		1.52	3,502.29	2,114.09	1,388.20	0.970			
				27:53		1.56	805.11	490.52	314.59	0.976			
				28:12		1.52	1,116.79	673.40	443.39	0.987			
				28:18		1.47	1,629.08	969.35	659.73	0.991			
	M			28:30		1.54	716.00	434.00	282.00	0.998			
	AN			28:35		1.60	579.00	356.00	223.00	1.001	12378-PeCDF	AN	
				28:45		1.50	518.48	311.36	207.12	1.006			
				28:52		1.53	844.84	510.75	334.09	1.011			
				29:17		1.57	821.24	501.37	319.87	1.025	23478-PeCDF	AN	
				29:25		1.45	1,071.84	635.13	436.71	1.030			
				29:45		1.32	205.97	117.07	88.90	1.041			J
	D	D	SN	30:01	RO	0.63	22.80			1.051			
				30:15	RO	1.15	87.26	53.04	46.28	1.059			J
340-342			14 Peaks				14,297.42						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354		DC	NL	0:00	RO	2.20	2.37			0.000			
				27:44		1.57	70.25	42.94	27.31	0.971			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:34		1.50	14,902.92	8,950.65	5,952.27	1.000	13C12-PeCDF 123	IS2	
				28:51		1.66	274.02	171.03	102.99	1.010			
				29:01	RO	5.26	29.20	60.28	11.45	1.016			
				29:16		1.50	12,815.90	7,693.92	5,121.98	1.025	13C12-PeCDF 234	SUR1	
				29:45	RO	3.37	28.64	37.85	11.23	1.041			
				29:56		1.72	25.51	16.14	9.37	1.048			
352-354			7 Peaks				28,146.44						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.935-1.022			
356-358		DC	NL	0:00	RO	0.85	3.14			0.000			
				27:49	RO	0.59	754.32	458.51	779.27	0.940			
	D	D	SN	28:05	RO	0.04	9.84			0.949			
				28:18		1.49	53.38	31.98	21.40	0.956			J
				28:33		1.54	477.26	289.19	188.07	0.965			
				28:41		1.54	90.57	54.90	35.67	0.969			J
				28:53		1.65	285.96	178.09	107.87	0.976			
	D	D	SN	29:02	RO	0.92	35.17			0.981			
				29:07	RO	2.06	80.12	64.78	31.42	0.984			J
				29:19		1.38	130.21	75.60	54.61	0.990			J
				29:27	RO	0.66	56.36	34.26	51.90	0.995			J
				29:37		1.32	72.94	41.51	31.43	1.001	12378-PeCDD	AN	J
				29:45		1.47	47.53	28.31	19.22	1.005			J
		DC	SN	29:59	RO	2.39	5.23			1.013			
				30:05	RO	1.83	35.39	25.43	13.88	1.016			J
		DC	SN	30:17	RO	0.99	3.88			1.023			
		DC	SN	30:21	RO	0.24	1.23			1.025			
356-358			11 Peaks				2,084.04						
13C12-PeCDD						1.32-1.78				0.865-1.135			
368-370		DC	NL	0:00	RO	0.81	0.63			0.000			
				27:42		1.33	37.28	21.30	15.98	0.936			
		DC	SN	28:33	RO	1.28	5.63			0.965			
				29:36		1.46	7,368.03	4,375.81	2,992.22	1.000	13C12-PeCDD 123	IS3	
				29:44		1.57	1,073.94	655.84	418.10	1.005			
				29:56		1.43	83.42	49.14	34.28	1.011			
				30:05	RO	2.30	23.92	21.57	9.38	1.016			
				30:15	RO	1.04	18.75	11.40	10.93	1.022			
		DC	SN	30:28		1.36	8.04			1.029			
368-370			6 Peaks				8,605.34						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376		DC	NL	0:00	RO	1.62	21.97			0.000			
				31:05		1.23	625.75	344.90	280.85	0.967			
				31:14		1.31	1,369.52	776.48	593.04	0.971			
				31:23	RO	1.02	98.58	54.57	53.46	0.976			J
				31:31		1.26	166.25	92.60	73.65	0.980			J
				31:41		1.32	88.38	50.29	38.09	0.985			J
				32:02		1.23	1,154.34	637.82	516.52	0.996	123478-HxCDF	AN	

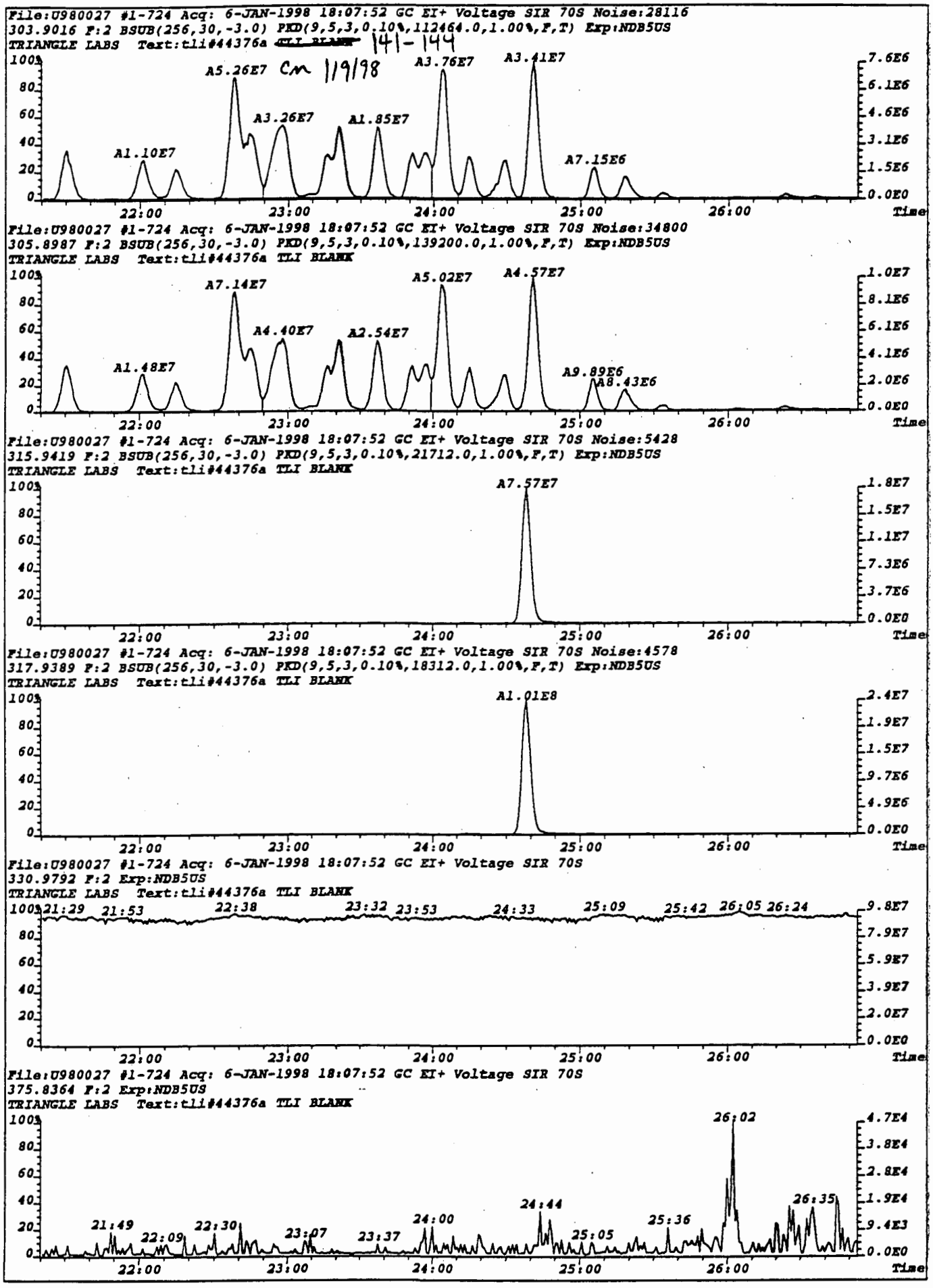
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:09		1.33	495.90	282.71	213.19	1.000	123678-HxCDF	AN	
				32:15		1.35	129.03	74.05	54.98	1.003			J
				32:26		1.21	197.98	108.59	89.39	1.009			J
				32:37		1.20	506.44	275.86	230.58	1.015	234678-HxCDF	AN	
	AN			33:22		1.05	34.10	17.50	16.60	1.038	123789-HxCDF	AN	PRJ
	M			33:28		1.33	117.30	67.00	50.30	1.041			J
374-376			12 Peaks				4,983.57						
13C12-HxCDF				0.43-0.59					0.876-1.124				
384-386	DC	NL		0:00	RO	0.88	5.84			0.000			
				31:04		0.44	20.73	6.30	14.43	0.966			
				32:02		0.51	8,412.04	2,835.75	5,576.29	0.996	13C12-HxCDF 478	SUR2	
				32:09		0.51	10,390.38	3,516.05	6,874.33	1.000	13C12-HxCDF 678	IS4	
				32:37		0.51	9,665.99	3,266.71	6,399.28	1.015	13C12-HxCDF 234	ALT2	
				33:05	RO	0.26	27.92	9.43	36.73	1.029			
				33:14	RO	1.56	6.51	6.73	4.31	1.034			
				33:23		0.50	7,458.64	2,493.12	4,965.52	1.038	13C12-HxCDF 789	ALT1	
384-386			7 Peaks				35,982.21						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43					0.958-1.014				
390-392	DC	NL		0:00	RO	0.70	6.97			0.000			
				31:34		1.22	90.71	49.89	40.82	0.962			J
				32:01		1.22	478.41	263.12	215.29	0.976			
				32:13	RO	1.48	197.79	131.09	88.30	0.982			
				32:22		1.37	30.51	17.65	12.86	0.987			J
	DC	SN		32:37	RO	4.95	4.48			0.994			
				32:45		1.09	31.21	16.31	14.90	0.998	123478-HxCDD	AN	J
				32:49		1.31	77.92	44.17	33.75	1.001	123678-HxCDD	AN	J
				33:07	RO	1.50	86.24	57.63	38.50	1.010	123789-HxCDD	AN	J
	DC	SN		33:26	RO	1.71	5.53			1.019			
390-392			7 Peaks				992.79						
13C12-HxCDD				1.05-1.43					0.970-1.030				
402-404	DC	NL		0:00	RO	1.60	7.68			0.000			
				32:13	RO	1.02	18.82	10.42	10.18	0.982			
				32:44		1.21	5,765.04	3,158.14	2,606.90	0.998	13C12-HxCDD 478	SUR3	
				32:48		1.20	8,672.25	4,729.10	3,943.15	1.000	13C12-HxCDD 678	IS5	
				33:07		1.21	10,895.05	5,960.87	4,934.18	1.010	13C12-HxCDD 789	RS2	
402-404			4 Peaks				25,351.16						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20					0.996-1.049				
408-410	DC	NL		0:00	RO	1.38	7.38			0.000			
				35:01		1.02	1,443.50	727.74	715.76	1.000	1234678-HpCDF	AN	
				35:18		1.01	273.19	136.99	136.20	1.009			
				35:26		1.11	304.94	160.71	144.23	1.012			
	D	D	SN	35:40	RO	0.54	9.96			1.019			
		DC	SN	35:46	RO	2.70	4.45			1.022			
		DC	SN	35:59	RO	1.70	6.63			1.028			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				36:33		1.03	136.05	69.11	66.94	1.044	1234789-HpCDF	AN	J
	DC	SN		36:46	RO	0.55	5.02			1.050			
	DC	SN		36:55	RO	0.48	2.49			1.055			
408-410		4 Peaks					2,157.68						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	0.66	10.79			0.000			
				35:00		0.44	6,563.47	2,002.40	4,561.07	1.000	13C12-HpCDF 678	IS6	
				36:32		0.44	4,469.51	1,370.05	3,099.46	1.044	13C12-HpCDF 789	SUR4	
418-420		2 Peaks					11,032.98						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00	RO	0.02	0.06			0.000			
				35:17		1.13	229.68	121.98	107.70	0.979			
				36:03		1.17	225.52	121.39	104.13	1.000	1234678-HpCDD	AN	
424-426		2 Peaks					455.20						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.02	13.88			0.000			
				36:03		1.05	5,964.62	3,054.56	2,910.06	1.000	13C12-HpCDD 678	IS7	
436-438		1 Peak					5,964.62						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00		0.98	3.07			0.000			
	DC	WL		34:22	RO	0.22	1.19			0.868			
	DC	WL		34:31	RO	1.31	2.34			0.872			
	DC	SN		35:44	RO	1.82	1.78			0.902			
	DC	SN		35:53	RO	1.12	1.98			0.906			
	DC	SN		36:17	RO	0.35	1.00			0.916			
	DC	SN		36:40	RO	0.14	0.59			0.926			
	DC	SN		37:07	RO	0.59	1.87			0.937			
	DC	SN		37:57	RO	0.47	6.77			0.958			
	DC	SN		38:08	RO	0.71	2.36			0.963			
	DC	SN		38:32	RO	1.05	3.04			0.973			
				39:49		0.93	614.76	295.87	318.89	1.005	OCDF	AN	
				40:04		0.76	16.14	6.98	9.16	1.012			
	DC	SN		40:13		0.77	8.60			1.016			
	DC	SN		40:20	RO	2.35	1.95			1.019			
	DC	SN		40:26	RO	1.18	3.76			1.021			
	DC	SN		40:37	RO	1.36	3.67			1.026			
442-444		2 Peaks					630.90						
OCDD				0.76-1.02						0.899-1.101			
458-460	DC	NL		0:00	RO	1.20	0.09			0.000			
				39:36		0.84	260.87	119.05	141.82	1.000	OCDD	AN	
	DC	SN		39:52	RO	0.43	3.82			1.007			
	DC	SN		39:57	RO	4.08	2.17			1.009			
458-460		1 Peak					260.87						

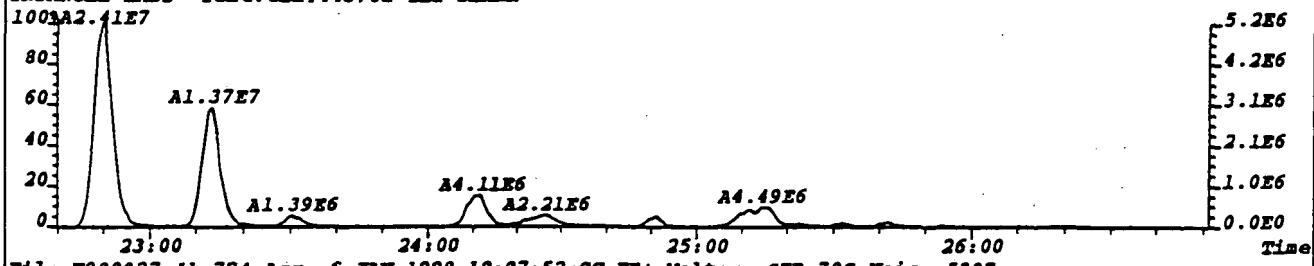
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00	RO	39.25	0.08			0.000			
				39:36		0.87	7,849.13	3,641.39	4,207.74	1.000	13C12-OCDD	IS8	
470-472			1 Peak				7,849.13						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

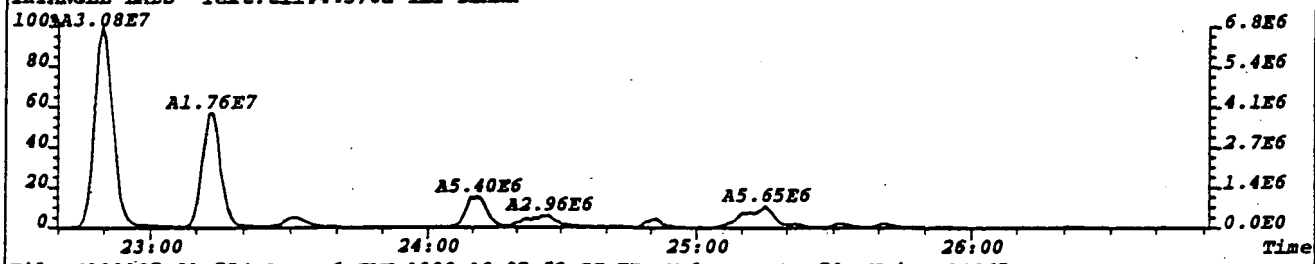
*** End of Report ***


File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:28116
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,112464.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
141-144
CM 1/9/98
A1.10E7
A5.26E7
A3.26E7
A1.85E7
A3.76E7
A3.41E7
A7.15E6
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:34800
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,139200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.48E7
A7.14E7
A4.40E7
A2.54E7
A5.02E7
A4.57E7
A9.89E6
A8.43E6
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:5428
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,21712.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A7.57E7
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:4578
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,18312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.01E8
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
21:29
21:53
22:38
23:32
23:53
24:33
25:09
25:42
26:05
26:24
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
26:02
24:44
26:35
21:49
22:09
22:30
23:07
23:37
24:00
25:05
25:36
22:00
23:00
24:00
25:00
26:00
Time

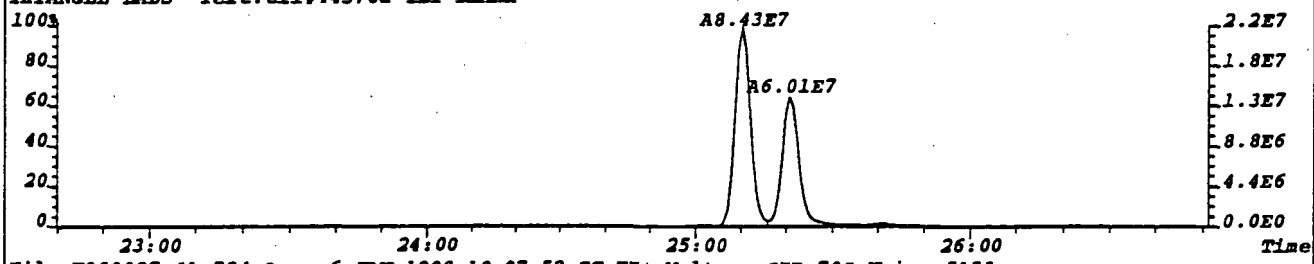
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2012
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8048.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



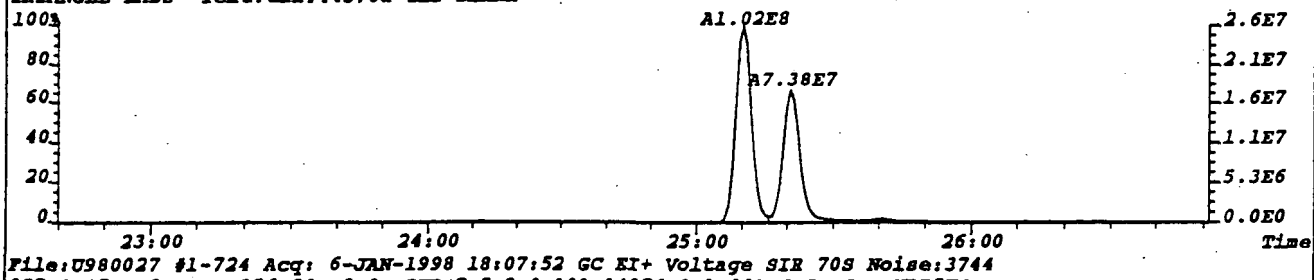
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:5307
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,21228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



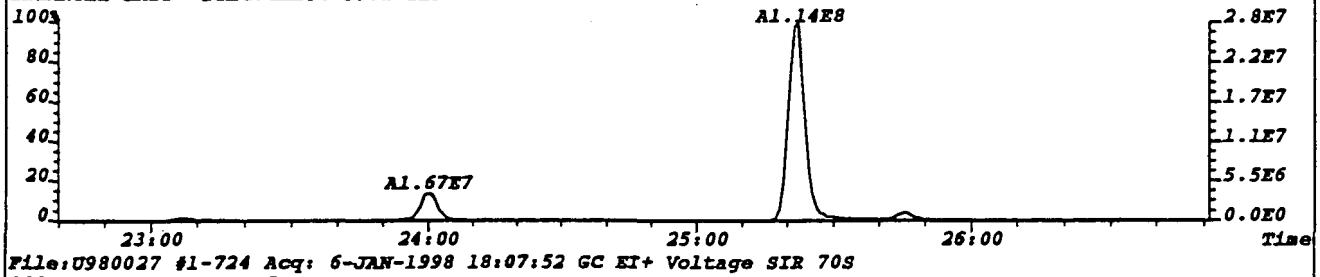
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:14867
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,59468.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



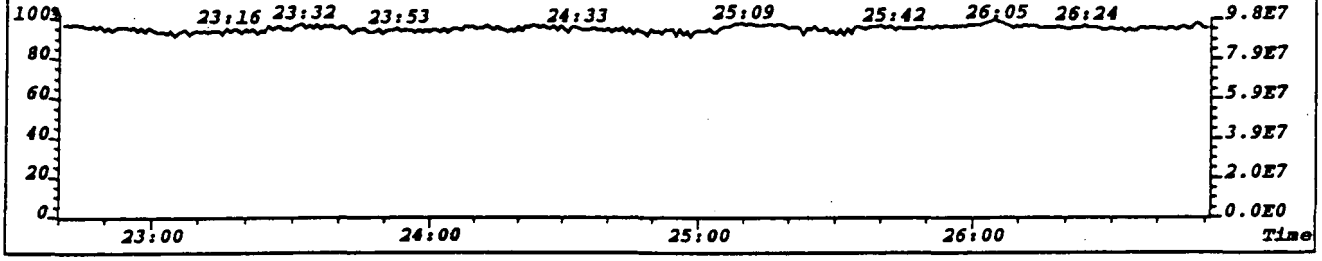
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:5153
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,20612.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



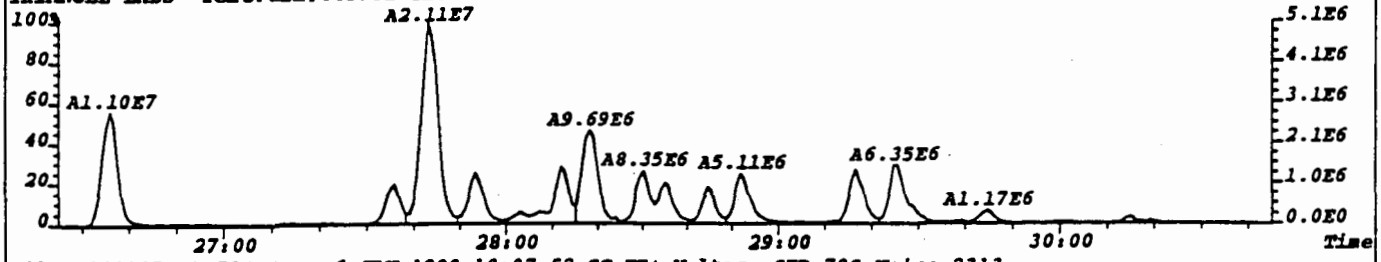
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:3744
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14976.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



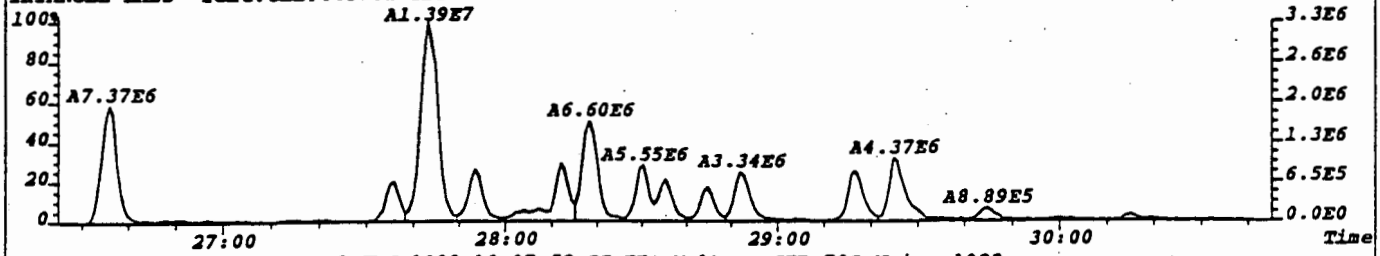
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



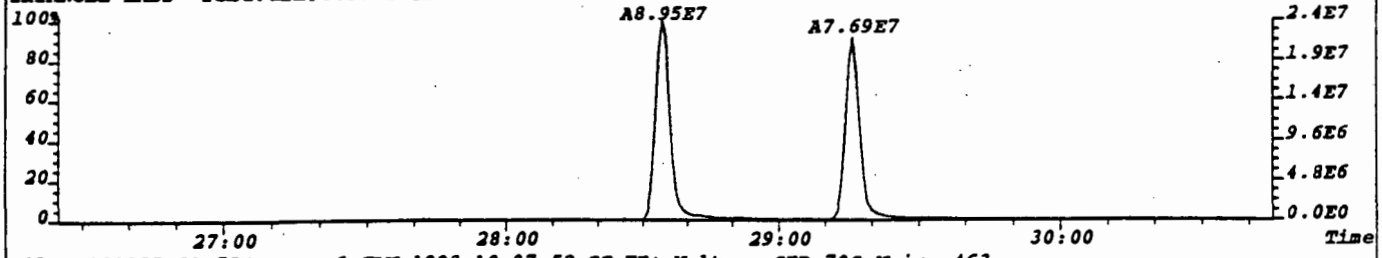
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1862
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



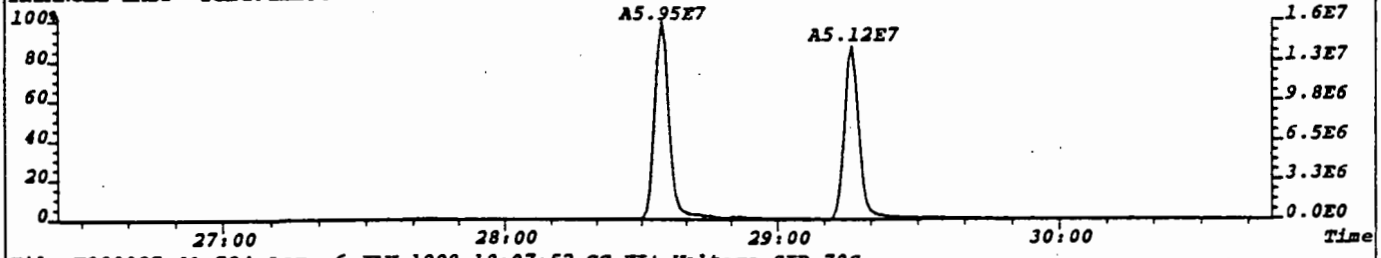
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2313
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



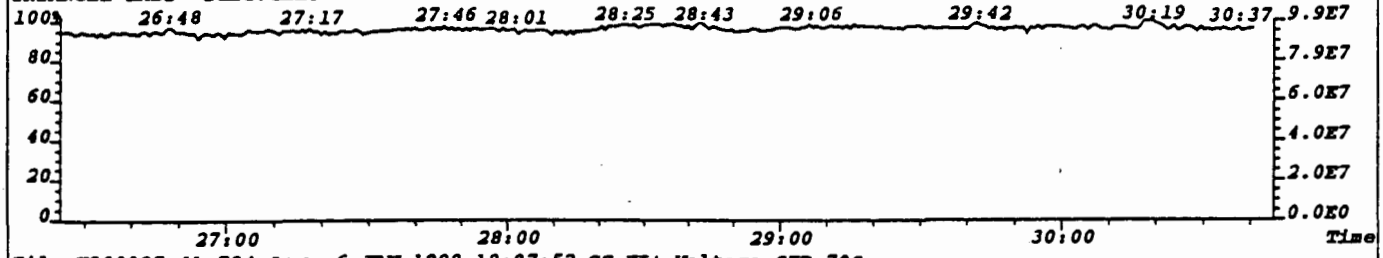
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1023
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



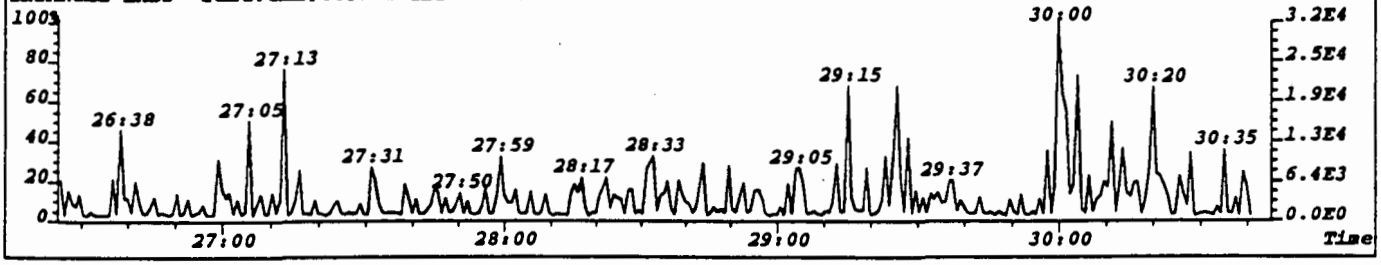
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:463
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1852.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

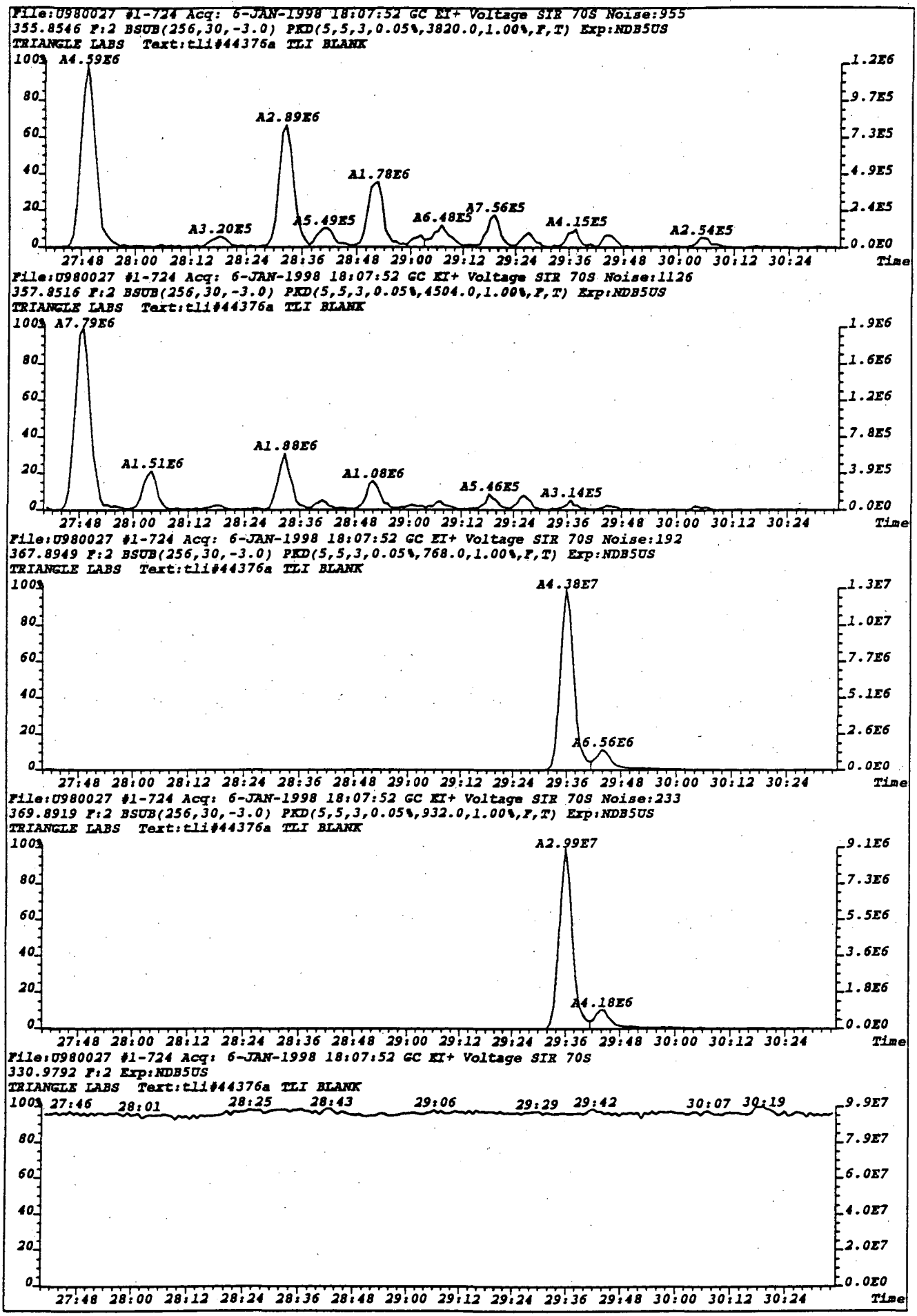


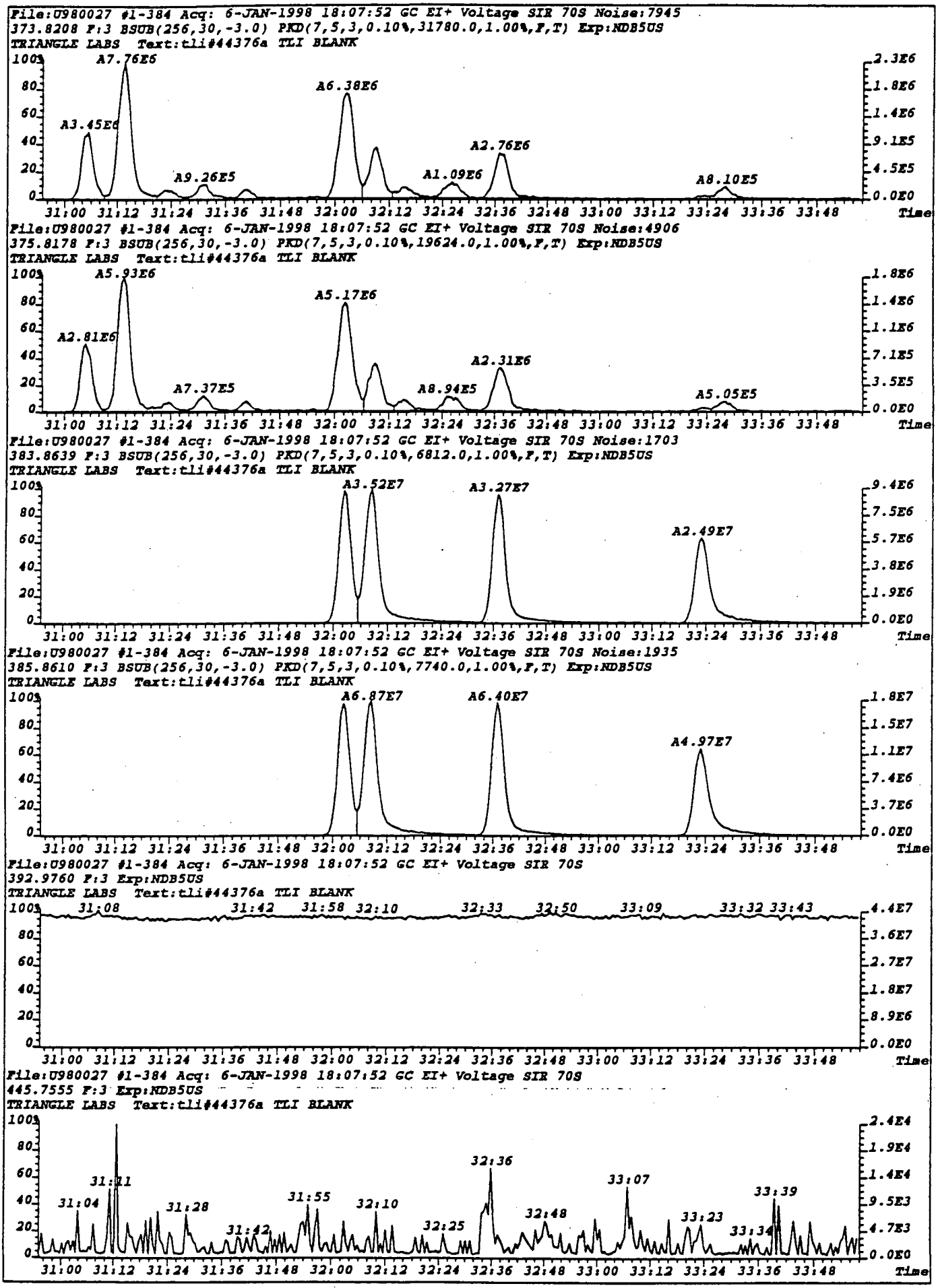
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

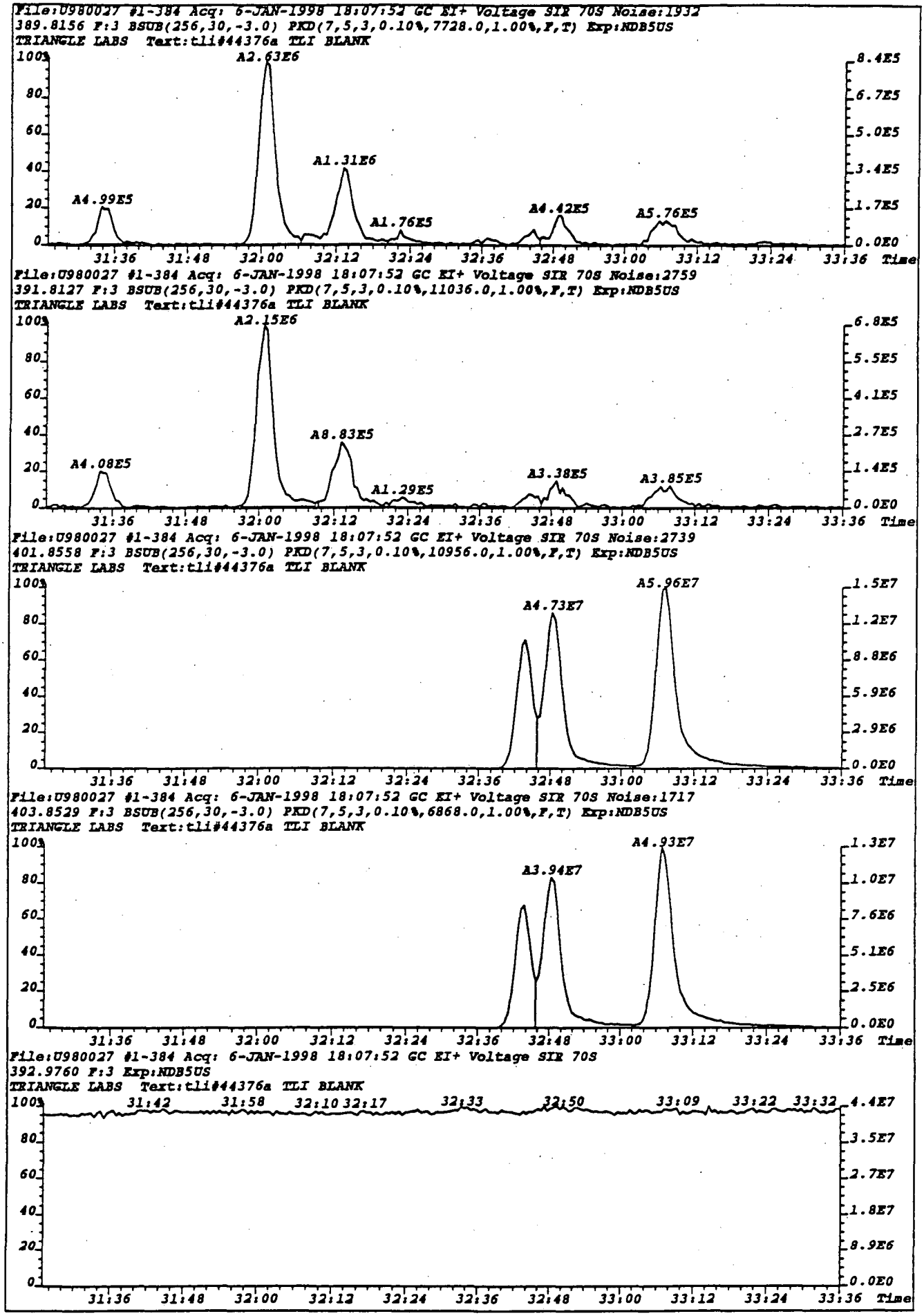


File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

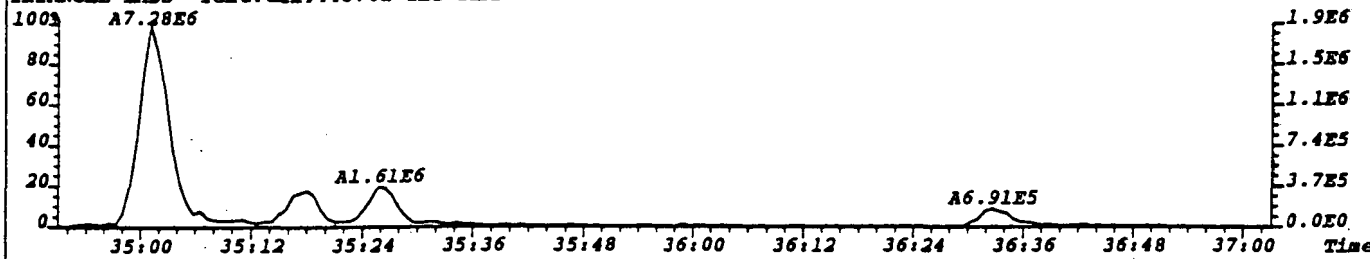



File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:955
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,3820.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A4.59E6
A2.89E6
A1.78E6
A3.20E5
A5.49E5
A6.48E5
A7.56E5
A4.15E5
A2.54E5
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1126
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,4504.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A7.79E6
A1.51E6
A1.88E6
A1.08E6
A5.46E5
A3.14E5
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:192
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A4.38E7
A6.56E6
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:233
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,932.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.99E7
A4.18E6
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
27:46 28:01 28:25 28:43 29:06 29:29 29:42 30:07 30:19
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time

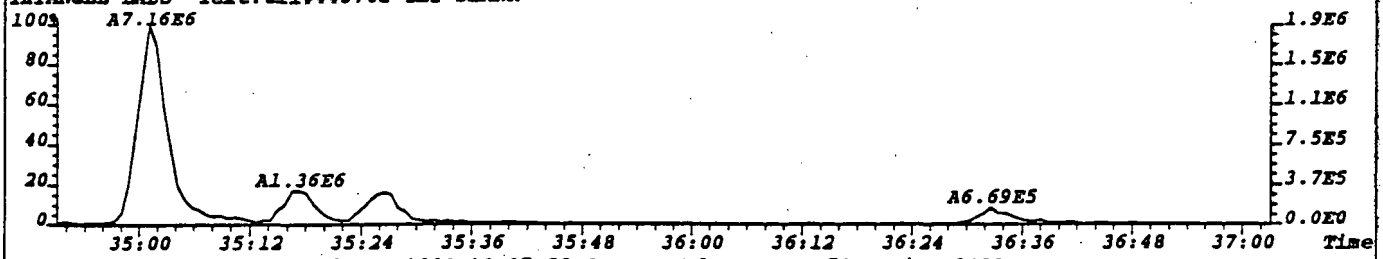

File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:7945
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,31780.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A7.76E6
A6.38E6
A3.45E6
A2.76E6
A9.26E5
A1.09E6
A8.10E5
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:4906
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,19624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.93E6
A5.17E6
A2.81E6
A2.31E6
A7.37E5
A8.94E5
A5.05E5
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1703
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6812.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.52E7
A3.27E7
A2.49E7
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1935
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7740.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A6.87E7
A6.40E7
A4.97E7
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
31:04
31:11
31:28
31:42
31:55
32:10
32:25
32:36
32:48
33:07
33:23
33:34
33:39
Time


File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1932
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7728.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.63E6
A1.31E6
A4.99E5
A1.76E5
A4.42E5
A5.76E5
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 Time
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2759
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11036.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.15E6
A8.83E5
A4.08E5
A1.29E5
A3.38E5
A3.85E5
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2739
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10956.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A5.96E7
A4.73E7
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1717
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6868.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A4.93E7
A3.94E7
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
31:42 31:58 32:10 32:17 32:33 32:50 33:09 33:22 33:32

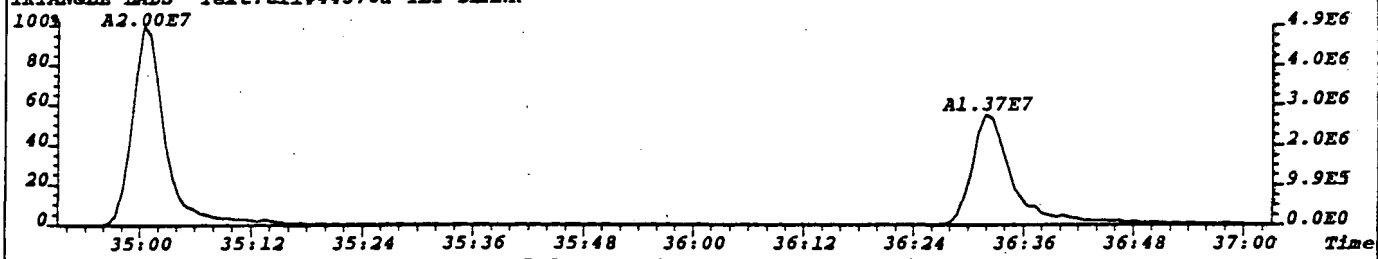
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2496
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9984.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



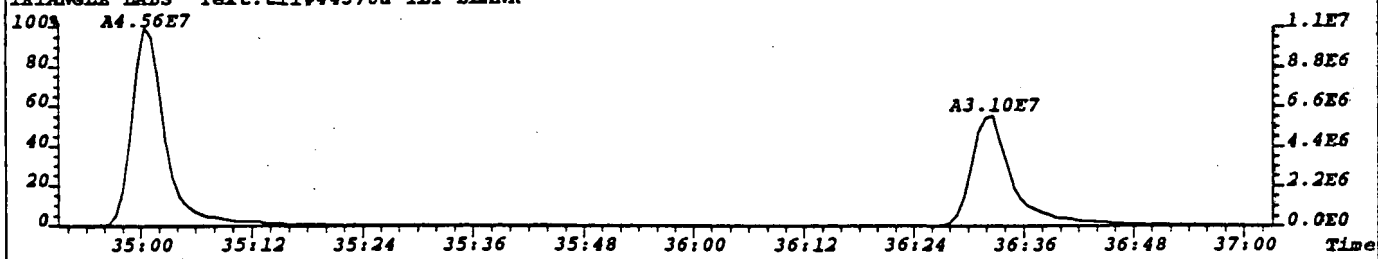
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:1811
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7244.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



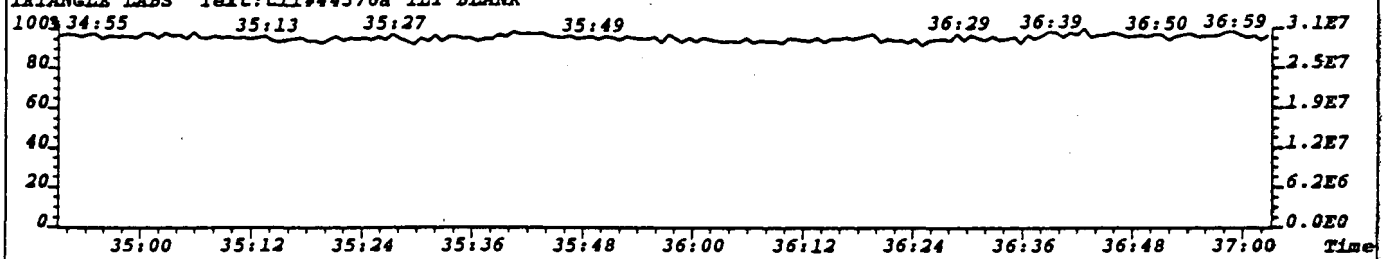
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:2459
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9836.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



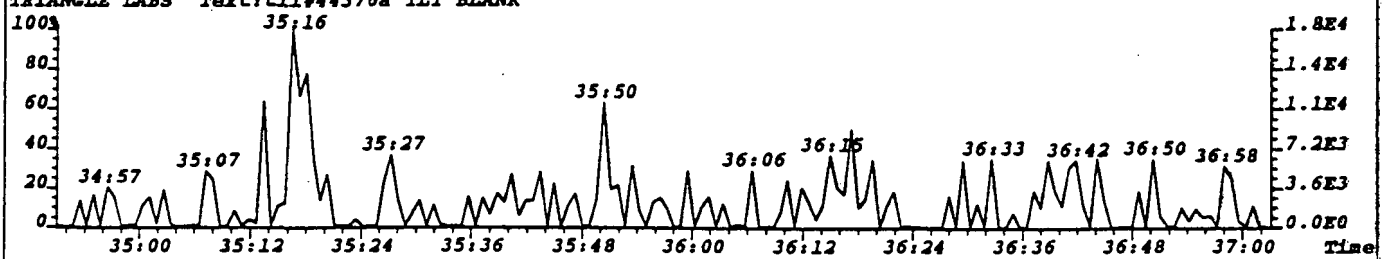
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:3744
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14976.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

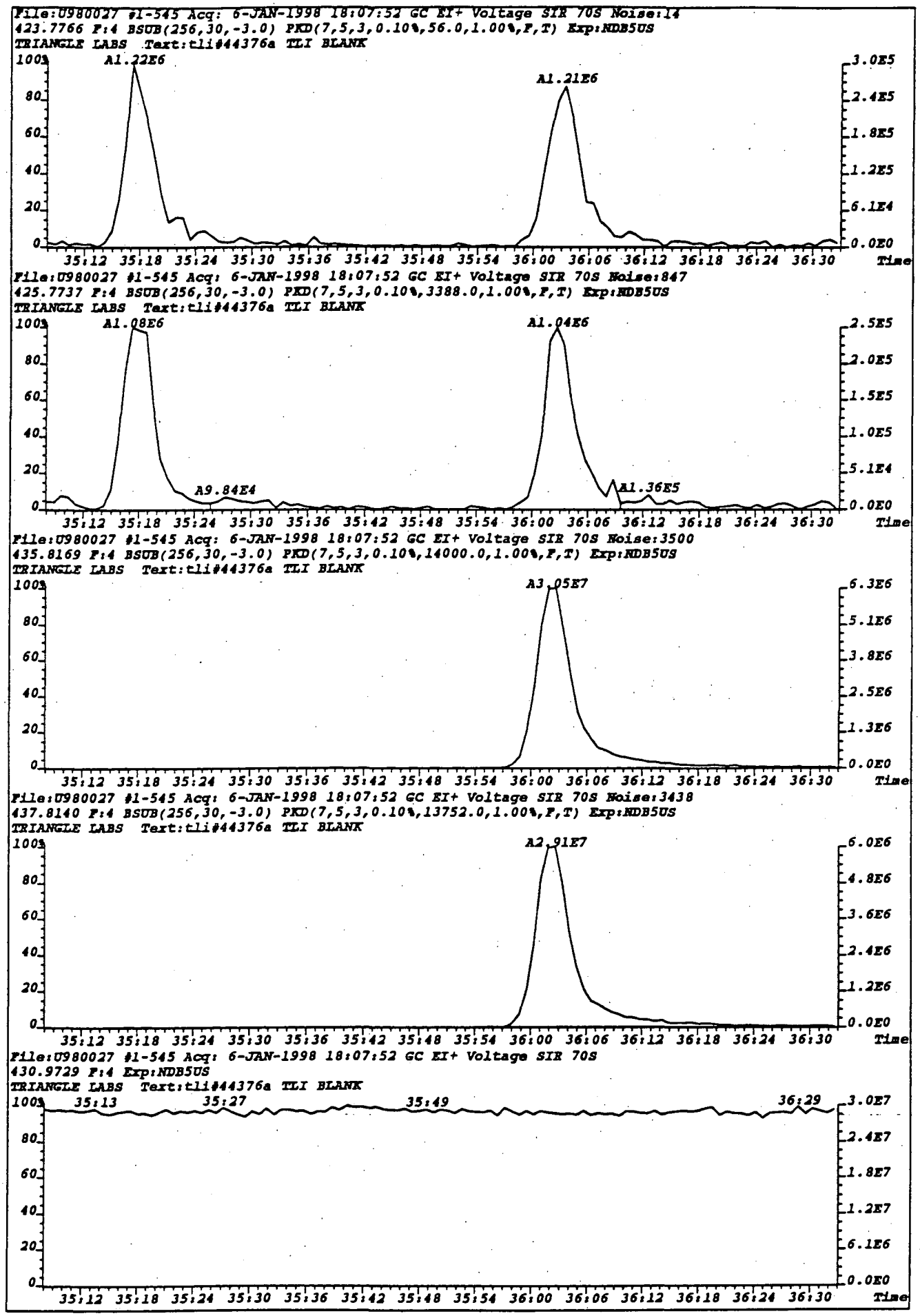


File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

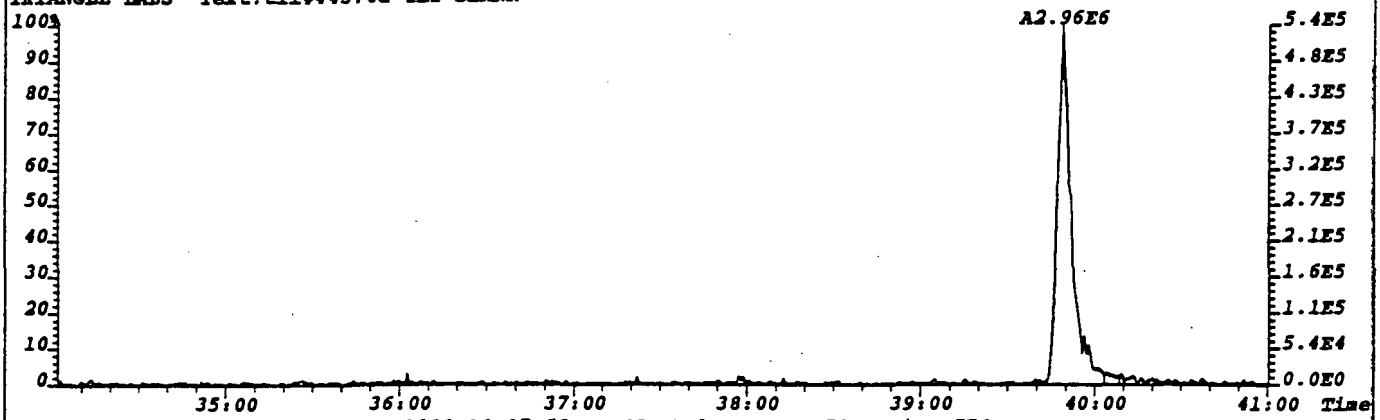


File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

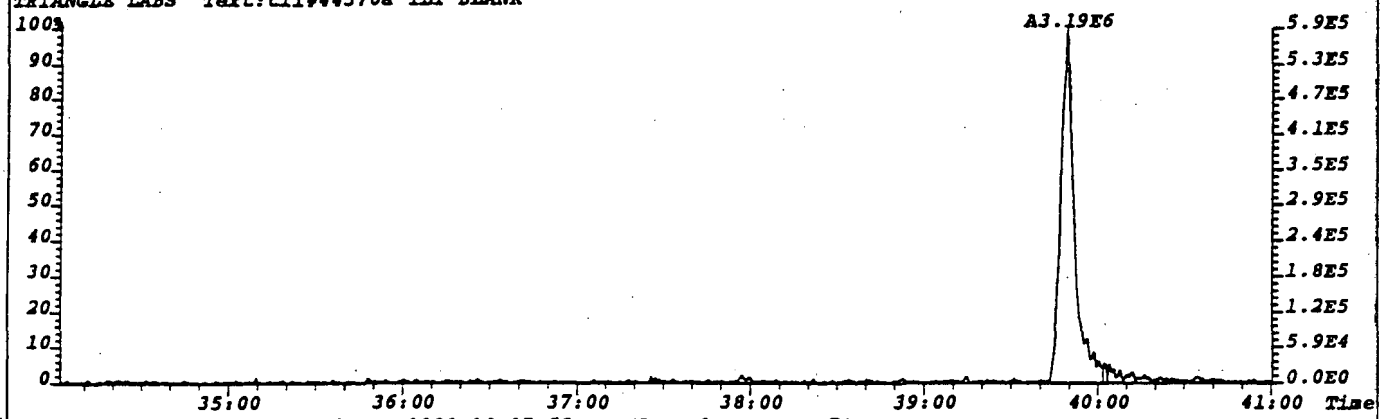



File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:14
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,56.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.22E6
A1.21E6
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:847
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3388.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A1.08E6
A1.04E6
A9.84E4
A1.36E5
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:3500
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A3.05E7
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:3438
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13752.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
A2.91E7
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK
35:13
35:27
35:49
36:29
Time

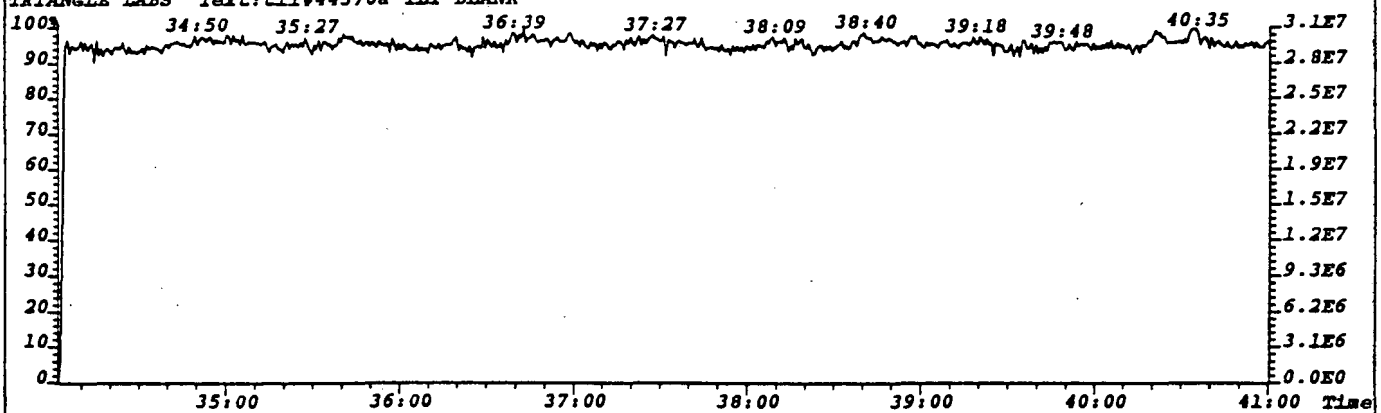
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:762
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3048.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



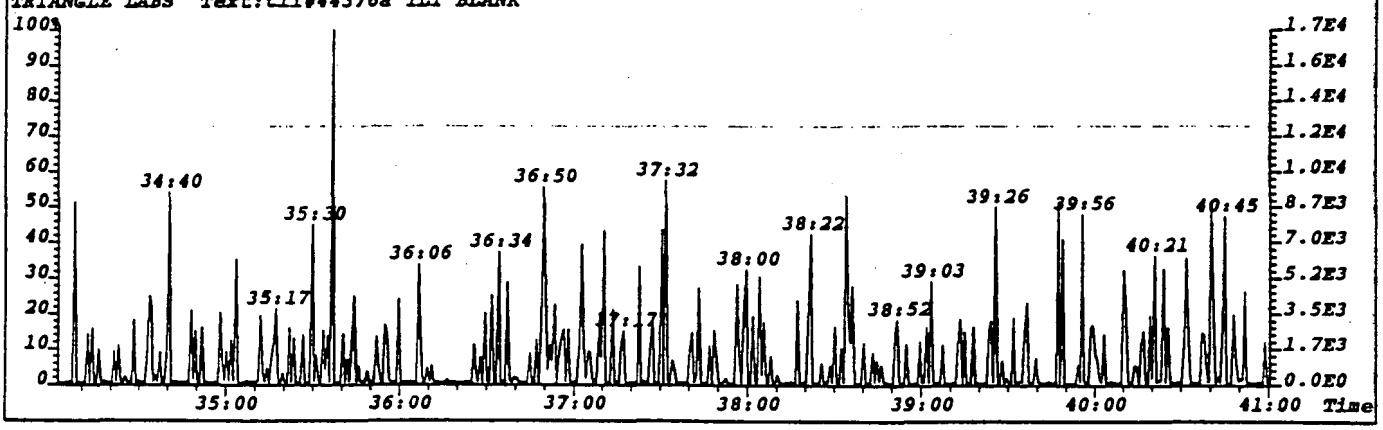
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:776
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3104.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



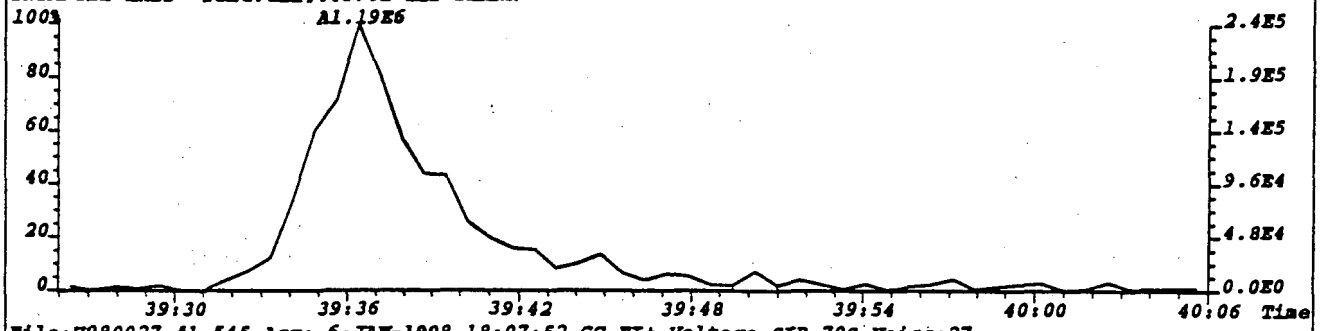
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



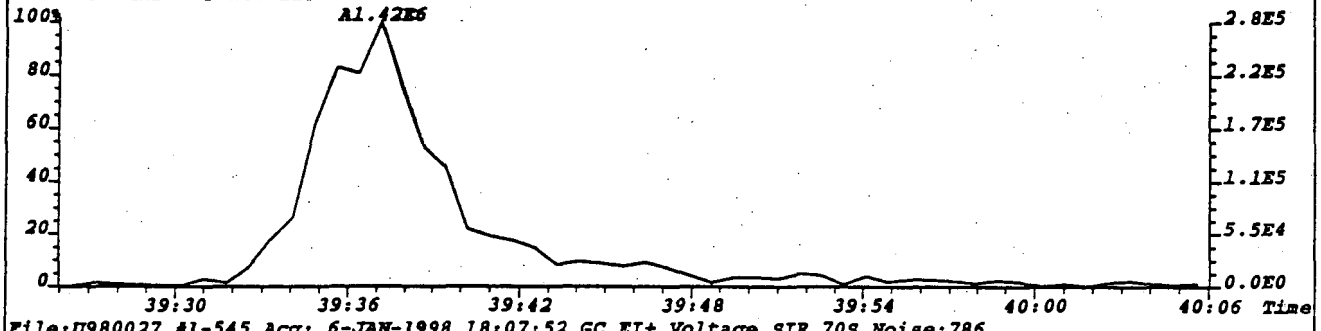
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



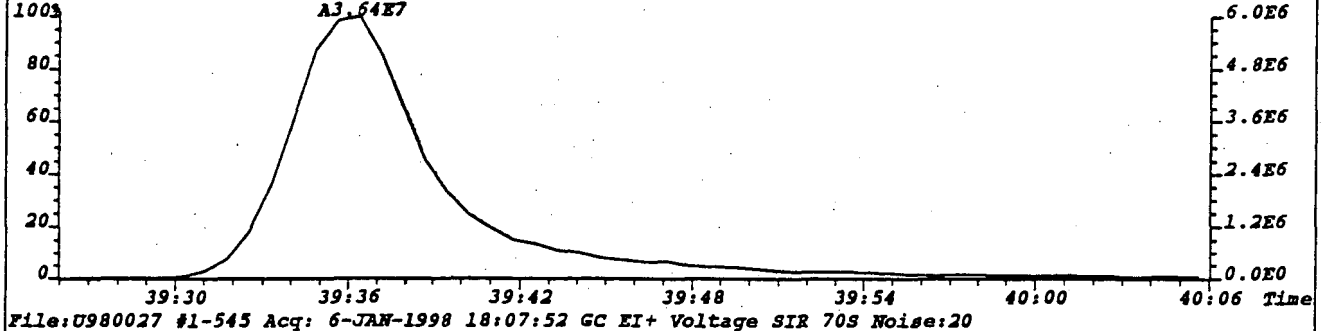
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:28
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,112.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



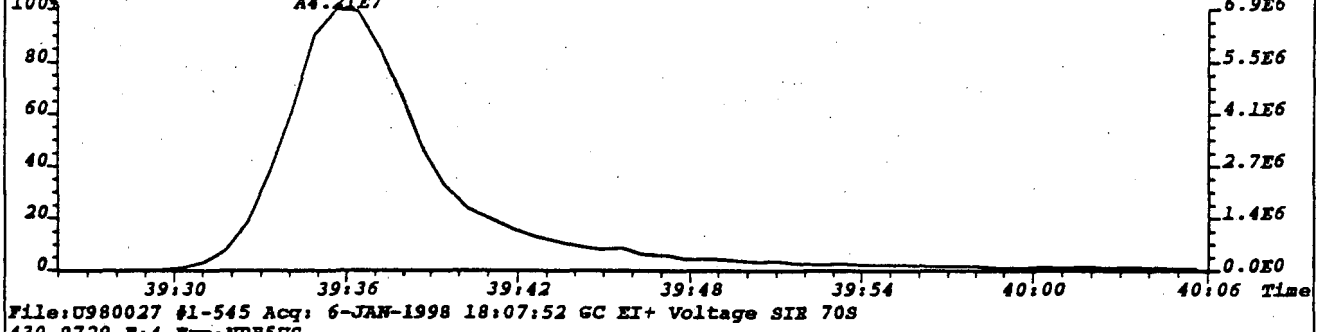
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:27
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,108.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK



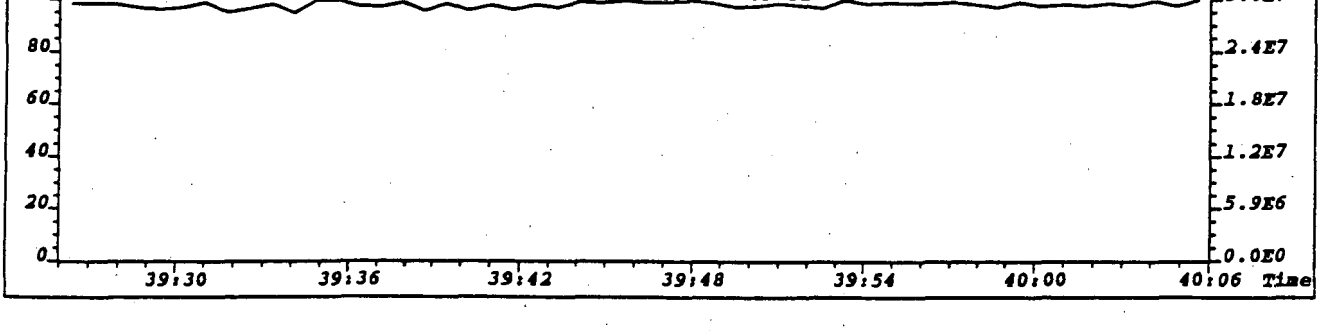
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:786
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3144.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

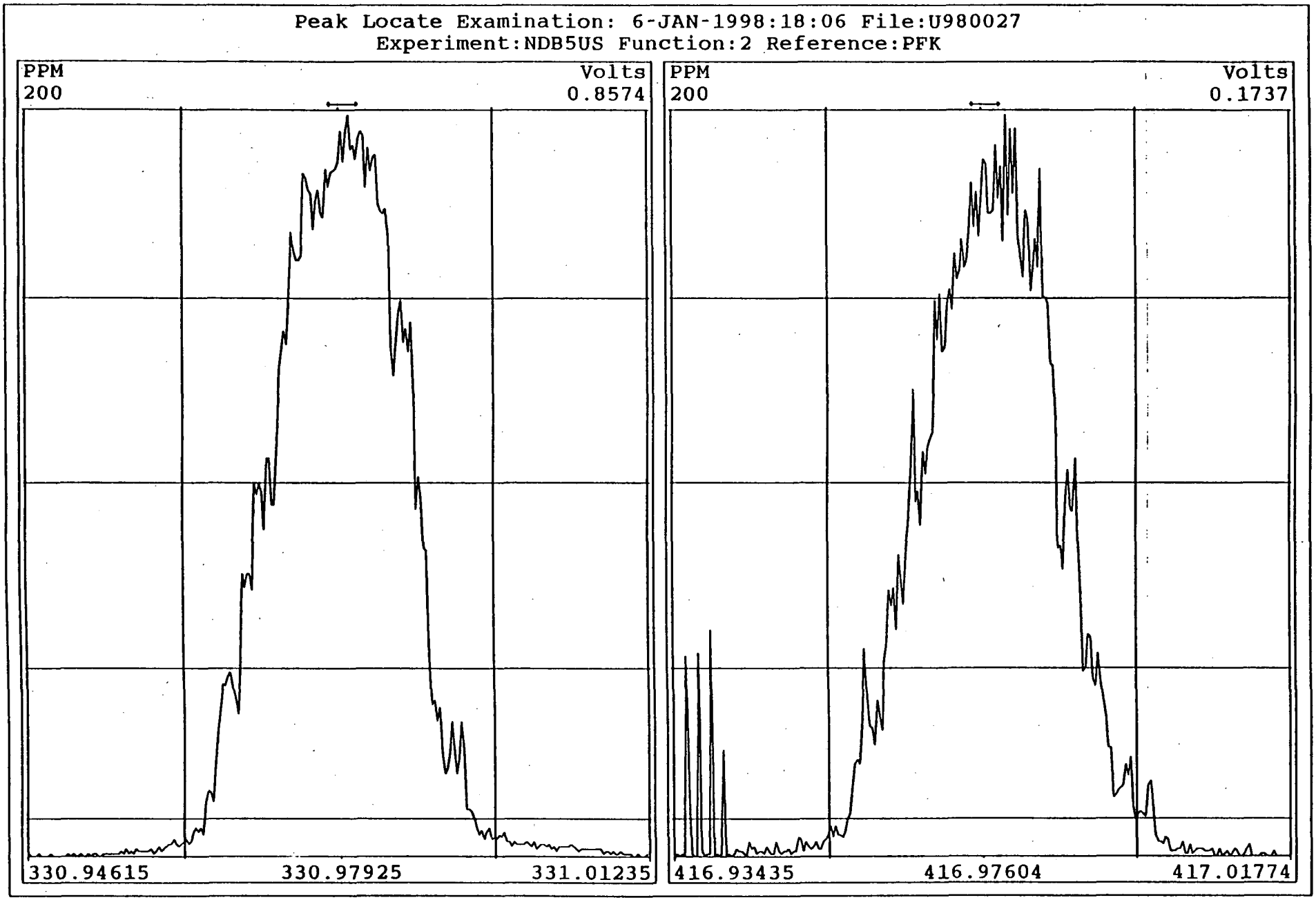


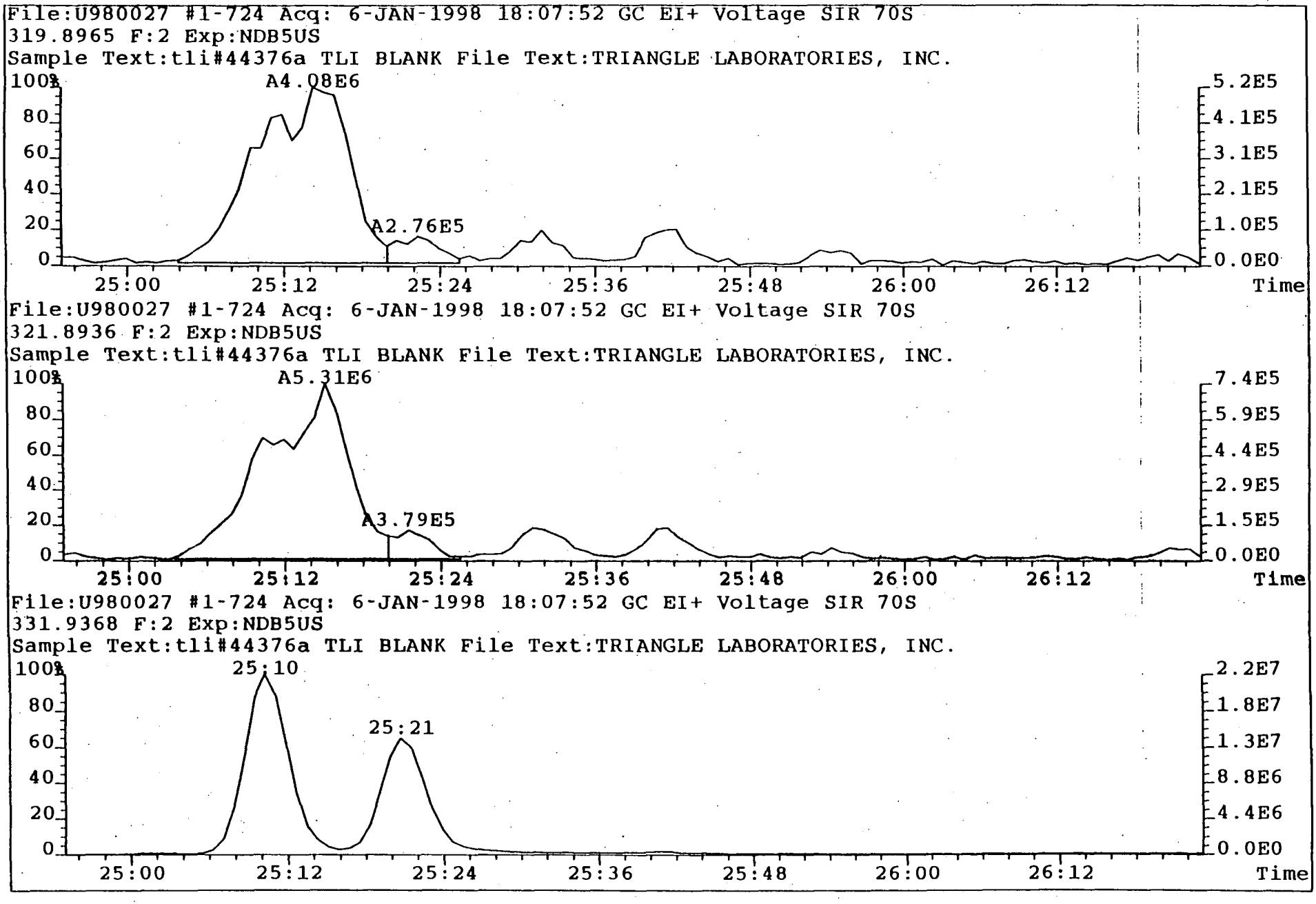
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S Noise:20
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK

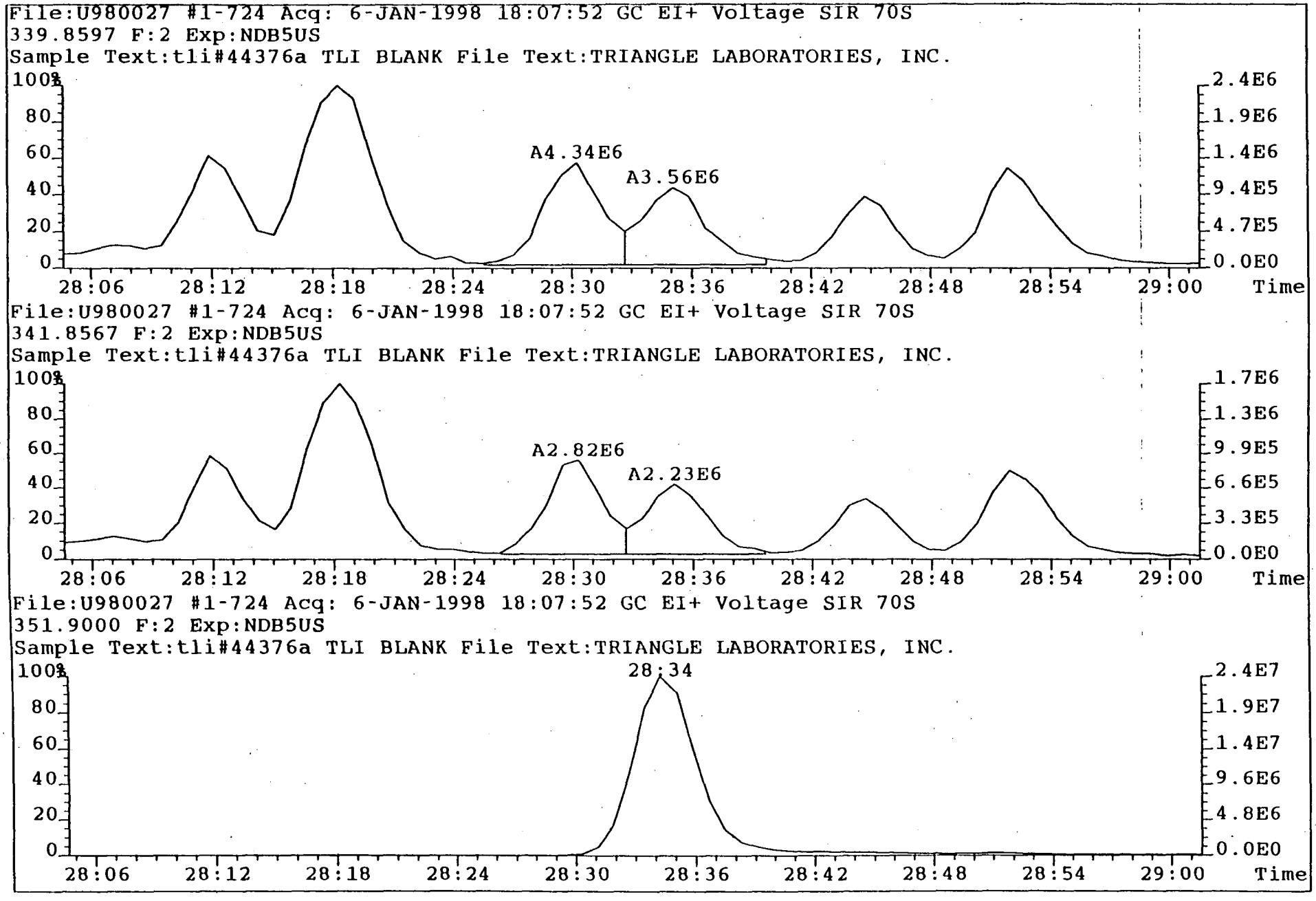


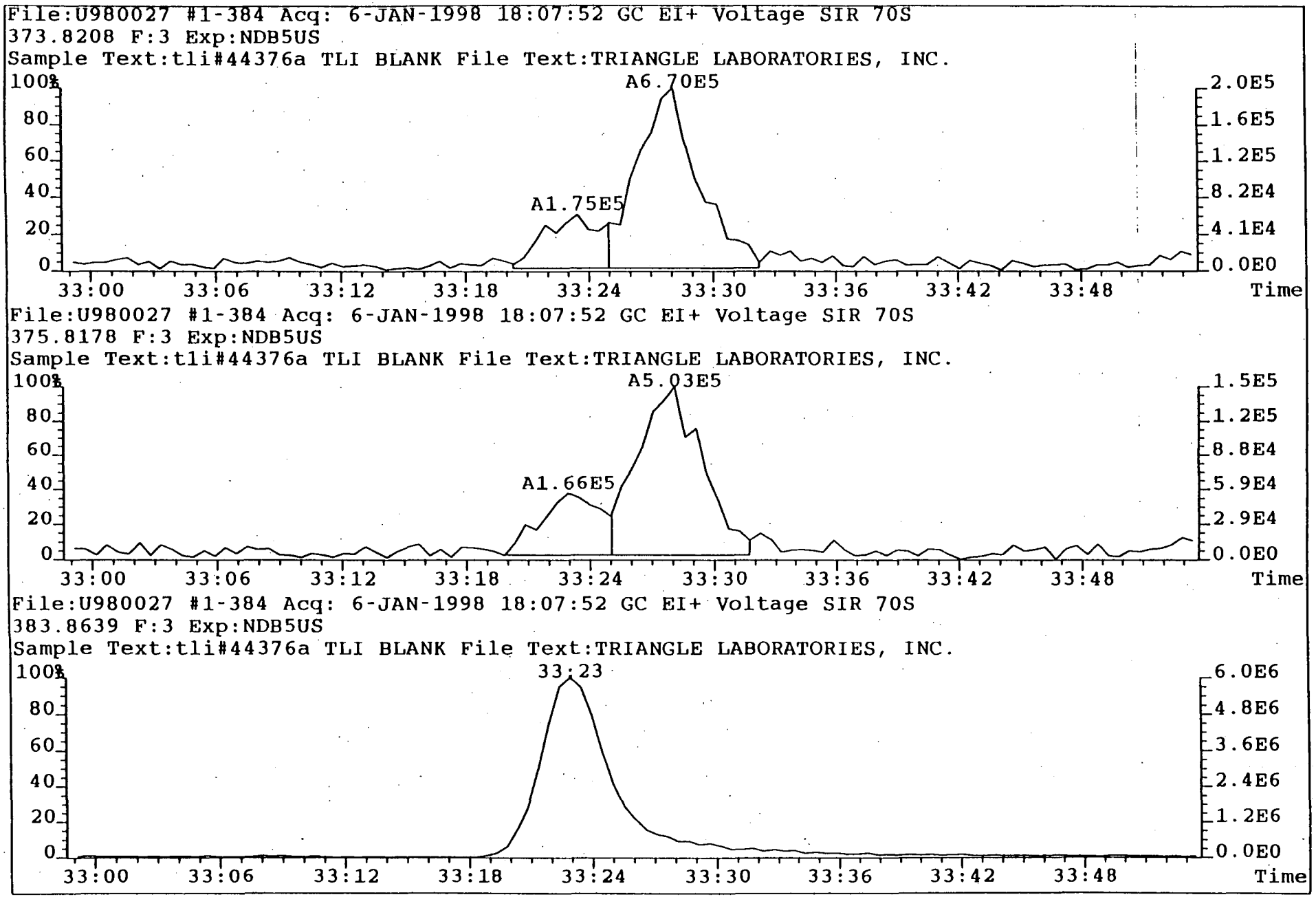
File:U980027 #1-545 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:tli#44376a TLI BLANK




Peak Locate Examination: 6-JAN-1998:18:06 File:U980027
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.8574
330.94615
330.97925
331.01235
PPM
200
Volts
0.1737
416.93435
416.97604
417.01774


File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
A4.08E6
A2.76E5
5.2E5
4.1E5
3.1E5
2.1E5
1.0E5
0.0E0
80
60
40
20
0
25:00
25:12
25:24
25:36
25:48
26:00
26:12
Time
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
A5.31E6
A3.79E5
7.4E5
5.9E5
4.4E5
2.9E5
1.5E5
0.0E0
80
60
40
20
0
25:00
25:12
25:24
25:36
25:48
26:00
26:12
Time
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
25:10
25:21
2.2E7
1.8E7
1.3E7
8.8E6
4.4E6
0.0E0
80
60
40
20
0
25:00
25:12
25:24
25:36
25:48
26:00
26:12
Time


File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A4.34E6
A3.56E6
2.4E6
1.9E6
1.4E6
9.4E5
4.7E5
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.82E6
A2.23E6
1.7E6
1.3E6
9.9E5
6.6E5
3.3E5
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980027 #1-724 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:34
2.4E7
1.9E7
1.4E7
9.6E6
4.8E6
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time


File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
A6.70E5
A1.75E5
100%
80
60
40
20
0
2.0E5
1.6E5
1.2E5
8.2E4
4.1E4
0.0E0
33:00
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
Time
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
A5.03E5
A1.66E5
1.5E5
1.2E5
8.8E4
5.9E4
2.9E4
0.0E0
File:U980027 #1-384 Acq: 6-JAN-1998 18:07:52 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:tli#44376a TLI BLANK File Text:TRIANGLE LABORATORIES, INC.
33:23
6.0E6
4.8E6
3.6E6
2.4E6
1.2E6
0.0E0

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 141-144 — Analysis File: P980095

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-10A-D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.27			0.73	23:06	B_

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.2	78.9	40%-130%	0.77	23:06	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:55	___

Data Reviewer: _____ 01/09/98

C2NF_PSR v2.01, LARS 6.10.08l

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:14 01/09/98

Initial ....Date....

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

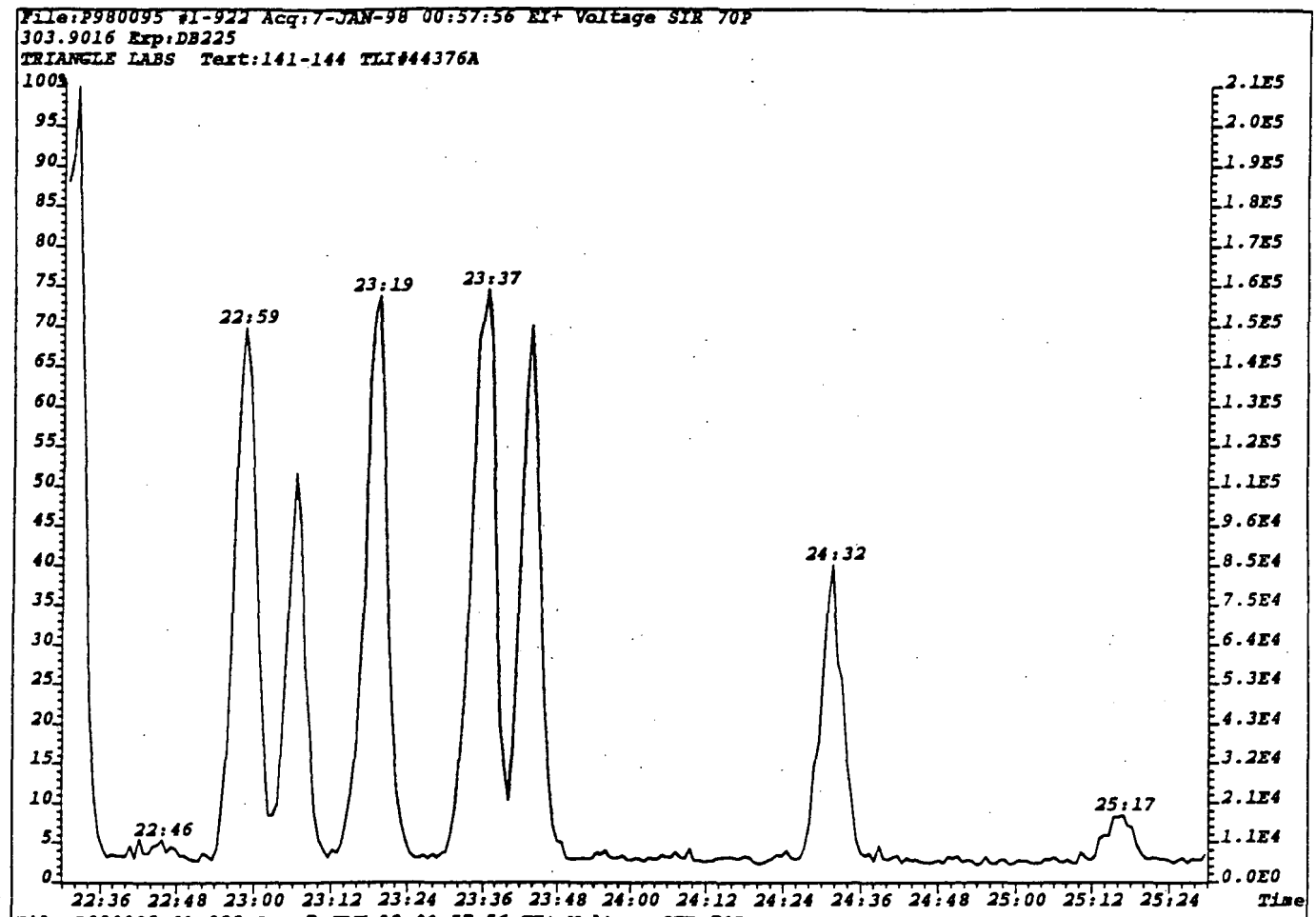
Page No. 1 Listing of P980095B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

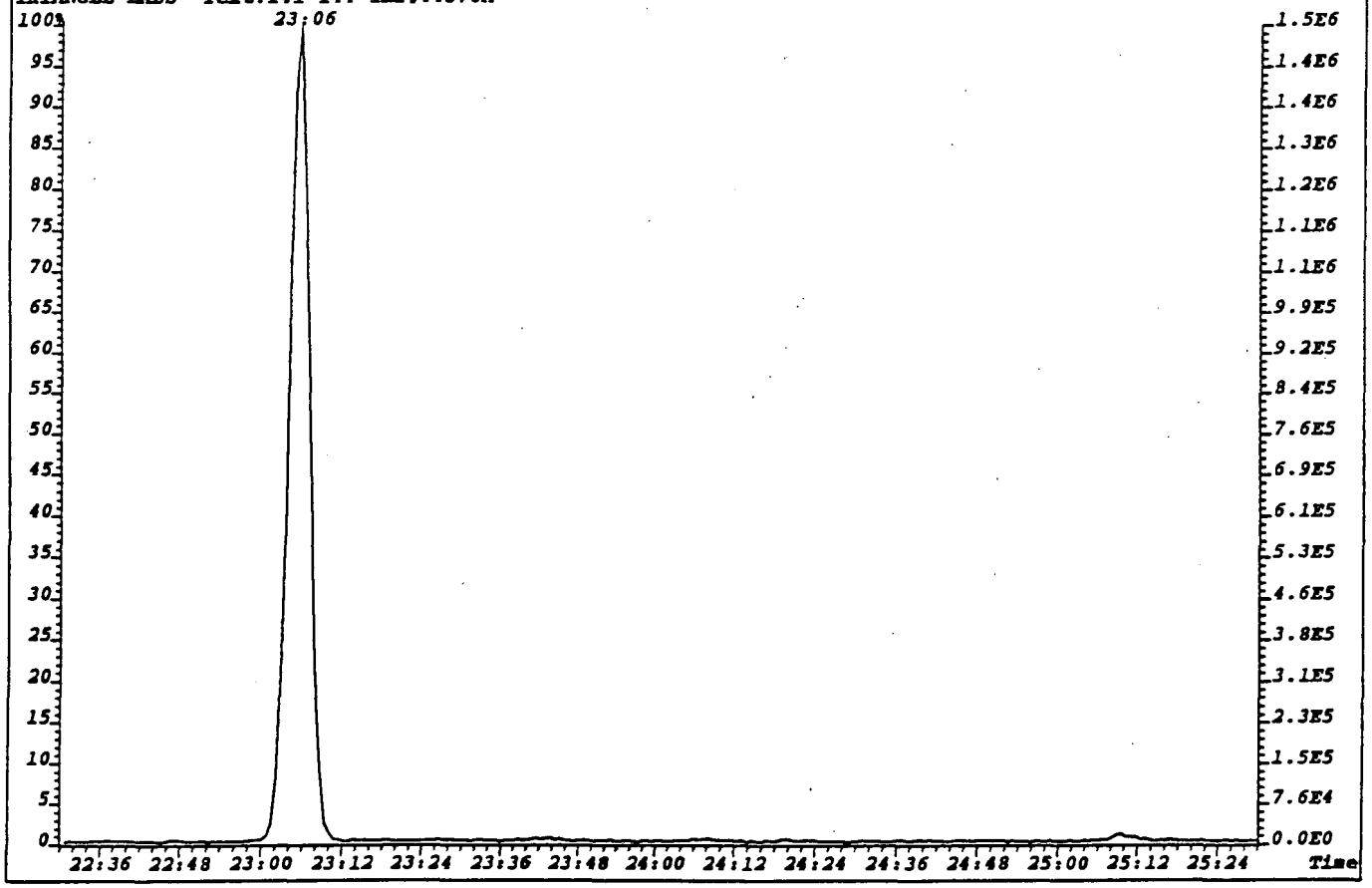
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89					0.792-1.101				
304-306	DC	NL		0:00	RO	0.64	2.55			0.000			
				18:29		0.80	208.64	92.91	115.73	0.800			
				18:46	RO	1.51	5.54	4.72	3.13	0.812			J
	DC	SN		18:55	RO	0.58	2.78			0.819			
				19:00	RO	1.83	2.99	3.10	1.69	0.823			J
				19:05	RO	0.97	13.72	7.48	7.75	0.826			
				19:28		0.79	179.35	79.17	100.18	0.843			
				19:36		0.70	189.42	78.08	111.34	0.848			
				19:44		0.76	358.26	154.98	203.28	0.854			
				19:55		0.83	141.48	64.08	77.40	0.862			
				20:01		0.73	13.36	5.65	7.71	0.867			
				20:10		0.77	165.82	72.38	93.44	0.873			
				20:20		0.87	372.82	173.19	199.63	0.880			
				20:29		0.81	184.64	82.47	102.17	0.887			
				20:38		0.77	456.74	198.71	258.03	0.893			
				20:48		0.73	152.00	64.30	87.70	0.900			
				21:11		0.76	964.84	417.38	547.46	0.917			
	DC	SN		21:22	RO	1.07	1.27			0.925			
				21:36		0.77	170.81	74.09	96.72	0.935			
				21:43		0.79	40.87	18.09	22.78	0.940			
				21:53		0.74	158.90	67.60	91.30	0.947			
				22:07		0.77	174.91	75.93	98.98	0.957			
				22:21		0.73	38.22	16.12	22.10	0.968			
				22:32		0.78	176.65	77.37	99.28	0.975			
				22:59		0.73	134.51	56.94	77.57	0.995			
				23:06		0.73	86.23	36.31	49.92	1.000	2378-TCDF		AN
				23:19		0.75	148.46	63.47	84.99	1.009			
				23:37		0.75	164.74	70.56	94.18	1.022			
				23:44		0.74	125.38	53.18	72.20	1.027			
				24:32		0.78	71.83	31.41	40.42	1.062			
				25:17		0.68	12.37	5.02	7.35	1.095			
304-306		28	Peaks				4,913.50						
13C12-TCDF				0.65-0.89					0.957-1.043				
316-318	DC	NL		0:00	RO	1.19	2.30			0.000			
	DC	WL		20:33	RO	0.37	1.40			0.890			
	DC	WL		21:36	RO	0.42	3.08			0.935			
				23:06		0.77	1,249.63	543.79	705.84	1.000	13C12-2378-TCDF		ISO
	DC	SN		23:14	RO	1.09	0.83			1.006			
	DC	SN		23:44	RO	0.56	1.88			1.027			
	DC	WH		24:19	RO	0.55	1.56			1.053			
	DC	WH		25:10	RO	0.60	9.45			1.089			
316-318		1	Peak				1,249.63						

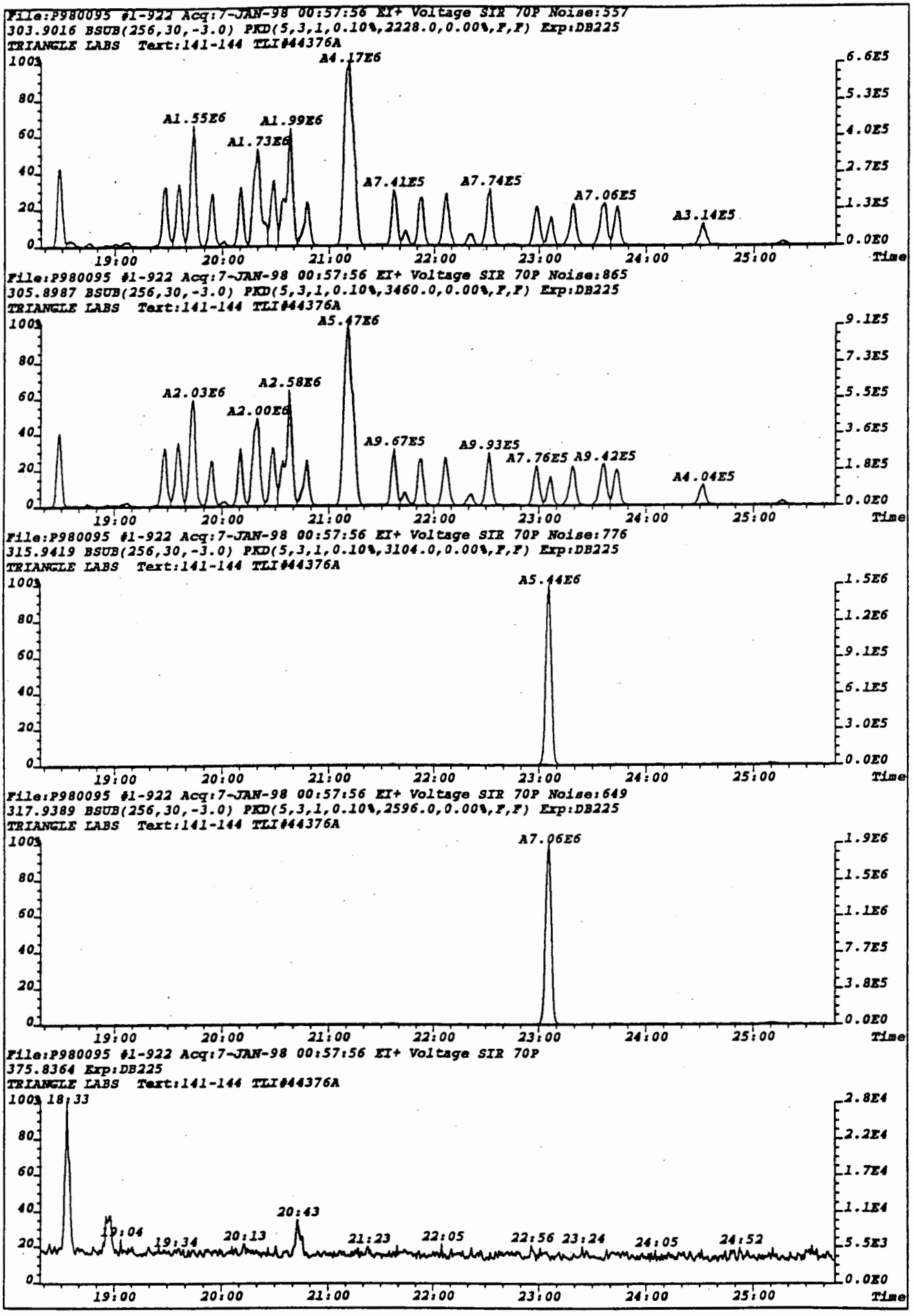
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC	NL		0:00	RO	1.71	1.54			0.000			
	DC	SN		19:51	RO	2.17	0.92			0.918			
				20:30	RO	0.54	3.33	1.45	2.70	0.948			
				21:38		0.80	827.44	367.56	459.88	1.000	13C12-2378-TCDD	IS1	
				21:55		0.82	1,141.58	513.50	628.08	1.013	13C12-1234-TCDD	RS1	
				22:40		0.78	10.38	4.55	5.83	1.048			
	DC	WH		23:47	RO	3.52	1.12			1.099			
	DC	WH		23:52	RO	0.55	1.61			1.103			
	DC	WH		24:16	RO	2.51	2.11			1.122			
	DC	WH		24:27	RO	1.57	2.78			1.130			
332-334			4	Peaks			1,982.73						

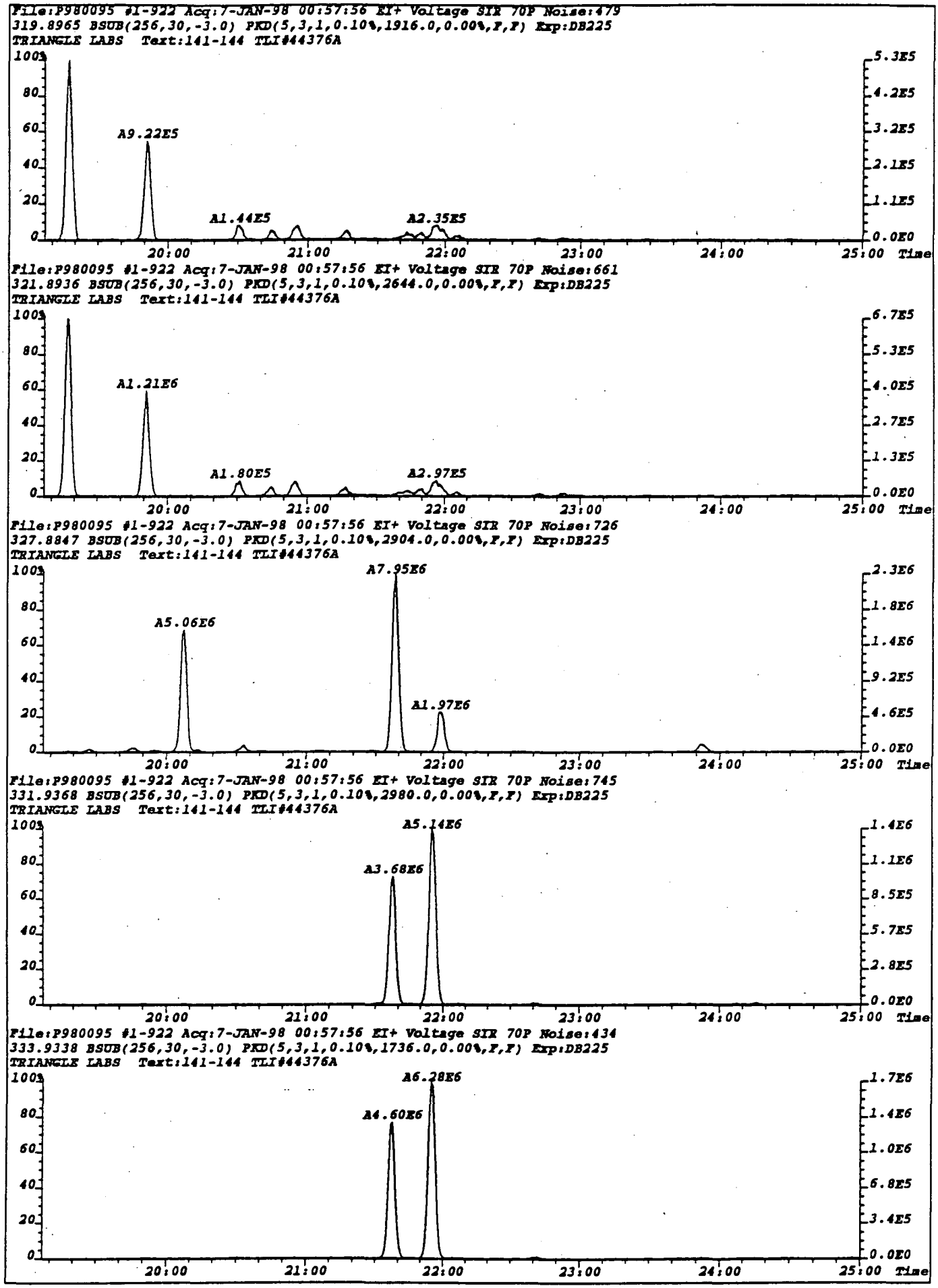
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

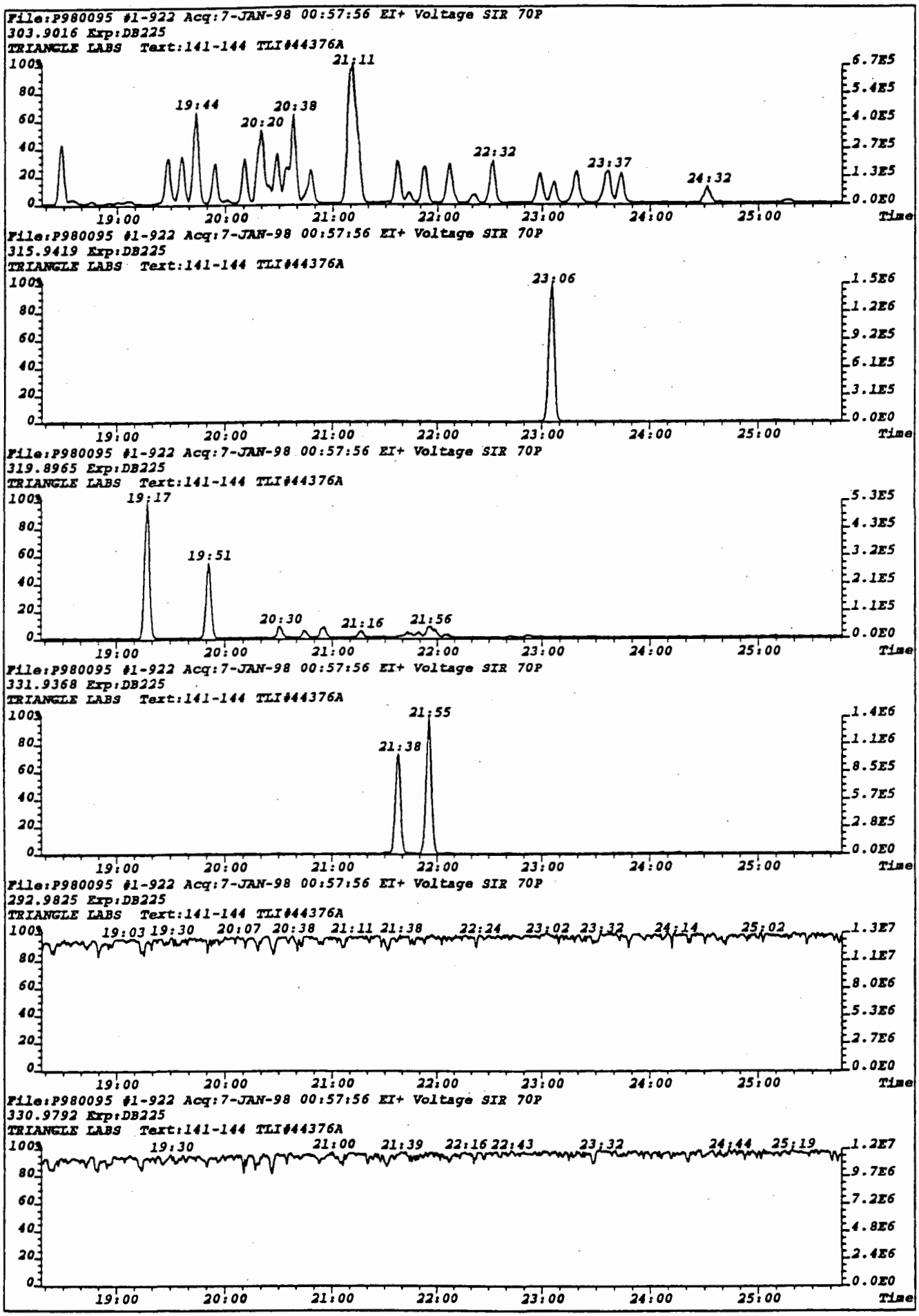
*** End of Report ***

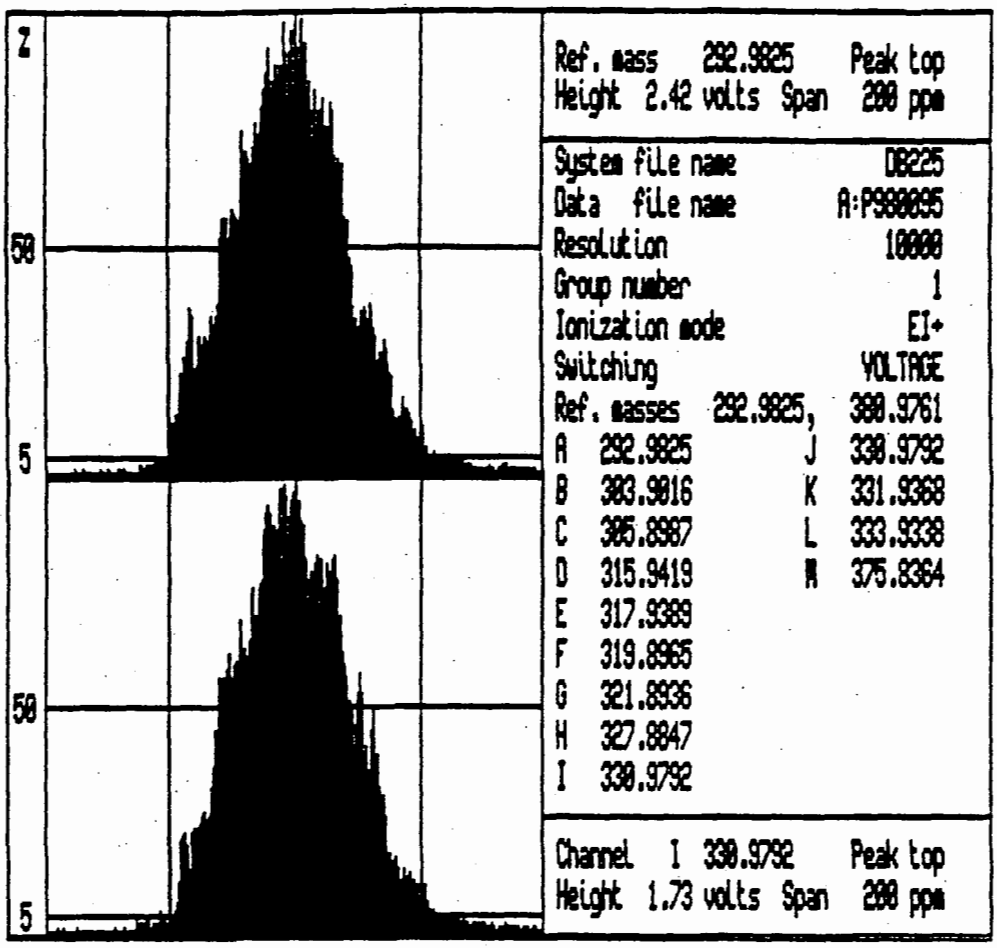

File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
22:46
22:59
23:19
23:37
24:32
25:17
Time


File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
23:06
Time


File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:557
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2228.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A4.17E6
A1.55E6
A1.99E6
A1.73E6
A7.41E5
A7.74E5
A7.06E5
A3.14E5
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:865
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3460.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A5.47E6
A2.03E6
A2.58E6
A2.00E6
A9.67E5
A9.93E5
A7.76E5
A9.42E5
A4.04E5
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:776
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3104.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A5.44E6
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:649
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2596.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A7.06E6
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
18:33
20:43
19:04
19:34
20:13
21:23
22:05
22:56
23:24
24:05
24:52
Time


File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:479
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1916.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A9.22E5
A1.44E5
A2.35E5
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:661
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2644.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A1.21E6
A1.80E5
A2.97E5
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:726
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2904.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A7.95E6
A5.06E6
A1.97E6
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:745
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2980.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A5.14E6
A3.68E6
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P Noise:434
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1736.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
A6.28E6
A4.60E6
Time


File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
19:44
20:20
20:38
21:11
22:32
23:37
24:32
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
23:06
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
19:17
19:51
20:30
21:16
21:56
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
21:38
21:55
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
19:03 19:30 20:07 20:38 21:11 21:38 22:24 23:02 23:32 24:14 25:02
Time
File:P980095 #1-922 Acq:7-JAN-98 00:57:56 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:141-144 TLI#44376A
19:30 21:00 21:39 22:16 22:43 23:32 24:44 25:19
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height 2.42 volts Span 200 ppm
System file name DB225
Data file name A:P980895
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 368.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height 1.73 volts Span 200 ppm

Eastern Research Group

TLI Project: **44376A** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **153-156** — Analysis File: **U980028**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPMIT204**
TLI ID:	**194-59-11A-D**	Date Extracted:	**12/29/97**	ICal:	**UF51058**
		Date Analyzed:	**01/06/98**	ConCal:	**U980025**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**U980026**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**KAS**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.68			0.79	25:21	PR_
1,2,3,7,8-PeCDD	4.0			1.61	29:36	___
1,2,3,4,7,8-HxCDD	4.5			1.20	32:44	___
1,2,3,6,7,8-HxCDD	7.3			1.25	32:49	___
1,2,3,7,8,9-HxCDD	10.3			1.23	33:06	___
1,2,3,4,6,7,8-HpCDD	43.1			1.03	36:03	E__
1,2,3,4,6,7,8,9-OCDD	69.6			0.84	39:36	___
2,3,7,8-TCDF	65.2			0.75	24:40	E__
1,2,3,7,8-PeCDF	15.6			1.59	28:35	___
2,3,4,7,8-PeCDF	29.4			1.51	29:16	___
1,2,3,4,7,8-HxCDF	101			1.24	32:02	E__
1,2,3,6,7,8-HxCDF	34.9			1.25	32:09	___
2,3,4,6,7,8-HxCDF	53.2			1.26	32:37	E__
1,2,3,7,8,9-HxCDF	3.1			1.29	33:22	PR_
1,2,3,4,6,7,8-HpCDF	163			1.05	35:01	E__
1,2,3,4,7,8,9-HpCDF	24.8			1.04	36:33	___
1,2,3,4,6,7,8,9-OCDF	144			0.87	39:49	E__

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	72.0	12			E__
Total PeCDD	65.7	10		97.8	___
Total HxCDD	93.7	7			___
Total HpCDD	86.7	2			E__
Total TCDF	364	16			E__
Total PeCDF	398	17		399	E__
Total HxCDF	413	13			E__
Total HpCDF	270	4			E__

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:17 01/10/98

TLI Project: **44376A** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **153-156** Analysis File: **U980028**

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.4	61.0	40%-130%	0.75	24:38	___
$^{13}C_{12}$-2,3,7,8-TCDD	2.1	53.3	40%-130%	0.80	25:20	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.4	59.1	40%-130%	1.49	28:34	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.0	50.0	40%-130%	1.49	29:35	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.3	58.4	40%-130%	0.51	32:08	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.0	74.3	40%-130%	1.20	32:48	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.8	69.6	25%-130%	0.45	35:01	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.7	68.7	25%-130%	1.04	36:02	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4.9	61.3	25%-130%	0.86	39:36	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.6	90.7	40%-130%	1.53	29:15	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.4	109	40%-130%	0.51	32:02	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.8	93.8	40%-130%	1.20	32:44	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.9	97.7	40%-130%	0.44	36:32	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.5	87.9	25:21	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.6	65.0	40%-130%	0.51	33:22	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.5	63.5	40%-130%	0.51	32:37	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:09	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.18	33:07	___

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:17 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980028B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00		0.77	2,630.52			0.000			
	KN			21:29		0.74	50,196.40	21,398.50	28,797.90	0.872			
	K			21:59		0.76	48,271.20	20,851.30	27,419.90	0.892			
	K			22:13		0.75	49,955.70	21,396.90	28,558.80	0.902			
	K			22:37		0.75	251,645.00	107,507.00	144,138.00	0.918			E
	K			22:56		0.74	154,767.30	65,946.20	88,821.10	0.931			E
	K			23:20		0.75	166,704.30	71,219.60	95,484.70	0.947			E
	K			23:36		0.74	118,319.60	50,474.70	67,844.90	0.958			E
				23:50		0.74	163,606.00	69,813.10	93,792.90	0.968			E
				24:03		0.74	201,437.50	85,969.50	115,468.00	0.976			E
				24:14		0.75	66,543.00	28,536.10	38,006.90	0.984			
				24:28		0.74	65,614.80	27,935.40	37,679.40	0.993			
				24:40		0.75	325,383.00	139,111.00	186,272.00	1.001	2378-TCDF	AN	E
				25:04		0.75	71,034.80	30,362.20	40,672.60	1.018			
				25:17		0.74	65,011.50	27,682.00	37,329.50	1.026			
				25:32		0.79	11,106.90	4,905.08	6,201.82	1.037			
				26:23		0.74	8,372.51	3,565.69	4,806.82	1.071			
304-306			16 Peaks				1,817,969.51						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.34	61.61			0.000			
	DC	WL		22:25	RO	0.98	261.41			0.910			
	DC	WL		22:59		0.81	653.35			0.933			
				23:53		0.74	72.73	30.94	41.79	0.970			
				24:04		0.87	537.38	249.75	287.63	0.977			
				24:38		0.75	16,107.16	6,904.38	9,202.78	1.000	13C12-2378-TCDF	IS0	
				25:17		0.67	303.79	122.02	181.77	1.026			
	DC	WH		26:10		0.84	217.36			1.062			
	DC	WH		26:38		0.82	803.61			1.081			
	DC	WH		26:47		0.73	164.10			1.087			
	DC	WH		26:56		0.65	31.62			1.093			
316-318			4 Peaks				17,021.06						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	0.24	24.67			0.000			
	KN			22:49		0.77	86,137.90	37,506.60	48,631.30	0.901			E
	NK			23:11		0.77	56,734.10	24,721.90	32,012.20	0.915			
	K			23:30		0.79	7,285.58	3,219.40	4,066.18	0.928			
	K			24:10		0.77	26,419.10	11,473.80	14,945.30	0.954			
				24:26		0.80	15,780.03	7,017.40	8,762.63	0.964			
				24:50		0.81	7,408.23	3,324.43	4,083.80	0.980			

Compound/ M_Z....	QC.	Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	M				25:15		0.77	26,800.00	11,700.00	15,100.00	0.997			
	AN				25:21		0.79	2,255.00	995.00	1,260.00	1.001	2378-TCDD	AN	PR
					25:31		0.79	3,594.40	1,589.40	2,005.00	1.007			
					25:41		0.79	3,957.14	1,750.86	2,206.28	1.014			
					25:54		0.86	1,387.98	640.69	747.29	1.022			
					26:20		0.76	1,360.13	586.35	773.78	1.039			
320-322				12	Peaks			239,119.59						
37Cl-TCDD											0.921-1.079			
328		DC	NL		0:00			48.70			0.000			
		DC	WL		22:48			447.36			0.900			
		DC	WL		23:06			522.57			0.912			
		DC	WL		23:12			418.96			0.916			
					23:25			173.49	173.49		0.924			
					23:59			17,808.20	17,808.20		0.947			
					24:11			457.32	457.32		0.955			
					24:19			220.65	220.65		0.960			
					24:39			457.92	457.92		0.973			
					24:51			147.39	147.39		0.981			
					25:21			9,435.46	9,435.46		1.001	37Cl-TCDD	CLS	
					25:45			10,441.10	10,441.10		1.016			
					26:34			46.89	46.89		1.049			
					26:39			84.66	84.66		1.052			
					26:47			71.47	71.47		1.057			
328				11	Peaks			39,344.55						
13C12-TCDD							0.65-0.89				0.921-1.079			
332-334		DC	NL		0:00	RO	1.51	25.75			0.000			
					25:09		0.82	18,000.51	8,102.57	9,897.94	0.993	13C12-1234-TCDD	RS1	
					25:20		0.80	10,720.27	4,777.34	5,942.93	1.000	13C12-2378-TCDD	IS1	
					25:39	RO	0.94	387.77	205.03	219.08	1.013			
					25:51	RO	1.15	64.92	42.16	36.68	1.020			
332-334				4	Peaks			29,173.47						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF							1.32-1.78				0.925-1.065			
340-342		DC	NL		0:00	RO	0.96	10.74			0.000			
					26:35		1.54	116,622.40	70,759.50	45,862.90	0.931			
					27:03	RO	0.87	1,999.02	1,215.09	1,391.10	0.947			
					27:13		1.51	3,176.74	1,909.19	1,267.55	0.953			
					27:20		1.53	3,233.73	1,953.87	1,279.86	0.957			
					27:35		1.51	40,046.10	24,081.60	15,964.50	0.966			
					27:43		1.51	272,815.00	164,272.00	108,543.00	0.970			E
					27:53		1.52	65,871.20	39,732.10	26,139.10	0.976			
					28:12		1.50	107,989.30	64,849.80	43,139.50	0.987			
					28:18		1.51	142,981.10	86,000.20	56,980.90	0.991			E
	M				28:30		1.56	59,600.00	36,300.00	23,300.00	0.998			
	AN				28:35		1.59	49,700.00	30,500.00	19,200.00	1.001	12378-PeCDF	AN	
					28:44		1.50	46,647.40	28,015.10	18,632.30	1.006			
					28:51		1.52	78,599.60	47,360.10	31,239.50	1.010			
					29:16		1.51	90,819.20	54,641.80	36,177.40	1.025	23478-PeCDF	AN	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:25		1.51	130,996.70	78,741.50	52,255.20	1.030			E
				29:44		1.50	29,270.60	17,542.00	11,728.60	1.041			
				30:07		1.39	324.47	188.89	135.58	1.054			
				30:15		1.52	10,891.45	6,577.74	4,313.71	1.059			
340-342			18 Peaks				1,251,584.01						
13C12-PeCDF				1.32-1.78						0.860-1.140			
352-354	DC	NL		0:00	RO	1.20	10.51			0.000			
				26:24	RO	1.10	28.66	17.42	15.82	0.924			
				26:37		1.47	130.94	78.01	52.93	0.932			
				26:47		1.48	54.98	32.77	22.21	0.938			
				27:14		1.67	15.70	9.83	5.87	0.953			
				27:26		1.39	66.77	38.89	27.88	0.960			
				27:47		1.45	174.21	103.05	71.16	0.973			
				27:56	RO	1.24	367.46	223.36	180.41	0.978			
				28:11		1.37	42.78	24.70	18.08	0.987			
				28:18	RO	3.81	95.80	143.28	37.57	0.991			
				28:34		1.49	12,138.84	7,264.06	4,874.78	1.000	13C12-PeCDF 123	IS2	
				28:51		1.48	272.09	162.59	109.50	1.010			
				29:03	RO	1.26	100.96	61.37	48.62	1.017			
				29:15		1.53	10,638.24	6,432.31	4,205.93	1.024	13C12-PeCDF 234	SUR1	
				29:52	RO	0.90	53.39	32.45	36.00	1.046			
				30:06	RO	0.94	35.68	21.69	23.00	1.054			
				30:15		1.69	123.08	77.27	45.81	1.059			
352-354			16 Peaks				24,339.58						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.935-1.022			
356-358	DC	NL		0:00	RO	1.14	7.35			0.000			
D	DC	WL		27:35	RO	0.88	425.31			0.932			
				27:49	RO	1.19	51,633.22	31,384.90	26,426.90	0.940			
				28:18		1.32	4,247.52	2,419.07	1,828.45	0.957			
				28:32		1.56	38,427.00	23,428.70	14,998.30	0.965			
				28:40		1.61	7,969.85	4,914.28	3,055.57	0.969			
				28:51		1.57	24,756.16	15,138.50	9,617.66	0.975			
				29:01		1.61	4,087.86	2,519.35	1,568.51	0.981			
				29:07		1.58	9,159.61	5,606.93	3,552.68	0.984			
				29:19		1.57	10,217.95	6,238.38	3,979.57	0.991			
				29:27	RO	0.84	5,226.58	3,176.94	3,764.62	0.995			
				29:36		1.61	7,022.96	4,335.08	2,687.88	1.001	12378-PeCDD	AN	
				29:44		1.60	5,582.53	3,438.36	2,144.17	1.005			
				30:04		1.69	4,798.56	3,013.61	1,784.95	1.016			
356-358			12 Peaks				173,129.80						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	1.98	3.67			0.000			
				27:43	RO	1.31	32.97	20.04	15.33	0.937			
				27:48	RO	3.02	24.89	29.46	9.76	0.940			
	DC	SN		27:58	RO	0.58	3.54			0.945			
				28:17	RO	2.46	30.06	29.04	11.79	0.956			
				28:32	RO	1.24	37.21	22.62	18.17	0.965			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		28:40		1.53	4.95			0.969			
				28:48	RO	4.10	7.93	12.76	3.11	0.974			
				28:50	RO	1.05	18.85	11.46	10.93	0.975			
	DC	SN		29:07	RO	5.70	3.80			0.984			
				29:17	RO	3.82	12.06	18.07	4.73	0.990			
				29:26	RO	1.04	11.70	7.11	6.82	0.995			
				29:35		1.49	5,311.54	3,175.06	2,136.48	1.000	13C12-PeCDD 123	IS3	
				29:43		1.51	922.58	555.36	367.22	1.005			
				29:57	RO	3.96	22.57	35.09	8.85	1.012			
				30:07		1.42	15.61	9.15	6.46	1.018			
				30:18	RO	5.02	14.41	28.39	5.65	1.024			
368-370		13	Peaks				6,462.38						

---------- Above: PeCDD / HxCDF Follows ----------

HxCDF				1.05-1.43					0.962-1.047				
374-376	DC	NL		0:00		1.26	2,385.85			0.000			
				31:05		1.24	91,814.00	50,882.00	40,932.00	0.967			E
				31:13		1.23	218,055.60	120,371.00	97,684.60	0.971			E
				31:23		1.31	18,173.42	10,298.30	7,875.12	0.977			
				31:31		1.23	28,238.70	15,563.60	12,675.10	0.981			
				31:41		1.22	15,040.77	8,259.31	6,781.46	0.986			
				31:51		1.24	2,443.34	1,352.36	1,090.98	0.991			
				32:02		1.24	207,127.80	114,716.00	92,411.80	0.997	123478-HxCDF	AN	E
				32:09		1.25	89,263.20	49,531.70	39,731.50	1.001	123678-HxCDF	AN	
				32:15		1.26	25,468.60	14,178.00	11,290.60	1.004			
				32:26		1.23	38,349.70	21,184.50	17,165.20	1.009			
				32:37		1.26	107,065.70	59,699.30	47,366.40	1.015	234678-HxCDF	AN	E
	AN			33:22		1.29	5,450.00	3,070.00	2,380.00	1.038	123789-HxCDF	AN	PR
	M			33:28		1.24	27,100.00	15,000.00	12,100.00	1.041			
374-376		13	Peaks				873,590.83						

13C12-HxCDF				0.43-0.59					0.876-1.124				
384-386	DC	NL		0:00	RO	1.78	45.39			0.000			
				31:13	RO	0.83	243.20	133.86	161.06	0.971			
				31:49	RO	1.57	48.06	49.82	31.83	0.990			
				32:02		0.51	7,363.14	2,499.07	4,864.07	0.997	13C12-HxCDF 478	SUR2	
				32:08		0.51	8,165.43	2,744.46	5,420.97	1.000	13C12-HxCDF 678	IS4	
				32:37		0.51	8,009.52	2,711.19	5,298.33	1.015	13C12-HxCDF 234	ALT2	
				32:55	RO	1.26	136.17	113.37	90.18	1.024			
				33:22		0.51	6,321.05	2,129.77	4,191.28	1.038	13C12-HxCDF 789	ALT1	
384-386		7	Peaks				30,286.57						

---------- Above: HxCDF / HxCDD Follows ----------

HxCDD				1.05-1.43					0.958-1.014				
390-392	DC	NL		0:00	RO	0.71	342.86			0.000			
				31:34		1.28	15,273.11	8,582.45	6,690.66	0.962			
				32:01		1.22	65,269.00	35,910.10	29,358.90	0.976			
				32:13		1.23	36,447.40	20,074.60	16,372.80	0.982			
				32:23		1.09	5,933.51	3,093.97	2,839.54	0.987			
				32:44		1.20	6,621.84	3,611.36	3,010.48	0.998	123478-HxCDD	AN	

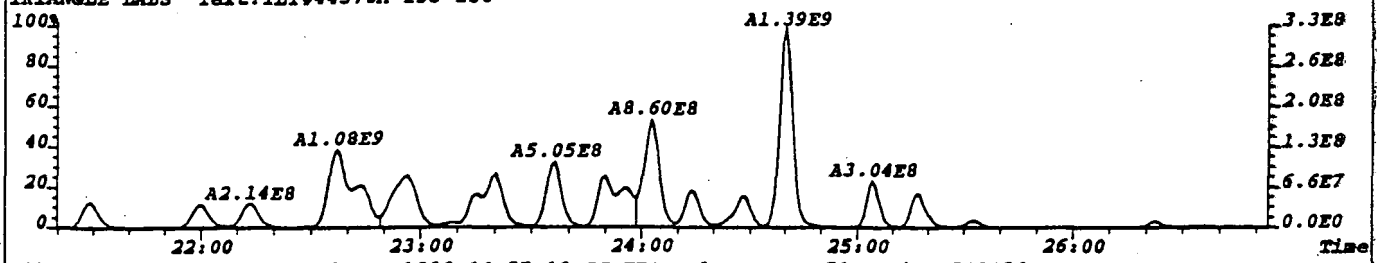
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:49		1.25	13,637.12	7,586.71	6,050.41	1.001	123678-HxCDD	AN	
				33:06		1.23	18,619.27	10,251.40	8,367.87	1.009	123789-HxCDD	AN	
390-392			7 Peaks				161,801.25						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	2.20	15.03			0.000			
				32:02		1.05	38.07	19.48	18.59	0.977			
				32:44		1.20	5,273.12	2,875.21	2,397.91	0.998	13C12-HxCDD 478	SUR3	
				32:48		1.20	7,681.27	4,196.41	3,484.86	1.000	13C12-HxCDD 678	IS5	
				33:07		1.18	10,392.68	5,623.36	4,769.32	1.010	13C12-HxCDD 789	RS2	
402-404			4 Peaks				23,385.14						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00		1.01	96.86			0.000			
				35:01		1.05	341,420.00	174,926.00	166,494.00	1.000	1234678-HpCDF	AN	E
				35:17		1.05	69,346.40	35,498.90	33,847.50	1.008			
				35:27		1.05	84,856.20	43,549.30	41,306.90	1.012			E
D	DC	NH		35:55	RO	0.54	340.41			1.026			
				36:33		1.04	40,502.50	20,652.40	19,850.10	1.044	1234789-HpCDF	AN	
408-410			4 Peaks				536,125.10						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	1.95	19.54			0.000			
				35:01		0.45	5,949.70	1,836.50	4,113.20	1.000	13C12-HpCDF 678	IS6	
				36:32		0.44	4,660.82	1,432.01	3,228.81	1.043	13C12-HpCDF 789	SUR4	
418-420			2 Peaks				10,610.52						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00	RO	1.37	43.86			0.000			
D	DC	WL		35:09	RO	0.45	1,026.39			0.975			
				35:18		1.01	56,202.30	28,303.50	27,898.80	0.980			E
				36:03		1.03	55,523.30	28,199.40	27,323.90	1.000	1234678-HpCDD	AN	E
424-426			2 Peaks				111,725.60						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.06	19.54			0.000			
				35:18	RO	0.72	51.02	26.01	36.28	0.980			
				35:32	RO	3.80	8.59	15.99	4.21	0.986			
				36:02		1.04	5,180.07	2,635.16	2,544.91	1.000	13C12-HpCDD 678	IS7	
436-438			3 Peaks				5,239.68						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	4.73	28.10			0.000			
				39:49		0.87	171,627.70	80,077.40	91,550.30	1.005	OCDF	AN	E
442-444			1 Peak				171,627.70						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00		1.00	11.06			0.000			
				39:36		0.84	66,941.80	30,632.60	36,309.20	1.000	OCDD		AN
458-460			1 Peak				66,941.80						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00	RO	2.02	3.57			0.000			
				39:36		0.86	6,941.79	3,215.80	3,725.99	1.000	13C12-OCDD		IS8
470-472			1 Peak				6,941.79						

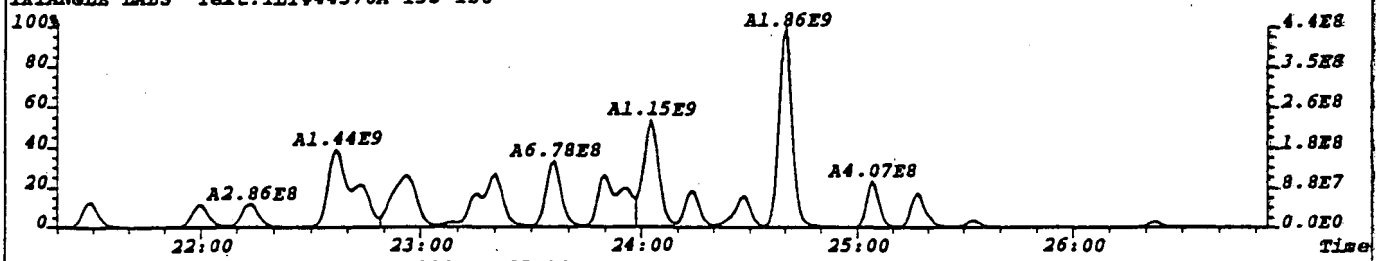
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

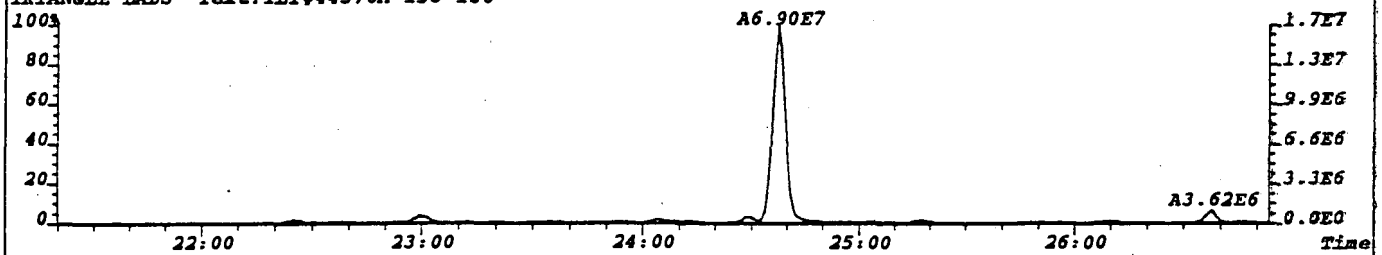
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:571803
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,2287212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



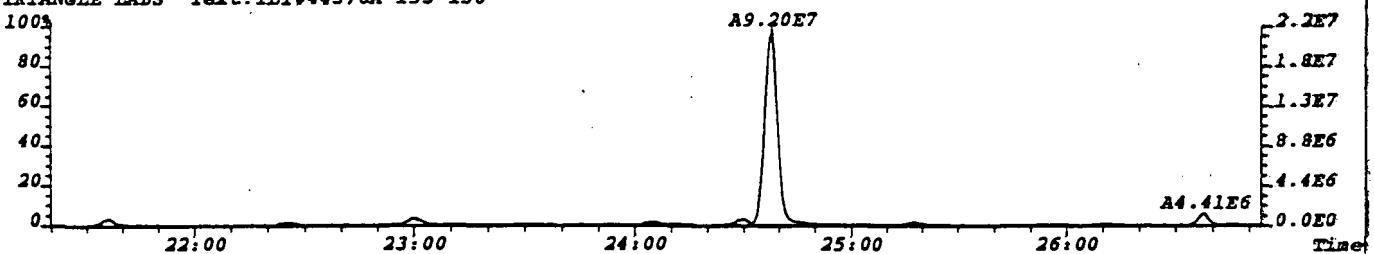
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:743456
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,2973824.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



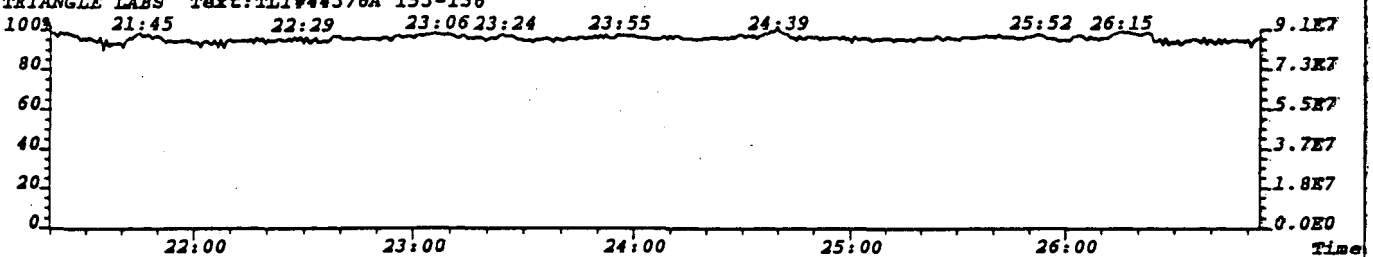
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:23299
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,93196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



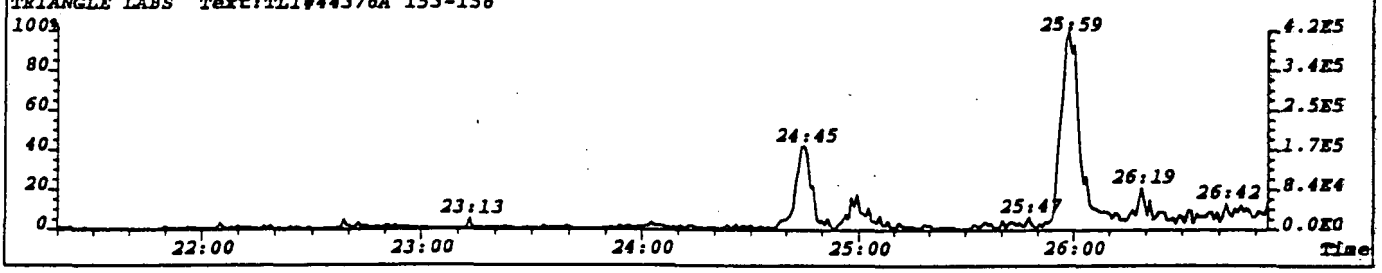
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:17404
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,69616.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

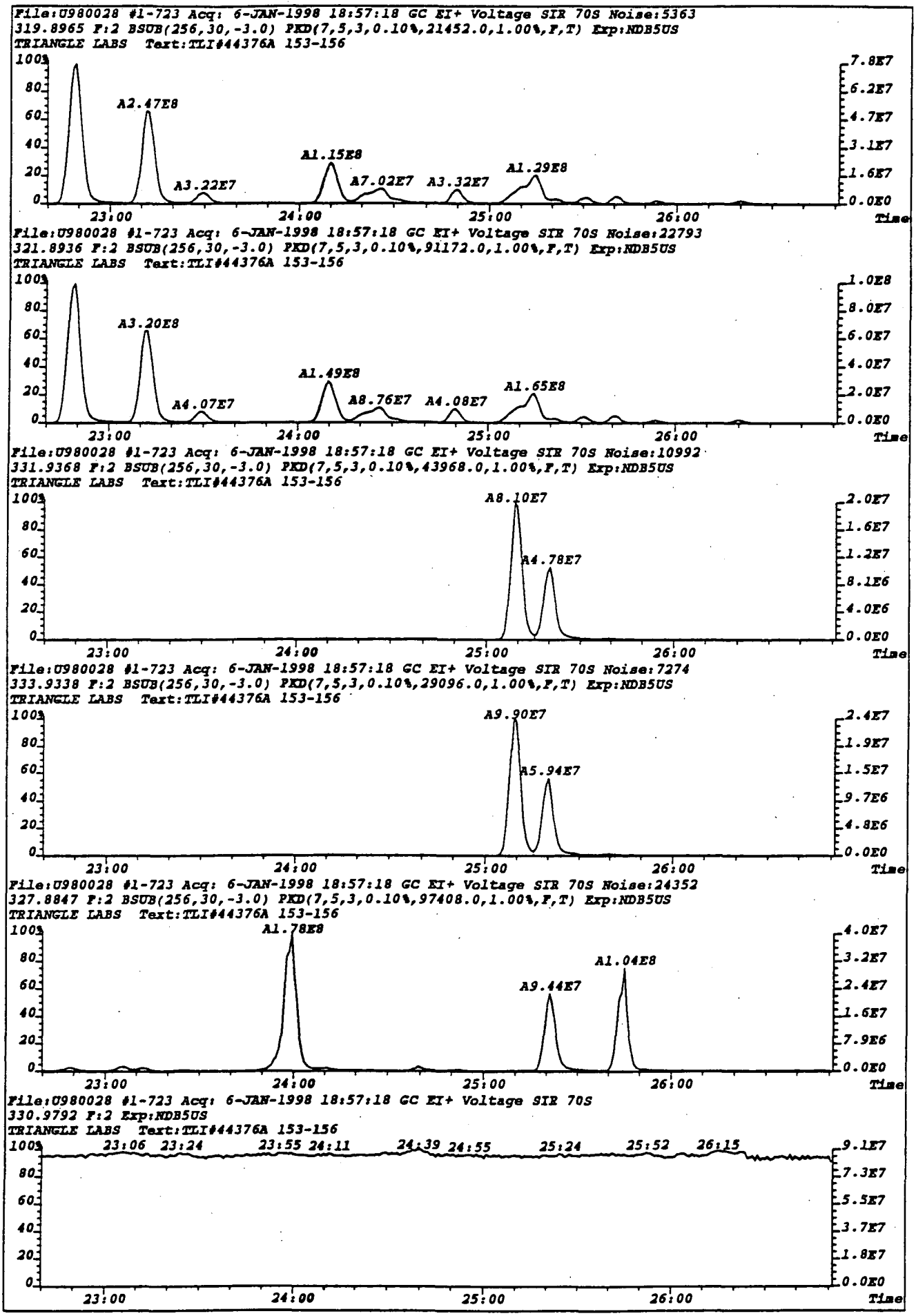


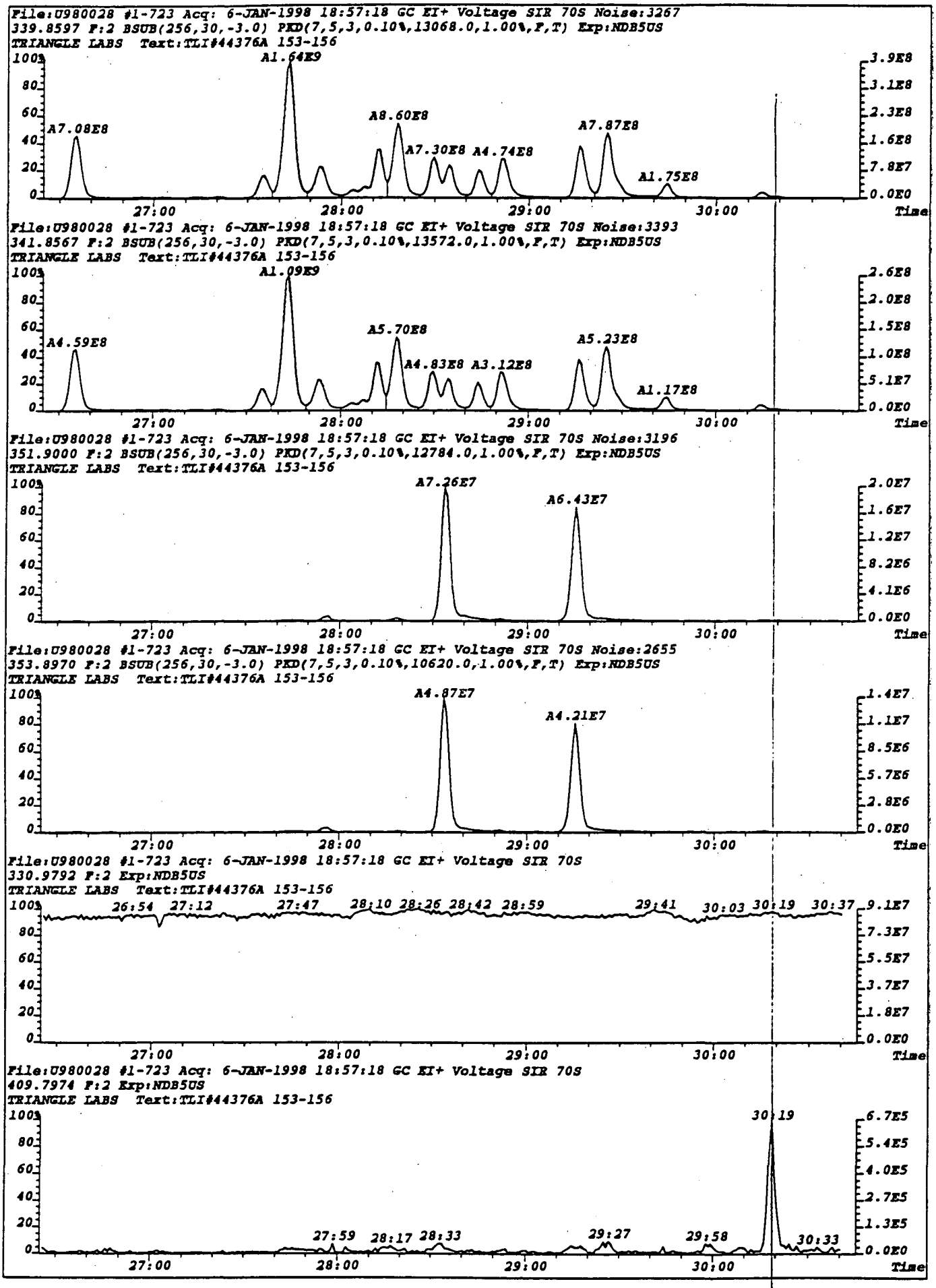
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

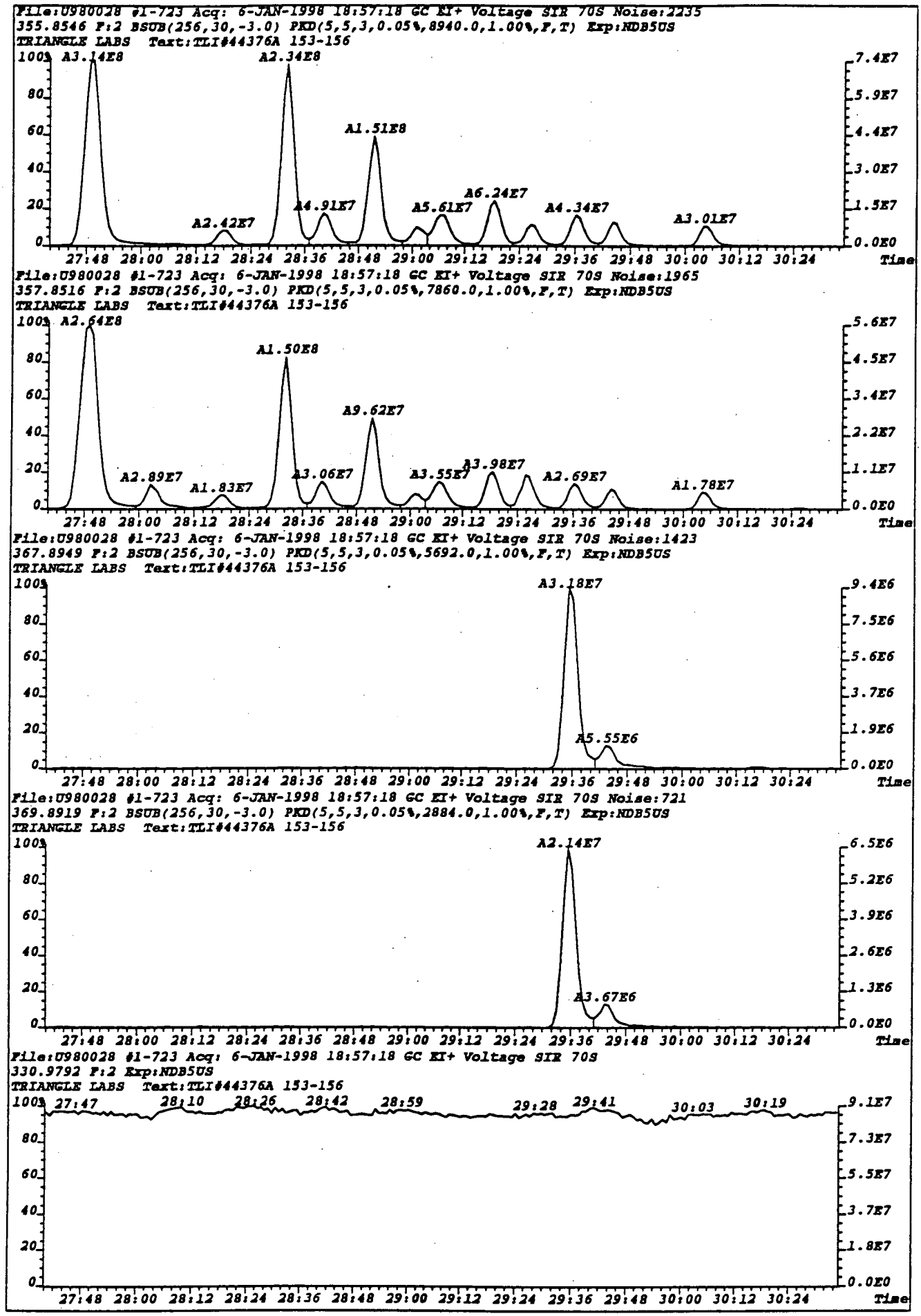


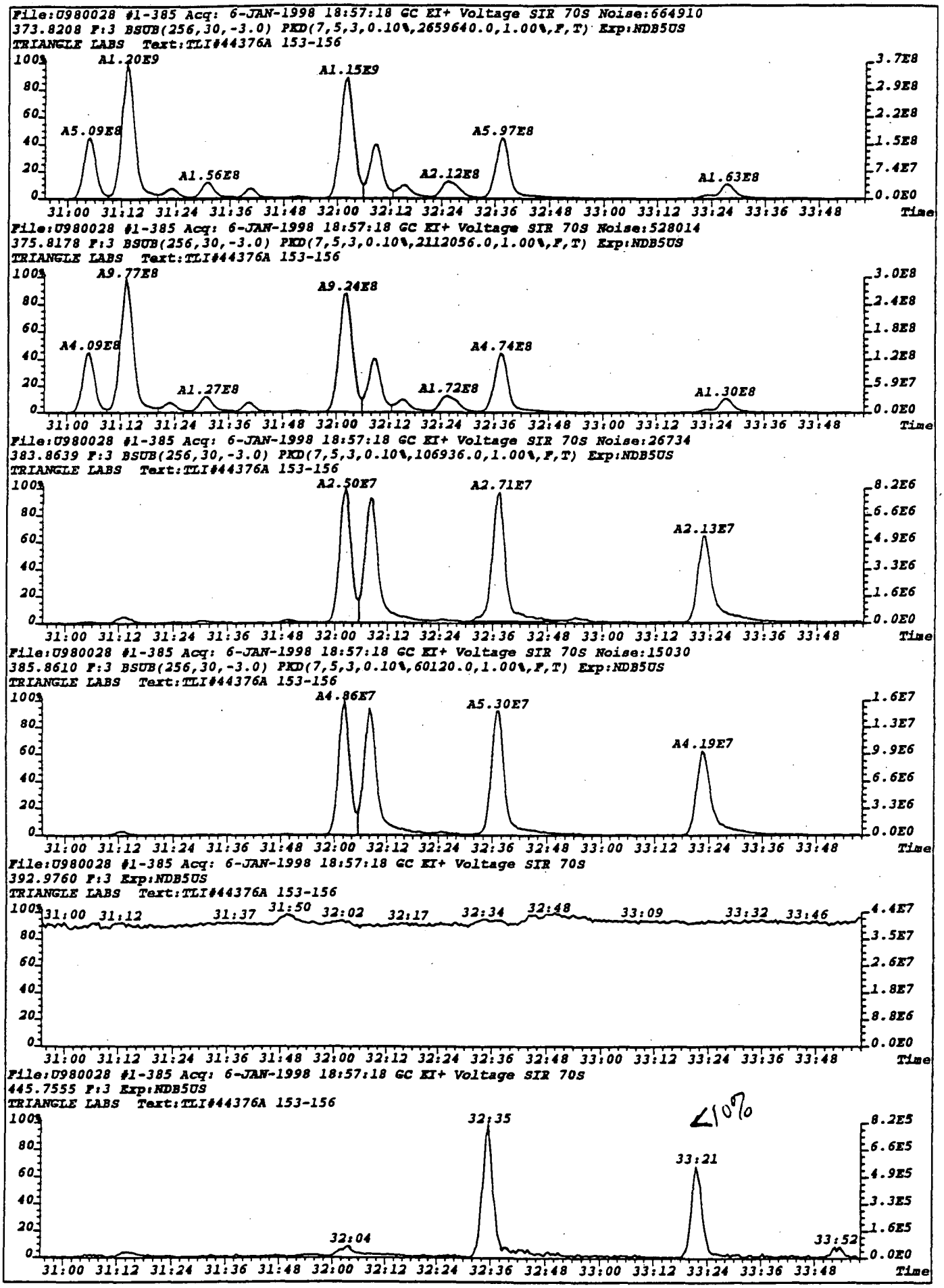
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

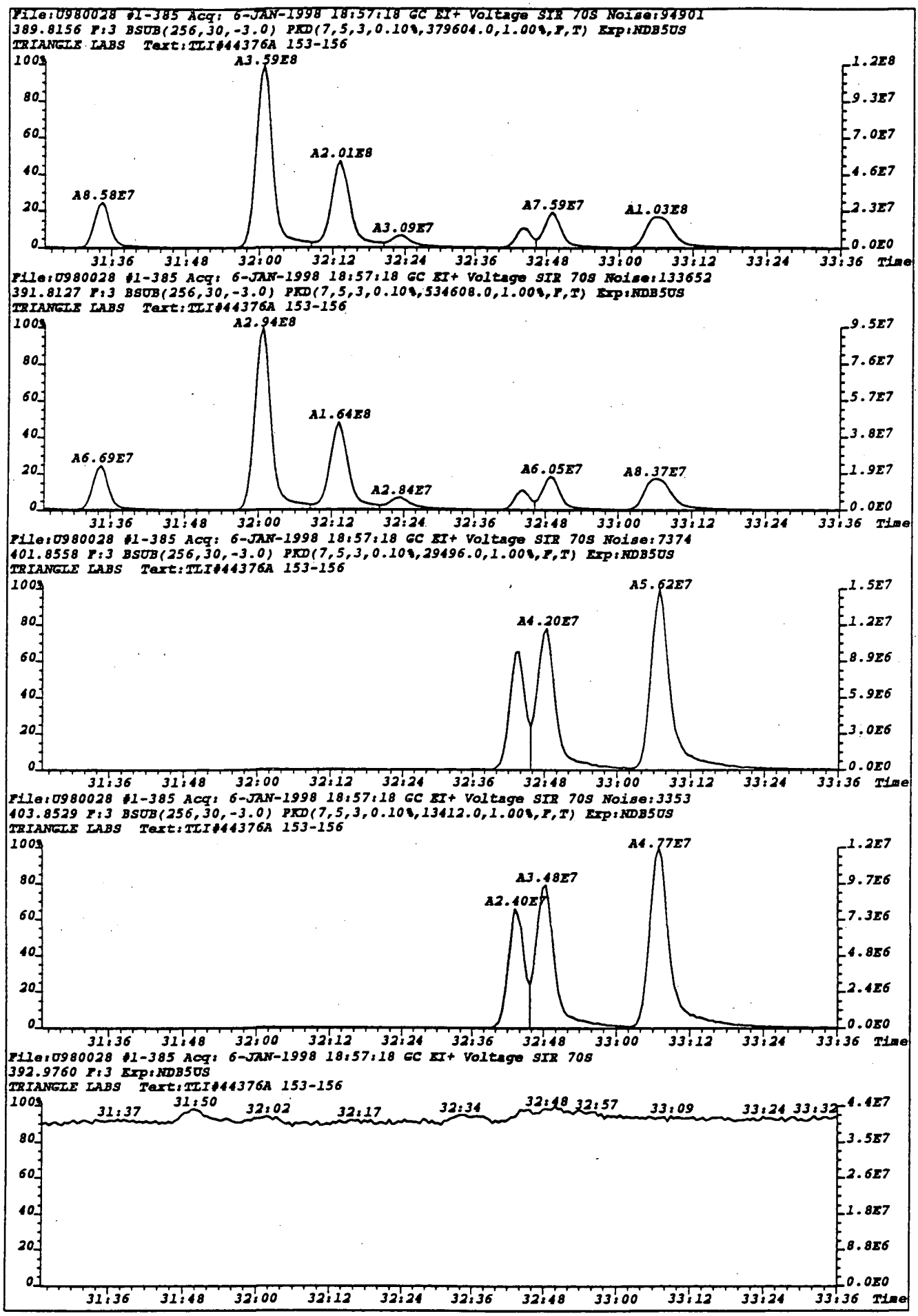



File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:5363
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,21452.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.47E8
A3.22E7
A1.15E8
A7.02E7
A3.32E7
A1.29E8
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:22793
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,91172.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A3.20E8
A4.07E7
A1.49E8
A8.76E7
A4.08E7
A1.65E8
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:10992
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,43968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A8.10E7
A4.78E7
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:7274
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29096.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A9.90E7
A5.94E7
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:24352
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,97408.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A1.78E8
A9.44E7
A1.04E8
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
23:06 23:24 23:55 24:11 24:39 24:55 25:24 25:52 26:15
23:00 24:00 25:00 26:00
Time


File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:3267
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13068.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A1.64E9
A8.60E8
A7.08E8
A7.30E8
A4.74E8
A7.87E8
A1.75E8
3.9E8
3.1E8
2.3E8
1.6E8
7.8E7
0.0E0
27:00
28:00
29:00
30:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:3393
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A1.09E9
A5.70E8
A4.59E8
A4.83E8
A3.12E8
A5.23E8
A1.17E8
2.6E8
2.0E8
1.5E8
1.0E8
5.1E7
0.0E0
27:00
28:00
29:00
30:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:3196
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12784.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A7.26E7
A6.43E7
2.0E7
1.6E7
1.2E7
8.2E6
4.1E6
0.0E0
27:00
28:00
29:00
30:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:2655
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10620.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A4.87E7
A4.21E7
1.4E7
1.1E7
8.5E6
5.7E6
2.8E6
0.0E0
27:00
28:00
29:00
30:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
26:54
27:12
27:47
28:10
28:26
28:42
28:59
29:41
30:03
30:19
30:37
9.1E7
7.3E7
5.5E7
3.7E7
1.8E7
0.0E0
27:00
28:00
29:00
30:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
30:19
27:59
28:17
28:33
29:27
29:58
30:33
6.7E5
5.4E5
4.0E5
2.7E5
1.3E5
0.0E0
27:00
28:00
29:00
30:00
Time

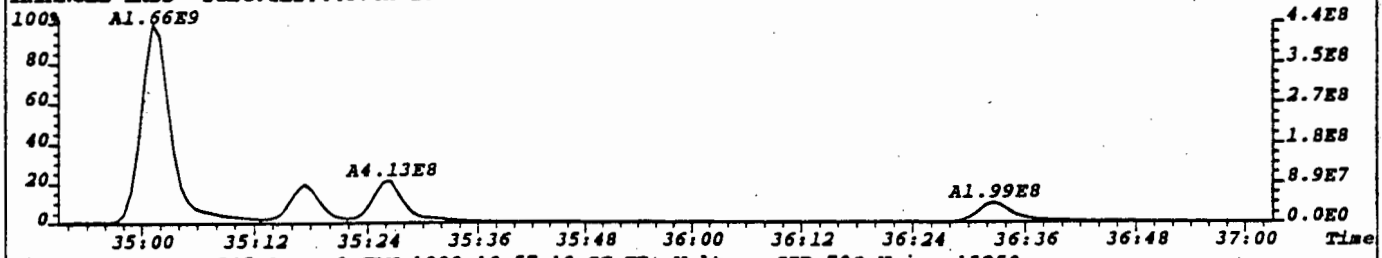

File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:2235
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,8940.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A3.14E8
A2.34E8
A1.51E8
A2.42E7
A4.91E7
A5.61E7
A6.24E7
A4.34E7
A3.01E7
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:1965
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,7860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.64E8
A1.50E8
A9.62E7
A2.89E7
A1.83E7
A3.06E7
A3.55E7
A3.98E7
A2.69E7
A1.78E7
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:1423
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,5692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A3.18E7
A5.55E6
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:721
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,2884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.14E7
A3.67E6
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
Time


File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:664910
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2659640.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A1.20E9
A1.15E9
A5.09E8
A5.97E8
A1.56E8
A2.12E8
A1.63E8
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:528014
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2112056.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A9.77E8
A9.24E8
A4.09E8
A4.74E8
A1.27E8
A1.72E8
A1.30E8
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:26734
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,106936.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.50E7
A2.71E7
A2.13E7
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:15030
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,60120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A4.86E7
A5.30E7
A4.19E7
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
32:35
<10%
33:21
32:04
33:52
Time

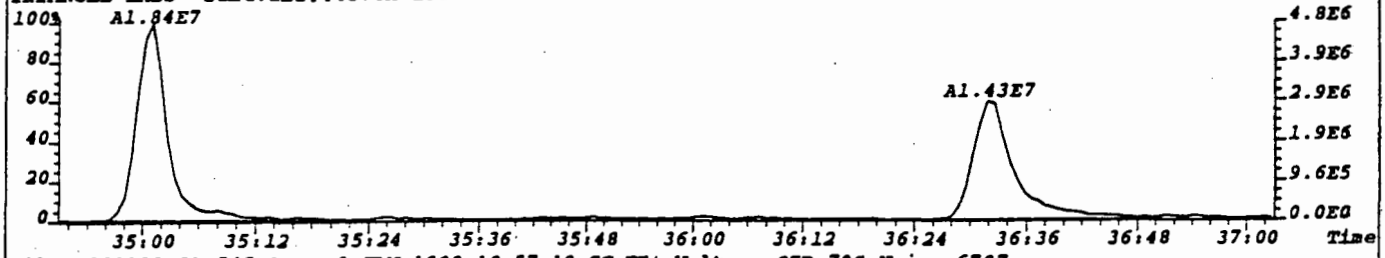

File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:94901
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,379604.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A3.59E8
A2.01E8
A8.58E7
A3.09E7
A7.59E7
A1.03E8
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:133652
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,534608.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.94E8
A1.64E8
A6.69E7
A2.84E7
A6.05E7
A8.37E7
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:7374
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29496.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A5.62E7
A4.20E7
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:3353
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A4.77E7
A3.48E7
A2.40E7
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
Time

File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:24356
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,97424.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

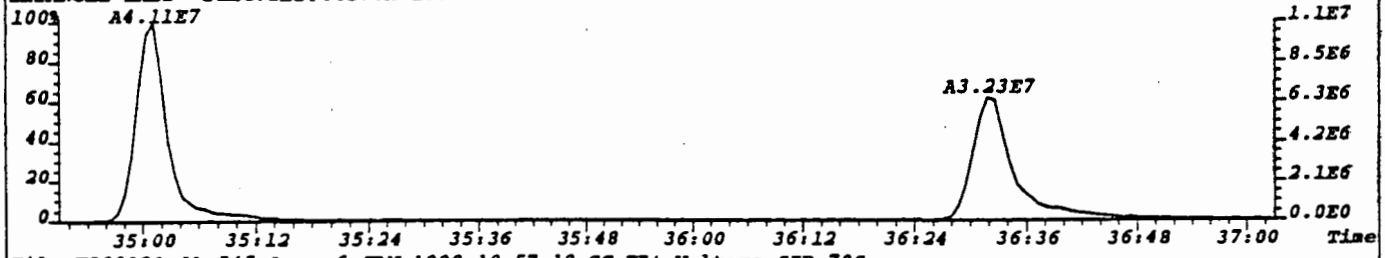
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:24075
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,96300.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



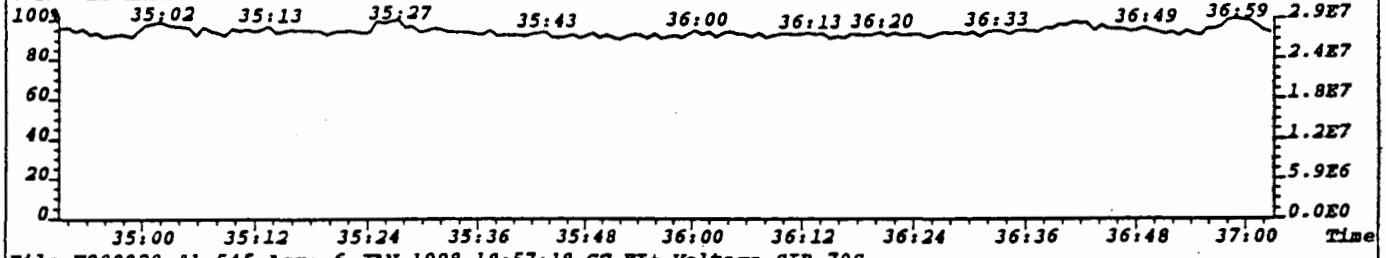
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:13250
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,53000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



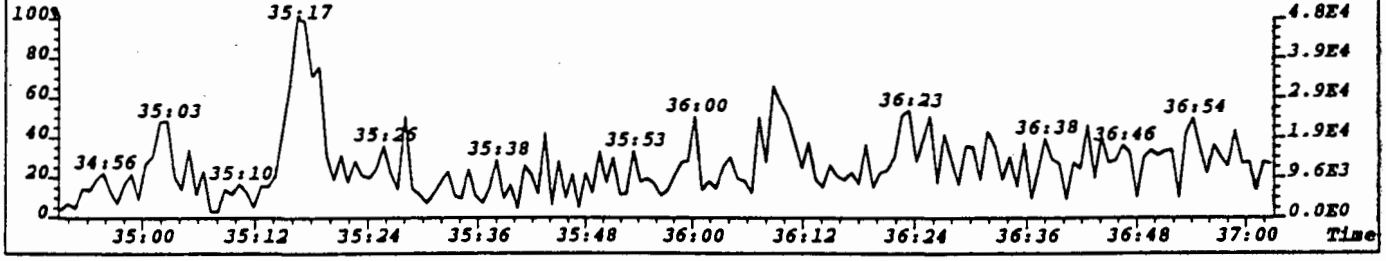
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:6787
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,27148.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

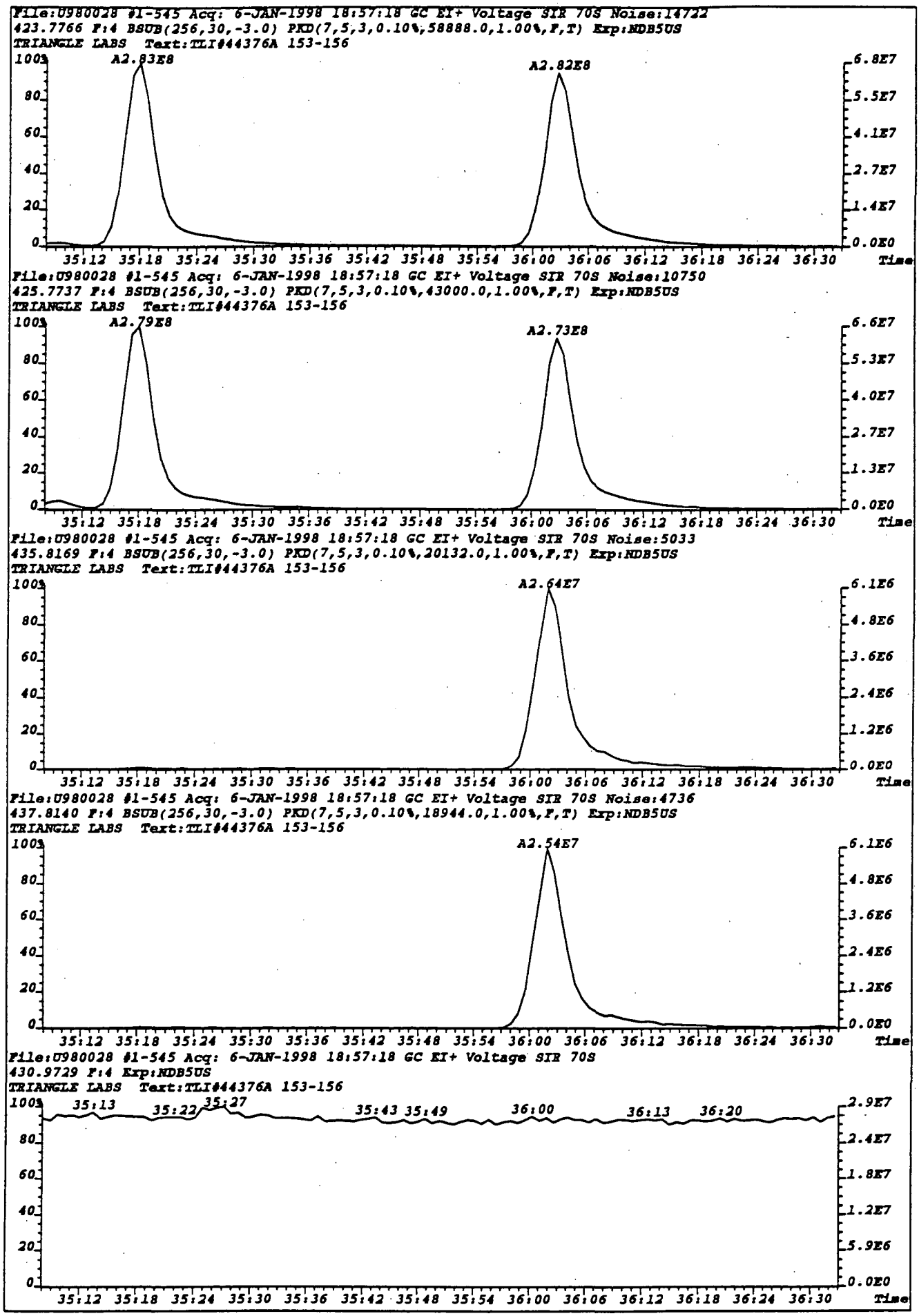


File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

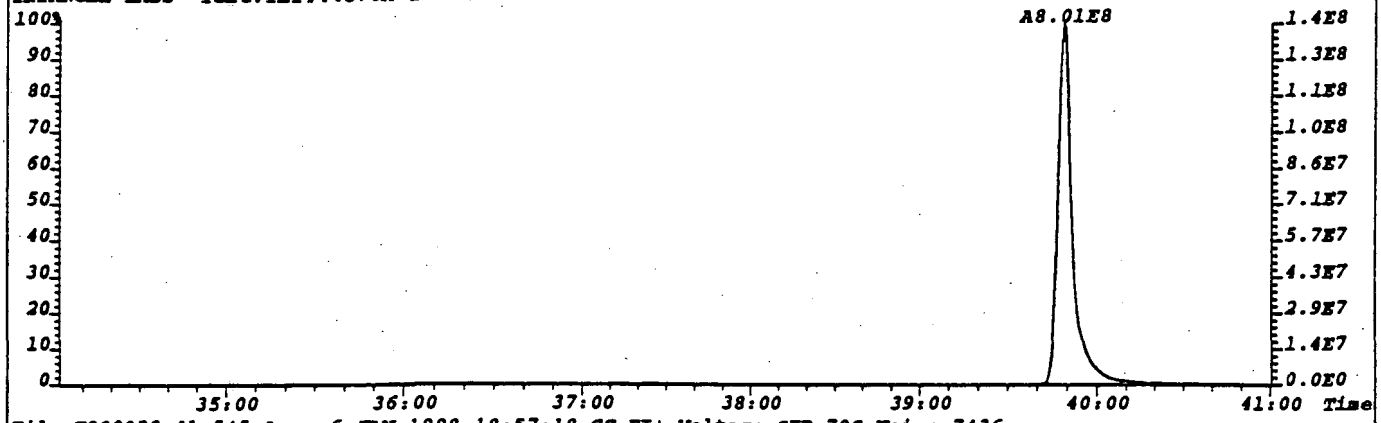


File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

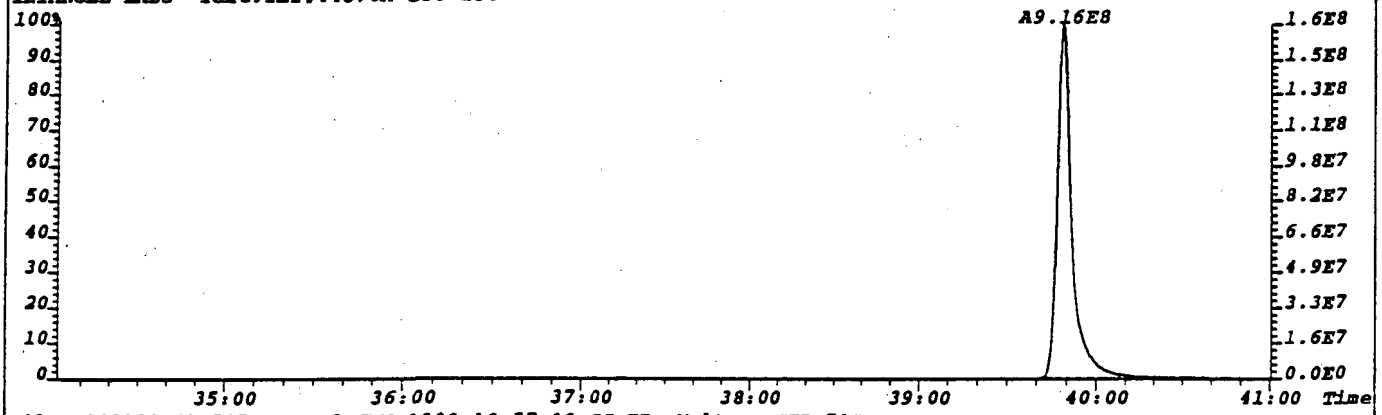



File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:14722
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,58888.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.83E8
A2.82E8
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:10750
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,43000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.79E8
A2.73E8
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:5033
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,20132.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.64E7
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:4736
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18944.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
A2.54E7
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156
35:13
35:22
35:27
35:43
35:49
36:00
36:13
36:20
Time

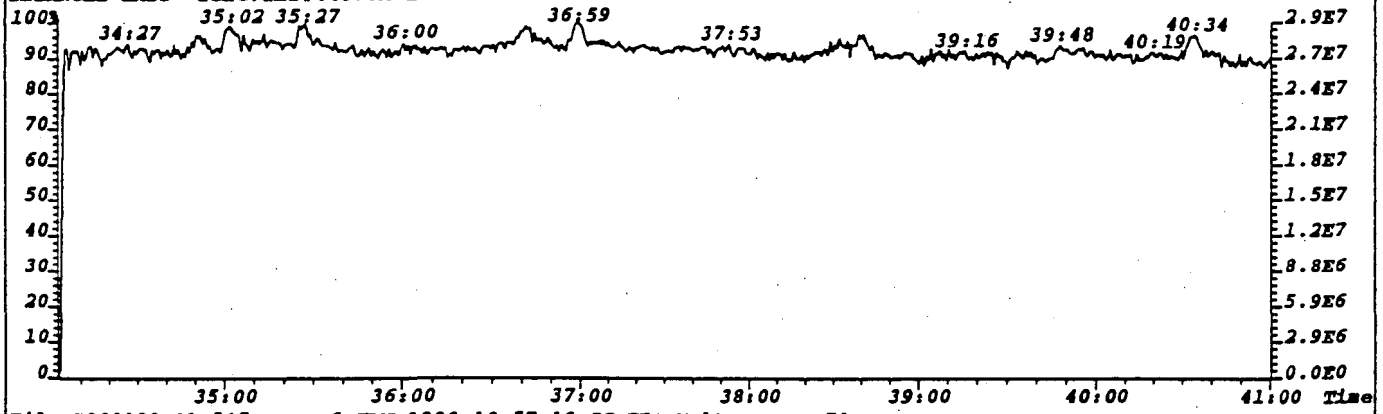
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:35145
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,140580.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



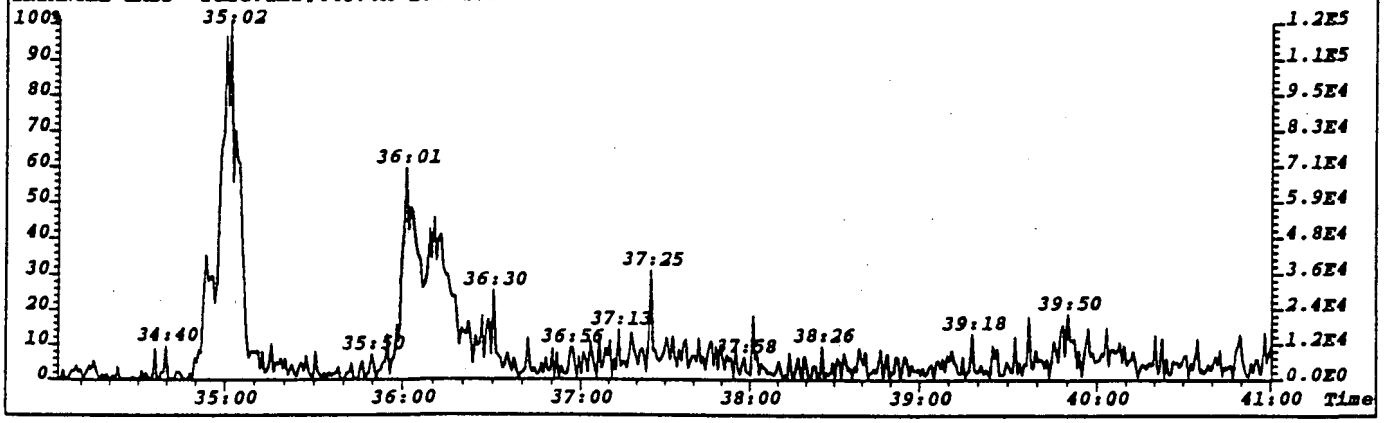
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:7436
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29744.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



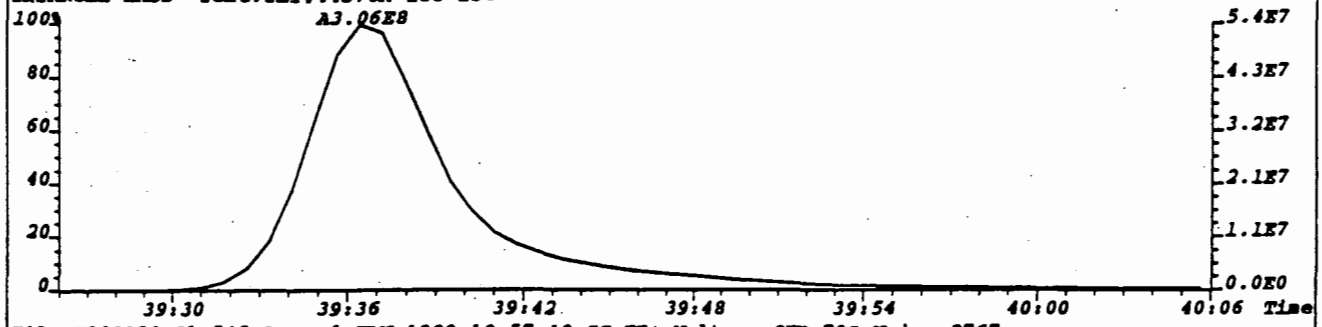
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



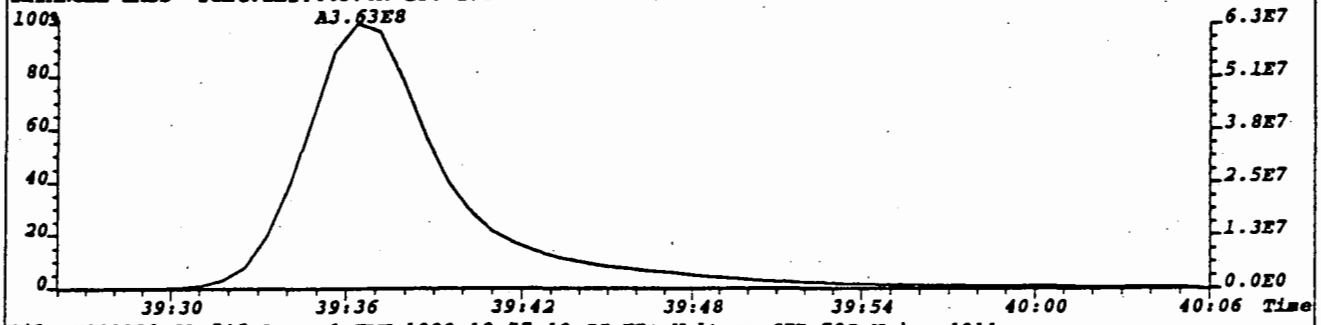
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



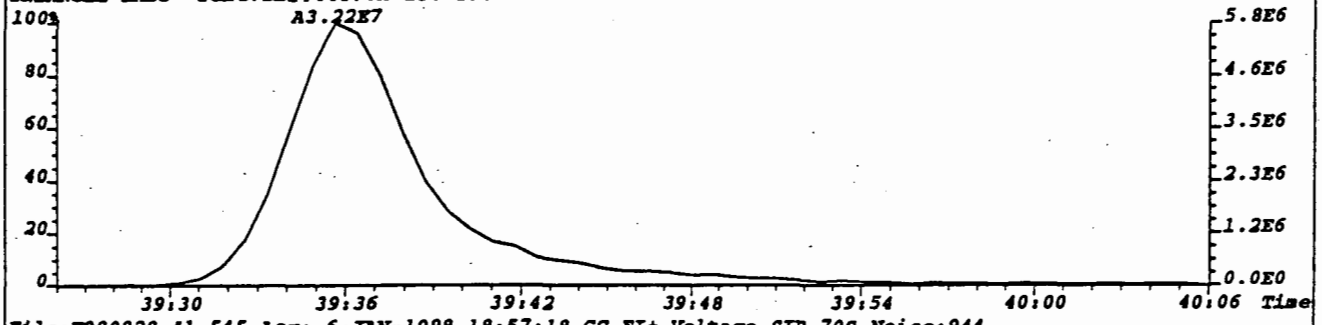
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:2766
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11064.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



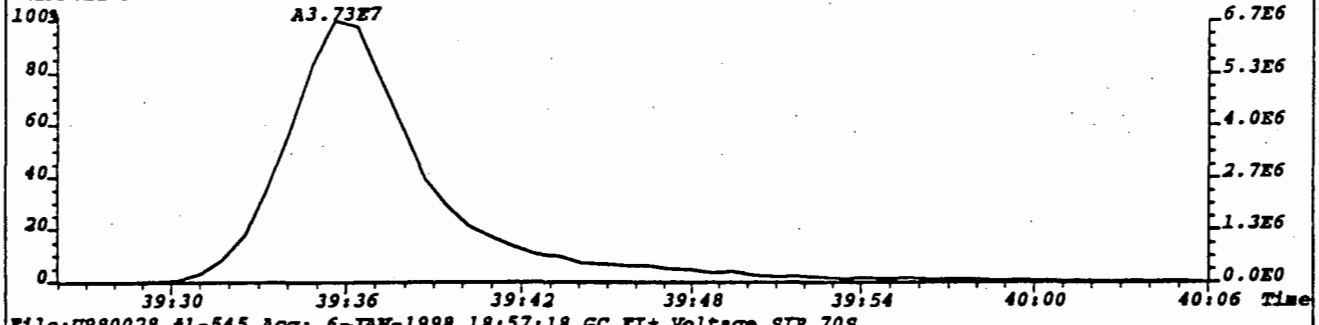
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:2767
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11068.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156



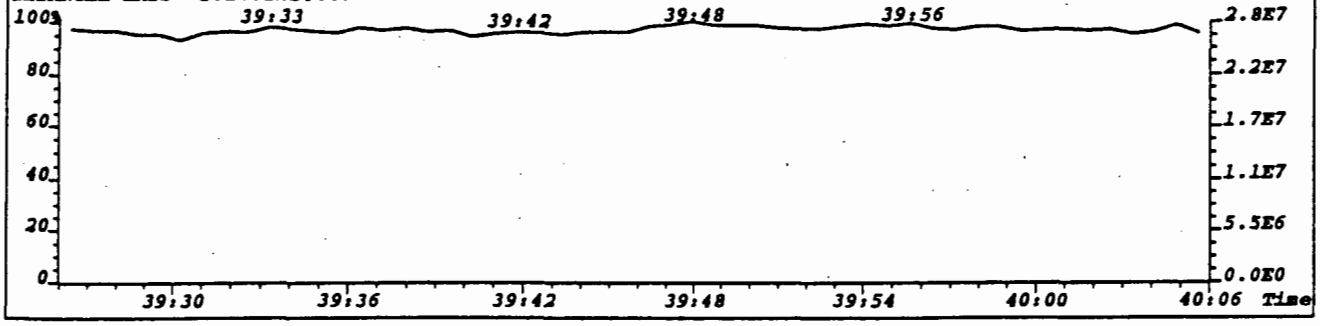
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:1911
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7644.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

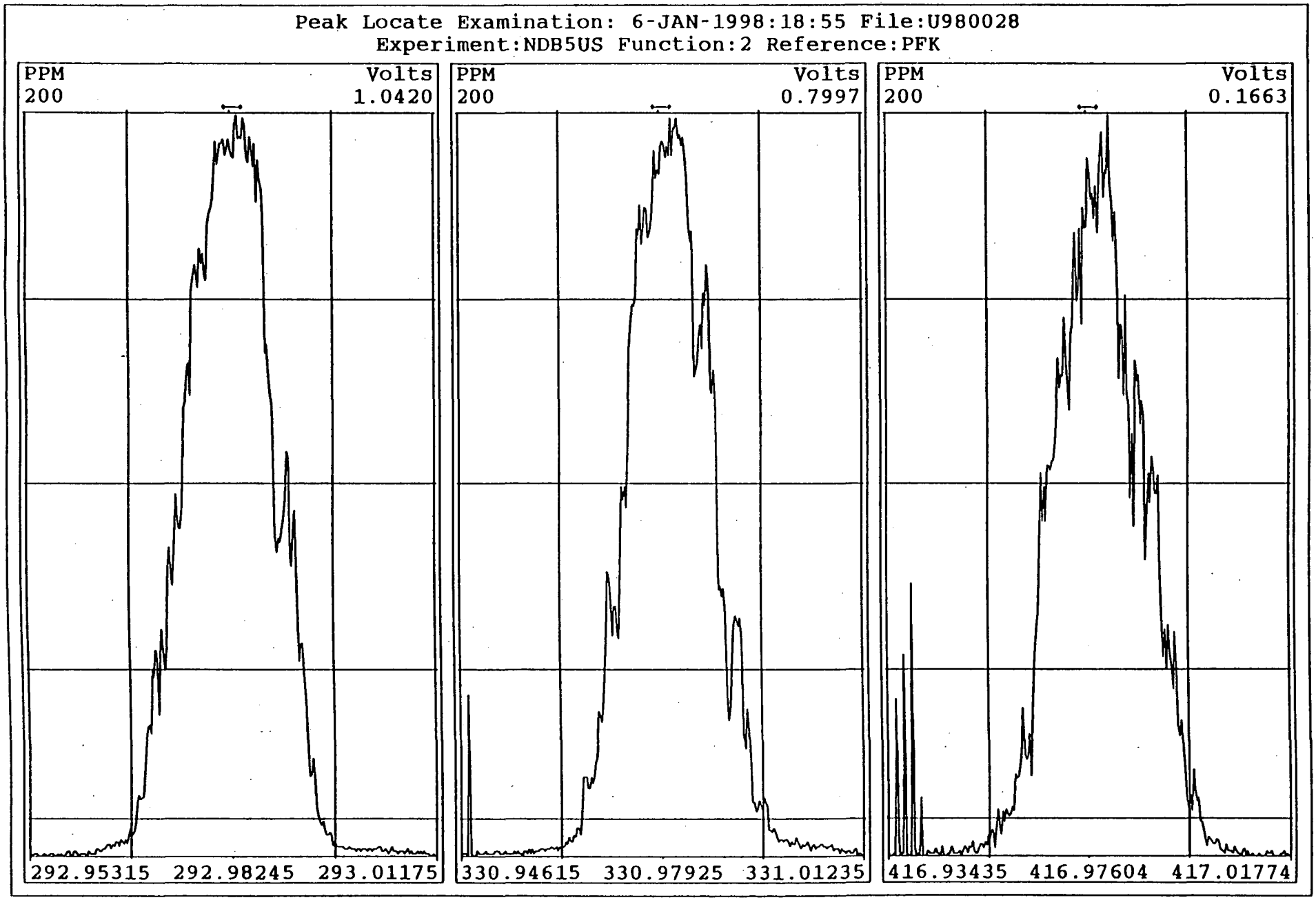


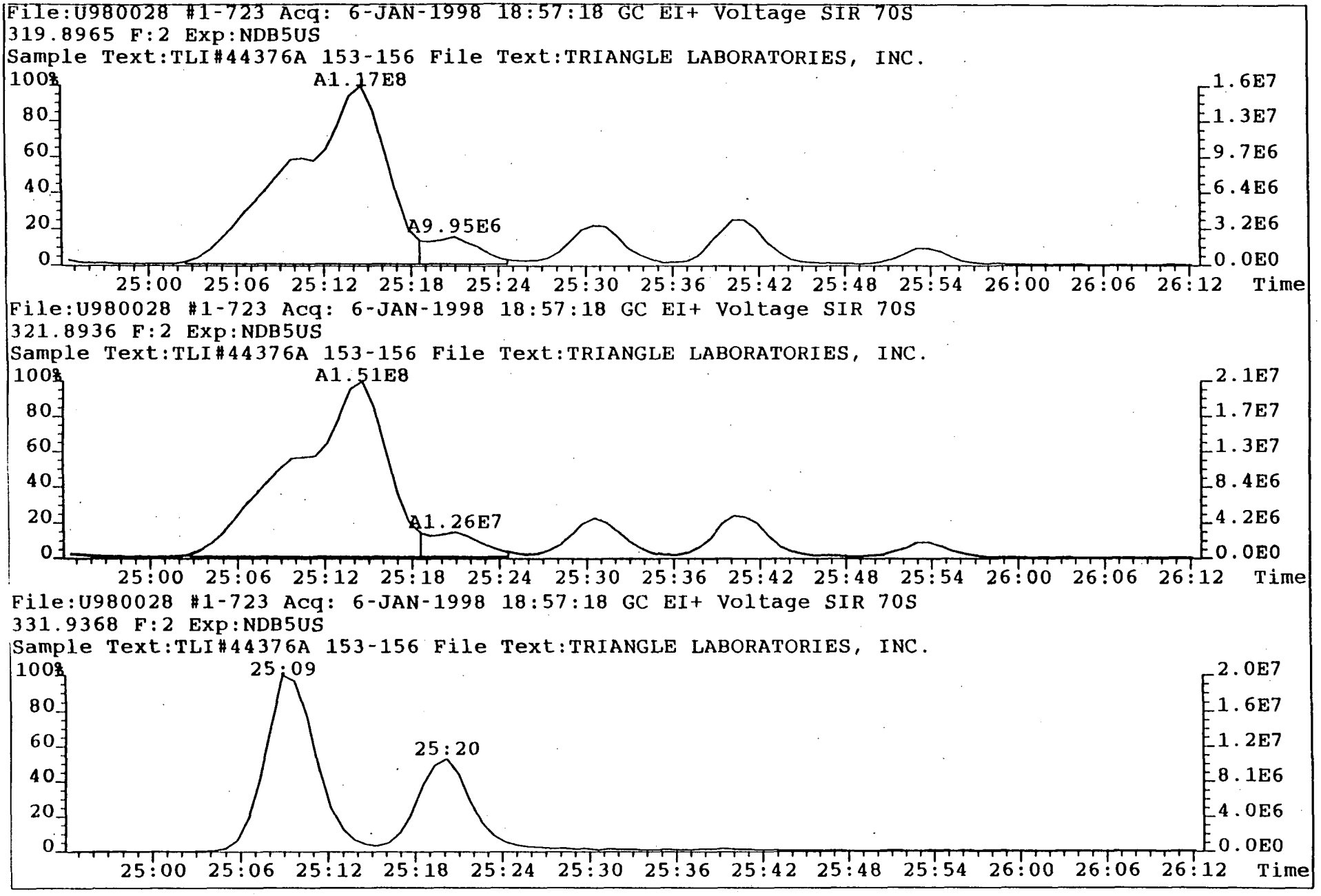
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S Noise:944
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3776.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156

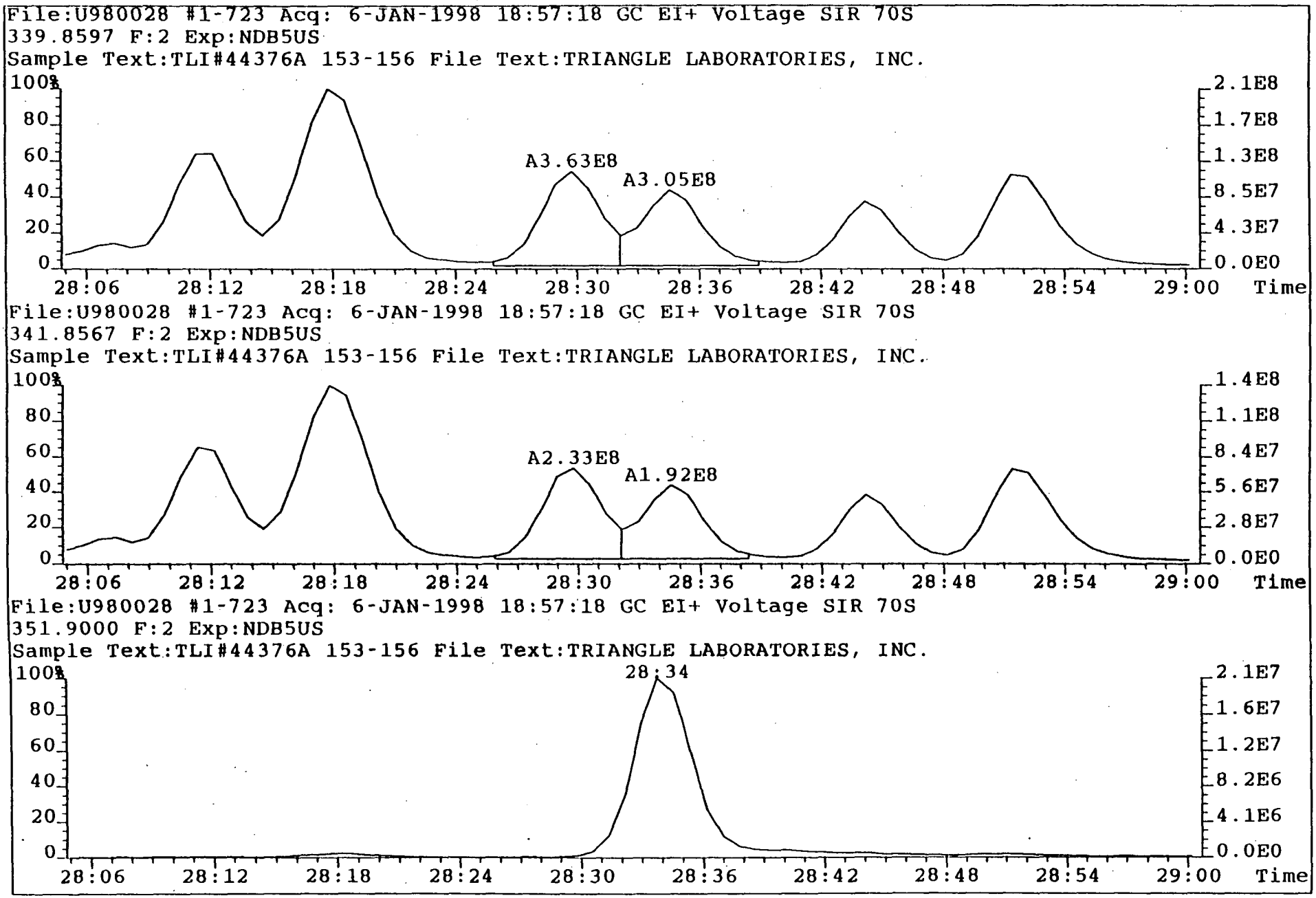


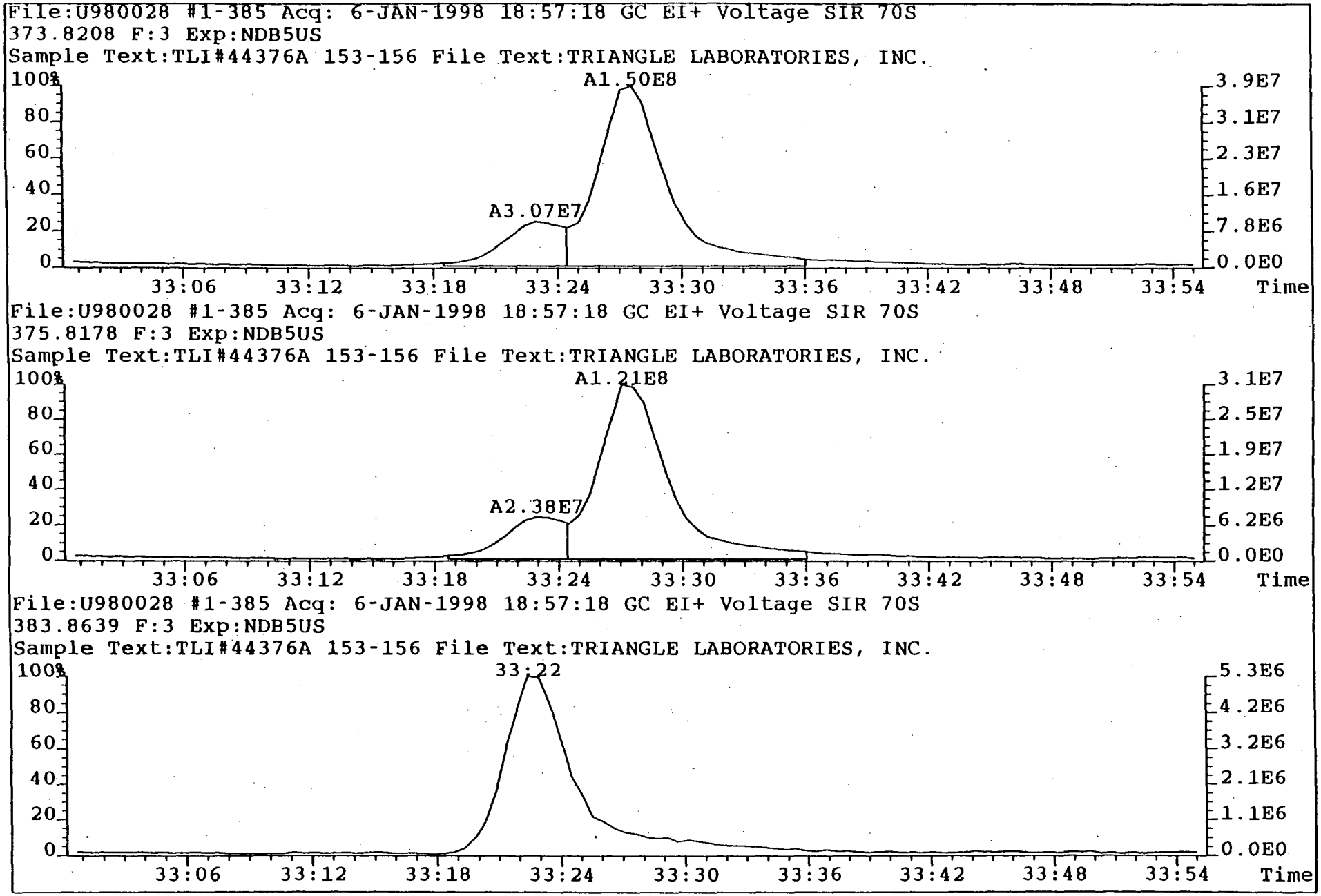
File:U980028 #1-545 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376A 153-156




Peak Locate Examination: 6-JAN-1998:18:55 File:U980028
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
1.0420
292.95315 292.98245 293.01175
PPM
200
Volts
0.7997
330.94615 330.97925 331.01235
PPM
200
Volts
0.1663
416.93435 416.97604 417.01774


File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.17E8
A9.95E6
1.6E7
1.3E7
9.7E6
6.4E6
3.2E6
0.0E0
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06 26:12 Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.51E8
A1.26E7
2.1E7
1.7E7
1.3E7
8.4E6
4.2E6
0.0E0
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06 26:12 Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
25:09
25:20
2.0E7
1.6E7
1.2E7
8.1E6
4.0E6
0.0E0
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06 26:12 Time


File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.63E8
A3.05E8
2.1E8
1.7E8
1.3E8
8.5E7
4.3E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.33E8
A1.92E8
1.4E8
1.1E8
8.4E7
5.6E7
2.8E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980028 #1-723 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:34
2.1E7
1.6E7
1.2E7
8.2E6
4.1E6
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time


File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.50E8
A3.07E7
3.9E7
3.1E7
2.3E7
1.6E7
7.8E6
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.21E8
A2.38E7
3.1E7
2.5E7
1.9E7
1.2E7
6.2E6
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time
File:U980028 #1-385 Acq: 6-JAN-1998 18:57:18 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376A 153-156 File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
33:22
5.3E6
4.2E6
3.2E6
2.1E6
1.1E6
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 153-156 — Analysis File: P980096

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-11A-D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	11.6			0.76	23:07	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.6	65.5	40%-130%	0.75	23:06	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:56	___

Data Reviewer: _____ 01/09/98

C2NF_PSR v2.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:15 01/09/98

Initial ....Date.

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

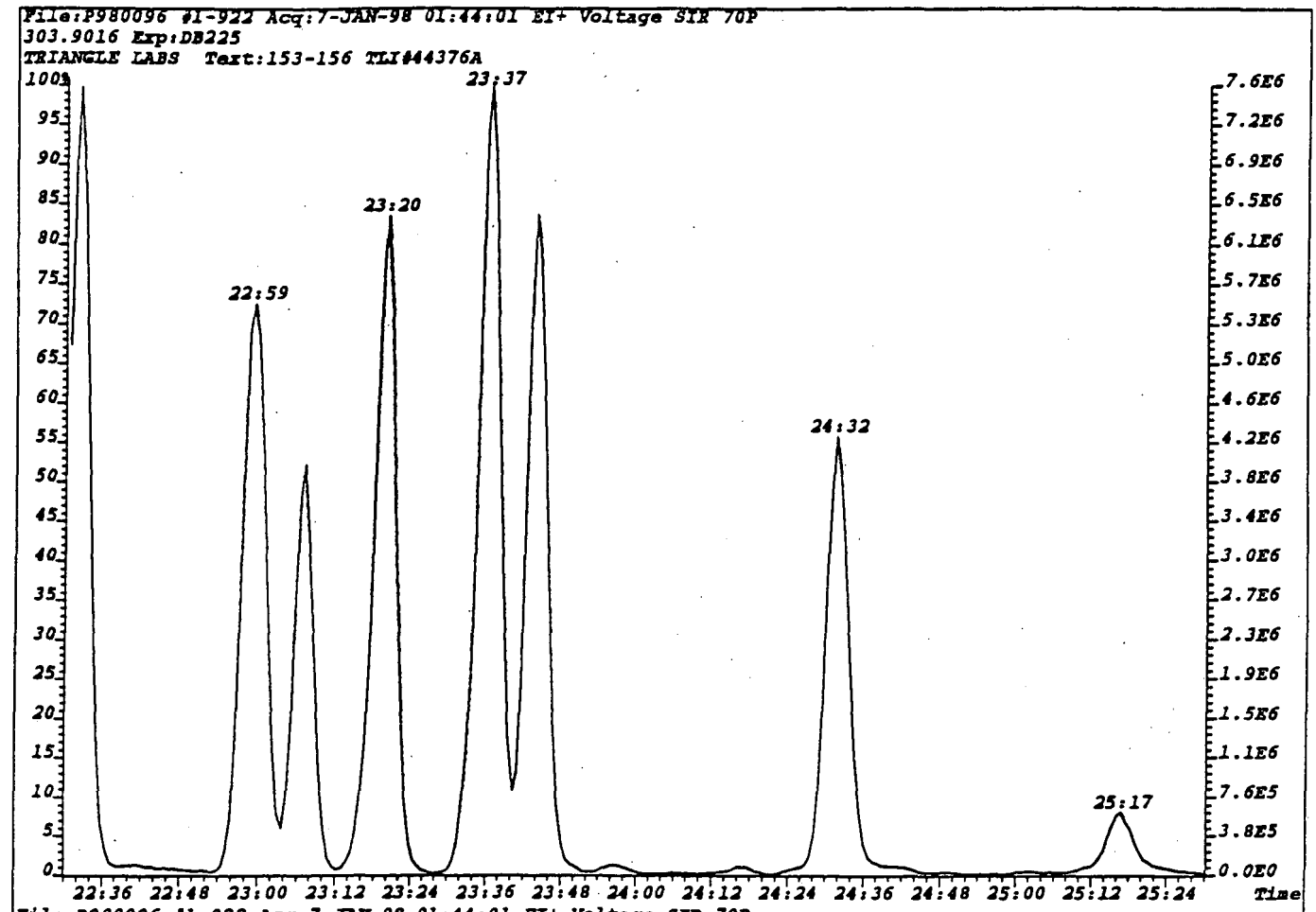
Page No. 1 Listing of P980096B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

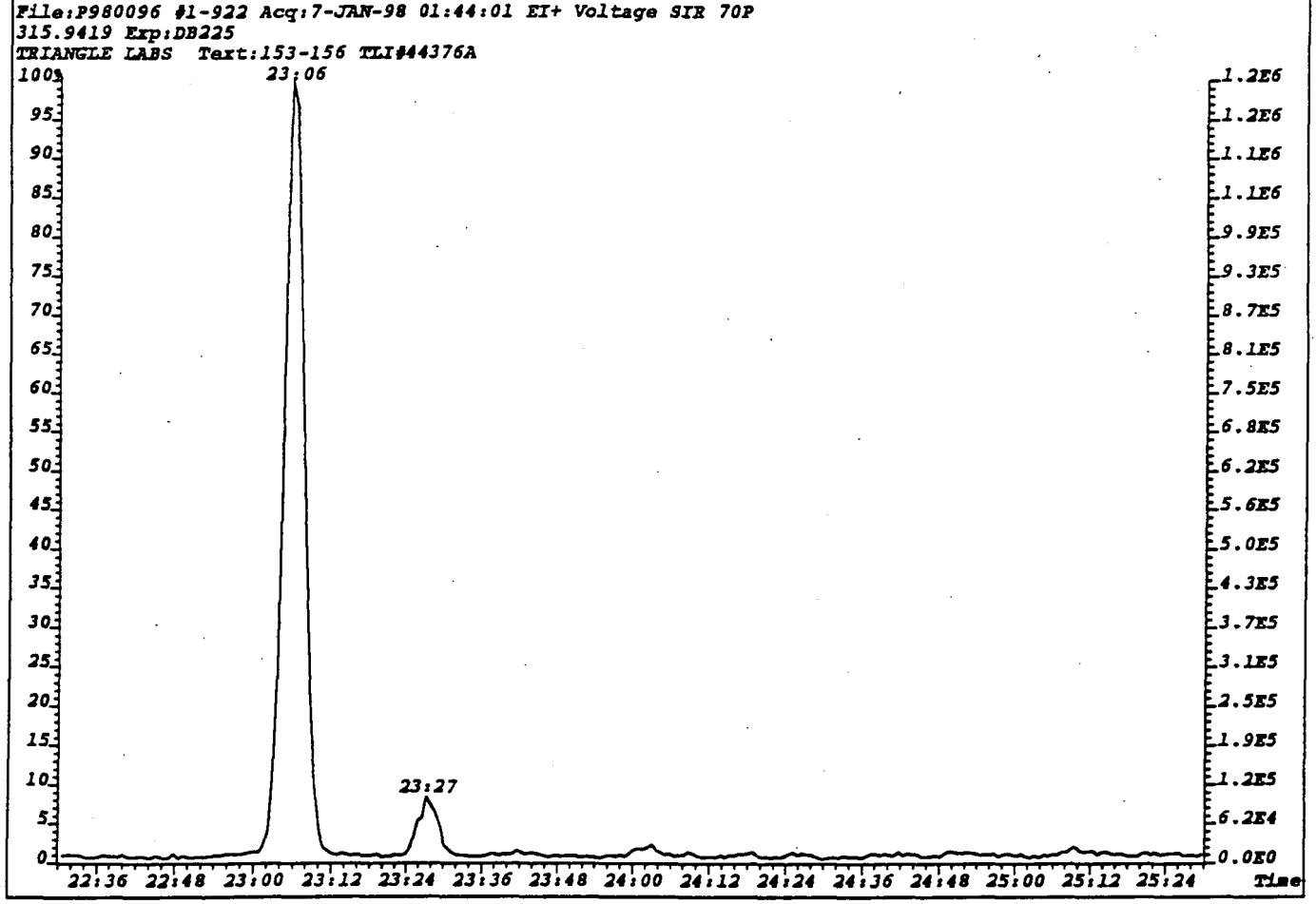
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.792-1.101			
304-306	DC	NL		0:00		0.76	5.59			0.000			
	DC	WL		18:15		0.66	45.83			0.790			
				18:29		0.82	3,551.20	1,597.23	1,953.97	0.800			
				18:45	RO	1.31	76.98	56.95	43.49	0.812			
				18:56		0.83	81.23	36.78	44.45	0.820			
				19:00	RO	1.00	70.45	39.65	39.80	0.823			
				19:07		0.84	278.28	127.12	151.16	0.828			
				19:29		0.76	3,941.29	1,700.87	2,240.42	0.843			
				19:36		0.76	3,923.45	1,688.13	2,235.32	0.848			
				19:44		0.75	7,249.42	3,105.33	4,144.09	0.854			E
				19:55		0.76	3,091.35	1,337.56	1,753.79	0.862			
				20:01		0.76	510.71	220.62	290.09	0.867			
				20:11		0.77	3,572.80	1,549.54	2,023.26	0.874			
				20:20		0.81	7,729.53	3,470.36	4,259.17	0.880			E
				20:29		0.78	4,205.00	1,843.23	2,361.77	0.887			
				20:38		0.75	11,217.29	4,813.21	6,404.08	0.893			E
				20:48		0.76	4,118.15	1,772.12	2,346.03	0.900			
				21:11		0.76	24,265.40	10,460.30	13,805.10	0.917			E
				21:23	RO	0.63	33.52	14.58	23.06	0.926			
				21:29		0.87	45.19	20.97	24.22	0.930			
				21:37		0.75	4,817.35	2,065.19	2,752.16	0.936			
				21:43		0.74	1,115.26	475.99	639.27	0.940			
				21:53		0.76	5,398.78	2,323.21	3,075.57	0.947			
				22:07		0.74	5,101.22	2,176.95	2,924.27	0.957			
				22:21		0.75	1,234.28	528.81	705.47	0.968			
				22:32		0.76	6,779.13	2,927.28	3,851.85	0.975			E
				22:41		0.67	40.75	16.31	24.44	0.982			
				22:59		0.76	5,401.94	2,332.77	3,069.17	0.995			
				23:07		0.76	3,150.19	1,355.56	1,794.63	1.001	2378-TCDF	AN	
				23:20		0.75	6,047.59	2,599.99	3,447.60	1.010			E
				23:37		0.75	7,197.14	3,075.43	4,121.71	1.022			E
				23:44		0.75	5,725.97	2,459.30	3,266.67	1.027			E
				23:56		0.66	33.08	13.11	19.97	1.036			
				24:16	RO	0.97	14.62	8.04	8.26	1.051			
				24:32		0.76	4,161.33	1,794.70	2,366.63	1.062			
				25:17		0.74	729.02	310.35	418.67	1.095			
	DC	WH		25:43		0.66	43.30			1.113			
304-306			34	Peaks			134,908.89						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	1.39	3.31			0.000			
	DC	WL		18:32	RO	1.30	3.72			0.802			
	DC	WL		19:18	RO	0.22	7.06			0.835			

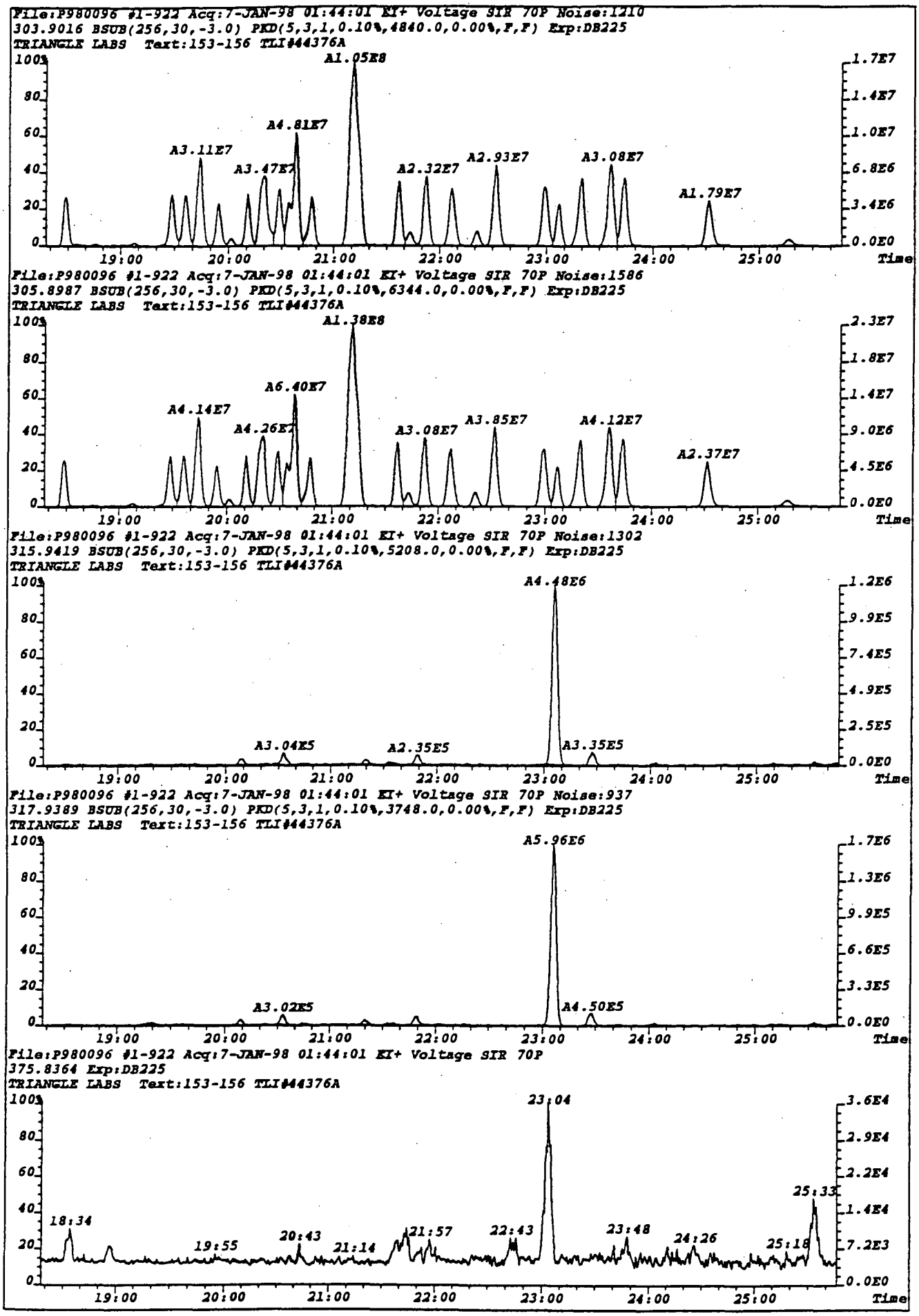
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WL		20:10		0.84	28.23			0.873			
	DC	WL		20:23	RO	0.60	2.53			0.882			
	DC	WL		20:33	RO	1.00	53.45			0.890			
	DC	WL		20:44	RO	0.37	5.38			0.898			
	DC	WL		21:20		0.74	25.67			0.924			
	DC	WL		21:33	RO	1.51	9.70			0.933			
	DC	WL		21:49		0.83	51.90			0.944			
				22:17	RO	0.39	5.95	2.59	6.58	0.965			
				22:24	RO	1.11	6.05	3.80	3.42	0.970			
				23:06		0.75	1,043.58	448.04	595.54	1.000	13C12-2378-TCDF	IS0	
				23:27		0.74	78.49	33.47	45.02	1.015			
				23:42		0.67	4.63	1.86	2.77	1.026			
				24:03		0.74	15.72	6.67	9.05	1.041			
	DC	WH		24:37	RO	1.36	2.60			1.066			
	DC	WH		24:42	RO	6.33	0.53			1.069			
	DC	WH		24:50	RO	2.12	2.27			1.075			
	DC	WH		25:10	RO	0.57	6.94			1.089			
	DC	WH		25:15		0.69	6.86			1.093			
	DC	WH		25:32		0.76	14.96			1.105			
	DC	WH		25:45	RO	1.86	4.81			1.115			
316-318		6	Peaks				1,154.42						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC	NL		0:00	RO	1.36	1.89			0.000			
	DC	SN		20:06	RO	1.07	0.99			0.929			
	DC	SN		20:30	RO	0.61	2.23			0.948			
				21:38		0.81	681.35	303.92	377.43	1.000	13C12-2378-TCDD	IS1	
				21:47	RO	0.99	3.17	1.77	1.79	1.007			
				21:56		0.82	1,148.77	516.84	631.93	1.014	13C12-1234-TCDD	RS1	
	DC	SN		22:08	RO	3.97	0.57			1.023			
	DC	SN		22:30		0.68	1.38			1.040			
				22:42		0.74	8.82	3.76	5.06	1.049			
	DC	WH		23:41	RO	0.05	0.83			1.095			
	DC	WH		24:30	RO	0.91	3.75			1.133			
	DC	WH		24:40	RO	1.13	2.80			1.140			
332-334		4	Peaks				1,842.11						

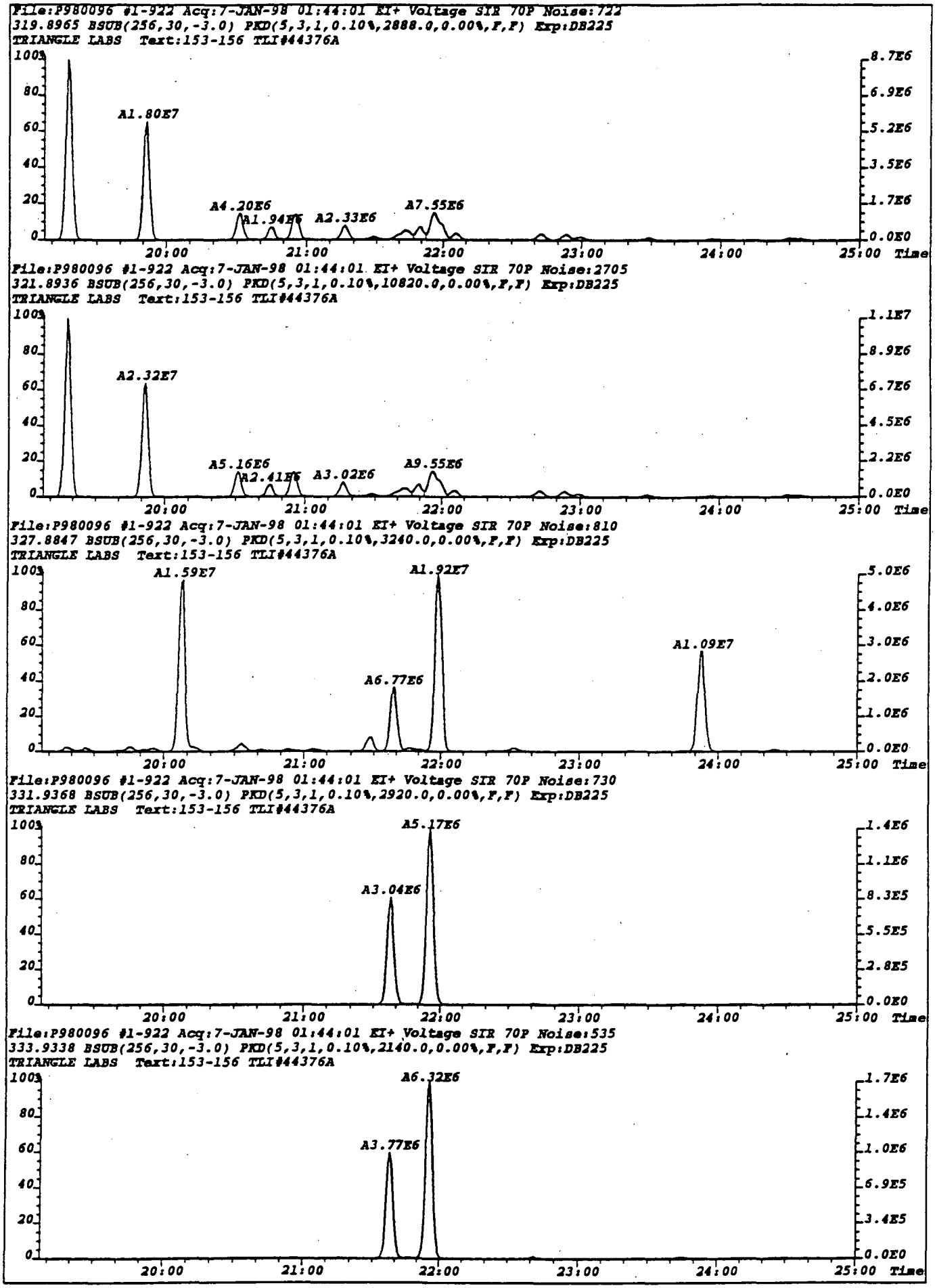
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

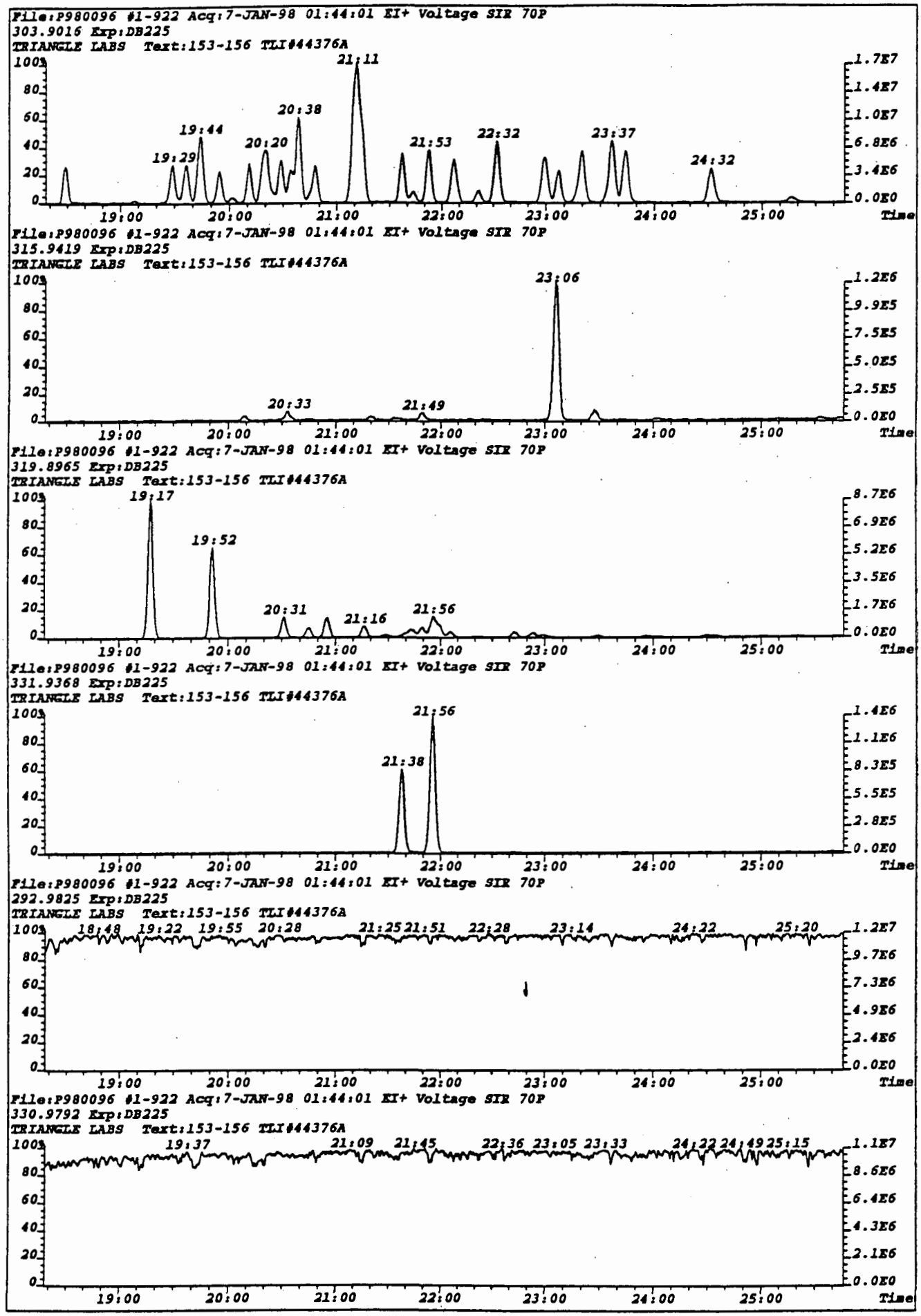
*** End of Report ***

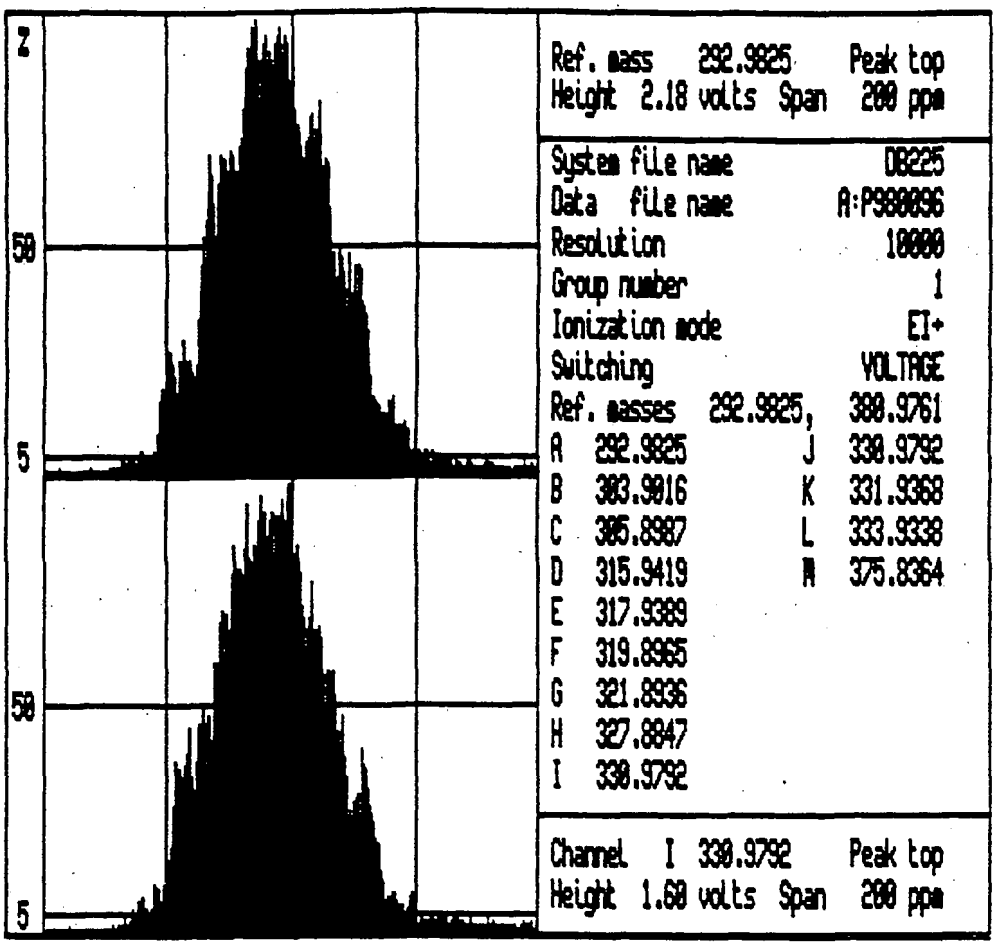

File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
22:59
23:20
23:37
24:32
25:17
Time


File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
23:06
23:27
Time


File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:1210
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4840.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A1.05E8
A4.81E7
A3.11E7
A3.47E7
A2.32E7
A2.93E7
A3.08E7
A1.79E7
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:1586
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6344.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A1.38E8
A6.40E7
A4.14E7
A4.26E7
A3.08E7
A3.85E7
A4.12E7
A2.37E7
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:1302
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5208.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A4.48E6
A3.04E5
A2.35E5
A3.35E5
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:937
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3748.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A5.96E6
A3.02E5
A4.50E5
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
23:04
18:34
19:55
20:43
21:14
21:57
22:43
23:48
24:26
25:18
25:33
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:722
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2888.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A1.80E7
A4.20E6
A1.94E6
A2.33E6
A7.55E6
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:2705
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,10820.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A2.32E7
A5.16E6
A2.41E6
A3.02E6
A9.55E6
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:810
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3240.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A1.59E7
A1.92E7
A6.77E6
A1.09E7
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:730
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2920.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A5.17E6
A3.04E6
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P Noise:535
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2140.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
A6.32E6
A3.77E6
Time


File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
19:29
19:44
20:20
20:38
21:11
21:53
22:32
23:37
24:32
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
20:33
21:49
23:06
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
19:17
19:52
20:31
21:16
21:56
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
21:38
21:56
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
18:48
19:22
19:55
20:28
21:25
21:51
22:28
23:14
24:22
25:20
File:P980096 #1-922 Acq:7-JAN-98 01:44:01 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:153-156 TLI#44376A
19:37
21:09
21:45
22:36
23:05
23:33
24:22
24:49
25:15
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height 2.18 volts Span 200 ppm
System file name DB225
Data file name A:P980896
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 388.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height 1.60 volts Span 200 ppm

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 157-160/166 — Analysis File: U980029

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-12A-E	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.71			0.74	25:21	PR_
1,2,3,7,8-PeCDD	5.0			1.55	29:37	___
1,2,3,4,7,8-HxCDD	5.4			1.24	32:45	___
1,2,3,6,7,8-HxCDD	8.1			1.27	32:50	___
1,2,3,7,8,9-HxCDD	11.9			1.25	33:07	___
1,2,3,4,6,7,8-HpCDD	55.4			1.02	36:03	E__
1,2,3,4,6,7,8,9-OCDD	87.1			0.84	39:38	E__
2,3,7,8-TCDF	76.6			0.75	24:41	E__
1,2,3,7,8-PeCDF	15.7			1.61	28:35	___
2,3,4,7,8-PeCDF	31.9			1.58	29:17	___
2,3,4,7,8-HxCDF	98.8			1.26	32:02	E__
1,2,3,6,7,8-HxCDF	35.5			1.26	32:09	___
2,3,4,6,7,8-HxCDF	53.9			1.26	32:38	E__
1,2,3,7,8,9-HxCDF	3.1			1.30	33:23	PRX
1,2,3,4,6,7,8-HpCDF	200			1.04	35:02	E__
1,2,3,4,7,8,9-HpCDF	34.5			1.04	36:34	___
1,2,3,4,6,7,8,9-OCDF	>40 ~~657~~ cm 1/10/98			0.91	39:50	SE_

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	143	12			QE_
Total PeCDD	103	9		161	E__
Total HxCDD	154	6		160	E__
Total HpCDD	114	2			E__
Total TCDF	441	16			E__
Total PeCDF	419	14		423	E__
Total HxCDF	417	12			E__
Total HpCDF	346	4			E__

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:18 01/10/98

TLI Project: 44376A
Client Sample: 157-160/166

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980029

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.5	62.7	40%-130%	0.75	24:39	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.5	63.2	40%-130%	0.81	25:20	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.7	66.4	40%-130%	1.57	28:35	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.5	63.0	40%-130%	1.52	29:36	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.7	67.6	40%-130%	0.53	32:09	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.1	77.1	40%-130%	1.21	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.1	77.2	25%-130%	0.45	35:01	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.0	74.0	25%-130%	1.07	36:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6.3	78.3	25%-130%	0.87	39:37	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.6	91.2	40%-130%	1.45	29:16	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.0	99.2	40%-130%	0.53	32:03	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.9	96.7	40%-130%	1.20	32:44	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.9	97.9	40%-130%	0.44	36:33	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.2	80.6	25:21	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.9	72.1	40%-130%	0.52	33:23	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.0	75.0	40%-130%	0.56	32:38	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	25:10	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	33:08	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:18 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980029B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00	RO	0.59	4,654.53			0.000			
	KN			21:29		0.75	70,734.70	30,424.20	40,310.50	0.872			
	K			22:00		0.74	71,500.80	30,447.40	41,053.40	0.892			
	K			22:14		0.74	74,434.60	31,535.90	42,898.70	0.902			
	K			22:37		0.75	374,158.00	160,127.00	214,031.00	0.918			E
	K			22:56		0.75	231,515.70	99,151.70	132,364.00	0.930			E
	K			23:20		0.73	243,962.00	102,610.00	141,352.00	0.947			QE
	K			23:36		0.75	174,584.70	74,746.50	99,838.20	0.957			E
				23:50		0.75	222,451.50	95,642.50	126,809.00	0.967			E
				24:03		0.79	275,262.00	121,763.00	153,499.00	0.976			E
				24:15		0.75	113,621.60	48,611.50	65,010.10	0.984			
				24:28		0.75	101,101.90	43,196.00	57,905.90	0.993			
				24:41		0.75	460,610.00	197,948.00	262,662.00	1.001	2378-TCDF	AN	E
				25:04		0.75	113,330.40	48,408.90	64,921.50	1.017			
				25:17		0.74	96,909.60	41,308.10	55,601.50	1.026			
				25:33		0.73	14,998.69	6,335.88	8,662.81	1.037			
				26:23		0.77	12,461.11	5,408.43	7,052.68	1.070			
304-306			16 Peaks				2,651,637.30						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.34	92.48			0.000			
	DC	WL		23:00		0.66	550.81			0.933			
				24:05	RO	1.04	351.73	206.74	198.72	0.977			
				24:39		0.75	19,404.20	8,293.10	11,111.10	1.000	13C12-2378-TCDF	IS0	
316-318			2 Peaks				19,755.93						

---------- Above: TCDF / TCDD Follows ----------

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	0.05	37.54			0.000			
	NK			22:48		0.70	282,030.00	116,595.00	165,435.00	0.900			E
	NK			23:12		0.78	163,874.80	71,703.20	92,171.60	0.916			QE
	K			23:29		0.74	20,505.63	8,742.13	11,763.50	0.927			
	D	D	SN	23:43	RO	1.63	1,147.51			0.936			
	D	D	SN	23:52	RO	1.18	464.20			0.942			
	D	D	SN	23:52	RO	1.13	609.80			0.942			
	D	D	SN	23:58	RO	2.31	320.39			0.946			
	K			24:11		0.82	63,021.90	28,386.10	34,635.80	0.955			
				24:27		0.75	32,116.10	13,789.60	18,326.50	0.965			
				24:50		0.80	15,186.02	6,744.66	8,441.36	0.980			
	M			25:15		0.75	60,400.00	25,900.00	34,500.00	0.997			
	AN			25:21		0.74	3,280.00	1,400.00	1,880.00	1.001	2378-TCDD	AN	PR
				25:32		0.73	7,033.78	2,969.55	4,064.23	1.008			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:40		0.73	6,746.39	2,850.86	3,895.53	1.013			
				25:54		0.66	2,589.37	1,032.12	1,557.25	1.022			
				26:20		0.74	2,162.91	917.71	1,245.20	1.039			
320-322			12 Peaks				658,946.90						
37Cl-TCDD										0.921-1.079			
328	DC	NL		0:00			164.66			0.000			
	DC	WL		22:39			65.15			0.894			
	DC	WL		22:49			1,517.08			0.901			
	DC	WL		23:05			640.72			0.911			
	DC	WL		23:12			966.28			0.916			
				23:25			274.46	274.46		0.924			
				23:58			19,256.70	19,256.70		0.946			
				24:11			537.07	537.07		0.955			
				24:19			372.94	372.94		0.960			
				24:27			157.60	157.60		0.965			
				24:40			556.72	556.72		0.974			
				24:50			218.26	218.26		0.980			
				25:21			12,032.60	12,032.60		1.001	37Cl-TCDD		CLS
				25:44			14,645.30	14,645.30		1.016			
328			9 Peaks				48,051.65						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334	DC	NL		0:00	RO	1.63	29.95			0.000			
				24:11		0.67	115.17	46.05	69.12	0.955			
				24:42	RO	1.22	41.63	28.77	23.52	0.975			
				25:10		0.81	21,107.87	9,471.57	11,636.30	0.993	13C12-1234-TCDD		RS1
				25:20		0.81	14,916.33	6,681.33	8,235.00	1.000	13C12-2378-TCDD		IS1
				25:39		0.77	1,003.84	437.57	566.27	1.013			
				25:53	RO	1.05	73.79	43.70	41.69	1.022			
				25:56	RO	1.51	181.46	154.49	102.52	1.024			
332-334			7 Peaks				37,440.09						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00	RO	0.76	24.07			0.000			
				26:36		1.53	169,674.90	102,544.00	67,130.90	0.931			E
				26:48	RO	0.77	9,224.95	5,607.32	7,279.42	0.938			
				27:04	RO	4.35	2,553.29	4,356.90	1,001.29	0.947			
				27:14	RO	6.54	1,345.56	3,449.71	527.67	0.953			
				27:22	RO	4.88	1,878.79	3,594.19	736.78	0.957			
				27:36		1.71	53,521.80	33,770.00	19,751.80	0.966			
				27:44		1.55	368,690.00	223,864.00	144,826.00	0.970			E
				27:55		1.66	88,383.70	55,159.20	33,224.50	0.977			
				28:12		1.61	158,042.20	97,398.20	60,644.00	0.987			
				28:19		1.57	198,580.30	121,294.00	77,286.30	0.991			E
	M			28:30		1.57	87,800.00	53,600.00	34,200.00	0.997			
	AN			28:35		1.61	66,200.00	40,800.00	25,400.00	1.000	12378-PeCDF		AN
				28:45		1.66	62,253.60	38,813.00	23,440.60	1.006			
				28:52		1.66	112,576.90	70,277.20	42,299.70	1.010			
				29:17		1.58	130,284.70	79,692.00	50,592.70	1.024	23478-PeCDF		AN

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:26		1.54	181,151.70	109,717.00	71,434.70	1.030			E
				29:44		1.71	44,196.70	27,915.10	16,281.60	1.040			
				30:07	RO	4.46	392.83	686.87	154.05	1.054			J
				30:15		1.60	15,235.04	9,386.42	5,848.62	1.058			
340-342			19 Peaks				1,751,986.96						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354	DC	NL		0:00	RO	1.08	33.36			0.000			
				26:36	RO	1.80	97.08	68.51	38.07	0.931			
				26:47		1.58	133.58	81.80	51.78	0.937			
				27:46		1.40	265.72	155.14	110.58	0.971			
				27:56		1.43	739.35	435.24	304.11	0.977			
				28:19	RO	30.76	396.65	4,783.95	155.55	0.991			
				28:35		1.57	16,016.44	9,791.10	6,225.34	1.000	13C12-PeCDF 123	IS2	
				28:52	RO	1.15	649.58	394.84	344.47	1.010			
				29:04	RO	1.97	145.40	112.21	57.02	1.017			
				29:16		1.45	14,107.16	8,338.52	5,768.64	1.024	13C12-PeCDF 234	SUR1	
				29:35		1.58	459.85	281.76	178.09	1.035			
				29:42	RO	1.07	234.90	142.78	133.88	1.039			
				29:52	RO	0.67	130.28	79.19	118.35	1.045			
				30:06	RO	1.89	80.94	60.02	31.74	1.053			
				30:16	RO	0.75	111.99	68.07	90.85	1.059			
352-354			14 Peaks				33,568.92						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.935-1.022			
356-358	DC	NL		0:00	RO	0.92	12.77			0.000			
D	DC	WL		27:36	RO	0.69	983.28			0.932			
				27:51	RO	1.31	131,094.84	79,685.10	60,994.20	0.941			E
				28:19		1.36	10,440.93	6,012.81	4,428.12	0.957			
				28:32		1.53	98,612.70	59,647.60	38,965.10	0.964			
				28:41		1.60	15,436.68	9,502.51	5,934.17	0.969			
				28:52		1.57	68,591.40	41,949.10	26,642.30	0.975			
				29:02	RO	1.79	7,989.76	5,593.27	3,133.24	0.981			
				29:08		1.44	17,334.86	10,240.20	7,094.66	0.984			
				29:19		1.56	26,946.10	16,428.90	10,517.20	0.990			
				29:28	RO	0.98	12,093.58	7,351.00	7,514.00	0.995			
				29:37		1.55	13,177.15	8,002.41	5,174.74	1.001	12378-PeCDD	AN	
				29:45		1.60	10,543.65	6,485.96	4,057.69	1.005			
				30:05		1.62	8,107.54	5,009.86	3,097.68	1.016			
356-358			12 Peaks				420,369.19						
13C12-PeCDD						1.32-1.78				0.865-1.135			
368-370	DC	NL		0:00	RO	1.15	12.63			0.000			
				27:48	RO	4.30	72.27	121.73	28.34	0.939			
				28:17	RO	2.73	39.17	41.97	15.36	0.956			
				28:33		1.71	56.01	35.34	20.67	0.965			
				28:42	RO	1.09	14.54	8.84	8.13	0.970			
				28:52		1.58	19.37	11.87	7.50	0.975			
				29:03	RO	0.32	20.53	12.48	38.63	0.981			
				29:20	RO	0.34	61.91	37.63	111.26	0.991			

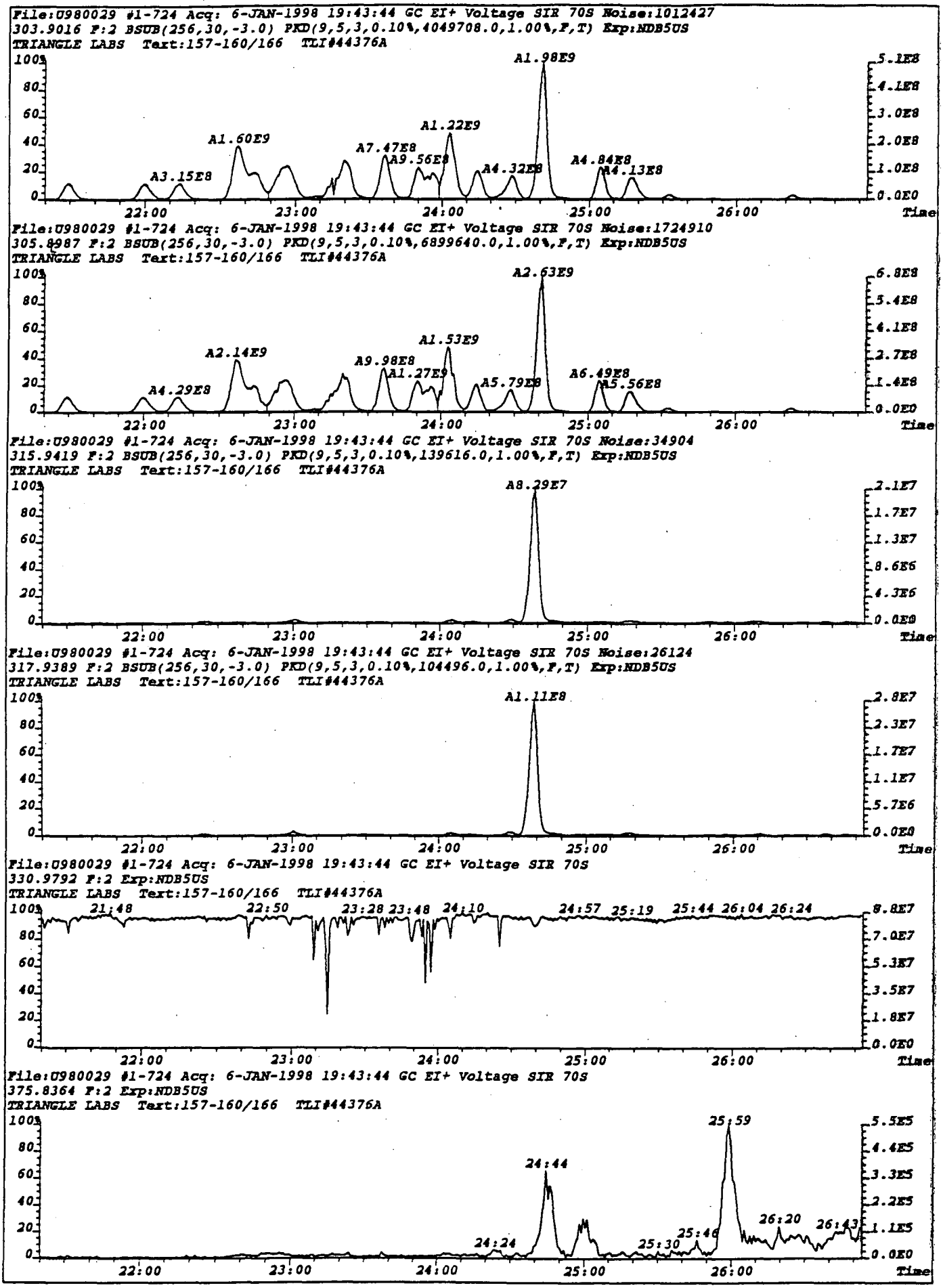
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:36		1.52	7,848.71	4,730.01	3,118.70	1.000	13C12-PeCDD 123	IS3	
				29:44		1.65	1,355.30	843.18	512.12	1.005			
				30:05	RO	0.45	141.37	85.93	192.81	1.016			
				30:17	RO	1.86	97.41	71.02	38.20	1.023			
				30:24	RO	1.09	132.44	80.50	74.10	1.027			
				30:29	RO	0.33	225.12	136.84	420.41	1.030			
				30:36	RO	0.30	324.18	197.05	647.30	1.034			
368-370			14 Peaks				10,408.33						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43					0.962-1.047				
374-376	DC	NL		0:00		1.25	7,026.95			0.000			
				31:06		1.26	140,660.80	78,431.80	62,229.00	0.967			E
				31:14		1.26	317,799.00	177,313.00	140,486.00	0.971			E
				31:24		1.30	31,584.30	17,851.70	13,732.60	0.977			
				31:32		1.23	45,572.90	25,150.20	20,422.70	0.981			
				31:41		1.27	25,270.90	14,132.90	11,138.00	0.985			
				32:02		1.26	297,473.00	165,937.00	131,536.00	0.996	123478-HxCDF	AN	E
				32:09		1.26	133,092.30	74,104.50	58,987.80	1.000	123678-HxCDF	AN	
				32:16		1.29	39,335.70	22,160.50	17,175.20	1.004			
				32:26		1.24	56,792.90	31,387.20	25,405.70	1.009			
				32:38		1.26	158,650.30	88,494.50	70,155.80	1.015	234678-HxCDF	AN	E
	AN		X	33:23		1.30	8,080.00	4,570.00	3,510.00	1.038	123789-HxCDF	AN	PR
	M			33:28		1.25	36,600.00	20,300.00	16,300.00	1.041			
374-376			12 Peaks				1,290,912.10						
13C12-HxCDF				0.43-0.59					0.876-1.124				
384-386	DC	NL		0:00	RO	0.77	115.38			0.000			
				31:13	RO	1.07	452.88	319.68	299.92	0.971			
				31:31	RO	1.61	154.52	164.29	102.33	0.980			
				31:50	RO	1.75	93.36	108.15	61.83	0.990			
				32:03		0.53	9,790.49	3,395.73	6,394.76	0.997	13C12-HxCDF 478	SUR2	
				32:09		0.53	11,961.66	4,138.76	7,822.90	1.000	13C12-HxCDF 678	IS4	
				32:26	RO	0.36	471.12	159.12	438.99	1.009			
				32:38		0.56	11,966.56	4,307.66	7,658.90	1.015	13C12-HxCDF 234	ALT2	
				32:55	RO	2.15	303.92	433.32	201.27	1.024			
				33:23		0.52	8,871.10	3,023.48	5,847.62	1.038	13C12-HxCDF 789	ALT1	
384-386			9 Peaks				44,065.61						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43					0.958-1.014				
390-392	DC	NL		0:00	RO	0.63	1,296.83			0.000			
D	D	SN		31:26	RO	0.49	1,066.98			0.958			
				31:35		1.26	25,794.00	14,395.80	11,398.20	0.963			
				32:01		1.22	194,623.70	107,046.00	87,577.70	0.976			E
				32:14		1.24	69,233.30	38,268.90	30,964.40	0.983			
				32:24	RO	1.00	12,414.51	6,872.32	6,890.22	0.988			
				32:45		1.24	10,433.29	5,774.74	4,658.55	0.998	123478-HxCDD	AN	
				32:50		1.27	20,048.12	11,199.00	8,849.12	1.001	123678-HxCDD	AN	
				33:07		1.25	28,354.00	15,777.10	12,576.90	1.010	123789-HxCDD	AN	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
390-392		7 Peaks					360,900.92						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00		1.28	49.51			0.000			
				32:44		1.20	7,138.51	3,892.28	3,246.23	0.998	13C12-HxCDD 478	SUR3	
				32:48		1.21	10,086.19	5,527.69	4,558.50	1.000	13C12-HxCDD 678	IS5	
				33:08		1.21	13,149.04	7,205.62	5,943.42	1.010	13C12-HxCDD 789	RS2	
402-404		3 Peaks					30,373.74						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	1.25	388.62			0.000			
				35:02		1.04	588,703.00	300,809.00	287,894.00	1.000	1234678-HpCDF	AN	E
				35:18		1.05	125,484.30	64,195.70	61,288.60	1.008			E
				35:27		1.06	165,389.90	84,938.20	80,451.70	1.012			E
D	DC	NH		35:55		0.97	2,430.58			1.026			
D	DC	NH		36:00	RO	1.40	2,241.33			1.028			
				36:34		1.04	78,802.90	40,254.30	38,548.60	1.044	1234789-HpCDF	AN	
408-410		4 Peaks					958,380.10						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	1.80	54.16			0.000			
				35:01		0.45	8,347.82	2,582.48	5,765.34	1.000	13C12-HpCDF 678	IS6	
				36:33		0.44	6,553.21	2,009.07	4,544.14	1.044	13C12-HpCDF 789	SUR4	
418-420		2 Peaks					14,901.03						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00	RO	1.53	75.56			0.000			
D	DC	WL		35:10	RO	0.44	29,813.03			0.975			
				35:18		0.97	103,113.80	50,872.60	52,241.20	0.979			E
D	DC	NH		35:35	RO	0.60	7,956.96			0.987			
				36:03		1.02	97,271.20	49,025.30	48,245.90	1.000	1234678-HpCDD	AN	E
424-426		2 Peaks					200,385.00						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.10	53.36			0.000			
				36:03		1.07	7,059.90	3,641.62	3,418.28	1.000	13C12-HpCDD 678	IS7	
436-438		1 Peak					7,059.90						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	4.34	66.19			0.000			
				39:50		0.91	1,268,705.00	604,537.00	664,168.00	1.005	OCDF	AN	SE
442-444		1 Peak					1,268,705.00						
OCDD				0.76-1.02						0.899-1.101			
458-460	DC	NL		0:00		0.77	21.91			0.000			
				39:38		0.84	135,424.50	61,921.40	73,503.10	1.000	OCDD	AN	E

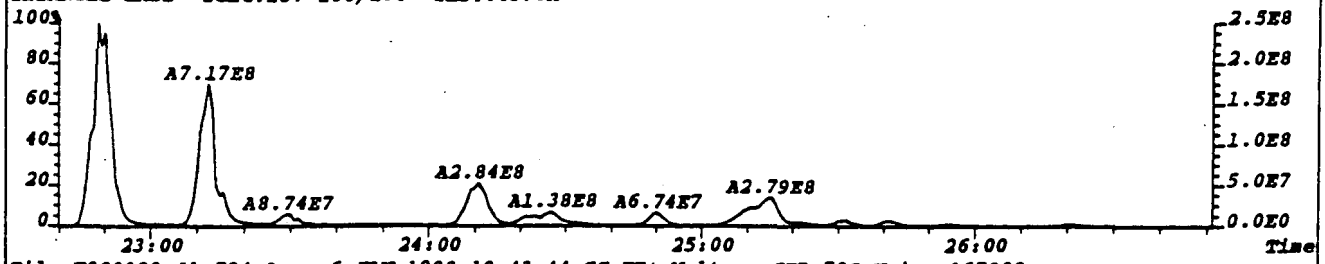
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
458-460			1 Peak				135,424.50						
13C12-OCDD				0.76-1.02						0.996-1.004			
470-472	DC	NL		0:00	RO	1.42	15.01			0.000			
				39:37		0.87	11,219.87	5,204.93	6,014.94	1.000	13C12-OCDD	IS8	
470-472			1 Peak				11,219.87						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

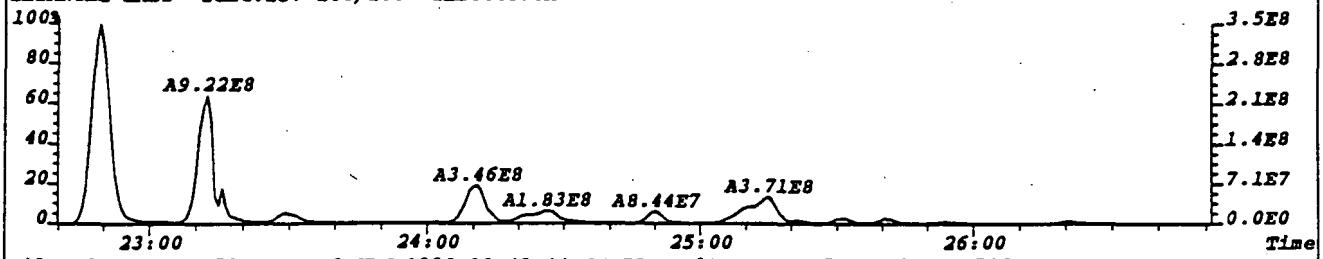
*** End of Report ***


File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:1012427
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,4049708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A1.98E9
A1.60E9
A1.22E9
A7.47E8
A9.56E8
A4.32E8
A4.84E8
A4.13E8
A3.15E8
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:1724910
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,6899640.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A2.63E9
A2.14E9
A1.53E9
A9.98E8
A1.27E9
A5.79E8
A6.49E8
A5.56E8
A4.29E8
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:34904
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,139616.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A8.29E7
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:26124
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,104496.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A1.11E8
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
21:48
22:50
23:28
23:48
24:10
24:57
25:19
25:44
26:04
26:24
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
25:59
24:44
24:24
25:30
25:46
26:20
26:43
22:00
23:00
24:00
25:00
26:00
Time

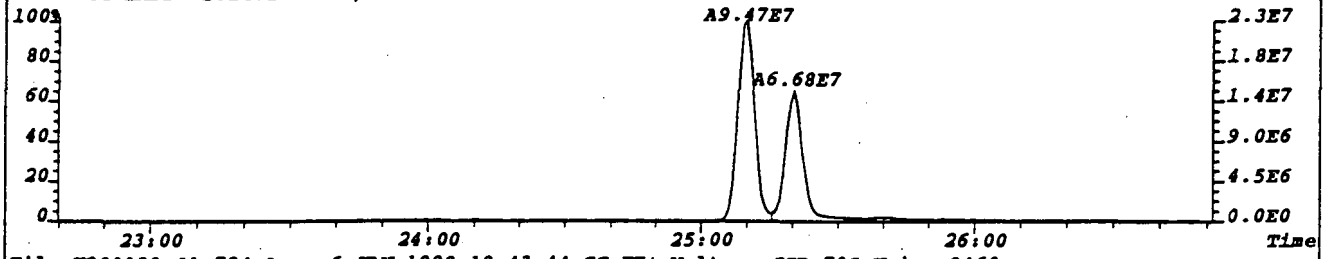
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:8164
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,32656.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



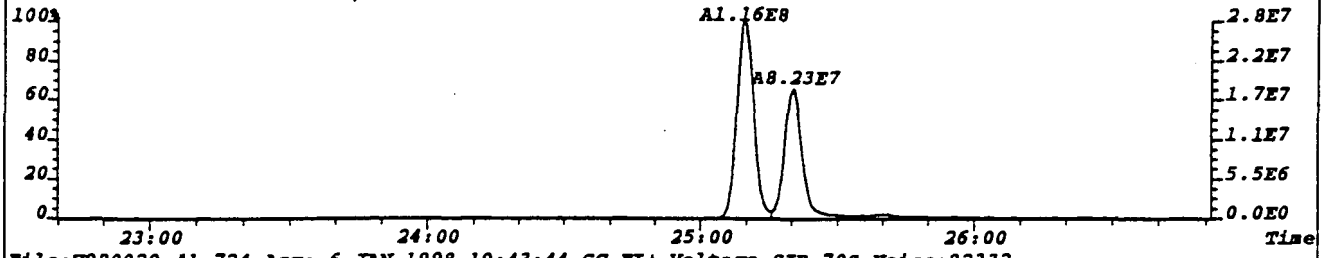
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:167392
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,669568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



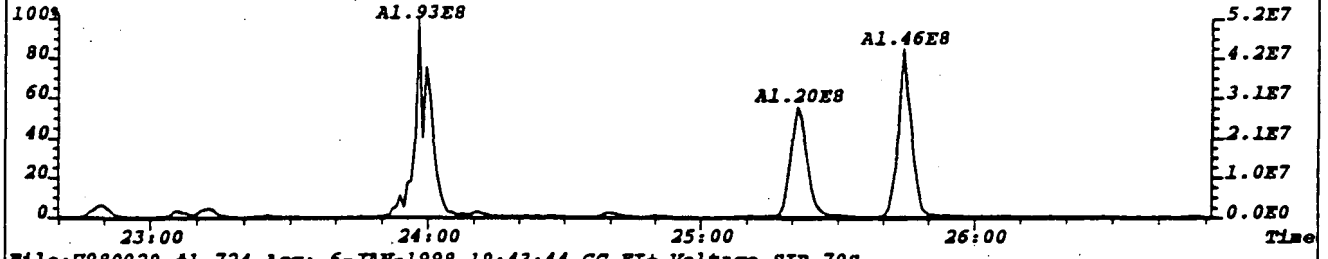
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:13785
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,55140.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



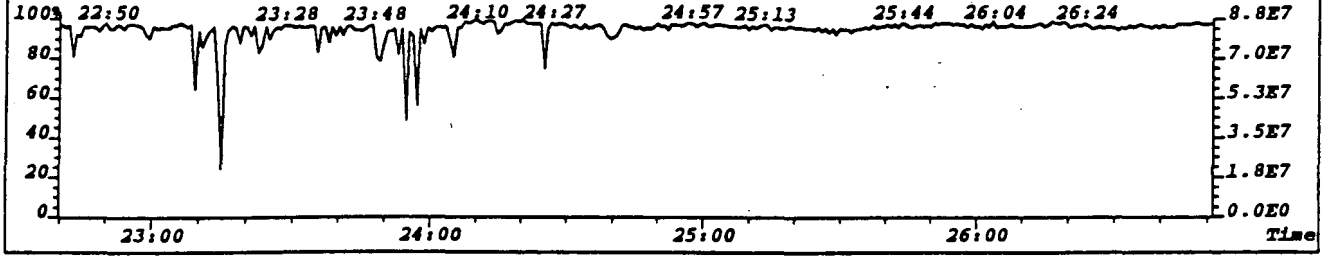
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:8460
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,33840.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



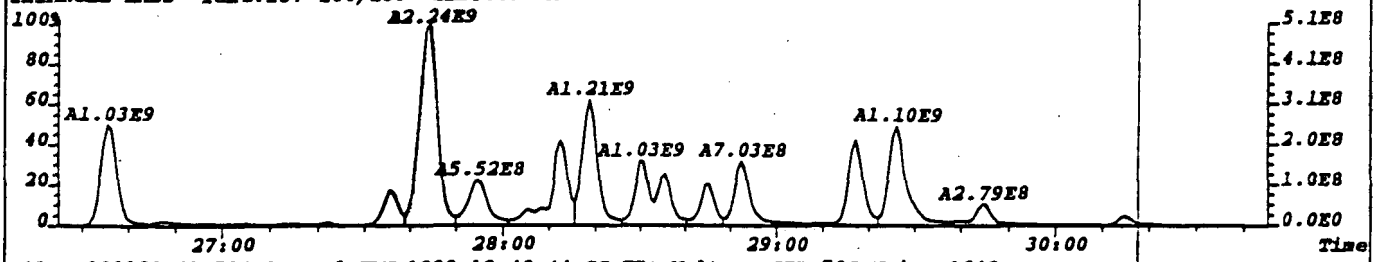
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:82332
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,329328.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



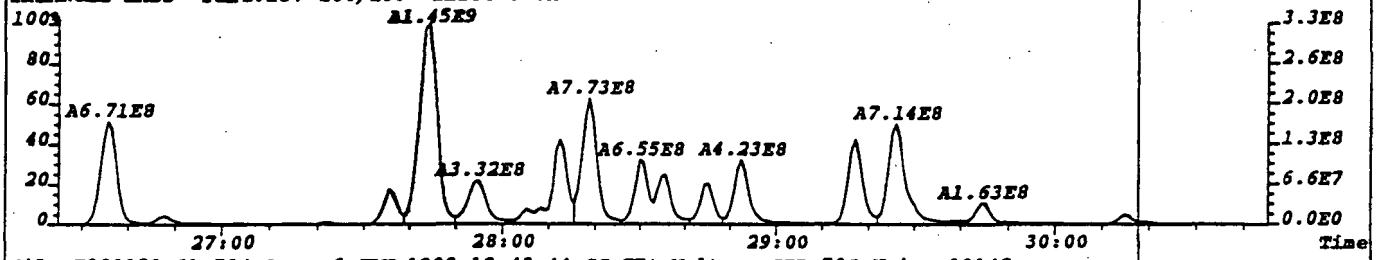
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



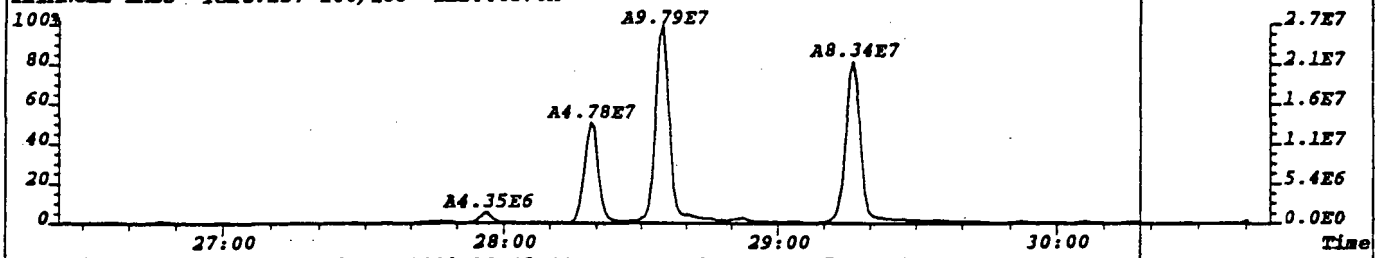
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:7317
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29268.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



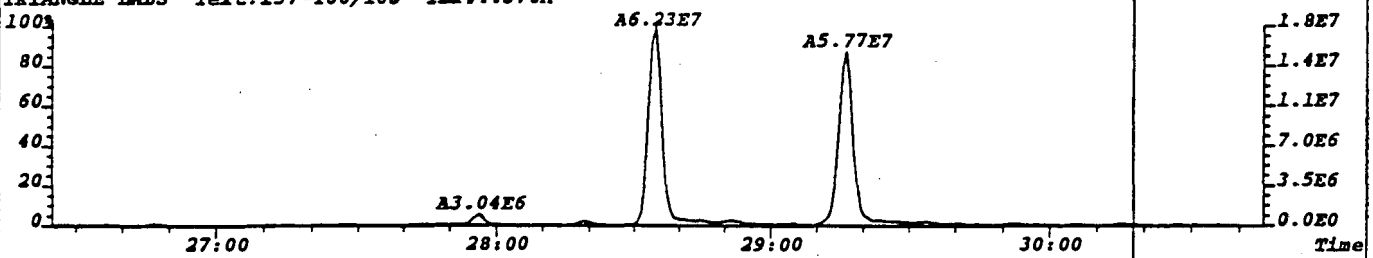
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:9642
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,38568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



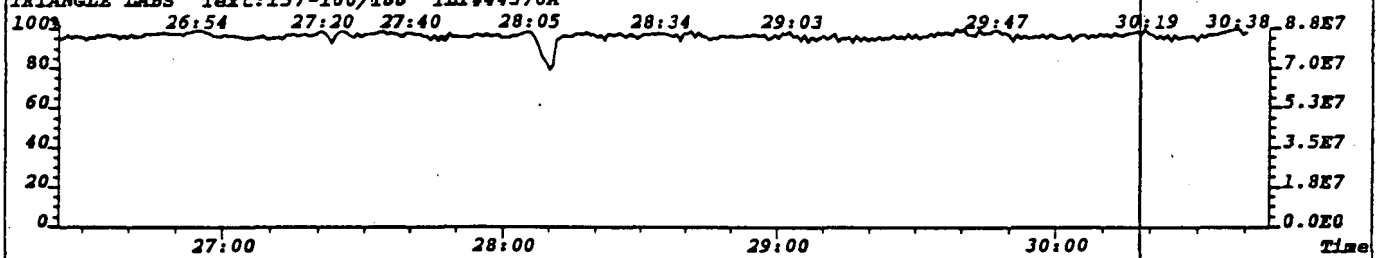
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:10142
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,40568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



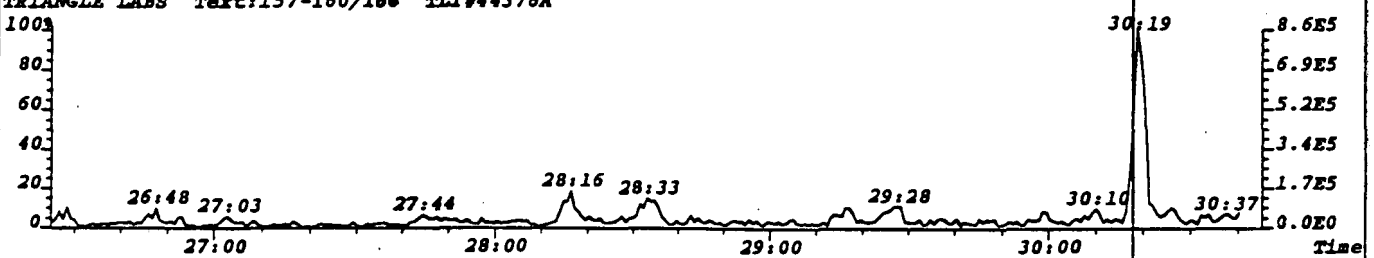
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:9362
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,37448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

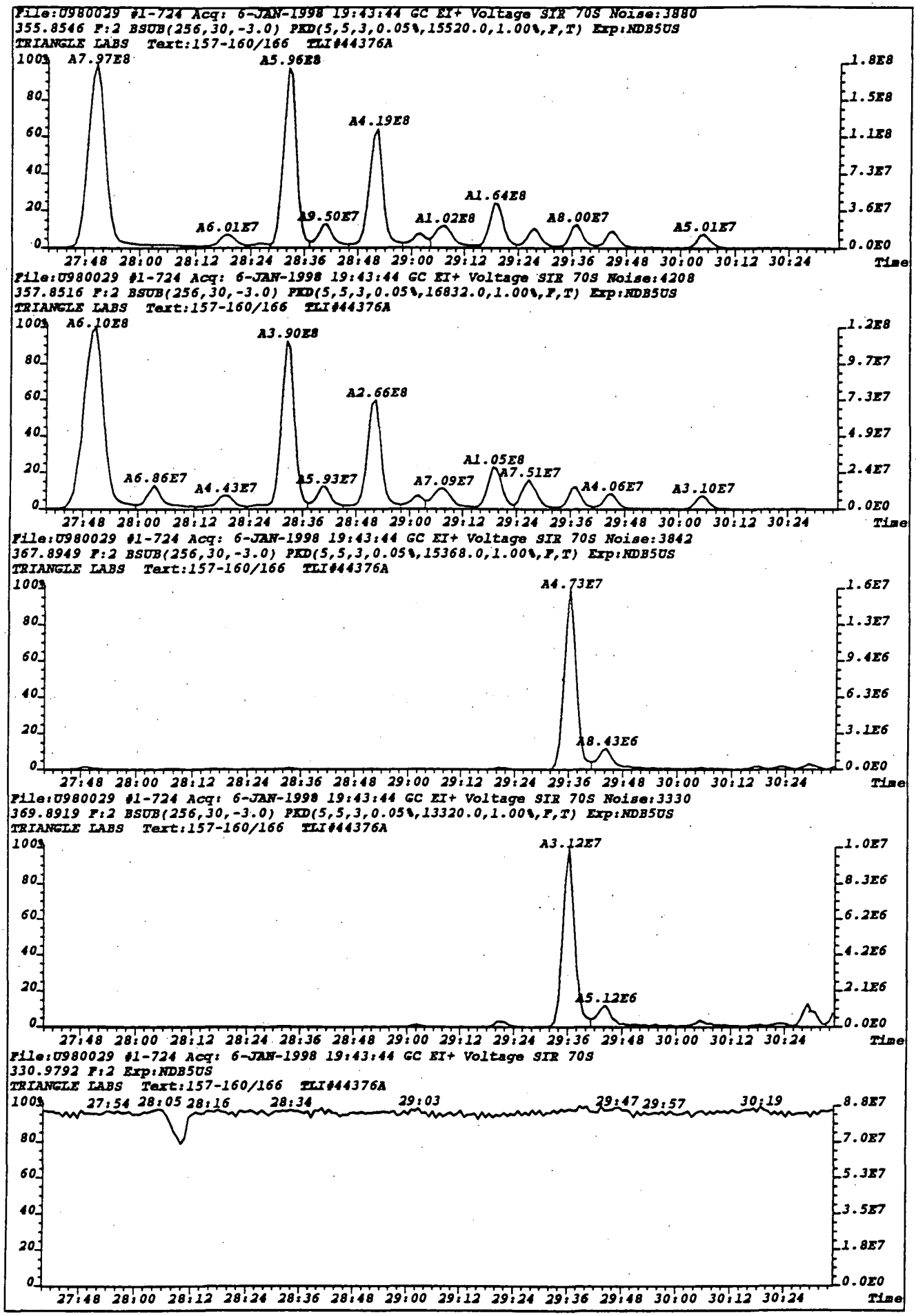


File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

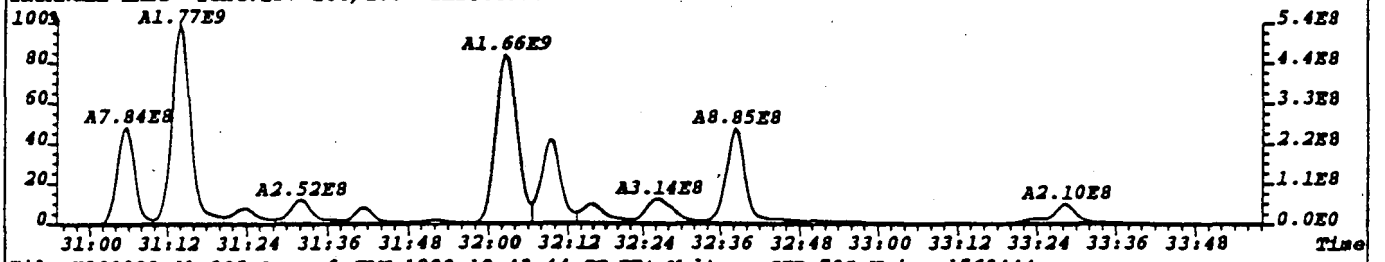


File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

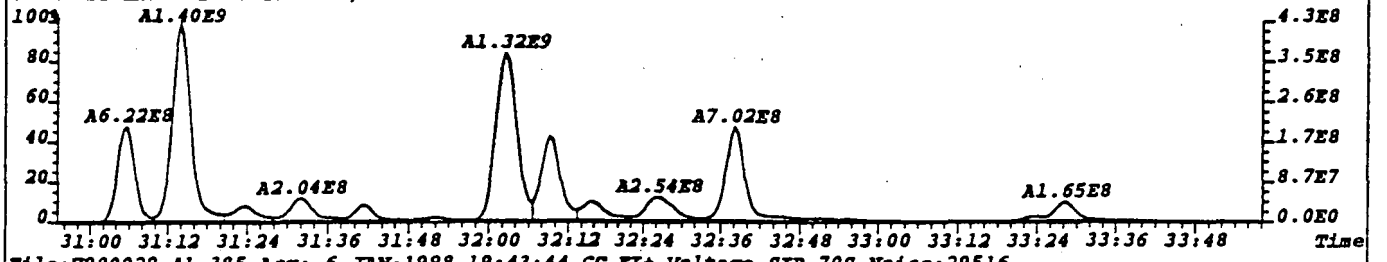



File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:3880
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,15520.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A7.97E8
A5.96E8
A4.19E8
A1.64E8
A6.01E7
A9.50E7
A1.02E8
A8.00E7
A5.01E7
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:4208
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,16832.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A6.10E8
A3.90E8
A2.66E8
A1.05E8
A7.51E7
A6.86E7
A4.43E7
A5.93E7
A7.09E7
A4.06E7
A3.10E7
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:3842
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,15368.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A4.73E7
A8.43E6
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:3330
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,13320.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A3.12E7
A5.12E6
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
Time

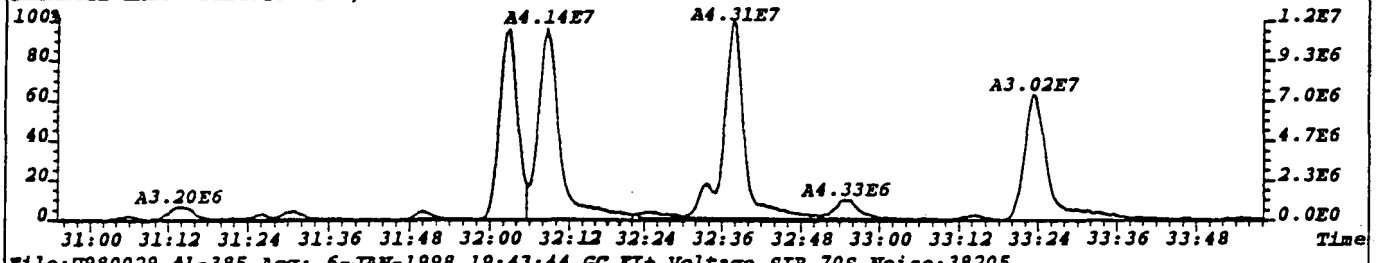
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:1950029
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7800116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



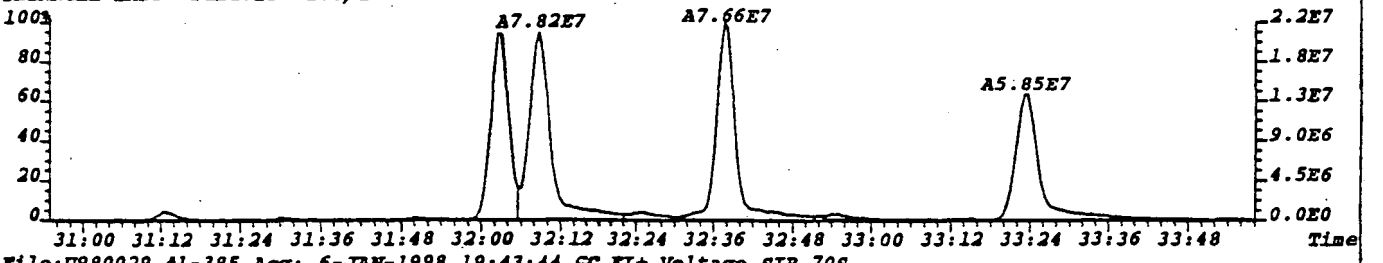
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:1563444
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6253776.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



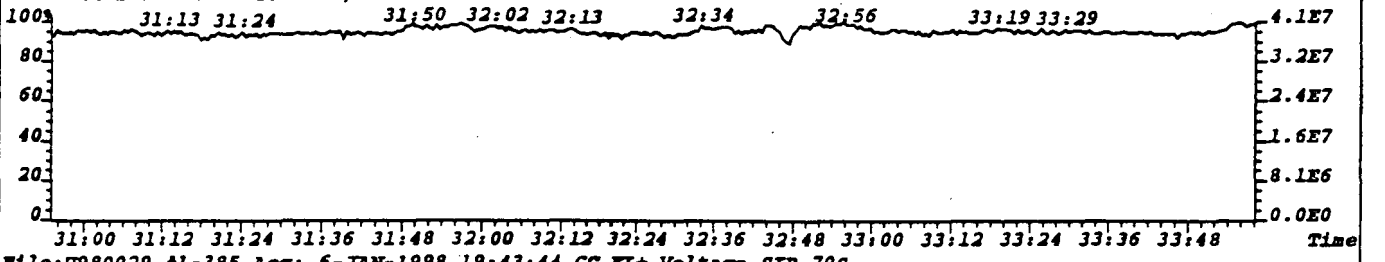
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:29516
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,118064.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



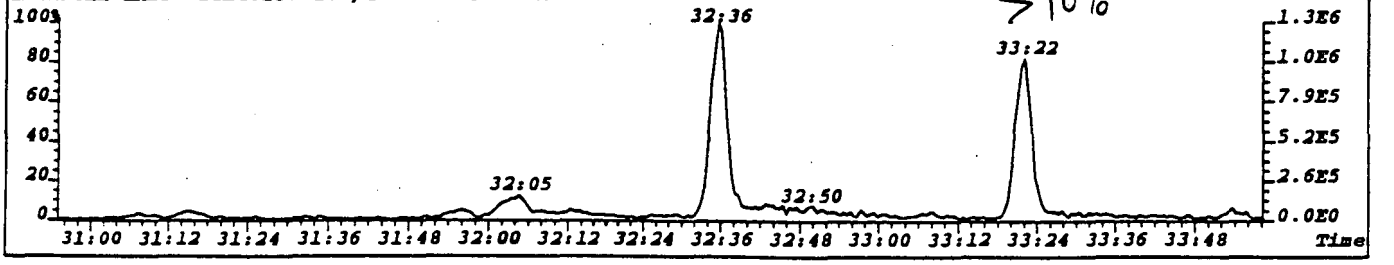
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:38205
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,152820.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



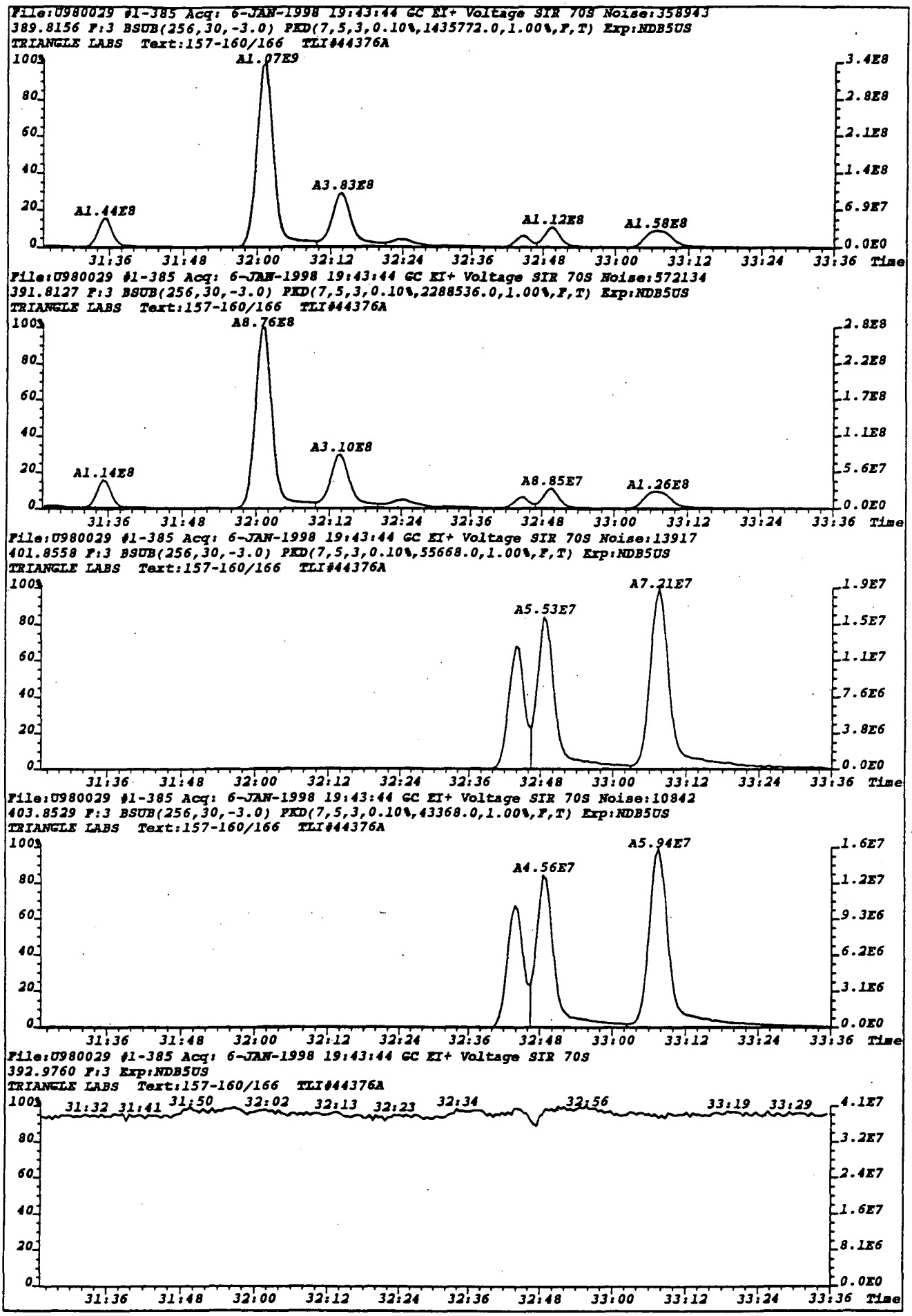
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



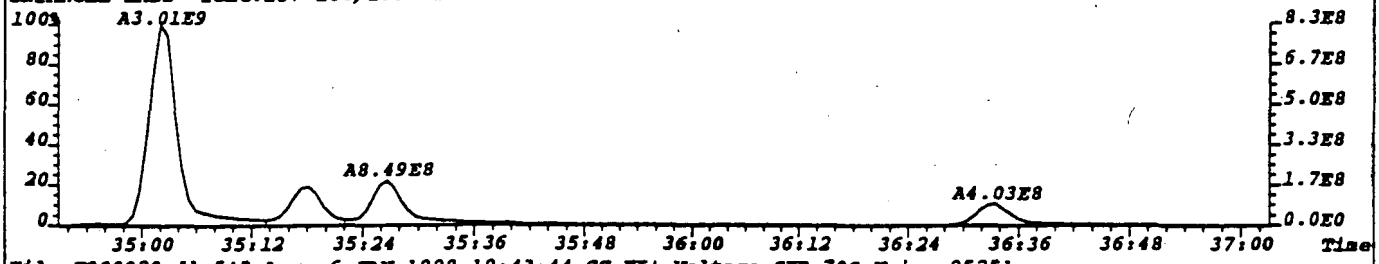
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



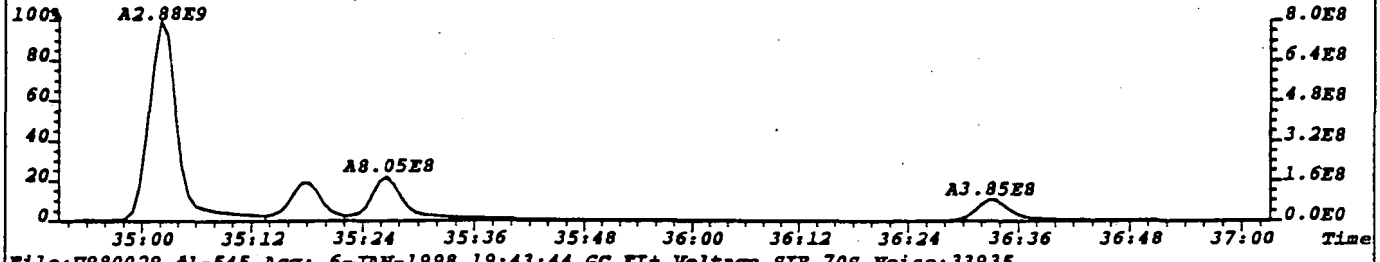
> 10%


File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:358943
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1435772.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A1.07E9
A3.83E8
A1.44E8
A1.12E8
A1.58E8
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:572134
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2288536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A8.76E8
A3.10E8
A1.14E8
A8.85E7
A1.26E8
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:13917
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,55668.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A7.21E7
A5.53E7
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:10842
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,43368.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A5.94E7
A4.56E7
File:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
31:32 31:41 31:50 32:02 32:13 32:23 32:34 32:56 33:19 33:29
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 Time

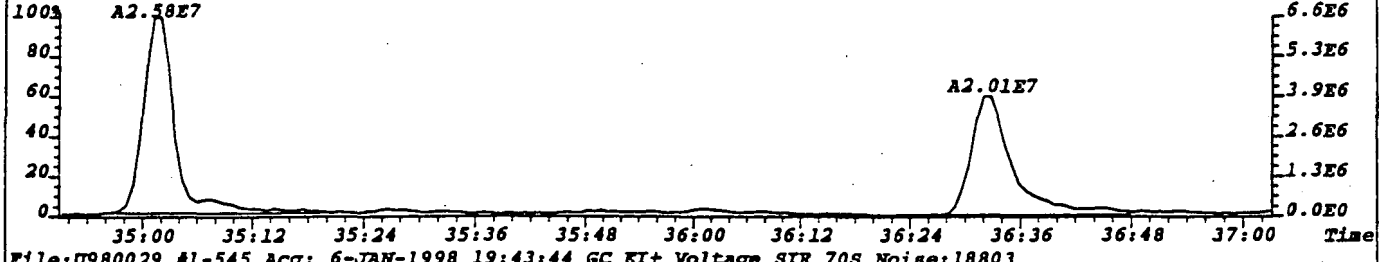
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:119081
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,476324.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



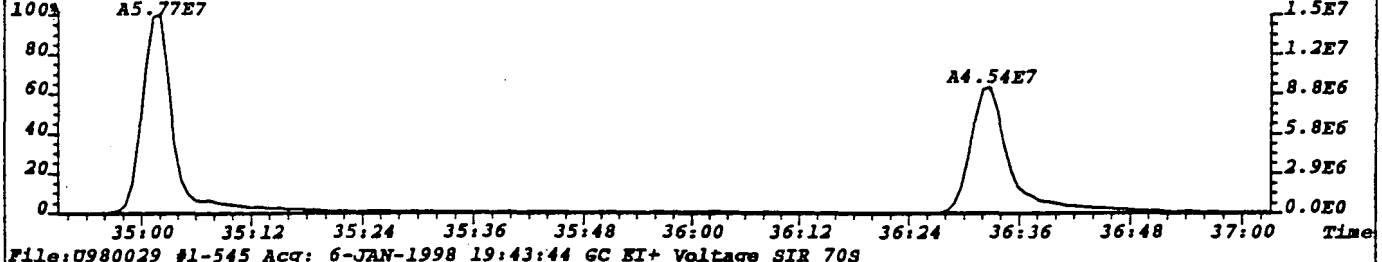
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:95251
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,381004.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



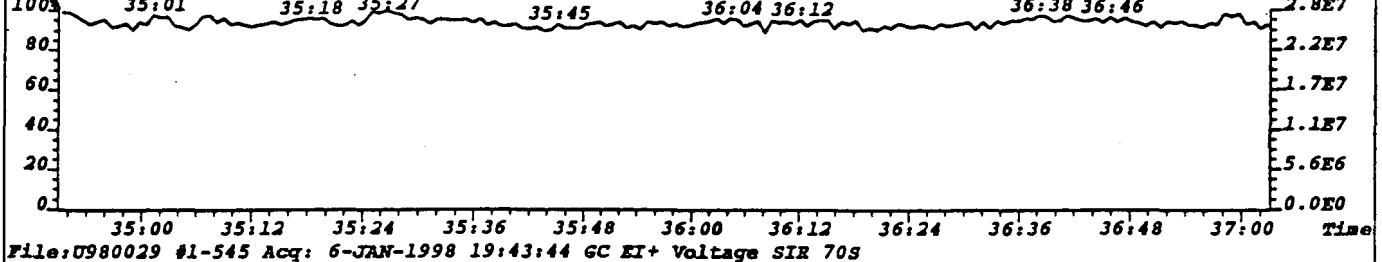
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:33935
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,135740.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



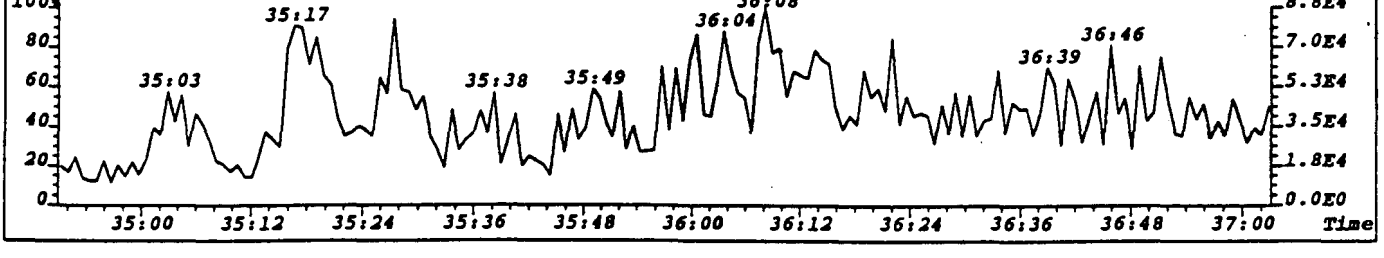
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:18803
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,75212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

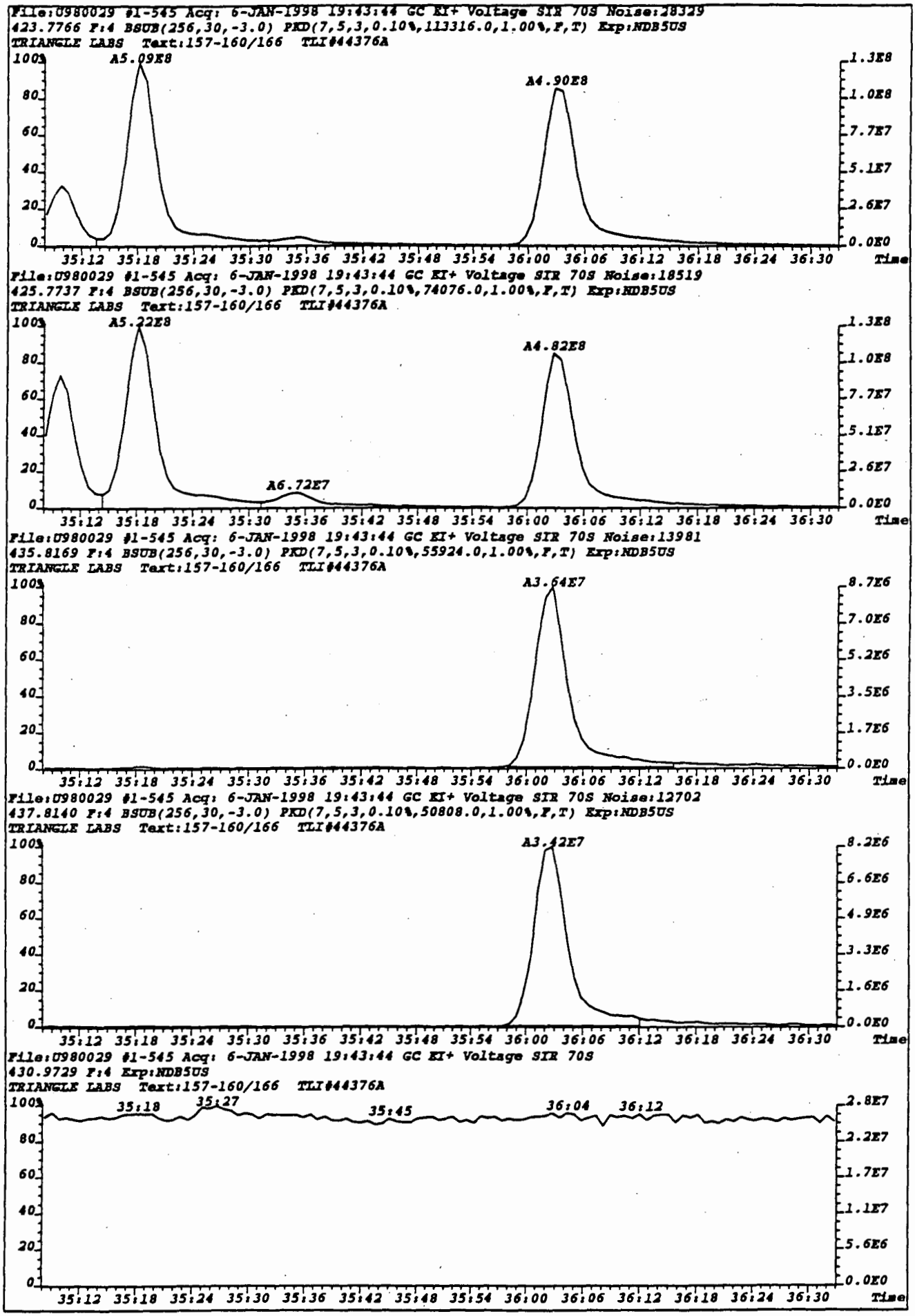


File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

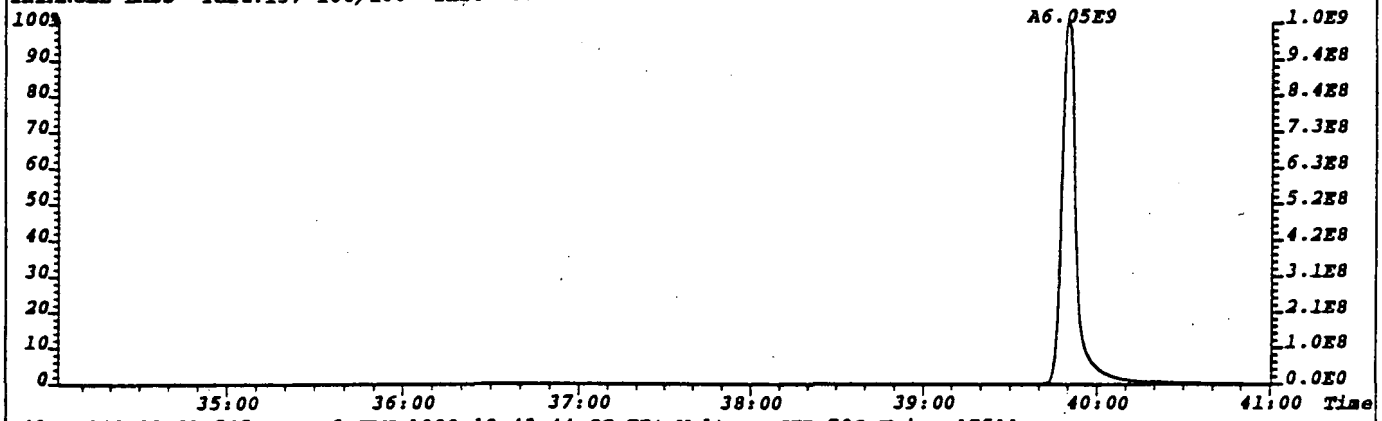


File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

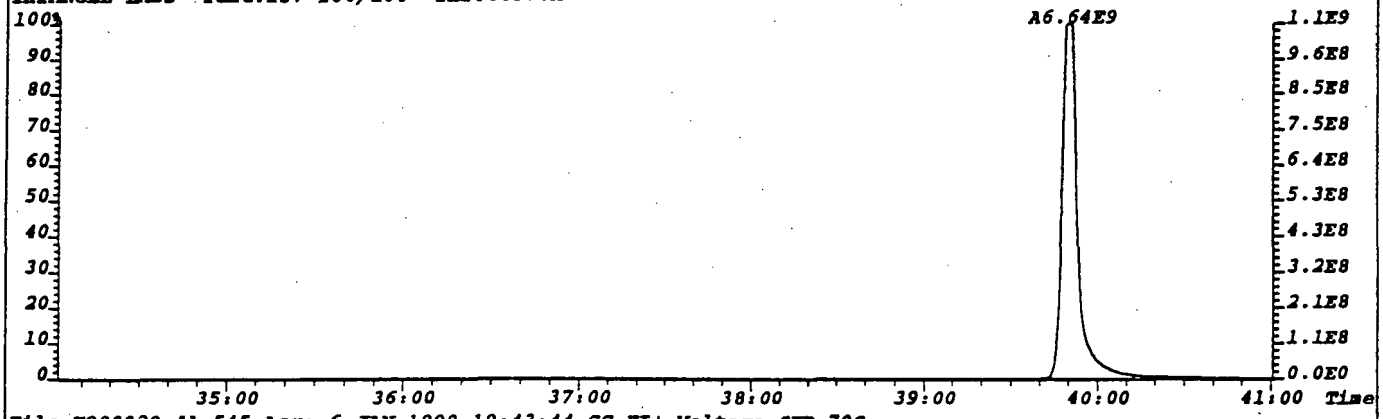



File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:28329
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,113316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A5.09E8
A4.90E8
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:18519
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,74076.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A5.22E8
A4.82E8
A6.72E7
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:13981
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,55924.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A3.64E7
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:12702
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,50808.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A3.42E7
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
35:18
35:27
35:45
36:04
36:12
35:12 35:18 35:24 35:30 35:36 35:42 35:48 35:54 36:00 36:06 36:12 36:18 36:24 36:30
Time

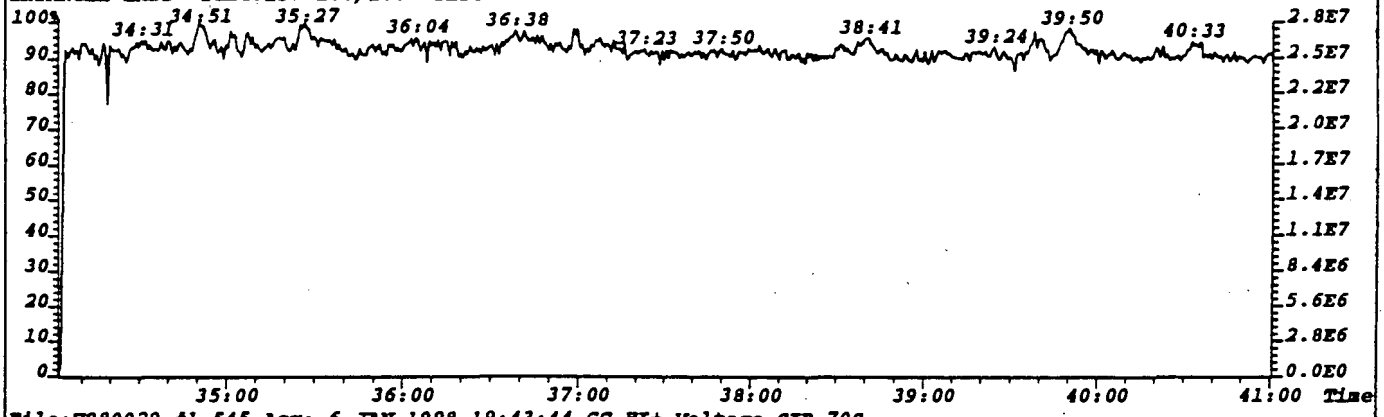
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:75923
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,303692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A



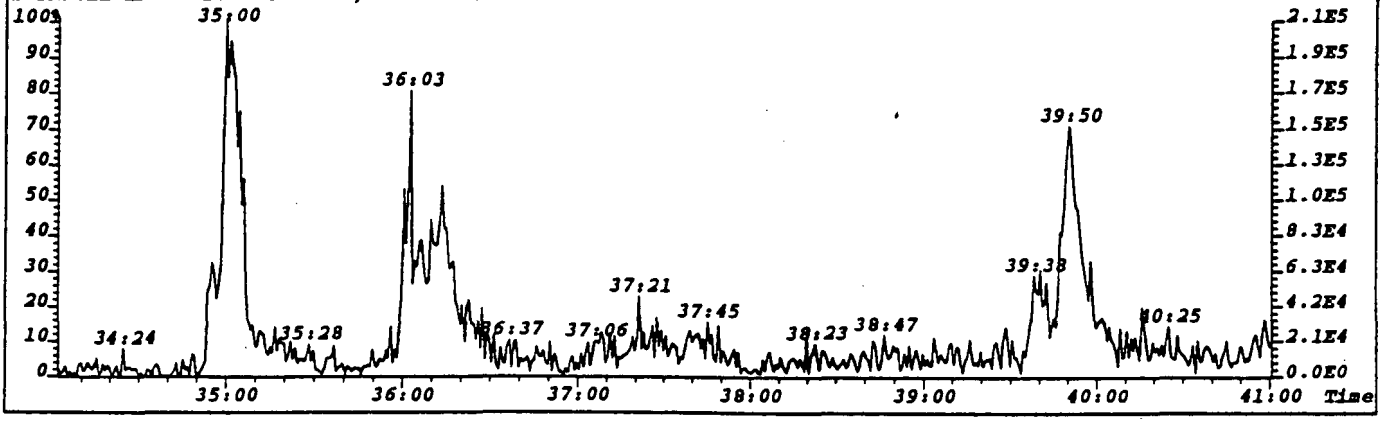
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:17511
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,70044.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

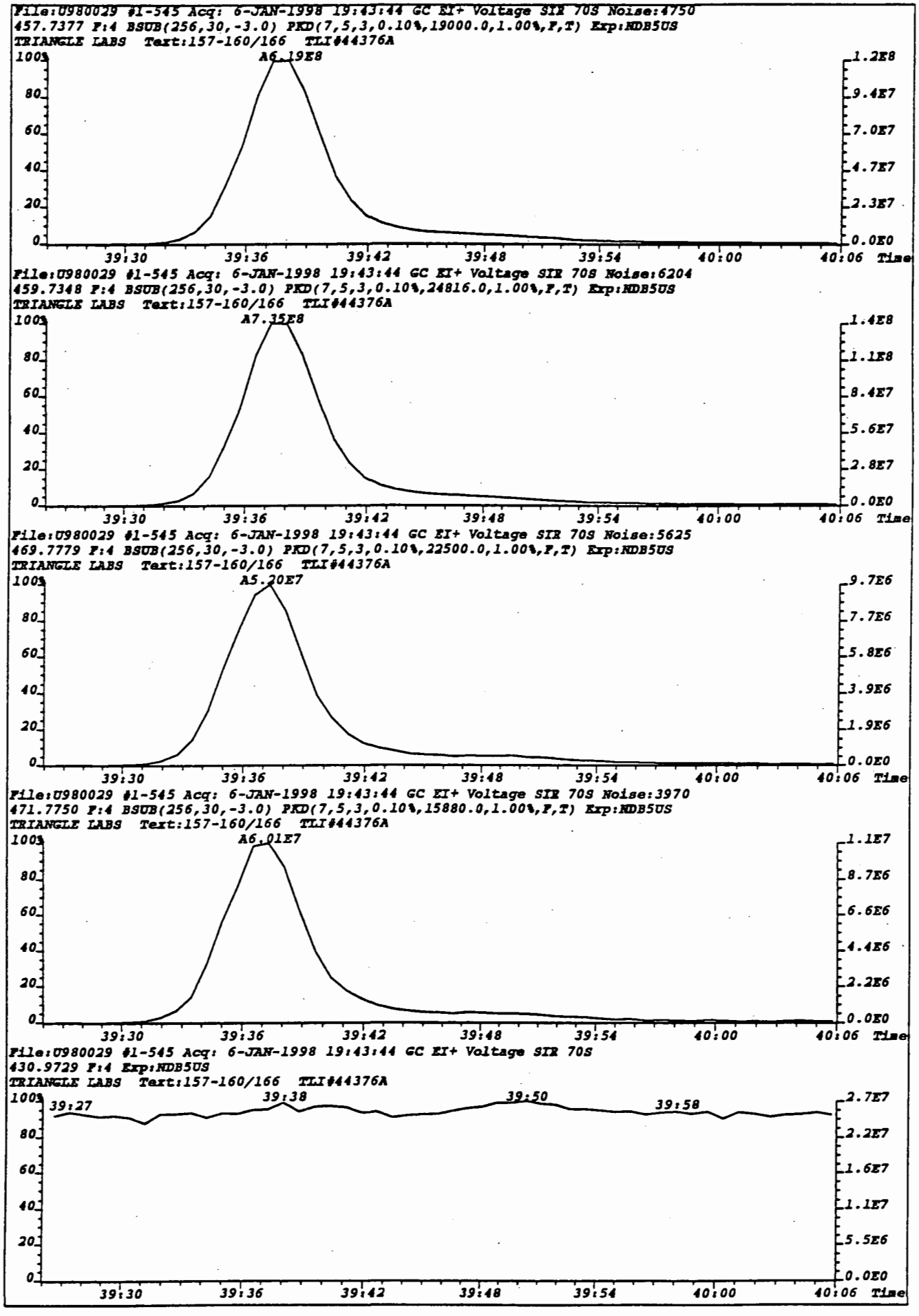


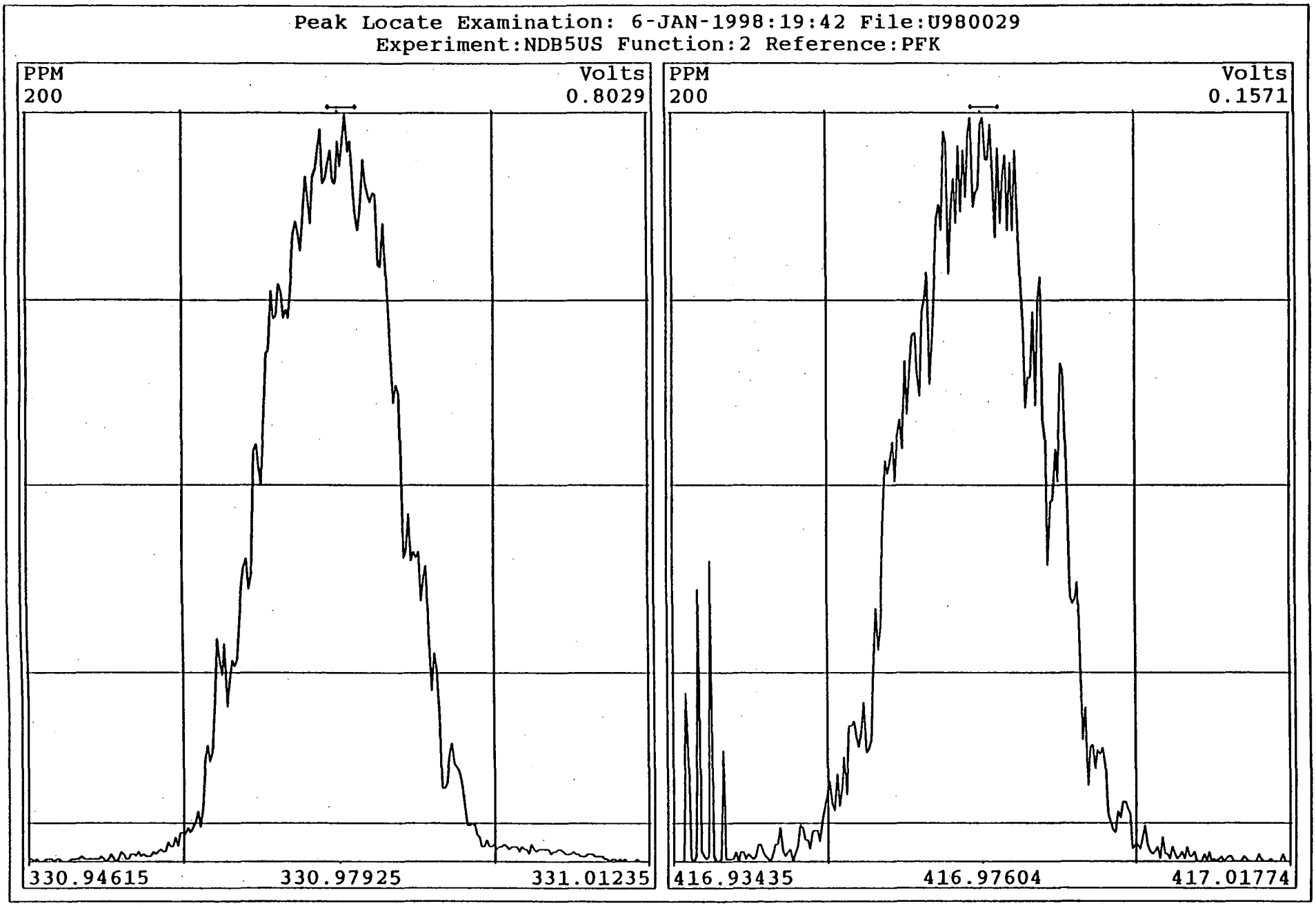
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

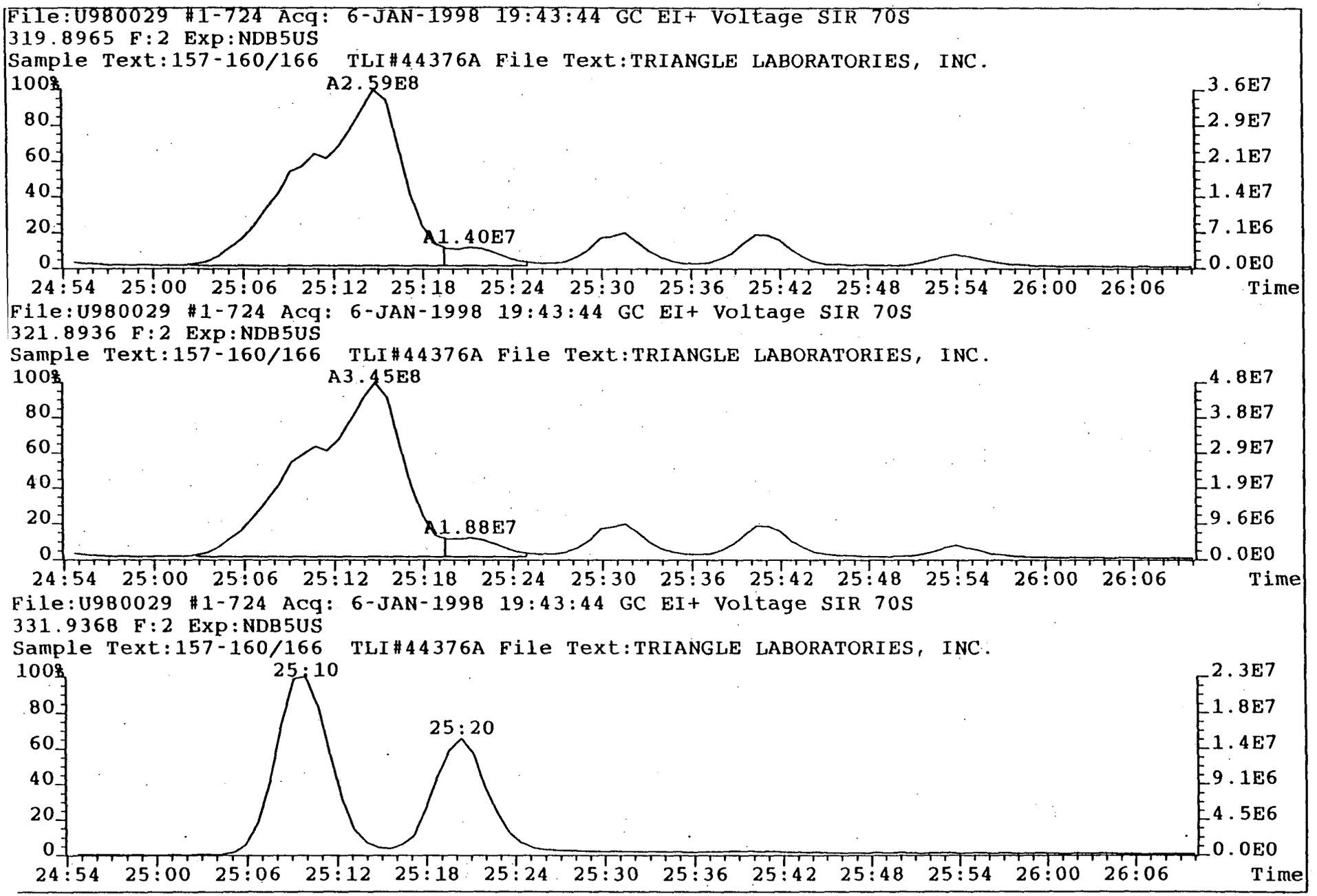


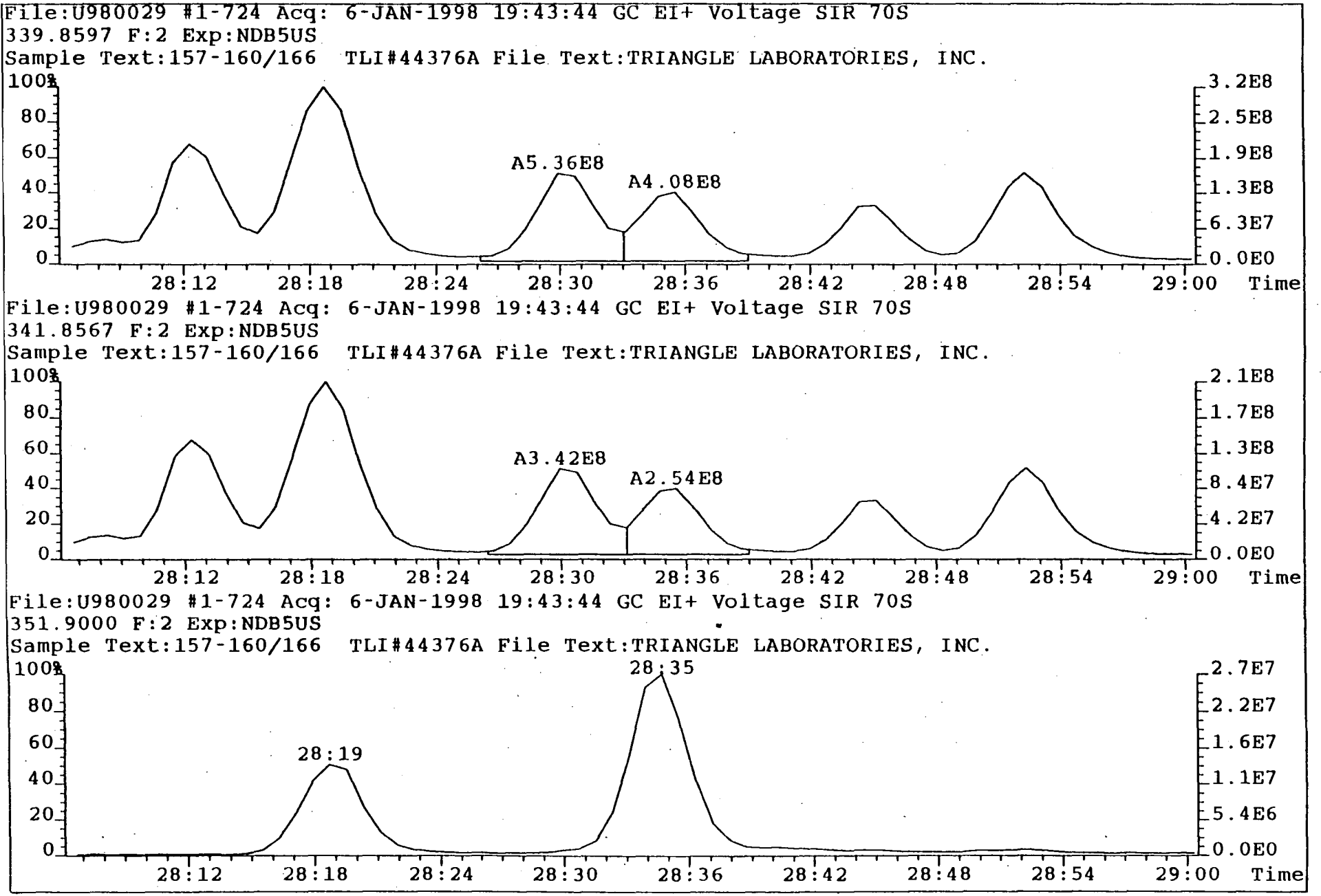
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A

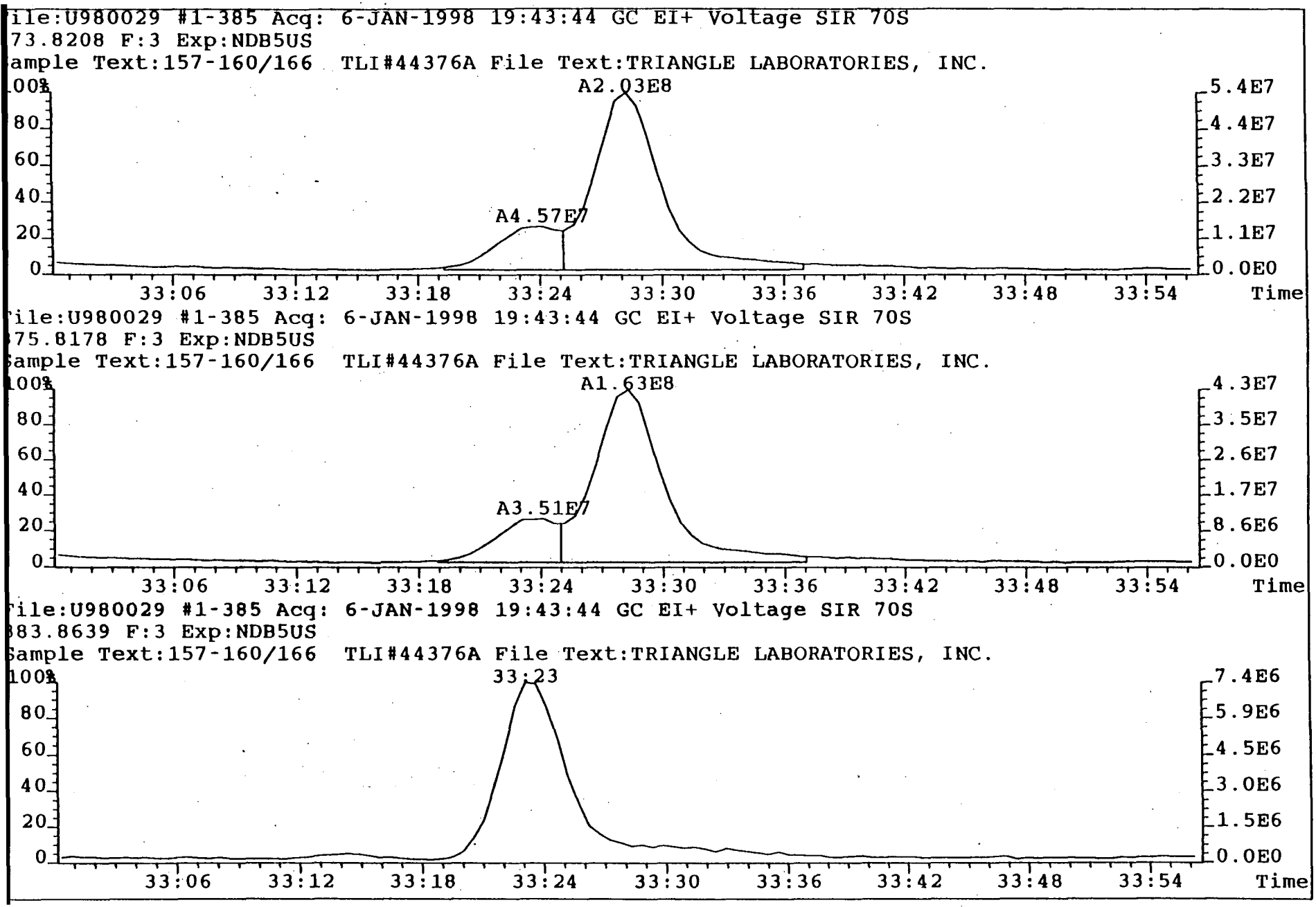



File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:4750
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,19000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A6.19E8
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:6204
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,24816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A7.15E8
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:5625
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A5.20E7
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S Noise:3970
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15880.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
A6.01E7
File:U980029 #1-545 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:157-160/166 TLI#44376A
39:27
39:38
39:50
39:58
39:30
39:36
39:42
39:48
39:54
40:00
40:06
Time


Peak Locate Examination: 6-JAN-1998:19:42 File:U980029
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.8029
330.94615
330.97925
331.01235
PPM
200
Volts
0.1571
416.93435
416.97604
417.01774


File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.59E8
A1.40E7
3.6E7
2.9E7
2.1E7
1.4E7
7.1E6
0.0E0
24:54 25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.45E8
A1.88E7
4.8E7
3.8E7
2.9E7
1.9E7
9.6E6
0.0E0
24:54 25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
25:10
25:20
2.3E7
1.8E7
1.4E7
9.1E6
4.5E6
0.0E0
24:54 25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time


File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A5.36E8
A4.08E8
3.2E8
2.5E8
1.9E8
1.3E8
6.3E7
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.42E8
A2.54E8
2.1E8
1.7E8
1.3E8
8.4E7
4.2E7
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time
File:U980029 #1-724 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:19
28:35
2.7E7
2.2E7
1.6E7
1.1E7
5.4E6
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
29:00
Time


ile:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
73.8208 F:3 Exp:NDB5US
ample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.03E8
A4.57E7
5.4E7
4.4E7
3.3E7
2.2E7
1.1E7
0.0E0
33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time
ile:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
75.8178 F:3 Exp:NDB5US
ample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.63E8
A3.51E7
4.3E7
3.5E7
2.6E7
1.7E7
8.6E6
0.0E0
33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time
ile:U980029 #1-385 Acq: 6-JAN-1998 19:43:44 GC EI+ Voltage SIR 70S
83.8639 F:3 Exp:NDB5US
ample Text:157-160/166 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
33:23
7.4E6
5.9E6
4.5E6
3.0E6
1.5E6
0.0E0
33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time

Eastern Research Group

TLI Project: 44376A
Client Sample: 157-160/166

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: P980097

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-12A-E	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	16.1			0.75	23:08	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.8	71.0	40%-130%	0.74	23:07	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.79	21:56	___

Data Reviewer: _____ 01/09/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:15 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

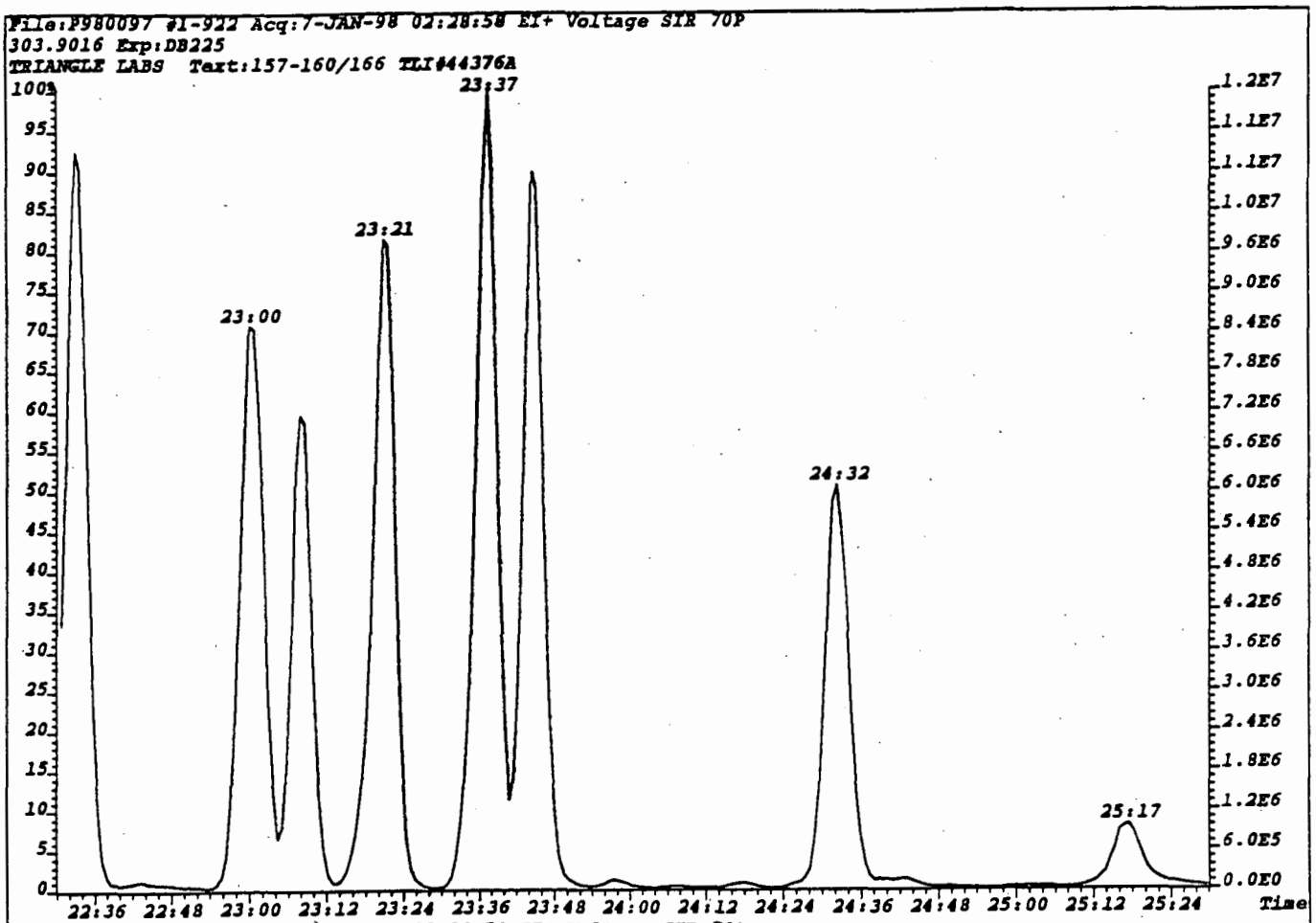
Page No. 1 Listing of P980097B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

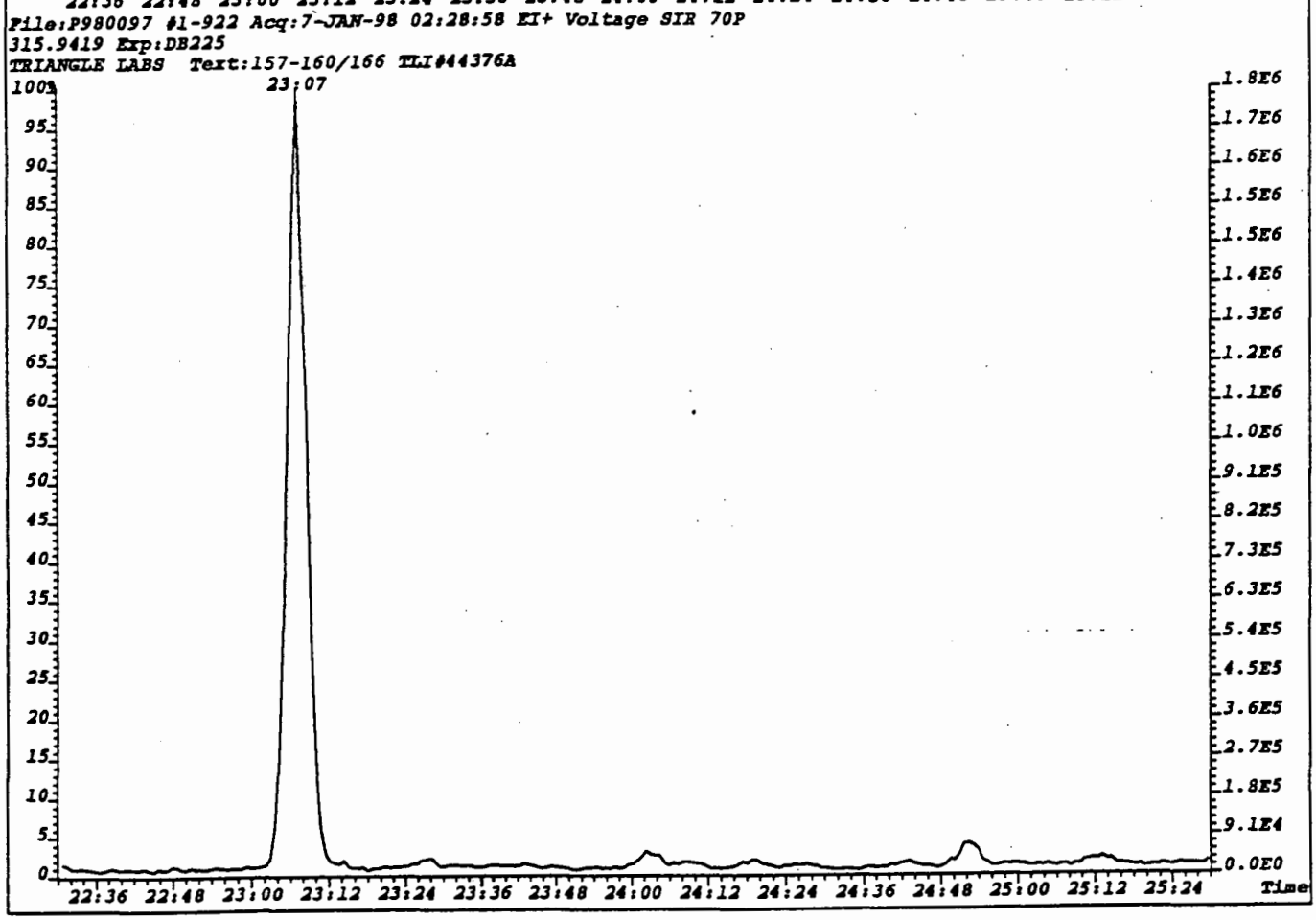
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.792-1.101			
304-306	DC	NL		0:00	RO	1.75	6.25			0.000			
	DC	WL		18:17		0.82	77.20			0.791			
				18:29	RO	0.90	5,442.84	2,755.79	3,075.05	0.800			
				18:47	RO	1.05	149.44	88.66	84.43	0.813			
				18:57	RO	0.64	123.03	53.52	84.12	0.820			
				19:02	RO	1.45	101.42	83.22	57.30	0.823			
				19:09		0.78	376.96	164.90	212.06	0.828			
				19:30		0.75	7,176.25	3,077.92	4,098.33	0.844			
				19:37		0.75	6,298.27	2,689.80	3,608.47	0.849			
				19:45		0.76	11,023.69	4,744.96	6,278.73	0.854			E
				19:56		0.76	5,591.09	2,407.14	3,183.95	0.862			
				20:03		0.76	727.20	313.90	413.30	0.867			
				20:12		0.76	5,663.59	2,441.53	3,222.06	0.874			
				20:21		0.81	11,786.43	5,264.23	6,522.20	0.880			E
				20:30		0.77	6,406.99	2,796.76	3,610.23	0.887			
				20:39		0.75	18,980.25	8,107.25	10,873.00	0.893			E
				20:48		0.75	6,462.59	2,772.45	3,690.14	0.900			
				21:11		0.76	38,781.10	16,734.90	22,046.20	0.916			E
				21:24		0.65	50.50	19.84	30.66	0.926			
				21:28	RO	1.02	76.75	44.15	43.36	0.929			
				21:38		0.75	8,916.28	3,815.37	5,100.91	0.936			E
				21:44		0.75	1,589.96	678.85	911.11	0.940			
				21:53		0.75	8,728.95	3,754.20	4,974.75	0.947			E
				22:08		0.75	8,731.18	3,746.66	4,984.52	0.957			E
				22:22		0.75	1,770.81	756.98	1,013.83	0.968			
				22:33		0.75	10,442.90	4,479.98	5,962.92	0.975			E
				22:43	RO	0.48	35.95	15.64	32.75	0.983			
				23:00		0.75	8,268.36	3,549.66	4,718.70	0.995			E
				23:08		0.75	6,183.94	2,647.64	3,536.30	1.001	2378-TCDF	AN	
				23:21		0.75	9,478.24	4,064.54	5,413.70	1.010			E
				23:37		0.75	11,235.67	4,832.54	6,403.13	1.022			E
				23:44		0.76	9,612.86	4,140.58	5,472.28	1.027			E
				23:57		0.68	50.11	20.25	29.86	1.036			
				24:32		0.75	6,155.15	2,643.77	3,511.38	1.061			
				25:17		0.77	1,230.58	534.76	695.82	1.094			
	DC	WH		25:44		0.85	58.81			1.113			
304-306			33	Peaks			217,649.33						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	1.76	4.99			0.000			
	DC	WL		20:10		0.68	31.96			0.872			
	DC	WL		20:23	RO	1.21	3.54			0.882			
	DC	WL		20:33		0.75	64.14			0.889			

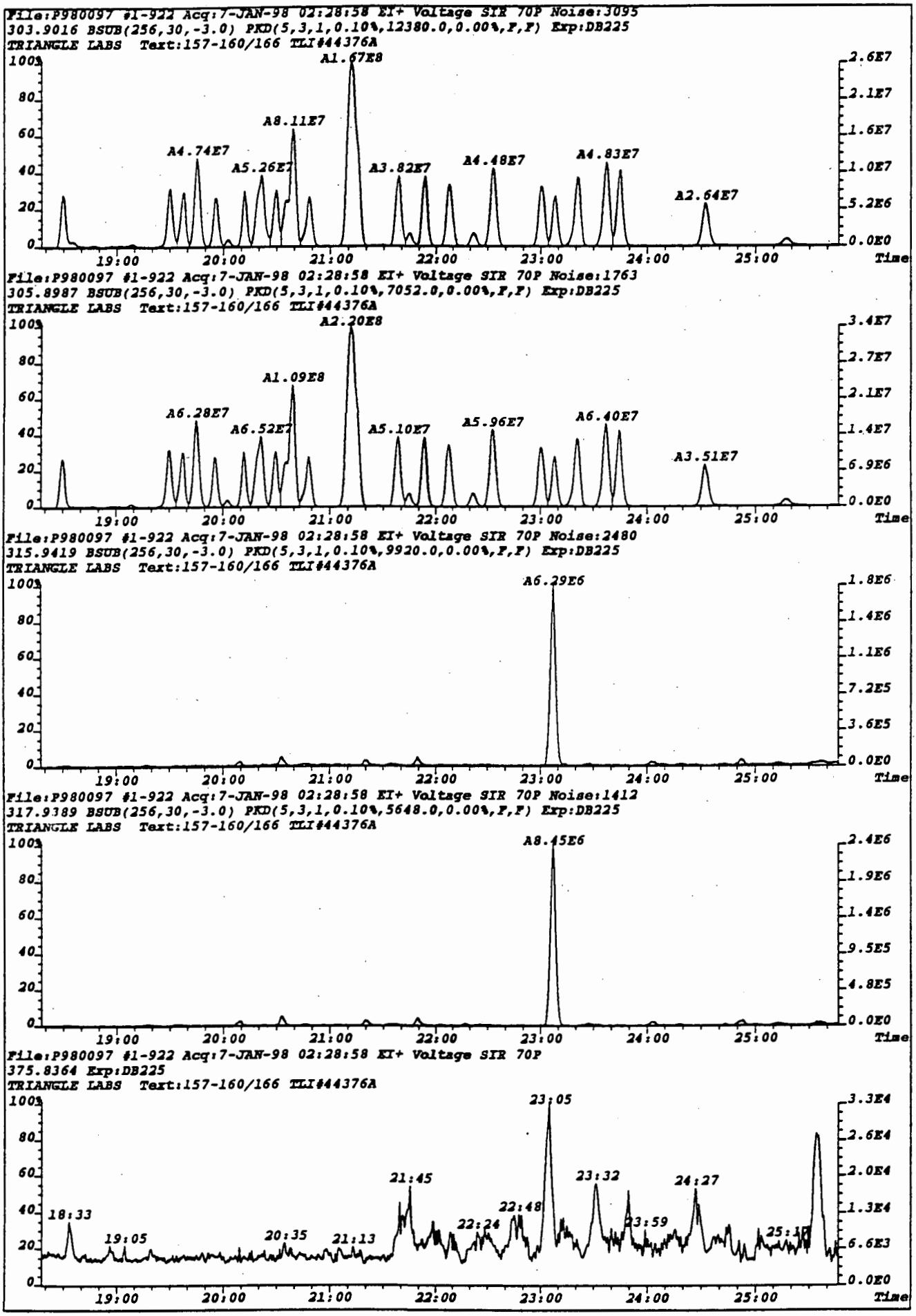
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WL		21:03		0.65	8.57			0.911			
	DC	WL		21:20		0.78	41.82			0.923			
	DC	WL		21:34	RO	0.39	12.50			0.933			
	DC	WL		21:49		0.73	58.77			0.944			
				22:18	RO	0.42	6.57	2.86	6.81	0.965			
				23:07		0.74	1,473.98	628.78	845.20	1.000	13C12-2378-TCDF	IS0	
				23:28	RO	0.21	8.00	3.48	16.55	1.015			
				24:02		0.83	33.20	15.01	18.19	1.040			
	DC	WH		24:09	RO	2.45	4.85			1.045			
	DC	WH		24:19		0.86	11.35			1.052			
	DC	WH		24:52		0.79	44.01			1.076			
	DC	WH		25:13	RO	0.40	16.30			1.091			
316-318		4	Peaks				1,521.75						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC	NL		0:00	RO	1.68	1.77			0.000			
	DC	WL		19:07	RO	0.98	2.27			0.884			
	DC	SN		20:31	RO	1.81	2.00			0.948			
	DC	SN		20:38	RO	2.07	1.77			0.954			
				21:38		0.79	984.02	433.06	550.96	1.000	13C12-2378-TCDD	IS1	
				21:56		0.79	1,496.30	659.49	836.81	1.014	13C12-1234-TCDD	RS1	
	DC	SN		22:19	RO	1.07	1.20			1.032			
				22:43		0.76	11.98	5.19	6.79	1.050			
	DC	SN		23:10	RO	1.39	0.67			1.071			
	DC	WH		23:45	RO	0.48	10.76			1.098			
	DC	WH		24:03	RO	2.38	0.80			1.112			
	DC	WH		24:14		0.81	4.70			1.120			
	DC	WH		24:28	RO	0.50	5.84			1.131			
	DC	WH		24:40	RO	0.27	1.68			1.140			
	DC	WH		24:47	RO	3.59	1.20			1.146			
332-334		3	Peaks				2,492.30						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

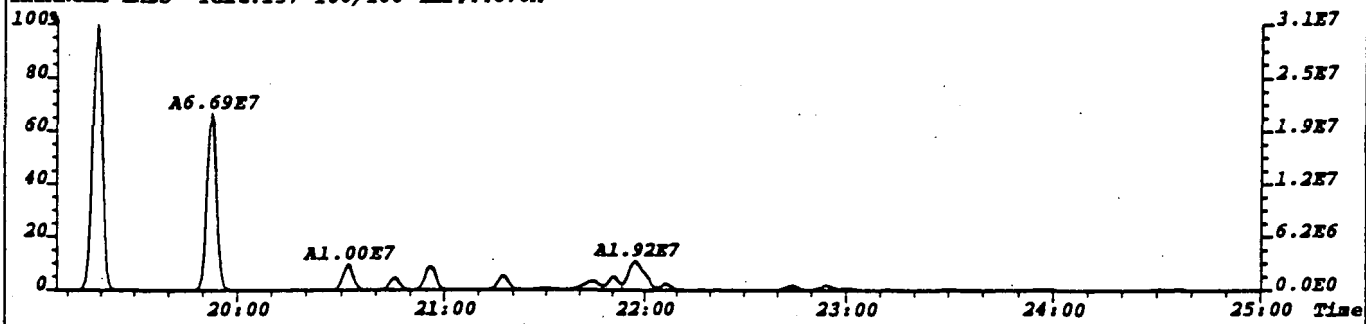
*** End of Report ***


File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
23:37
23:21
23:00
24:32
25:17
Time

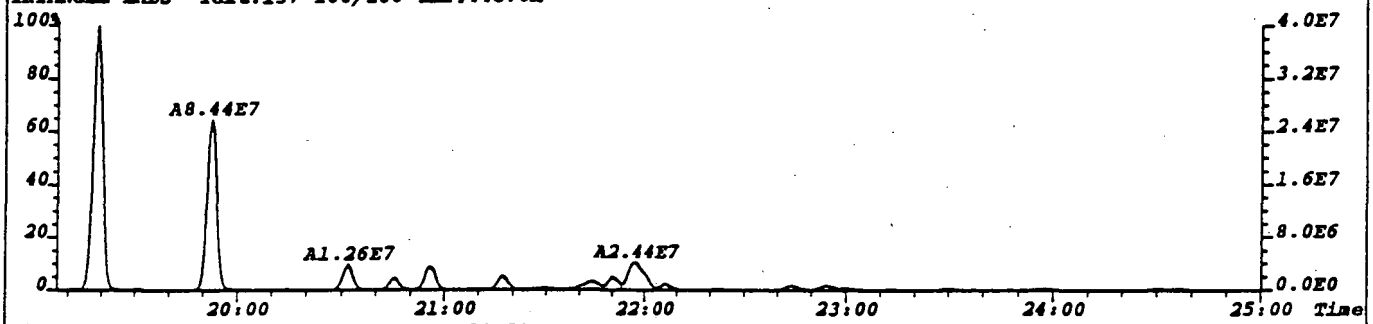

File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
23:07
Time


File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:3095
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,12380.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
A1.67E8
A8.11E7
A4.74E7
A5.26E7
A3.82E7
A4.48E7
A4.83E7
A2.64E7
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:1763
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,7052.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
A2.20E8
A1.09E8
A6.28E7
A6.52E7
A5.10E7
A5.96E7
A6.40E7
A3.51E7
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:2480
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,9920.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
A6.29E6
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:1412
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5648.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
A8.45E6
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
23:05
21:45
23:32
24:27
22:48
18:33
19:05
20:35
21:13
22:24
23:59
Time

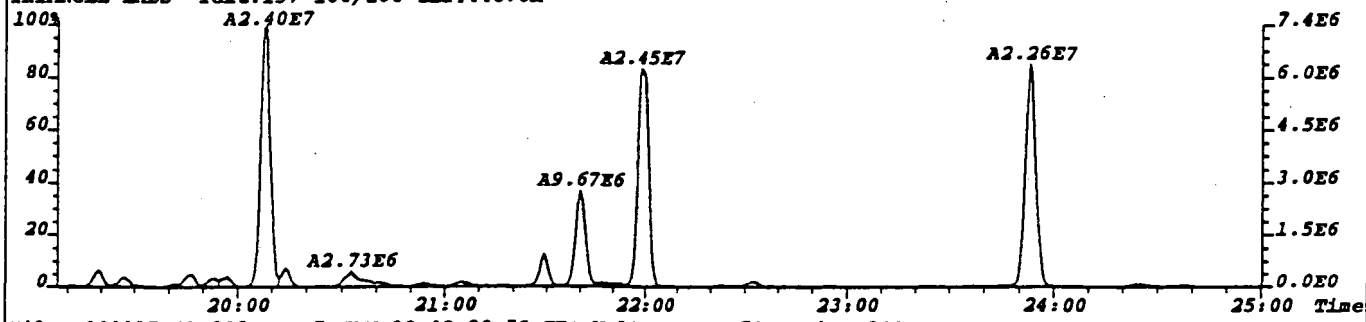
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:1292
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5168.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A



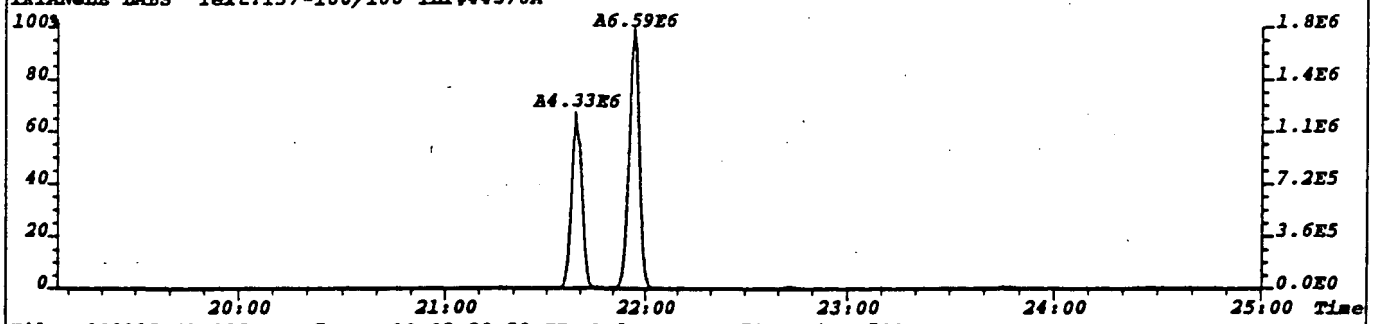
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:7310
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,29240.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A



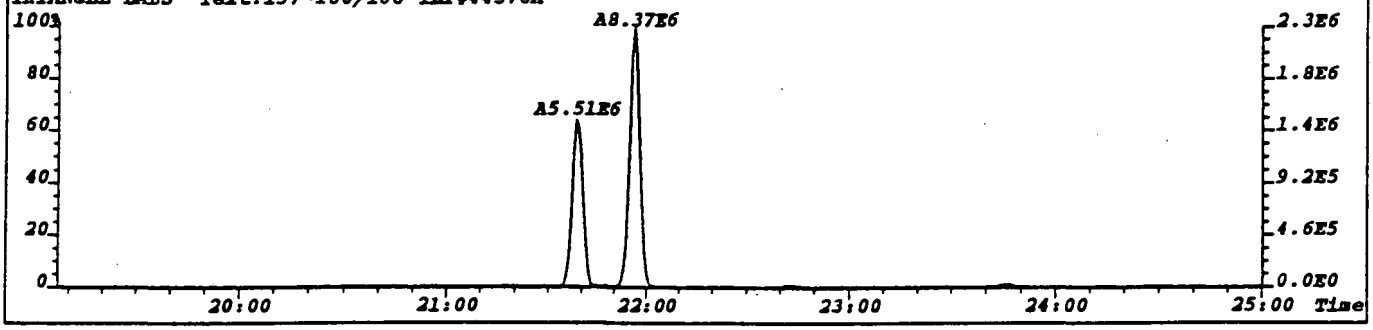
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:1154
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4616.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A

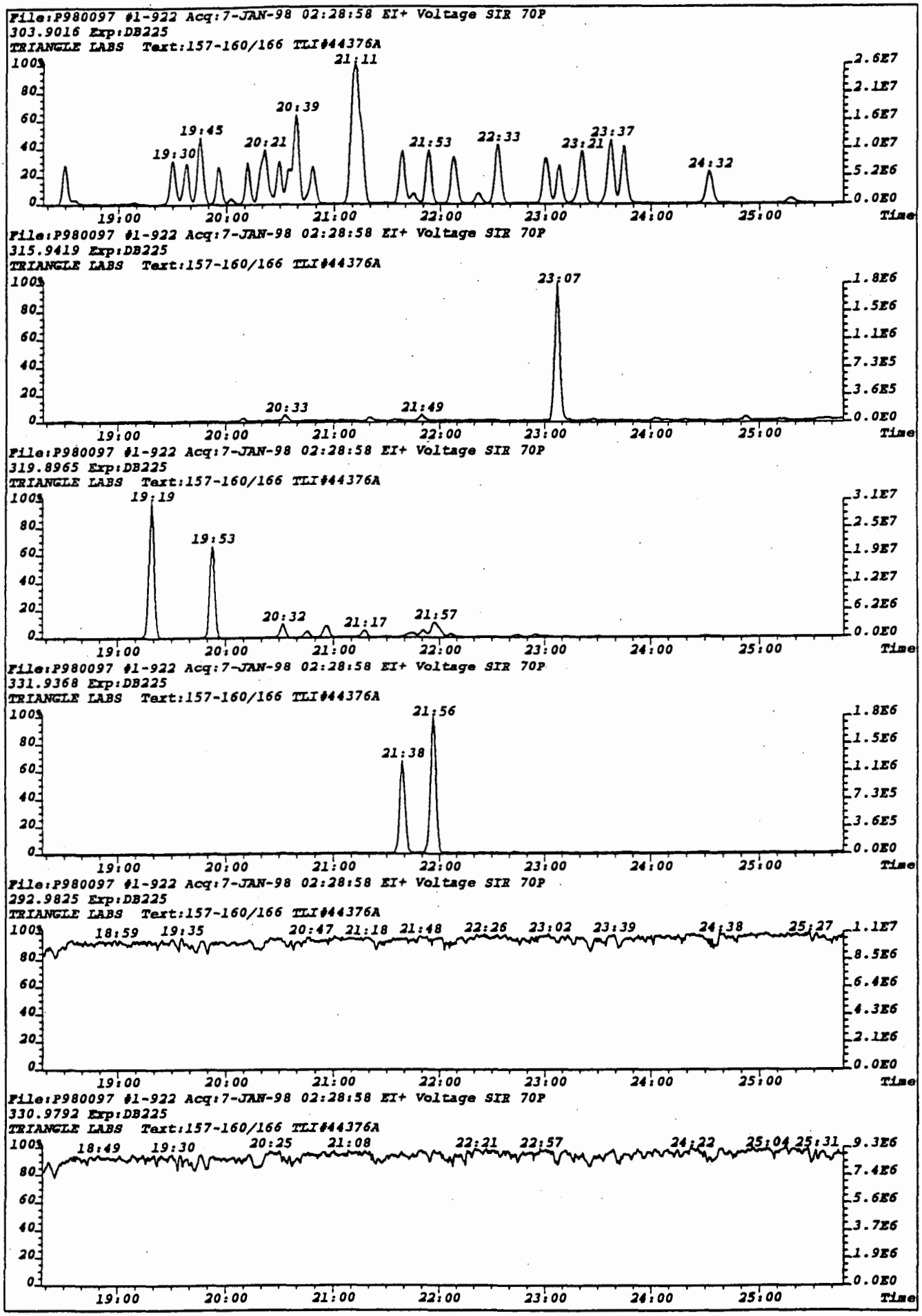


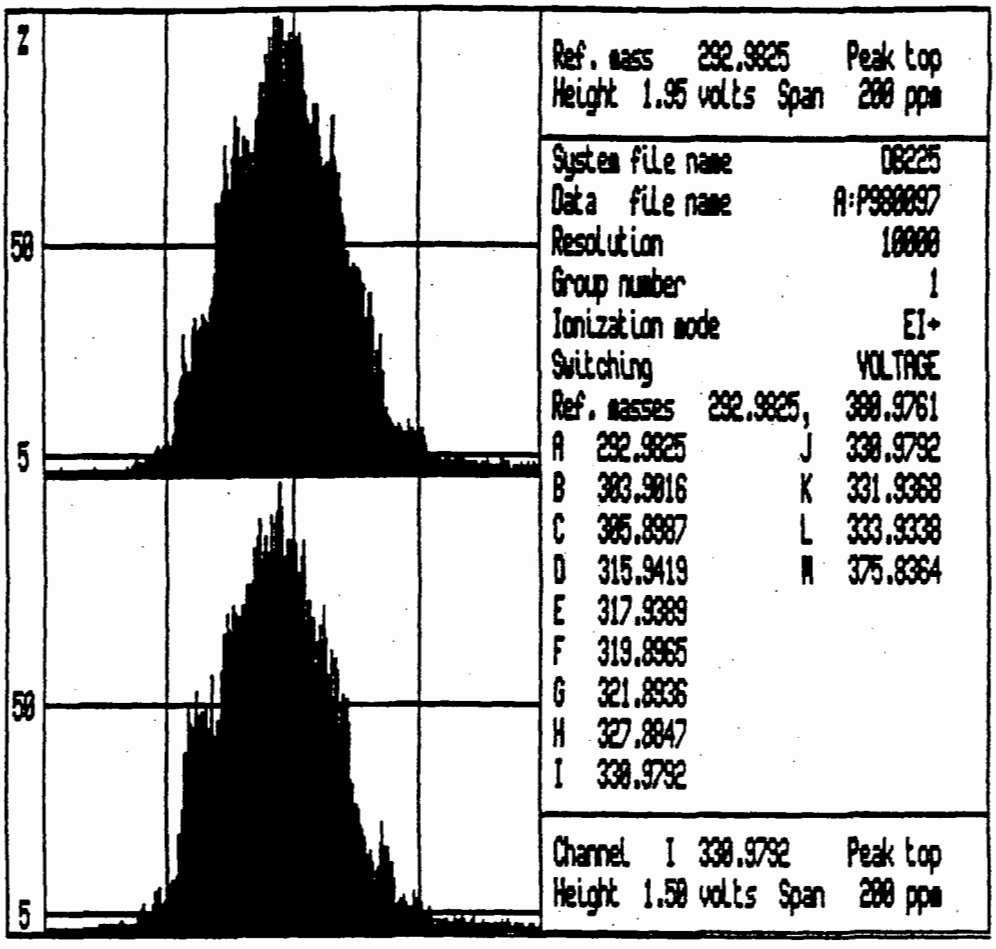
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:840
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3360.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A



File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P Noise:500
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2000.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A




File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
19:30
19:45
20:21
20:39
21:11
21:53
22:33
23:21
23:37
24:32
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
20:33
21:49
23:07
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
19:19
19:53
20:32
21:17
21:57
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
21:38
21:56
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
18:59
19:35
20:47
21:18
21:48
22:26
23:02
23:39
24:38
25:27
File:P980097 #1-922 Acq:7-JAN-98 02:28:58 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:157-160/166 TLI#44376A
18:49
19:30
20:25
21:08
22:21
22:57
24:22
25:04
25:31
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height 1.95 volts Span 200 ppm
System file name D8225
Data file name A:P980897
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height 1.50 volts Span 200 ppm

Eastern Research Group

TLI Project: **44376A** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **161-164** — Analysis File: **U980030**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPMIT204**
TLI ID:	**194-59-13A-E**	Date Extracted:	**12/29/97**	ICal:	**UF51058**
		Date Analyzed:	**01/06/98**	ConCal:	**U980025**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**U980026**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BB**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.61			0.75	25:20	PR_
1,2,3,7,8-PeCDD	3.4			1.53	29:36	___
1,2,3,4,7,8-HxCDD	3.7			1.33	32:44	___
1,2,3,6,7,8-HxCDD	5.7			1.21	32:49	___
1,2,3,7,8,9-HxCDD	8.3			1.27	33:06	___
1,2,3,4,6,7,8-HpCDD	32.9			0.96	36:02	___
1,2,3,4,6,7,8,9-OCDD	47.1			0.85	39:36	___
2,3,7,8-TCDF	53.8			0.74	24:38	E__
1,2,3,7,8-PeCDF	13.8			1.57	28:34	___
2,3,4,7,8-PeCDF	23.8			1.50	29:15	___
1,2,3,4,7,8-HxCDF	72.8			1.27	32:02	E__
1,2,3,6,7,8-HxCDF	25.9			1.19	32:08	___
2,3,4,6,7,8-HxCDF	38.5			1.32	32:37	___
1,2,3,7,8,9-HxCDF	2.5			1.15	33:23	PR_
1,2,3,4,6,7,8-HpCDF	107			1.05	35:01	E__
1,2,3,4,7,8,9-HpCDF	17.1			1.04	36:32	___
1,2,3,4,6,7,8,9-OCDF	79.7			0.88	39:49	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	68.1	11		68.4	E__
Total PeCDD	55.0	9		88.7	___
Total HxCDD	92.0	7			E__
Total HpCDD	68.8	2			___
Total TCDF	288	16			E__
Total PeCDF	324	15		326	E__
Total HxCDF	300	13			E__
Total HpCDF	180	4			E__

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:18 01/10/98

TLI Project: 44376A
Client Sample: 161-164

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980030

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	1.8	46.2	40%-130%	0.74	24:37	—
$^{13}C_{12}$-2,3,7,8-TCDD	1.8	44.7	40%-130%	0.79	25:18	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.8	46.1	40%-130%	1.51	28:34	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	1.8	44.1	40%-130%	1.51	29:35	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.0	50.6	40%-130%	0.51	32:08	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.7	66.3	40%-130%	1.21	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.5	61.4	25%-130%	0.44	35:00	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.6	64.3	25%-130%	1.02	36:02	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4.9	61.7	25%-130%	0.86	39:35	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.4	85.6	40%-130%	1.57	29:14	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.0	99.9	40%-130%	0.50	32:02	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.4	84.6	40%-130%	1.23	32:43	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.0	100	40%-130%	0.43	36:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.2	79.4	25:20	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.1	53.0	40%-130%	0.51	33:22	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.2	54.7	40%-130%	0.52	32:36	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:08	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.20	33:07	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:18 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980030B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00		0.80	2,170.31			0.000			
K				21:27		0.74	30,416.60	12,946.60	17,470.00	0.871			
K				21:58		0.74	30,893.70	13,143.90	17,749.80	0.892			
K				22:11		0.75	35,673.50	15,327.10	20,346.40	0.901			
K				22:35		0.75	169,571.50	72,625.00	96,946.50	0.917			E
K				22:54		0.73	104,955.70	44,338.10	60,617.60	0.930			E
K				23:18		0.73	113,286.80	47,800.50	65,486.30	0.947			E
K				23:34		0.74	85,763.70	36,381.50	49,382.20	0.957			
				23:49		0.78	125,186.40	54,757.60	70,428.80	0.968			E
				24:02		0.71	156,541.20	64,941.20	91,600.00	0.976			E
				24:13		0.74	52,006.50	22,038.80	29,967.70	0.984			
				24:26		0.73	49,115.30	20,751.80	28,363.50	0.993			
				24:38		0.74	245,942.00	104,635.00	141,307.00	1.001	2378-TCDF	AN	E
				25:03		0.78	51,065.90	22,455.60	28,610.30	1.018			
				25:16		0.75	53,291.70	22,788.20	30,503.50	1.026			
				25:31		0.79	8,762.02	3,863.68	4,898.34	1.037			
				26:22		0.72	5,969.33	2,508.15	3,461.18	1.071			
304-306			16 Peaks				1,318,441.85						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.96	34.39			0.000			
	DC	WL		22:23	RO	0.91	200.01			0.909			
	DC	WL		22:59		0.75	344.15			0.934			
				24:04	RO	1.71	101.33	98.08	57.25	0.978			
				24:11	RO	1.11	141.58	88.88	79.99	0.982			
				24:37		0.74	14,758.64	6,260.48	8,498.16	1.000	13C12-2378-TCDF	ISO	
				25:02	RO	1.79	59.65	60.36	33.70	1.017			
	DC	WH		26:10		0.75	137.47			1.063			
	DC	WH		26:45		0.74	61.24			1.087			
	DC	WH		26:54	RO	0.99	42.13			1.093			
316-318			4 Peaks				15,061.20						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	0.07	16.21			0.000			
NK				22:47		0.76	87,999.10	38,001.20	49,997.90	0.901			E
NK				23:10		0.77	55,623.10	24,216.20	31,406.90	0.916			
K				23:28		0.79	7,335.49	3,245.22	4,090.27	0.928			
K				24:09		0.76	23,306.00	10,056.00	13,250.00	0.955			
				24:24		0.80	14,392.98	6,408.92	7,984.06	0.964			
				24:49		0.79	6,595.16	2,920.49	3,674.67	0.981			
M				25:14		0.77	24,800.00	10,800.00	14,000.00	0.997			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	AN			25:20		0.75	2,070.00	890.00	1,180.00	1.001	2378-TCDD	AN	PR
				25:30		0.76	3,171.29	1,369.84	1,801.45	1.008			
				25:39		0.79	3,527.63	1,555.13	1,972.50	1.014			
				25:53		0.81	1,167.97	522.37	645.60	1.023			
				26:19	RO	0.96	995.77	539.76	562.58	1.040			
320-322			12	Peaks			230,984.49						
37Cl-TCDD									0.921-1.079				
328	DC	NL		0:00			84.86			0.000			
	DC	WL		22:47			458.03			0.901			
	DC	WL		23:05			310.32			0.912			
	DC	WL		23:10			423.61			0.916			
				23:58			14,710.40	14,710.40		0.947			
				24:09			354.82	354.82		0.955			
				24:38			268.18	268.18		0.974			
				24:49			83.54	83.54		0.981			
				25:09			32.21	32.21		0.994			
				25:20			8,667.13	8,667.13		1.001	37Cl-TCDD	CLS	
				25:44			8,225.28	8,225.28		1.017			
328			7	Peaks			32,341.56						
13C12-TCDD						0.65-0.89			0.921-1.079				
332-334	DC	NL		0:00	RO	1.84	20.00			0.000			
				25:08		0.82	21,792.63	9,849.83	11,942.80	0.993	13C12-1234-TCDD	RS1	
				25:18		0.79	10,900.64	4,796.51	6,104.13	1.000	13C12-2378-TCDD	IS1	
				25:39		0.81	396.22	176.92	219.30	1.014			
				26:08	RO	1.38	18.76	14.62	10.60	1.033			
				26:20	RO	1.06	39.40	23.64	22.26	1.041			
332-334			5	Peaks			33,147.65						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78			0.925-1.065				
340-342	DC	NL		0:00	RO	1.08	21.12			0.000			
				26:34		1.54	92,578.80	56,158.90	36,419.90	0.930			
				27:02	RO	1.21	1,360.02	826.68	682.62	0.946			
				27:13		1.37	1,730.49	999.40	731.09	0.953			
				27:20	RO	1.25	1,313.64	798.49	637.20	0.957			
				27:34		1.50	29,676.90	17,790.70	11,886.20	0.965			
				27:42		1.53	218,160.40	131,891.00	86,269.40	0.970			E
				27:52		1.52	49,830.50	30,089.50	19,741.00	0.975			
				28:11		1.53	79,564.40	48,087.80	31,476.60	0.987			
				28:18		1.52	109,126.50	65,836.30	43,290.20	0.991			
	M			28:29		1.59	43,500.00	26,700.00	16,800.00	0.997			
	AN			28:34		1.57	41,700.00	25,500.00	16,200.00	1.000	12378-PeCDF	AN	
				28:43		1.52	35,110.30	21,162.50	13,947.80	1.005			
				28:51		1.56	61,103.00	37,209.40	23,893.60	1.010			
				29:15		1.50	69,662.20	41,750.20	27,912.00	1.024	23478-PeCDF	AN	
				29:24		1.55	104,642.80	63,574.00	41,068.80	1.029			
				29:44		1.49	17,180.14	10,285.80	6,894.34	1.041			
				29:53	RO	3.33	568.80	742.75	223.06	1.046			
				30:14		1.51	9,021.70	5,433.11	3,588.59	1.058			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
340-342			18 Peaks				965,830.59						
13C12-PeCDF				1.32-1.78						0.860-1.140			
352-354		DC	NL	0:00	RO	0.96	23.95			0.000			
				26:25		1.38	43.71	25.38	18.33	0.925			
				26:35		1.71	67.62	42.71	24.91	0.931			
				27:43	RO	1.05	168.53	102.44	97.84	0.970			
				27:55		1.52	334.92	202.24	132.68	0.977			
				28:11	RO	2.32	23.72	21.59	9.30	0.987			
				28:18	RO	1.99	109.32	85.10	42.87	0.991			
				28:34		1.51	11,471.75	6,902.78	4,568.97	1.000	13C12-PeCDF 123	IS2	
				28:51		1.57	404.58	247.12	157.46	1.010			
				29:03	RO	1.94	96.87	73.71	37.99	1.017			
	N			29:14		1.57	9,483.27	5,787.10	3,696.17	1.023	13C12-PeCDF 234	SUR1	
				29:29	RO	1.17	318.17	193.40	164.98	1.032			
				29:40		1.47	128.93	76.73	52.20	1.039			
				29:51	RO	0.94	64.47	39.19	41.56	1.045			
				30:15		1.39	122.66	71.37	51.29	1.059			
				30:27	RO	0.50	13.61	8.27	16.67	1.066			
352-354			15 Peaks				22,852.13						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.935-1.022			
356-358		DC	NL	0:00	RO	1.11	9.59			0.000			
				27:49	RO	1.20	55,113.56	33,500.40	28,010.80	0.940			
				28:18	RO	1.21	3,666.98	2,228.95	1,849.48	0.957			
				28:31		1.58	35,938.40	21,996.50	13,941.90	0.964			
				28:40		1.52	7,219.99	4,354.29	2,865.70	0.969			
				28:50		1.54	23,679.52	14,351.90	9,327.62	0.975			
				29:01		1.54	3,486.53	2,111.75	1,374.78	0.981			
				29:06		1.55	8,227.41	5,006.60	3,220.81	0.984			
				29:18		1.47	9,656.81	5,754.76	3,902.05	0.990			
				29:26	RO	1.09	4,951.49	3,009.73	2,769.48	0.995			
				29:36		1.53	6,431.72	3,893.72	2,538.00	1.001	12378-PeCDD	AN	
				29:44		1.60	4,696.85	2,892.28	1,804.57	1.005			
				30:04		1.59	4,547.50	2,794.02	1,753.48	1.016			
356-358			12 Peaks				167,616.76						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370		DC	NL	0:00	RO	1.17	8.82			0.000			
				27:42	RO	2.33	17.31	15.85	6.79	0.936			
				27:48	RO	3.83	25.73	38.61	10.09	0.940			
				28:18	RO	0.76	14.20	8.63	11.42	0.957			
				28:30		1.48	59.44	35.48	23.96	0.963			
				29:07		1.69	20.46	12.84	7.62	0.984			
				29:35		1.51	5,672.58	3,413.92	2,258.66	1.000	13C12-PeCDD 123	IS3	
				29:42		1.37	774.58	447.69	326.89	1.004			
				29:49	RO	5.03	37.69	74.36	14.78	1.008			
				29:59	RO	2.17	50.97	43.31	19.99	1.014			
				30:05	RO	1.13	20.22	12.29	10.83	1.017			
368-370			10 Peaks				6,693.18						

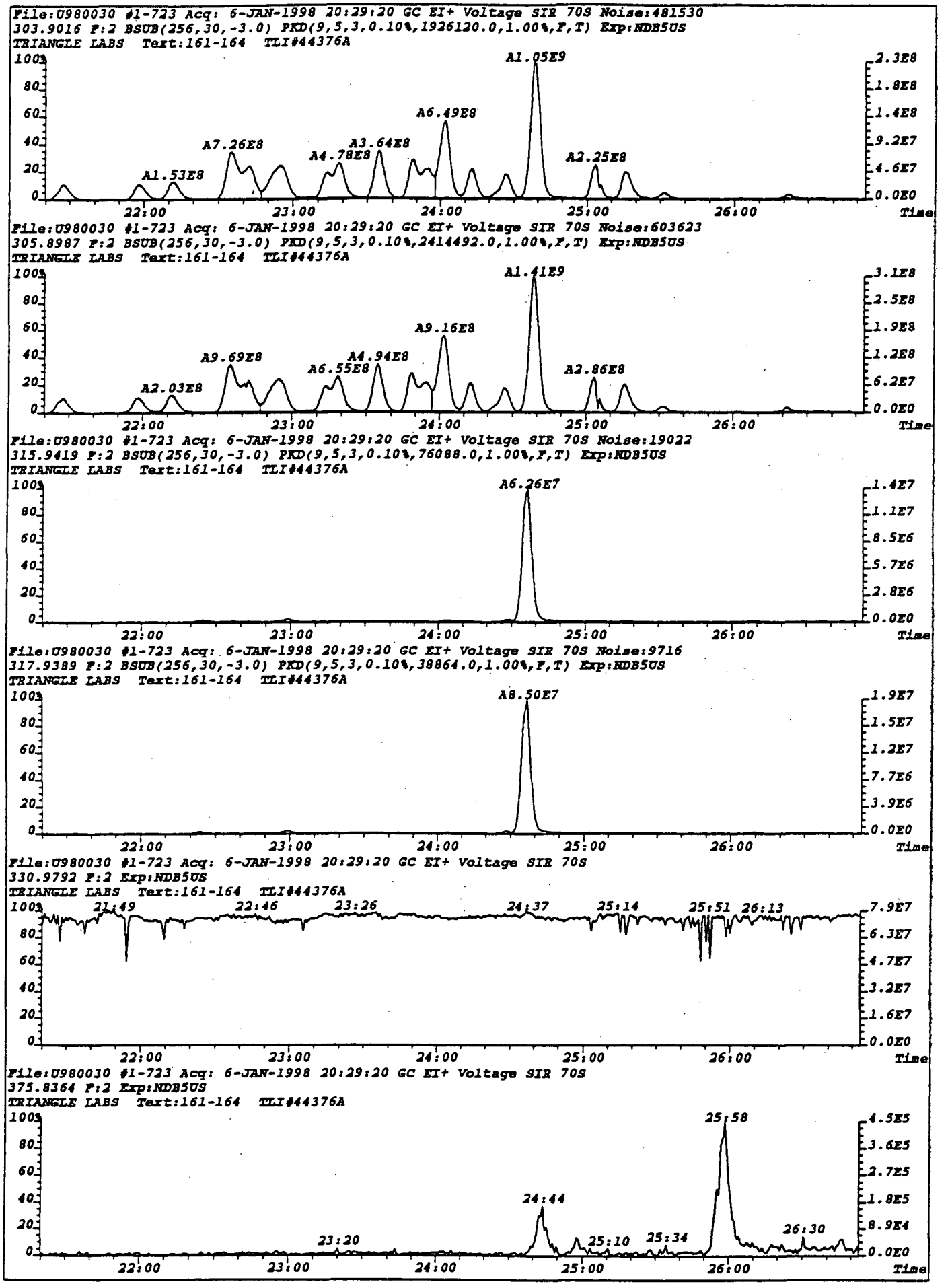
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376	DC	NL		0:00		1.33	1,154.72			0.000			
				31:04		1.24	77,351.50	42,744.90	34,606.60	0.967			
				31:13		1.25	174,348.40	97,007.30	77,341.10	0.971			E
				31:22		1.17	18,587.28	10,034.50	8,552.78	0.976			
				31:31		1.22	23,228.90	12,785.50	10,443.40	0.981			
				31:40		1.36	14,751.59	8,499.68	6,251.91	0.985			
				31:51		1.21	1,639.55	898.73	740.82	0.991			
				32:02		1.27	169,496.20	94,940.20	74,556.00	0.997	123478-HxCDF	AN	E
				32:08		1.19	74,959.40	40,675.20	34,284.20	1.000	123678-HxCDF	AN	
				32:15		1.35	20,727.18	11,894.80	8,832.38	1.004			
				32:25		1.25	31,775.90	17,655.10	14,120.80	1.009			
				32:37		1.32	87,560.70	49,873.10	37,687.60	1.015	234678-HxCDF	AN	
	AN			33:23		1.15	5,060.00	2,710.00	2,350.00	1.039	123789-HxCDF	AN	PR
	M			33:27		1.15	19,260.00	10,300.00	8,960.00	1.041			
374-376			13 Peaks				718,746.60						
13C12-HxCDF						0.43-0.59				0.876-1.124			
384-386	DC	NL		0:00	RO	0.90	47.58			0.000			
				31:13	RO	0.76	196.87	99.07	130.38	0.971			
				31:30	RO	1.91	32.95	41.58	21.82	0.980			
				31:35	RO	1.08	13.82	9.84	9.15	0.983			
				31:49	RO	1.32	49.33	43.08	32.67	0.990			
				32:02		0.50	7,621.28	2,552.25	5,069.03	0.997	13C12-HxCDF 478	SUR2	
				32:08		0.51	9,244.28	3,120.20	6,124.08	1.000	13C12-HxCDF 678	IS4	
				32:25	RO	0.61	268.76	108.96	177.99	1.009			
				32:36		0.52	9,013.19	3,084.23	5,928.96	1.015	13C12-HxCDF 234	ALT2	
				32:54	RO	1.71	101.26	114.40	67.06	1.024			
				33:22		0.51	6,726.35	2,262.79	4,463.56	1.038	13C12-HxCDF 789	ALT1	
384-386			10 Peaks				33,268.09						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL		0:00		1.41	384.09			0.000			
				31:34		1.18	16,079.72	8,695.27	7,384.45	0.962			
				32:00		1.22	89,918.40	49,458.40	40,460.00	0.976			E
				32:12		1.19	36,291.10	19,721.40	16,569.70	0.982			
				32:22		1.14	6,329.26	3,366.61	2,962.65	0.987			
				32:44		1.33	6,253.39	3,572.42	2,680.97	0.998	123478-HxCDD	AN	
				32:49		1.21	12,376.73	6,776.18	5,600.55	1.001	123678-HxCDD	AN	
				33:06		1.27	17,442.07	9,754.45	7,687.62	1.009	123789-HxCDD	AN	
390-392			7 Peaks				184,690.67						
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL		0:00		1.23	50.24			0.000			
				32:43		1.23	5,538.31	3,049.96	2,488.35	0.997	13C12-HxCDD 478	SUR3	
				32:48		1.21	8,940.53	4,897.56	4,042.97	1.000	13C12-HxCDD 678	IS5	
				33:07		1.20	13,562.19	7,411.28	6,150.91	1.010	13C12-HxCDD 789	RS2	
402-404			3 Peaks				28,041.03						

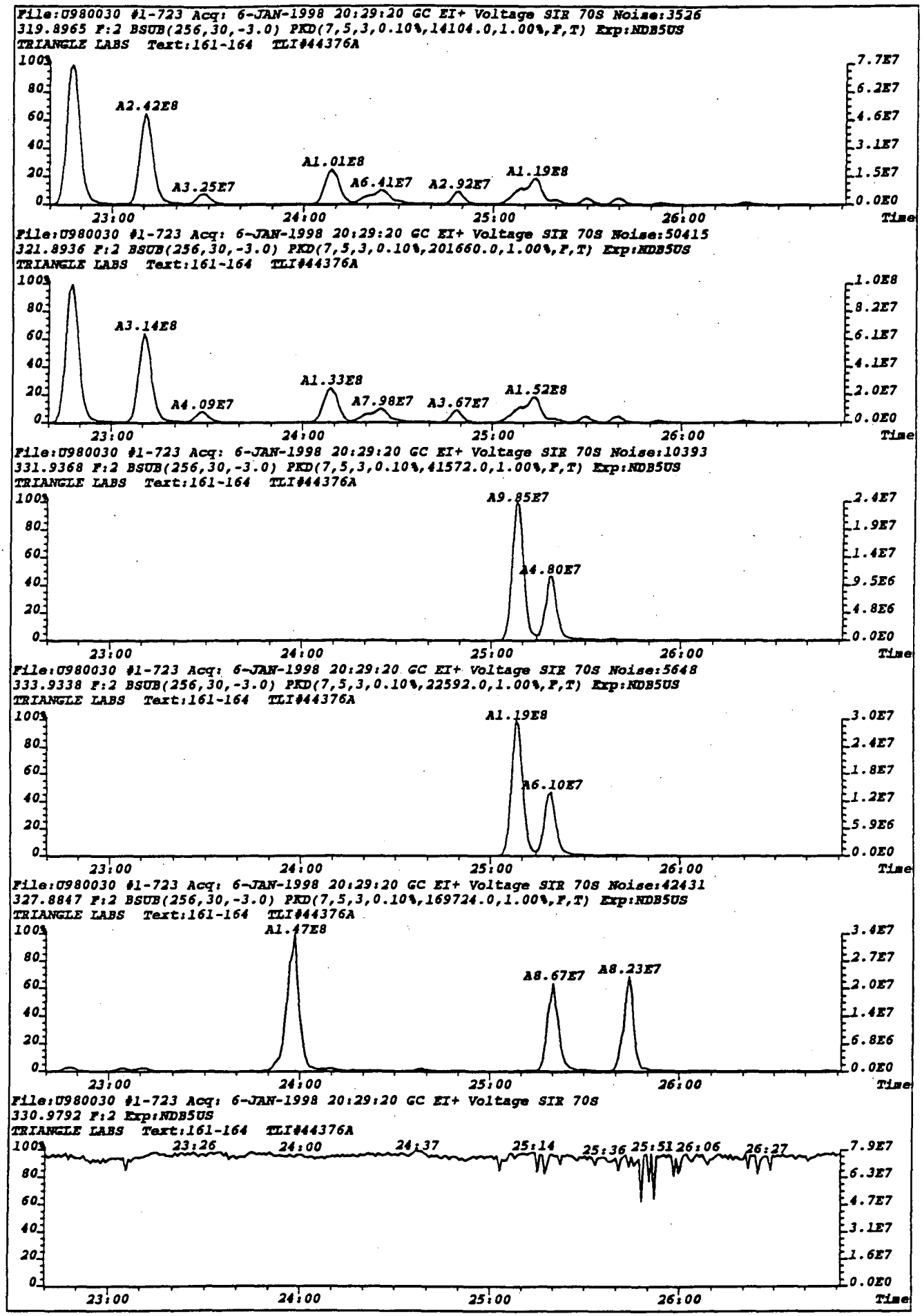
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.996-1.049			
408-410	DC	NL		0:00	RO	2.81	58.87			0.000			
				35:01		1.05	257,682.00	131,853.00	125,829.00	1.000	1234678-HpCDF	AN	E
				35:17		0.97	50,073.60	24,647.90	25,425.70	1.008			
				35:26		1.07	70,998.30	36,622.50	34,375.80	1.012			
				36:32		1.04	32,059.50	16,331.40	15,728.10	1.044	1234789-HpCDF	AN	
408-410			4 Peaks				410,813.40						
13C12-HpCDF						0.37-0.51				0.943-1.114			
418-420	DC	NL		0:00	RO	1.53	28.70			0.000			
				35:00		0.44	6,848.81	2,096.17	4,752.64	1.000	13C12-HpCDF 678	IS6	
				36:32		0.43	5,504.47	1,649.00	3,855.47	1.044	13C12-HpCDF 789	SUR4	
418-420			2 Peaks				12,353.28						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.975-1.005			
424-426	DC	NL		0:00	RO	1.21	47.29			0.000			
D	DC	WL		35:09	RO	0.45	882.08			0.975			
				35:18		1.02	56,558.10	28,577.10	27,981.00	0.980			
				36:02		0.96	51,793.10	25,417.50	26,375.60	1.000	1234678-HpCDD	AN	
424-426			2 Peaks				108,351.20						
13C12-HpCDD						0.88-1.20				0.972-1.028			
436-438	DC	NL		0:00		1.17	43.82			0.000			
				36:02		1.02	6,328.37	3,202.07	3,126.30	1.000	13C12-HpCDD 678	IS7	
436-438			1 Peak				6,328.37						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.899-1.101			
442-444	DC	NL		0:00	RO	2.53	37.03			0.000			
				39:49		0.88	125,087.40	58,422.20	66,665.20	1.006	OCDF	AN	
442-444			1 Peak				125,087.40						
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00		0.98	13.81			0.000			
				39:36		0.85	59,562.90	27,361.30	32,201.60	1.000	OCDD	AN	
458-460			1 Peak				59,562.90						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00	RO	1.34	16.93			0.000			
				39:35		0.86	9,121.26	4,222.49	4,898.77	1.000	13C12-OCDD	IS8	
470-472			1 Peak				9,121.26						

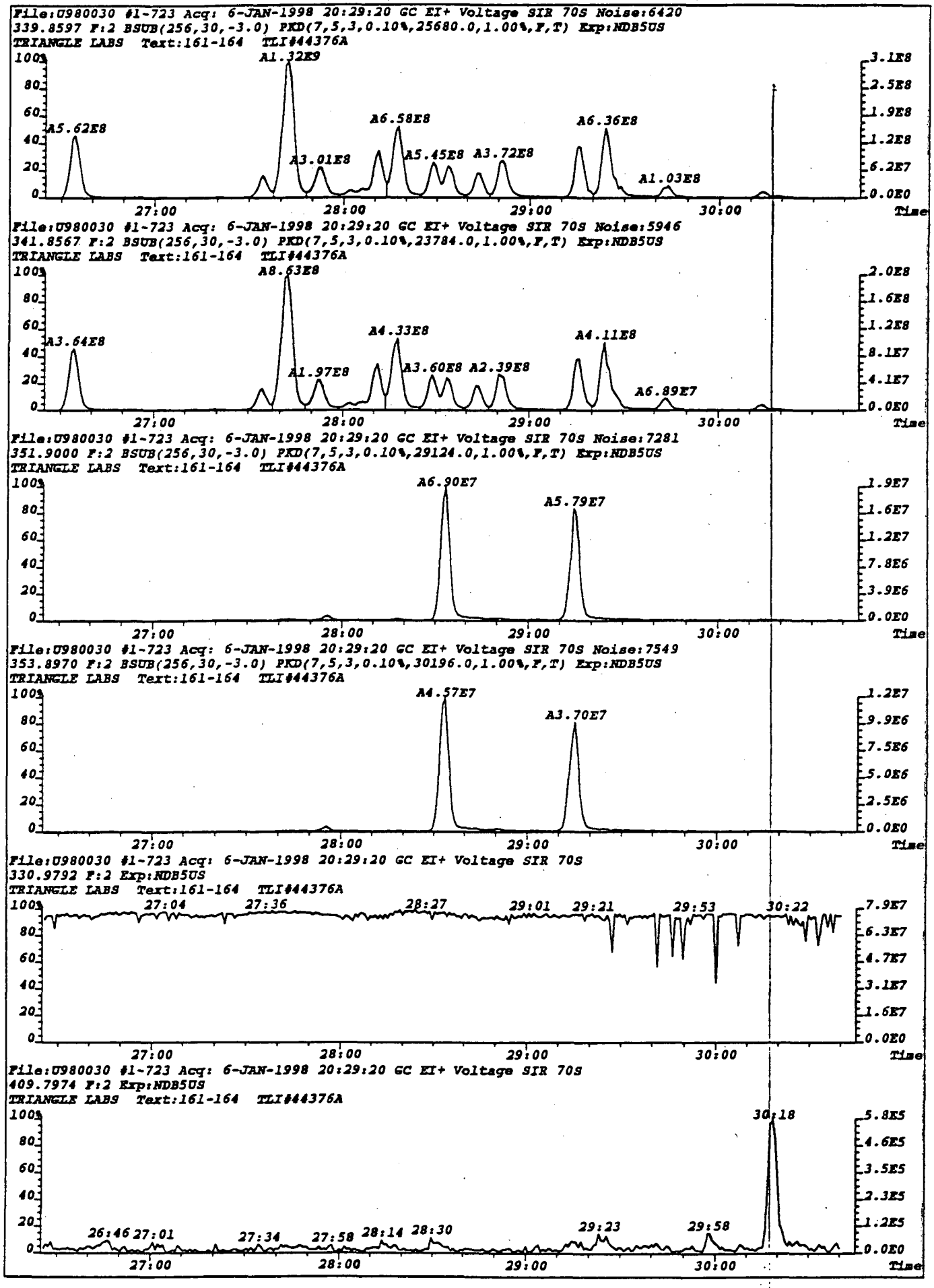
Compound/
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

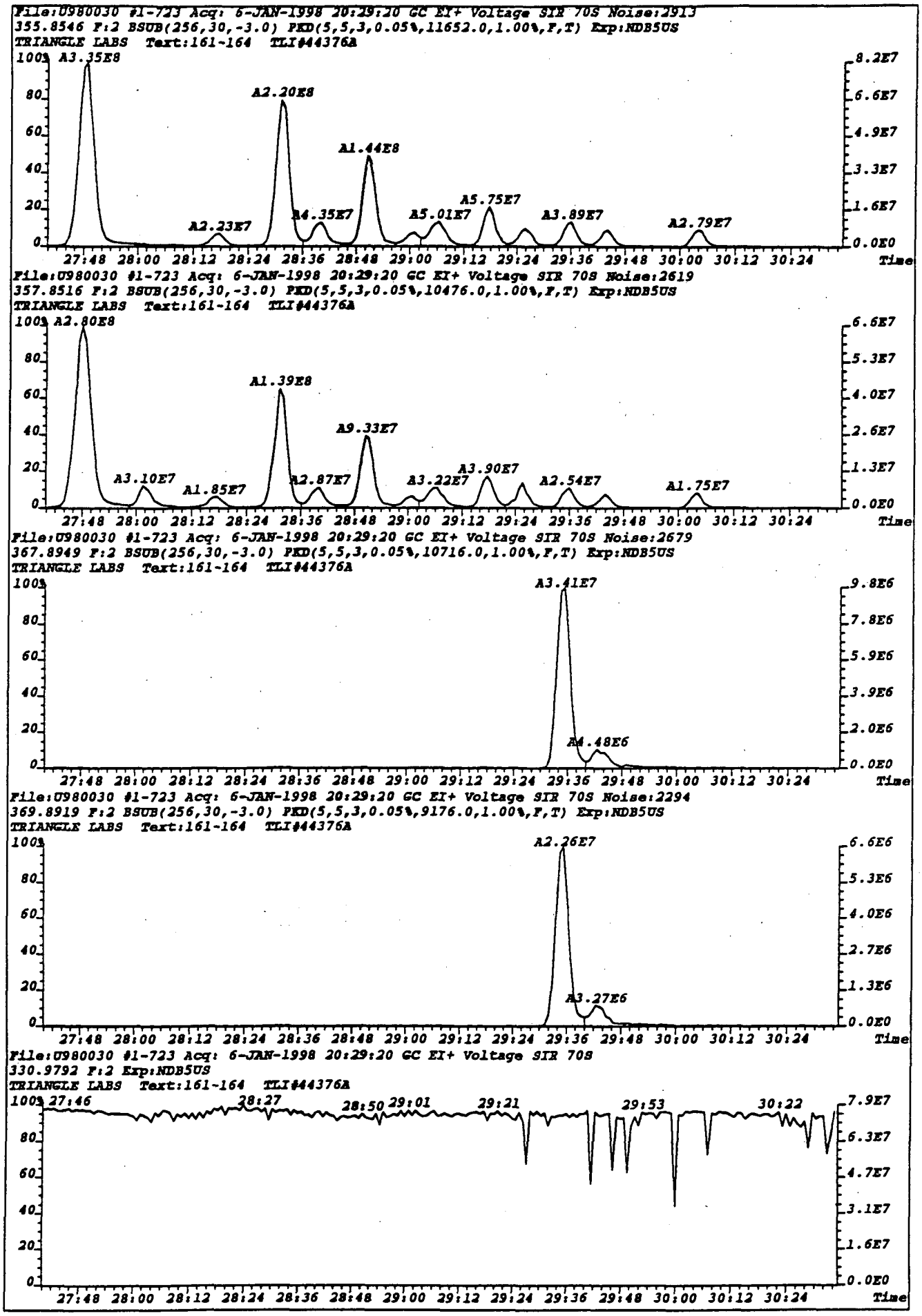
Column Description.....		"Why" Code Description.....		QC Log Desc.....
M_Z	-Nominal Ion Mass(es)	WL-Below Retention Time Window		A-Peak Added
..RT.	-Retention Time (mm:ss)	WH-Above Retention Time Window		K-Peak Kept
Rat.1	-Ratio of M/M+2 Ions	SN-Below Signal to Noise Level		D-Peak Deleted
OK	-RO=Ratio Outside Limits	<M-Below Method Detection Limit		T-Time Changed
Rel.RT	-Relative Retention Time	NL-Channel Specific Noise Level		M-Peak Area Changed
				N-Name Changed
				X-Ether Interference

*** End of Report ***

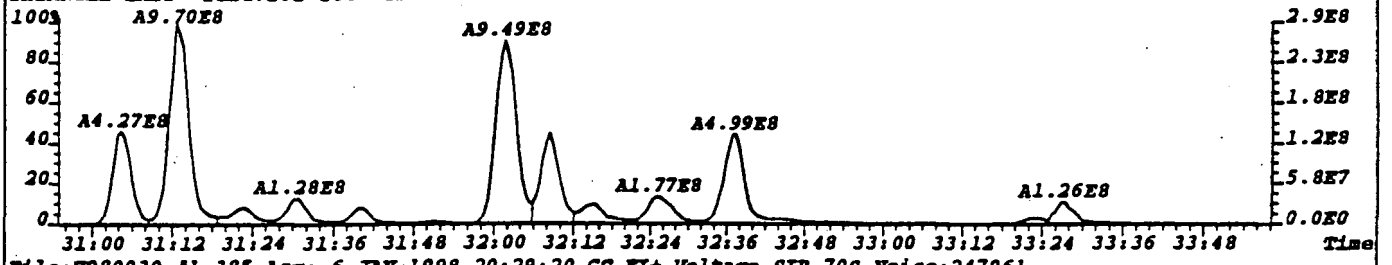

File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:481530
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,1926120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A1.05E9
A6.49E8
A7.26E8
A3.64E8
A4.78E8
A2.25E8
A1.53E8
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:603623
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,2414492.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A1.41E9
A9.16E8
A9.69E8
A4.94E8
A6.55E8
A2.86E8
A2.03E8
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:19022
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,76088.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A6.26E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:9716
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,38864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A8.50E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
21:49
22:46
23:26
24:37
25:14
25:51
26:13
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
25:58
24:44
23:20
25:10
25:34
26:30
Time


File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:3526
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14104.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.42E8
A3.25E7
A1.01E8
A6.41E7
A2.92E7
A1.19E8
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:50415
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,201660.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.14E8
A4.09E7
A1.33E8
A7.98E7
A3.67E7
A1.52E8
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:10393
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,41572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A9.85E7
A4.80E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:5648
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22592.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A1.19E8
A6.10E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:42431
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,169724.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A1.47E8
A8.67E7
A8.23E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
23:26
24:00
24:37
25:14
25:36
25:51
26:06
26:27
Time

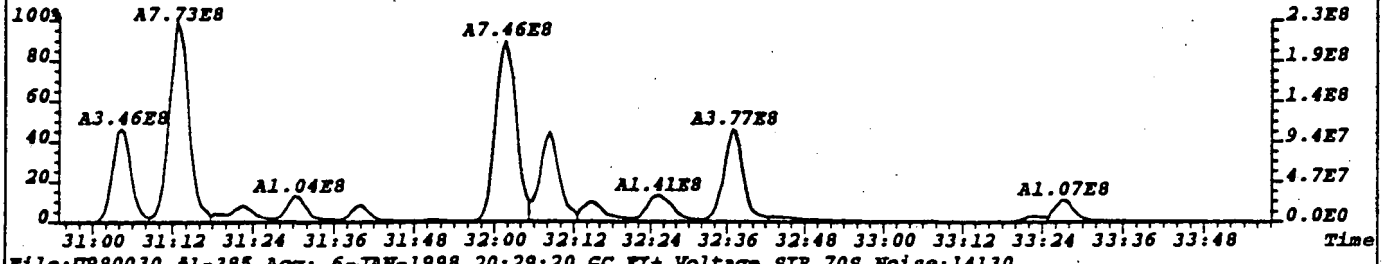

File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:6420
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,25680.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A1.32E9
A6.58E8
A6.36E8
A5.62E8
A3.01E8
A5.45E8
A3.72E8
A1.03E8
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:5946
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,23784.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A8.63E8
A4.33E8
A4.11E8
A3.64E8
A1.97E8
A3.60E8
A2.39E8
A6.89E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:7281
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29124.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A6.90E7
A5.79E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:7549
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,30196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A4.57E7
A3.70E7
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
27:04
27:36
28:27
29:01
29:21
29:53
30:22
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
30:18
26:46
27:01
27:34
27:58
28:14
28:30
29:23
29:58
27:00
28:00
29:00
30:00
Time


File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:2913
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,11652.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.35E8
A2.20E8
A1.44E8
A2.23E7
A4.35E7
A5.01E7
A5.75E7
A3.89E7
A2.79E7
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:2619
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,10476.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.80E8
A1.39E8
A9.33E7
A3.10E7
A1.85E7
A2.87E7
A3.22E7
A3.90E7
A2.54E7
A1.75E7
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:2679
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,10716.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.41E7
A4.48E6
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:2294
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,9176.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.26E7
A3.27E6
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
27:46
28:27
28:50
29:01
29:21
29:53
30:22
Time

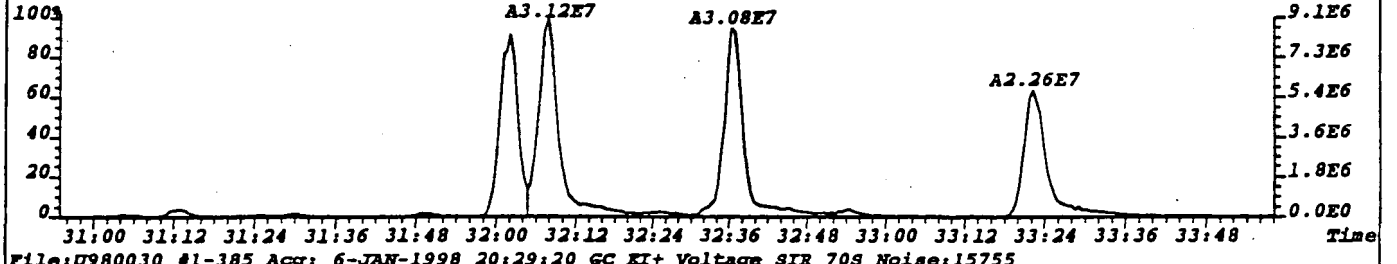
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:329400
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1317600.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



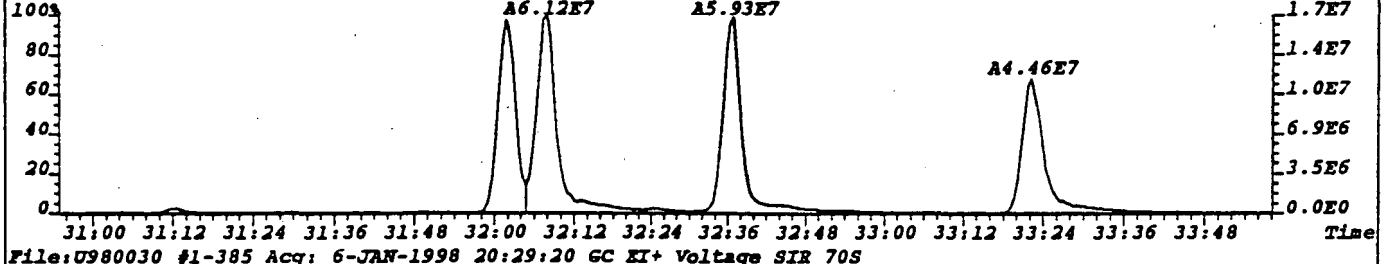
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:247961
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,991844.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



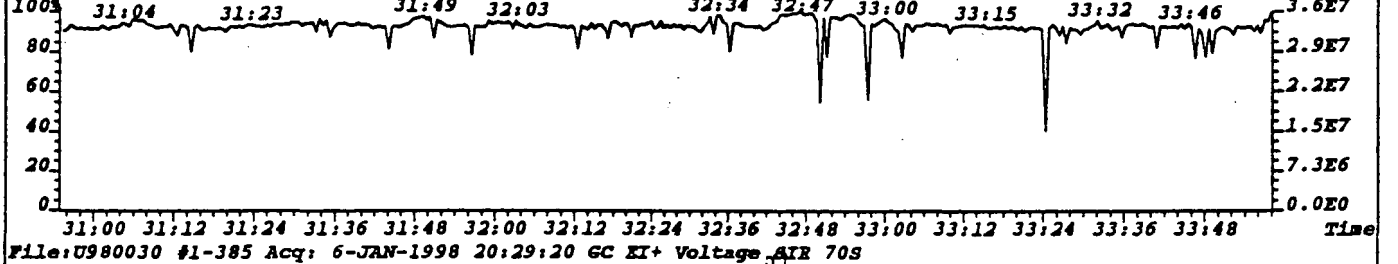
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:14130
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,56520.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



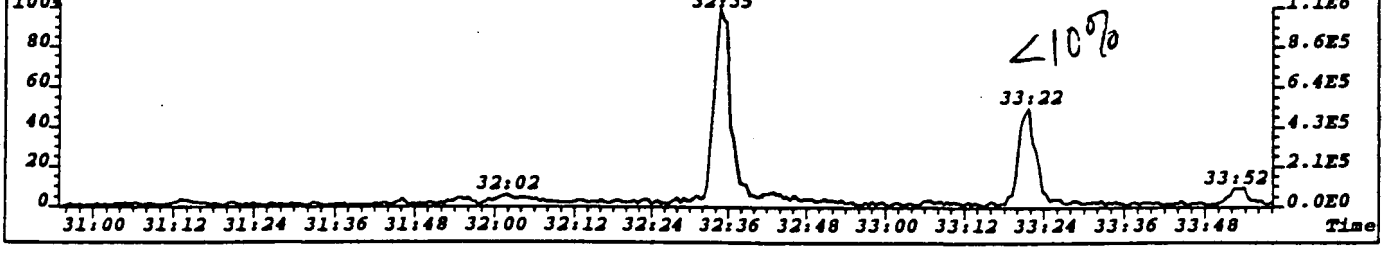
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:15755
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,63020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

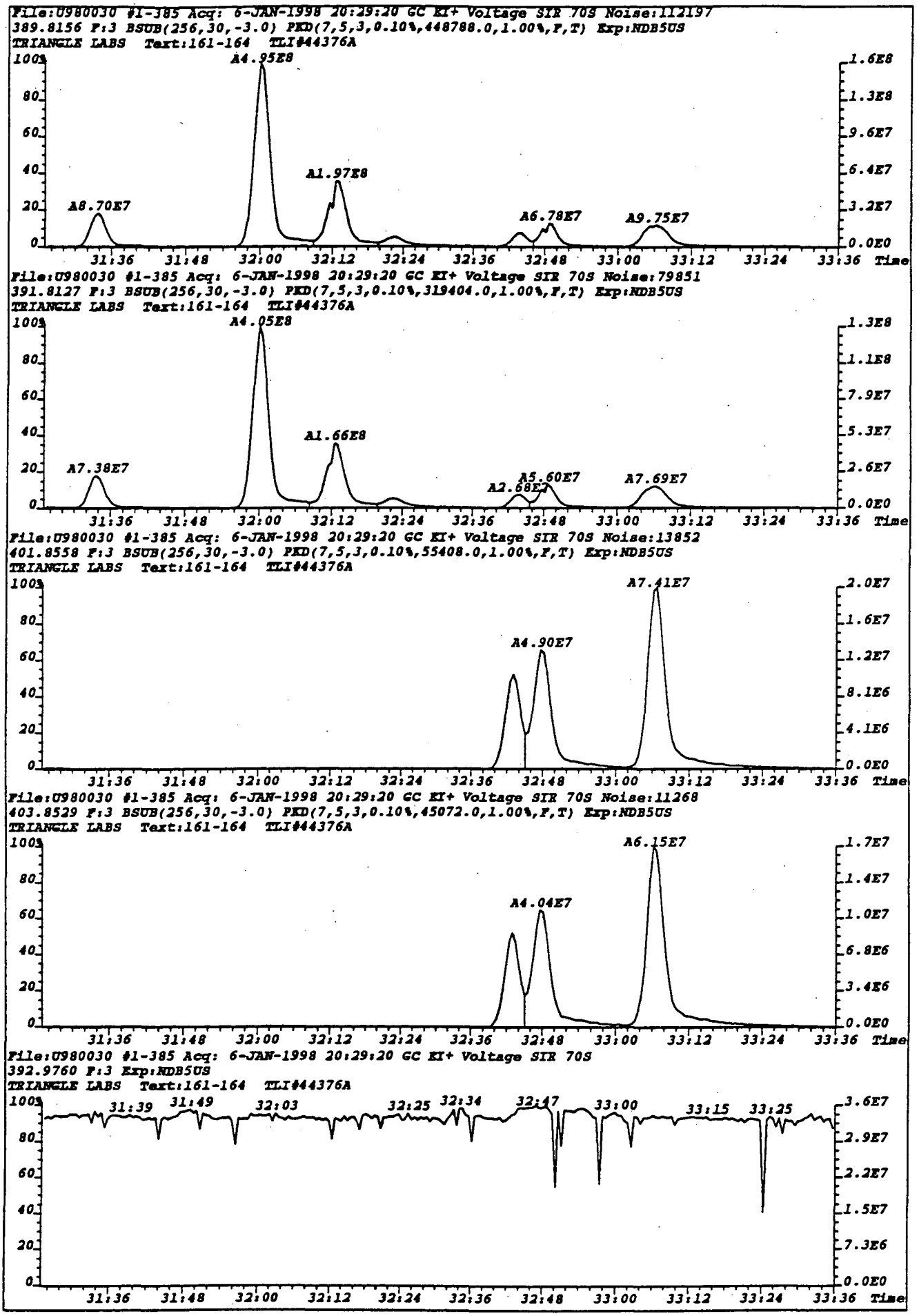


File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

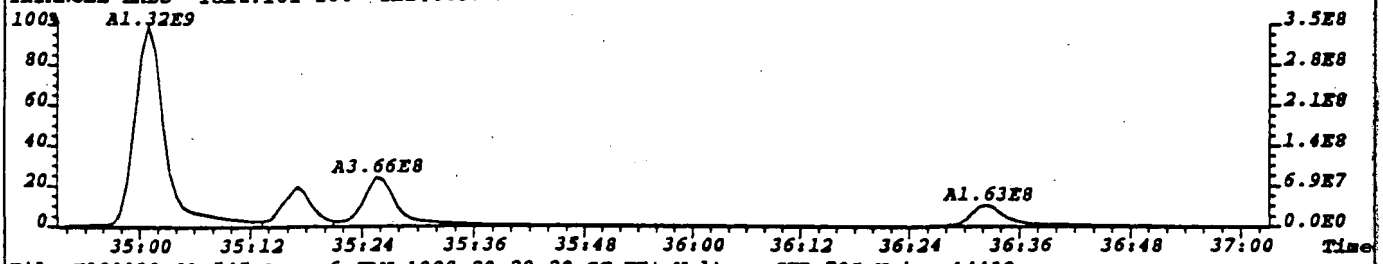


File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

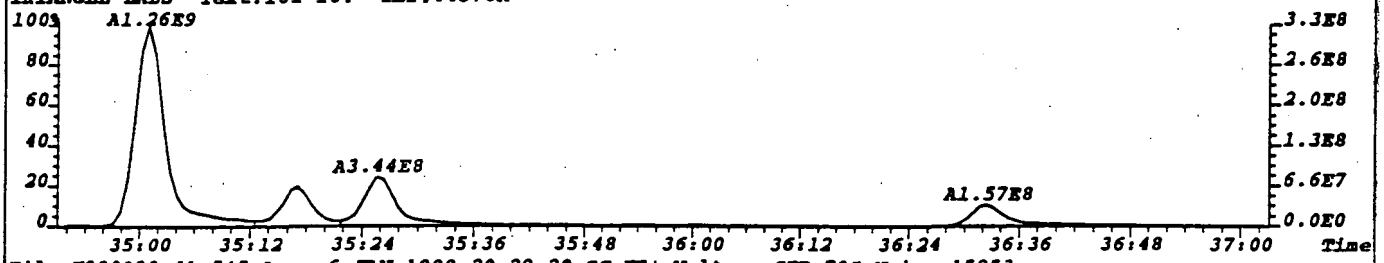



File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:112197
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,448788.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A4.95E8
A1.97E8
A8.70E7
A6.78E7
A9.75E7
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:79851
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,319404.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A4.05E8
A1.66E8
A7.38E7
A2.68E7
A5.60E7
A7.69E7
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:13852
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,55408.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A7.41E7
A4.90E7
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:11268
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,45072.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A6.15E7
A4.04E7
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
31:39
31:49
32:03
32:25
32:34
32:47
33:00
33:15
33:25
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
33:36
Time

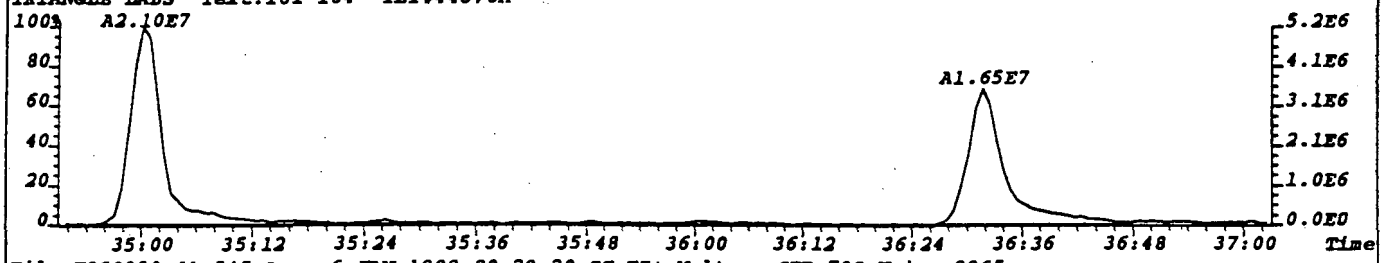
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:40567
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,162268.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



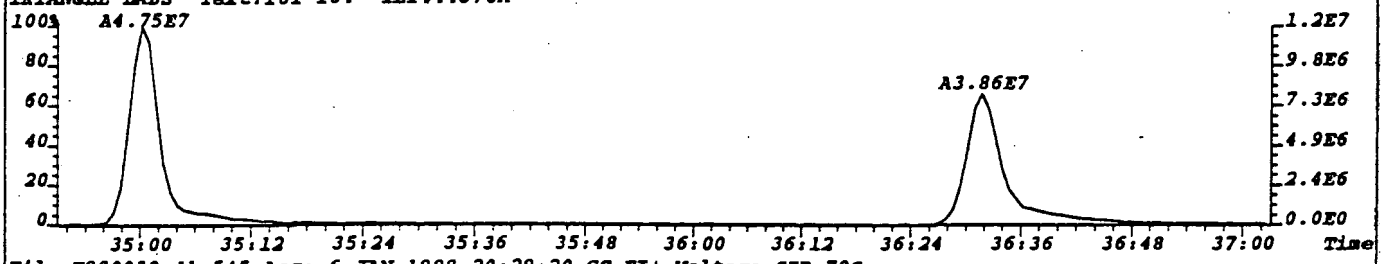
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:14432
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,57728.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



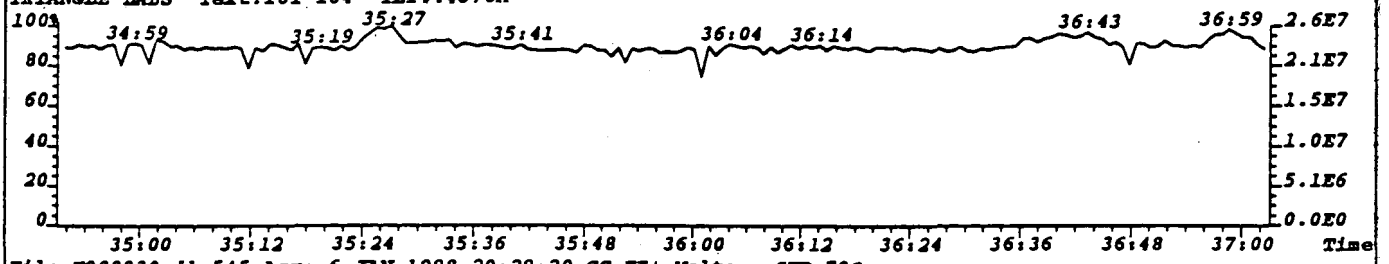
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:15253
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,61012.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



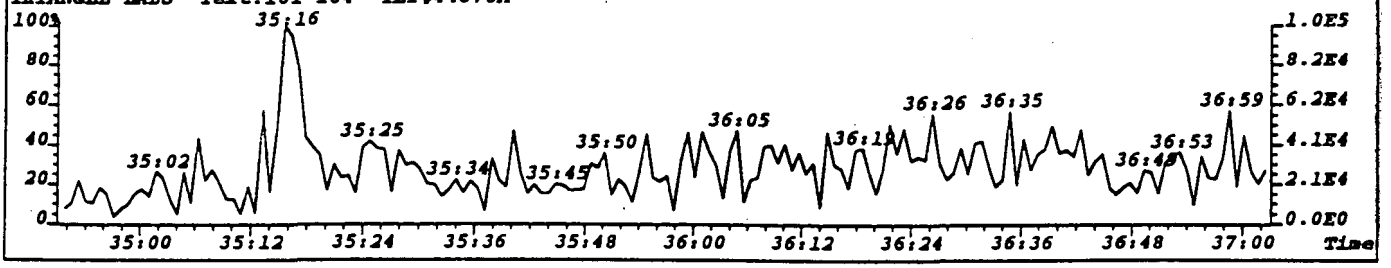
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:9965
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,39860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

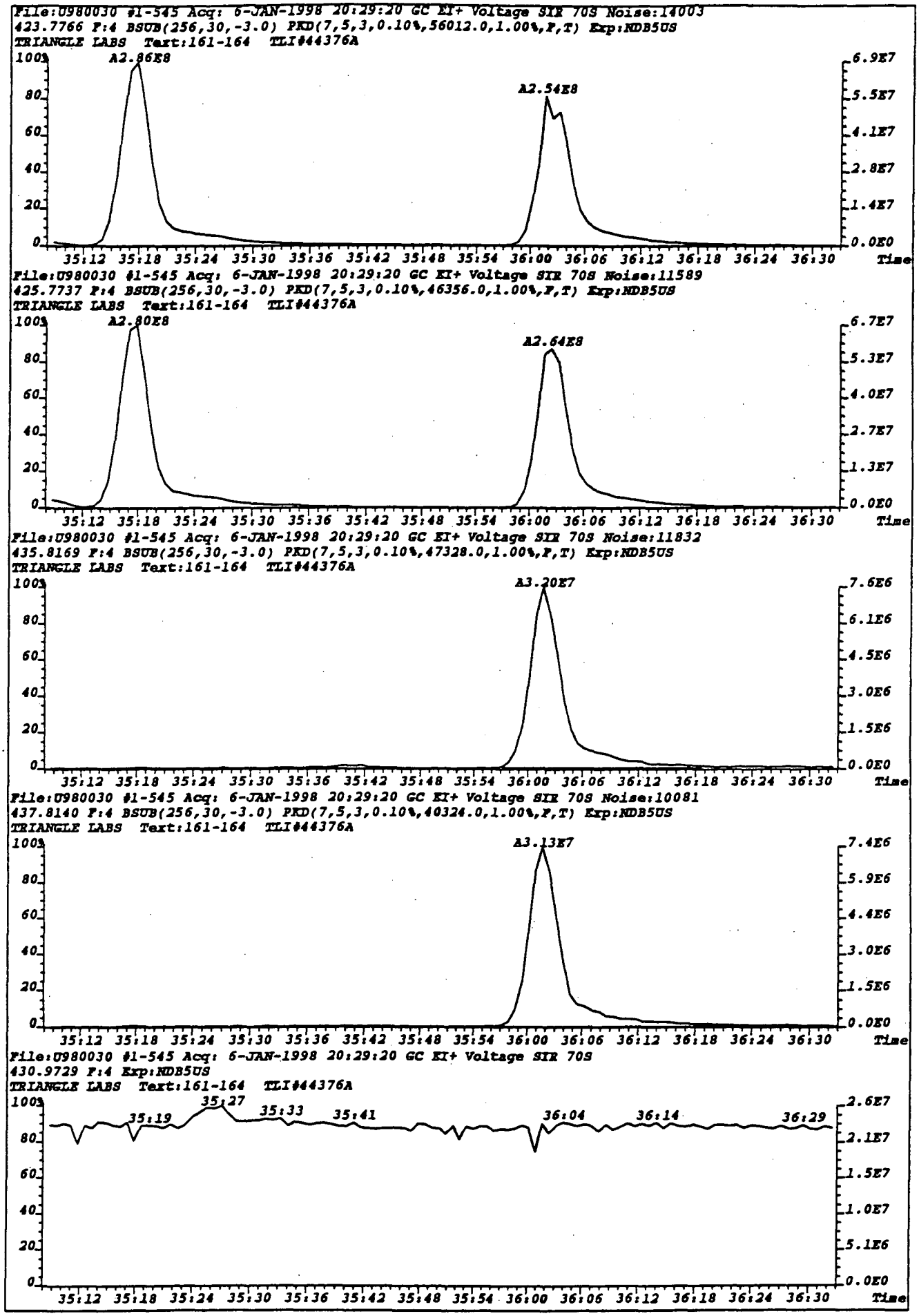


File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

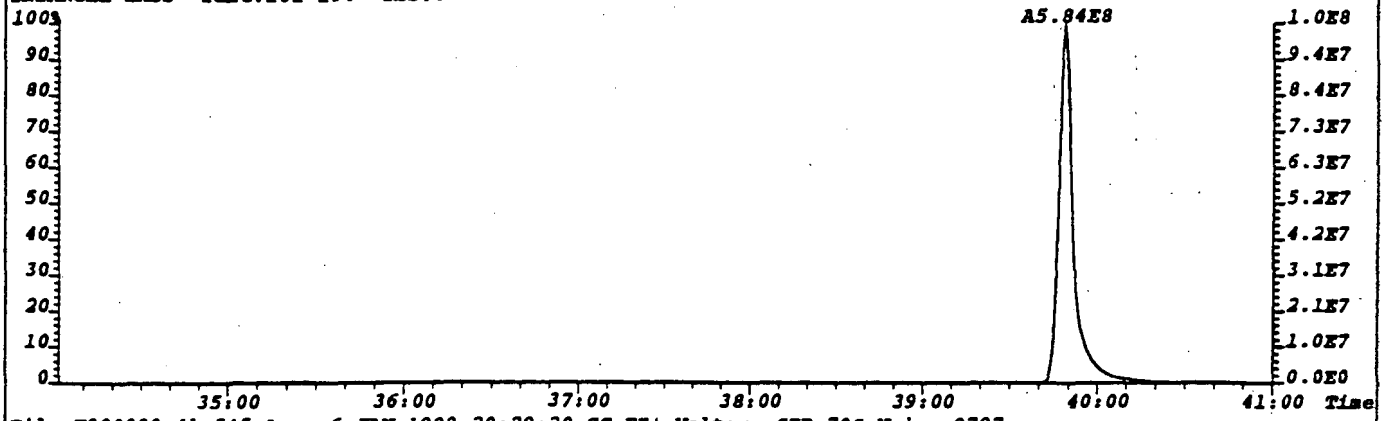


File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

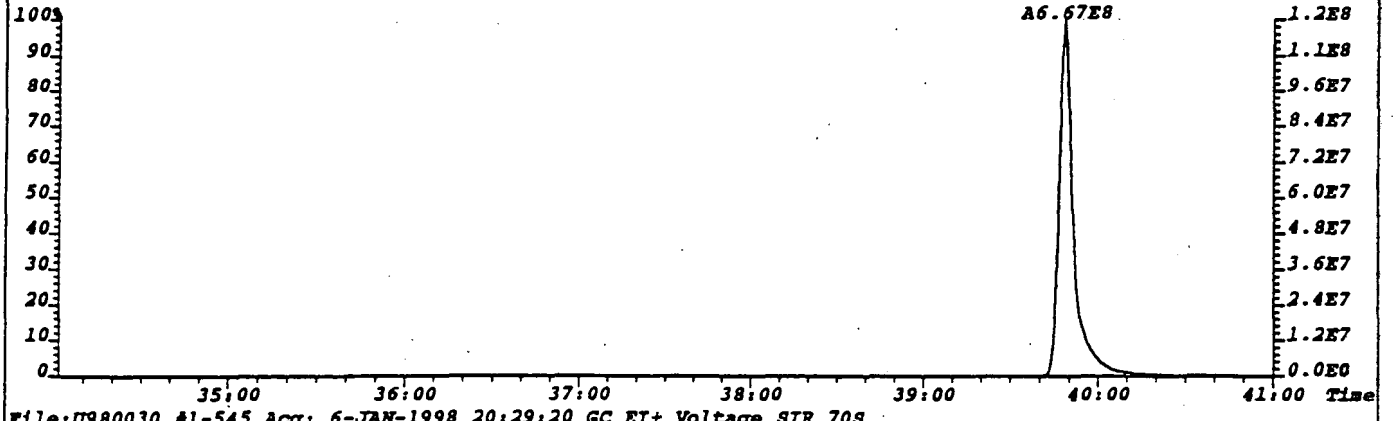



File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:14003
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,56012.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.86E8
A2.54E8
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:11589
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,46356.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.80E8
A2.64E8
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:11832
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,47328.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.20E7
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:10081
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,40324.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.13E7
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
35:19
35:27
35:33
35:41
36:04
36:14
36:29
Time

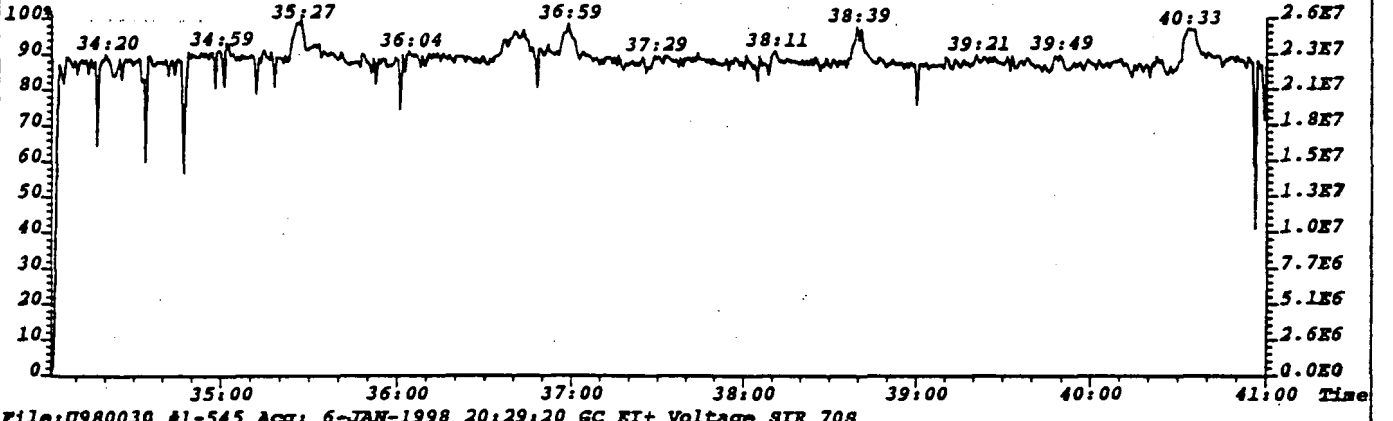
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:24761
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,99044.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A



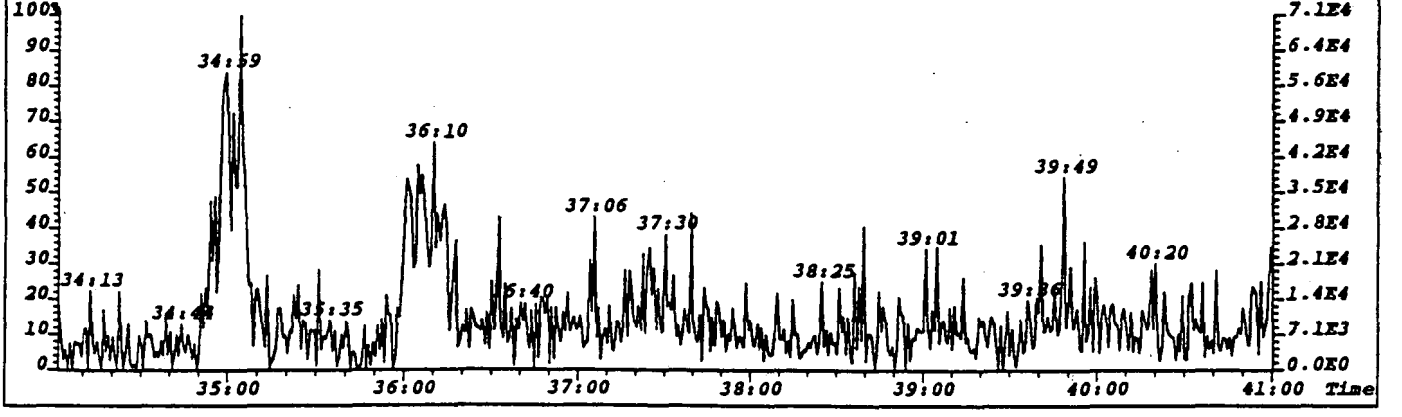
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:9797
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,39188.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

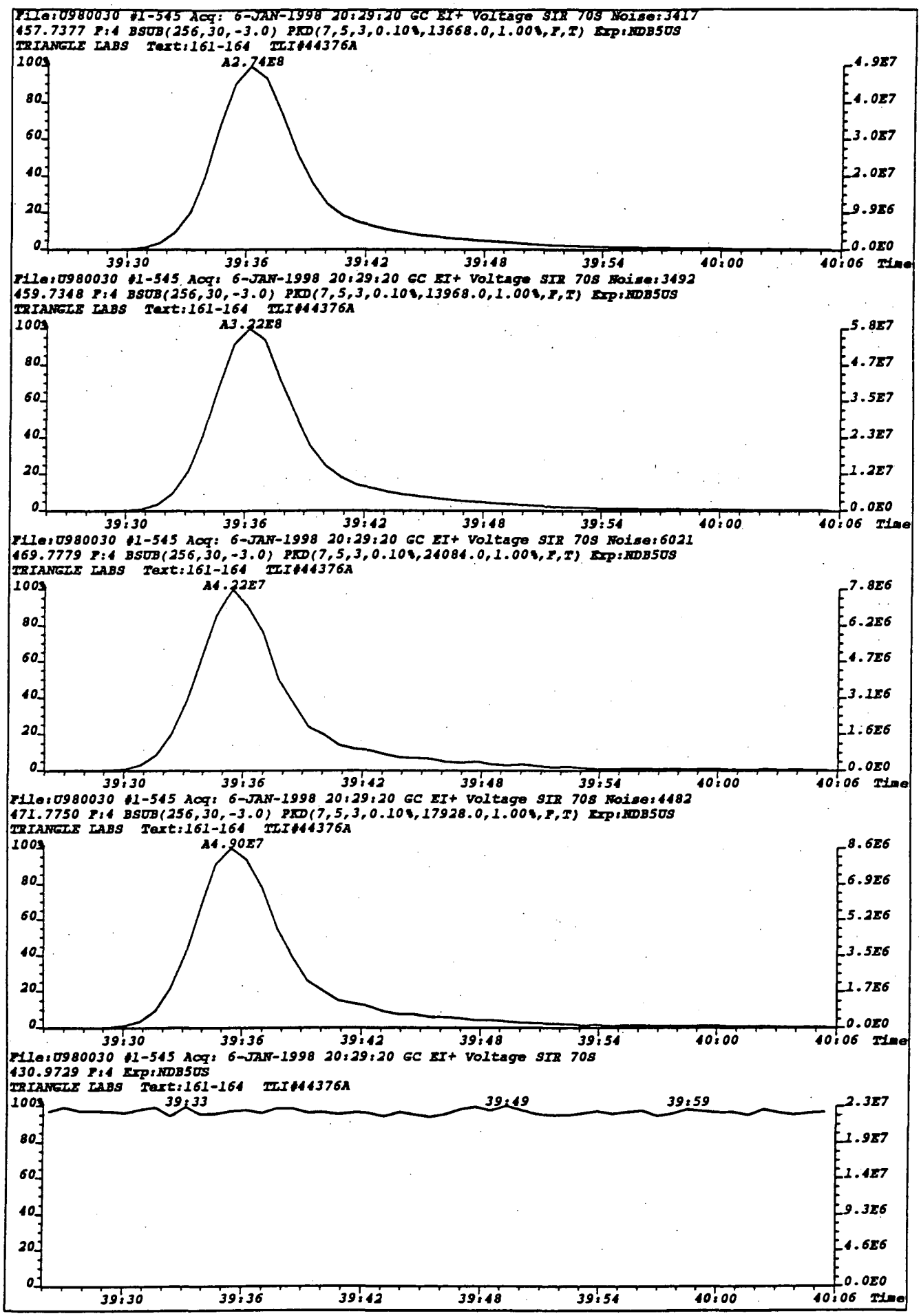


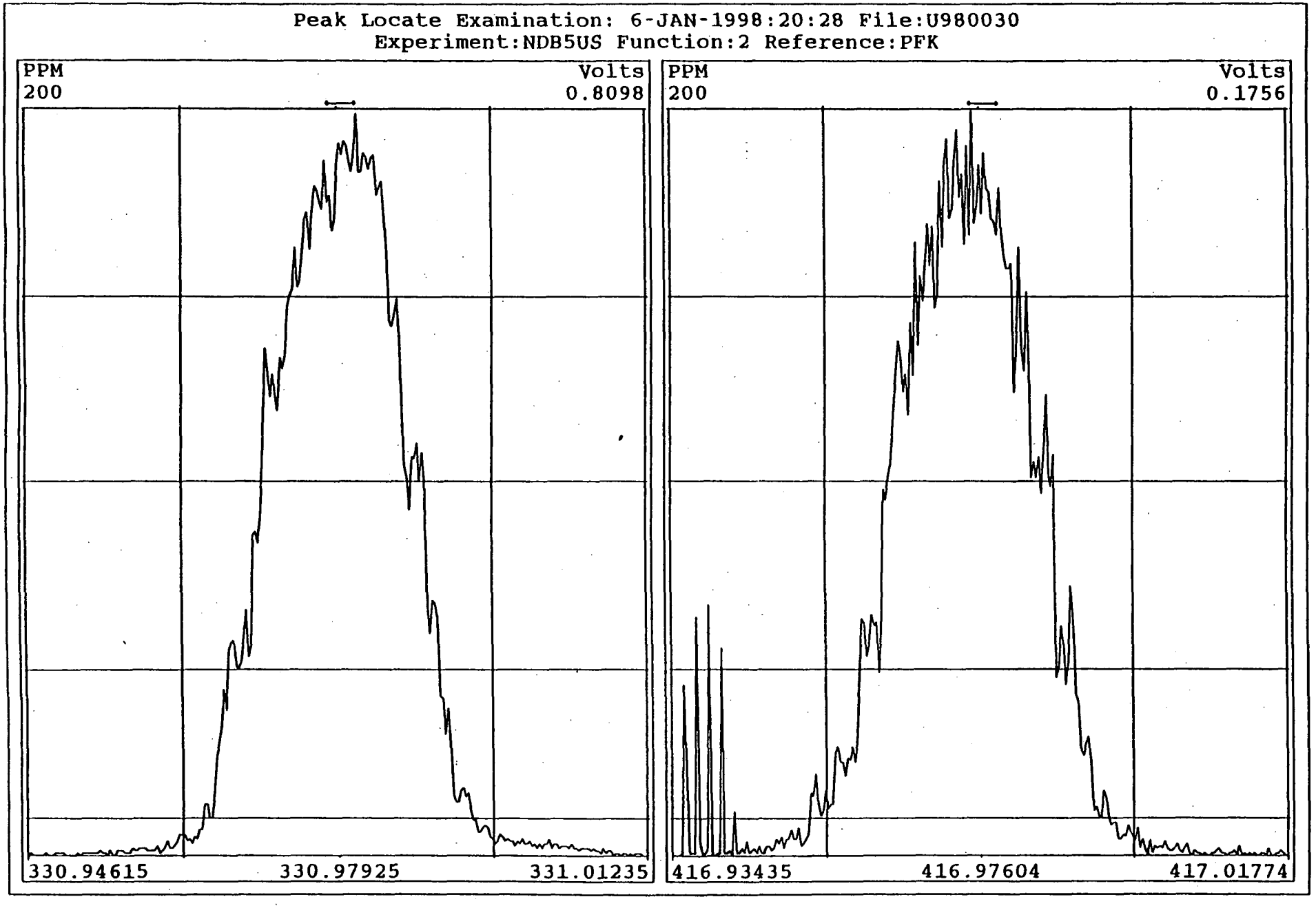
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

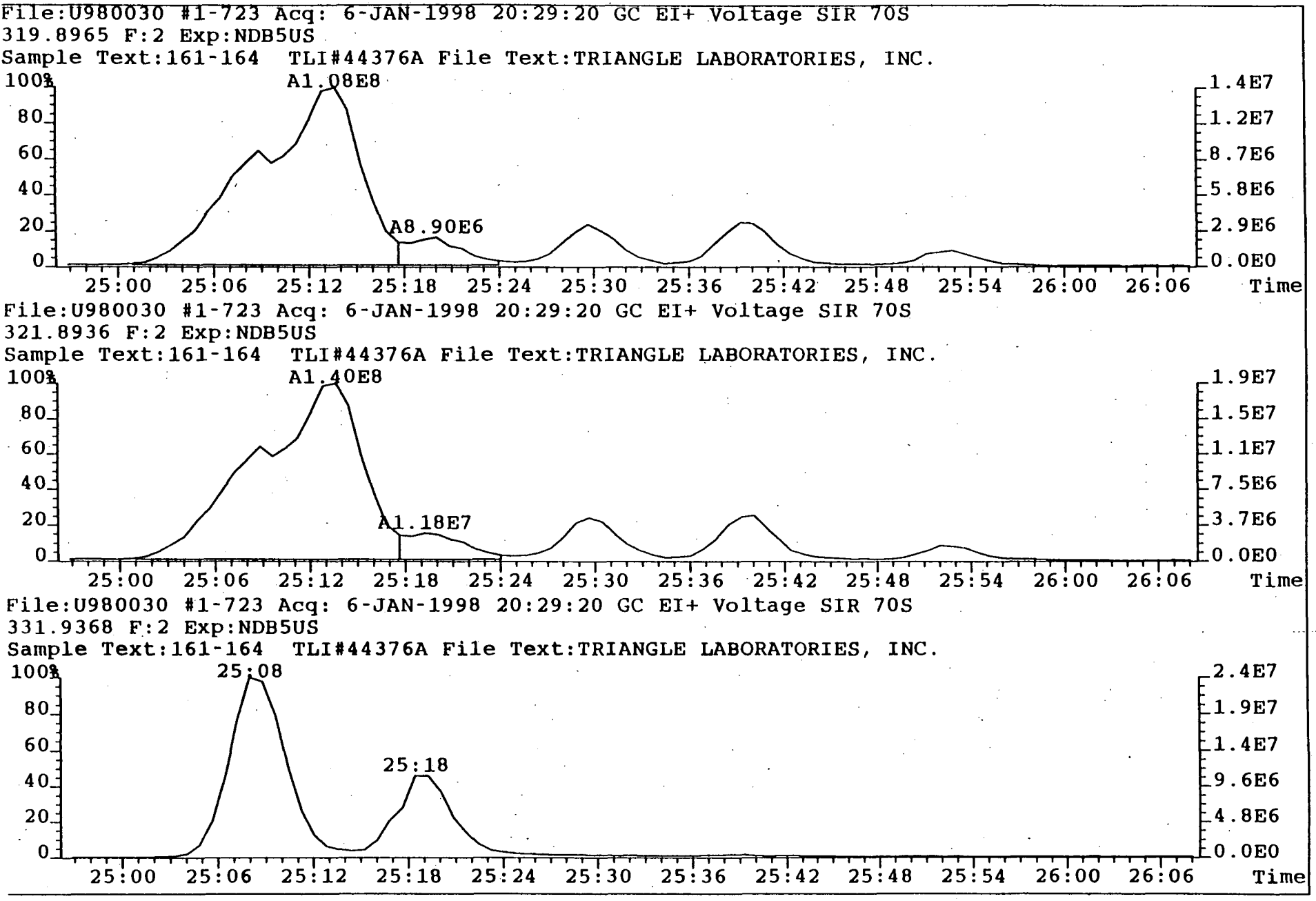


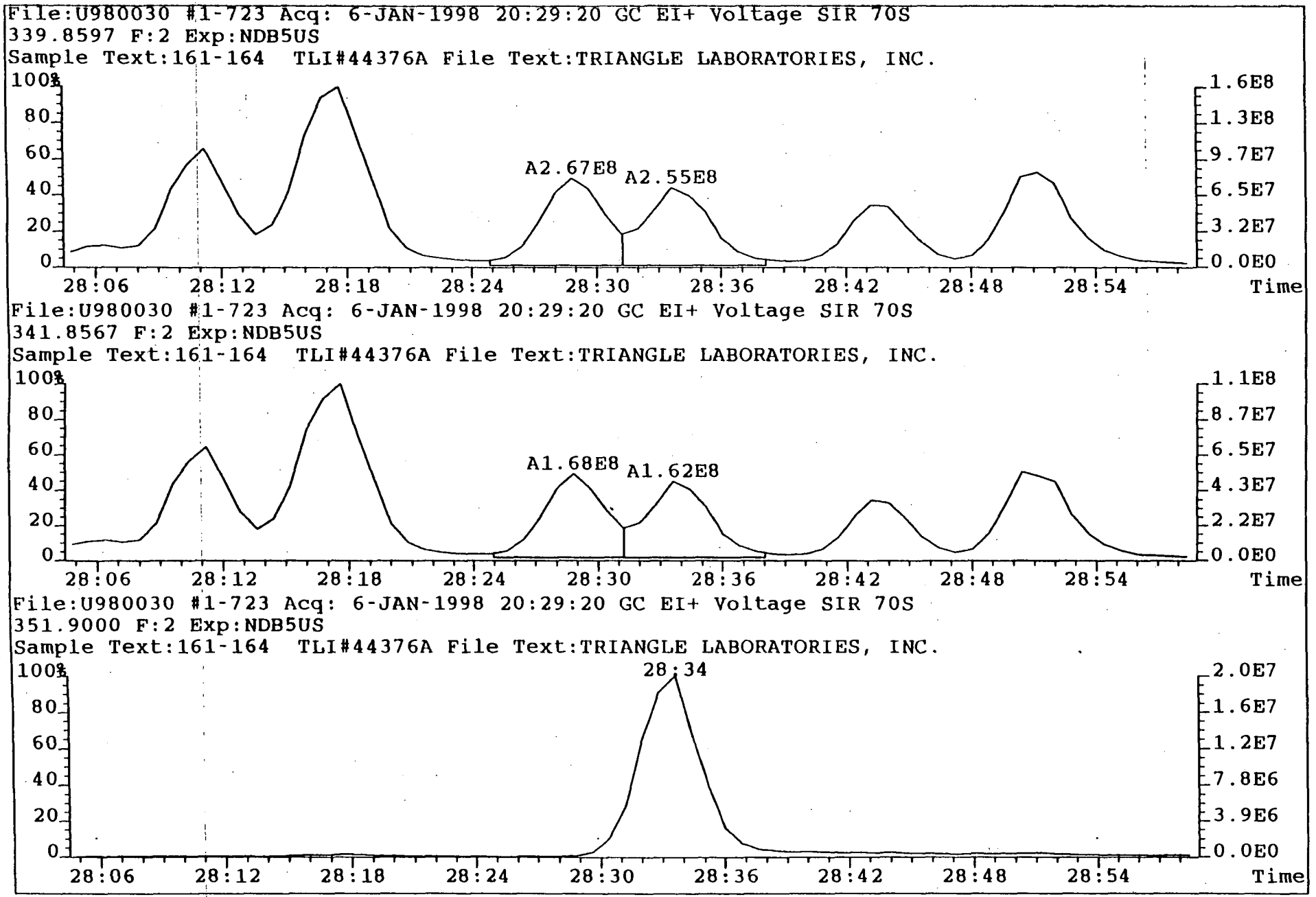
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A

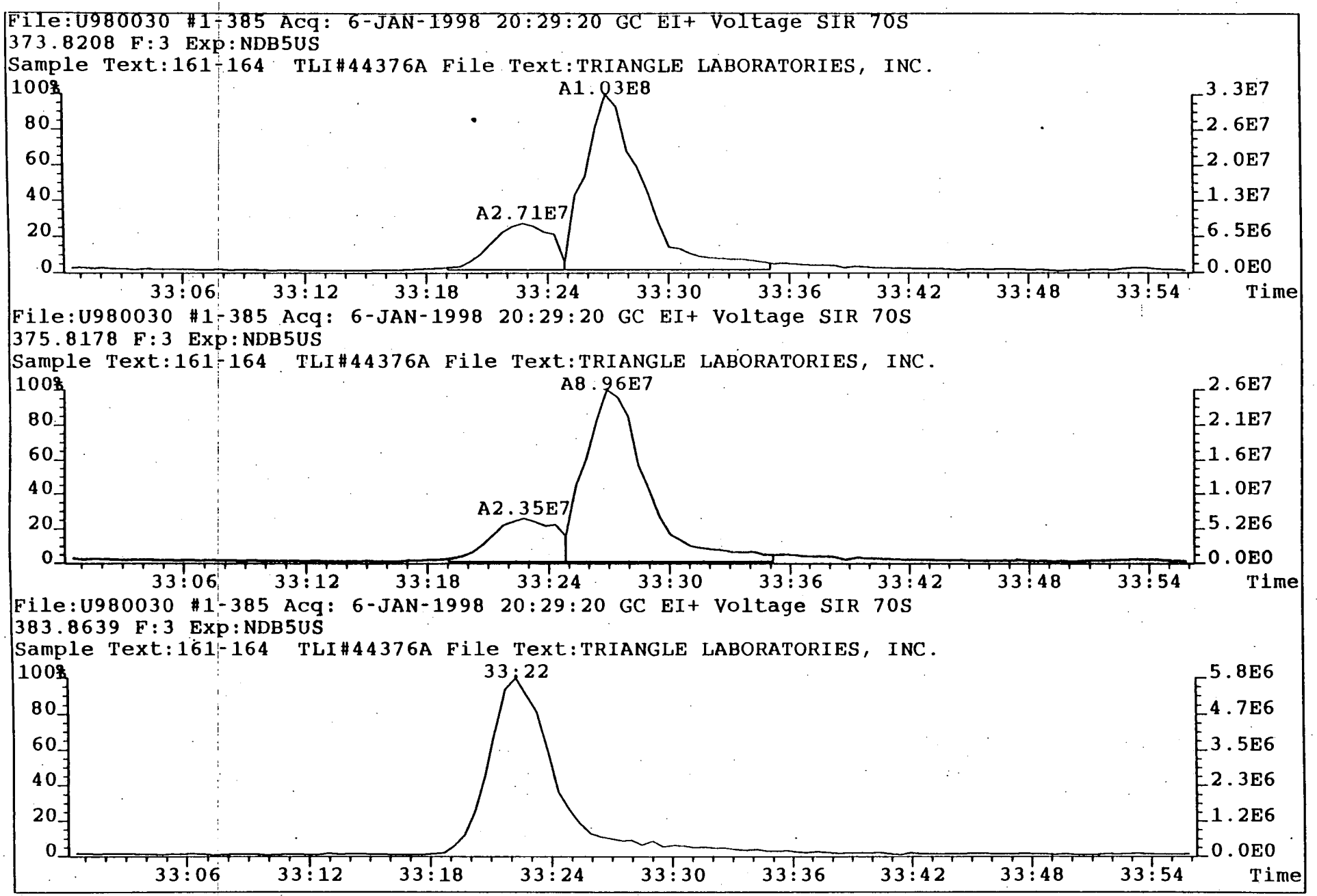



File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:3417
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13668.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A2.74E8
4.9E7
4.0E7
3.0E7
2.0E7
9.9E6
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:3492
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A3.22E8
5.8E7
4.7E7
3.5E7
2.3E7
1.2E7
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:6021
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,24084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A4.22E7
7.8E6
6.2E6
4.7E6
3.1E6
1.6E6
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S Noise:4482
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,17928.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
A4.90E7
8.6E6
6.9E6
5.2E6
3.5E6
1.7E6
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time
File:U980030 #1-545 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:161-164 TLI#44376A
39:33
39:49
39:59
2.3E7
1.9E7
1.4E7
9.3E6
4.6E6
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time


Peak Locate Examination: 6-JAN-1998:20:28 File:U980030
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.8098
330.94615
330.97925
331.01235
PPM
200
Volts
0.1756
416.93435
416.97604
417.01774


File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A1.08E8
A8.90E6
1.4E7
1.2E7
8.7E6
5.8E6
2.9E6
0.0E0
0
20
40
60
80
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A1.40E8
A1.18E7
1.9E7
1.5E7
1.1E7
7.5E6
3.7E6
0.0E0
0
20
40
60
80
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
25:08
25:18
2.4E7
1.9E7
1.4E7
9.6E6
4.8E6
0.0E0
0
20
40
60
80
25:00 25:06 25:12 25:18 25:24 25:30 25:36 25:42 25:48 25:54 26:00 26:06
Time


File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.67E8
A2.55E8
1.6E8
1.3E8
9.7E7
6.5E7
3.2E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.68E8
A1.62E8
1.1E8
8.7E7
6.5E7
4.3E7
2.2E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980030 #1-723 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:34
2.0E7
1.6E7
1.2E7
7.8E6
3.9E6
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time


File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.03E8
A2.71E7
3.3E7
2.6E7
2.0E7
1.3E7
6.5E6
0.0E0
100%
80
60
40
20
0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A8.96E7
A2.35E7
2.6E7
2.1E7
1.6E7
1.0E7
5.2E6
0.0E0
File:U980030 #1-385 Acq: 6-JAN-1998 20:29:20 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:161-164 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
33:22
5.8E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0

Eastern Research Group

TLI Project: 44376A
Client Sample: 161-164

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: P980098

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-13A-E	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	10.5			0.76	23:07	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.0	48.9	40%-130%	0.78	23:06	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:56	___

Data Reviewer: _____ 01/09/98

C2NF_PSR v2.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:15 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980098B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00		0.65	2.94			0.000			
				18:29		0.77	2,308.95	1,007.96	1,300.99	0.800			
				18:45	RO	1.55	39.31	34.40	22.21	0.812			
				18:56	RO	0.61	23.75	10.33	16.96	0.820			
				19:02	RO	1.11	28.62	17.87	16.17	0.824			
				19:08	RO	0.98	105.63	58.48	59.68	0.828			
				19:29		0.77	2,436.80	1,058.70	1,378.10	0.843			
				19:37		0.77	2,591.56	1,125.25	1,466.31	0.849			
				19:45		0.76	5,168.45	2,227.46	2,940.99	0.855			
				19:55		0.77	2,100.11	911.66	1,188.45	0.862			
				20:02		0.78	167.27	73.48	93.79	0.867			
				20:11		0.76	2,576.52	1,112.22	1,464.30	0.874			
				20:20		0.79	6,085.44	2,678.99	3,406.45	0.880			E
				20:30		0.79	3,377.06	1,486.07	1,890.99	0.887			
				20:39		0.75	9,073.85	3,892.77	5,181.08	0.894			E
				20:48		0.76	3,139.90	1,358.38	1,781.52	0.900			
				21:11		0.75	20,021.06	8,547.76	11,473.30	0.917			E
				21:38		0.74	4,195.80	1,789.85	2,405.95	0.937			
				21:44		0.76	847.14	366.60	480.54	0.941			
				21:53		0.76	4,342.05	1,871.69	2,470.36	0.947			
				22:08		0.76	4,165.30	1,799.66	2,365.64	0.958			
				22:22		0.74	1,006.07	426.90	579.17	0.968			
				22:33		0.76	5,558.11	2,397.54	3,160.57	0.976			
				22:41	RO	0.57	22.18	9.65	16.88	0.982			
				22:46		0.79	17.30	7.64	9.66	0.986			
				23:00		0.75	4,357.40	1,870.05	2,487.35	0.996			
				23:07		0.76	2,985.88	1,289.08	1,696.80	1.001	2378-TCDF	AN	
				23:20		0.75	4,982.85	2,134.19	2,848.66	1.010			
				23:37		0.75	6,460.08	2,760.68	3,699.40	1.022			E
				23:44		0.75	5,017.66	2,156.12	2,861.54	1.027			
				23:57	RO	0.59	27.03	11.76	19.80	1.037			
				24:17	RO	0.58	19.81	8.62	14.92	1.051			
				24:32		0.76	3,732.70	1,606.27	2,126.43	1.062			
				25:17		0.73	640.95	270.59	370.36	1.095			
	DC	WH		25:43		0.75	30.57			1.113			
304-306			33	Peaks			107,622.59						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.21	4.44			0.000			
	DC	WL		18:32	RO	0.64	5.84			0.802			
	DC	WL		20:10		0.70	19.67			0.873			
	DC	WL		20:33	RO	0.60	29.63			0.890			
	DC	WL		20:43	RO	1.44	3.43			0.897			

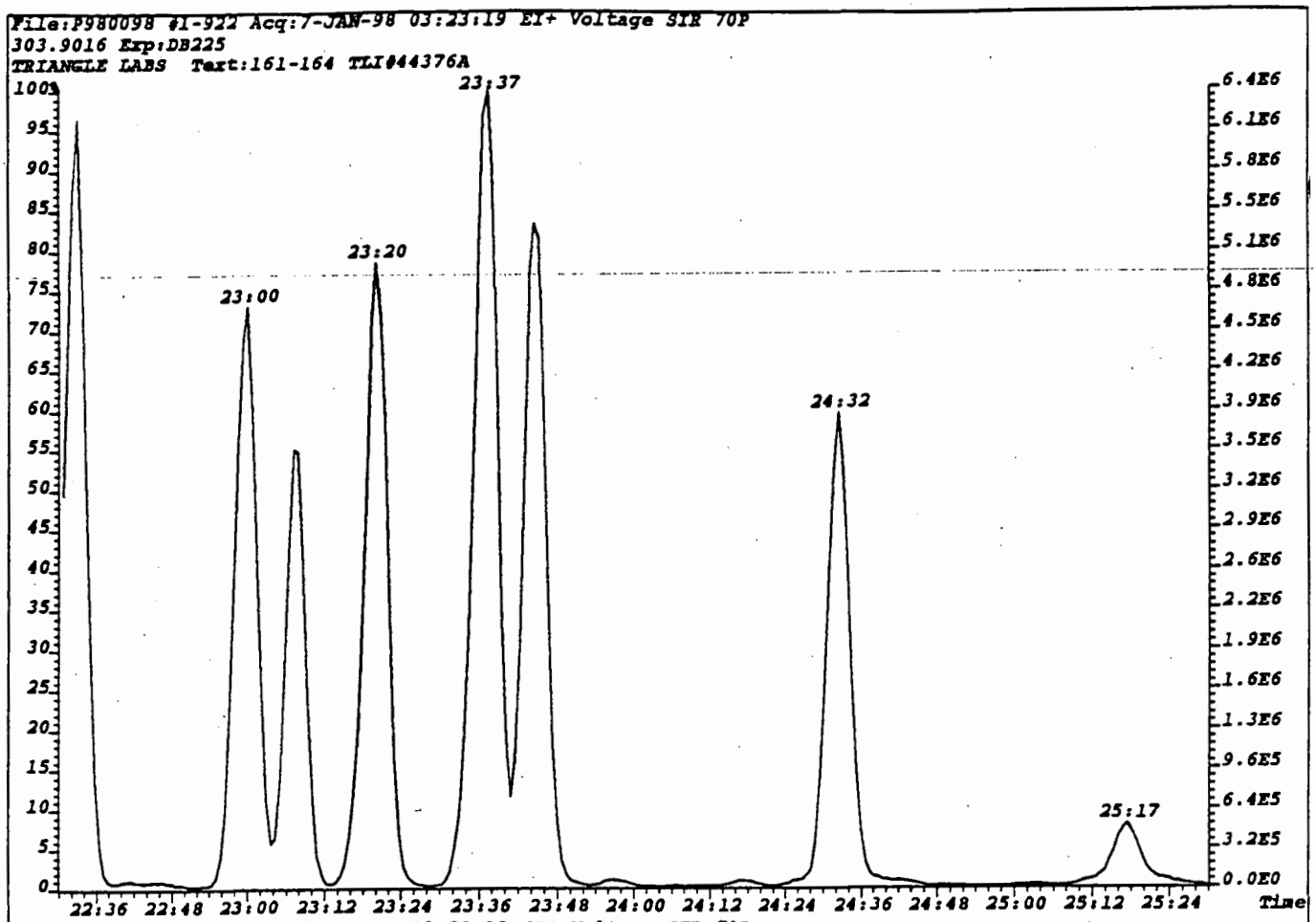
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC		WL	21:21		0.73	15.14			0.924			
	DC		WL	21:33	RO	0.41	9.70			0.933			
	DC		WL	21:49		0.70	23.44			0.944			
				23:06		0.78	1,090.14	476.68	613.46	1.000	13C12-2378-TCDF	IS0	
				24:03	RO	0.62	13.91	6.05	9.72	1.041			
	DC		WH	24:53	RO	0.37	1.91			1.077			
	DC		WH	24:59	RO	0.36	1.72			1.082			
	DC		WH	25:10		0.80	9.03			1.089			
	DC		WH	25:32	RO	0.52	7.42			1.105			
316-318		2	Peaks				1,104.05						

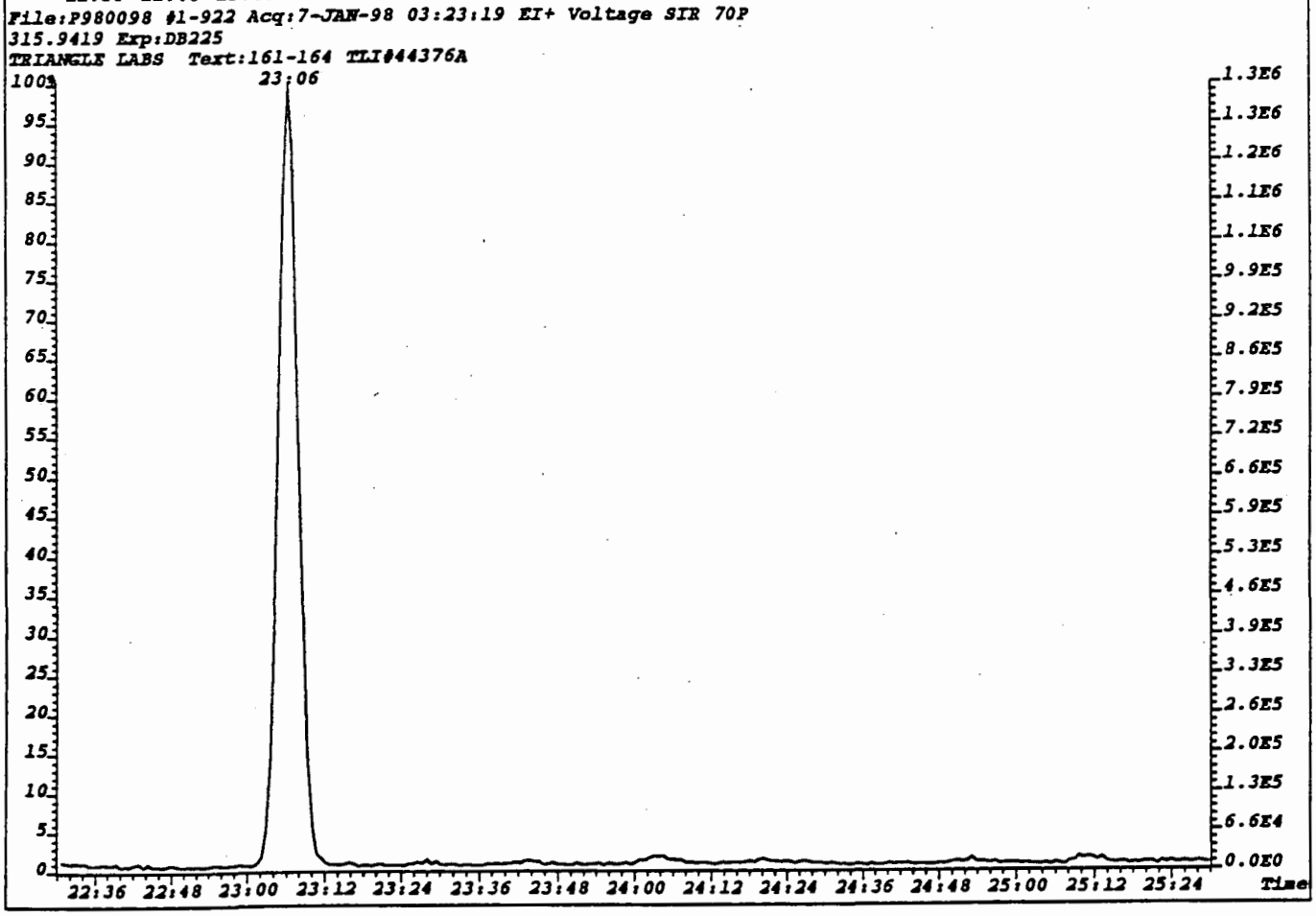
---------- Above: TCDF / TCDD Follows ----------

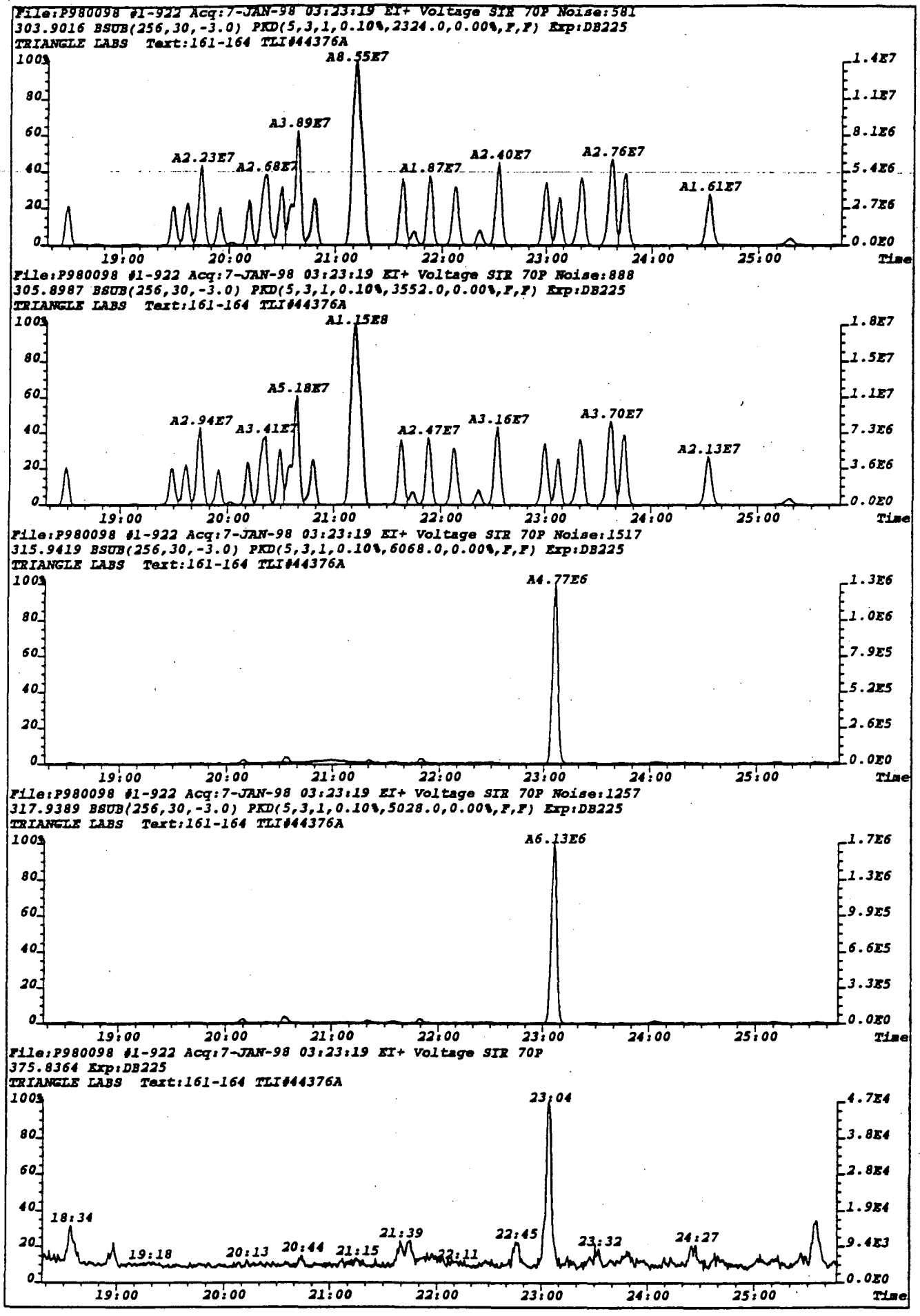
13C12-TCDD				0.65-0.89						0.908-1.092			
332-334	DC		NL	0:00	RO	1.04	2.55			0.000			
	DC		SN	20:30	RO	0.40	2.87			0.948			
				21:38		0.81	722.82	323.94	398.88	1.000	13C12-2378-TCDD	IS1	
				21:56		0.82	1,605.03	723.03	882.00	1.014	13C12-1234-TCDD	RS1	
				22:43	RO	0.97	7.97	4.36	4.50	1.050			
	DC		WH	23:44	RO	0.44	3.86			1.097			
	DC		WH	23:52	RO	1.14	1.26			1.103			
	DC		WH	24:29	RO	0.17	1.91			1.132			
332-334		3	Peaks				2,335.82						

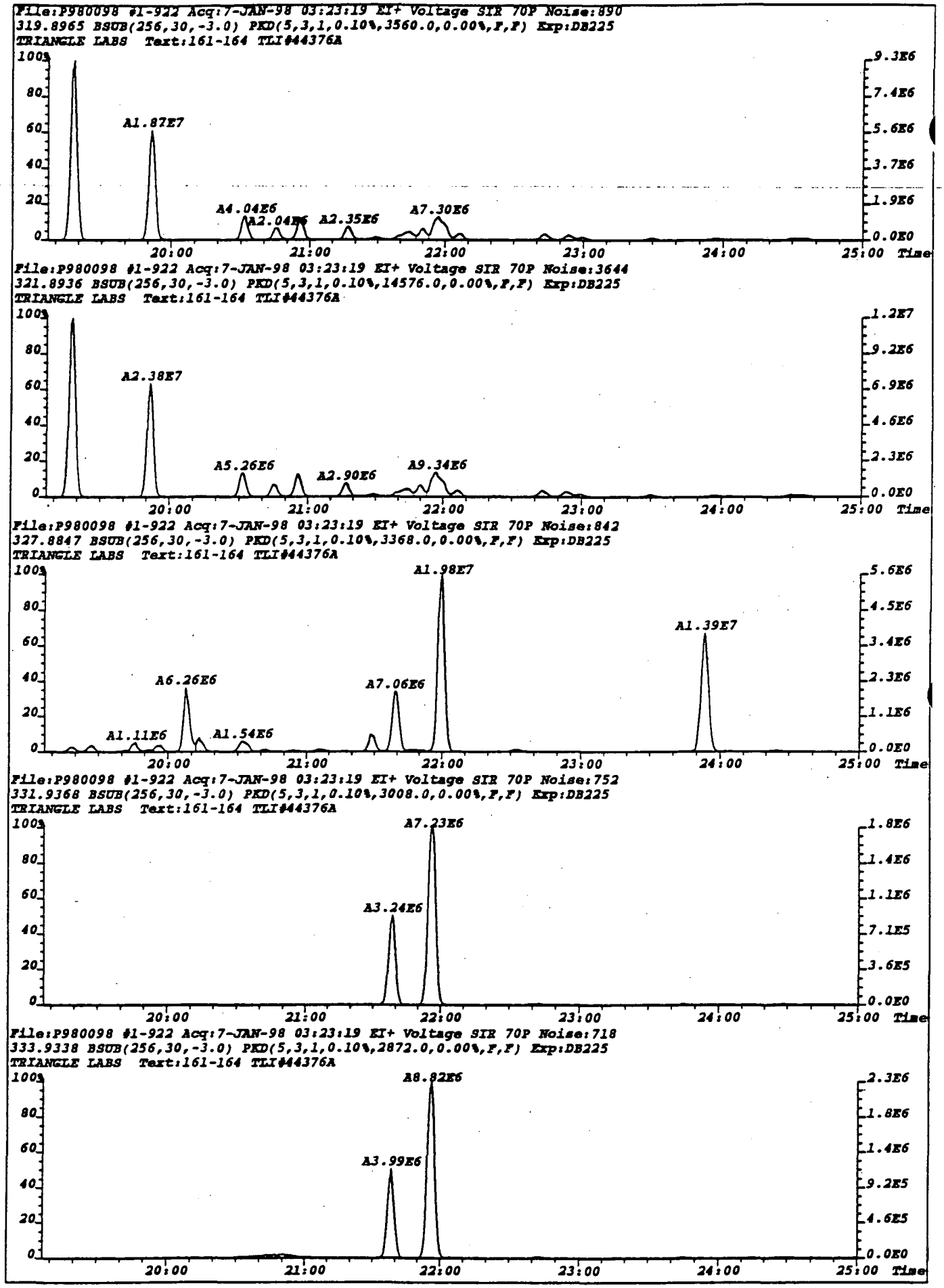
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rt.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

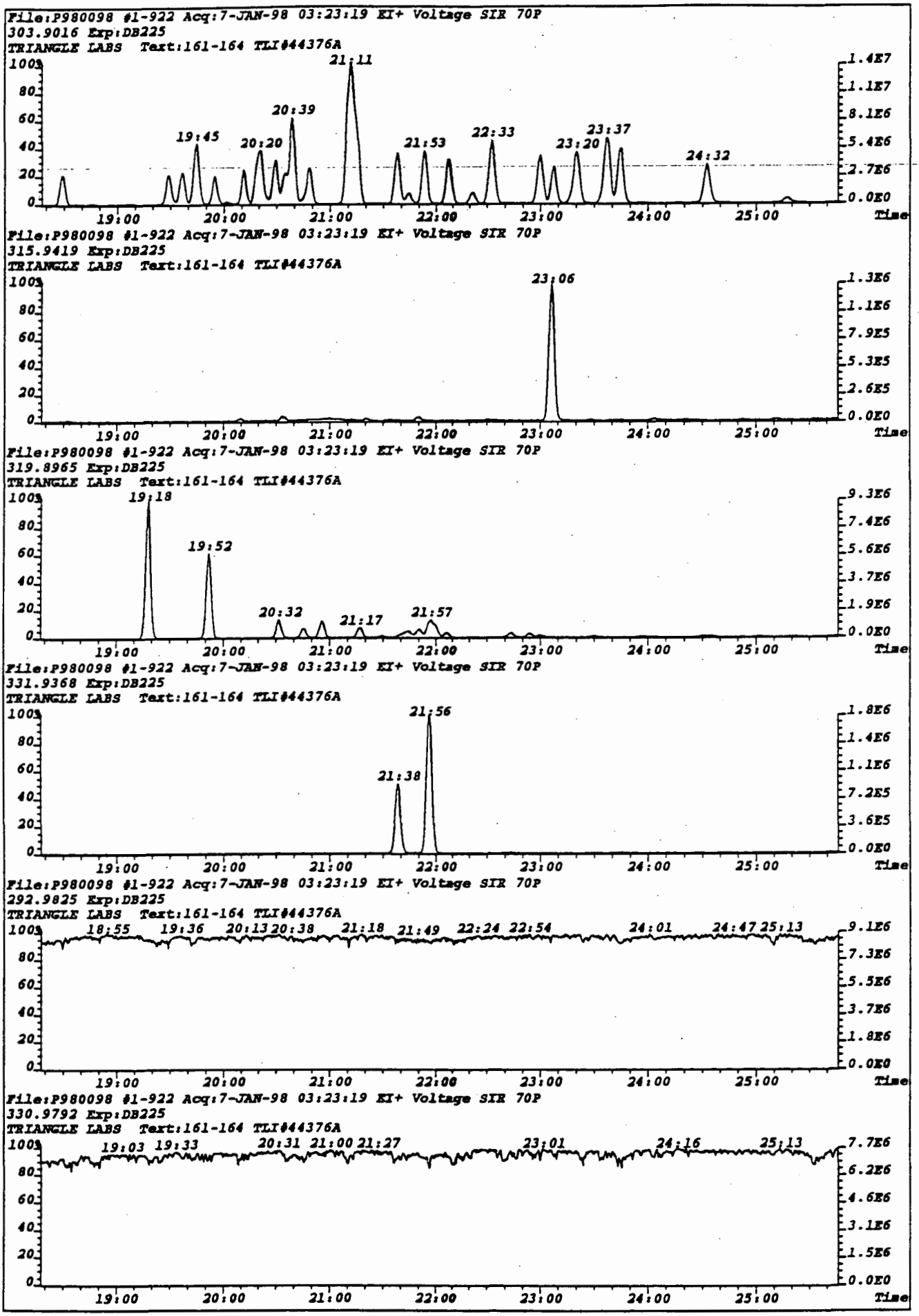
*** End of Report ***

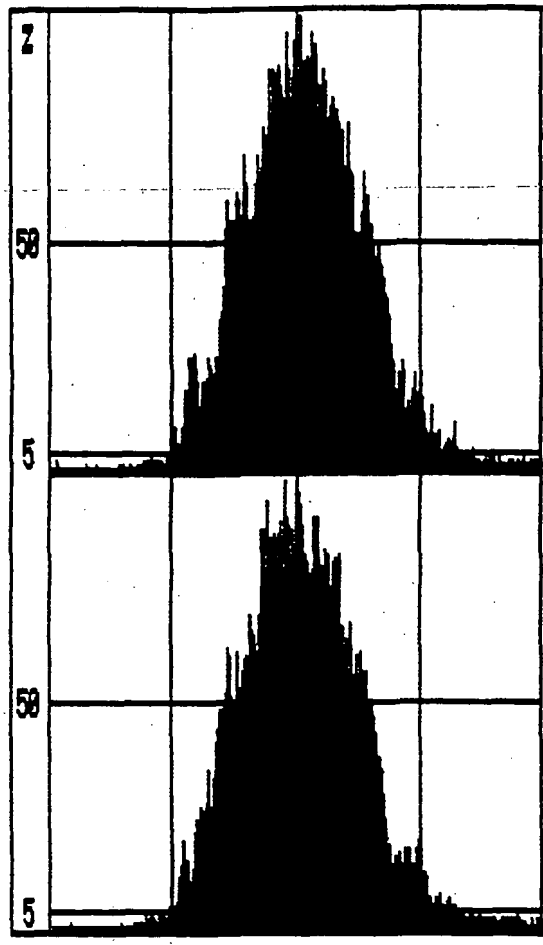

File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
23:00
23:20
23:37
24:32
25:17
Time


File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
23:06
Time


File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:581
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2324.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A8.55E7
A3.89E7
A2.23E7
A2.68E7
A1.87E7
A2.40E7
A2.76E7
A1.61E7
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:888
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3552.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A1.15E8
A5.18E7
A2.94E7
A3.41E7
A2.47E7
A3.16E7
A3.70E7
A2.13E7
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:1517
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6068.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A4.77E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:1257
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5028.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A6.13E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
23:04
18:34
19:18
20:13
20:44
21:15
21:39
22:11
22:45
23:32
24:27
Time


File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:890
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3560.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A1.87E7
A4.04E6
A2.04E6
A2.35E6
A7.30E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:3644
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,14576.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A2.38E7
A5.26E6
A2.90E6
A9.34E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:842
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3368.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A1.98E7
A1.39E7
A6.26E6
A7.06E6
A1.11E6
A1.54E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:752
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3008.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A7.23E6
A3.24E6
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P Noise:718
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2872.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
A8.82E6
A3.99E6
20:00
21:00
22:00
23:00
24:00
25:00
Time


File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
19:45
20:20
20:39
21:11
21:53
22:33
23:20
23:37
24:32
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
23:06
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
19:18
19:52
20:32
21:17
21:57
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
21:38
21:56
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
18:55
19:36
20:13
20:38
21:18
21:49
22:24
22:54
24:01
24:47
25:13
File:P980098 #1-922 Acq:7-JAN-98 03:23:19 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:161-164 TLI#44376A
19:03
19:33
20:31
21:00
21:27
23:01
24:16
25:13
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time



Ref. mass	292.9825	Peak top	
Height	1.68 volts	Span	200 ppm

System file name	D8225
Data file name	A:P980898
Resolution	10000
Group number	1
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 380.9761

A	292.9825	J	330.9792
B	303.9016	K	331.9368
C	305.8987	L	333.9338
D	315.9419	M	375.8364
E	317.9389		
F	319.8965		
G	321.8936		
H	327.8847		
I	330.9792		

Channel	I	330.9792		Peak top	
Height	1.18 volts		Span	200 ppm	

Eastern Research Group

TLI Project: 44376A
Client Sample: 165,167,168/225

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980031

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-14ACD	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.51			0.77	25:20	PR_
1,2,3,7,8-PeCDD	3.6			1.51	29:38	___
1,2,3,4,7,8-HxCDD	4.7			1.23	32:44	___
1,2,3,6,7,8-HxCDD	7.4			1.26	32:49	___
1,2,3,7,8,9-HxCDD	10.3			1.28	33:07	___
1,2,3,4,6,7,8-HpCDD	40.0			1.01	36:03	E__
1,2,3,4,6,7,8,9-OCDD	63.1			0.85	39:37	___
2,3,7,8-TCDF	64.6			0.74	24:39	E__
1,2,3,7,8-PeCDF	15.8			1.61	28:34	___
2,3,4,7,8-PeCDF	28.7			1.55	29:18	___
1,2,3,4,7,8-HxCDF	97.5			1.27	32:02	E__
1,2,3,6,7,8-HxCDF	32.5			1.20	32:09	___
2,3,4,6,7,8-HxCDF	47.4			1.25	32:39	E__
1,2,3,7,8,9-HxCDF	2.8			1.26	33:23	PR_
1,2,3,4,6,7,8-HpCDF	155			1.07	35:02	E__
1,2,3,4,7,8,9-HpCDF	25.6			1.06	36:33	___
1,2,3,4,6,7,8,9-OCDF	160			0.89	39:50	E__

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	76.5	12			E__
Total PeCDD	58.1	9		92.2	___
Total HxCDD	114	7			E__
Total HpCDD	80.3	2			E__
Total TCDF	370	16			E__
Total PeCDF	391	14		393	E__
Total HxCDF	403	13			E__
Total HpCDF	262	4			E__

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:19 01/10/98

TLI Project: **44376A** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **165,167,168/225** Analysis File: **U980031**

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.0	75.3	40%-130%	0.75	24:37	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.7	68.4	40%-130%	0.80	25:19	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.0	74.6	40%-130%	1.56	28:34	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.9	71.4	40%-130%	1.49	29:37	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.1	77.0	40%-130%	0.52	32:09	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.2	80.8	40%-130%	1.24	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.4	85.0	25%-130%	0.44	35:01	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.5	88.5	25%-130%	1.03	36:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6.4	80.0	25%-130%	0.87	39:36	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.4	85.5	40%-130%	1.54	29:17	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.1	104	40%-130%	0.52	32:03	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.9	97.1	40%-130%	1.23	32:44	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.7	93.7	40%-130%	0.44	36:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.3	82.9	25:20	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	80.7	40%-130%	0.51	33:23	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.2	79.9	40%-130%	0.55	32:38	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:09	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.24	33:07	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:19 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980031B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306		DC	NL	0:00	RO	0.59	6,422.82			0.000			
	K			21:27		0.75	81,985.40	35,099.80	46,885.60	0.871			
	K			21:58		0.74	79,054.70	33,749.00	45,305.70	0.892			
	K			22:12		0.74	87,376.20	37,269.40	50,106.80	0.902			
	K			22:35		0.74	451,067.00	192,246.00	258,821.00	0.917			E
	K			22:55		0.74	291,646.00	124,256.00	167,390.00	0.931			E
	K			23:19		0.73	322,976.00	136,663.00	186,313.00	0.947			E
	K			23:35		0.74	223,884.70	95,304.70	128,580.00	0.958			E
				23:49		0.74	267,897.00	114,147.00	153,750.00	0.968			E
				24:02		0.75	356,664.00	152,480.00	204,184.00	0.976			E
				24:13		0.74	136,966.90	58,449.90	78,517.00	0.984			
				24:27		0.75	126,685.20	54,168.60	72,516.60	0.993			
				24:39		0.74	576,292.00	245,114.00	331,178.00	1.001	2378-TCDF	AN	E
				25:03		0.75	141,772.10	60,686.30	81,085.80	1.018			
				25:16		0.75	115,529.70	49,697.50	65,832.20	1.026			
				25:32		0.73	21,012.72	8,867.82	12,144.90	1.037			
				26:22		0.74	14,968.77	6,388.32	8,580.45	1.071			
304-306			16 Peaks				3,295,778.39						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318		DC	NL	0:00	RO	1.27	79.86			0.000			
		DC	WL	22:24		0.82	598.41			0.910			
		DC	WL	22:59		0.84	953.20			0.934			
				24:03		0.80	378.73	168.43	210.30	0.977			
				24:37		0.75	28,763.40	12,283.10	16,480.30	1.000	13C12-2378-TCDF	IS0	
				25:17		0.76	481.83	207.64	274.19	1.027			
		DC	WH	26:09		0.85	520.21			1.062			
		DC	WH	26:45	RO	0.93	175.85			1.087			
		DC	WH	26:54		0.86	106.79			1.093			
316-318			3 Peaks				29,623.96						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.895-1.047			
320-322		DC	NL	0:00	RO	0.49	177.34			0.000			
	NK			22:48		0.77	188,101.40	82,050.40	106,051.00	0.901			E
	NK			23:11		0.77	123,705.30	53,974.40	69,730.90	0.916			
	K			23:28		0.81	12,374.19	5,541.73	6,832.46	0.927			
	K			24:09		0.76	45,571.30	19,743.60	25,827.70	0.954			
				24:25		0.78	24,302.90	10,684.90	13,618.00	0.964			
				24:49		0.79	12,193.61	5,382.70	6,810.91	0.980			
	M			25:14		0.77	46,900.00	20,400.00	26,500.00	0.997			
	AN			25:20		0.77	3,120.00	1,360.00	1,760.00	1.001	2378-TCDD	AN	PR

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:30		0.77	5,665.08	2,469.30	3,195.78	1.007			
				25:40		0.77	6,144.71	2,675.43	3,469.28	1.014			
				25:53		0.74	2,034.66	868.00	1,166.66	1.022			
				26:19		0.74	2,024.17	859.48	1,164.69	1.039			
320-322			12	Peaks			472,137.32						
37Cl-TCDD										0.921-1.079			
328	DC	NL		0:00			72.01			0.000			
	DC	WL		22:48			1,369.49			0.901			
	DC	WL		23:04			2,604.15			0.911			
	DC	WL		23:10			1,098.75			0.915			
				23:22			339.47	339.47		0.923			
				23:58			43,739.20	43,739.20		0.947			
				24:20			299.09	299.09		0.961			
				24:40			474.30	474.30		0.974			
				24:50			145.62	145.62		0.981			
				25:13			154.61	154.61		0.996			
				25:20			16,526.10	16,526.10		1.001	37Cl-TCDD		CLS
				25:43			16,653.10	16,653.10		1.016			
				25:55			238.93	238.93		1.024			
				26:33			108.95	108.95		1.049			
				26:39			92.96	92.96		1.053			
				26:46			220.96	220.96		1.057			
328			12	Peaks			78,993.29						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334	DC	NL		0:00	RO	1.32	35.01			0.000			
				24:10	RO	1.23	123.69	86.19	69.88	0.955			
				25:09		0.82	26,033.30	11,695.30	14,338.00	0.993	13C12-1234-TCDD		RS1
				25:19		0.80	19,921.79	8,837.59	11,084.20	1.000	13C12-2378-TCDD		IS1
				25:39		0.74	807.25	344.39	462.86	1.013			
				25:57	RO	1.01	58.85	33.46	33.25	1.025			
				26:03	RO	0.31	95.56	41.57	133.71	1.029			
				26:17	RO	1.07	41.22	24.96	23.29	1.038			
332-334			7	Peaks			47,081.66						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00		1.40	27.48			0.000			
				26:35		1.52	221,928.30	133,908.00	88,020.30	0.931			
				26:46	RO	1.17	6,471.93	3,933.92	3,351.38	0.937			
				26:55	RO	6.68	1,613.18	4,223.29	632.62	0.942			
				27:03	RO	10.17	874.22	3,486.10	342.83	0.947			
				27:14	RO	8.05	1,094.97	3,456.68	429.40	0.953			
				27:35		1.66	73,443.20	45,828.40	27,614.80	0.966			
				27:43		1.54	490,937.00	297,760.00	193,177.00	0.970			E
				27:54		1.65	111,984.30	69,736.30	42,248.00	0.977			
				28:12		1.60	191,779.20	117,964.00	73,815.20	0.987			
				28:18		1.56	274,484.00	167,073.00	107,411.00	0.991			E
	M			28:30		1.55	112,200.00	68,200.00	44,000.00	0.998			
	AN			28:34		1.61	92,000.00	56,800.00	35,200.00	1.000	12378-PeCDF		AN

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:44		1.59	78,573.30	48,282.90	30,290.40	1.006			
				28:52		1.65	135,871.70	84,681.20	51,190.50	1.011			
				29:18		1.55	162,442.80	98,842.50	63,600.30	1.026	23478-PeCDF	AN	
				29:27		1.55	230,219.10	139,783.00	90,436.10	1.031			E
				29:46		1.67	46,447.90	29,036.80	17,411.10	1.042			
				30:14		1.56	21,294.15	12,979.70	8,314.45	1.058			
340-342			18	Peaks			2,253,659.25						
13C12-PeCDF				1.32-1.78						0.860-1.140			
352-354	DC	NL		0:00	RO	1.20	30.44			0.000			
				26:24	RO	1.16	116.56	70.85	60.86	0.924			
				26:36	RO	1.93	103.50	78.21	40.59	0.931			
				26:46		1.54	135.65	82.28	53.37	0.937			
				27:08		1.46	12.28	7.28	5.00	0.950			
				27:22		1.73	149.18	94.45	54.73	0.958			
				27:43		1.60	260.83	160.54	100.29	0.970			
				27:55		1.53	958.40	580.33	378.07	0.977			
				28:18	RO	32.58	504.77	6,449.74	197.95	0.991			
				28:34		1.56	22,191.91	13,517.80	8,674.11	1.000	13C12-PeCDF 123	IS2	
				28:51		1.59	754.48	463.36	291.12	1.010			
				29:03	RO	3.04	140.17	167.23	54.97	1.017			
				29:17		1.54	18,338.70	11,127.20	7,211.50	1.025	13C12-PeCDF 234	SUR1	
				29:33		1.66	675.57	422.07	253.50	1.034			
				29:52	RO	1.19	232.95	141.60	119.09	1.046			
				29:59	RO	3.16	51.20	63.39	20.08	1.050			
				30:16	RO	1.03	185.77	112.92	109.30	1.060			
352-354			16	Peaks			44,811.92						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.935-1.022			
356-358	DC	NL		0:00	RO	1.02	14.13			0.000			
D	DC	WL		27:35	RO	0.75	1,032.72			0.931			
				27:50	RO	1.07	107,958.12	65,621.60	61,210.00	0.940			
				28:18	RO	1.25	7,456.68	4,532.49	3,619.39	0.956			
				28:32		1.53	76,190.60	46,099.70	30,090.90	0.963			
				28:41		1.53	13,846.01	8,374.55	5,471.46	0.968			
				28:52		1.58	50,543.60	30,962.40	19,581.20	0.975			
				29:02		1.58	7,218.33	4,419.59	2,798.74	0.980			
				29:07		1.55	15,000.66	9,126.47	5,874.19	0.983			
				29:20		1.53	18,970.71	11,485.80	7,484.91	0.990			
				29:30	RO	0.83	9,212.00	5,599.45	6,707.67	0.996			
				29:38		1.51	13,287.99	7,991.37	5,296.62	1.001	12378-PeCDD	AN	
				29:45		1.56	8,999.70	5,478.95	3,520.75	1.005			Q
				30:05		1.58	7,994.83	4,893.29	3,101.54	1.016			
356-358			12	Peaks			336,679.23						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	0.94	9.34			0.000			
				27:48	RO	3.43	97.36	130.93	38.18	0.939			
				28:06	RO	2.01	17.90	14.12	7.02	0.949			
				28:15		1.58	79.72	48.80	30.92	0.954			

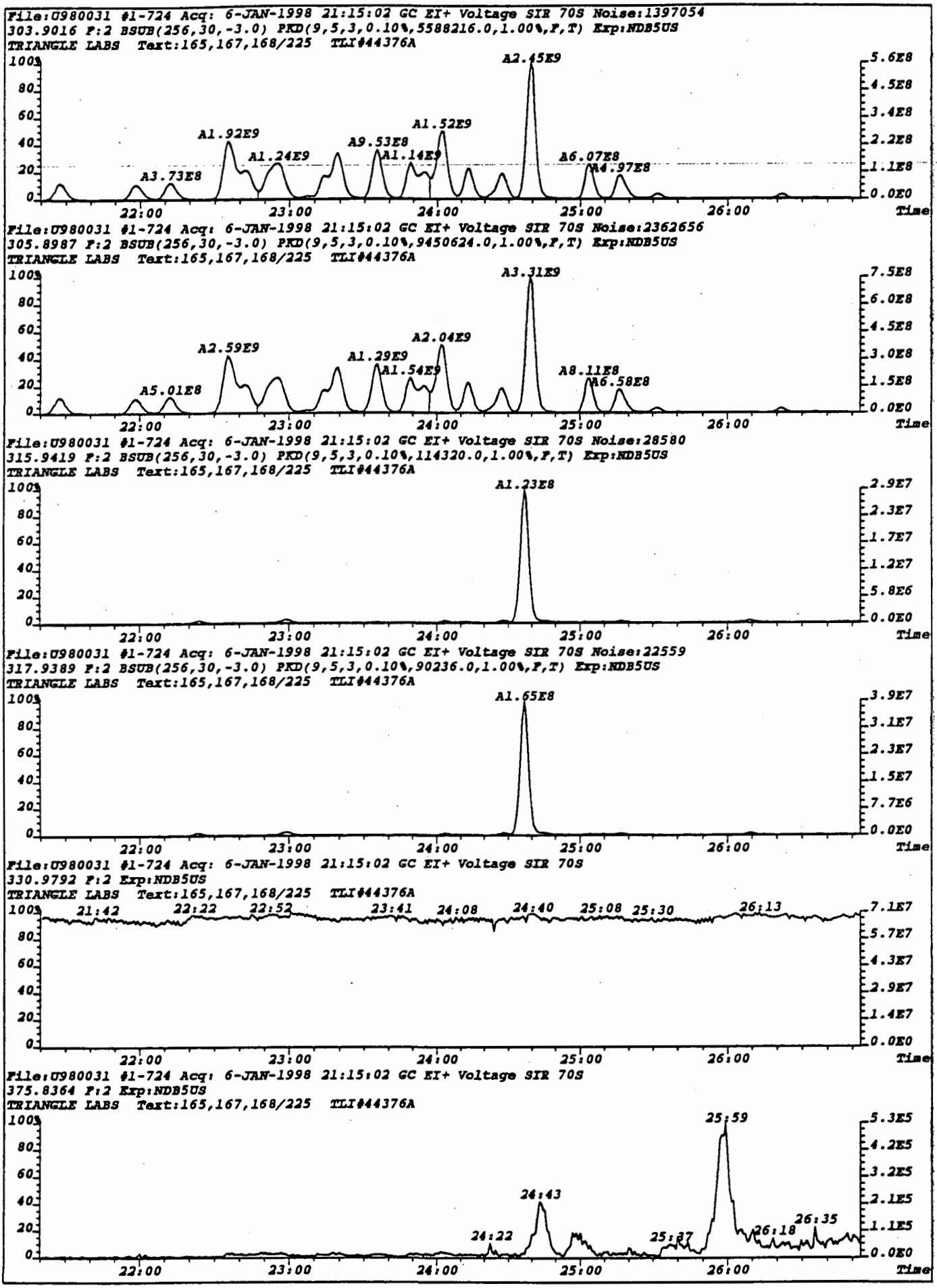
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:32	RO	1.24	60.20	36.59	29.42	0.963			
				29:20	RO	0.62	19.59	11.91	19.36	0.990			
				29:37		1.49	10,959.04	6,565.88	4,393.16	1.000	13C12-PeCDD 123	IS3	
				29:44		1.41	1,571.16	918.59	652.57	1.004			
				29:56	RO	2.37	45.01	41.90	17.65	1.011			
				30:02	RO	0.33	28.92	17.58	52.80	1.014			
				30:17	RO	6.82	43.63	116.63	17.11	1.023			
				30:37	RO	0.34	78.80	47.90	142.27	1.034			
368-370			11 Peaks				13,001.33						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376	DC	NL		0:00	RO	0.92	4,978.94			0.000			
				31:05		1.26	194,950.10	108,558.00	86,392.10	0.967			E
				31:14		1.26	417,152.00	232,369.00	184,783.00	0.971			E
				31:23		1.20	36,091.60	19,695.90	16,395.70	0.976			
				31:32		1.26	53,322.20	29,695.60	23,626.60	0.981			
				31:41		1.26	29,294.80	16,336.60	12,958.20	0.985			
				31:52		1.34	5,044.60	2,892.35	2,152.25	0.991			
				32:02		1.27	391,030.00	218,602.00	172,428.00	0.996	123478-HxCDF	AN	E
				32:09		1.20	162,153.10	88,312.10	73,841.00	1.000	123678-HxCDF	AN	
				32:16		1.26	48,434.80	27,010.50	21,424.30	1.004			
				32:26		1.26	75,865.00	42,277.40	33,587.60	1.009			
				32:39		1.25	185,974.20	103,229.00	82,745.20	1.016	234678-HxCDF	AN	E
	AN			33:23		1.26	9,560.00	5,330.00	4,230.00	1.038	123789-HxCDF	AN	PR
	M			33:28		1.25	50,900.00	28,300.00	22,600.00	1.041			
374-376			13 Peaks				1,659,772.40						
13C12-HxCDF						0.43-0.59				0.876-1.124			
384-386	DC	NL		0:00	RO	1.32	65.79			0.000			
				31:05	RO	1.81	46.27	55.52	30.64	0.967			
				31:13	RO	0.80	595.03	315.47	394.06	0.971			
				31:30	RO	1.13	127.07	95.44	84.15	0.980			
				31:33	RO	1.60	26.67	28.19	17.66	0.981			
				31:50	RO	1.82	120.20	144.53	79.60	0.990			
				32:03		0.52	13,621.10	4,653.76	8,967.34	0.997	13C12-HxCDF 478	SUR2	
				32:09		0.52	15,925.09	5,440.09	10,485.00	1.000	13C12-HxCDF 678	IS4	
				32:24		0.51	663.29	223.94	439.35	1.008			
				32:38		0.55	14,896.82	5,295.11	9,601.71	1.015	13C12-HxCDF 234	ALT2	
				32:55	RO	1.76	217.11	253.48	143.78	1.024			
				33:23		0.51	11,596.17	3,917.11	7,679.06	1.038	13C12-HxCDF 789	ALT1	
384-386			11 Peaks				57,834.82						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL		0:00	RO	0.42	417.85			0.000			
	D	D	SN	31:26	RO	0.45	539.64			0.958			
				31:35		1.25	27,935.00	15,540.20	12,394.80	0.963			
				32:01		1.22	147,092.10	80,941.80	66,150.30	0.976			E
				32:14		1.22	67,560.90	37,122.10	30,438.80	0.983			

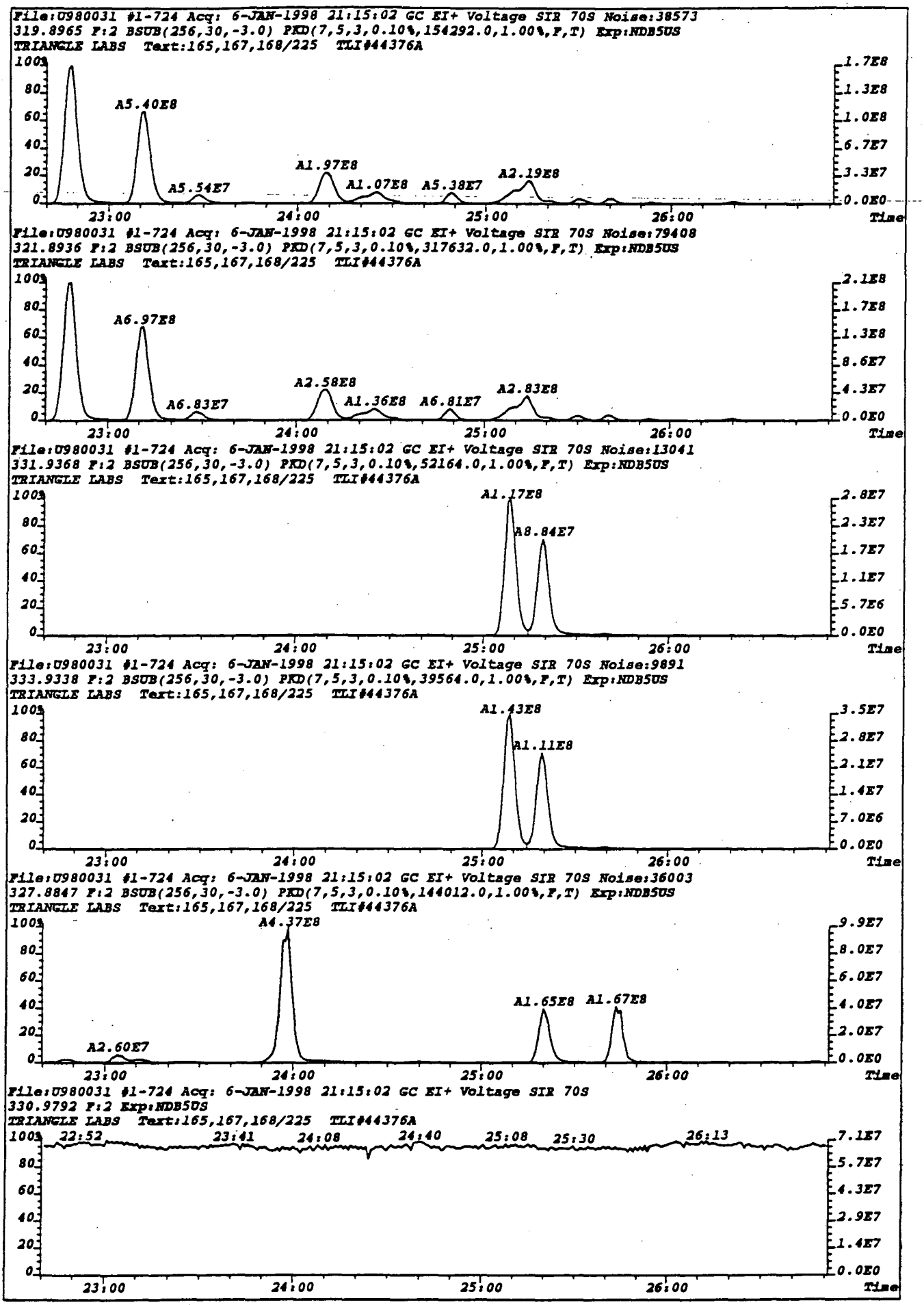
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:24		1.18	10,722.53	5,810.30	4,912.23	0.988			
				32:44		1.23	11,056.60	6,101.00	4,955.60	0.998	123478-HxCDD	AN	
				32:49		1.26	22,430.44	12,517.00	9,913.44	1.001	123678-HxCDD	AN	
				33:07		1.28	30,024.80	16,831.50	13,193.30	1.010	123789-HxCDD	AN	
390-392			7 Peaks				316,822.37						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	2.18	41.46			0.000			
				32:03	RO	0.88	54.21	30.01	34.06	0.977			
				32:44		1.23	8,772.48	4,841.31	3,931.17	0.998	13C12-HxCDD 478	SUR3	
				32:48		1.24	12,341.48	6,842.51	5,498.97	1.000	13C12-HxCDD 678	IS5	
				33:07		1.24	15,357.72	8,497.16	6,860.56	1.010	13C12-HxCDD 789	RS2	
402-404			4 Peaks				36,525.89						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	0.77	111.02			0.000			
				35:02		1.07	585,811.00	302,399.00	283,412.00	1.000	1234678-HpCDF	AN	E
				35:17		1.04	118,835.20	60,588.10	58,247.10	1.008			
				35:27		1.06	154,379.50	79,478.80	74,900.70	1.012			E
D	DC	NH		35:55	RO	1.73	1,117.51			1.026			
D	DC	NH		36:01	RO	3.39	716.92			1.029			
				36:33		1.06	75,223.70	38,661.30	36,562.40	1.044	1234789-HpCDF	AN	
408-410			4 Peaks				934,249.40						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	2.66	71.22			0.000			
				35:01		0.44	10,726.26	3,255.06	7,471.20	1.000	13C12-HpCDF 678	IS6	
				36:32		0.44	8,063.95	2,444.77	5,619.18	1.043	13C12-HpCDF 789	SUR4	
418-420			2 Peaks				18,790.21						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00		0.91	90.06			0.000			
D	DC	WL		35:10	RO	0.43	1,890.28			0.975			
				35:18		1.00	98,857.60	49,385.70	49,471.90	0.979			E
				36:03		1.01	98,139.60	49,229.30	48,910.30	1.000	1234678-HpCDD	AN	E
424-426			2 Peaks				196,997.20						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.03	44.07			0.000			
				36:03		1.03	9,863.19	5,003.93	4,859.26	1.000	13C12-HpCDD 678	IS7	
436-438			1 Peak				9,863.19						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	4.74	53.73			0.000			
				39:50		0.89	368,276.00	173,289.00	194,987.00	1.006	OCDF	AN	E
442-444			1 Peak				368,276.00						

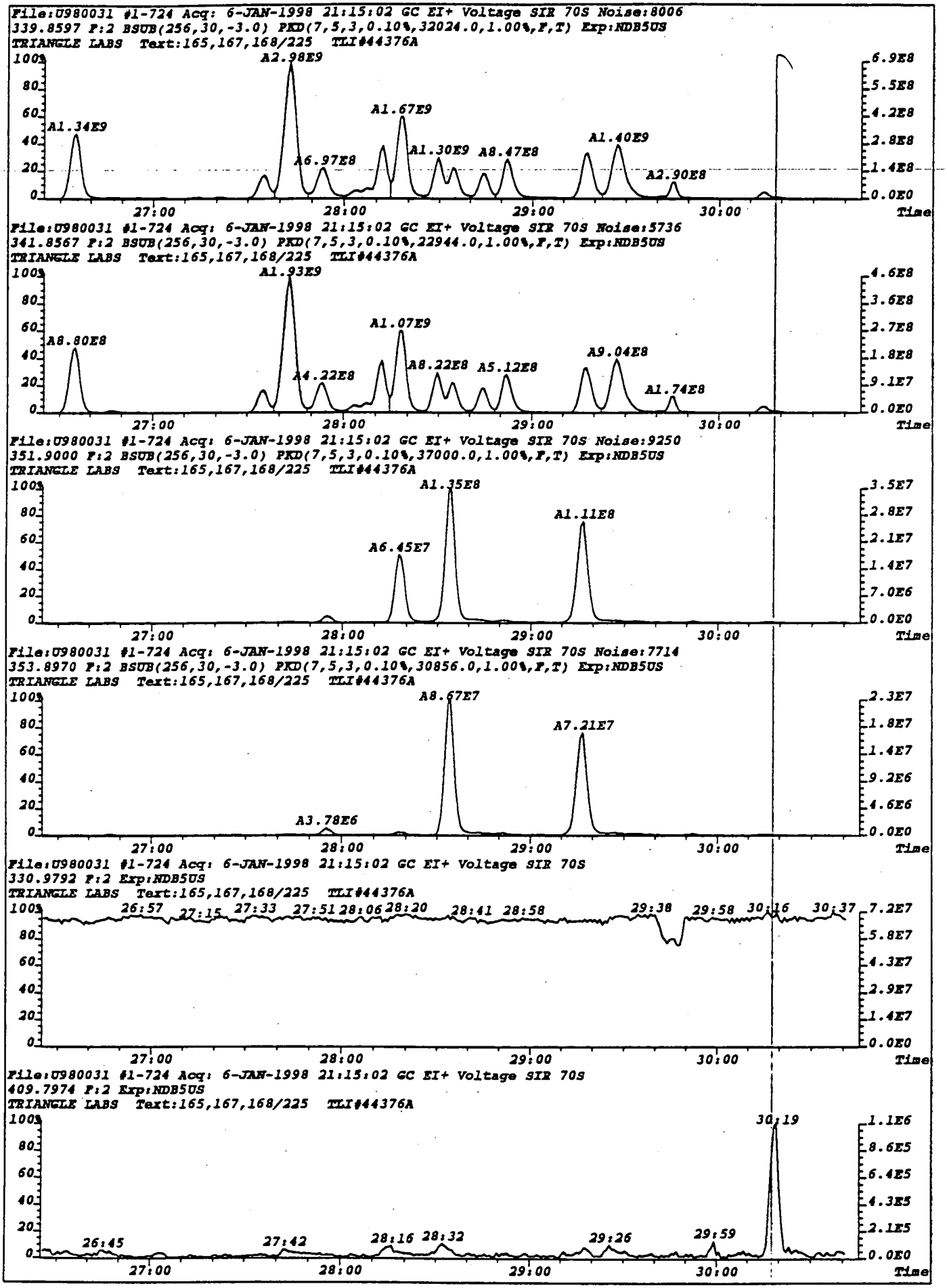
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00	RO	0.66	19.24			0.000			
				39:37		0.85	117,123.00	53,705.10	63,417.90	1.000	OCDD		AN
458-460			1 Peak				117,123.00						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00	RO	1.26	17.46			0.000			
				39:36		0.87	13,394.37	6,222.20	7,172.17	1.000	13C12-OCDD		IS8
470-472			1 Peak				13,394.37						

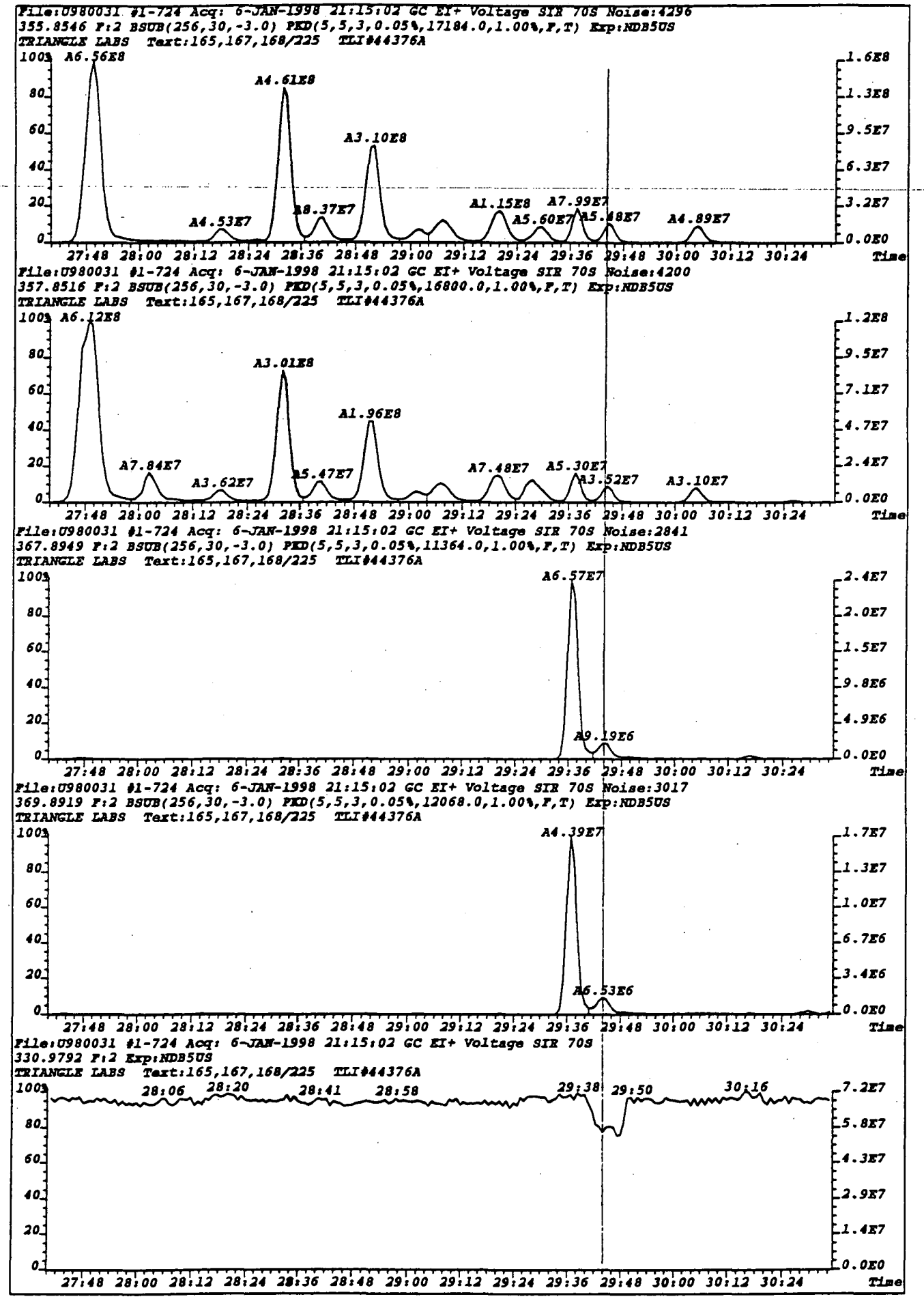
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

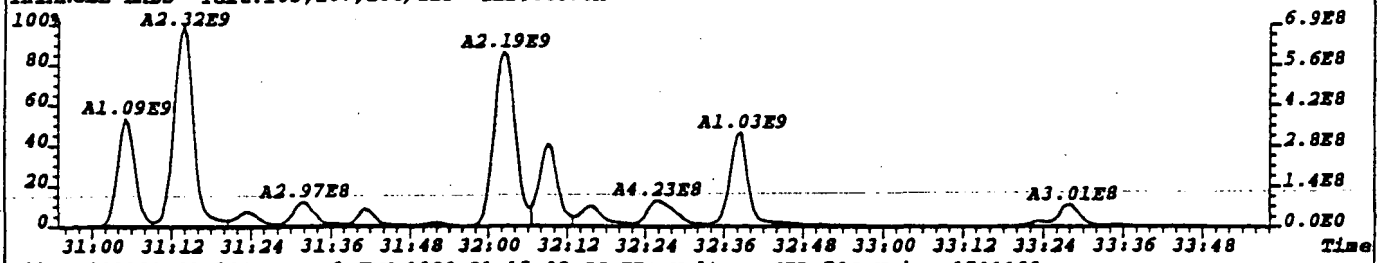

File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:1397054
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,5588216.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A2.45E9
A1.92E9
A1.52E9
A9.53E8
A1.24E9
A1.14E9
A6.07E8
A3.73E8
A4.97E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:2362656
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,9450624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A3.31E9
A2.59E9
A2.04E9
A1.29E9
A1.54E9
A8.11E8
A5.01E8
A6.58E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:28580
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,114320.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.23E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:22559
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,90236.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.65E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
21:42
22:22
22:52
23:41
24:08
24:40
25:08
25:30
26:13
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
25:59
24:43
24:22
25:37
26:18
26:35
Time


File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:38573
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,154292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A5.40E8
A5.54E7
A1.97E8
A1.07E8
A5.38E7
A2.19E8
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:79408
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,317632.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.97E8
A6.83E7
A2.58E8
A1.36E8
A6.81E7
A2.83E8
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:13041
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,52164.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.17E8
A8.84E7
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:9891
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,39564.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.43E8
A1.11E8
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:36003
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,144012.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A4.37E8
A2.60E7
A1.65E8
A1.67E8
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
22:52
23:41
24:08
24:40
25:08
25:30
26:13
Time

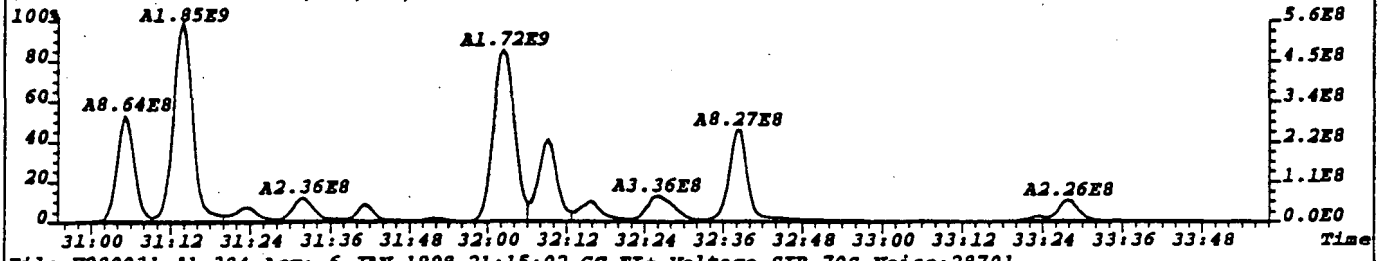

File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:8006
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,32024.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.34E9
A2.98E9
A6.97E8
A1.67E9
A1.30E9
A8.47E8
A1.40E9
A2.90E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:5736
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22944.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A8.80E8
A1.93E9
A4.22E8
A1.07E9
A8.22E8
A5.12E8
A9.04E8
A1.74E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:9250
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,37000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.45E7
A1.35E8
A1.11E8
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:7714
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,30856.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A3.78E6
A8.67E7
A7.21E7
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
26:57
27:15
27:33
27:51
28:06
28:20
28:41
28:58
29:38
29:58
30:16
30:37
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
26:45
27:42
28:16
28:32
29:26
29:59
30:19
27:00
28:00
29:00
30:00
Time


File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:4296
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,17184.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.56E8
A4.61E8
A3.10E8
A4.53E7
A8.37E7
A1.15E8
A7.99E7
A5.60E7
A5.48E7
A4.89E7
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:4200
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,16800.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.12E8
A3.01E8
A1.96E8
A7.84E7
A3.62E7
A5.47E7
A7.48E7
A5.30E7
A3.52E7
A3.10E7
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:2841
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,11364.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.57E7
A9.19E6
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:3017
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,12068.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A4.39E7
A6.53E6
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
28:06
28:20
28:41
28:58
29:38
29:50
30:16
Time

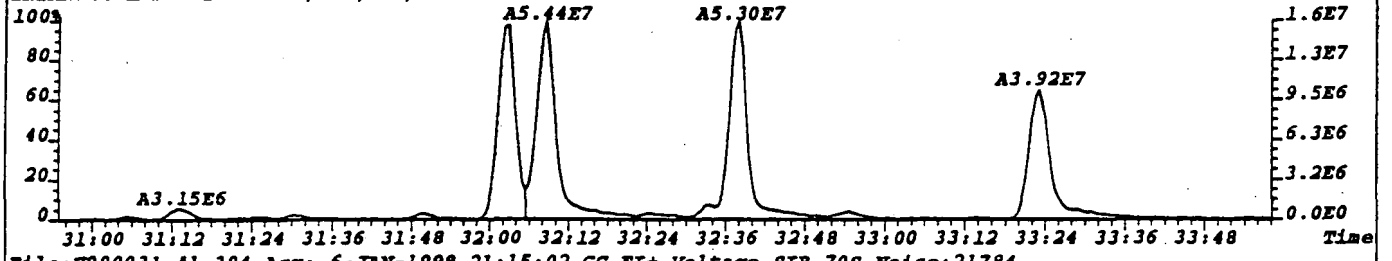
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:1378101
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5512404.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



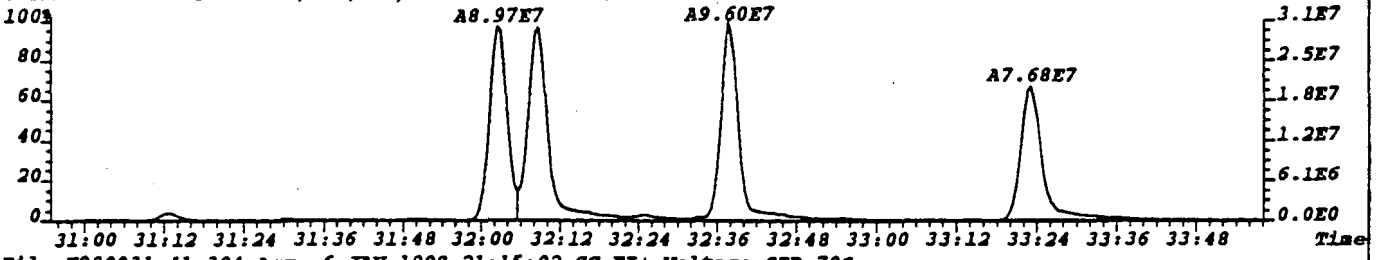
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:1501133
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6004532.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



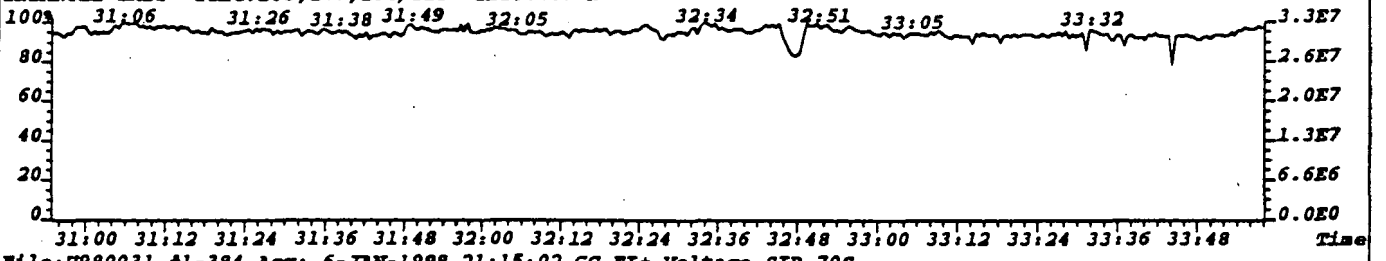
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:28701
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,114804.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



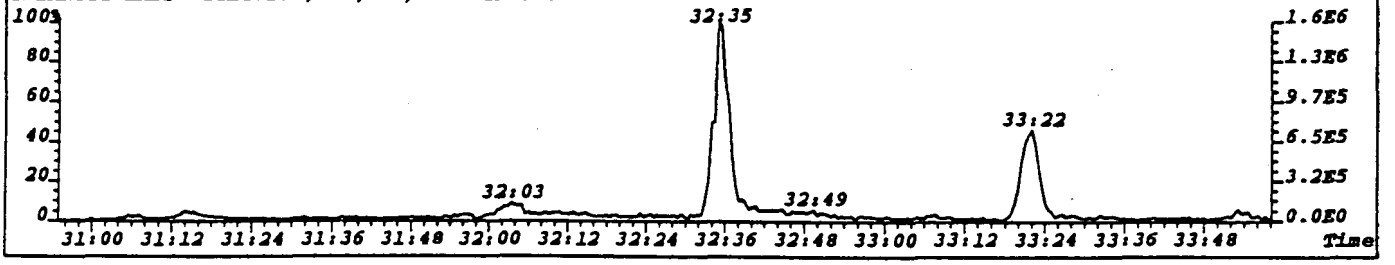
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:21784
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,87136.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

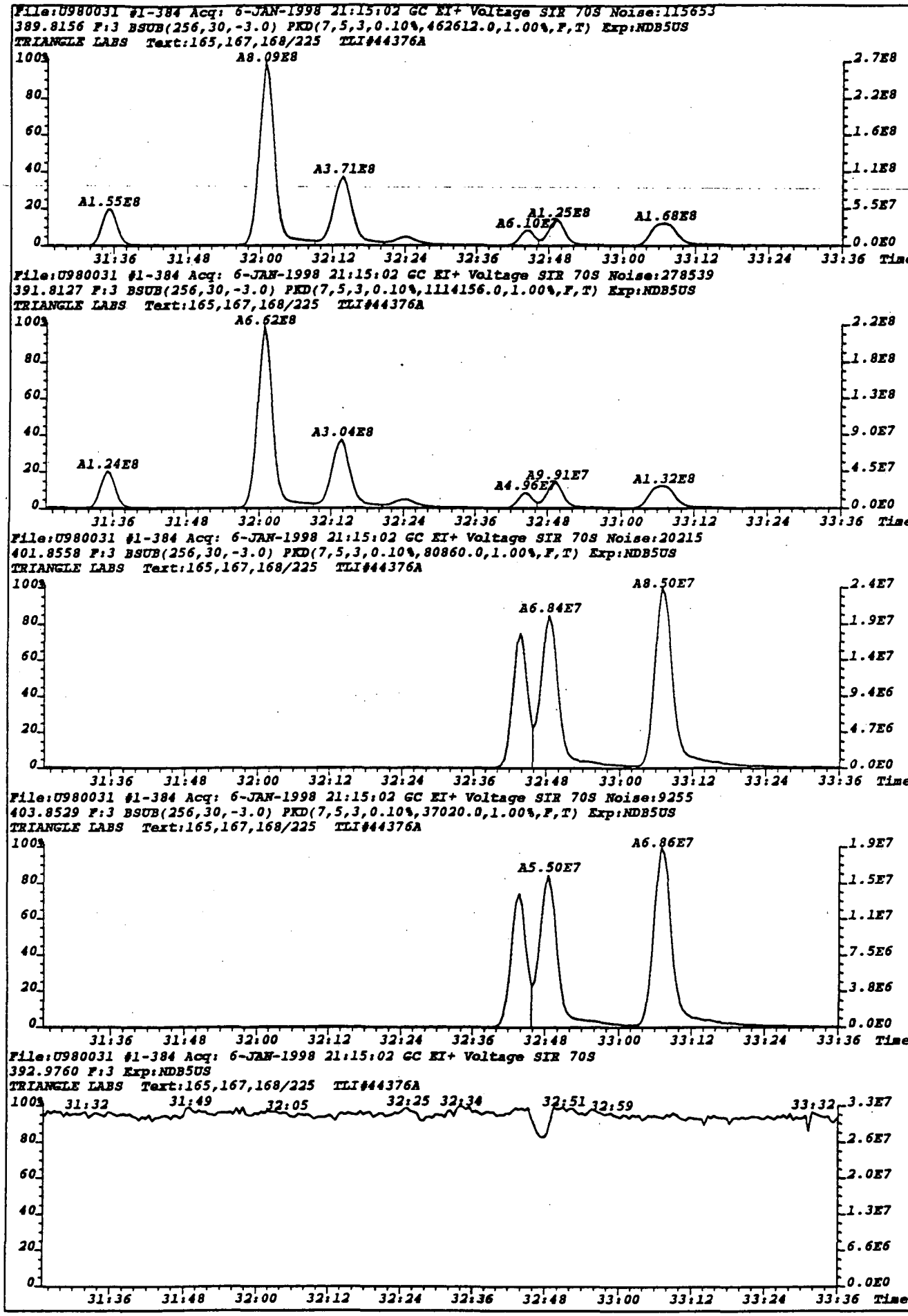


File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

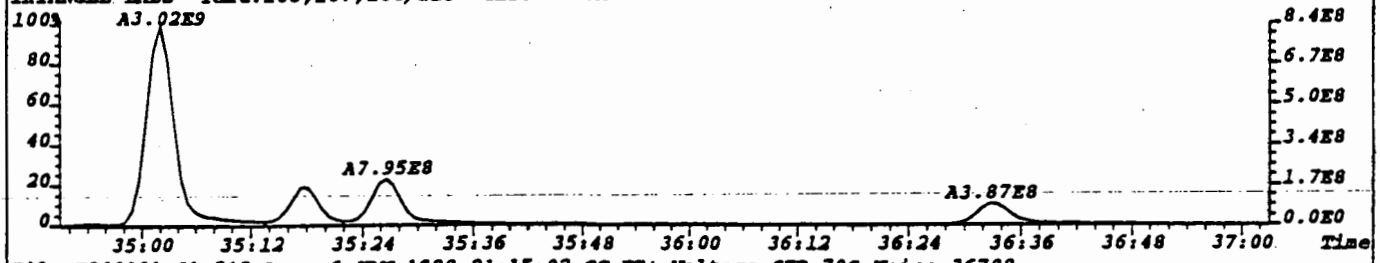


File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

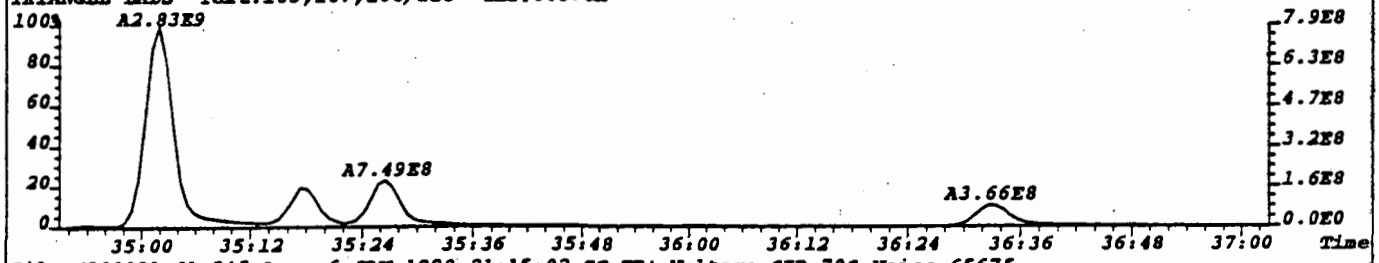



File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:115653
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,462612.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A8.09E8
A3.71E8
A1.55E8
A6.10E7
A1.25E8
A1.68E8
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:278539
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,1114156.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.62E8
A3.04E8
A1.24E8
A4.96E7
A9.91E7
A1.32E8
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:20215
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A8.50E7
A6.84E7
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:9255
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,37020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.86E7
A5.50E7
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
33:36
Time

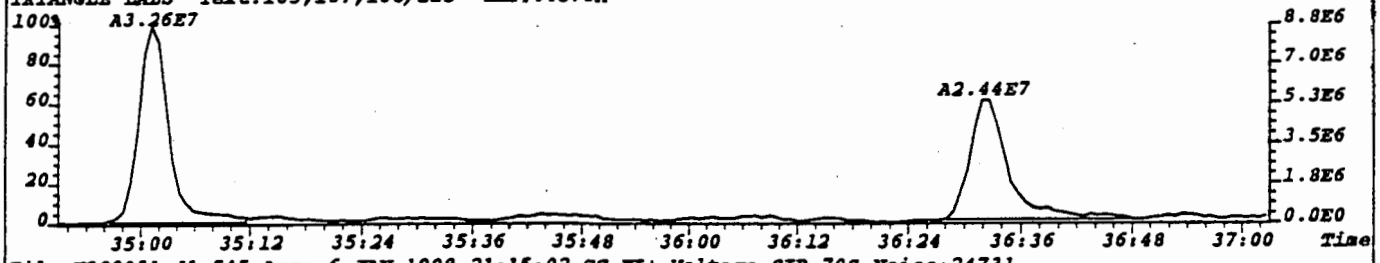
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:28302
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,113208.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



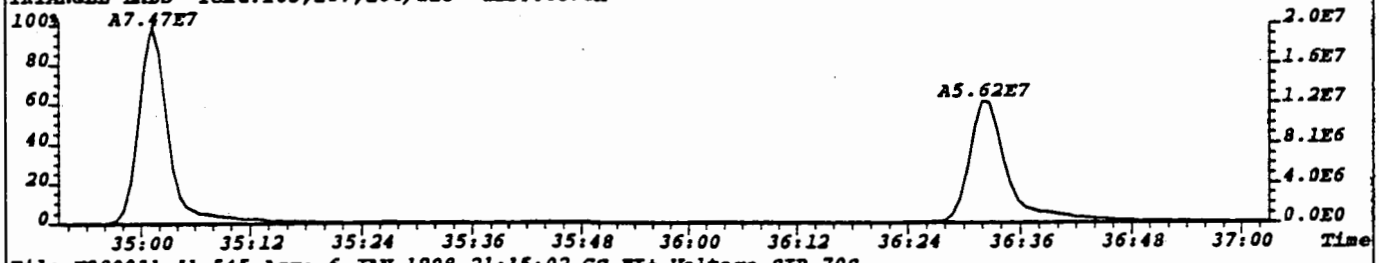
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:36788
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,147152.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



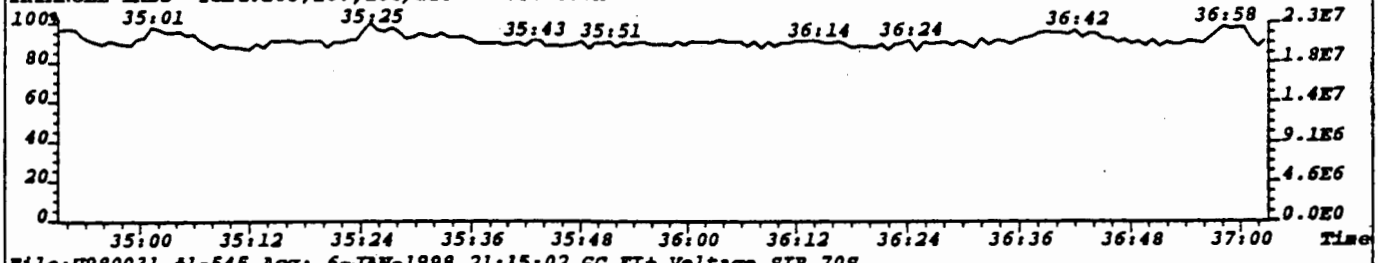
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:65675
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,262700.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



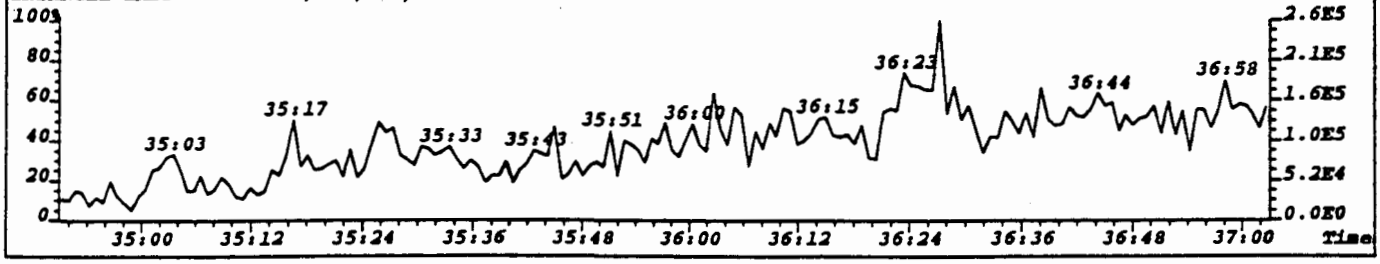
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:24731
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,98924.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



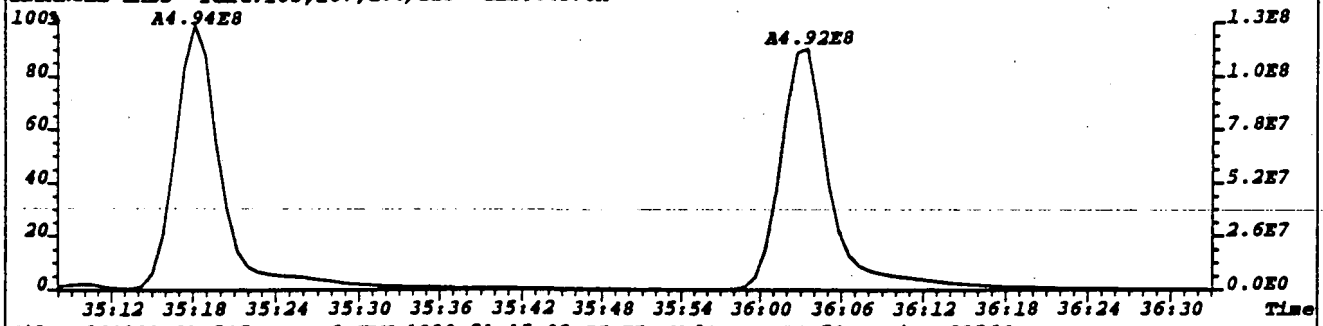
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



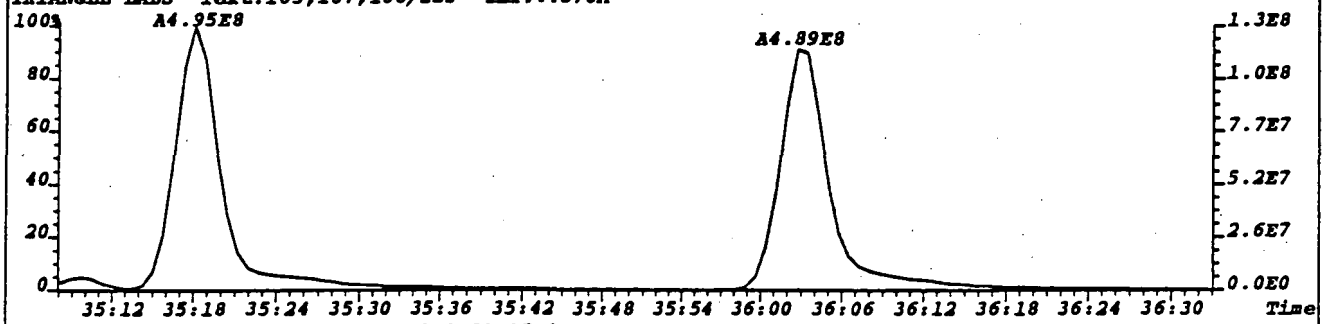
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



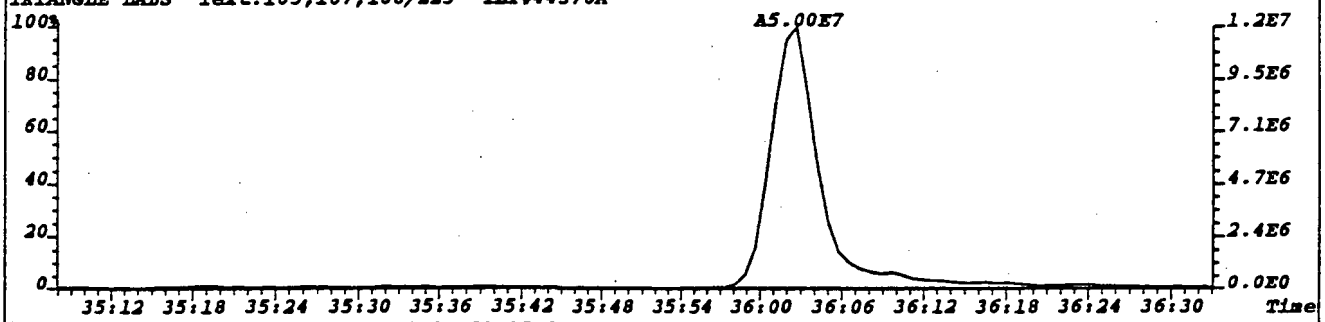
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:21466
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,85864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



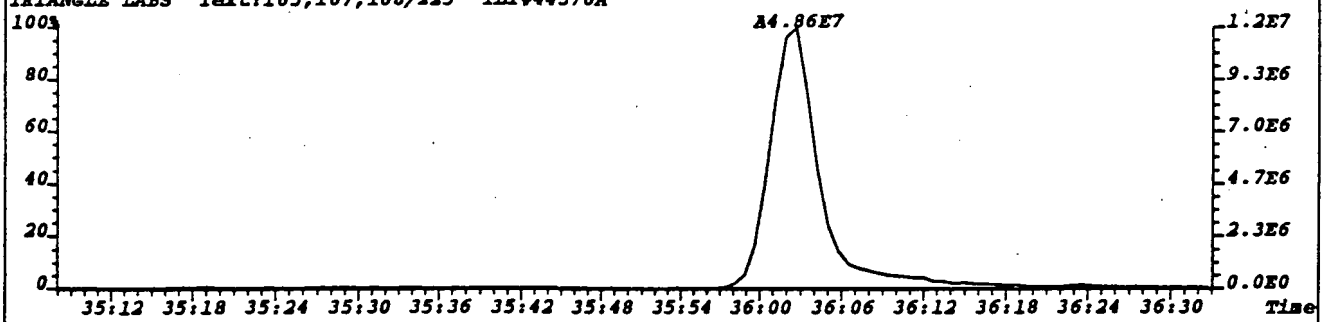
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:23566
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,94264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



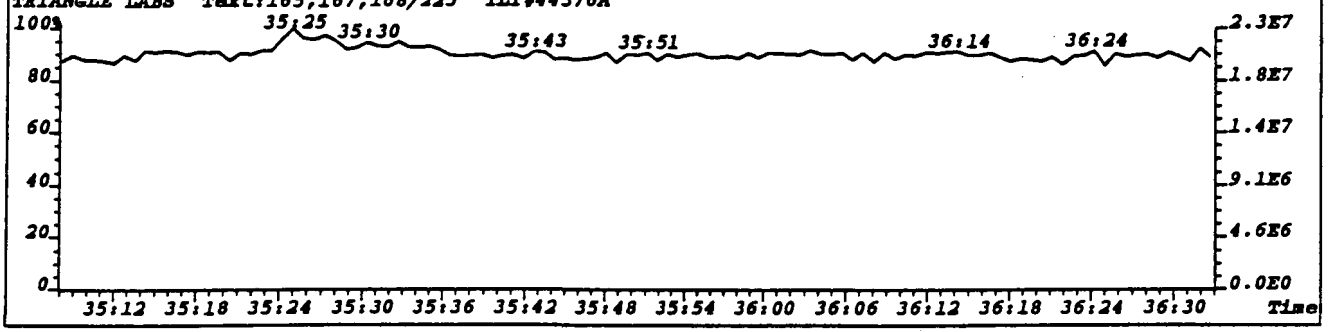
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:11160
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,44640.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



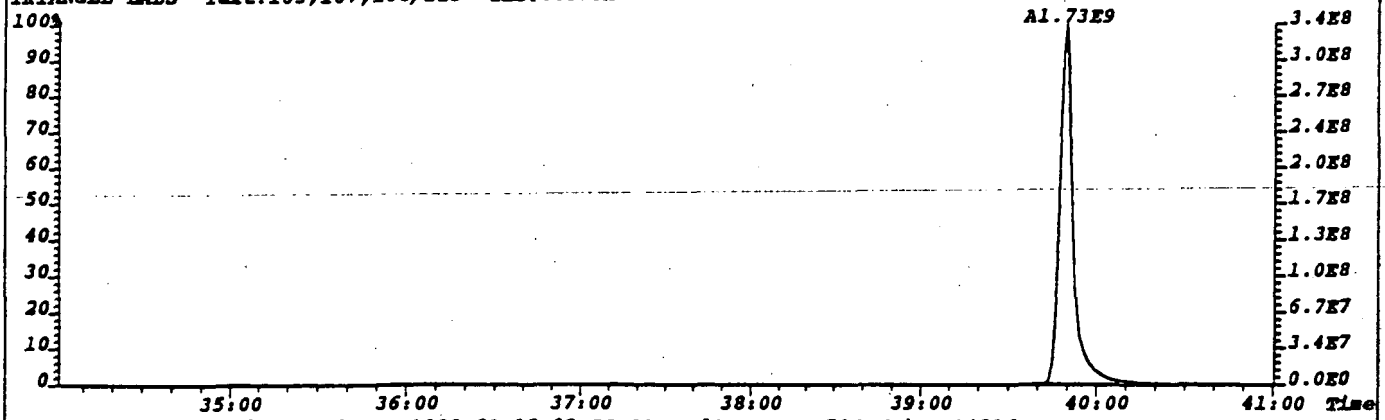
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:10875
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,43500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



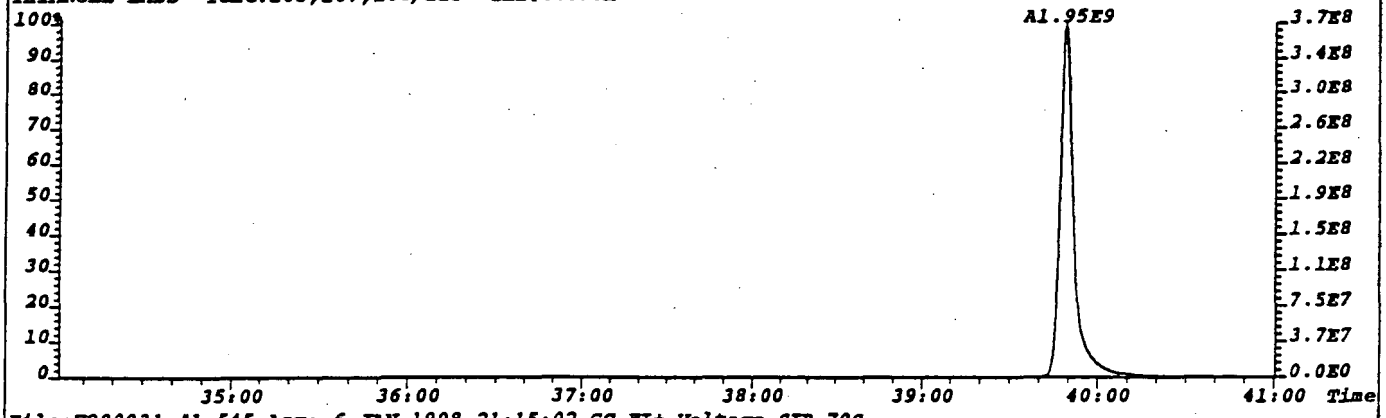
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



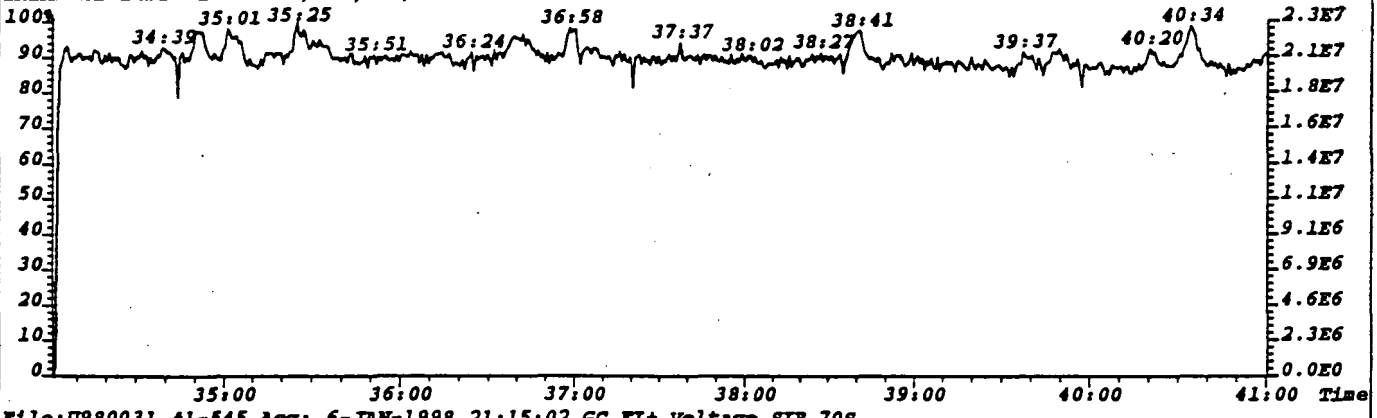
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:67395
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,269580.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



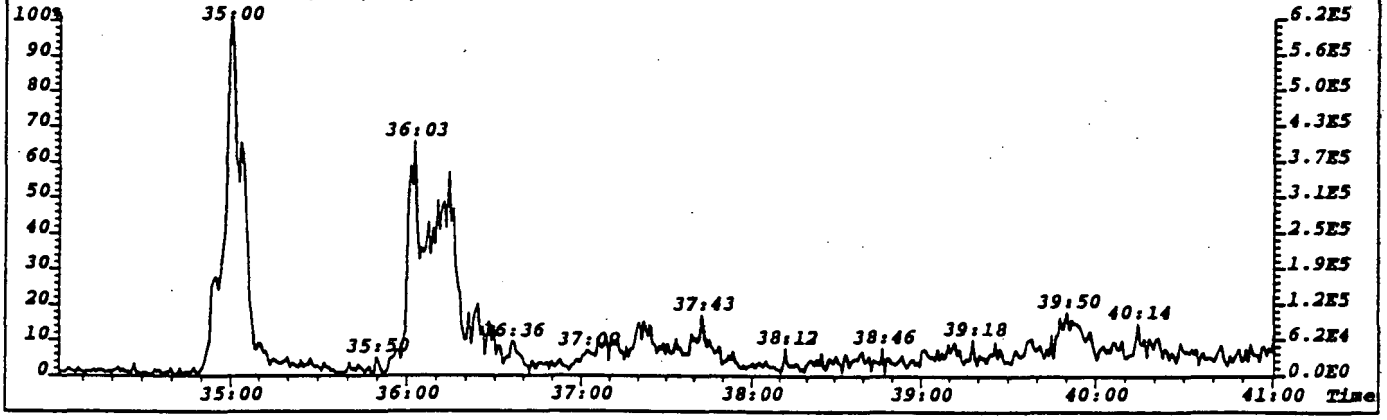
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:14216
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,56864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

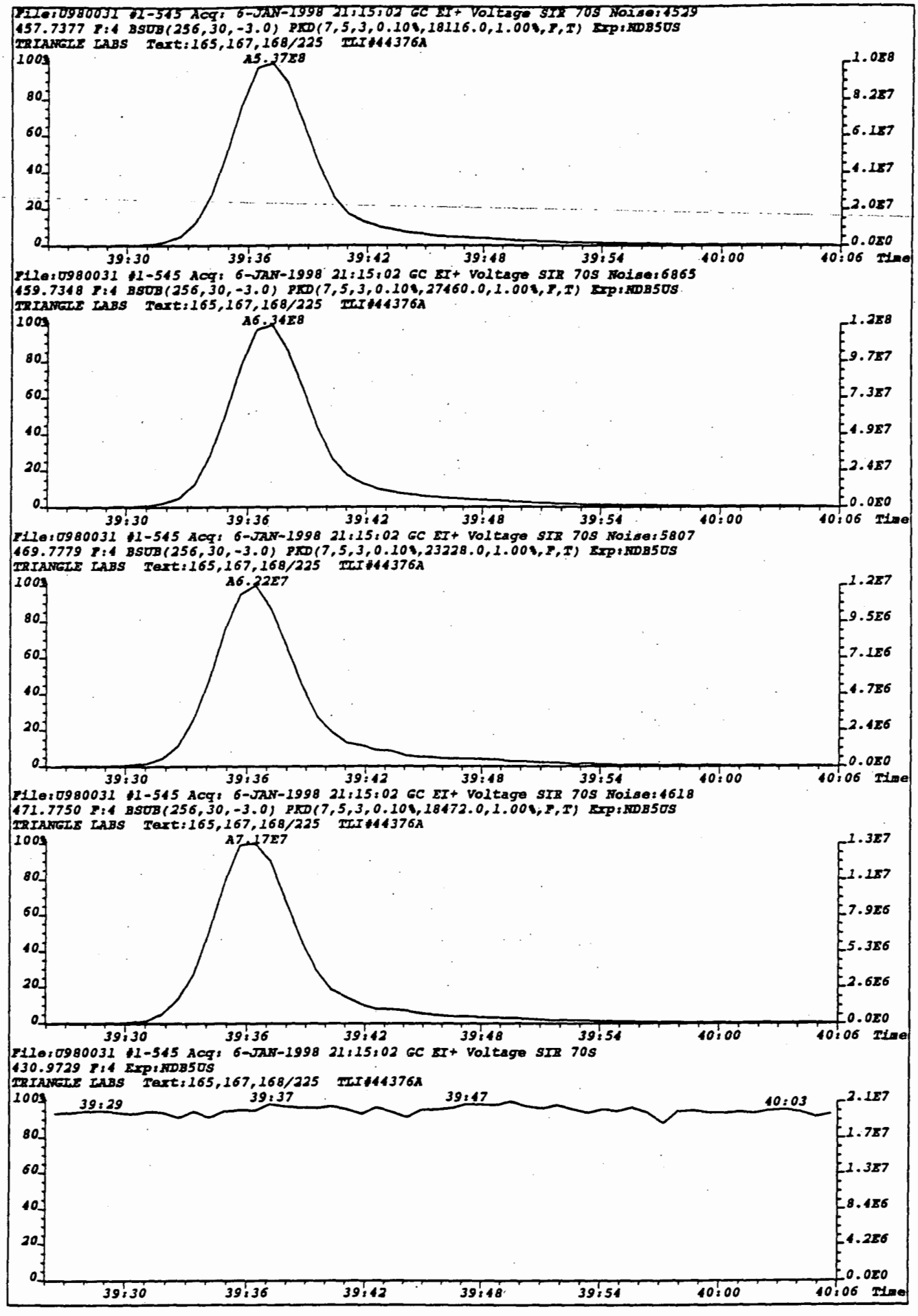


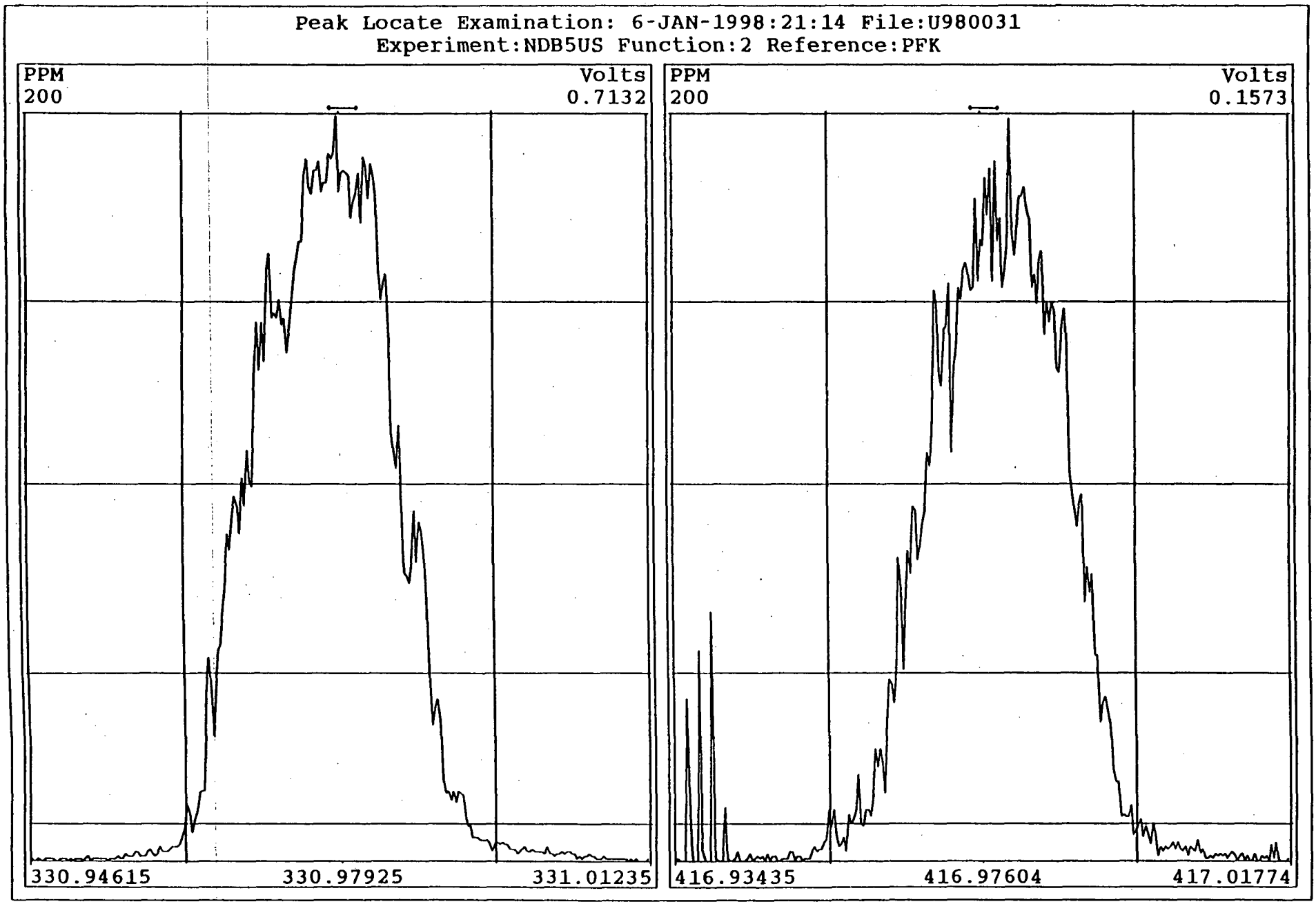
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

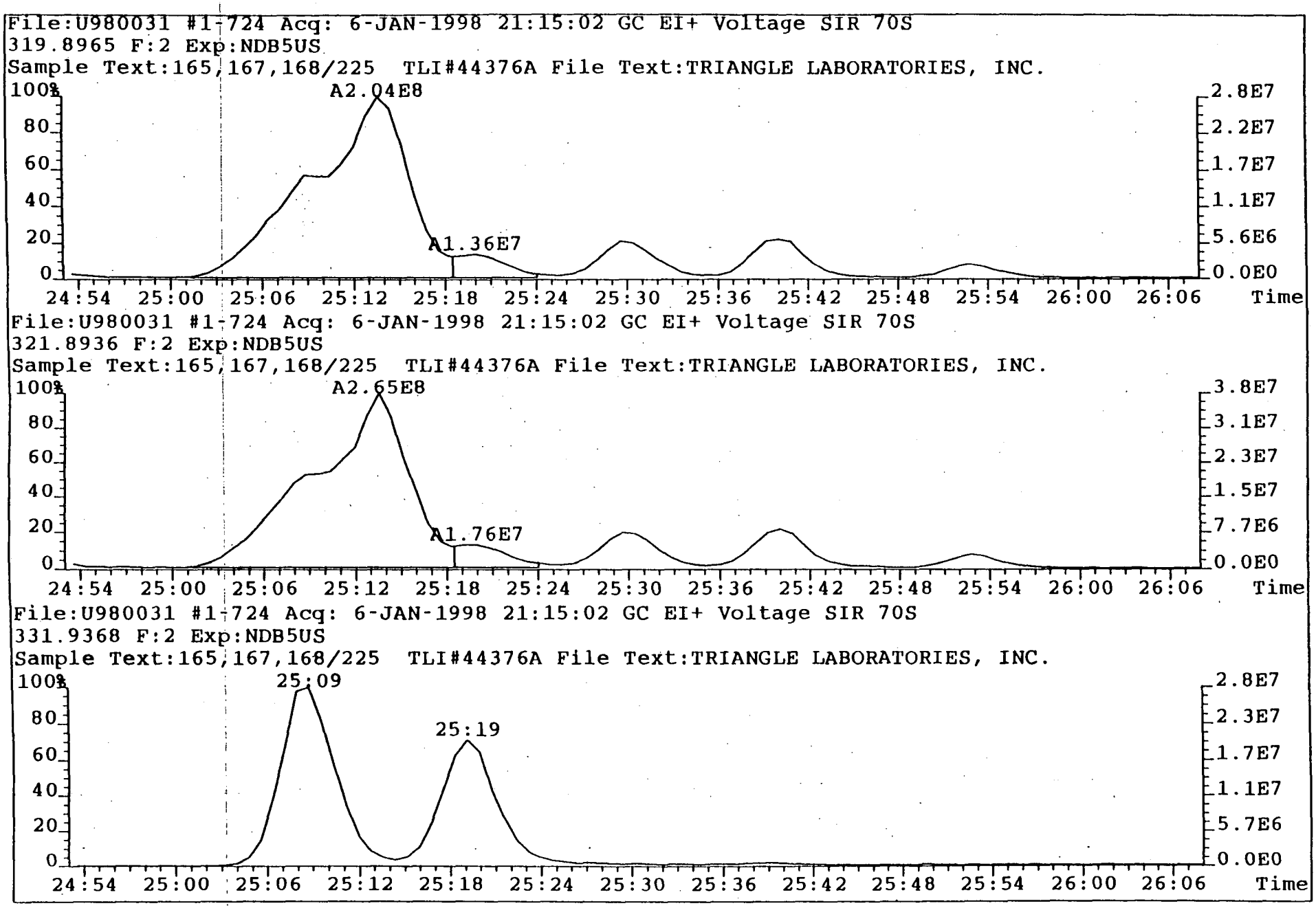


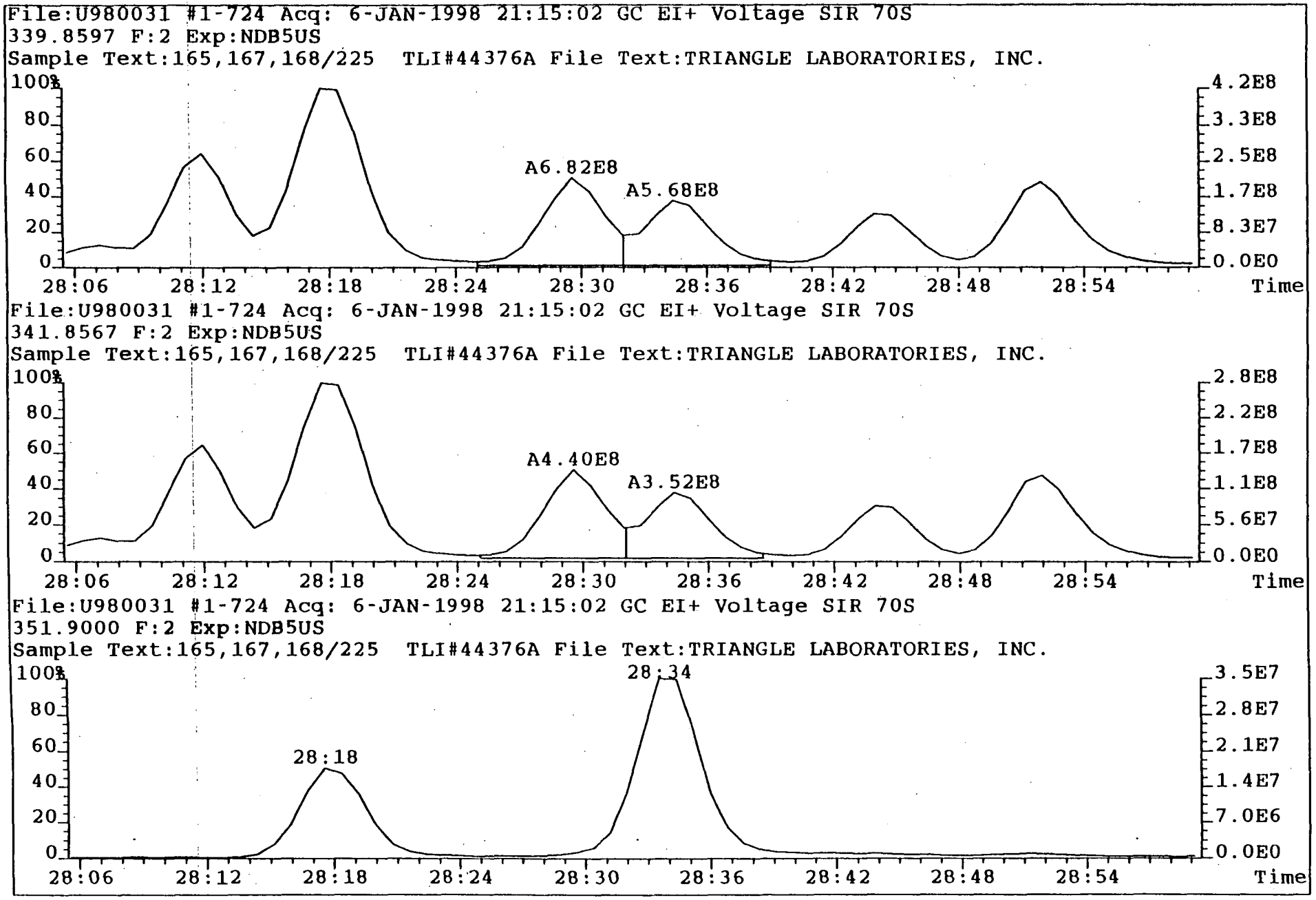
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

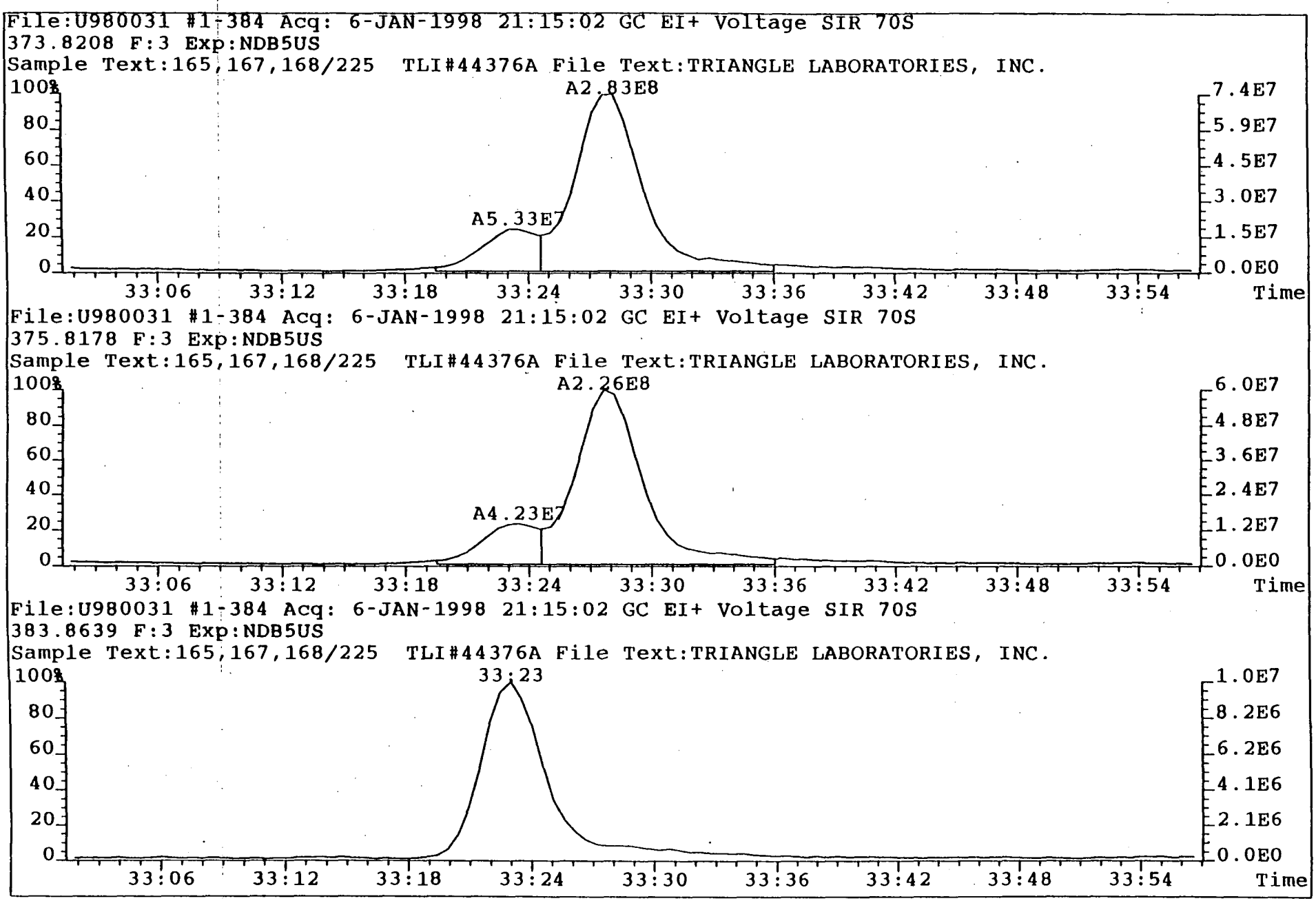



File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:4529
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A5.37E8
1.0E8
8.2E7
6.1E7
4.1E7
2.0E7
0.0E0
39:30
39:36
39:42
39:48
39:54
40:00
40:06 Time
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:6865
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,27460.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.34E8
1.2E8
9.7E7
7.3E7
4.9E7
2.4E7
0.0E0
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:5807
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,23228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.22E7
1.2E7
9.5E6
7.1E6
4.7E6
2.4E6
0.0E0
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S Noise:4618
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18472.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A7.17E7
1.3E7
1.1E7
7.9E6
5.3E6
2.6E6
0.0E0
File:U980031 #1-545 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
39:29
39:37
39:47
40:03
2.1E7
1.7E7
1.3E7
8.4E6
4.2E6
0.0E0


Peak Locate Examination: 6-JAN-1998:21:14 File:U980031
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.7132
330.94615
330.97925
331.01235
PPM
200
Volts
0.1573
416.93435
416.97604
417.01774


File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.04E8
A1.36E7
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.65E8
A1.76E7
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
25:09
25:19
Time


File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A6.82E8
A5.68E8
4.2E8
3.3E8
2.5E8
1.7E8
8.3E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A4.40E8
A3.52E8
2.8E8
2.2E8
1.7E8
1.1E8
5.6E7
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980031 #1-724 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:18
28:34
3.5E7
2.8E7
2.1E7
1.4E7
7.0E6
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time


File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.83E8
A5.33E7
7.4E7
5.9E7
4.5E7
3.0E7
1.5E7
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.26E8
A4.23E7
6.0E7
4.8E7
3.6E7
2.4E7
1.2E7
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time
File:U980031 #1-384 Acq: 6-JAN-1998 21:15:02 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:165,167,168/225 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
33:23
1.0E7
8.2E6
6.2E6
4.1E6
2.1E6
0.0E0
33:06
33:12
33:18
33:24
33:30
33:36
33:42
33:48
33:54
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 165,167,168/225 — Analysis File: P980099

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-14ACD	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	13.4			0.75	23:06	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.2	79.8	40%-130%	0.78	23:06	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:55	___

Data Reviewer: _____ 01/09/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:16 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

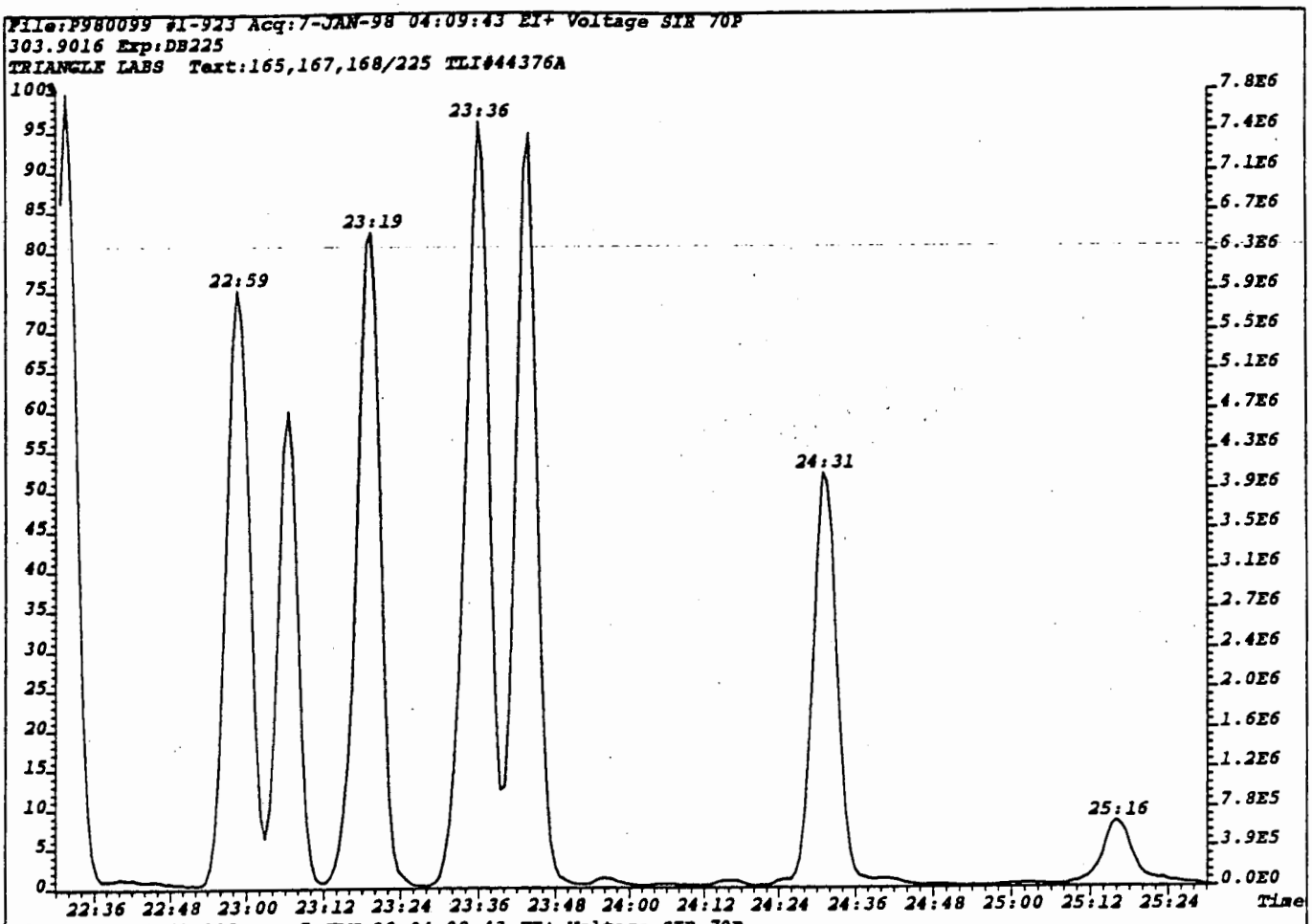
Page No. 1 Listing of P980099B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

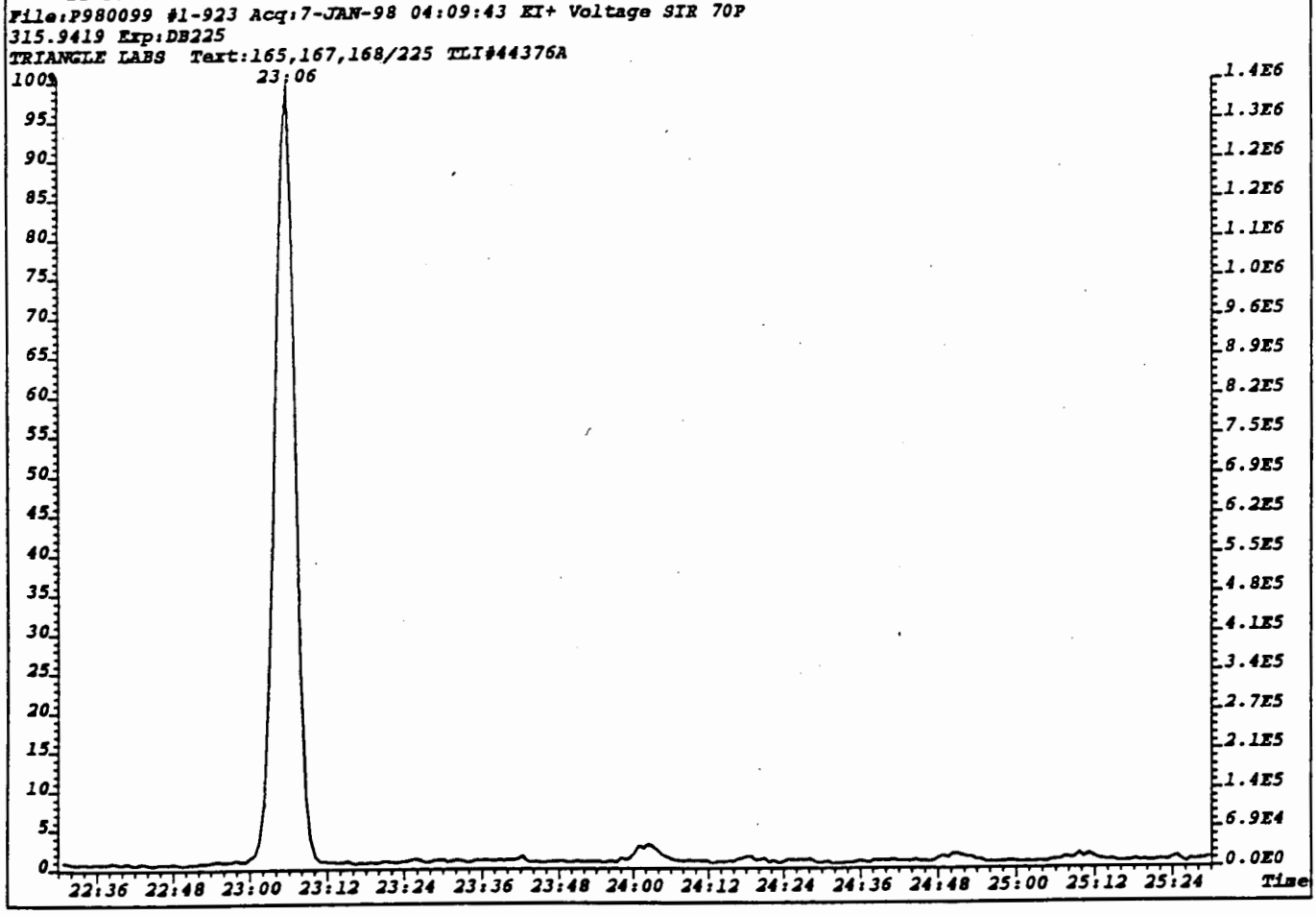
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00		0.67	8.81			0.000			
	DC	WL		18:14		0.77	29.25			0.789			
				18:28		0.80	3,686.03	1,638.93	2,047.10	0.799			
				18:45	RO	1.31	91.24	67.48	51.55	0.812			
				18:55		0.71	60.27	25.09	35.18	0.819			
				19:00	RO	1.07	76.38	46.37	43.15	0.823			
				19:07		0.83	222.15	101.01	121.14	0.828			
				19:28		0.75	4,594.42	1,975.87	2,618.55	0.843			
				19:36		0.76	4,539.08	1,959.16	2,579.92	0.848			
				19:44		0.76	7,964.10	3,445.30	4,518.80	0.854			E
				19:54		0.77	3,642.65	1,583.78	2,058.87	0.861			
				20:01		0.77	359.52	156.65	202.87	0.867			
				20:10		0.75	3,809.43	1,636.29	2,173.14	0.873			
				20:20		0.79	8,034.10	3,547.26	4,486.84	0.880			E
				20:28		0.78	4,316.42	1,891.99	2,424.43	0.886			
				20:38		0.76	13,396.14	5,763.78	7,632.36	0.893			E
				20:47		0.75	4,468.25	1,910.85	2,557.40	0.900			
				21:10		0.76	26,200.80	11,316.00	14,884.80	0.916			E
				21:23		0.68	39.69	16.04	23.65	0.926			
				21:28		0.74	34.97	14.86	20.11	0.929			
				21:37		0.75	6,116.07	2,623.33	3,492.74	0.936			E
				21:43		0.74	1,098.71	467.19	631.52	0.940			
				21:52		0.75	5,972.88	2,558.71	3,414.17	0.947			E
				22:06		0.77	5,963.45	2,594.36	3,369.09	0.957			E
				22:21		0.74	1,300.70	554.23	746.47	0.968			
				22:31		0.75	7,070.54	3,034.65	4,035.89	0.975			E
				22:40	RO	0.59	41.95	18.25	30.79	0.981			
				22:59		0.75	5,755.54	2,463.23	3,292.31	0.995			
				23:06		0.75	3,940.87	1,689.95	2,250.92	1.000	2378-TCDF	AN	
				23:19		0.76	6,400.09	2,762.06	3,638.03	1.009			E
				23:36		0.75	7,404.69	3,163.73	4,240.96	1.022			E
				23:44		0.76	6,682.69	2,875.23	3,807.46	1.027			E
				23:56		0.65	32.54	12.85	19.69	1.036			
				24:15		0.80	15.90	7.07	8.83	1.050			
				24:31		0.75	4,166.02	1,782.76	2,383.26	1.061			
				25:16		0.78	789.63	345.48	444.15	1.094			
	DC	WH		25:43		0.86	42.39			1.113			
304-306			34	Peaks			148,287.91						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.21	3.84			0.000			
	DC	WL		20:08		0.74	34.12			0.872			
	DC	WL		20:33		0.66	48.54			0.890			

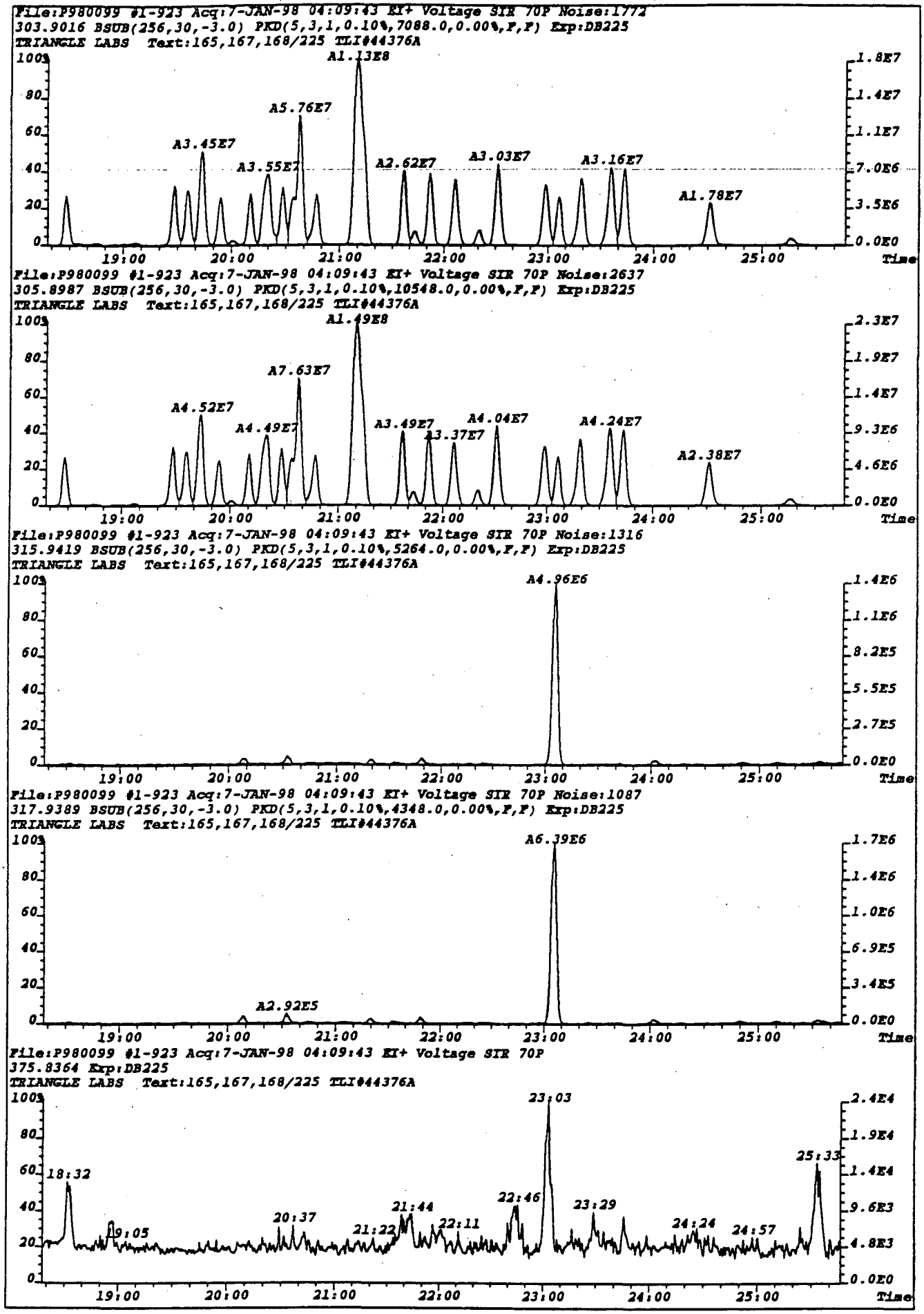
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC		WL	20:43	RO	0.98	9.20			0.897			
	DC		WL	21:19		0.77	31.58			0.923			
	DC		WL	21:33		0.65	17.56			0.933			
	DC		WL	21:43	RO	1.07	2.00			0.940			
	DC		WL	21:48		0.86	36.41			0.944			
	DC		WL	22:02	RO	0.90	2.21			0.954			
				22:16	RO	0.29	5.01	2.18	7.52	0.964			
				22:24		0.75	9.81	4.19	5.62	0.970			
				23:06		0.78	1,134.89	495.74	639.15	1.000	13C12-2378-TCDF	IS0	
				24:02	RO	0.94	25.45	13.45	14.38	1.040			
	DC		WH	24:18	RO	3.20	1.93			1.052			
	DC		WH	24:28	RO	2.21	1.96			1.059			
	DC		WH	24:50	RO	0.99	12.81			1.075			
	DC		WH	25:10	RO	0.33	8.48			1.089			
	DC		WH	25:34	RO	0.51	21.63			1.107			
	DC		WH	25:45		0.72	8.09			1.115			
316-318		4	Peaks				1,175.16						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC		NL	0:00	RO	1.14	2.23			0.000			
				20:18		0.72	3.26	1.36	1.90	0.939			
	DC		SN	20:24	RO	1.00	0.90			0.944			
				20:30	RO	1.51	2.78	2.37	1.57	0.948			
	DC		SN	20:55	RO	0.34	0.55			0.968			
	DC		SN	21:16		0.75	2.83			0.984			
				21:37		0.79	745.90	329.78	416.12	1.000	13C12-2378-TCDD	IS1	
				21:46	RO	0.58	5.20	2.26	3.91	1.007			
				21:55		0.82	1,024.97	462.03	562.94	1.014	13C12-1234-TCDD	RS1	
	DC		SN	22:24	RO	5.00	0.32			1.036			
				22:41		0.71	10.22	4.24	5.98	1.049			
	DC		SN	22:59	RO	1.31	0.62			1.063			
	DC		WH	23:44	RO	0.43	7.70			1.098			
	DC		WH	24:14	RO	0.58	3.86			1.121			
	DC		WH	24:28	RO	0.38	4.21			1.132			
	DC		WH	24:38		0.74	2.72			1.140			
332-334		6	Peaks				1,792.33						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

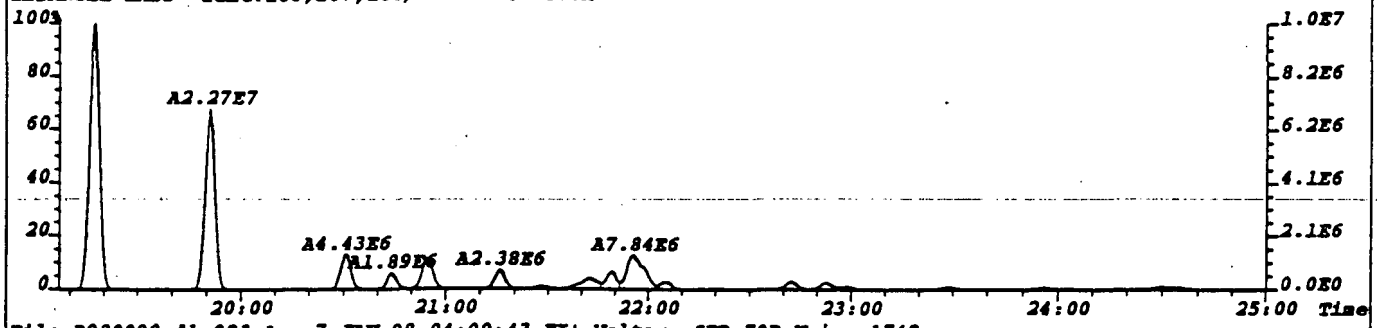
*** End of Report ***


File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
22:59
23:19
23:36
24:31
25:16
Time

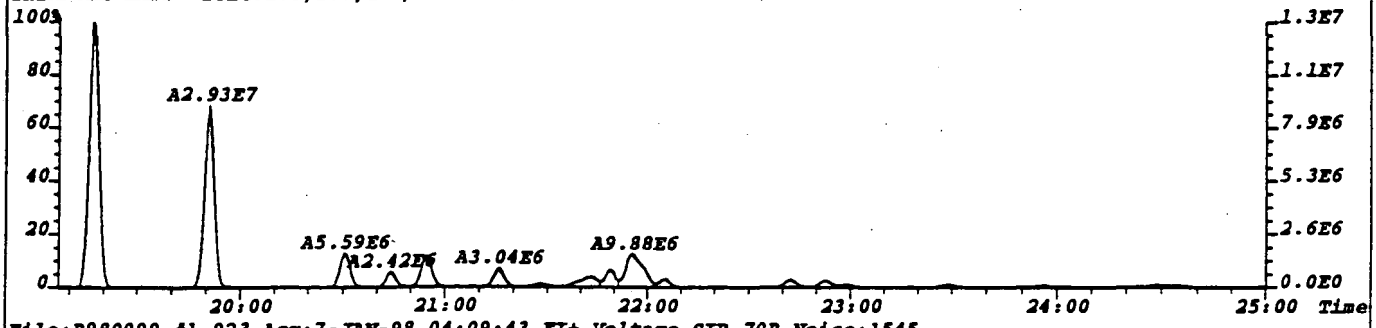

File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
23:06
Time


File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:1772
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,7088.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.13E8
A5.76E7
A3.45E7
A3.55E7
A2.62E7
A3.03E7
A3.16E7
A1.78E7
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:2637
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,10548.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A1.49E8
A7.63E7
A4.52E7
A4.49E7
A3.49E7
A3.37E7
A4.04E7
A4.24E7
A2.38E7
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:1316
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5264.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A4.96E6
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:1087
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4348.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
A6.39E6
A2.92E5
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
23:03
18:32
19:05
20:37
21:22
21:44
22:11
22:46
23:29
24:24
24:57
25:33
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time

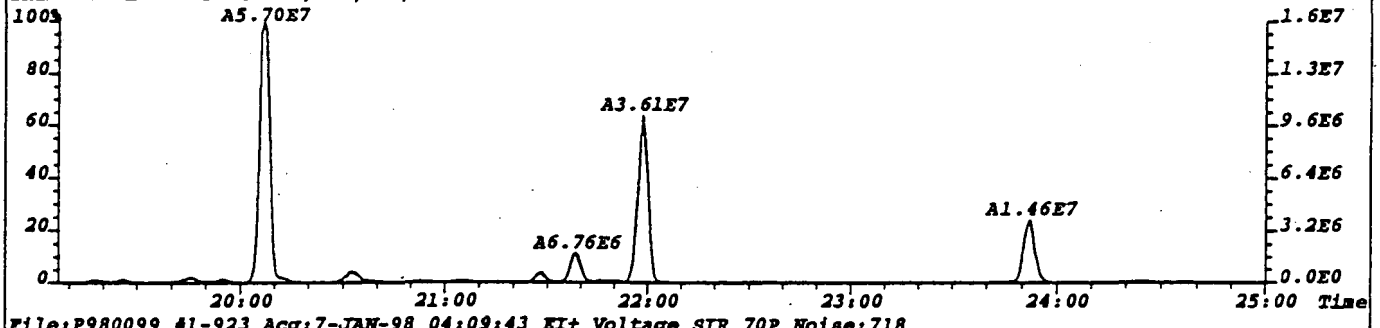
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:693
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2772.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



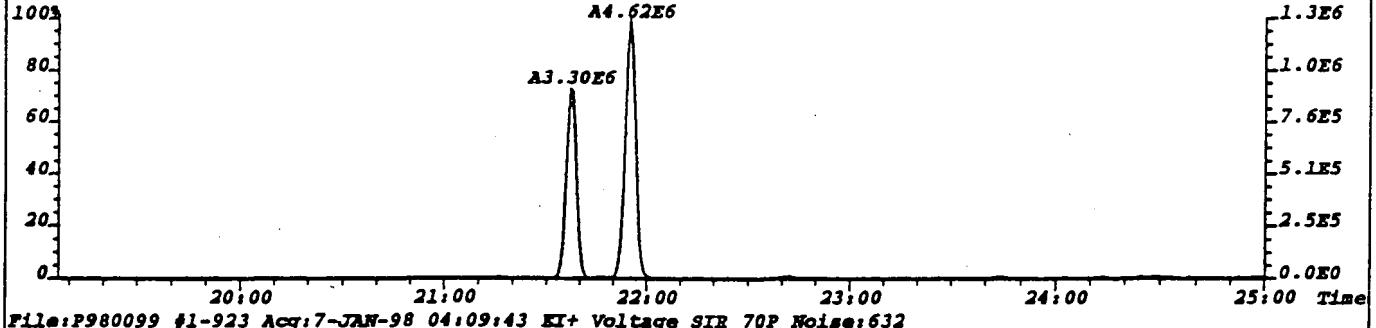
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:1742
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6968.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



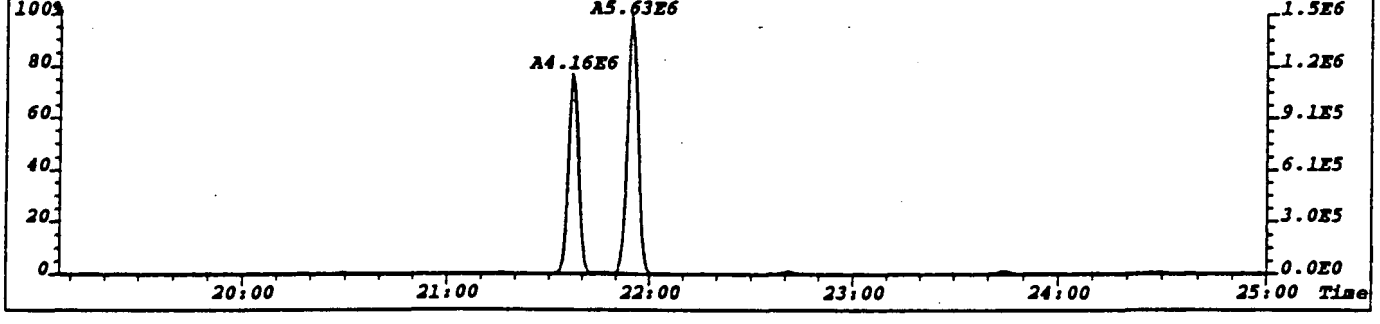
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:1545
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6180.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A

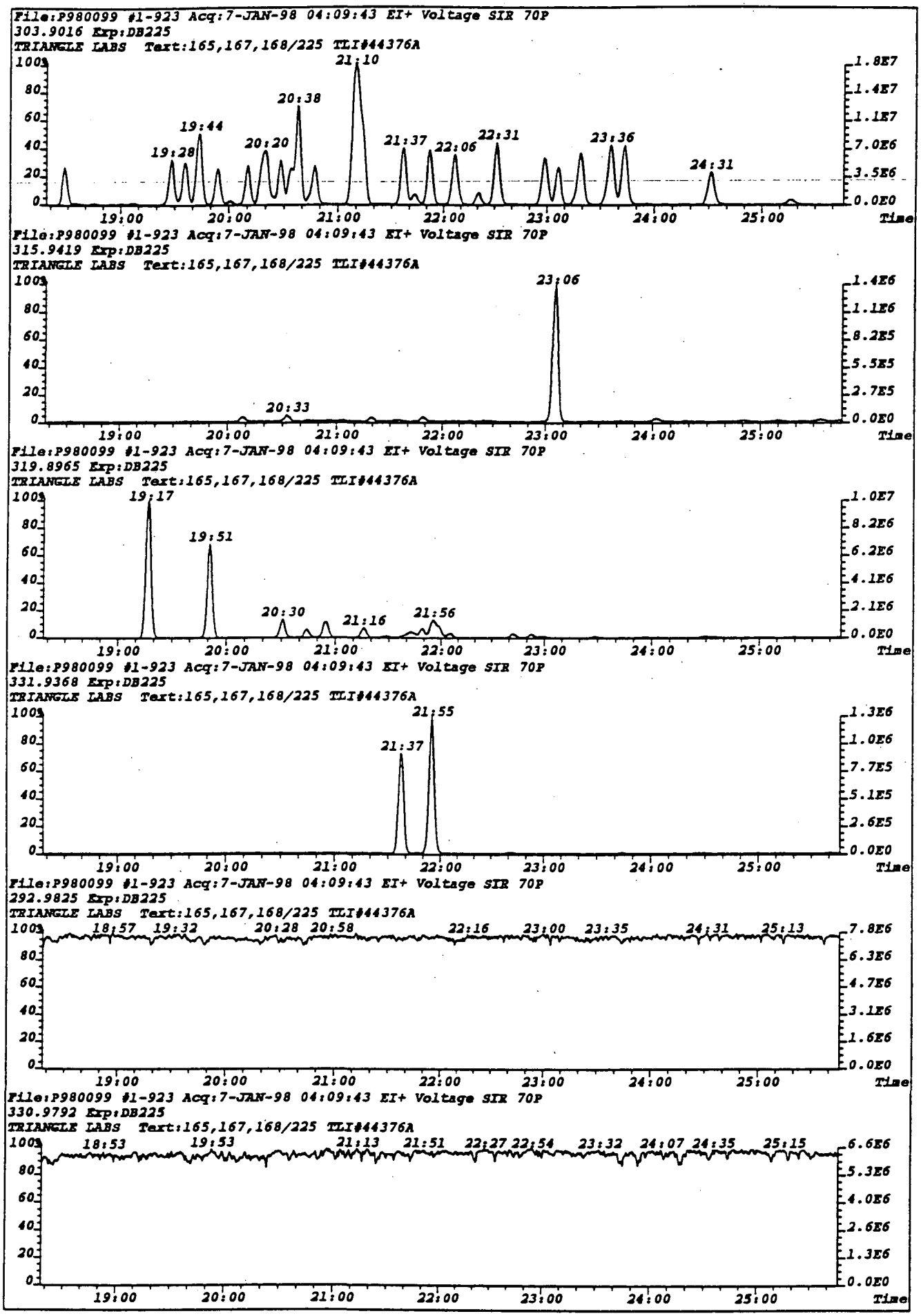


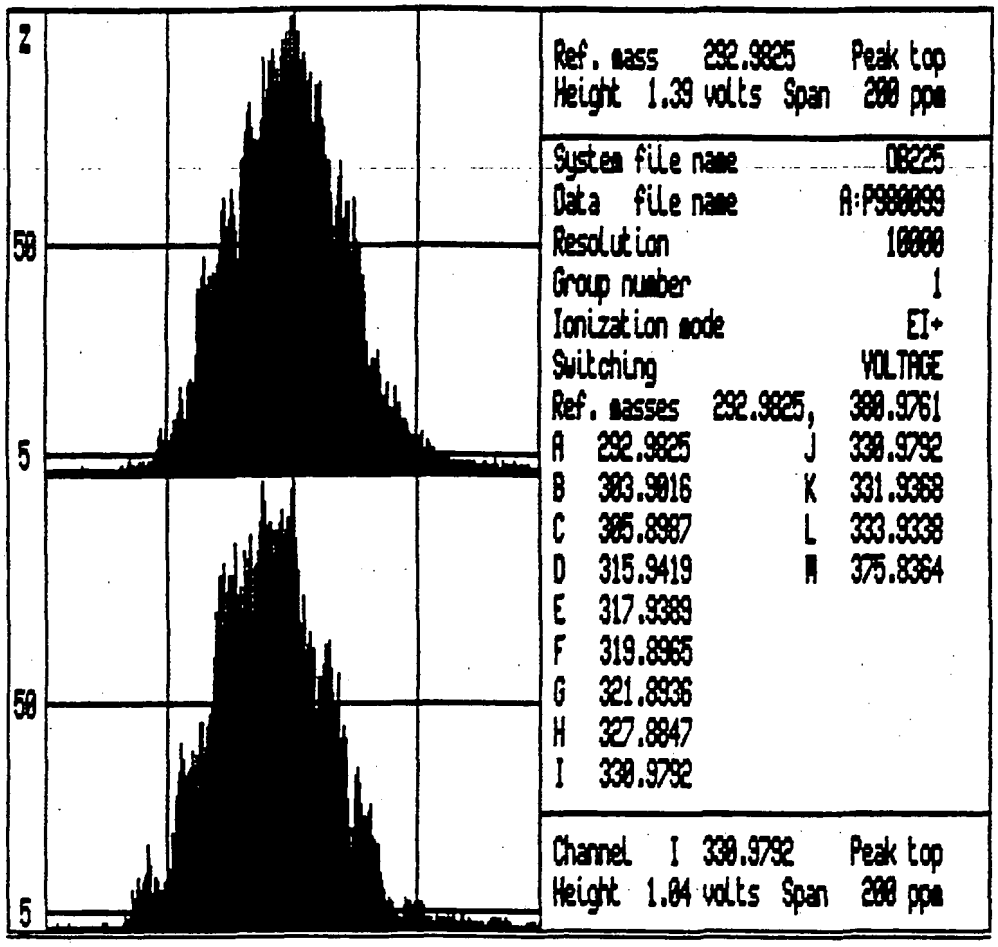
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:718
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2872.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A



File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P Noise:632
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2528.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A




File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
19:28
19:44
20:20
20:38
21:10
21:37
22:06
22:31
23:36
24:31
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
20:33
23:06
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
19:17
19:51
20:30
21:16
21:56
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
21:37
21:55
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
18:57
19:32
20:28
20:58
22:16
23:00
23:35
24:31
25:13
File:P980099 #1-923 Acq:7-JAN-98 04:09:43 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:165,167,168/225 TLI#44376A
18:53
19:53
21:13
21:51
22:27
22:54
23:32
24:07
24:35
25:15
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


2
50
5
50
5
Ref. mass 292.9825 Peak top
Height 1.39 volts Span 200 ppm
System file name D8225
Data file name A:P980899
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 300.9761
A 292.9825 J 330.9792
B 303.9816 K 331.9368
C 305.8987 L 333.9338
D 315.9419 M 375.8364
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
Channel I 330.9792 Peak top
Height 1.04 volts Span 200 ppm

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 177/182-184/209 — Analysis File: U980032

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-15A	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.004				
1,2,3,7,8-PeCDD	ND	0.006				
1,2,3,4,7,8-HxCDD	ND	0.007				
1,2,3,6,7,8-HxCDD	ND	0.006				
1,2,3,7,8,9-HxCDD	ND	0.006				
1,2,3,4,6,7,8-HpCDD	0.02			0.96	36:02	J
1,2,3,4,6,7,8,9-OCDD	0.06			0.92	39:37	JB
2,3,7,8-TCDF	EMPC		0.03			B
1,2,3,7,8-PeCDF	0.01			1.43	28:34	J
2,3,4,7,8-PeCDF	0.01			1.36	29:16	J
1,2,3,4,7,8-HxCDF	0.03			1.37	32:01	J
1,2,3,6,7,8-HxCDF	0.01			1.11	32:08	J
2,3,4,6,7,8-HxCDF	0.02			1.11	32:37	J
1,2,3,7,8,9-HxCDF	ND	0.006				
1,2,3,4,6,7,8-HpCDF	0.13			1.04	35:00	
1,2,3,4,7,8,9-HpCDF	ND	0.01				
1,2,3,4,6,7,8,9-OCDF	0.11			0.87	39:49	J

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.01	1		0.02	
Total PeCDD	0.01	1		0.02	
Total HxCDD	0.02	1			
Total HpCDD	0.02	1		0.04	
Total TCDF	0.05	3		0.13	
Total PeCDF	0.07	5		0.13	
Total HxCDF	0.11	5			
Total HpCDF	0.13	1		0.15	

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 177/182-184/209 — Analysis File: U980032

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.5	62.5	40%-130%	0.76	24:36	___
$^{13}C_{12}$-2,3,7,8-TCDD	2.7	68.1	40%-130%	0.81	25:18	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.9	72.1	40%-130%	1.49	28:33	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.2	79.7	40%-130%	1.50	29:35	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.0	73.9	40%-130%	0.50	32:08	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.7	92.1	40%-130%	1.21	32:48	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.6	39.7	25%-130%	0.35	35:00	RO___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.5	87.4	25%-130%	1.05	36:02	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	7.0	86.9	25%-130%	0.86	39:36	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.8	93.9	40%-130%	1.46	29:14	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.7	92.5	40%-130%	0.50	32:01	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.6	90.3	40%-130%	1.20	32:43	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.8	95.1	40%-130%	0.35	36:32	RO___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.3	82.4	25:20	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.1	77.7	40%-130%	0.51	33:22	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.1	78.0	40%-130%	0.48	32:36	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	25:08	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	33:07	___

Data Reviewer: _____ 01/10/98

MIT2_P5R v1.01, LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:20 01/10/98

223

Initial ....Date....

Data Review By: CM 1/10/98 Calculated Noise Area: 7.03

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980032B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306		DC	NL	0:00		0.89	29.06			0.000			
	K			22:36	RO	0.30	50.23	21.85	73.91	0.919			J
	D	D	SN	22:54	RO	0.40	50.96			0.931			
	K			23:18	RO	1.04	74.27	43.82	41.96	0.947			J
	K			23:35		0.75	62.85	26.96	35.89	0.959			J
				23:53	RO	0.64	81.65	35.52	55.59	0.971			J
	A			24:00		0.75	103.40	44.40	59.00	0.976			J
				24:13		0.89	101.59	47.84	53.75	0.984			J
	D	D	SN	24:26	RO	1.13	32.66			0.993			
	M			24:38	RO	0.63	193.32	84.10	133.00	1.001	2378-TCDF	AN	
				25:03	RO	0.52	38.20	16.62	31.77	1.018			J
304-306			8	Peaks			705.51						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318		DC	NL	0:00	RO	1.70	16.80			0.000			
		DC	WL	23:34		0.76	413.05			0.958			
				24:11	RO	0.50	85.95	37.39	75.43	0.983			
				24:36		0.76	17,972.16	7,785.96	10,186.20	1.000	13C12-2378-TCDF	IS0	
				25:02	RO	0.62	340.69	148.21	238.69	1.018			
				25:33		0.85	52.88	24.27	28.61	1.039			
		DC	WH	25:39	RO	5.93	8.76			1.043			
316-318			4	Peaks			18,451.68						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.895-1.047			
320-322		DC	NL	0:00		0.89	8.13			0.000			
	KN			22:46	RO	0.59	58.94	25.64	43.35	0.900			J
	KN			23:10		0.89	43.05	20.22	22.83	0.916			J
	D	D	SN	23:47	RO	0.36	3.08			0.940			
		DC	SN	24:25	RO	0.93	10.12			0.965			
		DC	SN	24:35	RO	4.18	7.98			0.972			
		DC	SN	24:47	RO	0.20	2.39			0.980			
		DC	SN	24:55	RO	3.90	1.75			0.985			
		DC	SN	25:13	RO	0.47	15.63			0.997			
		DC	SN	25:18	RO	0.45	15.91			1.000	2378-TCDD	AN	
		DC	SN	26:30		0.72	7.78			1.047			
		DC	SN	26:44	RO	0.40	6.97			1.057			
320-322			2	Peaks			101.99						
37Cl-TCDD										0.921-1.079			
328		DC	NL	0:00			5.73			0.000			
				23:57			95.45	95.45		0.947			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:20			12,297.60	12,297.60		1.001	37Cl-TCDD	CLS	
				25:50			52.49	52.49		1.021			
				25:58			35.38	35.38		1.026			
				26:01			12.38	12.38		1.028			
				26:03			31.01	31.01		1.030			
				26:09			56.59	56.59		1.034			
				26:09			23.43	23.43		1.034			
				26:21			48.49	48.49		1.042			
				26:38			27.17	27.17		1.053			
				26:46			8.90	8.90		1.058			
	DC	SN		26:51			6.28			1.061			
328			11 Peaks				12,688.89						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334	DC	NL		0:00	RO	1.86	16.55			0.000			
				24:08		0.84	85.01	38.69	46.32	0.954			
				25:08		0.81	19,596.91	8,779.31	10,817.60	0.993	13C12-1234-TCDD	RS1	
				25:18		0.81	14,912.62	6,690.82	8,221.80	1.000	13C12-2378-TCDD	IS1	
				25:38		0.76	680.28	294.57	385.71	1.013			
				25:50	RO	4.90	48.82	135.18	27.58	1.021			
332-334			5 Peaks				35,323.64						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00	RO	0.90	11.80			0.000			
				26:34		1.73	59.20	37.55	21.65	0.931			J
				27:34	RO	0.45	24.97	15.18	33.93	0.966			J
				27:42	RO	0.88	133.39	81.08	92.01	0.970			J
D	D	SN		27:52	RO	0.54	32.33			0.976			
				28:10		1.33	55.91	31.91	24.00	0.987			J
				28:17		1.66	83.18	51.91	31.27	0.991			J
M				28:34		1.43	49.90	29.40	20.50	1.001	12378-PeCDF	AN	J
D	D	SN		28:42	RO	1.28	37.89			1.005			
D	D	SN		28:51		1.65	47.95			1.011			
M				29:16		1.36	59.70	34.40	25.30	1.025	23478-PeCDF	AN	J
				29:24	RO	1.17	68.62	41.71	35.56	1.030			J
	DC	SN		29:43	RO	2.88	11.04			1.041			
D	D	SN		30:14	RO	0.72	16.01			1.059			
	DC	SN		30:34	RO	0.35	3.09			1.071			
340-342			8 Peaks				534.87						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354	DC	NL		0:00	RO	0.88	18.05			0.000			
				27:15	RO	0.61	18.48	11.23	18.42	0.954			
				27:29	RO	0.23	18.85	11.46	48.99	0.963			
				27:42		1.55	585.52	356.22	229.30	0.970			
	DC	SN		28:01	RO	0.38	10.66			0.981			
				28:10		1.56	41.54	25.32	16.22	0.987			
				28:33		1.49	16,135.84	9,645.30	6,490.54	1.000	13C12-PeCDF 123	IS2	
				28:50	RO	1.27	603.20	366.65	287.96	1.010			
				29:14		1.46	14,633.01	8,687.17	5,945.84	1.024	13C12-PeCDF 234	SUR1	

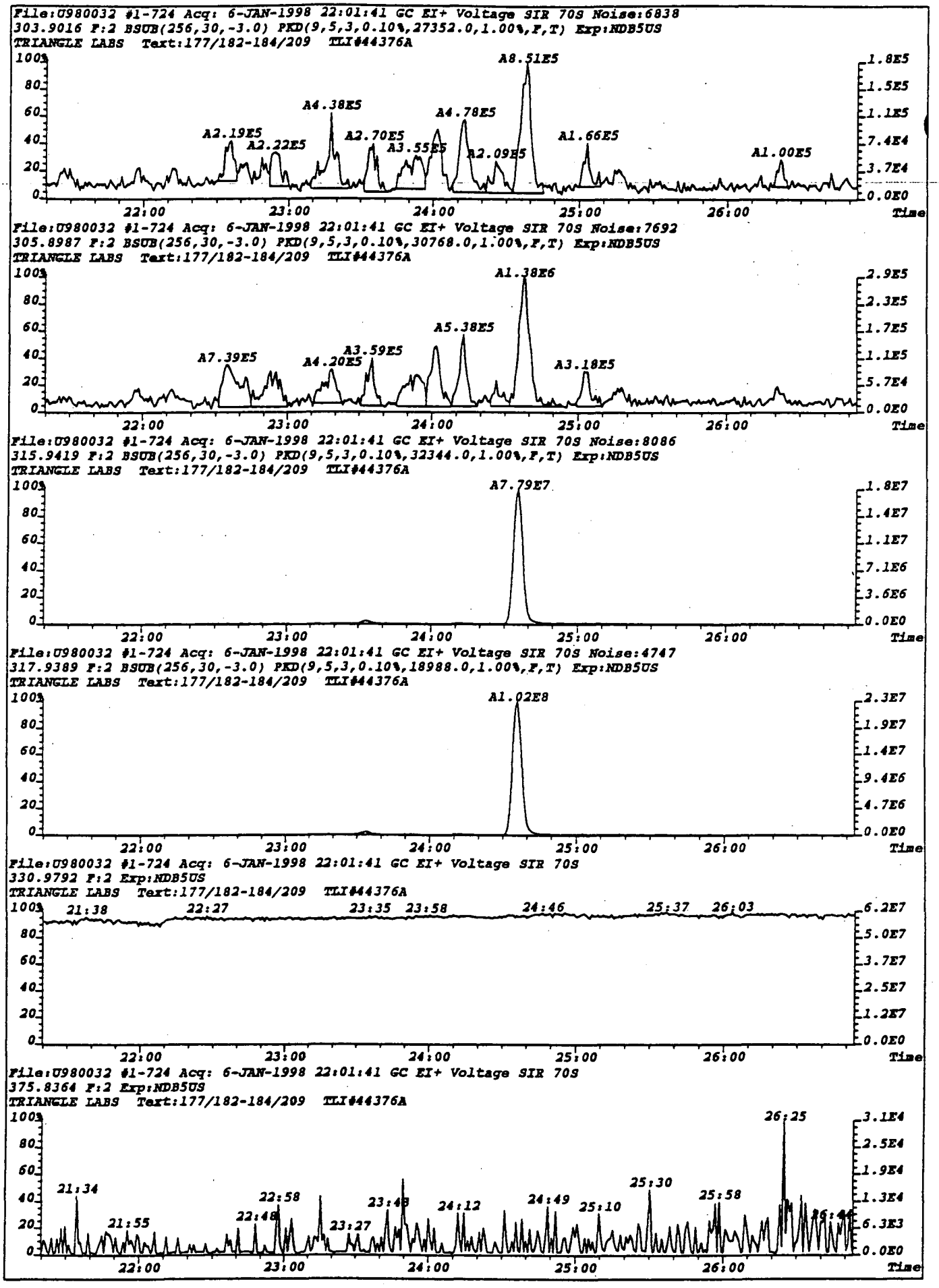
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:13	RO	1.02	46.56	28.30	27.85	1.058			
				30:20	RO	0.38	17.87	10.86	28.53	1.062			
352-354			9 Peaks				32,100.87						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.935-1.022			
356-358	DC	NL		0:00	RO	0.45	3.41			0.000			
A				27:48	RO	0.75	32.41	19.70	26.40	0.940			J
	DC	SN		28:26		1.76	6.04			0.961			
				28:31		1.69	43.44	27.27	16.17	0.964			J
	DC	SN		28:40	RO	0.23	4.54			0.969			
D	D	SN		28:50	RO	1.10	23.18			0.975			
	DC	SN		29:07	RO	0.34	4.69			0.984			
	DC	SN		29:25		1.36	11.87			0.994			
	DC	SN		29:38	RO	1.12	12.54			1.002			
	DC	SN		29:45	RO	0.89	8.54			1.006			
356-358			2 Peaks				75.85						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	0.56	3.27			0.000			
	DC	SN		27:44	RO	0.53	3.75			0.937			
	DC	SN		27:54	RO	0.45	4.39			0.943			
				28:30	RO	0.92	26.49	16.10	17.51	0.963			
	DC	SN		28:38	RO	1.28	17.90			0.968			
				29:35		1.50	9,216.67	5,530.36	3,686.31	1.000	13C12-PeCDD 123	IS3	
				29:43		1.61	1,462.72	902.71	560.01	1.005			
				30:04	RO	1.09	79.81	48.51	44.54	1.016			
				30:15	RO	3.47	26.75	36.35	10.49	1.023			
	DC	SN		30:31	RO	2.01	7.68			1.032			
368-370			5 Peaks				10,812.44						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.962-1.047			
374-376	DC	NL		0:00	RO	0.87	19.73			0.000			
				31:03		1.28	44.70	25.07	19.63	0.966			J
				31:12		1.27	107.10	59.91	47.19	0.971			J
M				32:01		1.37	114.40	66.10	48.30	0.996	123478-HxCDF	AN	J
M				32:08		1.11	54.10	28.40	25.70	1.000	123678-HxCDF	AN	J
				32:37		1.11	60.05	31.64	28.41	1.015	234678-HxCDF	AN	J
374-376			5 Peaks				380.35						
13C12-HxCDF				0.43-0.59						0.876-1.124			
384-386	DC	NL		0:00	RO	0.72	17.52			0.000			
				31:03		0.59	88.88	33.04	55.84	0.966			
				31:11		0.47	161.16	51.22	109.94	0.970			
				32:01		0.50	10,277.07	3,447.68	6,829.39	0.996	13C12-HxCDF 478	SUR2	
				32:08		0.50	13,473.70	4,493.05	8,980.65	1.000	13C12-HxCDF 678	IS4	
				32:36		0.48	12,827.57	4,150.67	8,676.90	1.015	13C12-HxCDF 234	ALT2	
				33:04	RO	1.91	25.01	31.70	16.56	1.029			
				33:22		0.51	9,854.68	3,329.97	6,524.71	1.038	13C12-HxCDF 789	ALT1	

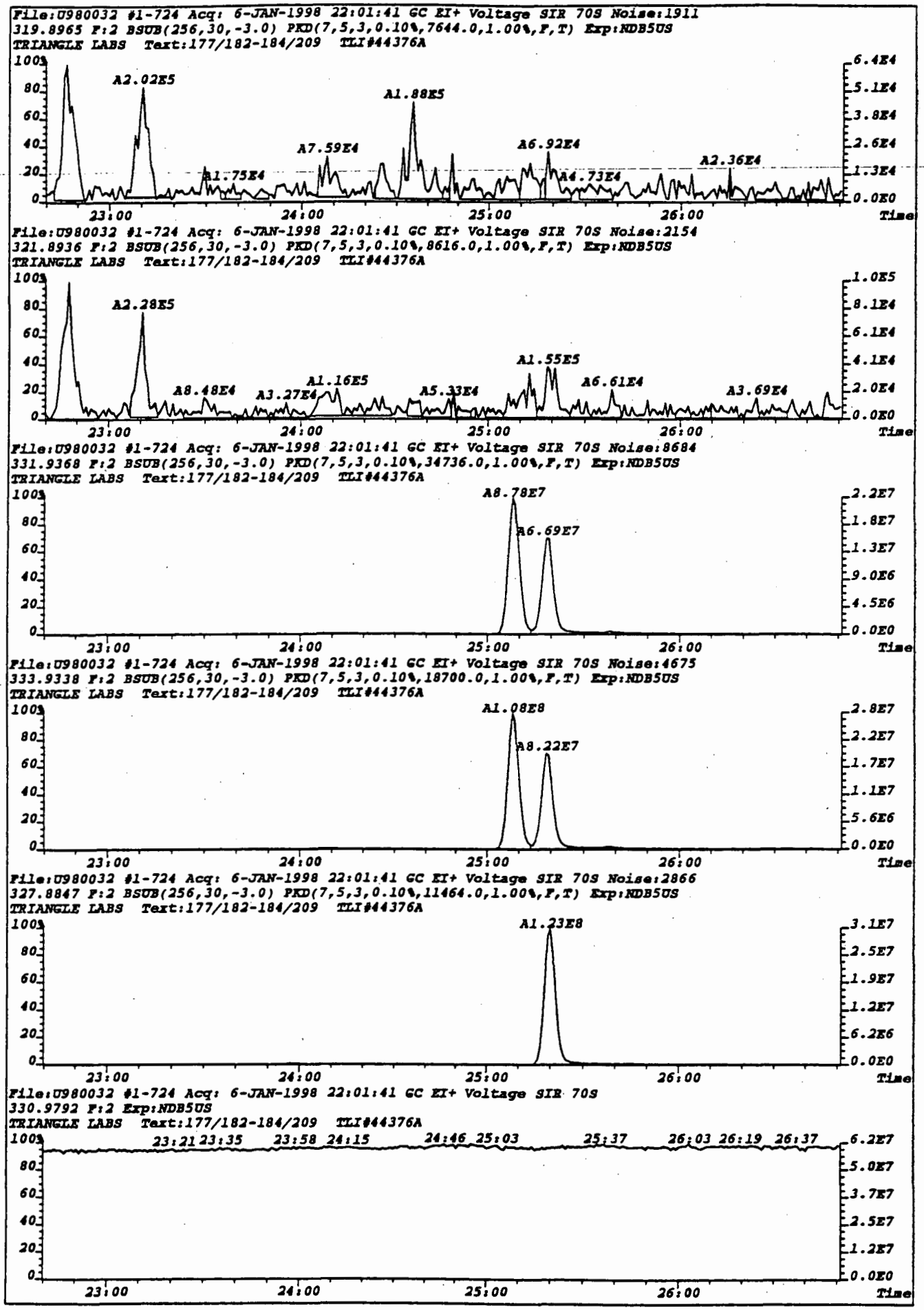
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				33:43		0.53	56.30	19.59	36.71	1.049			
384-386			8 Peaks				46,764.37						
				---------- Above: HxCDF / HxCDD Follows ----------									
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL		0:00	RO	0.67	11.71			0.000			
M				32:00		1.13	67.30	35.70	31.60	0.976			J
D	D	SN		32:12		1.25	30.08			0.982			
	DC	SN		33:35	RO	0.30	4.52			1.024			
390-392			1 Peak				67.30						
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL		0:00	RO	0.86	42.42			0.000			
				32:43		1.20	8,203.44	4,480.50	3,722.94	0.997	13C12-HxCDD	478	SUR3
				32:48		1.21	12,414.95	6,796.24	5,618.71	1.000	13C12-HxCDD	678	IS5
				33:07		1.21	13,554.21	7,417.33	6,136.88	1.010	13C12-HxCDD	789	RS2
402-404			3 Peaks				34,172.60						
				---------- Above: HxCDD / HpCDF Follows ----------									
HpCDF						0.88-1.20				0.996-1.049			
408-410	DC	NL		0:00	RO	1.39	17.97			0.000			
M				35:00		1.04	200.00	102.00	98.00	1.000	1234678-HpCDF	AN	
D	D	SN		35:16	RO	0.76	36.84			1.008			
				35:26	RO	0.55	32.40	16.52	30.16	1.012			J
D	D	SN		36:34	RO	0.75	26.74			1.045	1234789-HpCDF	AN	
408-410			2 Peaks				232.40						
13C12-HpCDF						0.37-0.51				0.943-1.114			
418-420	DC	NL		0:00	RO	0.60	26.87			0.000			
M				35:00	RO	0.35	4,418.18	1,350.00	3,890.00	1.000	13C12-HpCDF	678	IS6
				35:28	RO	0.76	39.63	20.93	27.52	1.013			
M				36:32	RO	0.35	3,370.91	1,030.00	2,950.00	1.044	13C12-HpCDF	789	SUR4
418-420			3 Peaks				7,828.72						
				---------- Above: HpCDF / HpCDD Follows ----------									
HpCDD						0.88-1.20				0.975-1.005			
424-426	DC	NL		0:00	RO	1.62	6.57			0.000			
M				35:17	RO	0.81	32.95	16.80	20.70	0.979			J
	DC	SN		35:44	RO	0.31	3.45			0.992			
				36:02		0.96	43.12	21.09	22.03	1.000	1234678-HpCDD	AN	J
	DC	SN		36:32	RO	1.65	16.38			1.014			
424-426			2 Peaks				76.07						
13C12-HpCDD						0.88-1.20				0.972-1.028			
436-438	DC	NL		0:00	RO	0.86	37.49			0.000			
				36:02		1.05	8,602.80	4,401.91	4,200.89	1.000	13C12-HpCDD	678	IS7
436-438			1 Peak				8,602.80						

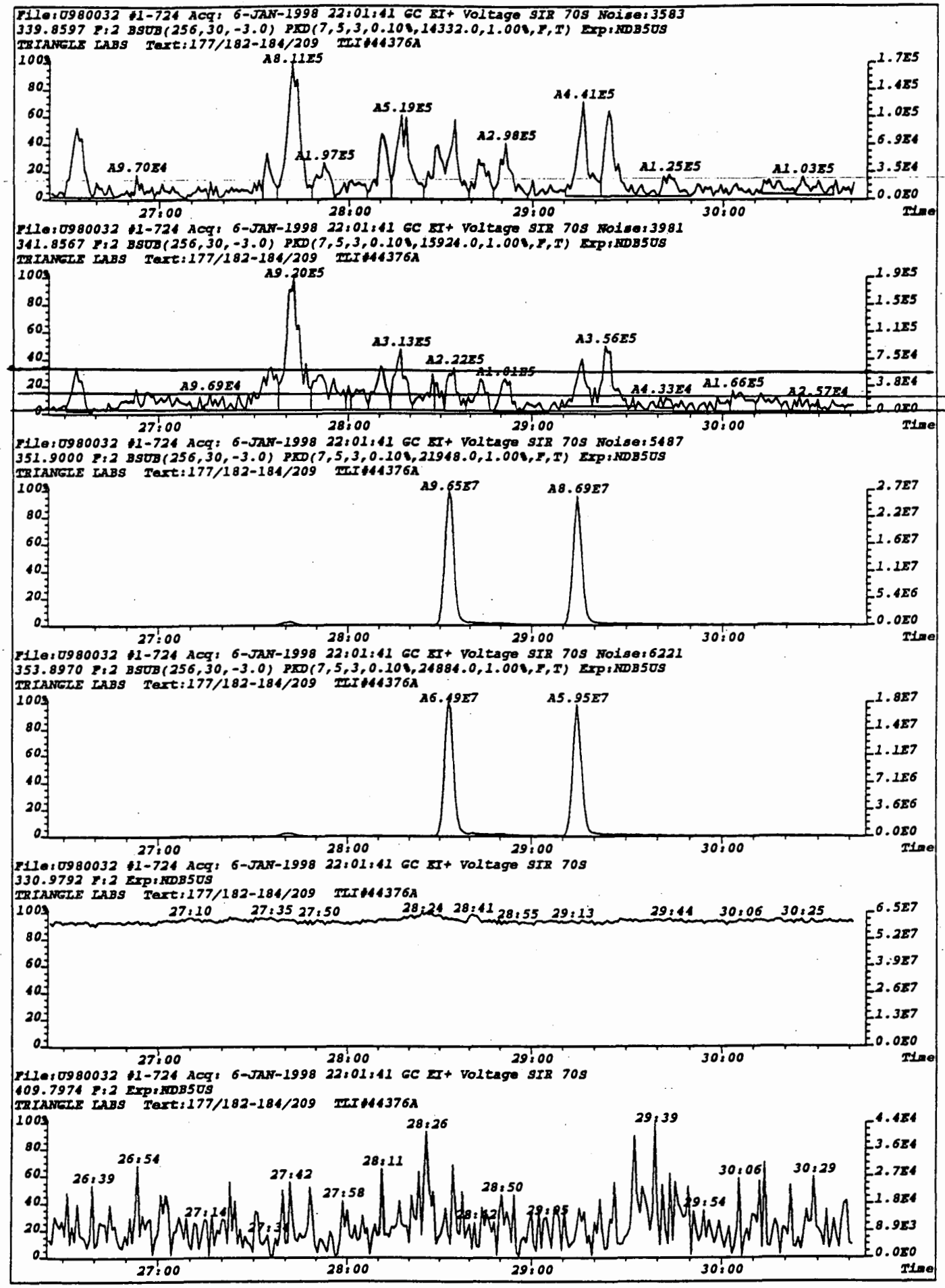
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	2.20	9.87			0.000			
M				39:49		0.87	252.00	117.00	135.00	1.005	OCDF	AN	J
442-444			1 Peak				252.00						
OCDD				0.76-1.02						0.899-1.101			
458-460	DC	NL		0:00	RO	0.71	6.43			0.000			
				39:37		0.92	102.13	48.94	53.19	1.000	OCDD	AN	J
	DC	SN		39:51	RO	0.45	2.51			1.006			
458-460			1 Peak				102.13						
13C12-OCDD				0.76-1.02						0.996-1.004			
470-472	DC	NL		0:00	RO	1.07	14.91			0.000			
				39:36		0.86	12,836.23	5,930.35	6,905.88	1.000	13C12-OCDD	IS8	
470-472			1 Peak				12,836.23						

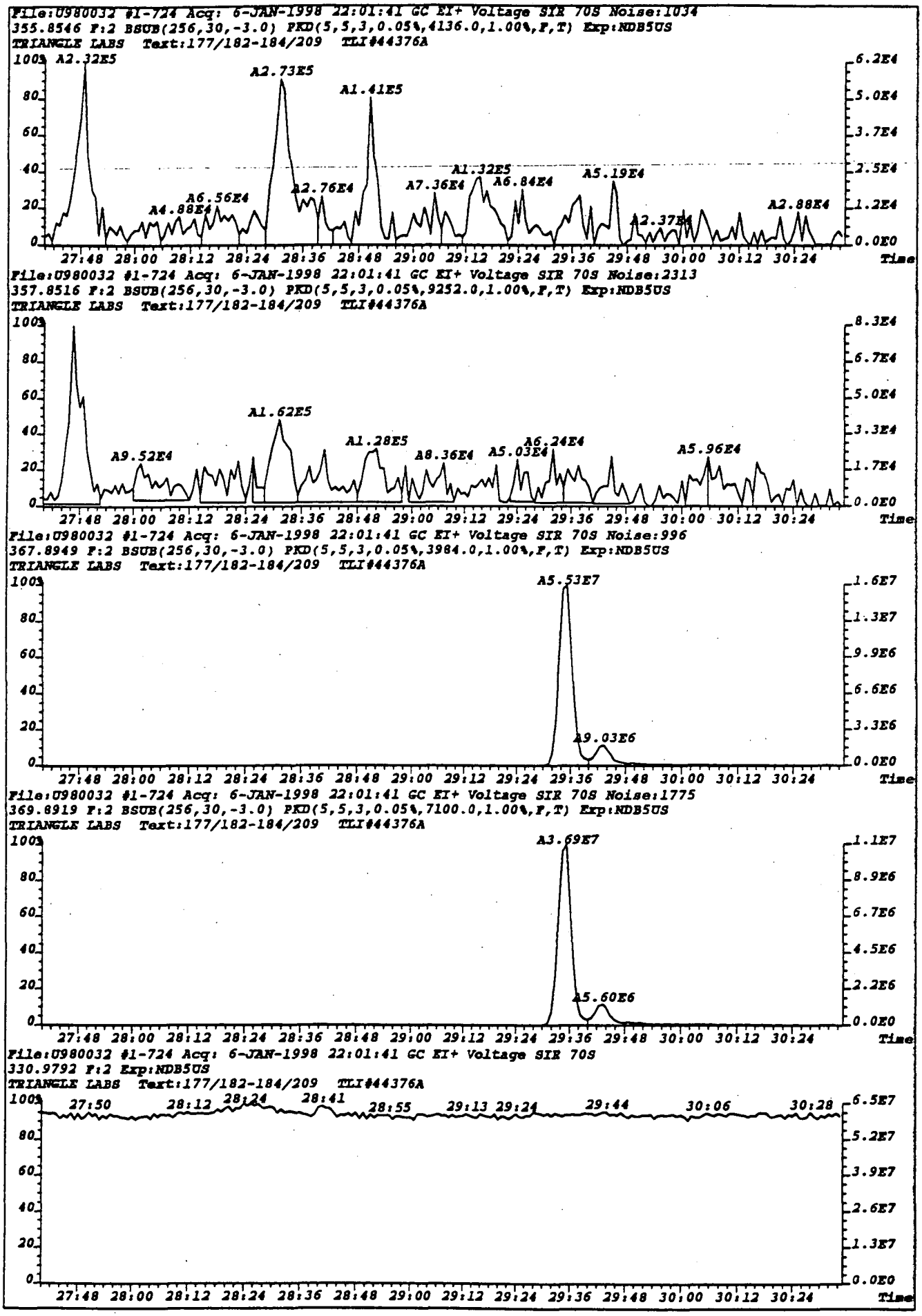
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

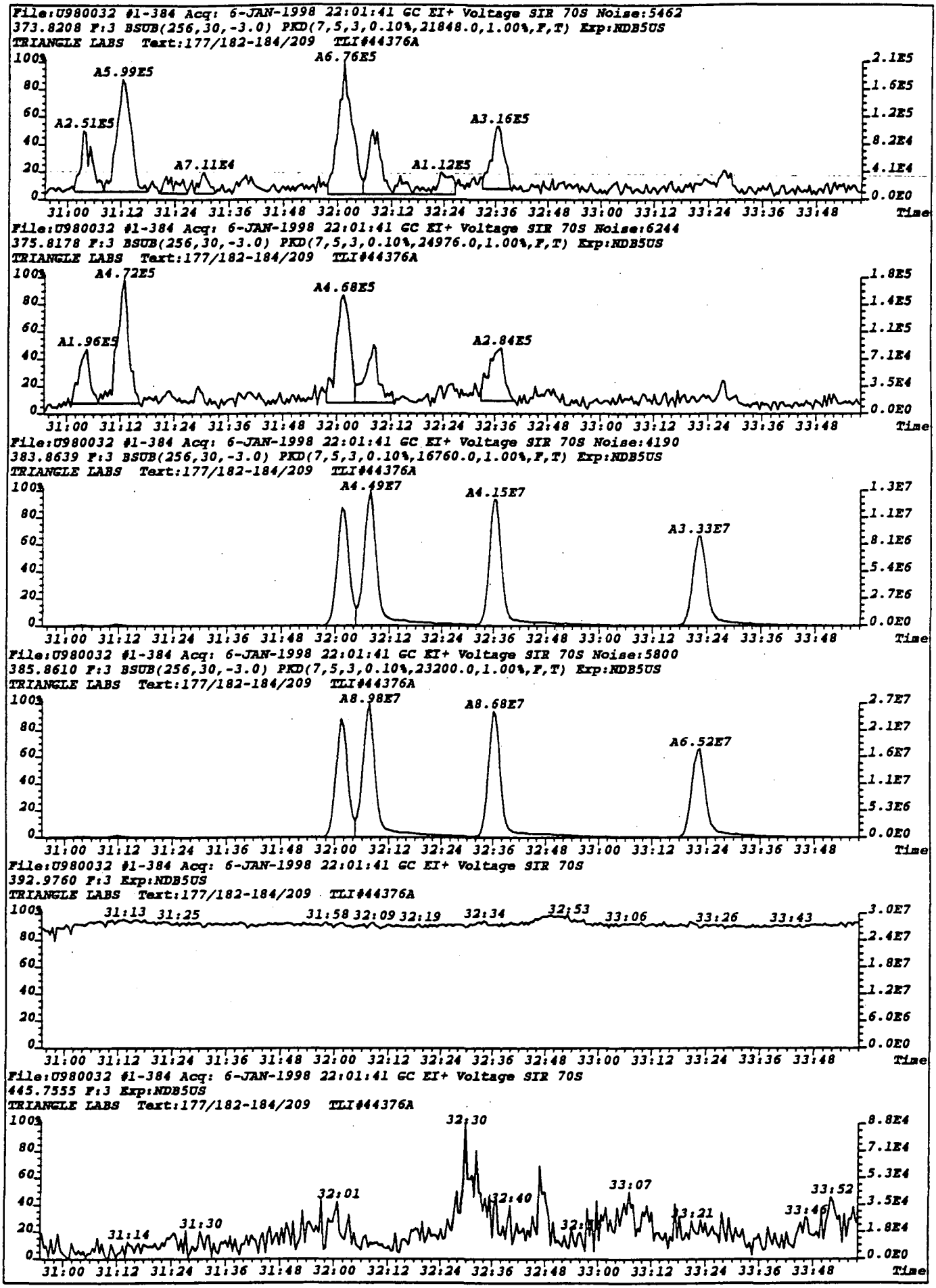
*** End of Report ***

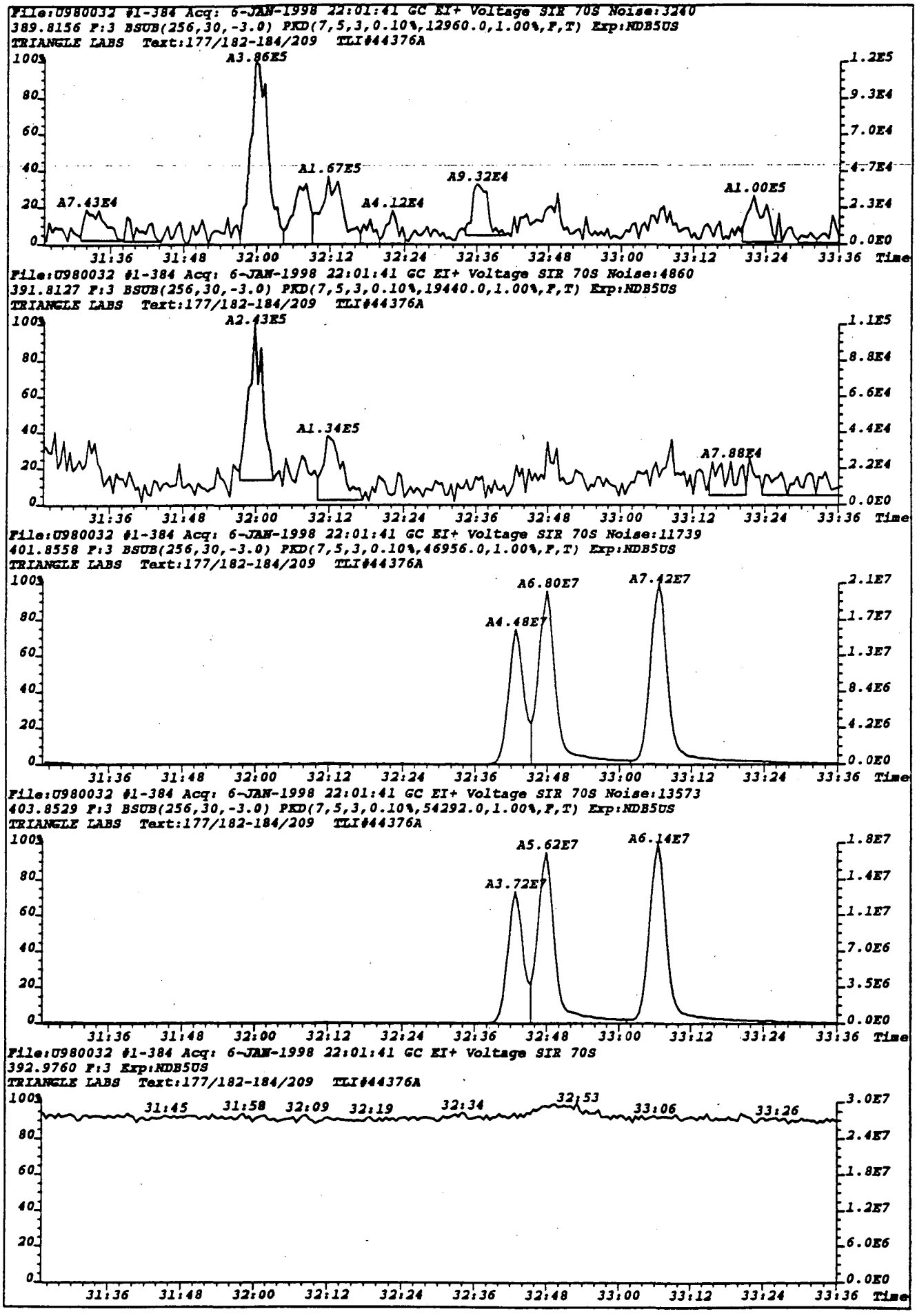

File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:6838
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,27352.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A8.51E5
A4.38E5
A4.78E5
A2.19E5
A2.22E5
A2.70E5
A3.55E5
A2.09E5
A1.66E5
A1.00E5
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:7692
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,30768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.38E6
A5.38E5
A7.39E5
A4.20E5
A3.59E5
A3.18E5
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:8086
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,32344.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A7.79E7
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4747
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,18988.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.02E8
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
21:38
22:27
23:35
23:58
24:46
25:37
26:03
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
26:25
21:34
21:55
22:58
22:48
23:27
24:12
24:49
25:10
25:30
25:58
Time


File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:1911
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7644.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A2.02E5
A1.75E4
A7.59E4
A1.88E5
A6.92E4
A4.73E4
A2.36E4
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2154
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8616.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A2.28E5
A8.48E4
A3.27E4
A1.16E5
A5.33E4
A1.55E5
A6.61E4
A3.69E4
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:8684
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,34736.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A8.78E7
A6.69E7
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4675
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18700.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.08E8
A8.22E7
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2866
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11464.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.23E8
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
23:21 23:35 23:58 24:15 24:46 25:03 25:37 26:03 26:19 26:37
23:00 24:00 25:00 26:00 Time

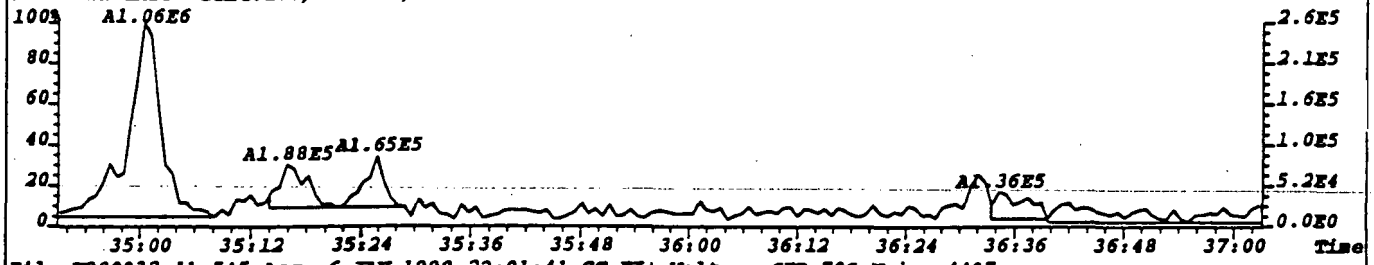

File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:3583
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14332.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A8.11E5
A5.19E5
A4.41E5
A2.98E5
A1.97E5
A9.70E4
A1.25E5
A1.03E5
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:3981
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15924.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A9.20E5
A3.13E5
A2.22E5
A3.56E5
A9.69E4
A4.33E4
A1.66E5
A2.57E4
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:5487
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,21948.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A9.65E7
A8.69E7
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:6221
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,24884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A6.49E7
A5.95E7
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
27:10
27:35
27:50
28:24
28:41
28:55
29:13
29:44
30:06
30:25
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
28:26
29:39
26:54
26:39
27:42
28:11
27:58
28:50
30:06
30:29
29:54
Time


File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:1034
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,4136.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A2.32E5
A2.73E5
A1.41E5
A1.32E5
A6.84E4
A5.19E4
A7.36E4
A6.56E4
A4.88E4
A2.76E4
A2.37E4
A2.88E4
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2313
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,9252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.62E5
A1.28E5
A6.24E4
A9.52E4
A8.36E4
A5.03E4
A5.96E4
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:996
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,3984.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A5.53E7
A9.03E6
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:1775
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,7100.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A3.69E7
A5.60E6
Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
27:50
28:12
28:24
28:41
28:55
29:13
29:24
29:44
30:06
30:28
Time

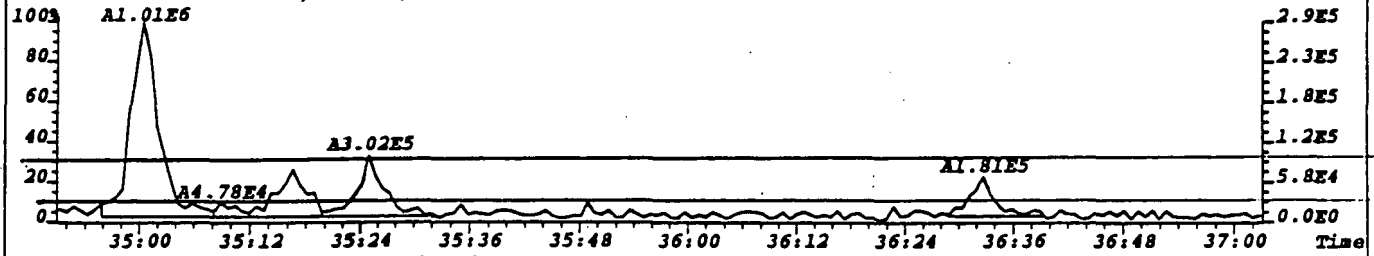

File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:5462
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,21848.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A5.99E5
A6.76E5
A2.51E5
A3.16E5
A7.11E4
A1.12E5
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:6244
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,24976.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A4.72E5
A4.68E5
A1.96E5
A2.84E5
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4190
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,16760.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A4.49E7
A4.15E7
A3.33E7
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:5800
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,23200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A8.98E7
A8.68E7
A6.52E7
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
31:13 31:25 31:58 32:09 32:19 32:34 32:53 33:06 33:26 33:43
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
32:30
32:01
32:40
33:07
33:52
31:14
31:30
33:21
33:46
31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48
Time


File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:3240
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12960.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A3.86E5
A1.67E5
A9.32E4
A1.00E5
A7.43E4
A4.12E4
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4860
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,19440.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A2.43E5
A1.34E5
A7.88E4
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:11739
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,46956.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A6.80E7
A7.42E7
A4.48E7
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:13573
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,54292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A5.62E7
A6.14E7
A3.72E7
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
31:45
31:58
32:09
32:19
32:34
32:53
33:06
33:26
Time

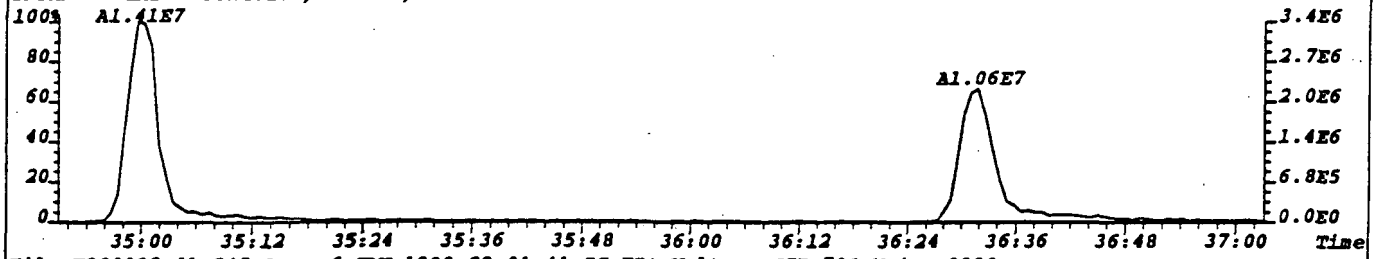
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:6140
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,24560.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



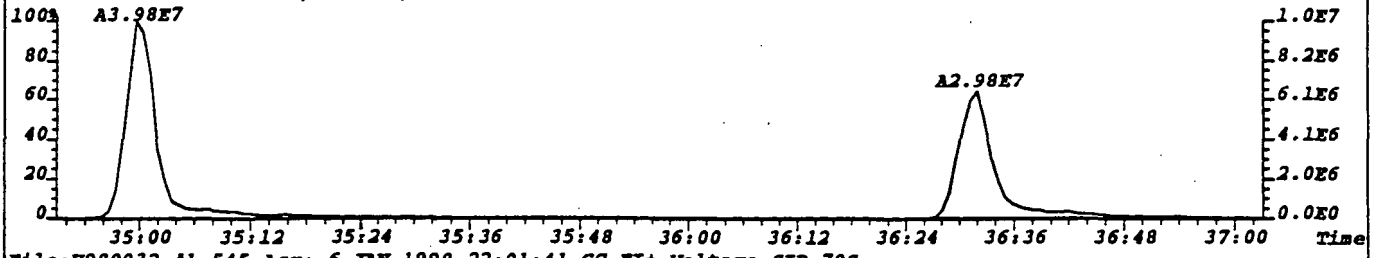
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4407
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,17628.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



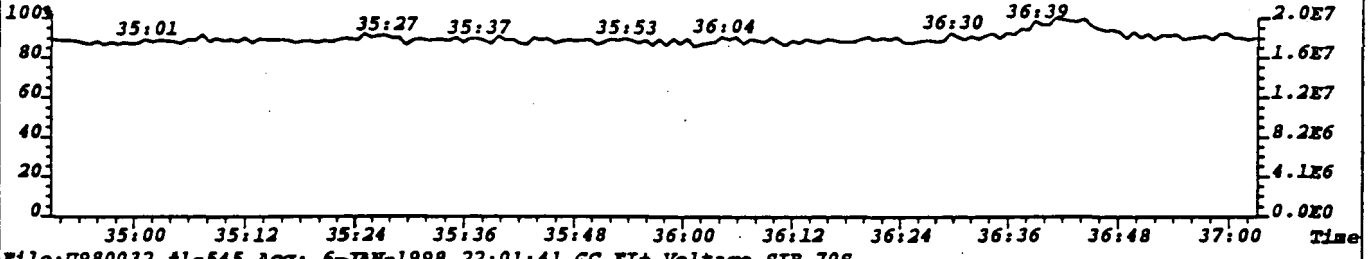
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:5597
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22388.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



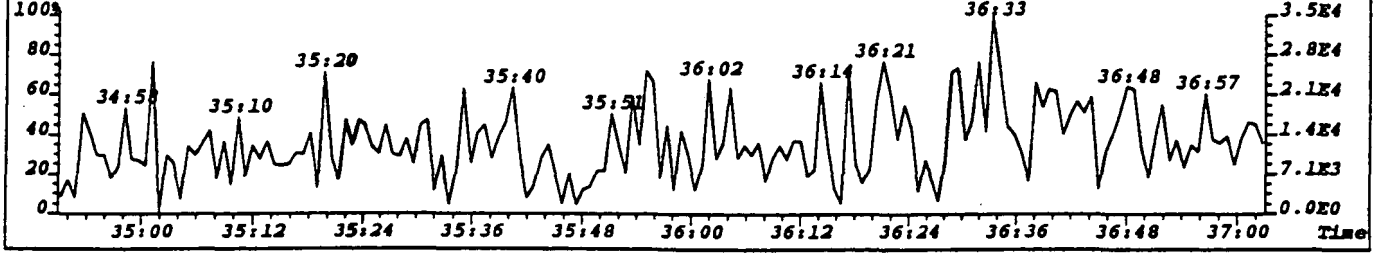
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:9330
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,37320.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



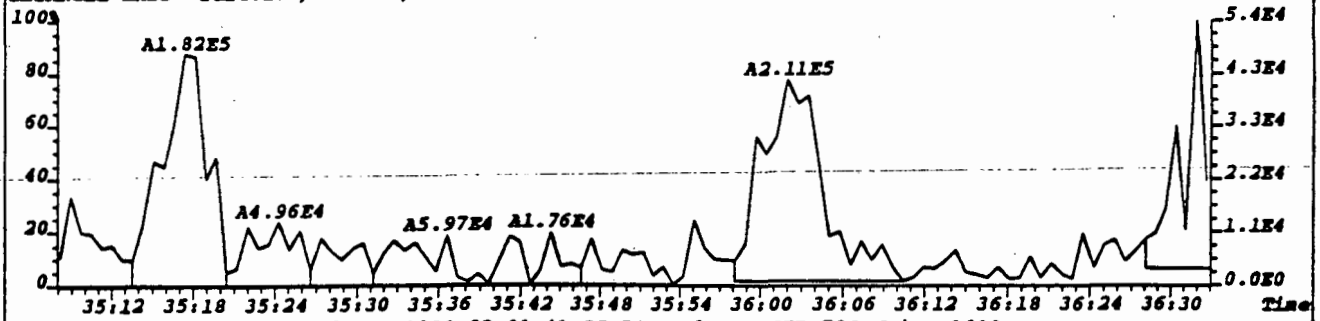
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



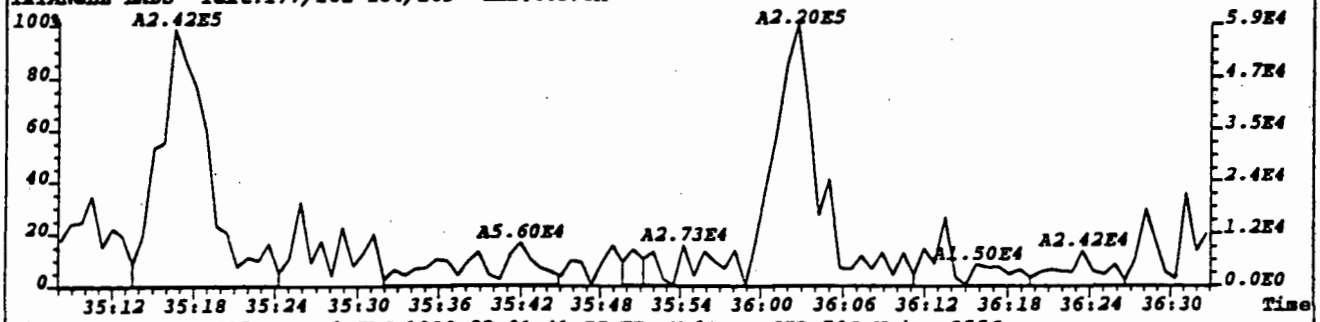
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



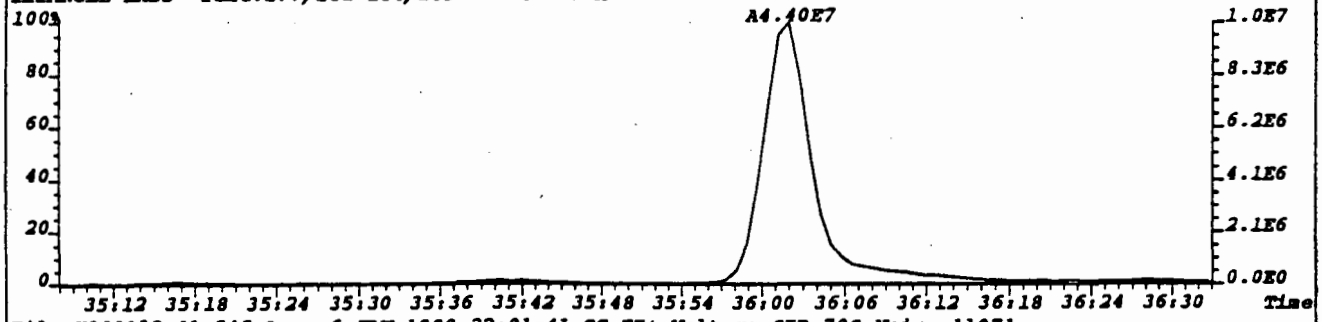
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2606
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10424.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



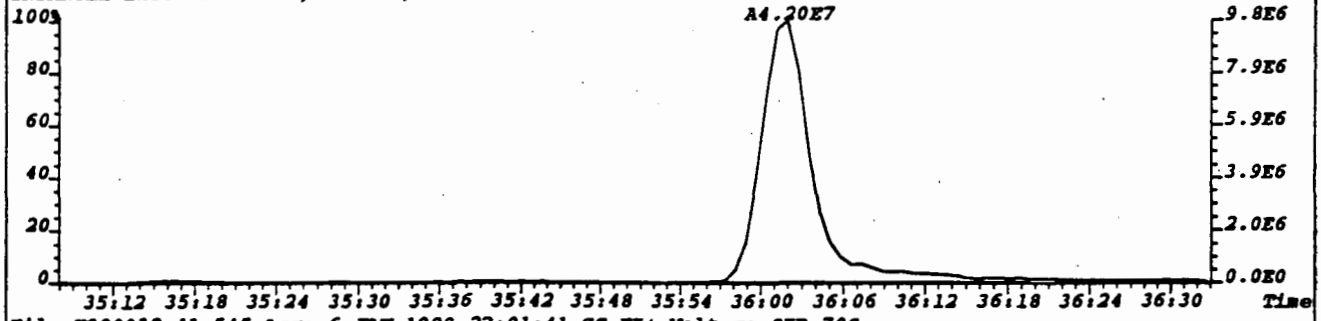
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:1609
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6436.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



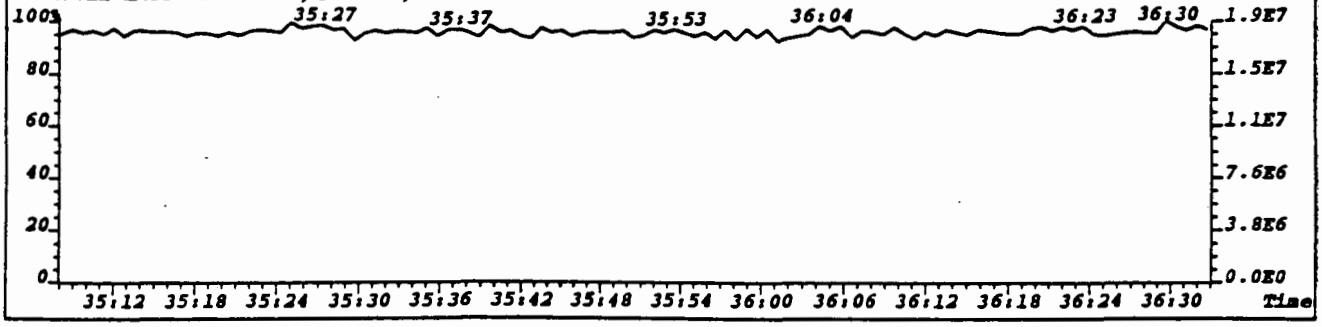
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:9556
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,38224.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

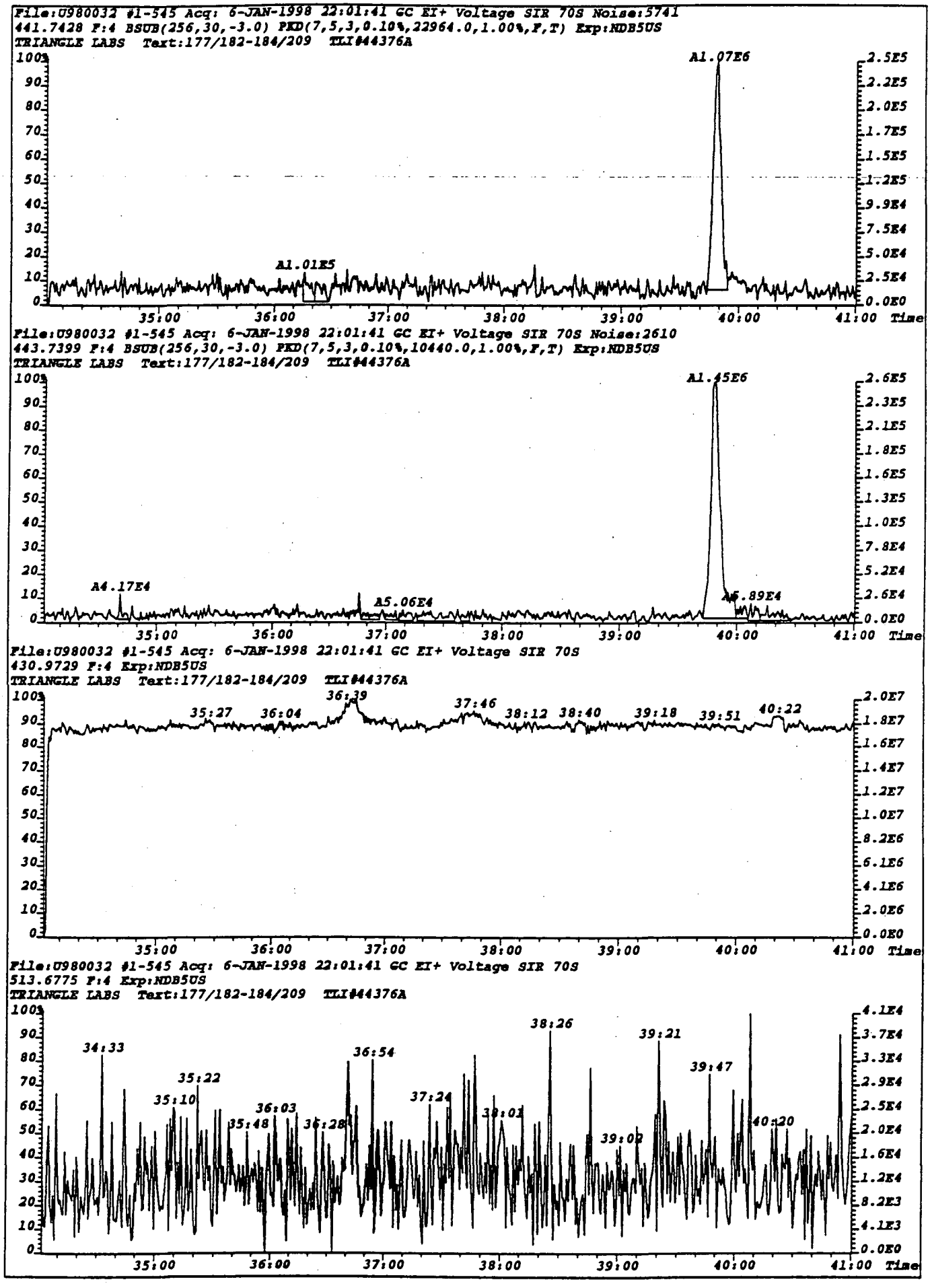


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:11071
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,44284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

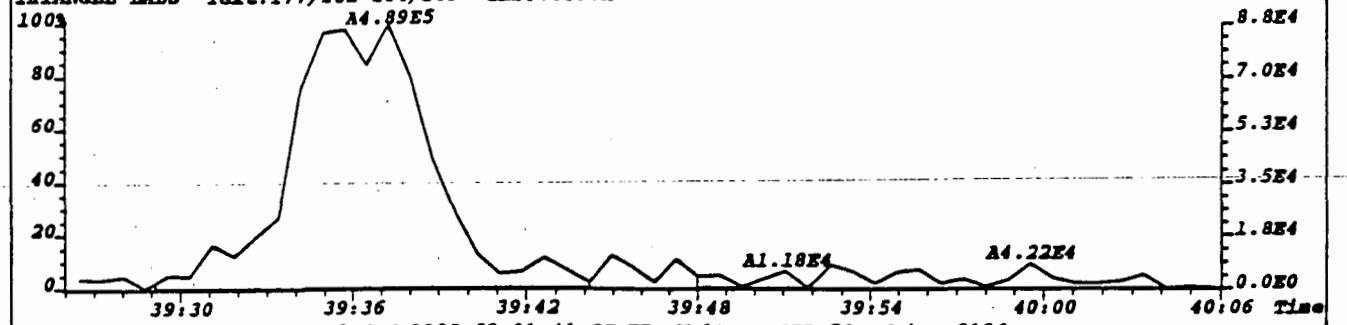


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

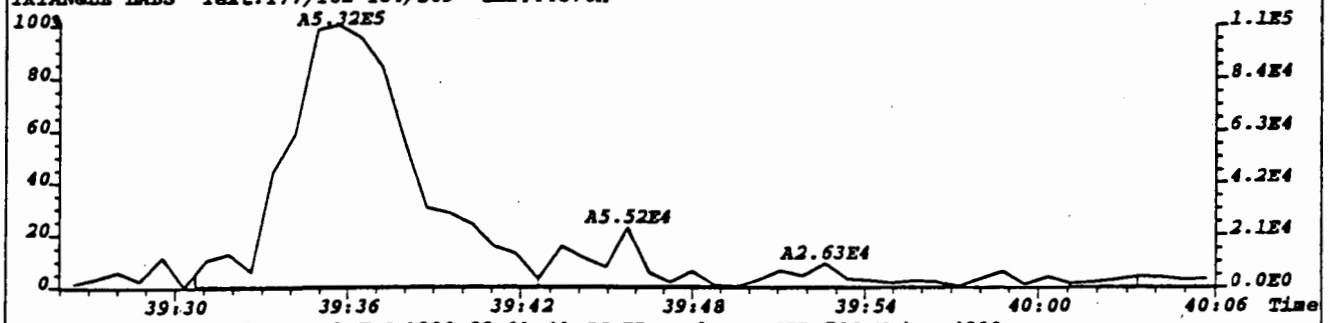



File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:5741
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22964.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.07E6
A1.01E5
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2610
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10440.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.45E6
A4.17E4
A5.06E4
A6.89E4
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
35:27
36:04
36:39
37:46
38:12
38:40
39:18
39:51
40:22
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
34:33
35:10
35:22
35:48
36:03
36:28
36:54
37:24
38:01
38:26
39:02
39:21
39:47
40:20
35:00
36:00
37:00
38:00
39:00
40:00
41:00
Time

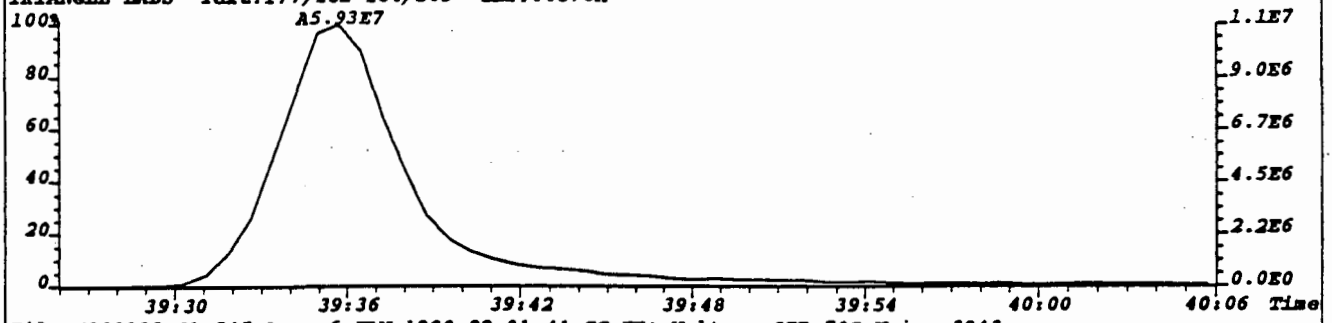
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:1517
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6068.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



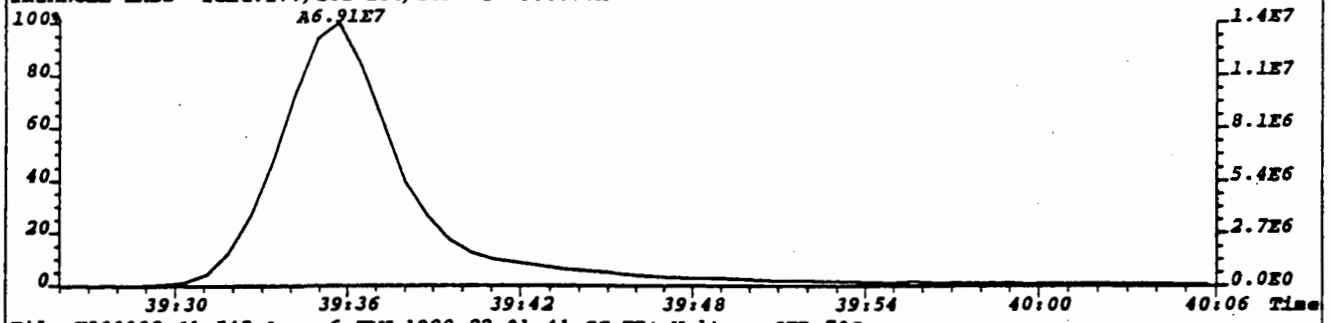
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:2126
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8504.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



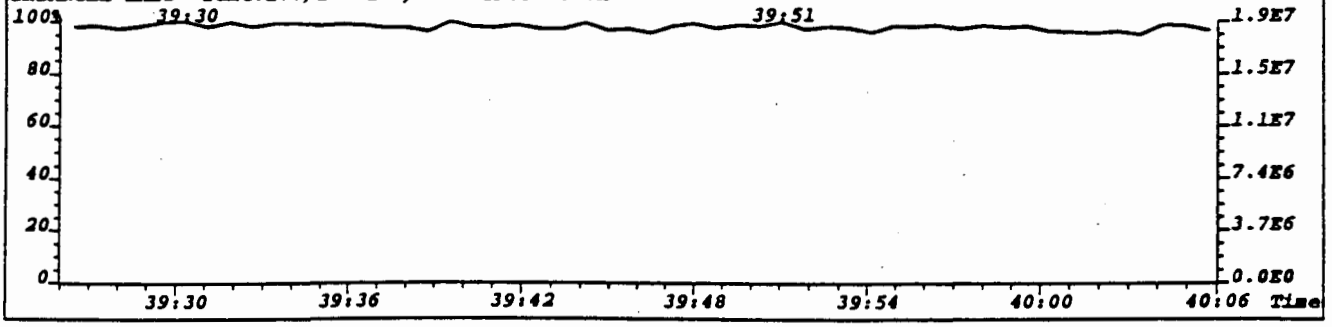
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:4239
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,16956.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

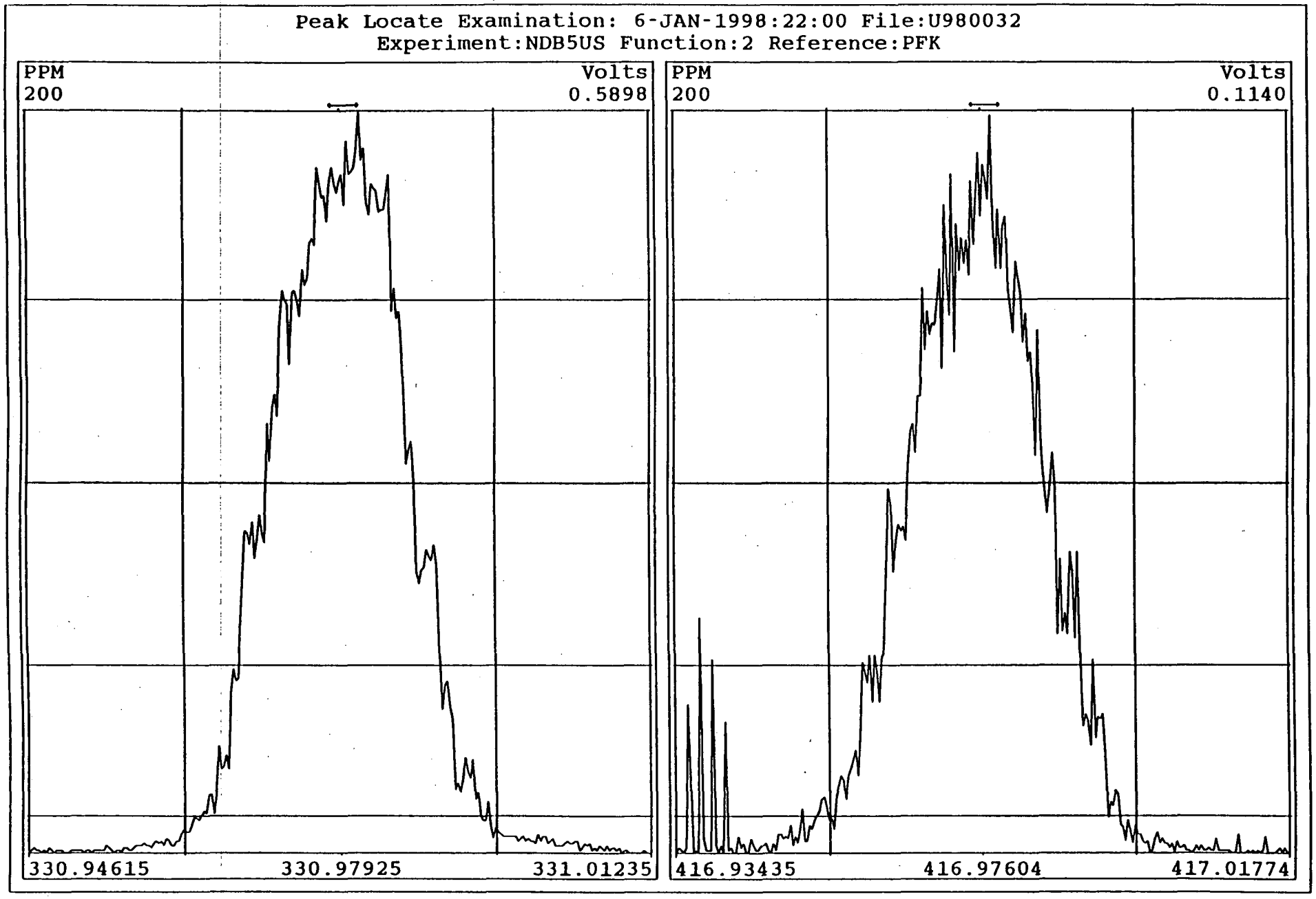


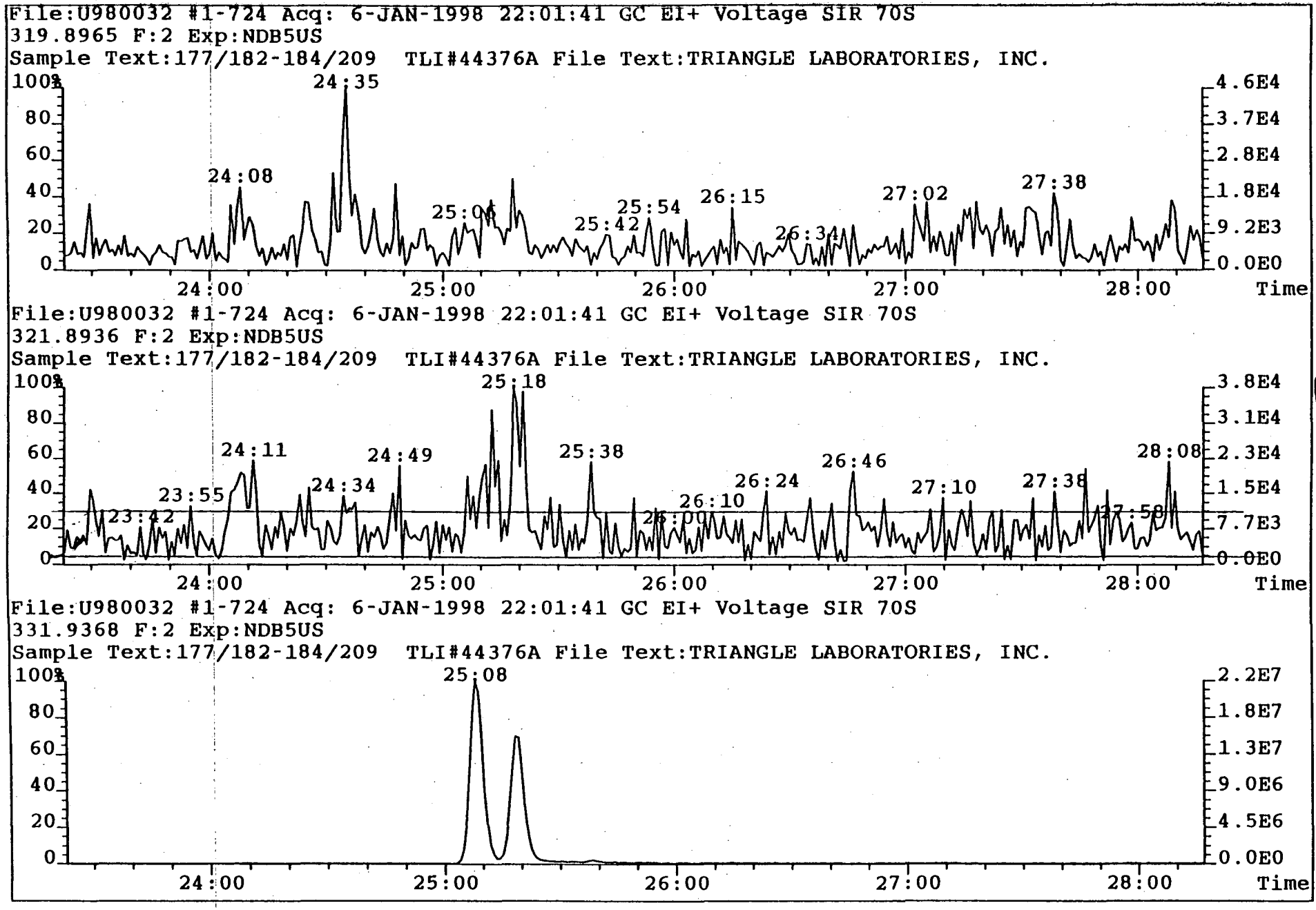
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S Noise:3943
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15772.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



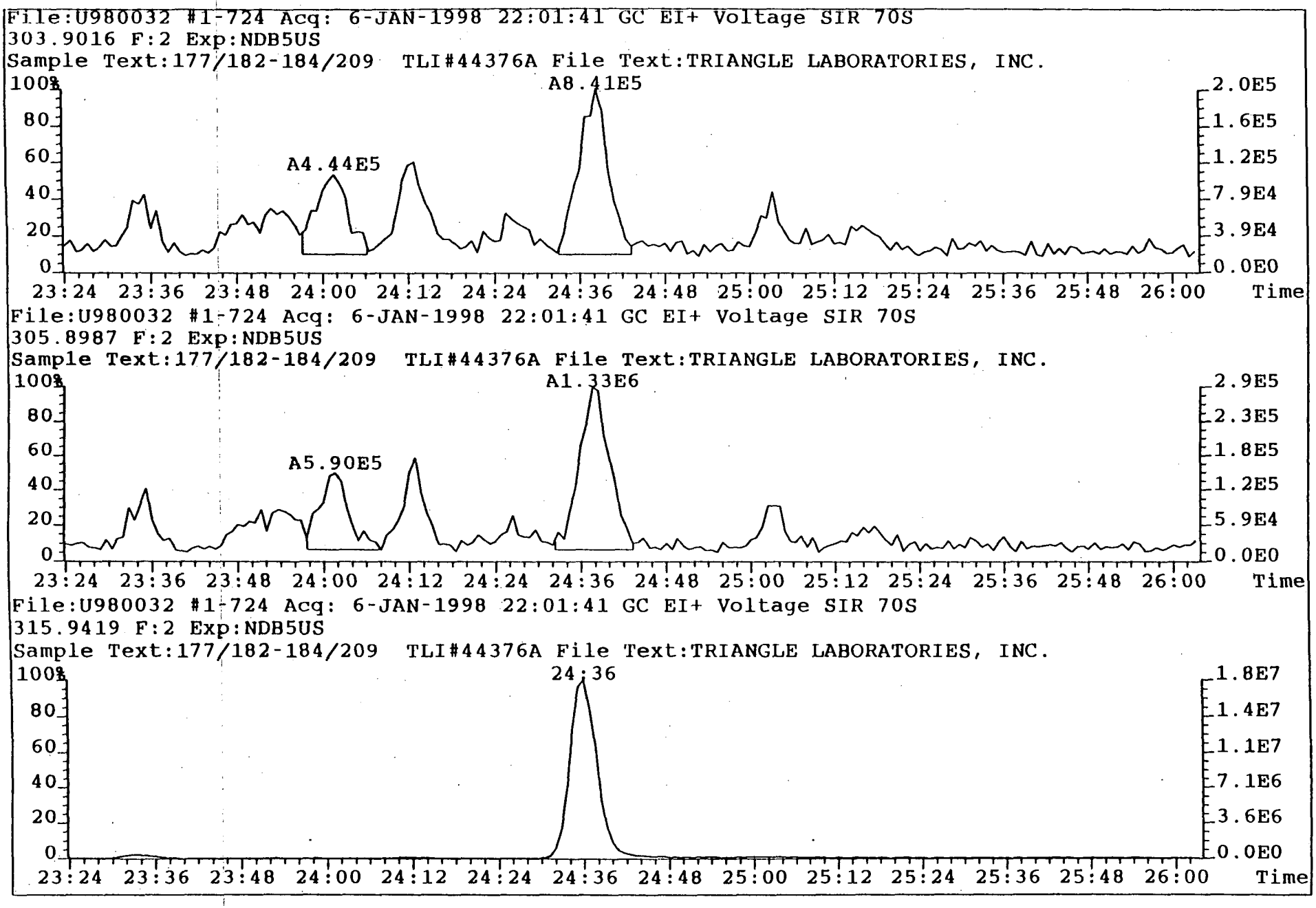
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

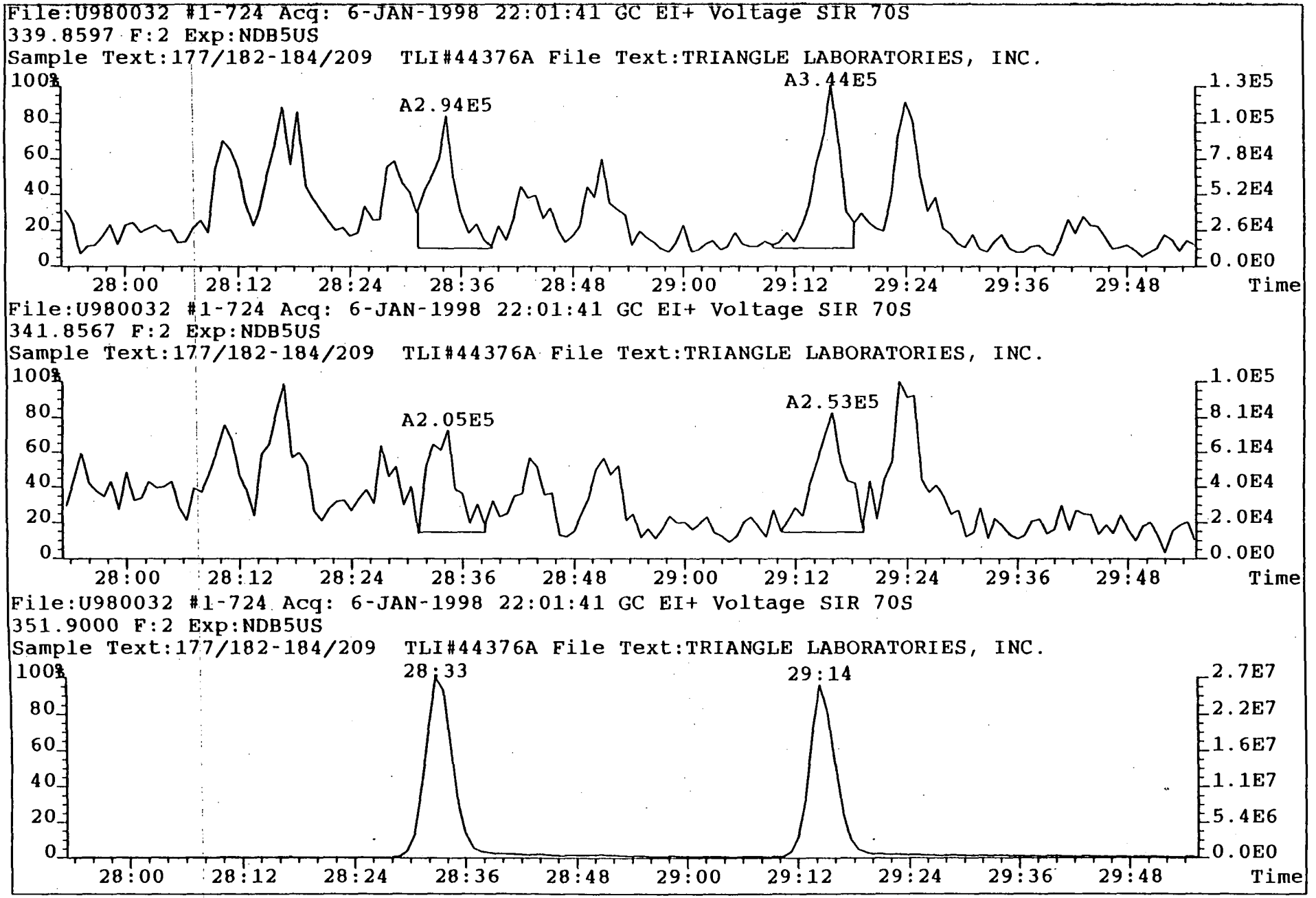


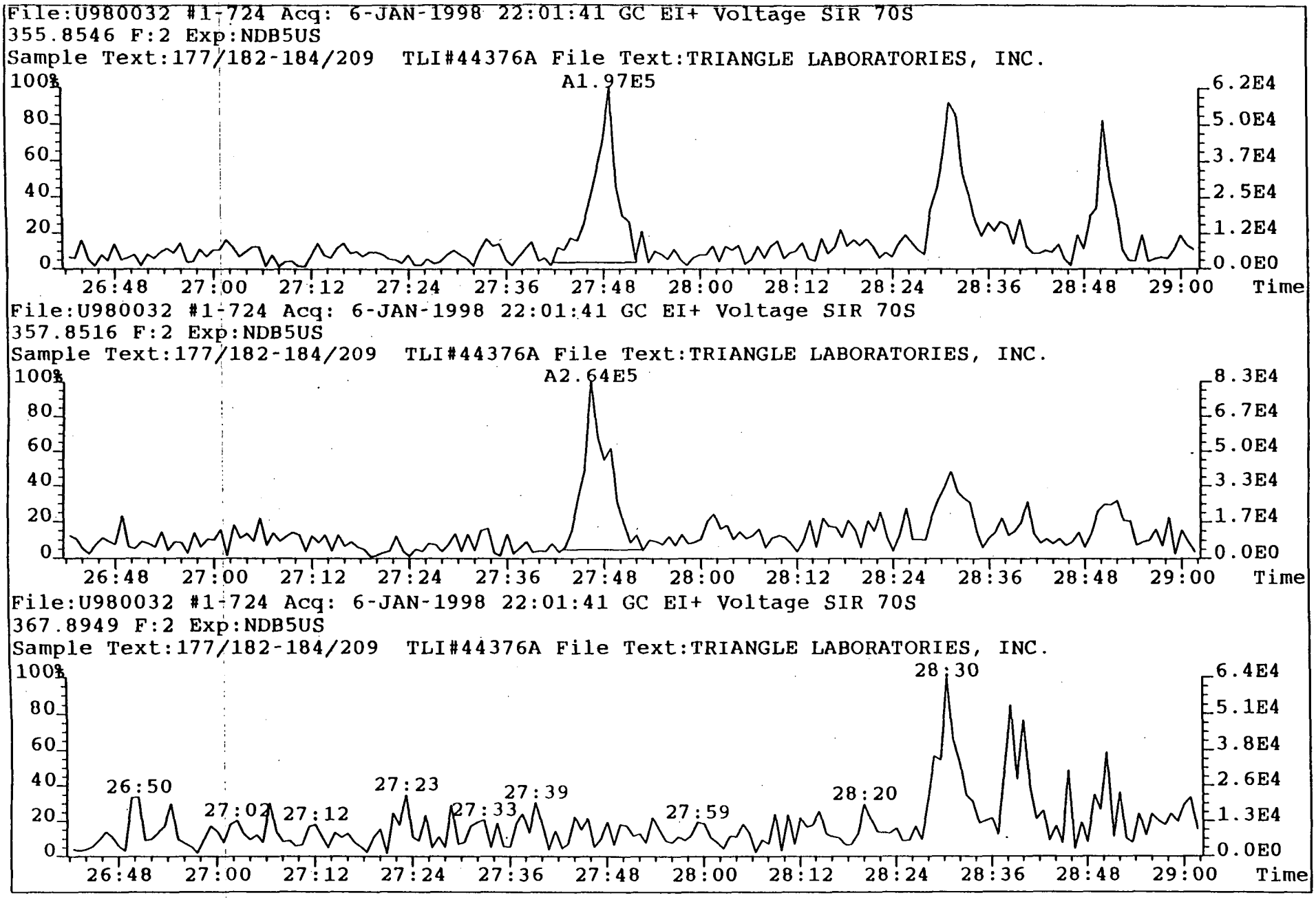

Peak Locate Examination: 6-JAN-1998:22:00 File:U980032
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.5898
330.94615
330.97925
331.01235
PPM
200
Volts
0.1140
416.93435
416.97604
417.01774

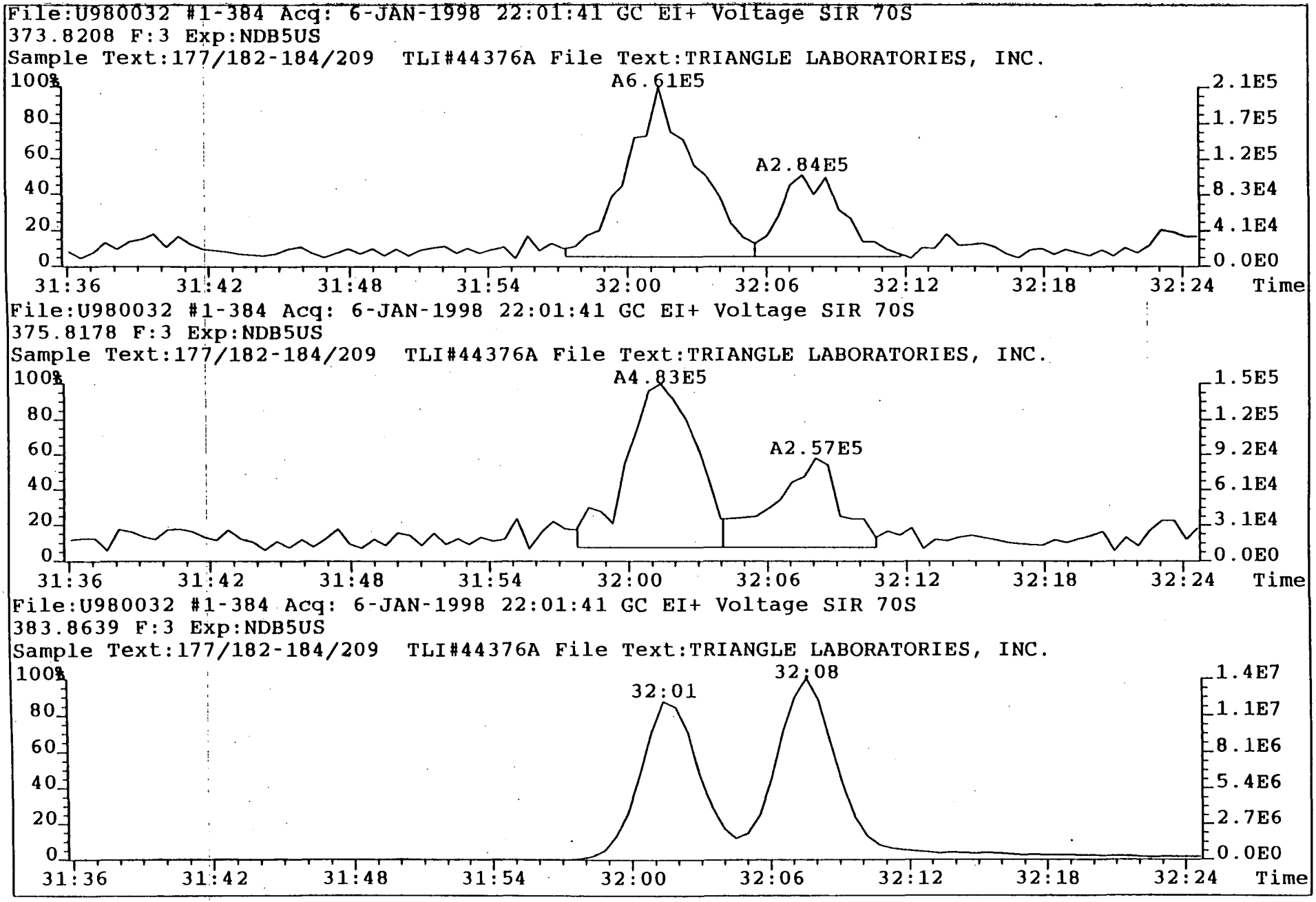


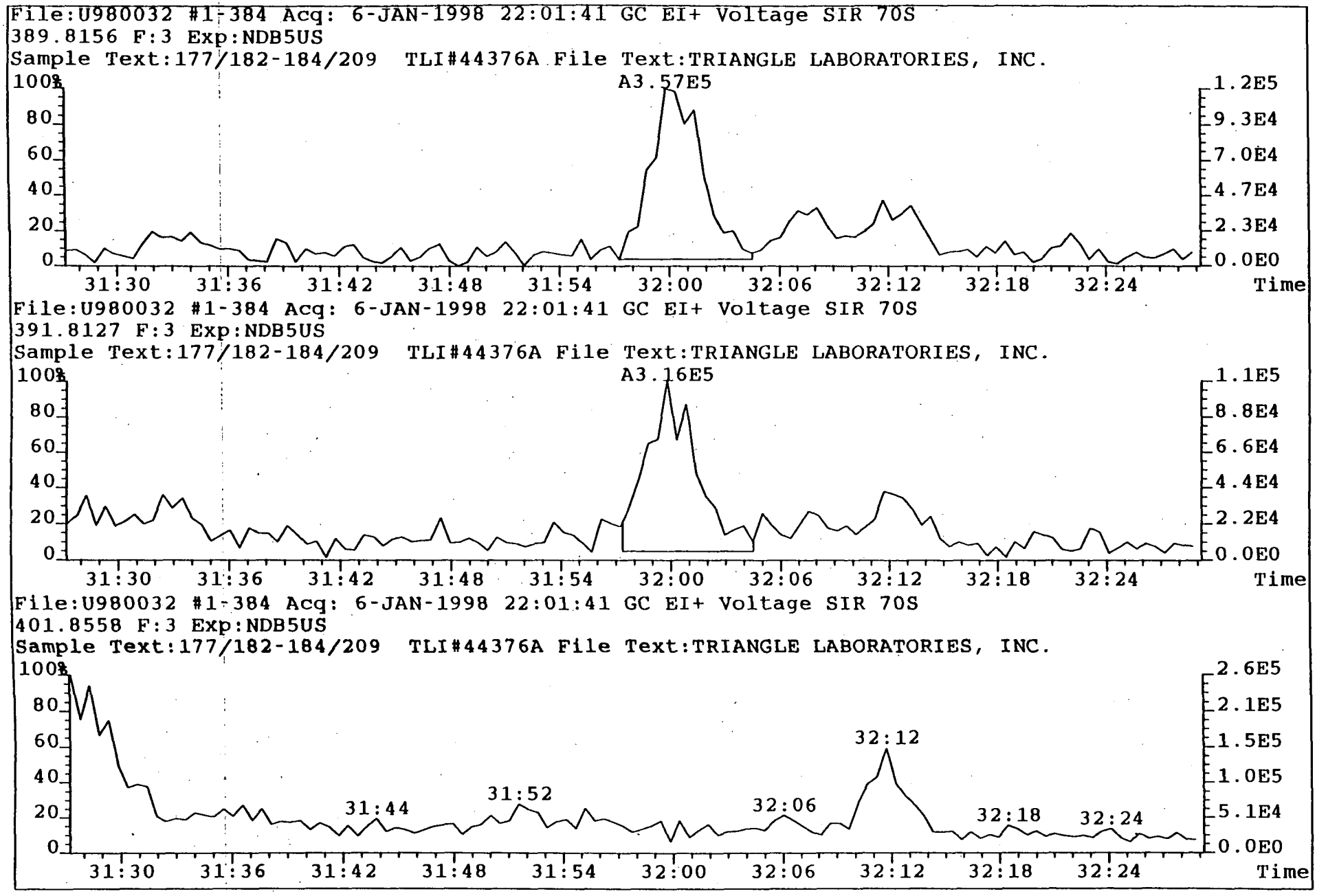
(5x7=4)
7.03
36
1/6/98

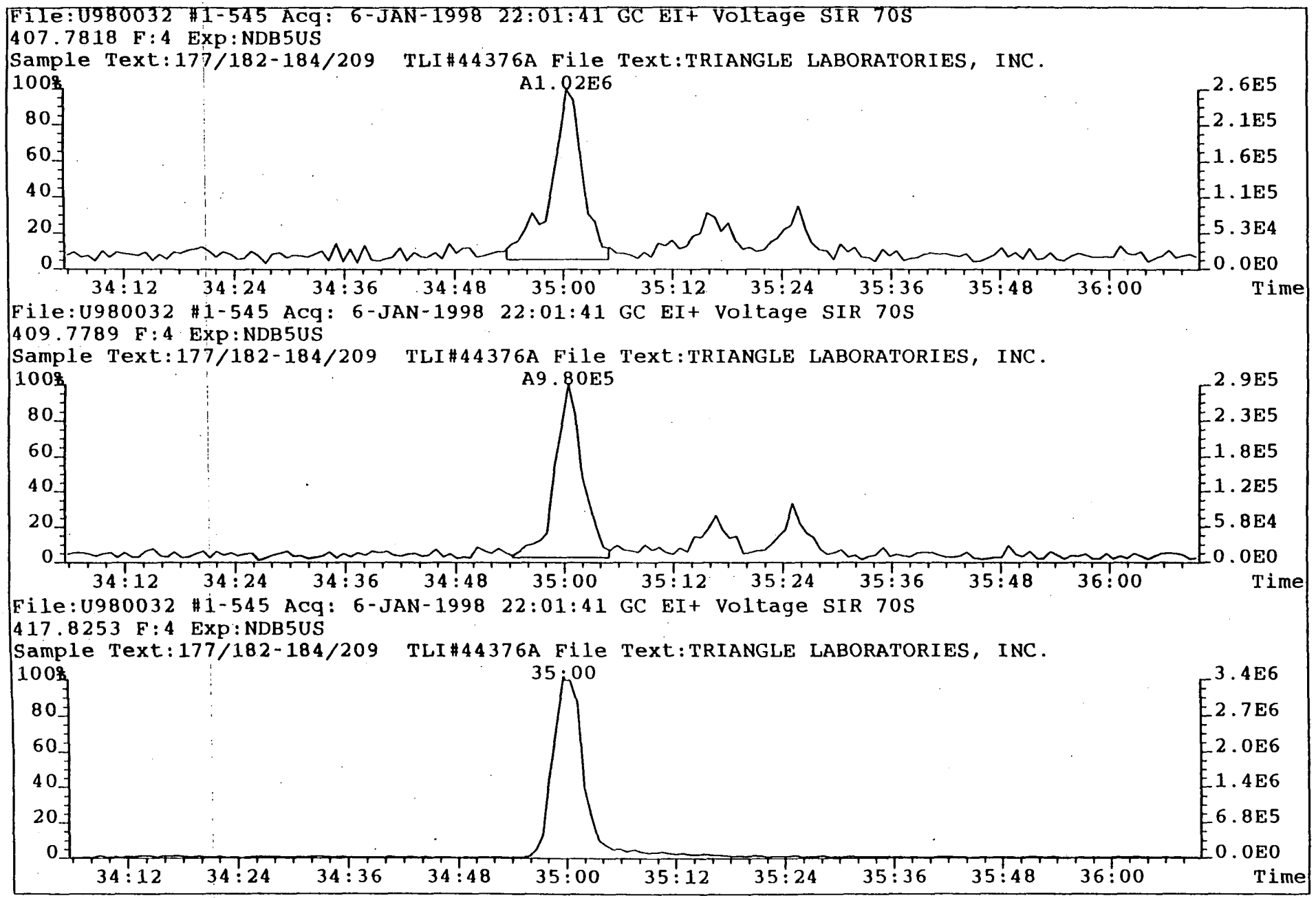

File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
303.9016 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A8.41E5
A4.44E5
2.0E5
1.6E5
1.2E5
7.9E4
3.9E4
0.0E0
23:24 23:36 23:48 24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
305.8987 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.33E6
A5.90E5
2.9E5
2.3E5
1.8E5
1.2E5
5.9E4
0.0E0
23:24 23:36 23:48 24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
315.9419 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
24:36
1.8E7
1.4E7
1.1E7
7.1E6
3.6E6
0.0E0
23:24 23:36 23:48 24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 Time

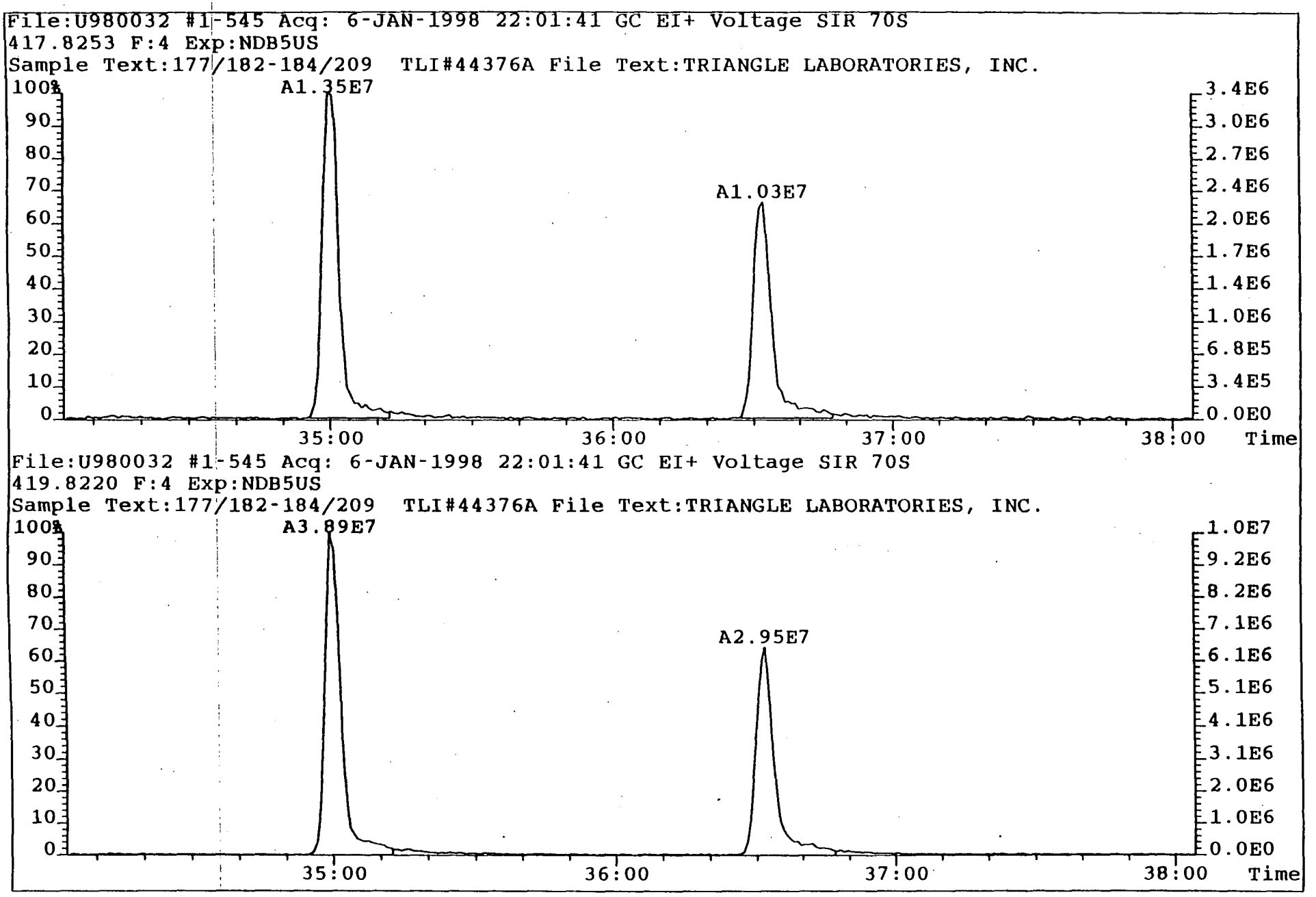

File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.94E5
A3.44E5
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.05E5
A2.53E5
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
28:33
29:14
100%
80
60
40
20
0
28:00
28:12
28:24
28:36
28:48
29:00
29:12
29:24
29:36
29:48
Time
1.3E5
1.0E5
7.8E4
5.2E4
2.6E4
0.0E0
1.0E5
8.1E4
6.1E4
4.0E4
2.0E4
0.0E0
2.7E7
2.2E7
1.6E7
1.1E7
5.4E6
0.0E0

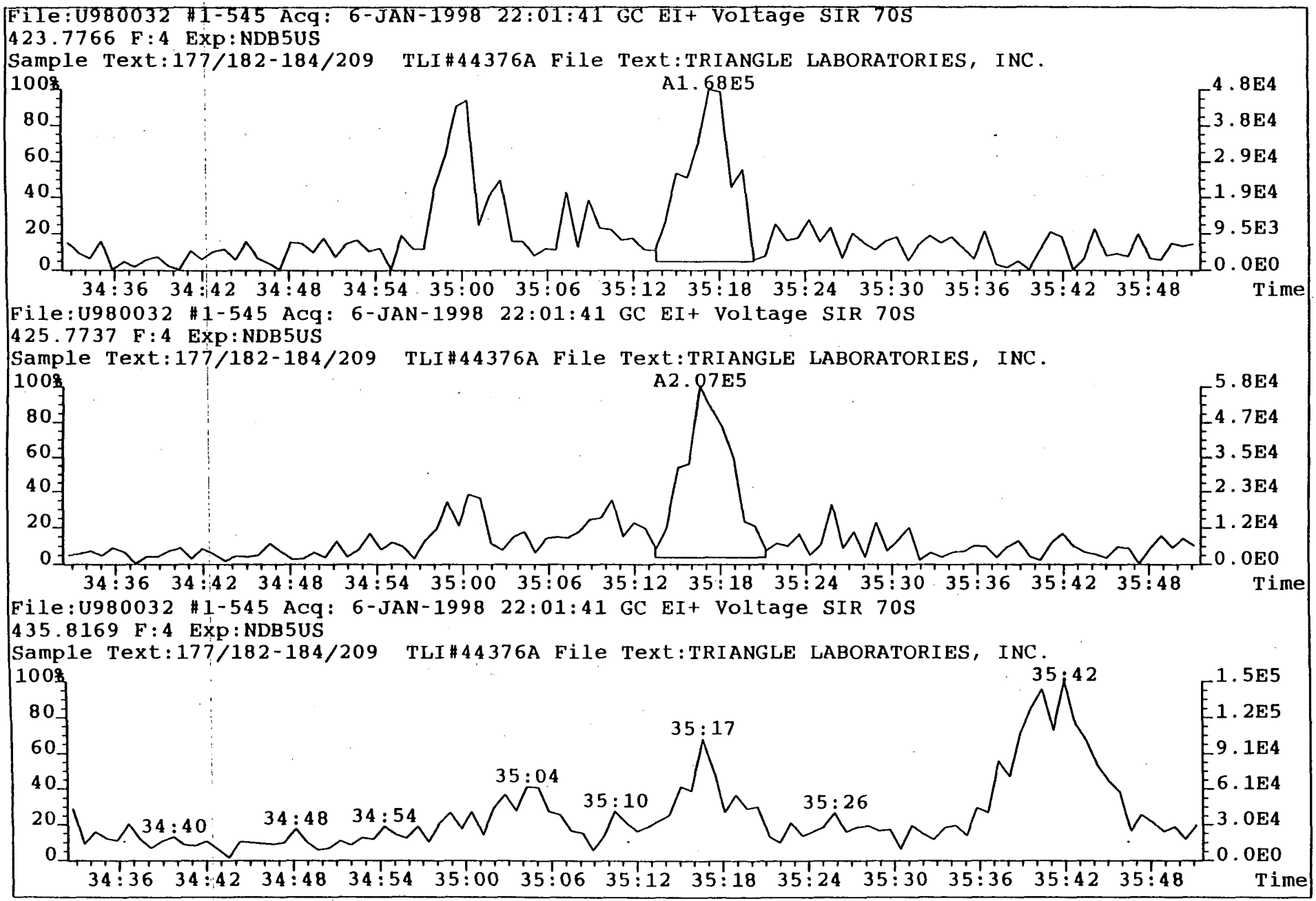

File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
355.8546 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.97E5
100%
80
60
40
20
0
6.2E4
5.0E4
3.7E4
2.5E4
1.2E4
0.0E0
26:48 27:00 27:12 27:24 27:36 27:48 28:00 28:12 28:24 28:36 28:48 29:00 Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
357.8516 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.64E5
100%
80
60
40
20
0
8.3E4
6.7E4
5.0E4
3.3E4
1.7E4
0.0E0
26:48 27:00 27:12 27:24 27:36 27:48 28:00 28:12 28:24 28:36 28:48 29:00 Time
File:U980032 #1-724 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
367.8949 F:2 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
28:30
100%
80
60
40
20
0
6.4E4
5.1E4
3.8E4
2.6E4
1.3E4
0.0E0
26:50
27:02
27:12
27:23
27:33
27:39
27:59
28:20
26:48 27:00 27:12 27:24 27:36 27:48 28:00 28:12 28:24 28:36 28:48 29:00 Time

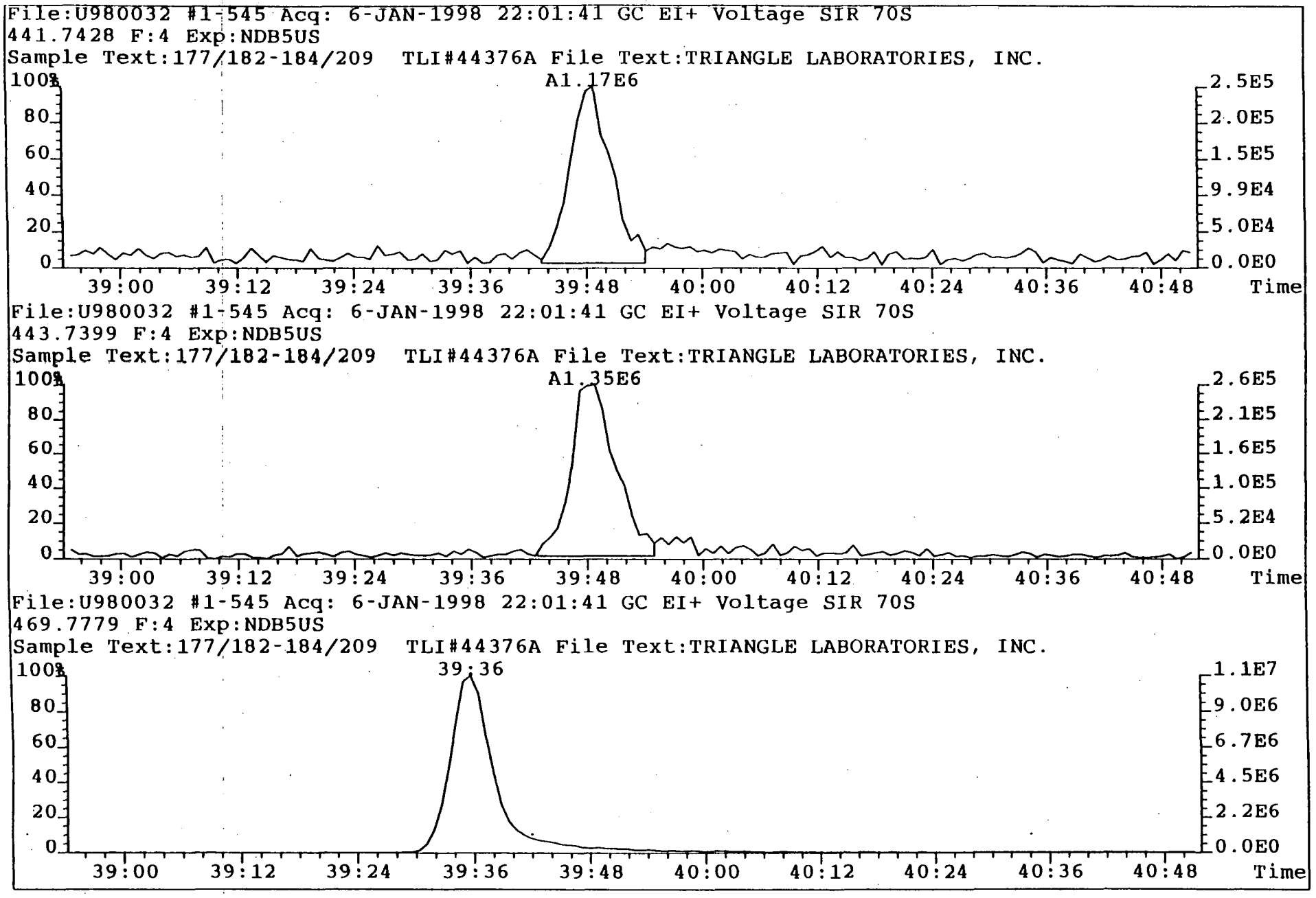

File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A6.61E5
A2.84E5
100%
80
60
40
20
0
2.1E5
1.7E5
1.2E5
8.3E4
4.1E4
0.0E0
31:36
31:42
31:48
31:54
32:00
32:06
32:12
32:18
32:24
Time
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A4.83E5
A2.57E5
1.5E5
1.2E5
9.2E4
6.1E4
3.1E4
0.0E0
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
32:01
32:08
1.4E7
1.1E7
8.1E6
5.4E6
2.7E6
0.0E0


File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
389.8156 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A3.57E5
100%
80
60
40
20
0
1.2E5
9.3E4
7.0E4
4.7E4
2.3E4
0.0E0
31:30 31:36 31:42 31:48 31:54 32:00 32:06 32:12 32:18 32:24 Time
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
391.8127 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A3.16E5
100%
80
60
40
20
0
1.1E5
8.8E4
6.6E4
4.4E4
2.2E4
0.0E0
31:30 31:36 31:42 31:48 31:54 32:00 32:06 32:12 32:18 32:24 Time
File:U980032 #1-384 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
401.8558 F:3 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
31:44
31:52
32:06
32:12
32:18
32:24
2.6E5
2.1E5
1.5E5
1.0E5
5.1E4
0.0E0
31:30 31:36 31:42 31:48 31:54 32:00 32:06 32:12 32:18 32:24 Time


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
407.7818 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.02E6
100%
80
60
40
20
0
2.6E5
2.1E5
1.6E5
1.1E5
5.3E4
0.0E0
34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48 36:00
Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
409.7789 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A9.80E5
100%
80
60
40
20
0
2.9E5
2.3E5
1.8E5
1.2E5
5.8E4
0.0E0
34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48 36:00
Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
417.8253 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
35:00
100%
80
60
40
20
0
3.4E6
2.7E6
2.0E6
1.4E6
6.8E5
0.0E0
34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48 36:00
Time


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
417.8253 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.35E7
A1.03E7
100%
90
80
70
60
50
40
30
20
10
0
3.4E6
3.0E6
2.7E6
2.4E6
2.0E6
1.7E6
1.4E6
1.0E6
6.8E5
3.4E5
0.0E0
35:00
36:00
37:00
38:00
Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
419.8220 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A3.89E7
A2.95E7
100%
90
80
70
60
50
40
30
20
10
0
1.0E7
9.2E6
8.2E6
7.1E6
6.1E6
5.1E6
4.1E6
3.1E6
2.0E6
1.0E6
0.0E0
35:00
36:00
37:00
38:00
Time


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
423.7766 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.68E5
100%
80
60
40
20
0
4.8E4
3.8E4
2.9E4
1.9E4
9.5E3
0.0E0
34:36 34:42 34:48 34:54 35:00 35:06 35:12 35:18 35:24 35:30 35:36 35:42 35:48
Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
425.7737 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A2.07E5
100%
80
60
40
20
0
5.8E4
4.7E4
3.5E4
2.3E4
1.2E4
0.0E0
34:36 34:42 34:48 34:54 35:00 35:06 35:12 35:18 35:24 35:30 35:36 35:42 35:48
Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
435.8169 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
1.5E5
1.2E5
9.1E4
6.1E4
3.0E4
0.0E0
34:40
34:48
34:54
35:04
35:10
35:17
35:26
35:42
34:36 34:42 34:48 34:54 35:00 35:06 35:12 35:18 35:24 35:30 35:36 35:42 35:48
Time


File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
441.7428 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.17E6
100%
80
60
40
20
0
2.5E5
2.0E5
1.5E5
9.9E4
5.0E4
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48 Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
443.7399 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.35E6
100%
80
60
40
20
0
2.6E5
2.1E5
1.6E5
1.0E5
5.2E4
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48 Time
File:U980032 #1-545 Acq: 6-JAN-1998 22:01:41 GC EI+ Voltage SIR 70S
469.7779 F:4 Exp:NDB5US
Sample Text:177/182-184/209 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
39:36
100%
80
60
40
20
0
1.1E7
9.0E6
6.7E6
4.5E6
2.2E6
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48 Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 177/182-184/209 R CK 1 — Analysis File: P980100

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-15A	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.02			0.80	23:06	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	72.0	40%-130%	0.79	23:05	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:55	___

Data Reviewer: _____ 01/09/98

C2NF_PSR v2.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:16 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.22

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980100B.dbf
01/09/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound Name	ID	Flags
TCDF				0.65-0.89						0.792-1.101			
304-306	DC	NL		0:00	RO	1.01	1.79			0.000			
	DC	SN		19:27	RO	1.45	1.42			0.843			
	DC	SN		20:08	RO	2.05	0.76			0.872			
	DC	SN		20:20	RO	1.29	2.46			0.881			
	DC	SN		20:29	RO	2.34	1.20			0.887			
				20:36	RO	0.99	3.08	1.72	1.74	0.892			J
				21:10		0.89	10.60	4.99	5.61	0.917			
				21:36		0.84	5.39	2.46	2.93	0.936			J
	DC	SN		22:08	RO	0.38	1.91			0.959			
	DC	SN		22:21	RO	1.10	0.73			0.968			
	DC	SN		22:59	RO	1.54	1.65			0.996			
M				23:06		0.80	7.60	3.37	4.23	1.001	2378-TCDF	AN	
	DC	SN		23:19	RO	0.99	2.19			1.010			
				23:36	RO	0.96	3.17	1.71	1.79	1.022			J
	DC	SN		24:32	RO	0.43	1.10			1.063			
304-306			5 Peaks				29.84						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	1.01	3.12			0.000			
	DC	WL		21:35	RO	0.63	8.09			0.935			
	DC	WL		21:51		0.78	32.58			0.947			
	DC	WL		22:03	RO	0.52	0.94			0.955			
				23:05		0.79	1,340.63	590.39	750.24	1.000	13C12-2378-TCDF	IS0	
	DC	SN		23:18	RO	3.80	0.73			1.009			
	DC	SN		23:22		0.67	0.97			1.012			
				23:42	RO	0.93	6.39	3.34	3.61	1.027			
	DC	WH		24:09	RO	2.48	1.61			1.046			
	DC	WH		25:09	RO	0.53	8.11			1.090			
316-318			2 Peaks				1,347.02						

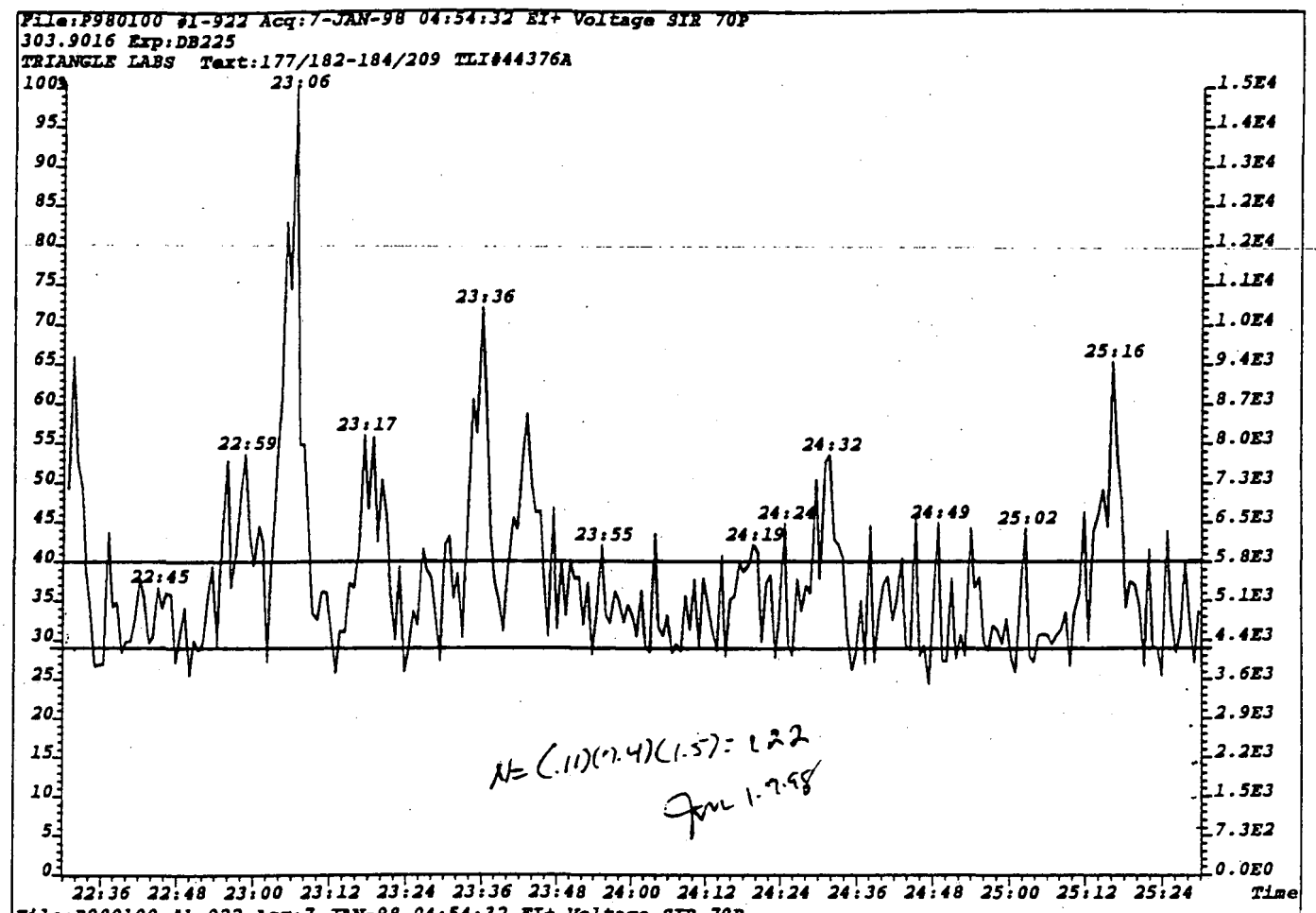
---------- Above: TCDF / TCDD Follows ----------

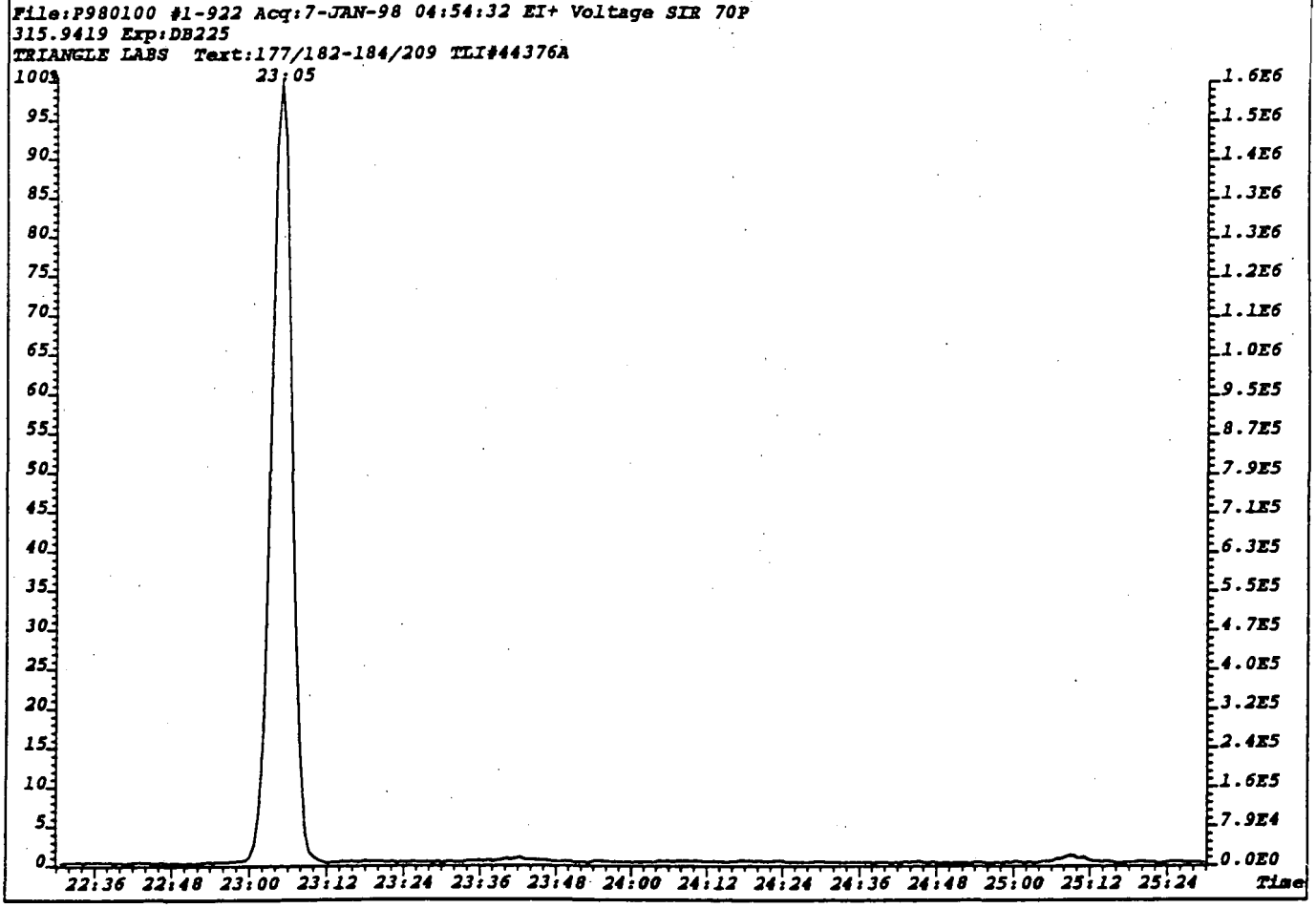
13C12-TCDD				0.65-0.89						0.908-1.092			
332-334	DC	NL		0:00	RO	1.53	1.58			0.000			
				20:28		0.69	6.22	2.53	3.69	0.947			
	DC	SN		20:35	RO	0.34	1.15			0.952			
				21:37		0.79	982.64	434.10	548.54	1.000	13C12-2378-TCDD	IS1	
				21:55		0.80	1,342.00	597.84	744.16	1.014	13C12-1234-TCDD	RS1	
				22:40	RO	1.07	11.29	6.80	6.38	1.049			
332-334			4 Peaks				2,342.15						

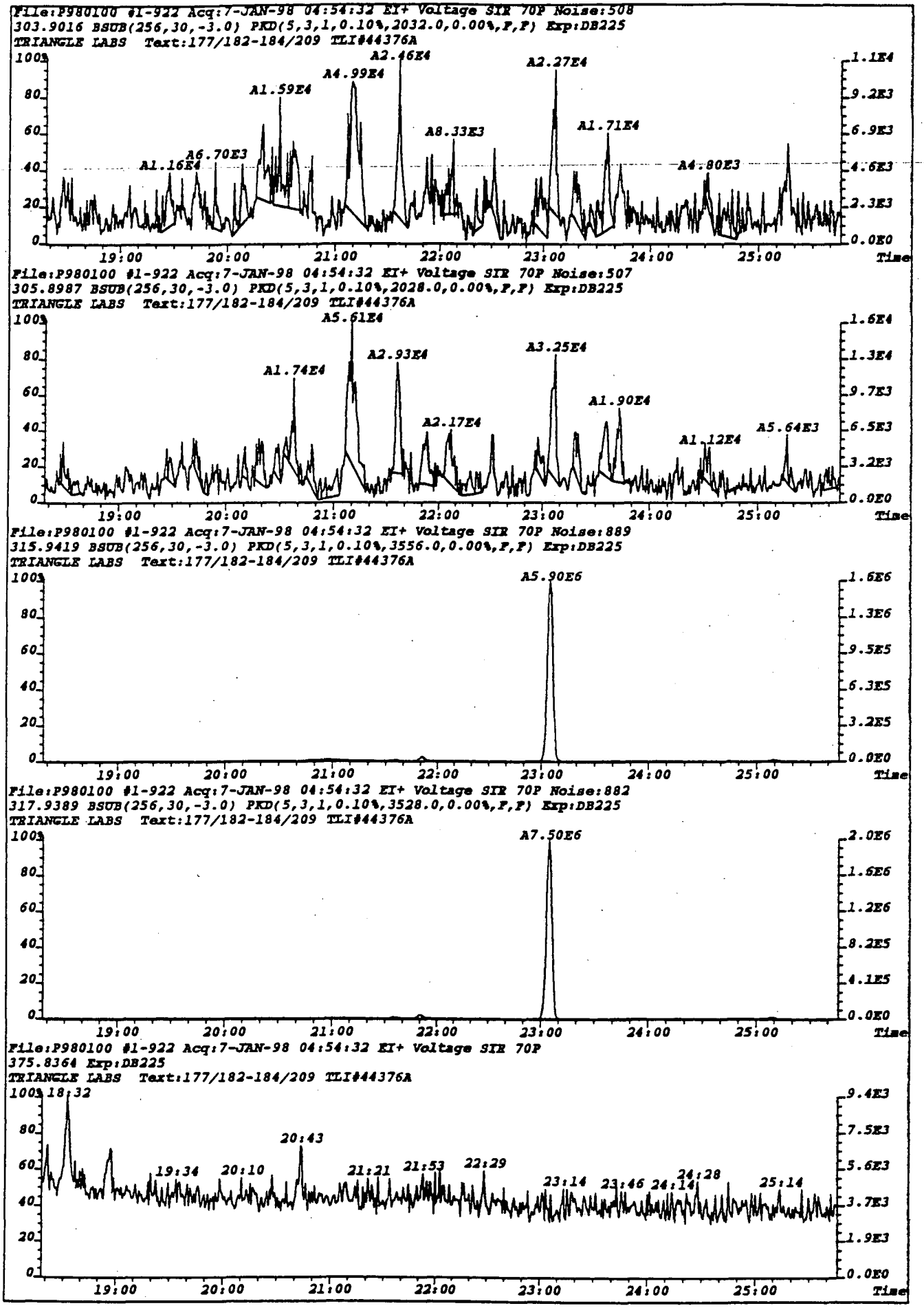
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound Name	ID	Flags

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

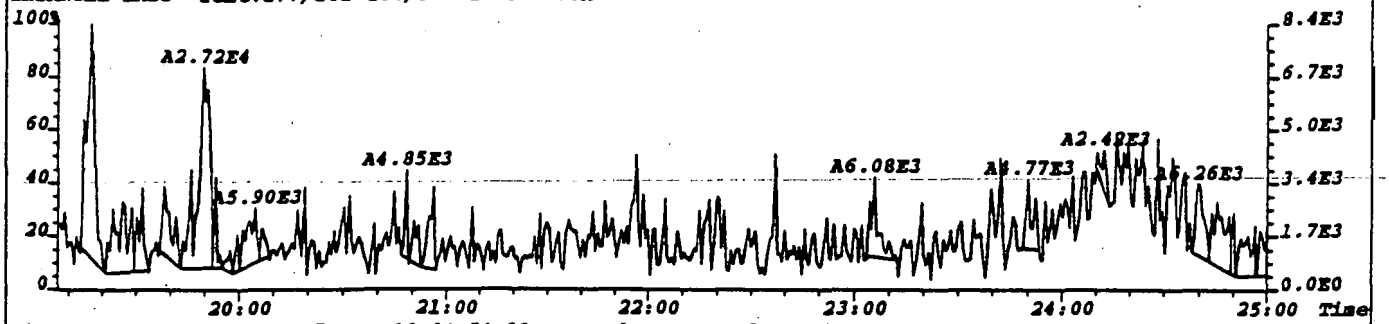
*** End of Report ***


File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
23:06
23:36
25:16
23:17
22:59
24:32
24:24
24:49
25:02
23:55
24:19
22:45
N=(.11)(7.4)(1.5)= 1.22
JWL 1.7.98
Time

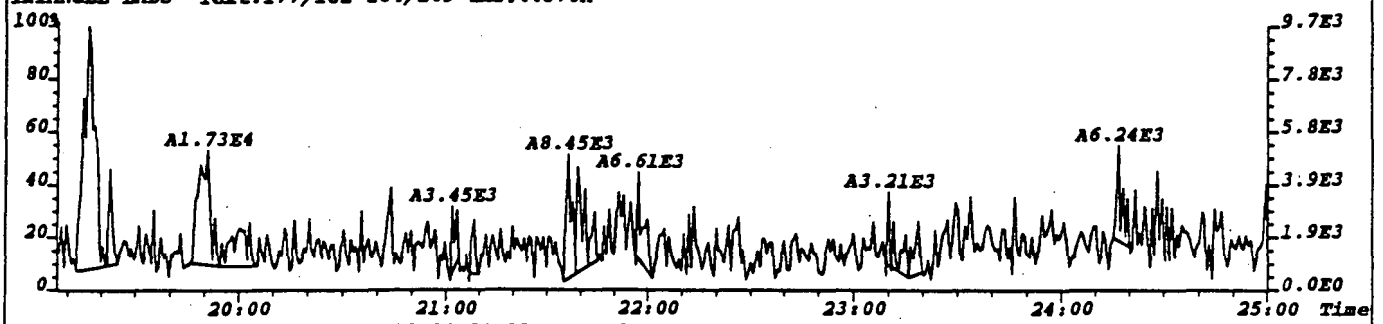

File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
23:05
Time


File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:508
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2032.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.16E4
A6.70E3
A1.59E4
A4.99E4
A2.46E4
A8.33E3
A2.27E4
A1.71E4
A4.80E3
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:507
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2028.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A1.74E4
A5.61E4
A2.93E4
A2.17E4
A3.25E4
A1.90E4
A1.12E4
A5.64E3
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:889
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3556.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A5.90E6
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:882
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3528.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
A7.50E6
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
18:32
19:34
20:10
20:43
21:21
21:53
22:29
23:14
23:46
24:14
24:28
25:14
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time

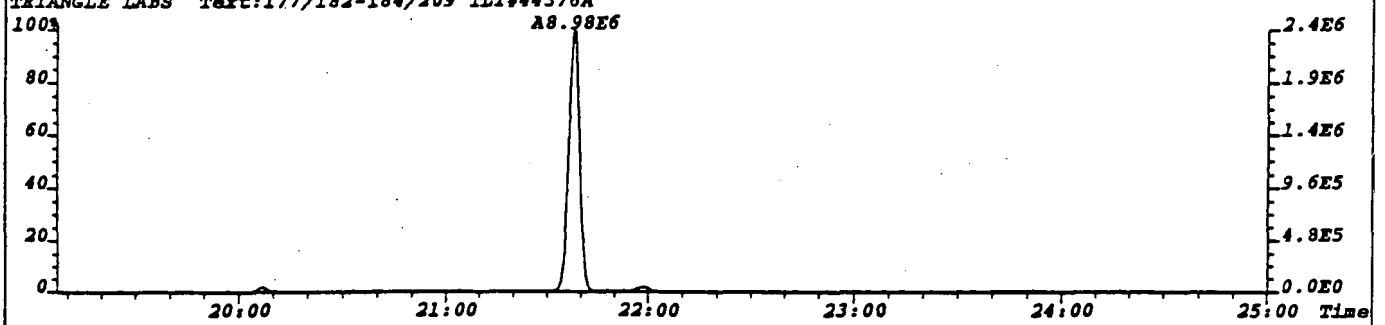
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:410
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1640.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



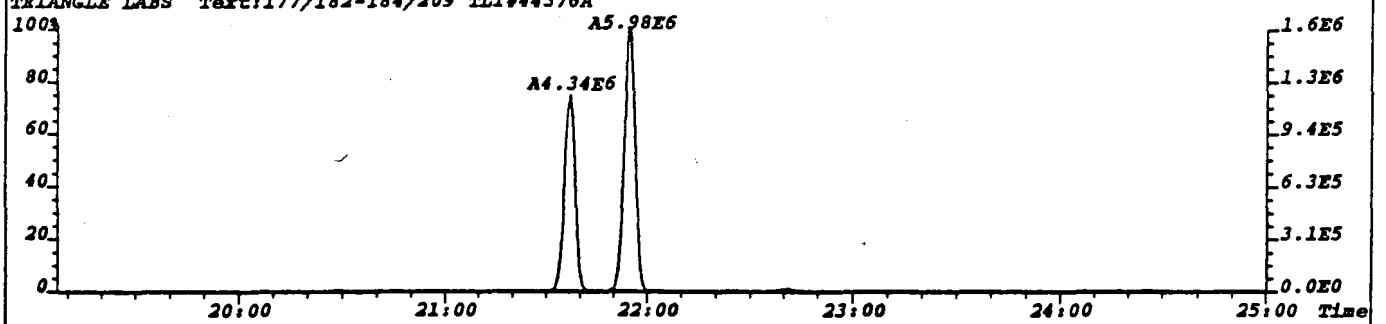
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:442
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1768.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A



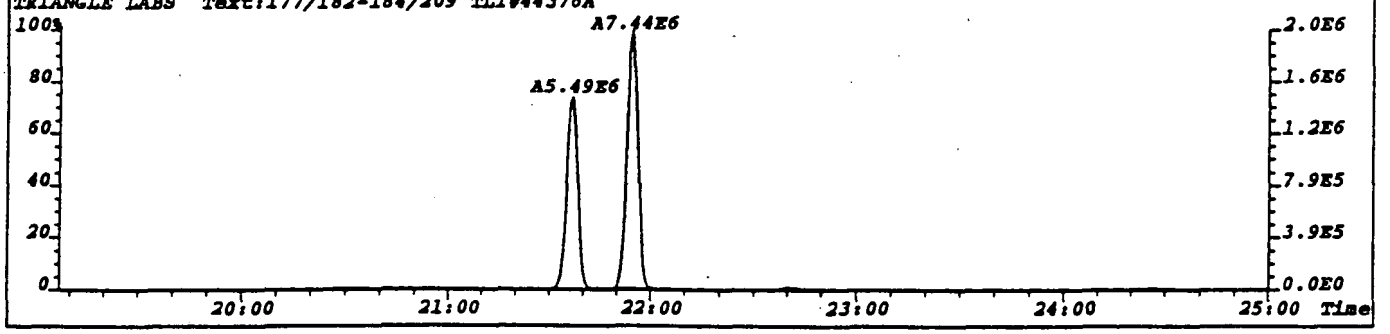
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:505
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2020.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

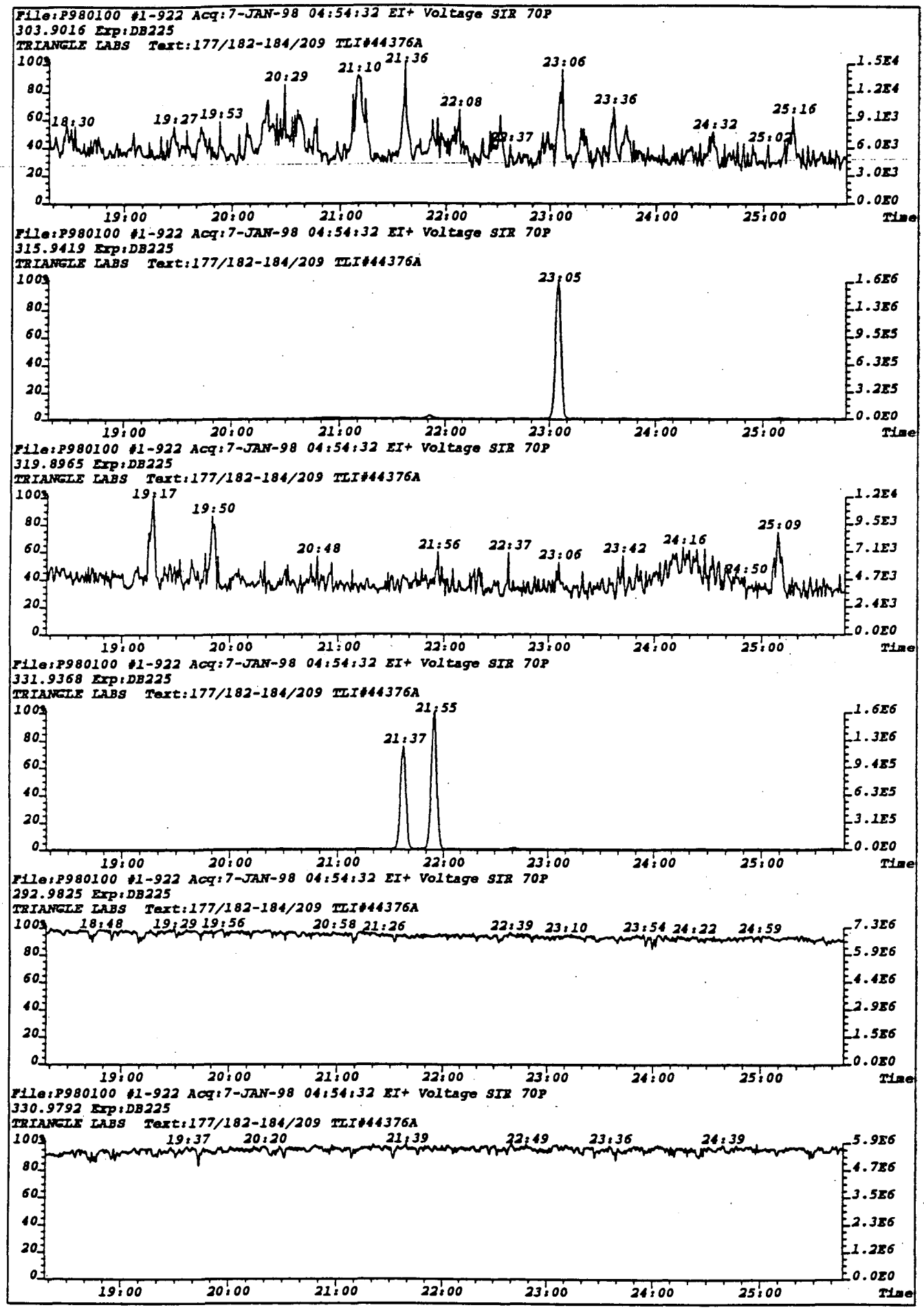


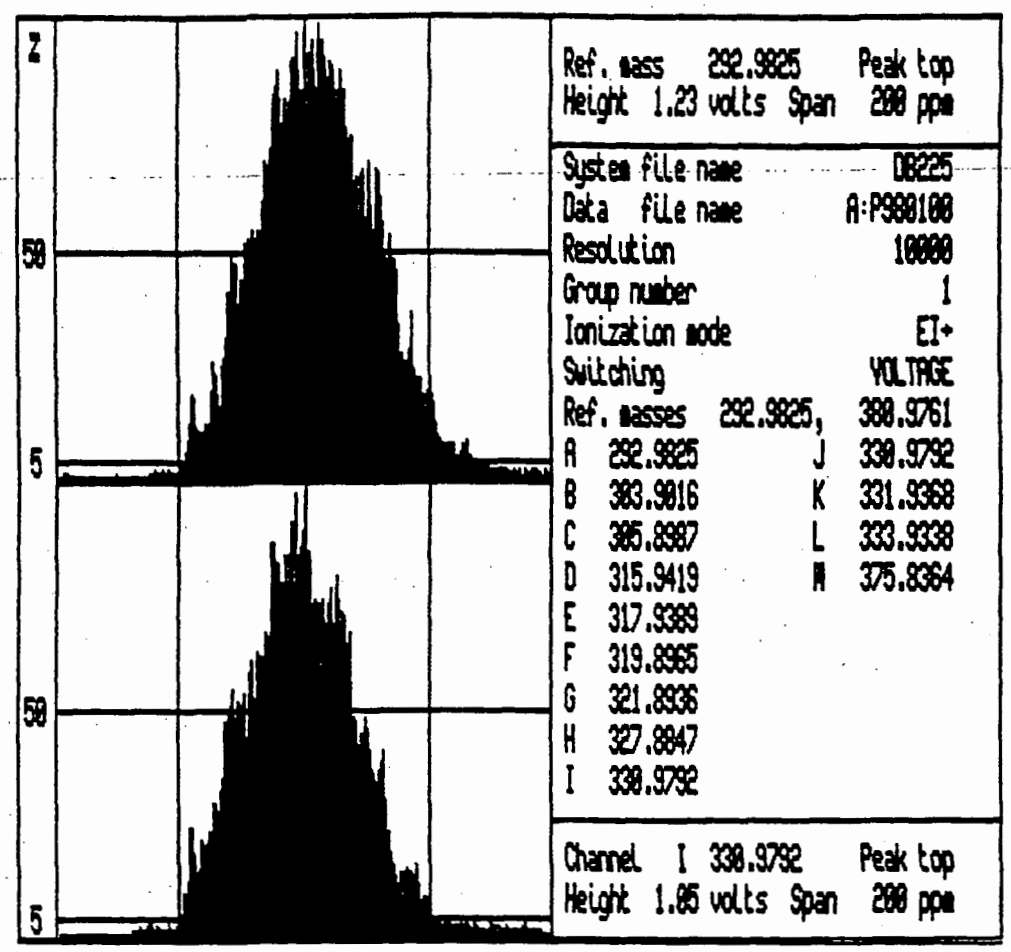
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:678
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2712.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A

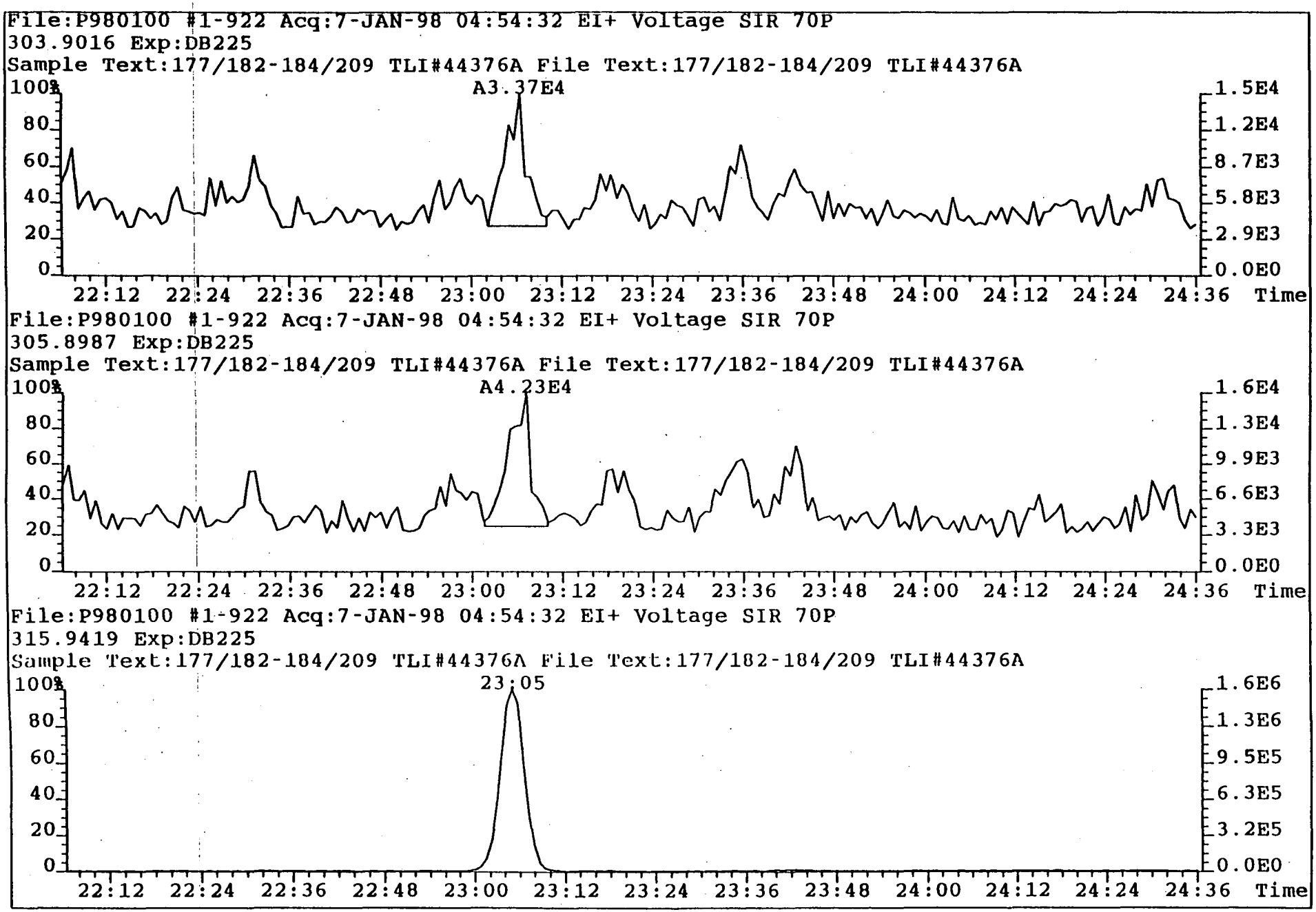


File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P Noise:447
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1788.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A




File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
18:30
19:27
19:53
20:29
21:10
21:36
22:08
22:37
23:06
23:36
24:32
25:02
25:16
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
23:05
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
19:17
19:50
20:48
21:56
22:37
23:06
23:42
24:16
24:50
25:09
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
21:37
21:55
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
18:48
19:29
19:56
20:58
21:26
22:39
23:10
23:54
24:22
24:59
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:177/182-184/209 TLI#44376A
19:37
20:20
21:39
22:49
23:36
24:39
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


%
50
5
50
5
Ref. mass 292.9825 Peak top
Height 1.23 volts Span 200 ppm
System file name DB225
Data file name A:P980108
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height 1.05 volts Span 200 ppm


File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
303.9016 Exp:DB225
Sample Text:177/182-184/209 TLI#44376A File Text:177/182-184/209 TLI#44376A
A3.37E4
100%
80
60
40
20
0
1.5E4
1.2E4
8.7E3
5.8E3
2.9E3
0.0E0
22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 24:36 Time
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
305.8987 Exp:DB225
Sample Text:177/182-184/209 TLI#44376A File Text:177/182-184/209 TLI#44376A
A4.23E4
100%
80
60
40
20
0
1.6E4
1.3E4
9.9E3
6.6E3
3.3E3
0.0E0
22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 24:36 Time
File:P980100 #1-922 Acq:7-JAN-98 04:54:32 EI+ Voltage SIR 70P
315.9419 Exp:DB225
Sample Text:177/182-184/209 TLI#44376A File Text:177/182-184/209 TLI#44376A
23:05
100%
80
60
40
20
0
1.6E6
1.3E6
9.5E5
6.3E5
3.2E5
0.0E0
22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 24:36 Time

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 178-181/226 — Analysis File: U98003

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-15B-D	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.005				__
1,2,3,7,8-PeCDD	ND	0.008				__
1,2,3,4,7,8-HxCDD	ND	0.01				__
1,2,3,6,7,8-HxCDD	0.01			1.16	32:49	J__
1,2,3,7,8,9-HxCDD	EMPC		0.01			J__
1,2,3,4,6,7,8-HpCDD	0.04			0.93	36:03	J__
1,2,3,4,6,7,8,9-OCDD	0.14			0.93	39:36	JB_
2,3,7,8-TCDF	0.07			0.76	24:39	B__
1,2,3,7,8-PeCDF	EMPC		0.02			J__
2,3,4,7,8-PeCDF	0.03			1.42	29:16	J__
1,2,3,4,7,8-HxCDF	0.08			1.36	32:02	J__
1,2,3,6,7,8-HxCDF	0.03			1.32	32:09	J__
2,3,4,6,7,8-HxCDF	0.04			1.36	32:37	J__
1,2,3,7,8,9-HxCDF	ND	0.009				__
1,2,3,4,6,7,8-HpCDF	0.14			0.88	35:01	__
1,2,3,4,7,8,9-HpCDF	ND	0.01				__
1,2,3,4,6,7,8,9-OCDF	0.10			0.83	39:48	J__

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.04	2		0.04	__
Total PeCDD	0.01	1		0.06	__
Total HxCDD	0.03	2		0.10	__
Total HpCDD	0.08	2			__
Total TCDF	0.30	10		0.35	__
Total PeCDF	0.36	10		0.40	__
Total HxCDF	0.28	6		0.31	__
Total HpCDF	0.18	2		0.22	__

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:21 01/10/98

Eastern Research Group

TLI Project: 44376A
Client Sample: 178-181/226

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980033

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.4	60.5	40%-130%	0.76	24:36	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.5	63.7	40%-130%	0.80	25:19	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.4	59.5	40%-130%	1.50	28:34	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.7	67.7	40%-130%	1.48	29:35	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.6	64.3	40%-130%	0.49	32:08	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.0	75.3	40%-130%	1.18	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.5	63.2	25%-130%	0.42	35:00	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.1	76.3	25%-130%	1.02	36:02	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6.0	75.6	25%-130%	0.85	39:36	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.9	98.4	40%-130%	1.53	29:15	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.7	92.4	40%-130%	0.48	32:02	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.9	97.0	40%-130%	1.30	32:43	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.4	85.2	40%-130%	0.41	36:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.3	83.1	25:20	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.5	63.7	40%-130%	0.49	33:23	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.8	68.9	40%-130%	0.48	32:36	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	25:09	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.22	33:07	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:21 01/10/98

Initial ....Date...

Data Review By: CW 1/10/98 Calculated Noise Area: 8.88

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980033B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.867-1.079			
304-306	DC	NL		0:00		0.81	24.71			0.000			
ND	D	SN		21:27	RO	1.12	46.78			0.872			
K				22:12	RO	0.59	67.90	29.54	50.34	0.902			J
K				22:36		0.70	218.84	90.35	128.49	0.919			J
K				22:56	RO	0.57	122.11	53.12	92.73	0.932			J
K				23:19		0.72	176.24	73.55	102.69	0.948			J
K				23:35		0.81	164.62	73.48	91.14	0.959			J
M				23:48		0.81	177.80	79.80	98.00	0.967			J
M				24:01		0.77	196.60	85.60	111.00	0.976			J
				24:14		0.89	155.96	73.58	82.38	0.985			J
				24:27	RO	0.60	76.34	33.21	55.63	0.994			J
				24:39		0.76	436.37	188.41	247.96	1.002	2378-TCDF	AN	
				25:04		0.81	109.81	49.28	60.53	1.019			J
				25:16		0.77	84.33	36.76	47.57	1.027			J
				26:22		0.70	46.91	19.30	27.61	1.072			J
304-306			13	Peaks			2,033.83						
13C12-TCDF				0.65-0.89						0.959-1.041			
316-318	DC	NL		0:00	RO	1.28	12.64			0.000			
	DC	WL		23:35		0.74	416.06			0.959			
				23:51		0.71	44.54	18.51	26.03	0.970			
				24:13		0.82	147.67	66.56	81.11	0.984			
				24:36		0.76	19,017.23	8,205.13	10,812.10	1.000	13C12-2378-TCDF	IS0	
				25:04	RO	1.94	120.29	131.98	67.96	1.019			
	DC	WH		25:37		0.75	15.52			1.041			
	DC	WH		25:58		0.89	13.23			1.056			
316-318			4	Peaks			19,329.73						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.895-1.047			
320-322	DC	NL		0:00	RO	1.18	5.12			0.000			
KN				22:47		0.79	109.60	48.49	61.11	0.900			J
KN				23:11		0.71	69.15	28.74	40.41	0.916			J
D	D	SN		23:23	RO	1.58	3.24			0.924			
K				24:08	RO	0.64	29.98	13.04	20.33	0.953			J
D	D	SN		24:27		0.69	11.78			0.966			
D	D	SN		24:35	RO	2.41	10.58			0.971			
	DC	SN		24:48	RO	1.22	6.11			0.980			
D	D	SN		25:13		0.73	38.61			0.996			
	DC	SN		25:20	RO	0.22	6.39			1.001	2378-TCDD	AN	
	DC	SN		25:41	RO	1.36	3.59			1.014			
320-322			3	Peaks			208.73						

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
37Cl-TCDD										0.921-1.079			
328	DC	NL		0:00			1.81			0.000			
				23:58			254.56	254.56		0.947			
				25:20			12,670.80	12,670.80		1.001	37Cl-TCDD	CLS	
				25:35			110.58	110.58		1.011			
				25:42			130.90	130.90		1.015			
				25:49			104.66	104.66		1.020			
				25:59			22.08	22.08		1.026			
				26:04			43.97	43.97		1.030			
				26:38			12.24	12.24		1.052			
				26:51			17.32	17.32		1.061			
328			9	Peaks			13,367.11						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334	DC	NL		0:00	RO	2.19	14.53			0.000			
				24:09	RO	1.08	77.24	47.15	43.64	0.954			
				25:09		0.81	21,411.05	9,574.65	11,836.40	0.993	13C12-1234-TCDD	RS1	
				25:19		0.80	15,239.33	6,793.46	8,445.87	1.000	13C12-2378-TCDD	IS1	
				25:39		0.82	602.63	270.80	331.83	1.013			
				25:50	RO	1.02	146.11	83.82	82.55	1.020			
332-334			5	Peaks			37,476.36						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00	RO	0.78	5.53			0.000			
				26:35		1.52	163.33	98.60	64.73	0.931			J
				27:34		1.32	58.77	33.46	25.31	0.965			J
				27:43		1.39	322.20	187.23	134.97	0.970			J
				27:52	RO	1.31	67.35	40.94	31.24	0.975			J
	D	D	SN	28:02	RO	0.48	19.03			0.981			
	M			28:11		1.51	99.50	59.80	39.70	0.987			J
				28:18		1.55	187.95	114.28	73.67	0.991			J
	M			28:30		1.55	76.80	46.70	30.10	0.998			J
	AN			28:35	RO	1.27	60.71	36.90	29.10	1.001	12378-PeCDF	AN	J
				28:44		1.33	60.44	34.53	25.91	1.006			J
				28:52		1.52	102.27	61.75	40.52	1.011			J
	D	D	SN	28:59	RO	0.51	8.34			1.015			
				29:16		1.42	126.65	74.21	52.44	1.025	23478-PeCDF	AN	J
				29:24		1.70	166.85	104.99	61.86	1.029			J
	D	D	SN	29:44	RO	1.23	36.90			1.041			
		DC	SN	29:55	RO	0.22	3.06			1.047			
	D	D	SN	30:14		1.33	22.62			1.058			
340-342			12	Peaks			1,492.82						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354	DC	NL		0:00	RO	11.55	0.56			0.000			
				27:42		1.54	588.08	356.51	231.57	0.970			
				28:34		1.50	14,537.90	8,715.04	5,822.86	1.000	13C12-PeCDF 123	IS2	
				28:50	RO	1.86	385.25	281.03	151.08	1.009			
				29:03	RO	1.86	79.84	58.15	31.31	1.017			
				29:15		1.53	13,822.53	8,351.70	5,470.83	1.024	13C12-PeCDF 234	SUR1	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:35	RO	1.04	194.29	118.10	113.27	1.036			
				29:45		1.62	65.28	40.34	24.94	1.041			
				30:13	RO	1.26	39.93	24.27	19.33	1.058			
352-354			8 Peaks				29,713.10						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.935-1.022			
356-358	DC	NL		0:00	RO	1.27	0.46			0.000			
				27:49	RO	0.95	68.98	41.93	44.22	0.940			J
	DC	SN		27:57	RO	0.65	1.96			0.945			
				28:31	RO	1.83	55.08	39.49	21.60	0.964			J
	DC	SN		28:42	RO	1.11	7.65			0.970			
				28:51		1.78	42.25	27.06	15.19	0.975			J
	DC	SN		29:00	RO	1.26	7.78			0.980			
	DC	SN		29:06	RO	1.18	6.38			0.984			
D	D	SN		29:17	RO	2.08	19.56			0.990			
D	D	SN		29:27	RO	0.85	8.54			0.995			
D	D	SN		29:36	RO	1.22	10.91			1.001	12378-PeCDD	AN	
D	D	SN		29:43	RO	1.25	10.22			1.005			
	DC	SN		30:05	RO	3.32	4.00			1.017			
356-358			3 Peaks				166.31						
13C12-PeCDD						1.32-1.78				0.865-1.135			
368-370	DC	NL		0:00	RO	1.16	0.36			0.000			
				28:31	RO	2.25	14.79	13.05	5.80	0.964			
				28:39	RO	0.97	10.58	6.43	6.63	0.968			
	DC	SN		29:00	RO	2.30	5.69			0.980			
				29:35		1.48	8,550.21	5,099.89	3,450.32	1.000	13C12-PeCDD 123	IS3	
				29:43		1.72	1,242.39	784.80	457.59	1.005			
				30:10	RO	1.02	29.83	18.13	17.72	1.020			
				30:20		1.46	18.92	11.24	7.68	1.025			
				30:28	RO	0.98	16.16	9.82	10.00	1.030			
368-370			7 Peaks				9,882.88						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376	DC	NL		0:00		1.39	17.96			0.000			
				31:04		1.14	123.45	65.88	57.57	0.967			J
				31:13		1.17	247.83	133.83	114.00	0.971			J
D	D	SN		31:23	RO	0.89	14.89			0.977			
				31:30	RO	1.64	20.32	14.92	9.07	0.980			J
				31:41		1.13	23.05	12.25	10.80	0.986			J
	DC	SN		31:47	RO	1.76	3.32			0.989			
				32:02		1.36	228.93	131.74	97.19	0.997	123478-HxCDF	AN	J
				32:09		1.32	92.41	52.59	39.82	1.001	123678-HxCDF	AN	J
				32:16	RO	1.45	24.57	15.88	10.97	1.004			J
				32:25	RO	1.03	36.92	20.44	19.87	1.009			J
M				32:37		1.36	114.70	66.00	48.70	1.015	234678-HxCDF	AN	J
	DC	SN		32:53	RO	6.12	2.67			1.023			
D	D	SN		33:27	RO	2.08	18.48			1.041			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
374-376			9 Peaks				912.18						
13C12-HxCDF				0.43-0.59						0.876-1.124			
384-386	DC	NL		0:00	RO	1.27	8.08			0.000			
				31:04		0.43	74.28	22.29	51.99	0.967			
				31:12		0.46	151.45	47.67	103.78	0.971			
	DC	SN		31:16	RO	0.78	6.54			0.973			
				32:02		0.48	8,645.83	2,806.69	5,839.14	0.997	13C12-HxCDF 478	SUR2	
				32:08		0.49	11,340.31	3,716.34	7,623.97	1.000	13C12-HxCDF 678	IS4	
				32:36		0.48	10,964.58	3,575.22	7,389.36	1.015	13C12-HxCDF 234	ALT2	
				33:12		0.47	32.04	10.23	21.81	1.033			
				33:23		0.49	7,803.98	2,566.97	5,237.01	1.039	13C12-HxCDF 789	ALT1	
				33:47	RO	1.45	7.40	7.11	4.90	1.051			
	DC	SN		33:49	RO	0.65	9.88			1.052			
384-386			8 Peaks				39,019.87						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.014			
390-392	DC	NL		0:00	RO	0.97	9.19			0.000			
				31:34	RO	0.95	21.71	12.02	12.62	0.962			J
				32:01	RO	1.45	97.48	63.08	43.52	0.976			J
	DC	SN		32:08	RO	4.07	5.82			0.980			
				32:13		1.39	45.64	26.54	19.10	0.982			J
				32:49		1.16	22.83	12.28	10.55	1.001	123678-HxCDD	AN	J
	DC	SN		32:59	RO	0.43	2.19			1.006			
M				33:07	RO	1.02	24.39	13.50	13.30	1.010	123789-HxCDD	AN	J
390-392			5 Peaks				212.05						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	1.63	11.22			0.000			
				32:12		1.24	47.12	26.06	21.06	0.982			
				32:43		1.30	6,971.88	3,936.17	3,035.71	0.997	13C12-HxCDD 478	SUR3	
				32:48		1.18	9,821.98	5,313.82	4,508.16	1.000	13C12-HxCDD 678	IS5	
				33:07		1.22	13,104.52	7,214.47	5,890.05	1.010	13C12-HxCDD 789	RS2	
				33:33	RO	7.69	14.60	50.17	6.52	1.023			
402-404			5 Peaks				29,960.10						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	0.72	13.20			0.000			
				35:01		0.88	342.48	160.10	182.38	1.000	1234678-HpCDF	AN	
				35:17		0.93	78.89	38.01	40.88	1.008			J
				35:26	RO	1.24	81.13	49.14	39.77	1.012			J
D	D	SN		36:33		1.07	52.14			1.044	1234789-HpCDF	AN	
408-410			3 Peaks				502.50						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	0.92	14.66			0.000			
				35:00		0.42	6,810.63	2,017.35	4,793.28	1.000	13C12-HpCDF 678	IS6	
				35:25	RO	0.80	49.54	27.50	34.40	1.012			

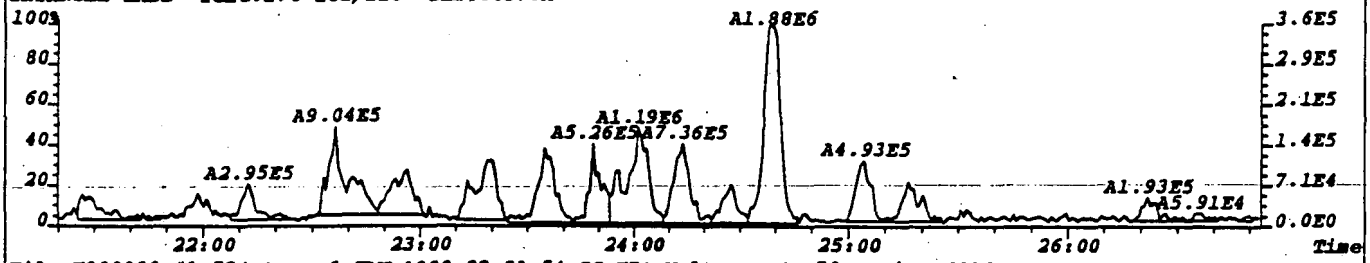
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				36:32		0.41	4,653.39	1,358.87	3,294.52	1.044	13C12-HpCDF 789	SUR4	
		DC	SN	36:59	RO	0.14	14.01			1.057			
418-420			3 Peaks				11,513.56						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.975-1.005			
424-426		DC	NL	0:00	RO	0.82	4.30			0.000			
				35:17		1.02	77.15	38.88	38.27	0.979			J
				36:03		0.93	75.31	36.26	39.05	1.000	1234678-HpCDD	AN	J
		DC	SN	36:19	RO	1.67	3.12			1.008			
	D	DC	NH	36:32	RO	1.79	10.53			1.014			
424-426			2 Peaks				152.46						
13C12-HpCDD						0.88-1.20				0.972-1.028			
436-438		DC	NL	0:00		0.96	19.18			0.000			
				35:17		0.97	48.62	23.93	24.69	0.979			
				36:02		1.02	7,263.48	3,664.67	3,598.81	1.000	13C12-HpCDD 678	IS7	
				36:26		1.05	68.88	35.32	33.56	1.011			
				36:33		1.01	57.06	28.62	28.44	1.014			
436-438			4 Peaks				7,438.04						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.899-1.101			
442-444		DC	NL	0:00		1.02	5.00			0.000			
		DC	SN	36:03		0.99	7.50			0.910			
		DC	SN	36:24		0.92	2.78			0.919			
		DC	SN	36:39	RO	0.44	2.31			0.926			
				39:48		0.83	189.54	85.98	103.56	1.005	OCDF	AN	J
		DC	SN	40:26	RO	0.13	1.72			1.021			
		DC	SN	40:35	RO	0.66	2.38			1.025			
442-444			1 Peak				189.54						
OCDD						0.76-1.02				0.899-1.101			
458-460		DC	NL	0:00	RO	0.04	0.13			0.000			
				39:36		0.93	207.89	100.13	107.76	1.000	OCDD	AN	J
		DC	SN	40:07		0.89	5.49			1.013			
458-460			1 Peak				207.89						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472		DC	NL	0:00	RO	1.10	8.47			0.000			
				39:36		0.85	10,793.67	4,944.64	5,849.03	1.000	13C12-OCDD	IS8	
470-472			1 Peak				10,793.67						

Compound/
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

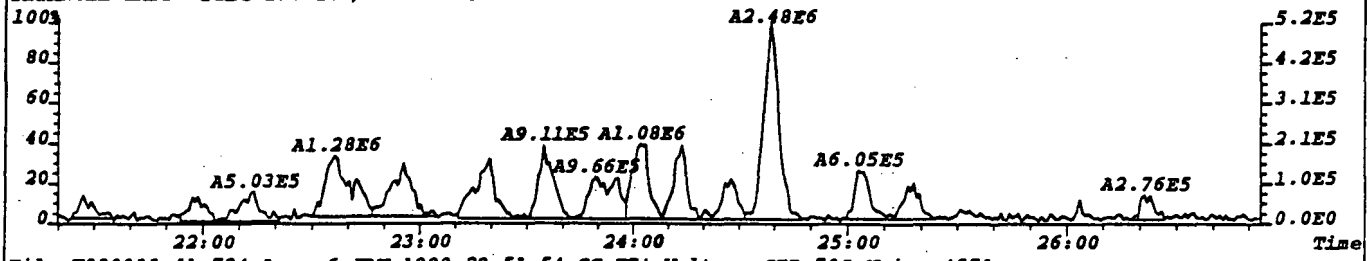
Column Description	"Why" Code Description	QC Log Desc
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

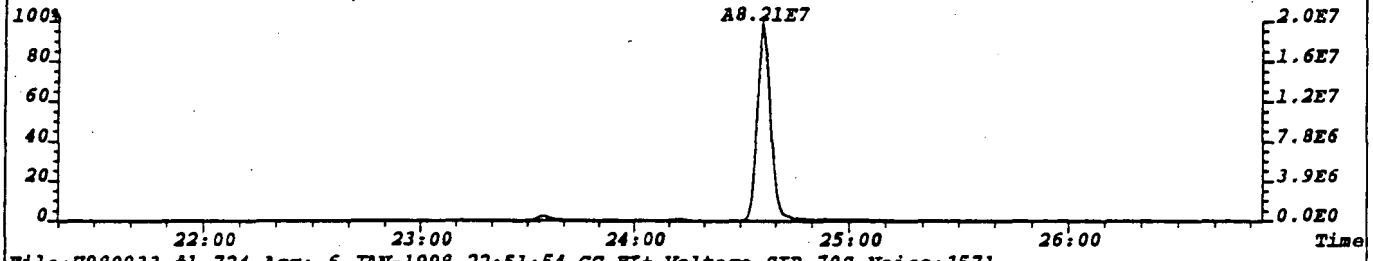
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:5542
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,22168.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



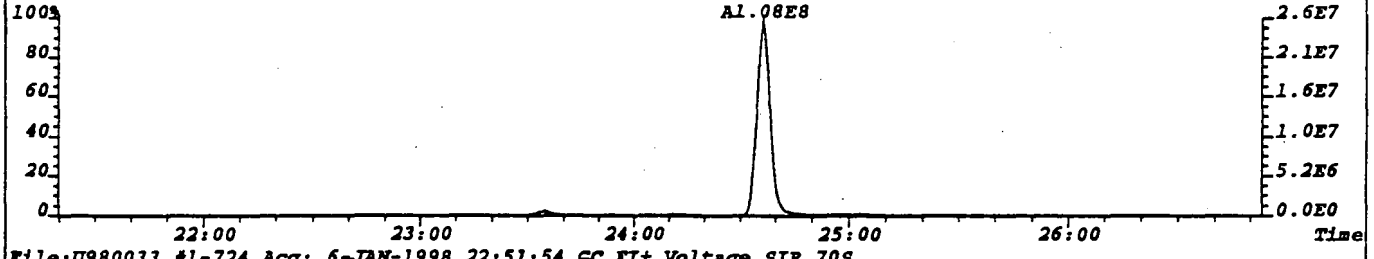
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:6813
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,27252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



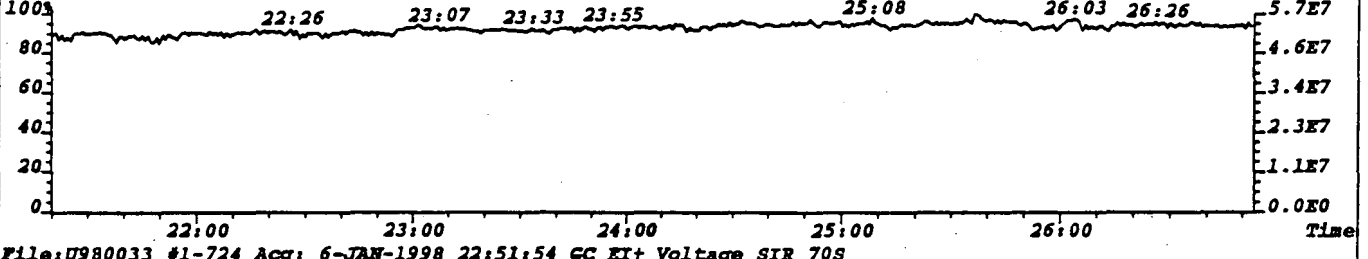
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4571
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,18284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



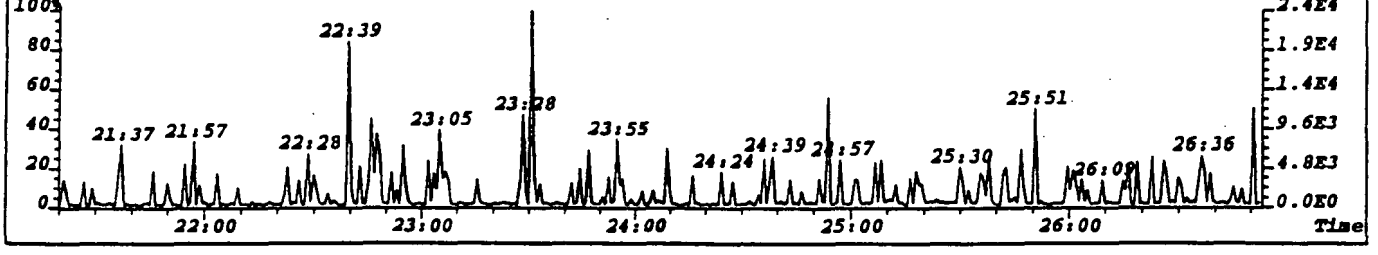
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:3571
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,14284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

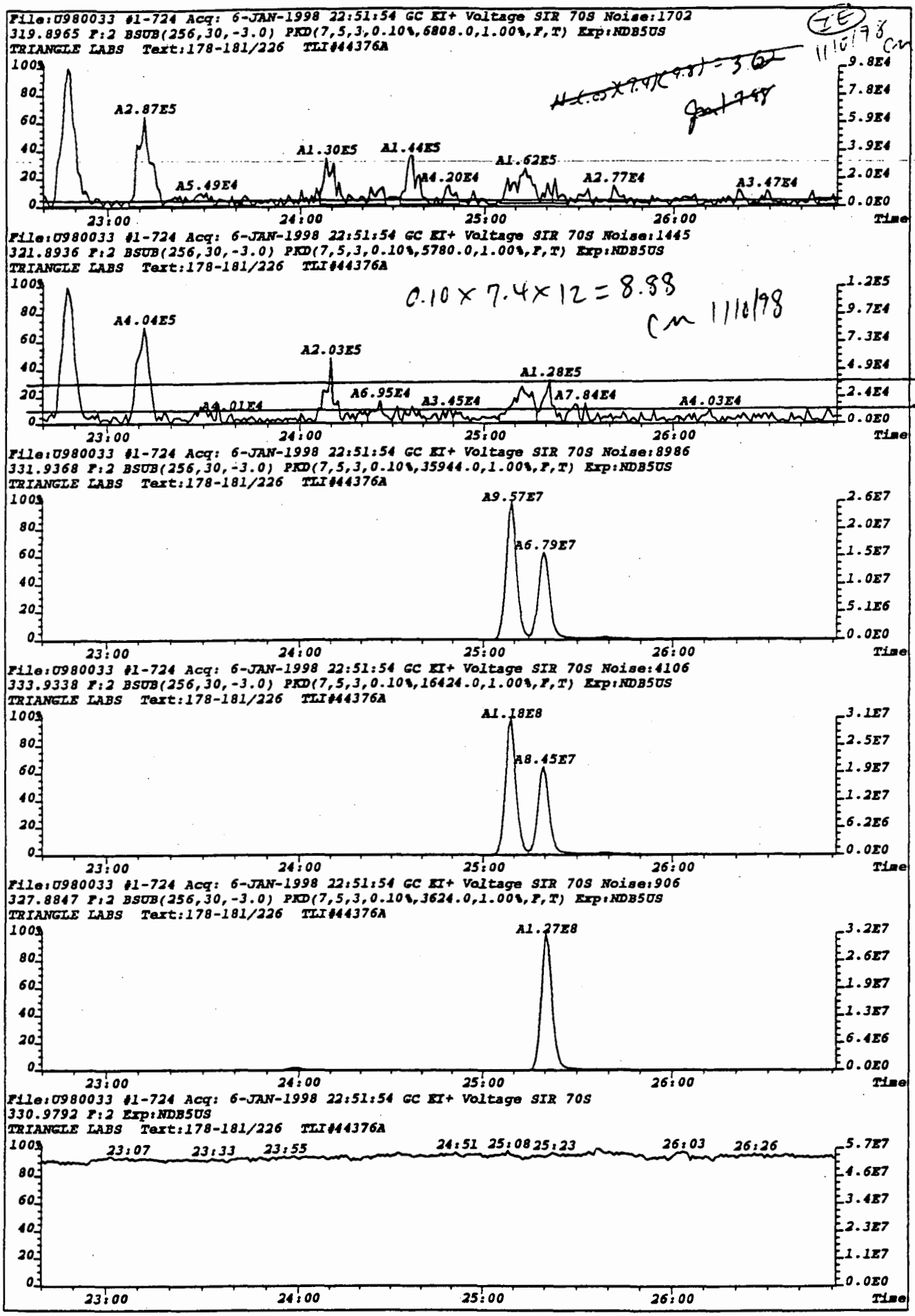


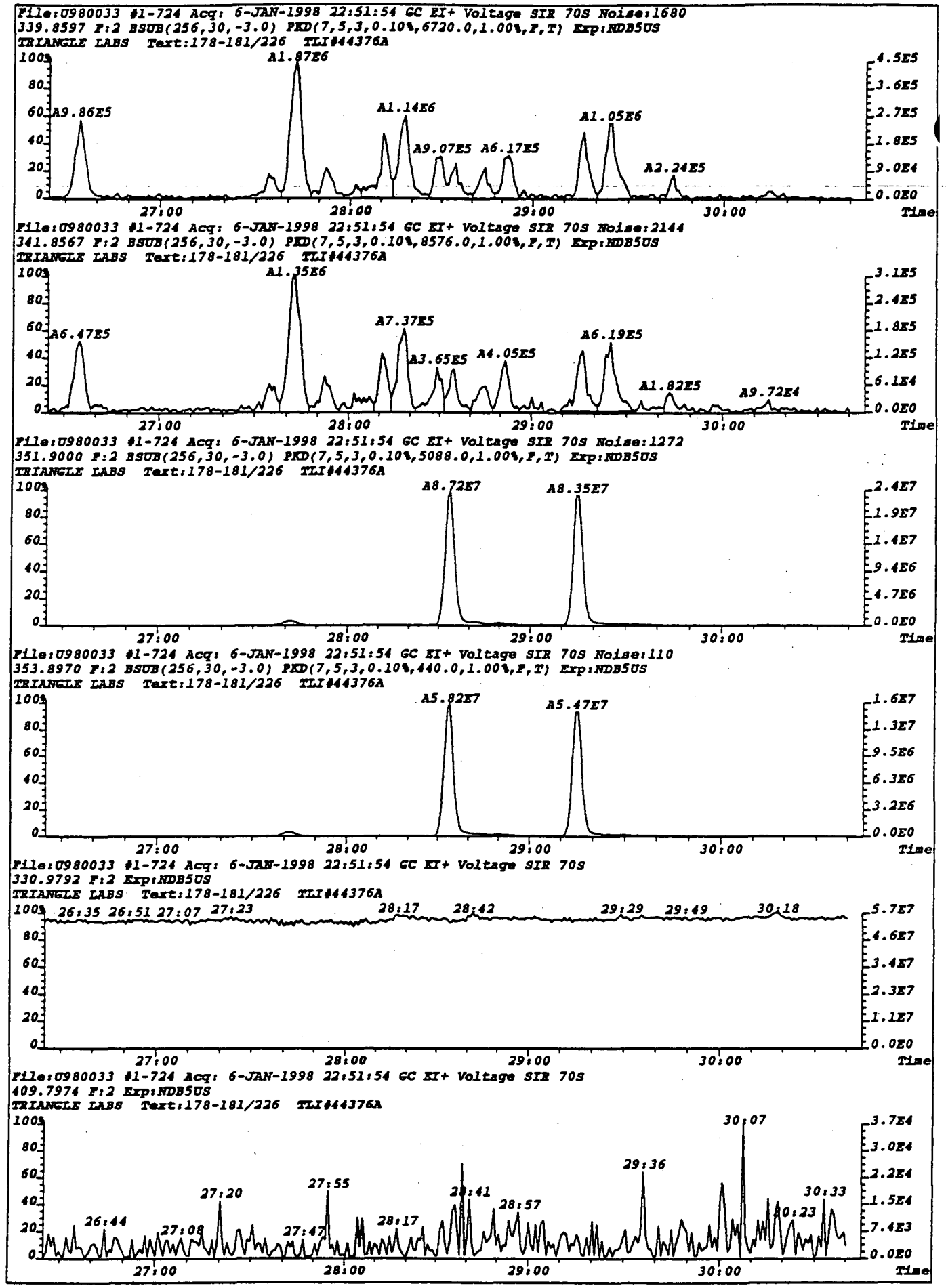
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



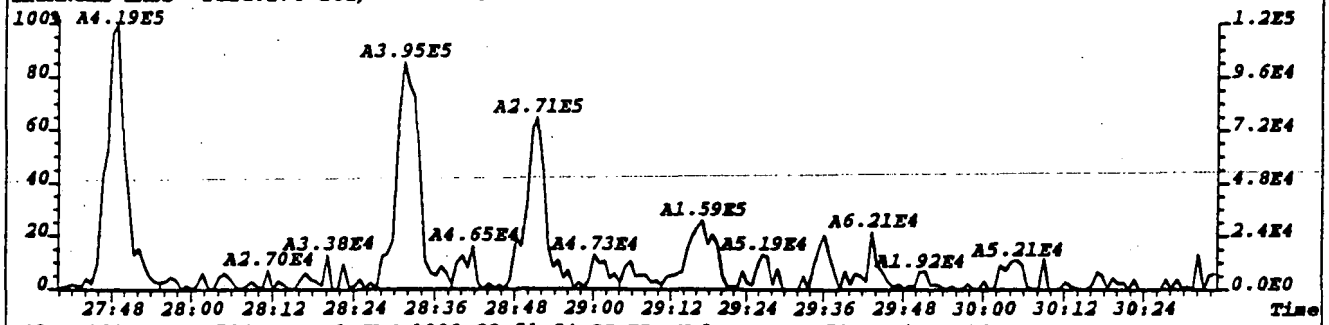
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



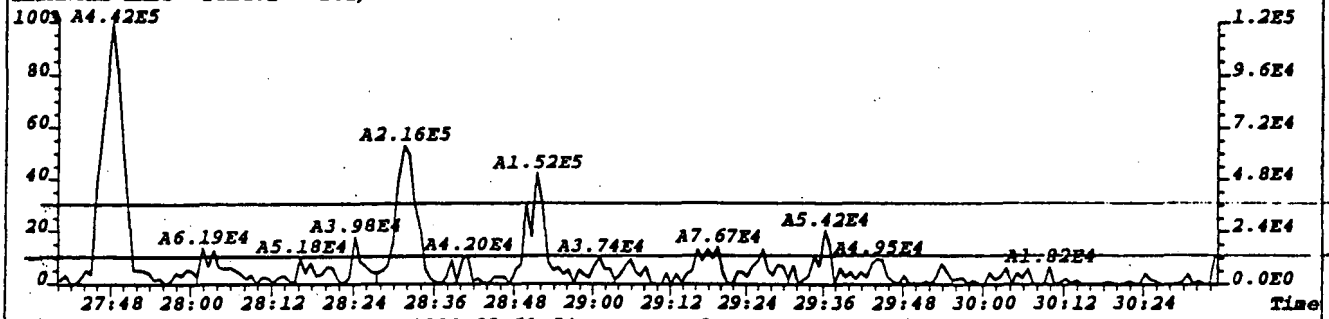

File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1702
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6808.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A2.87E5
A5.49E4
A1.30E5
A1.44E5
A4.20E4
A1.62E5
A2.77E4
A3.47E4
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1445
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5780.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A4.04E5
A4.01E4
A2.03E5
A6.95E4
A3.45E4
A1.28E5
A7.84E4
A4.03E4
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:8986
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,35944.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A9.57E7
A6.79E7
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4106
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,16424.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.18E8
A8.45E7
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:906
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.27E8
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
23:07
23:33
23:55
24:51
25:08
25:23
26:03
26:26
23:00
24:00
25:00
26:00
Time


File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1680
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.87E6
A9.86E5
A1.14E6
A9.07E5
A6.17E5
A1.05E6
A2.24E5
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2144
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8576.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.35E6
A6.47E5
A7.37E5
A3.65E5
A4.05E5
A6.19E5
A1.82E5
A9.72E4
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1272
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5088.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A8.72E7
A8.35E7
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:110
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,440.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A5.82E7
A5.47E7
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
26:35 26:51 27:07 27:23 28:17 28:42 29:29 29:49 30:18
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
26:44 27:08 27:20 27:47 27:55 28:17 28:41 28:57 29:36 30:07 30:23 30:33
27:00 28:00 29:00 30:00 Time

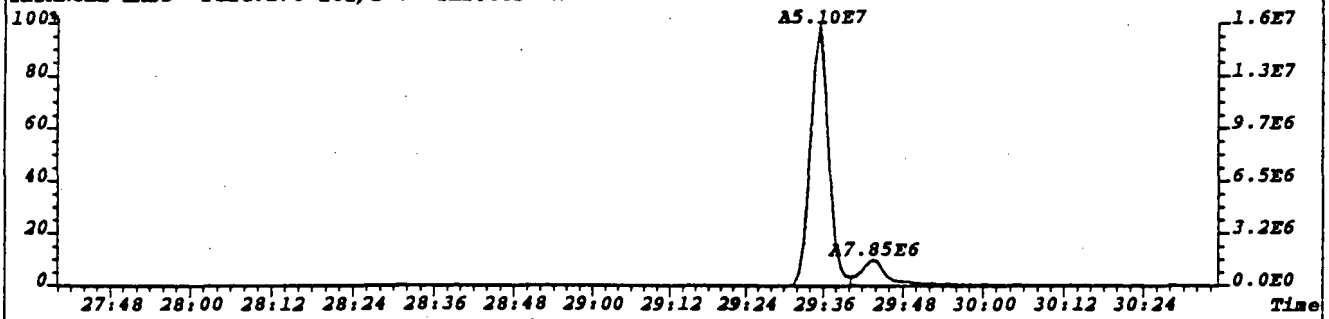
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:142
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



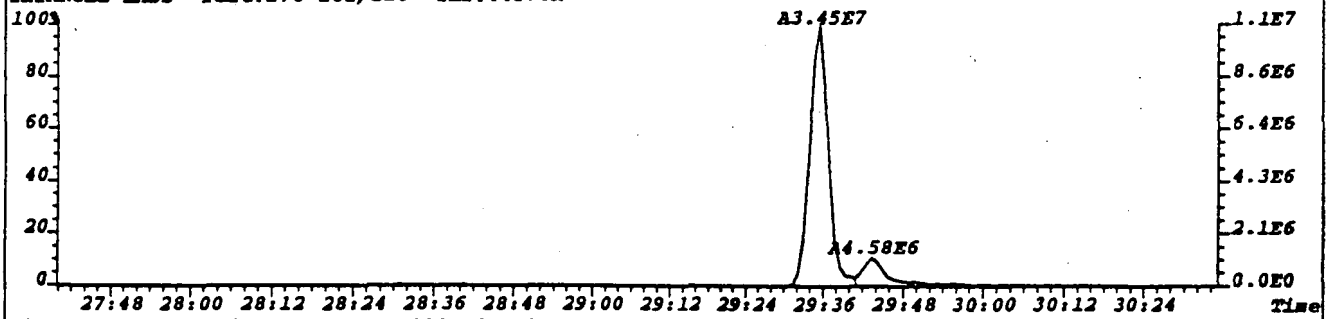
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:112
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



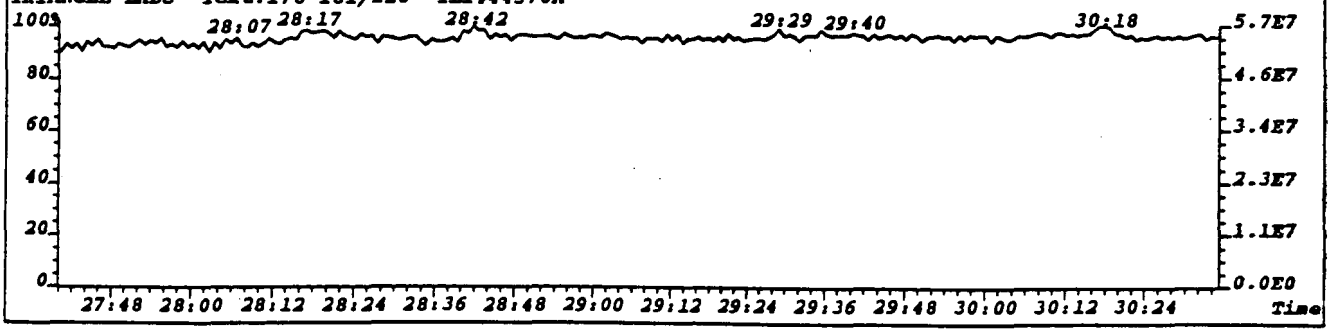
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:108
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,432.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

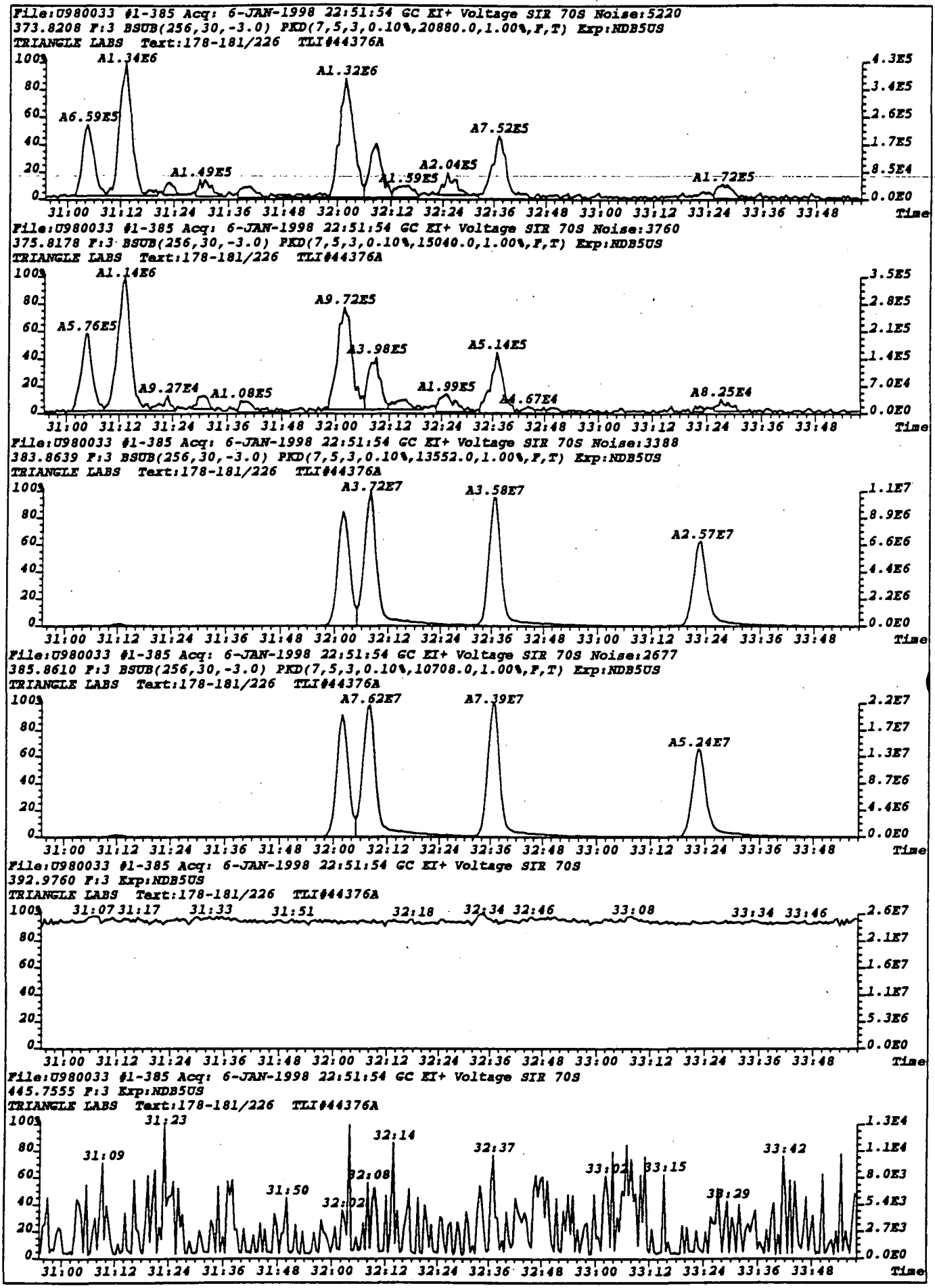


File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:95
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,380.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

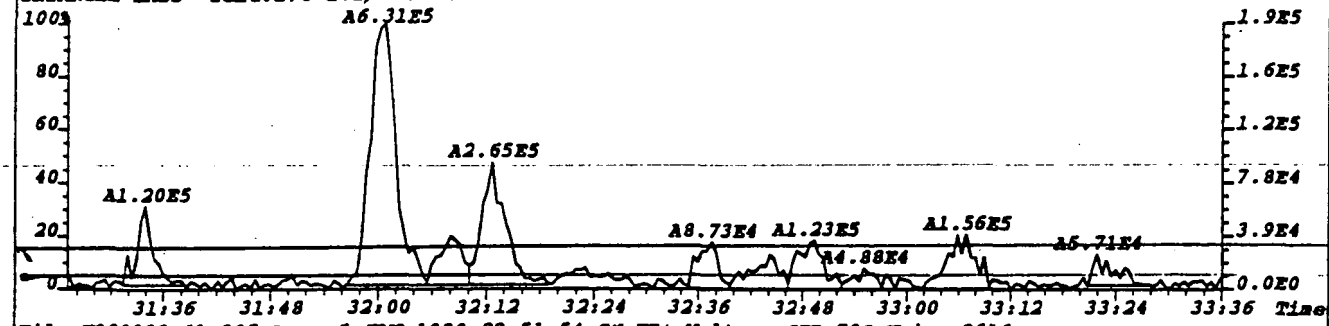


File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

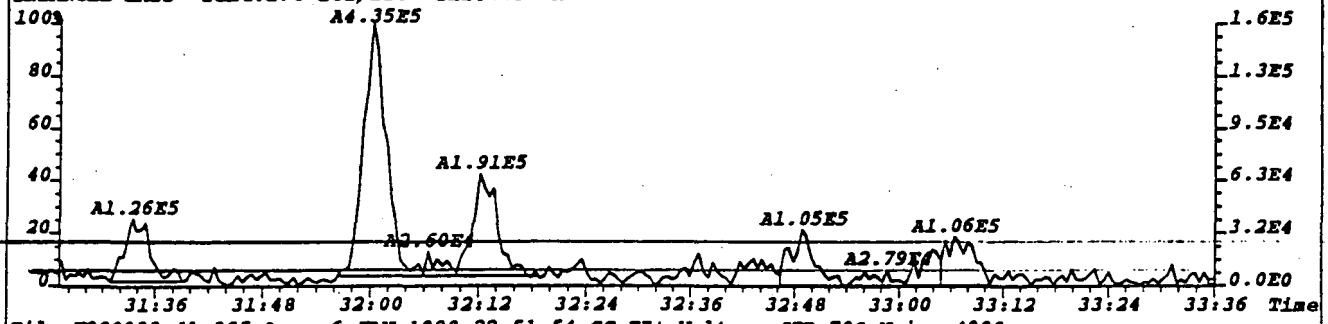



File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:5220
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,20880.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.34E6
A1.32E6
A6.59E5
A7.52E5
A1.49E5
A2.04E5
A1.59E5
A1.72E5
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:3760
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15040.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.14E6
A9.72E5
A5.76E5
A3.98E5
A5.14E5
A9.27E4
A1.08E5
A1.99E5
A4.67E4
A8.25E4
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:3388
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13552.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A3.72E7
A3.58E7
A2.57E7
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2677
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A7.62E7
A7.39E7
A5.24E7
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
31:09
31:23
31:50
32:02
32:08
32:14
32:37
33:02
33:15
33:29
33:42
31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48
Time

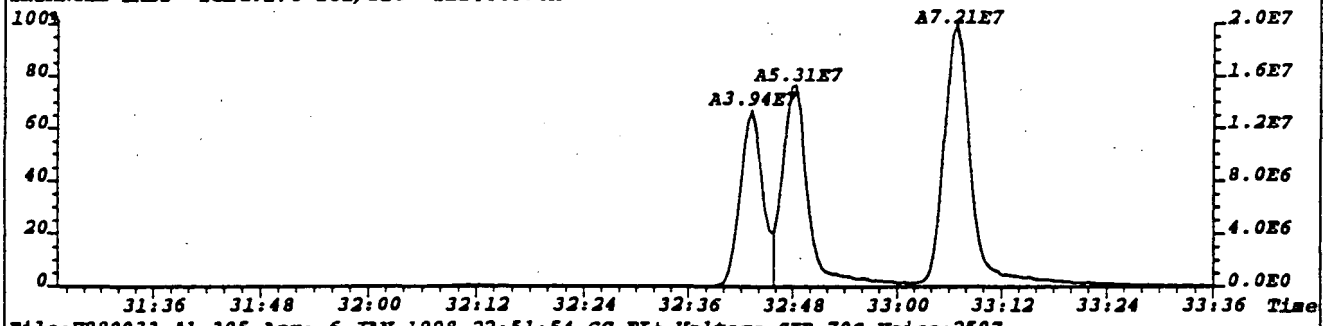
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2547
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10188.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



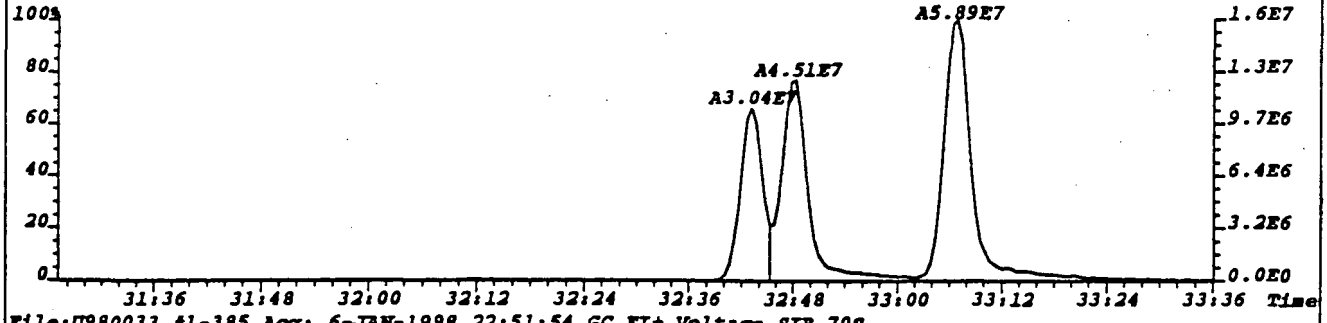
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2616
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10464.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



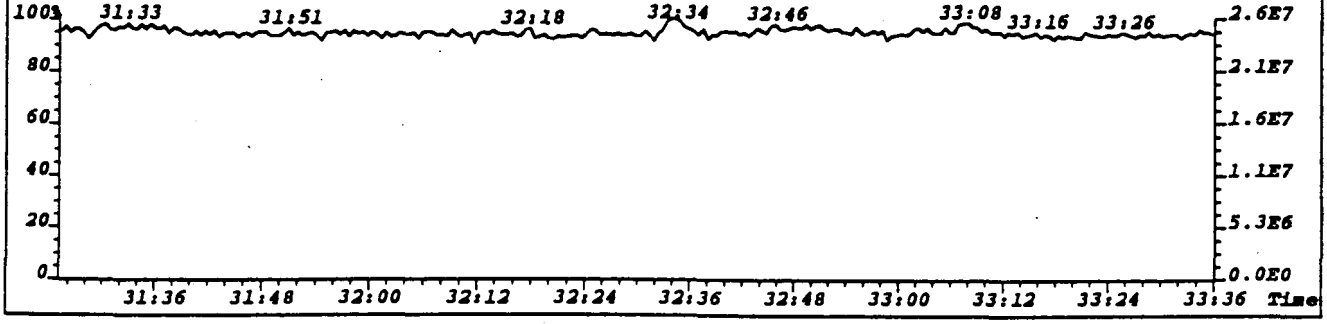
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4088
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,16352.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



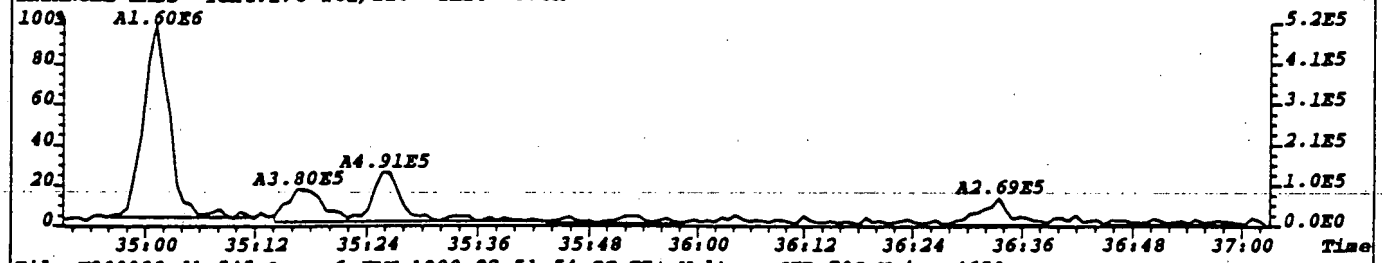
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2507
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10028.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



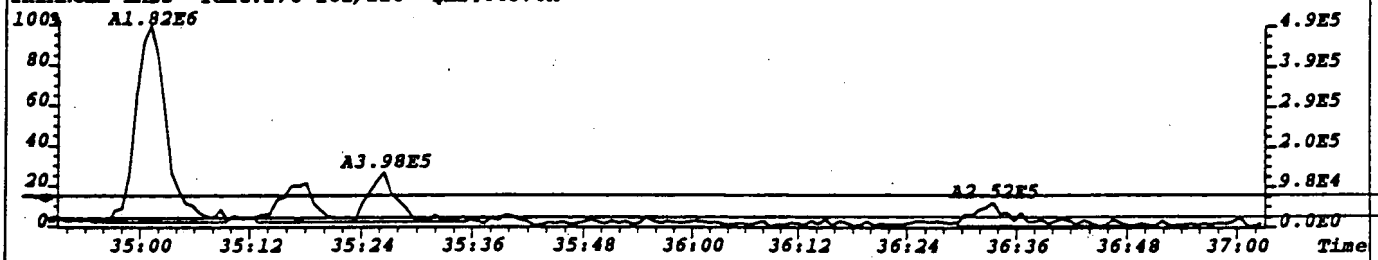
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



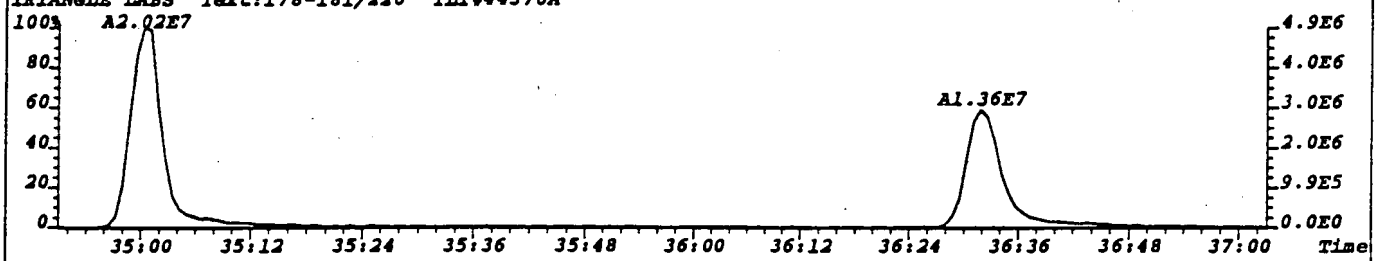
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:3367
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13468.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



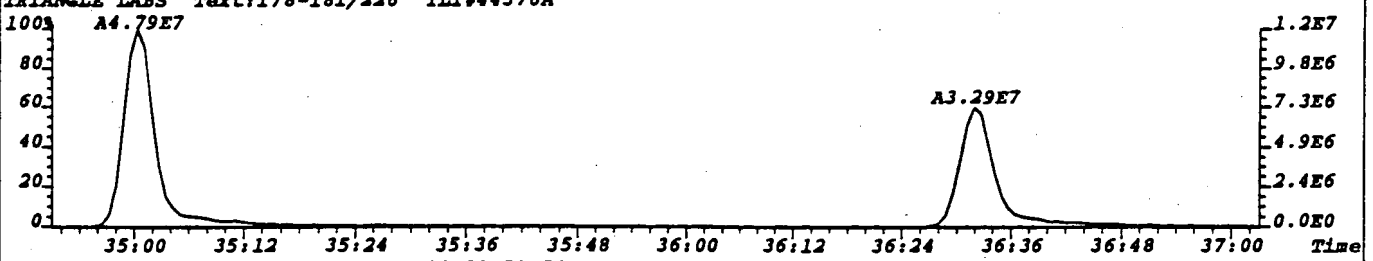
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4650
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18600.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



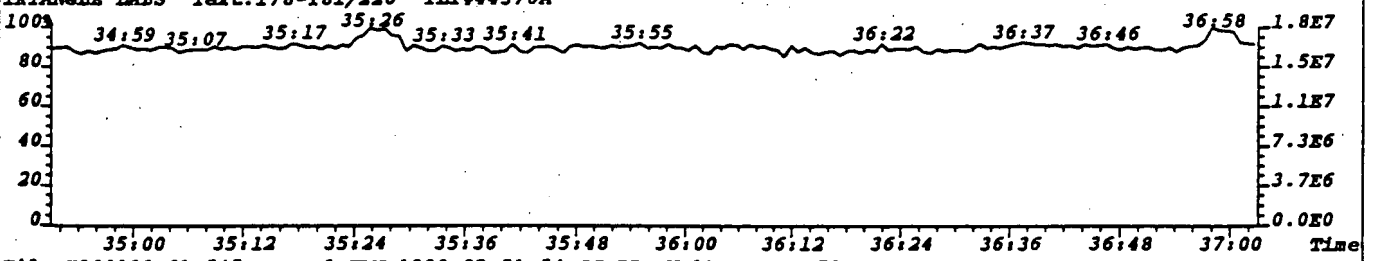
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4667
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18668.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



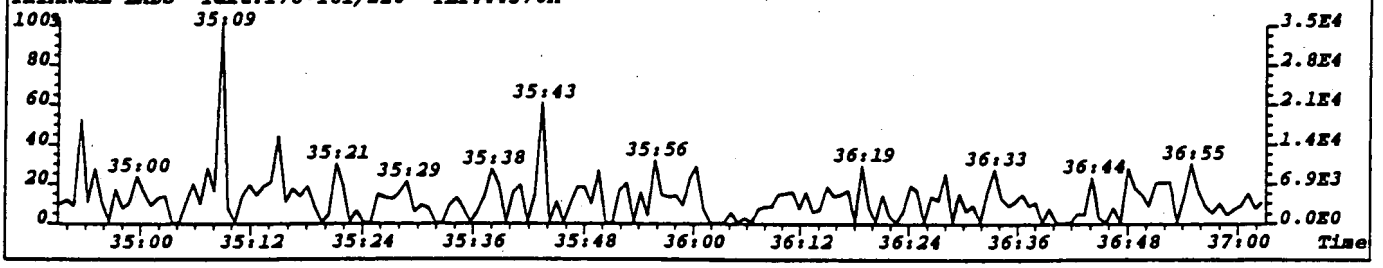
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:5092
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,20368.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

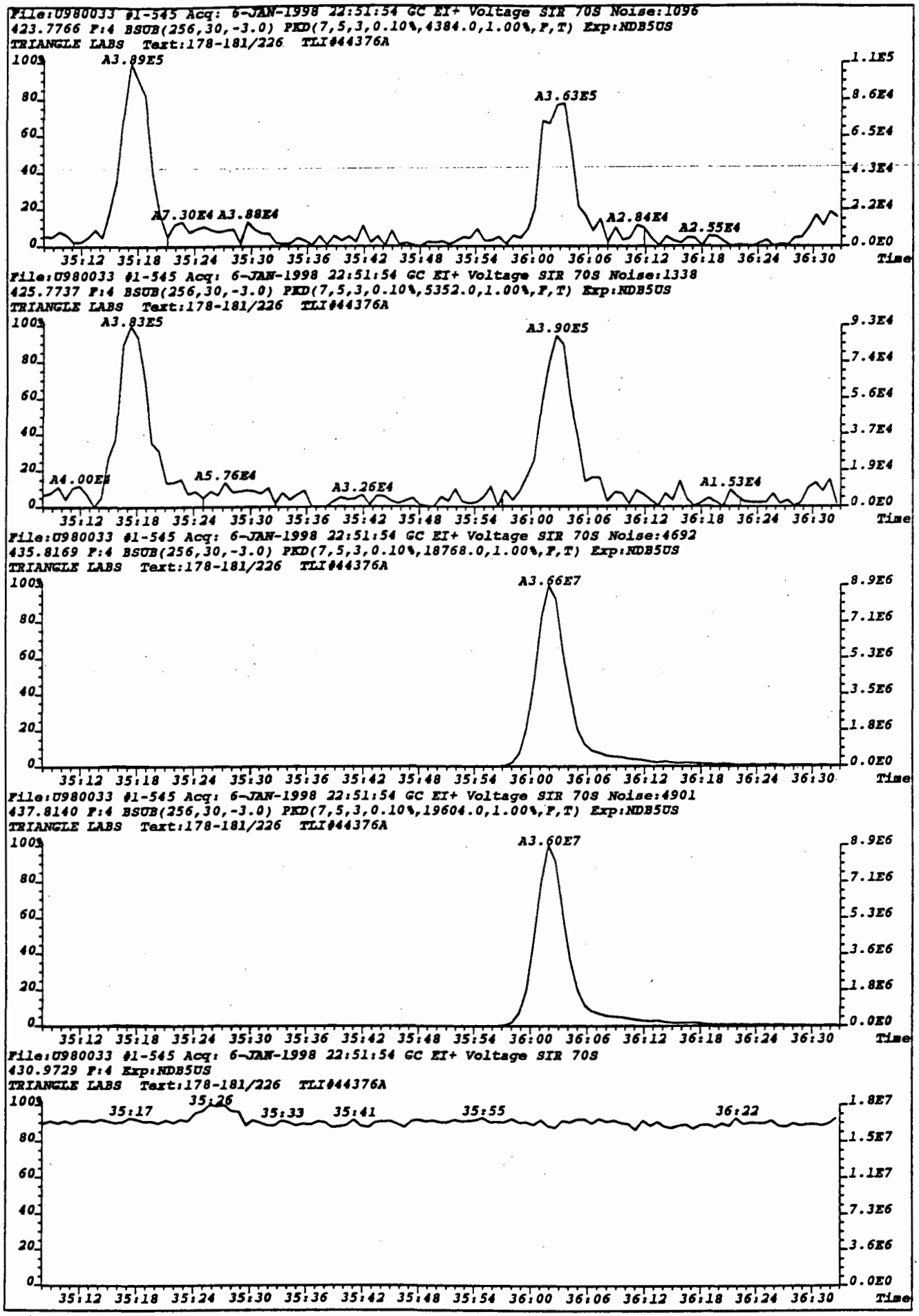


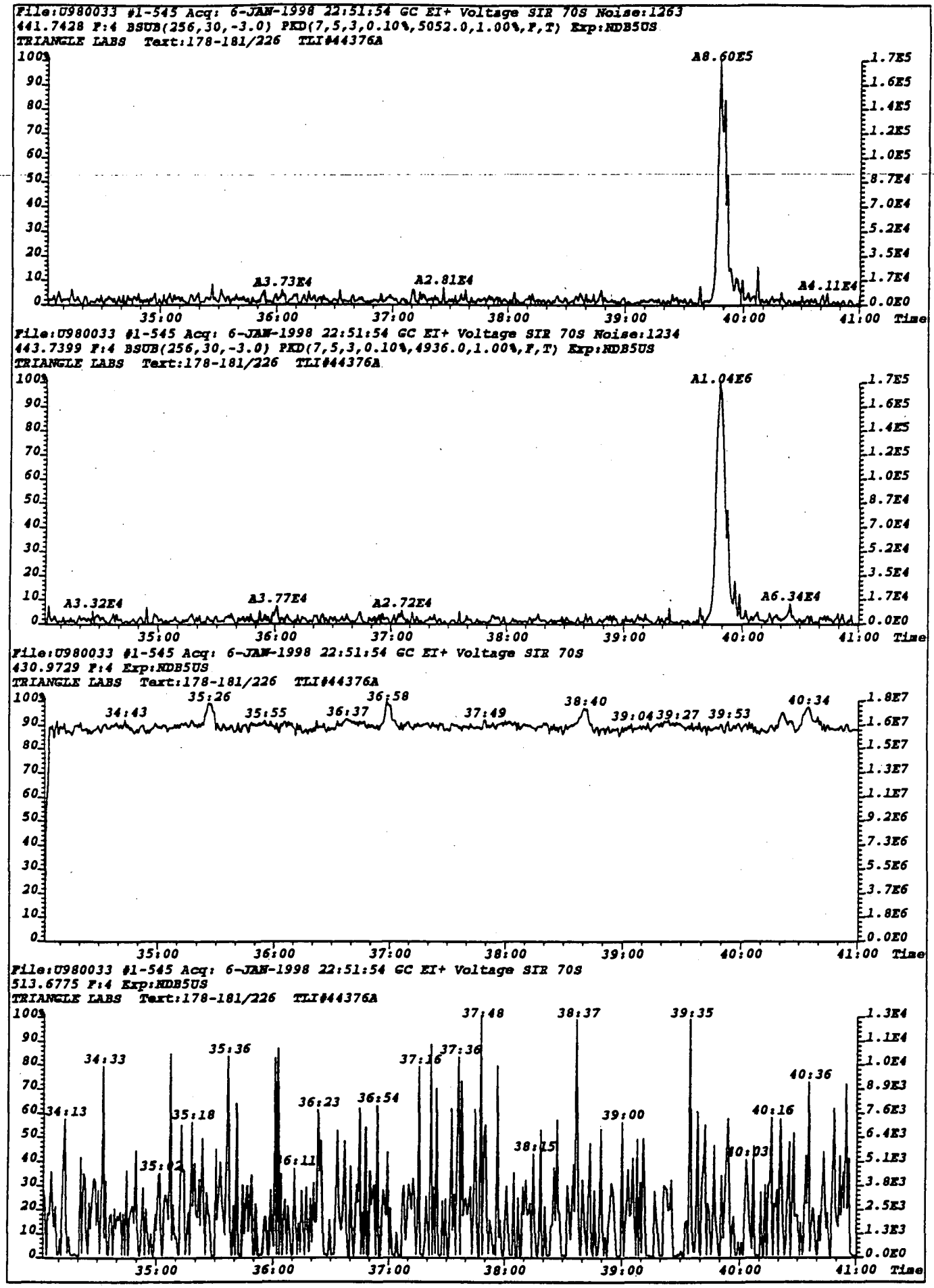
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



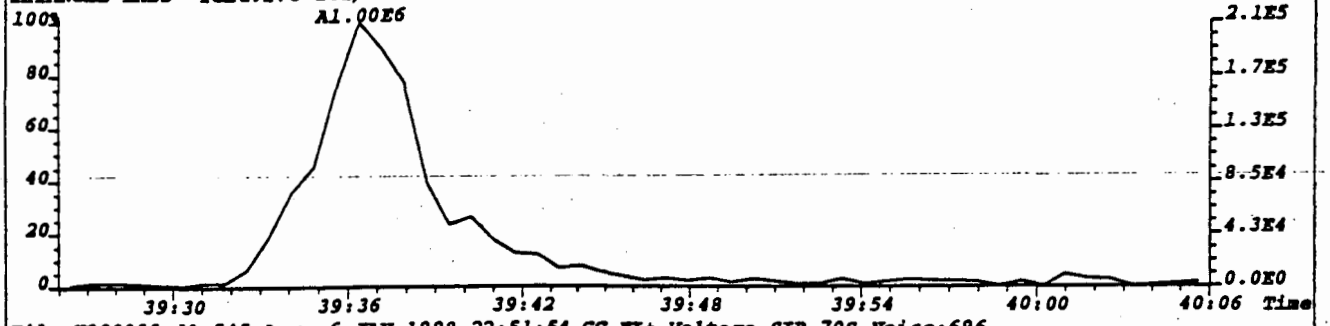
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



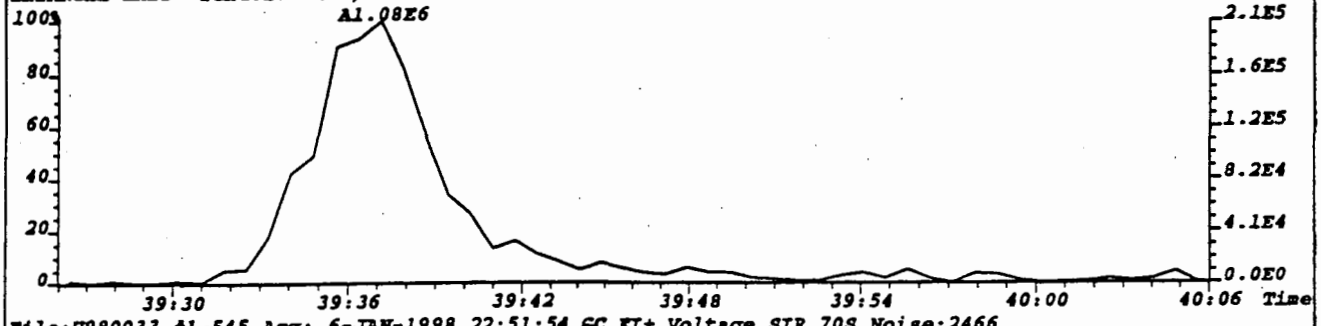

File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1096
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4384.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A3.89E5
A3.63E5
A7.30E4
A3.88E4
A2.84E4
A2.55E4
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1338
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5352.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A3.83E5
A3.90E5
A4.00E4
A5.76E4
A3.26E4
A1.53E4
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4692
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A3.66E7
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:4901
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,19604.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A3.60E7
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
35:17
35:26
35:33
35:41
35:55
36:22
35:12 35:18 35:24 35:30 35:36 35:42 35:48 35:54 36:00 36:06 36:12 36:18 36:24 36:30
Time


File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1263
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5052.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A8.60E5
A3.73E4
A2.81E4
A4.11E4
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:1234
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4936.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.04E6
A3.32E4
A3.77E4
A2.72E4
A6.34E4
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
34:43
35:26
35:55
36:37
36:58
37:49
38:40
39:04
39:27
39:53
40:34
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A
34:13
34:33
35:18
35:36
36:11
36:23
36:54
37:16
37:36
37:48
38:15
38:37
39:00
39:35
40:03
40:16
40:36
Time

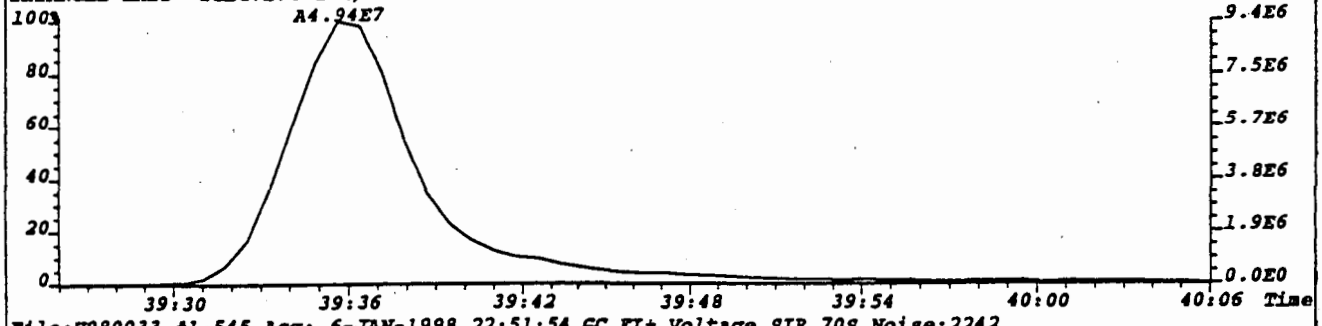
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:29
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



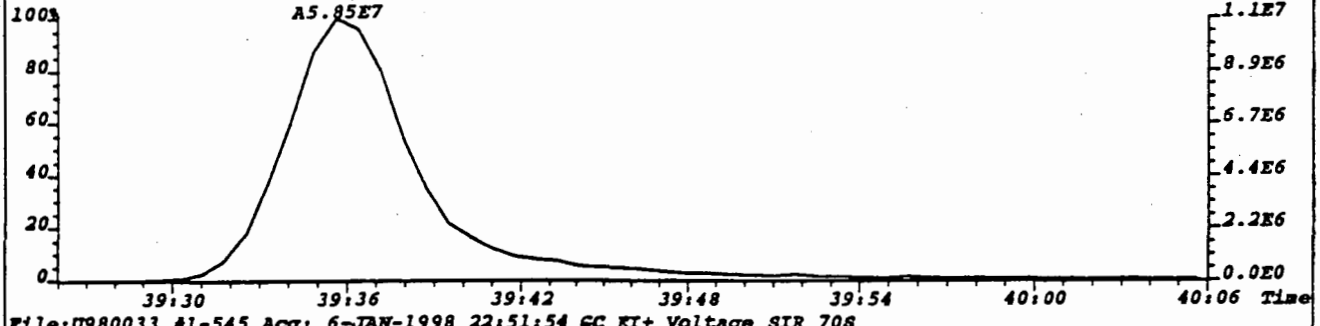
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:696
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2784.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A



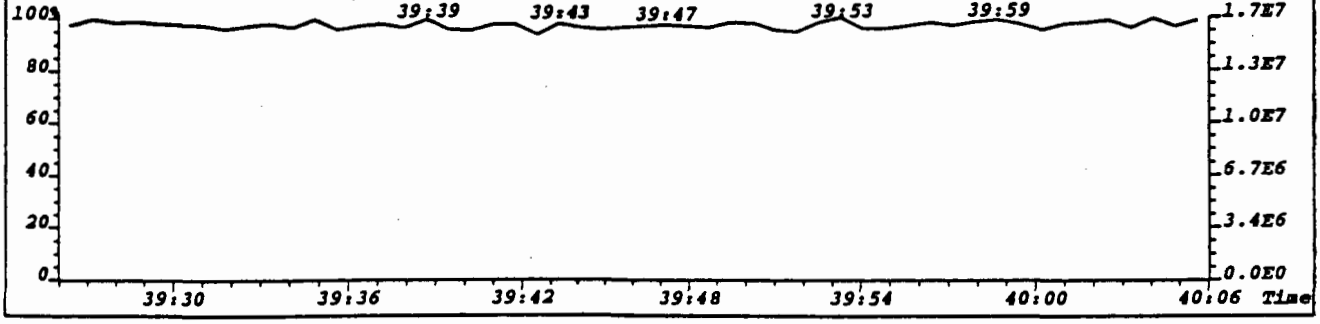
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2466
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

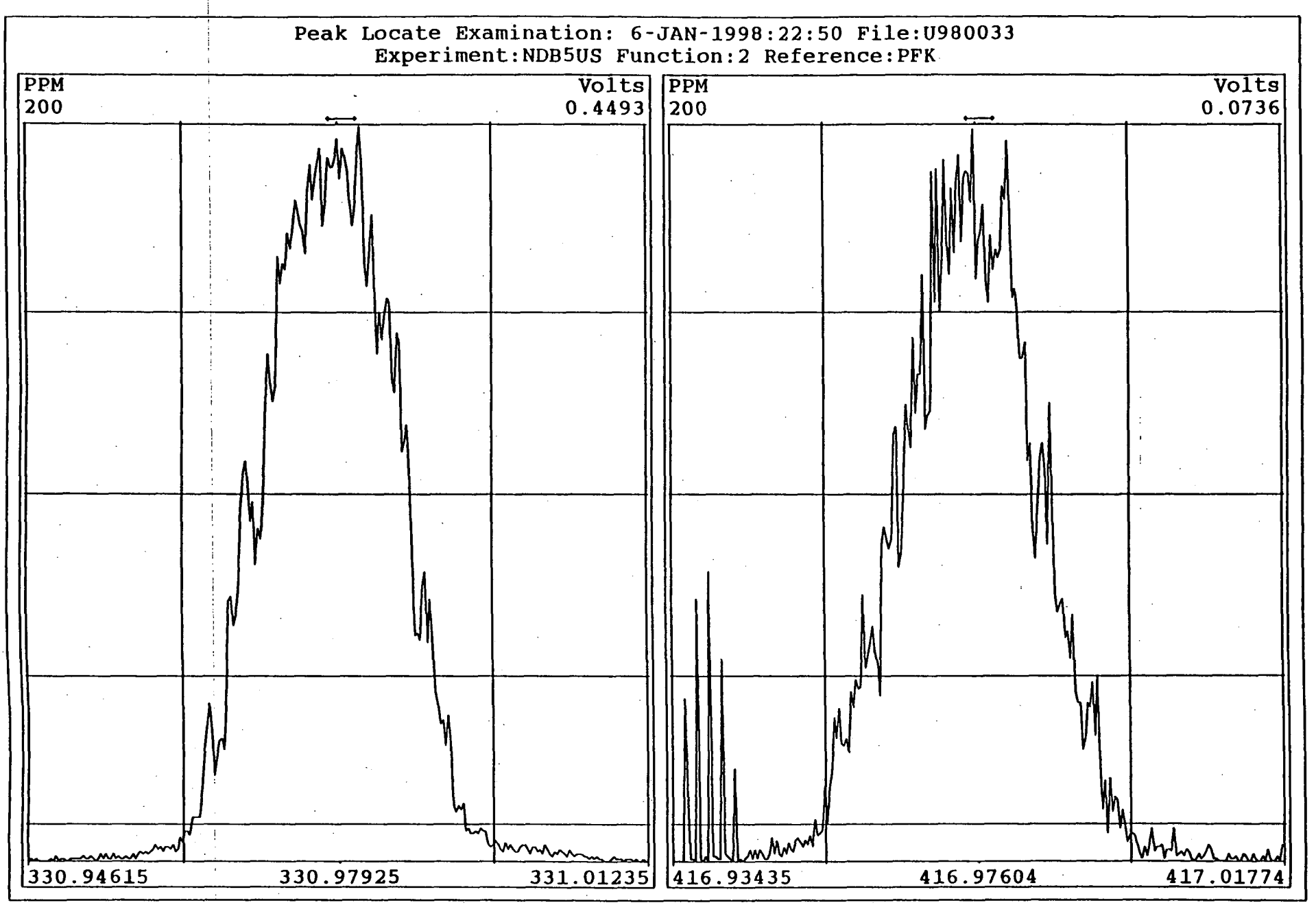


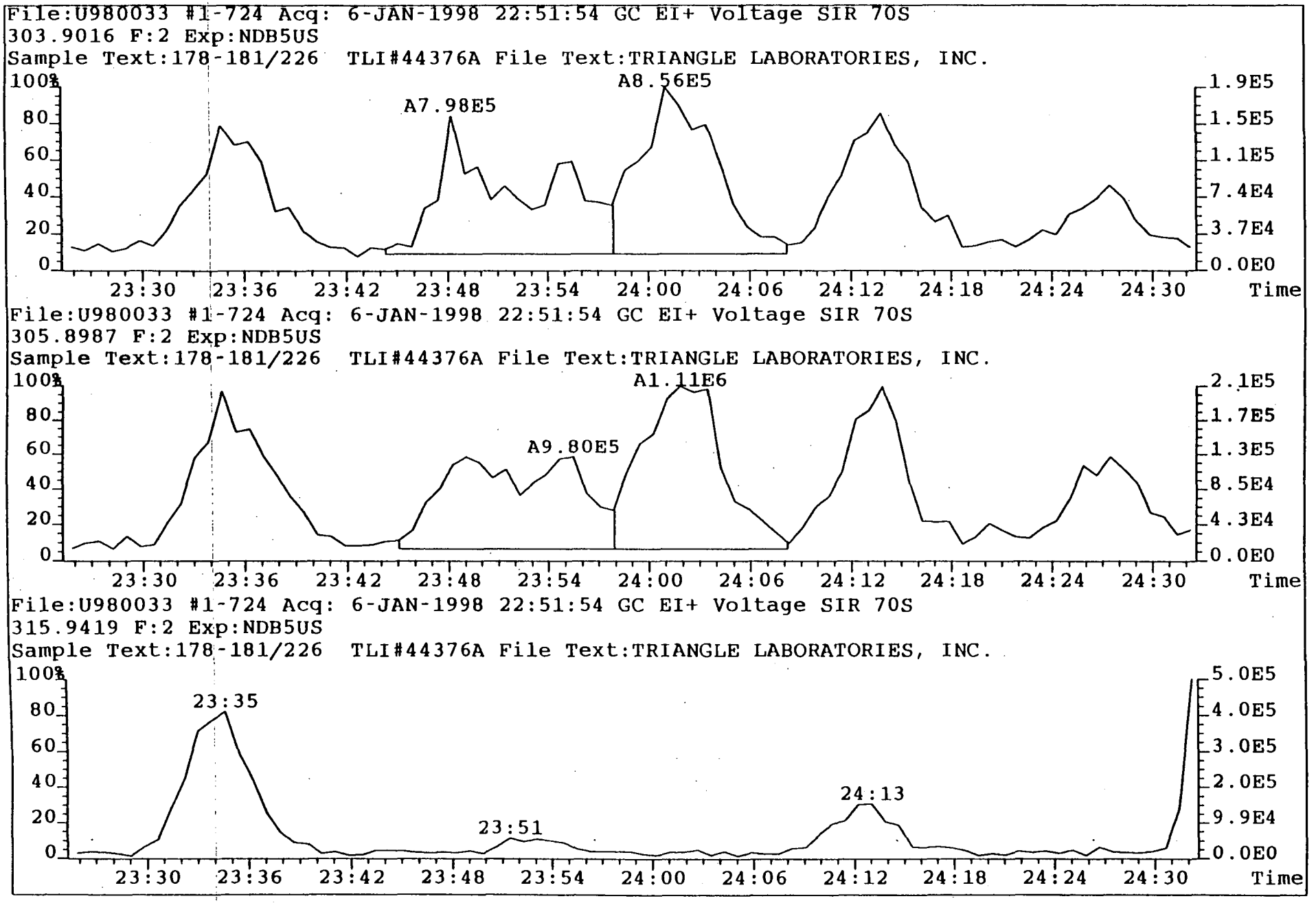
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S Noise:2242
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

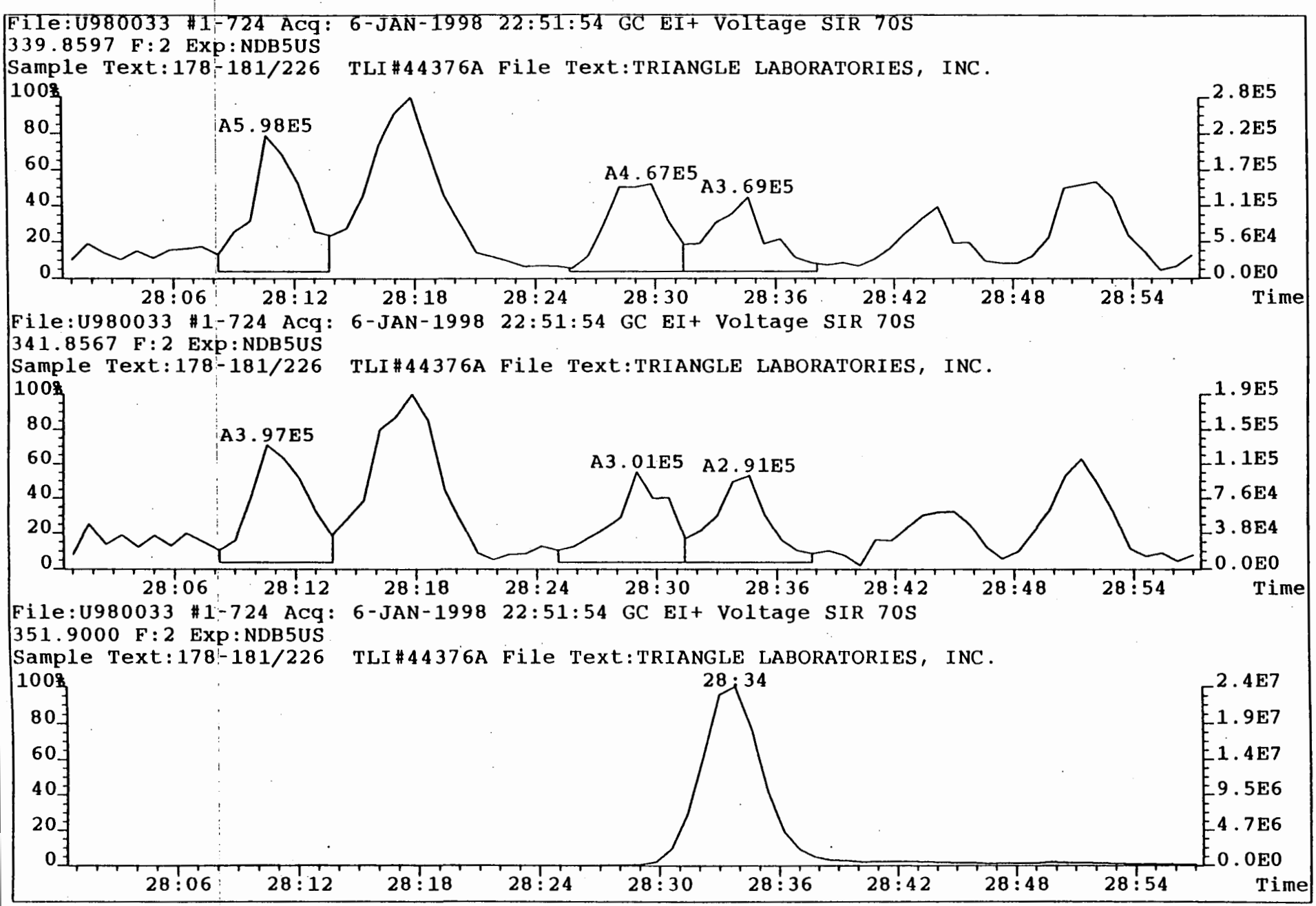


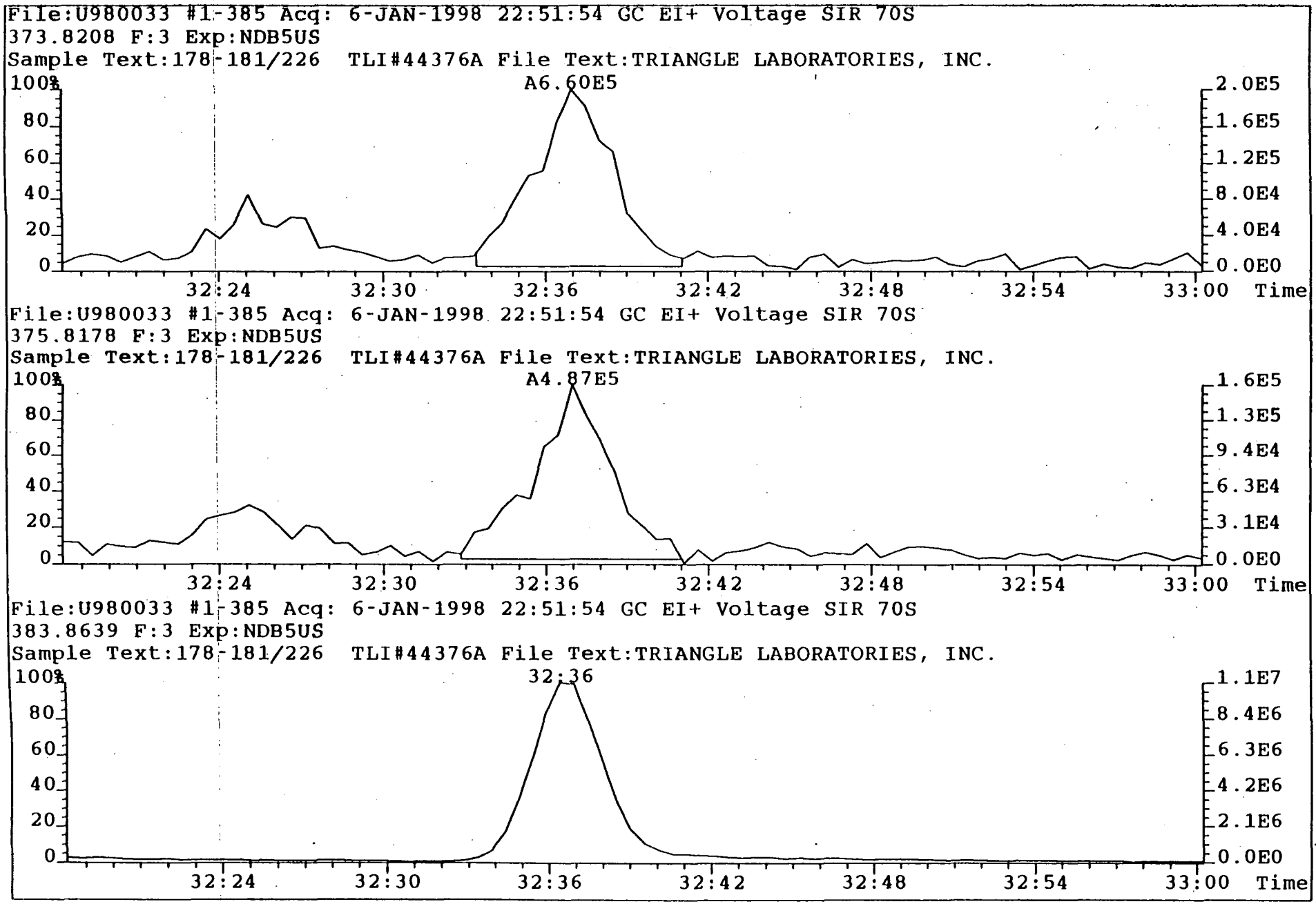
File:U980033 #1-545 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:178-181/226 TLI#44376A

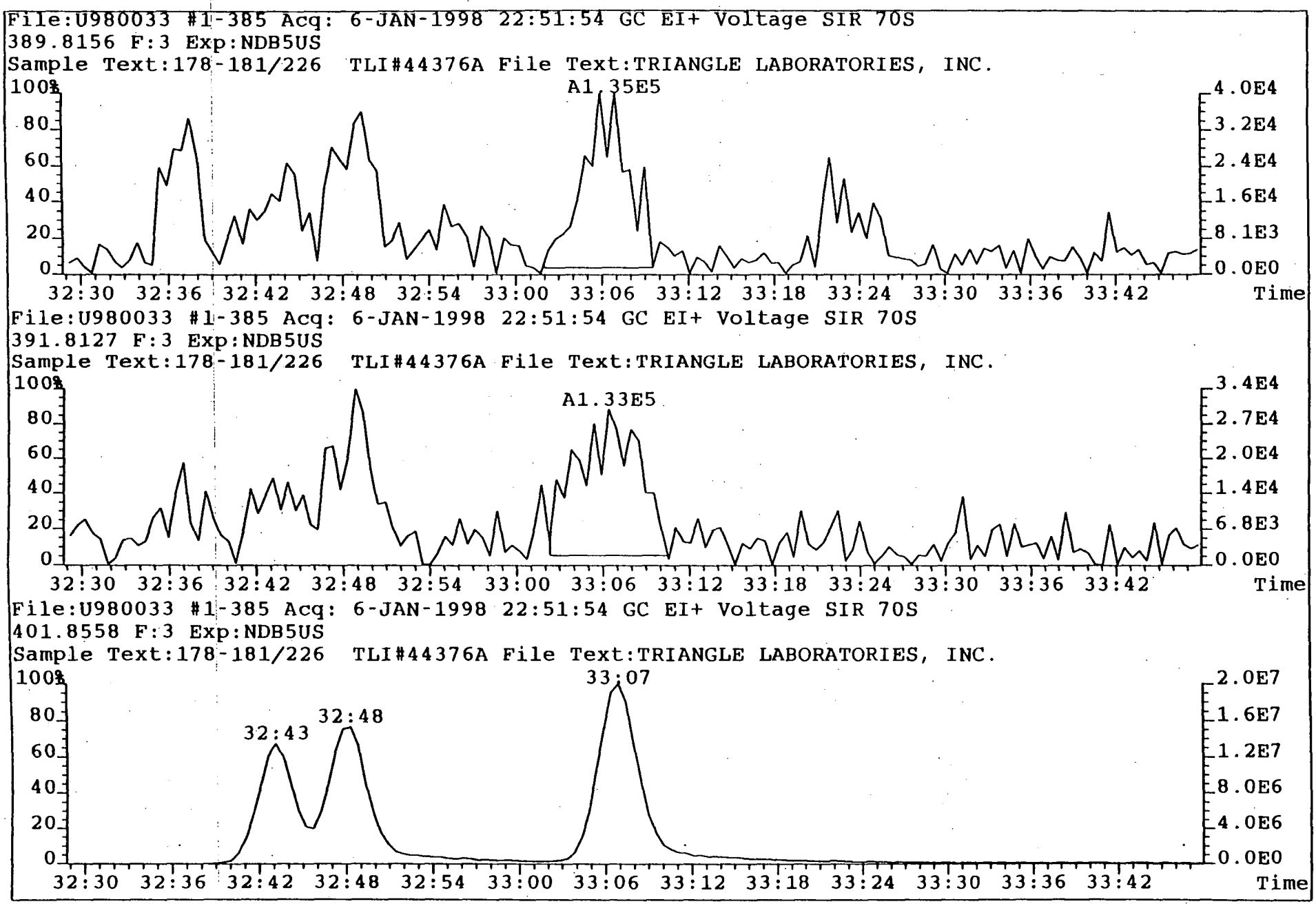



Peak Locate Examination: 6-JAN-1998:22:50 File:U980033
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.4493
330.94615
330.97925
331.01235
PPM
200
Volts
0.0736
416.93435
416.97604
417.01774


File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
303.9016 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A7.98E5
A8.56E5
1.9E5
1.5E5
1.1E5
7.4E4
3.7E4
0.0E0
23:30 23:36 23:42 23:48 23:54 24:00 24:06 24:12 24:18 24:24 24:30 Time
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
305.8987 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A9.80E5
A1.11E6
2.1E5
1.7E5
1.3E5
8.5E4
4.3E4
0.0E0
23:30 23:36 23:42 23:48 23:54 24:00 24:06 24:12 24:18 24:24 24:30 Time
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
315.9419 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
23:35
23:51
24:13
5.0E5
4.0E5
3.0E5
2.0E5
9.9E4
0.0E0
23:30 23:36 23:42 23:48 23:54 24:00 24:06 24:12 24:18 24:24 24:30 Time


File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A5.98E5
A4.67E5
A3.69E5
2.8E5
2.2E5
1.7E5
1.1E5
5.6E4
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.97E5
A3.01E5
A2.91E5
1.9E5
1.5E5
1.1E5
7.6E4
3.8E4
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time
File:U980033 #1-724 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:34
2.4E7
1.9E7
1.4E7
9.5E6
4.7E6
0.0E0
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
28:54
Time


File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A6.60E5
100%
80
60
40
20
0
2.0E5
1.6E5
1.2E5
8.0E4
4.0E4
0.0E0
32:24
32:30
32:36
32:42
32:48
32:54
33:00
Time
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A4.87E5
100%
80
60
40
20
0
1.6E5
1.3E5
9.4E4
6.3E4
3.1E4
0.0E0
32:24
32:30
32:36
32:42
32:48
32:54
33:00
Time
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
32:36
100%
80
60
40
20
0
1.1E7
8.4E6
6.3E6
4.2E6
2.1E6
0.0E0
32:24
32:30
32:36
32:42
32:48
32:54
33:00
Time


File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
389.8156 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.35E5
Time
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
391.8127 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.33E5
Time
File:U980033 #1-385 Acq: 6-JAN-1998 22:51:54 GC EI+ Voltage SIR 70S
401.8558 F:3 Exp:NDB5US
Sample Text:178-181/226 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
32:43
32:48
33:07
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 178-181/226 — Analysis File: P980101

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-15B-D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.03			0.78	23:06	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.1	76.5	40%-130%	0.77	23:05	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:54	___

Data Reviewer: _____ 01/09/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:16 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 0.83

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

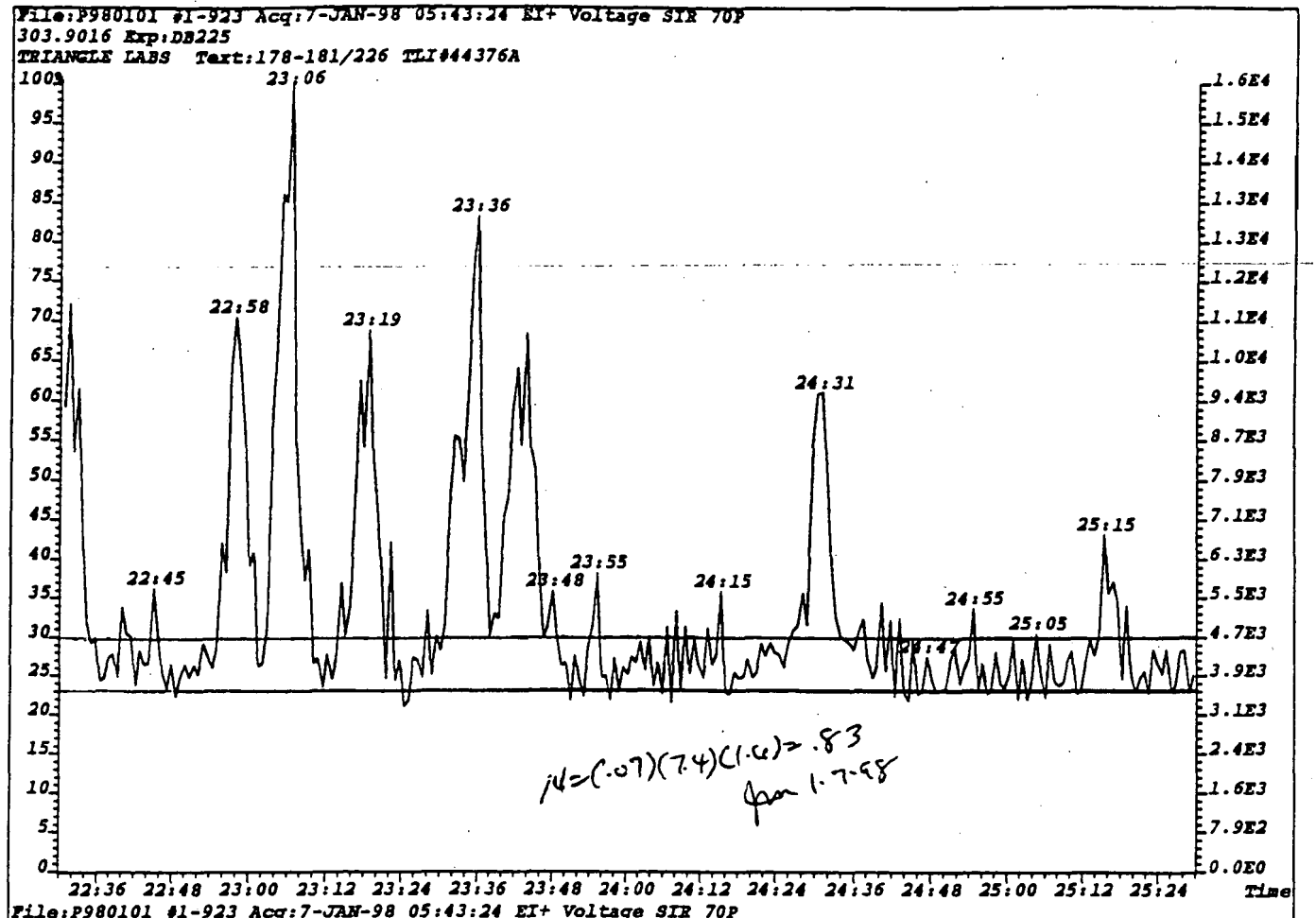
Page No. 1 Listing of P980101B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.792-1.101			
304-306	DC	NL		0:00		0.71	1.59			0.000			
				18:27	RO	1.03	3.35	1.94	1.89	0.799			J
	DC	SN		18:40		0.71	0.70			0.809			
				19:27	RO	0.63	5.01	2.18	3.48	0.843			J
				19:35	RO	1.31	2.50	1.85	1.41	0.848			J
				19:42	RO	0.92	5.84	3.03	3.30	0.853			J
				19:53		0.80	3.00	1.33	1.67	0.861			J
	DC	SN		20:09		0.74	2.30			0.873			
				20:19		0.78	7.84	3.43	4.41	0.880			
				20:28	RO	0.56	3.10	1.35	2.43	0.887			J
				20:37		0.71	12.75	5.28	7.47	0.893			
				20:47	RO	1.00	3.86	2.17	2.18	0.900			J
				21:09		0.70	23.52	9.70	13.82	0.916			
	DC	SN		21:21		0.68	0.74			0.925			
				21:36	RO	0.99	8.32	4.63	4.70	0.936			
	DC	SN		21:42		0.89	1.51			0.940			
				21:51	RO	1.29	4.27	3.11	2.41	0.947			J
				22:06		0.66	6.11	2.44	3.67	0.957			J
	DC	SN		22:13	RO	0.19	0.14			0.962			
	DC	SN		22:20	RO	0.33	0.44			0.968			
				22:31	RO	0.59	6.34	2.76	4.66	0.975			J
	DC	SN		22:40	RO	0.38	0.48			0.982			
				22:58		0.81	5.15	2.31	2.84	0.995			J
				23:06		0.78	9.49	4.17	5.32	1.001	2378-TCDF	AN	
				23:19		0.83	7.20	3.26	3.94	1.010			
				23:36		0.72	8.00	3.35	4.65	1.022			
				23:44	RO	0.50	5.77	2.51	4.99	1.028			J
				24:31	RO	0.54	3.17	1.38	2.56	1.062			J
	DC	SN		25:05	RO	1.00	0.27			1.087			
	DC	SN		25:07	RO	1.25	0.35			1.088			
	DC	SN		25:15	RO	0.62	1.10			1.094			
304-306		20	Peaks				134.59						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	0.96	2.66			0.000			
	DC	WL		21:24	RO	2.31	0.57			0.927			
	DC	WL		21:36		0.65	10.56			0.936			
	DC	WL		21:51		0.81	34.03			0.947			
				23:05		0.77	1,333.50	579.79	753.71	1.000	13C12-2378-TCDF	IS0	
				23:42	RO	0.93	3.77	1.99	2.13	1.027			
	DC	WH		25:09	RO	0.64	11.84			1.090			
316-318		2	Peaks				1,337.27						

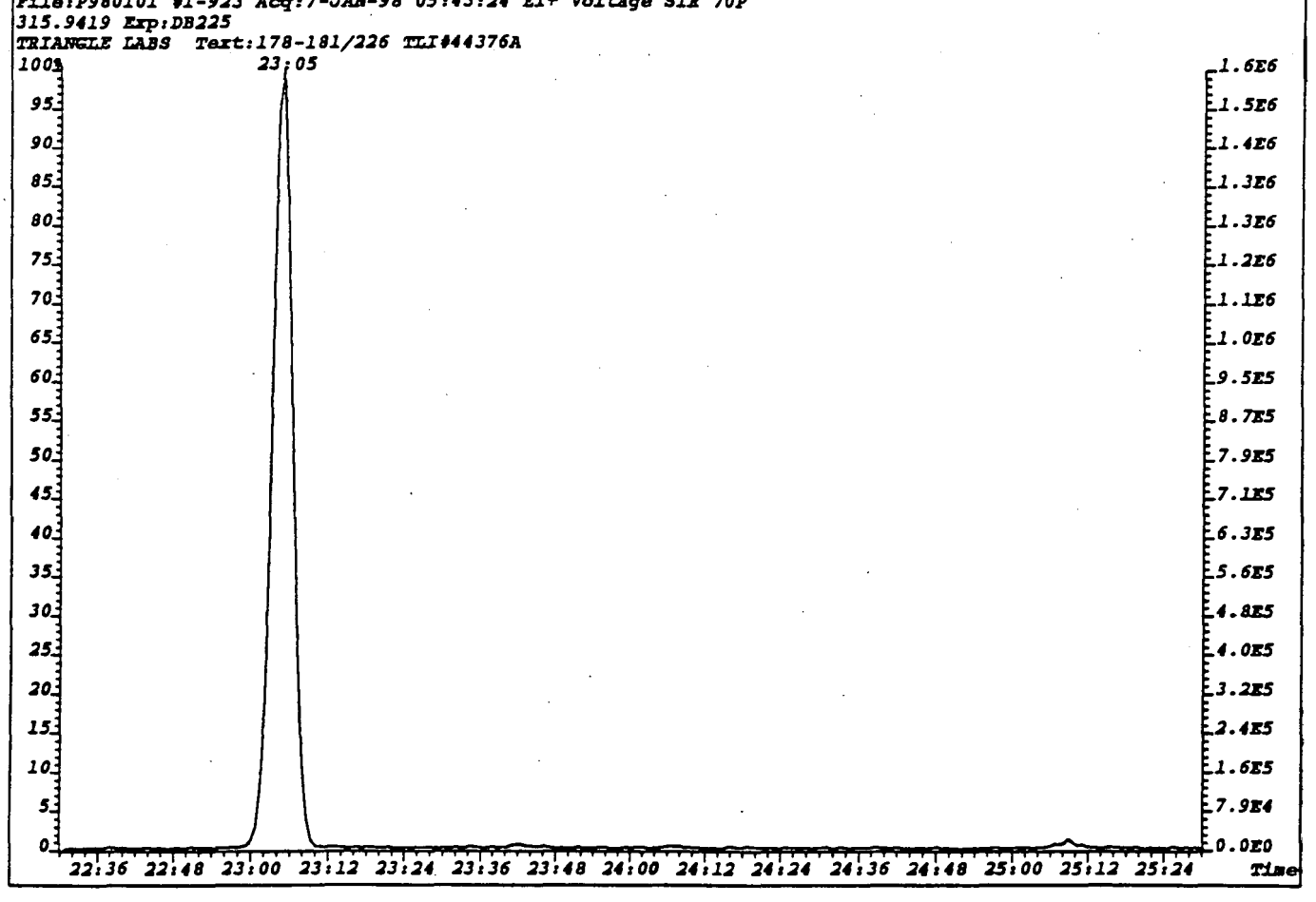
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.908-1.092			
332-334		DC	NL	0:00	RO	1.84	1.20			0.000			
				20:29	RO	0.48	5.20	2.26	4.69	0.948			
				21:37		0.80	913.31	406.07	507.24	1.000	13C12-2378-TCDD	IS1	
				21:54		0.80	1,255.82	559.54	696.28	1.013	13C12-1234-TCDD	RS1	
				22:41		0.74	13.35	5.69	7.66	1.049			
		DC	SN	22:52		0.83	1.06			1.058			
		DC	WH	24:09	RO	1.01	1.59			1.117			
		DC	WH	24:29	RO	0.39	3.33			1.133			
		DC	WH	24:58	RO	1.24	2.99			1.155			
332-334			4	Peaks			2,187.68						

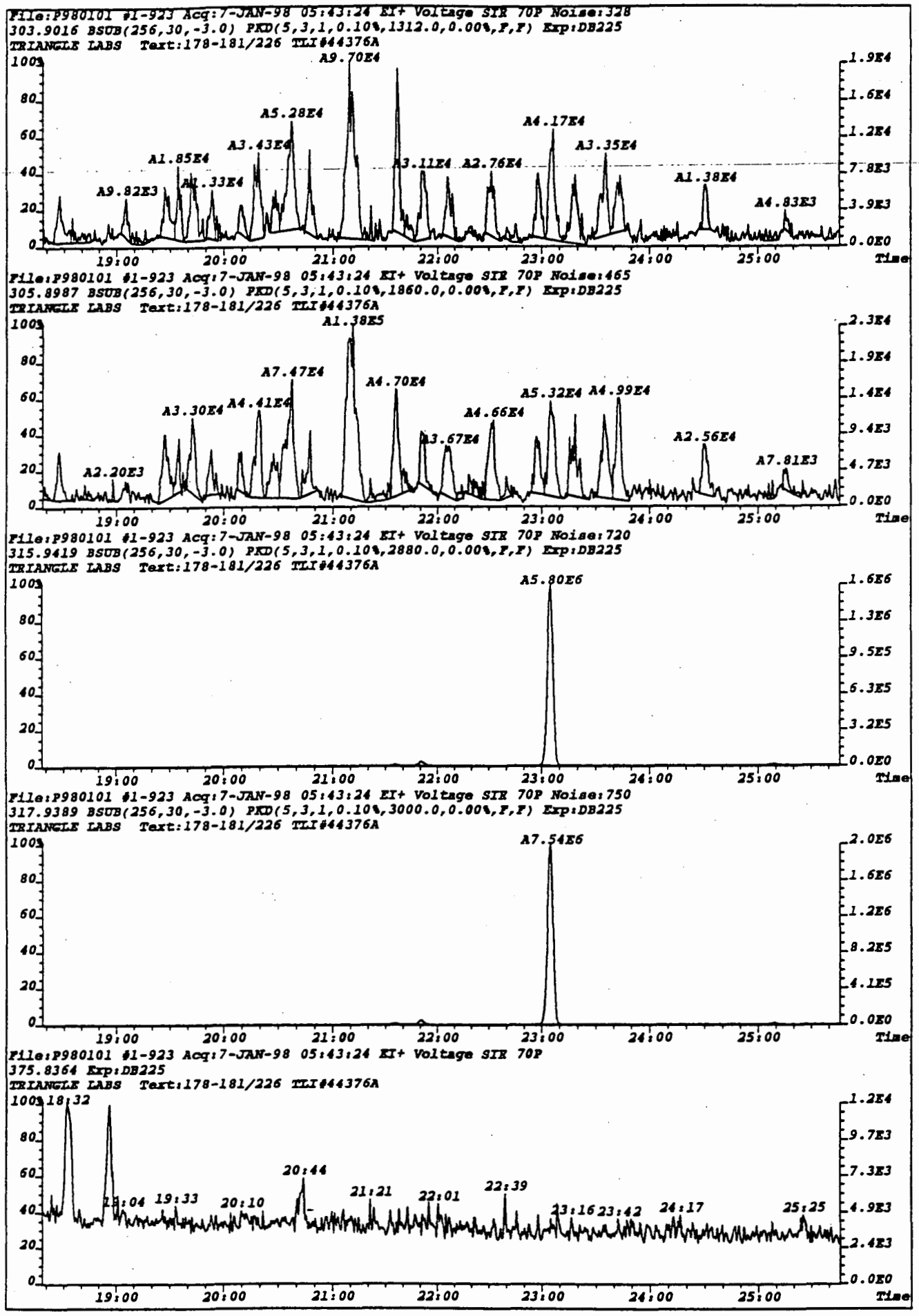
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

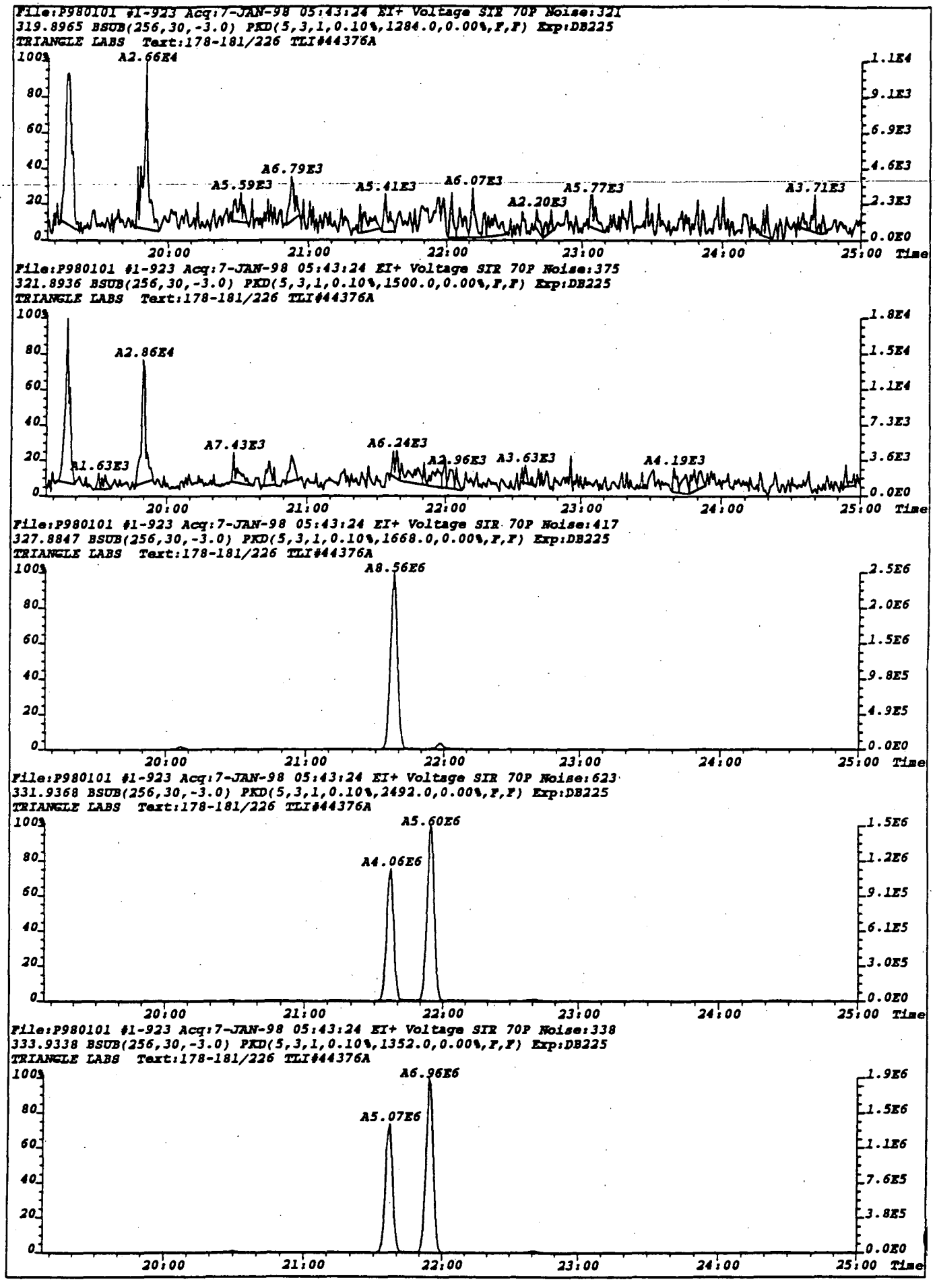
*** End of Report ***

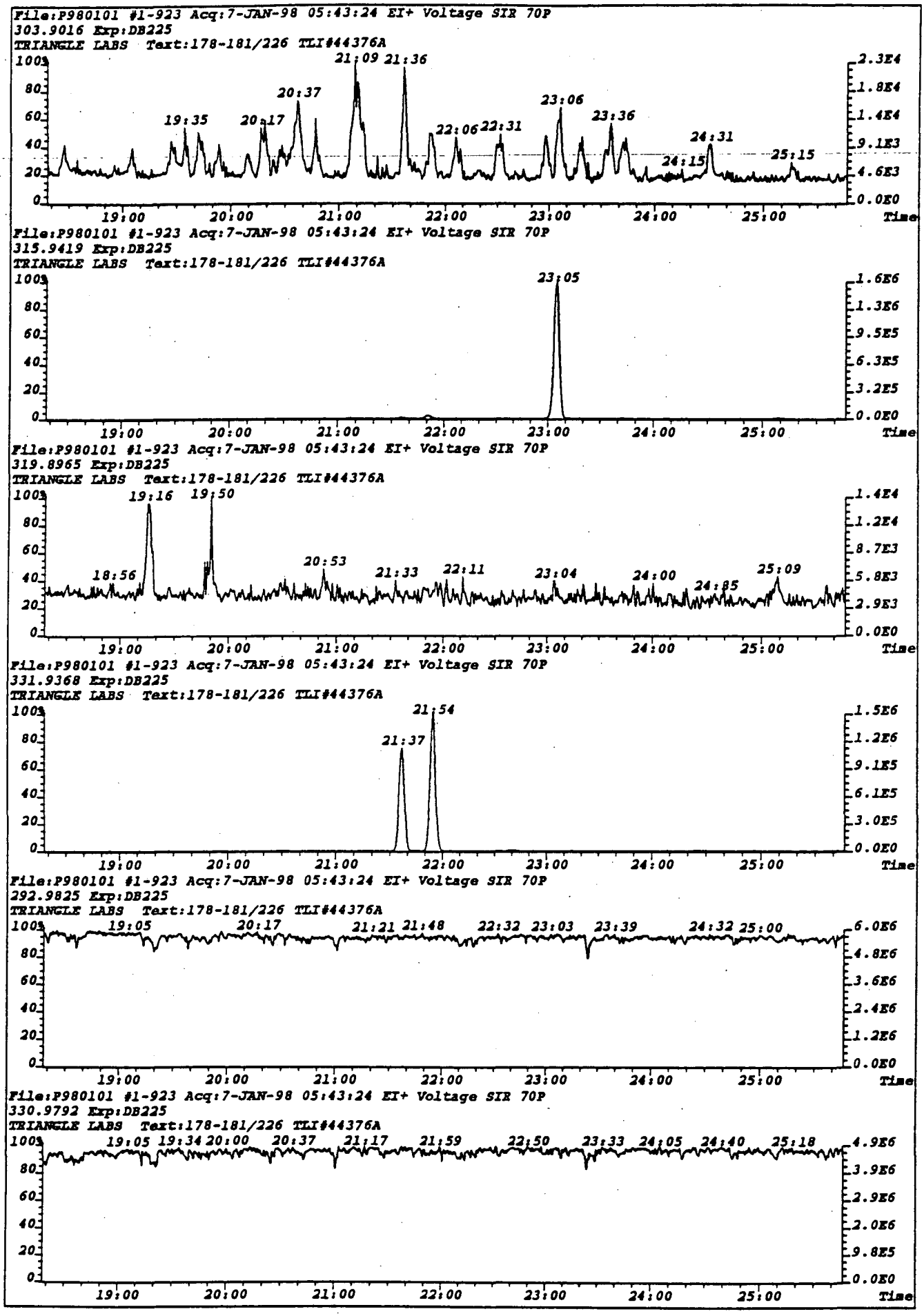


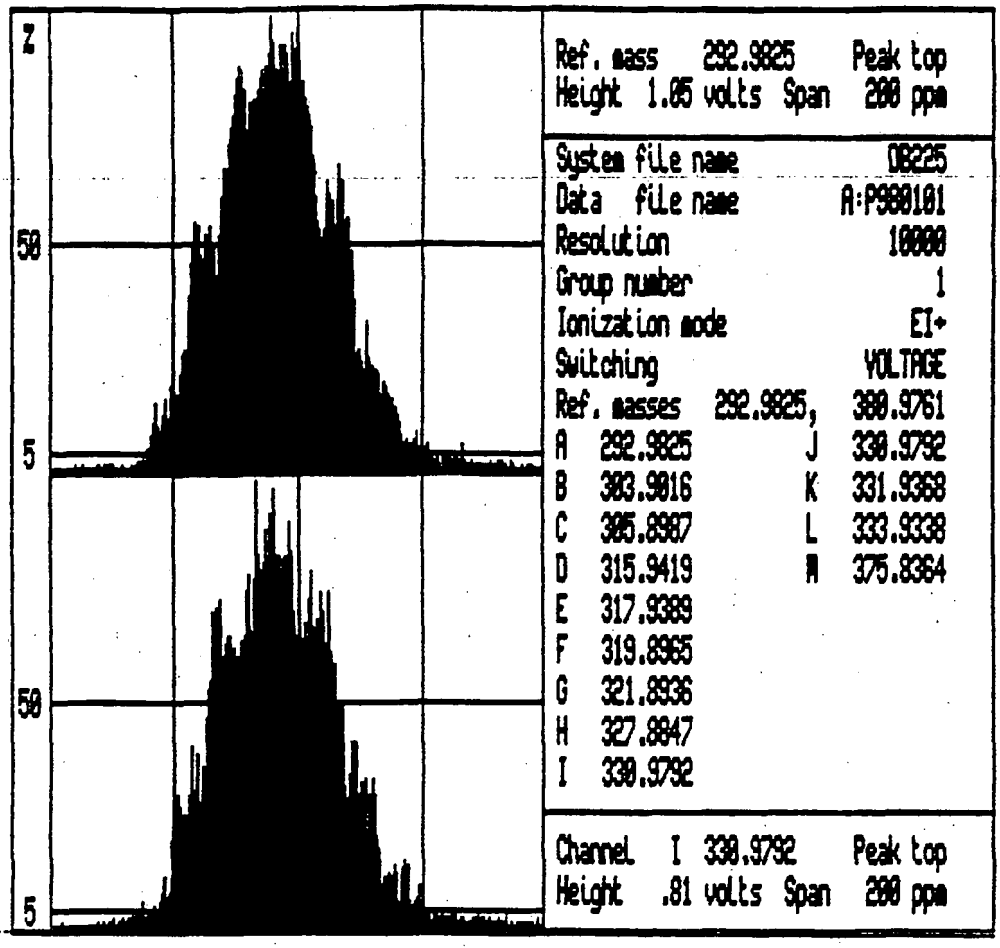
$\mu = (.07)(7.4)(1.6) = .83$
from 1-7-98




File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:328
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1312.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A9.70E4
A5.28E4
A4.17E4
A3.43E4
A1.85E4
A3.35E4
A3.11E4
A2.76E4
A1.38E4
A1.33E4
A9.82E3
A4.83E3
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:465
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1860.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A1.38E5
A7.47E4
A4.70E4
A5.32E4
A4.99E4
A3.30E4
A4.41E4
A4.66E4
A3.67E4
A2.56E4
A2.20E3
A7.81E3
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:720
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2880.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A5.80E6
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:750
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3000.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A7.54E6
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
18:32
20:44
19:04
19:33
20:10
21:21
22:01
22:39
23:16
23:42
24:17
25:25
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:321
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1284.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A2.66E4
A6.79E3
A5.59E3
A5.41E3
A6.07E3
A2.20E3
A5.77E3
A3.71E3
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:375
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1500.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A2.86E4
A1.63E3
A7.43E3
A6.24E3
A2.96E3
A3.63E3
A4.19E3
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:417
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1668.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A8.56E6
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:623
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2492.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A5.60E6
A4.06E6
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P Noise:338
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1352.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
A6.96E6
A5.07E6
20:00
21:00
22:00
23:00
24:00
25:00
Time


File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
19:35 20:17 20:37 21:09 21:36 22:06 22:31 23:06 23:36 24:15 24:31 25:15
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
23:05
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
18:56 19:16 19:50 20:53 21:33 22:11 23:04 24:00 24:35 25:09
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
21:37 21:54
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
19:05 20:17 21:21 21:48 22:32 23:03 23:39 24:32 25:00
File:P980101 #1-923 Acq:7-JAN-98 05:43:24 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:178-181/226 TLI#44376A
19:05 19:34 20:00 20:37 21:17 21:59 22:50 23:33 24:05 24:40 25:18
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height 1.05 volts Span 200 ppm
System file name DB225
Data file name A:P980101
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height .81 volts Span 200 ppm

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 193-196 — Analysis File: U980034

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-17A-D	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/06/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BB	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	EMPC		0.006			PRJ
1,2,3,7,8-PeCDD	0.04			1.69	29:35	J__
1,2,3,4,7,8-HxCDD	0.02			1.07	32:44	J__
1,2,3,6,7,8-HxCDD	0.04			1.28	32:49	J__
1,2,3,7,8,9-HxCDD	0.05			1.17	33:06	J__
1,2,3,4,6,7,8-HpCDD	0.12			0.94	36:03	___
1,2,3,4,6,7,8,9-OCDD	0.25			0.81	39:36	B__
2,3,7,8-TCDF	0.45			0.78	24:39	B__
1,2,3,7,8-PeCDF	0.14			1.52	28:35	___
2,3,4,7,8-PeCDF	0.22			1.48	29:15	___
1,2,3,4,7,8-HxCDF	0.31			1.28	32:01	___
1,2,3,6,7,8-HxCDF	0.12			1.23	32:08	___
2,3,4,6,7,8-HxCDF	0.14			1.32	32:37	___
1,2,3,7,8,9-HxCDF	0.02			1.36	33:23	J__
1,2,3,4,6,7,8-HpCDF	1.2			1.05	35:01	___
1,2,3,4,7,8,9-HpCDF	0.17			1.20	36:33	___
1,2,3,4,6,7,8,9-OCDF	0.41			0.87	39:49	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.31	9		0.31	___
Total PeCDD	0.52	9		0.81	___
Total HxCDD	0.53	7			___
Total HpCDD	0.23	2			___
Total TCDF	2.2	15		2.2	___
Total PeCDF	2.9	14		2.9	___
Total HxCDF	1.4	12			___
Total HpCDF	1.9	4			___

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: 44376A
Client Sample: 193-196

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980034

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.4	60.0	40%-130%	0.75	24:36	___
$^{13}C_{12}$-2,3,7,8-TCDD	3.2	79.6	40%-130%	0.81	25:19	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.1	78.7	40%-130%	1.49	28:33	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.4	86.0	40%-130%	1.48	29:35	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.9	72.7	40%-130%	0.48	32:08	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.4	85.3	40%-130%	1.28	32:48	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.6	40.6	25%-130%	0.36	35:00	RO___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.8	95.1	25%-130%	1.04	36:02	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	7.4	92.1	25%-130%	0.87	39:36	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.7	93.6	40%-130%	1.46	29:15	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.7	92.8	40%-130%	0.47	32:02	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.9	98.0	40%-130%	1.28	32:43	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.3	107	40%-130%	0.35	36:32	RO___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	85.2	25:20	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	79.0	40%-130%	0.47	33:22	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.1	77.2	40%-130%	0.48	32:36	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:08	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.26	33:07	___

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.0[illegible]

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:22 01/10/98

Initial ....Date...

Data Review By: [signature] 1/10/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00	RO	0.54	25.08			0.000			
NK				21:27		0.81	312.29	139.92	172.37	0.872			
K				21:58		0.82	334.60	150.48	184.12	0.893			
K				22:11		0.77	366.98	159.62	207.36	0.902			
K				22:35		0.78	1,614.93	707.63	907.30	0.918			
K				22:55		0.79	1,037.30	458.58	578.72	0.932			
K				23:19		0.75	1,094.23	470.30	623.93	0.948			
K				23:35		0.75	924.14	396.17	527.97	0.959			
				23:48		0.80	1,223.48	542.62	680.86	0.967			
				24:02		0.79	1,130.48	498.90	631.58	0.977			
				24:12		0.78	573.27	250.50	322.77	0.984			
				24:27		0.82	484.69	218.34	266.35	0.994			
				24:39		0.78	2,760.78	1,207.35	1,553.43	1.002	2378-TCDF	AN	
				25:03		0.72	751.82	315.47	436.35	1.018			
				25:16		0.79	640.63	283.44	357.19	1.027			
				25:31		0.88	110.01	51.52	58.49	1.037			J
				26:23	RO	0.95	98.20	52.61	55.48	1.072			J
304-306			16 Peaks				13,457.83						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.32	14.35			0.000			
	DC	WL		23:33		0.72	413.45			0.957			
				23:53	RO	1.27	34.52	24.80	19.50	0.971			
				24:12	RO	1.10	121.79	75.73	68.81	0.984			
				24:36		0.75	19,665.36	8,406.96	11,258.40	1.000	13C12-2378-TCDF	ISO	
				25:02	RO	0.92	277.29	143.63	156.66	1.018			
	DC	WH		26:04	RO	0.98	16.83			1.060			
	DC	WH		26:11	RO	0.62	11.10			1.064			
316-318			4 Peaks				20,098.96						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00		0.66	8.07			0.000			
NK				22:47		0.69	532.64	217.62	315.02	0.900			
NK				23:11		0.71	343.42	142.48	200.94	0.916			J
K				23:27		0.69	93.85	38.28	55.57	0.926			J
D	D	SN		23:49	RO	1.05	5.04			0.941			
K				24:10		0.71	250.37	104.16	146.21	0.955			J
				24:26		0.73	184.25	77.76	106.49	0.965			J
				24:48		0.67	91.48	36.58	54.90	0.980			J
M				25:15		0.68	279.00	113.00	166.00	0.997			J
AN				25:20	RO	0.52	34.94	15.20	29.40	1.001	2378-TCDD	AN	PRJ

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:29		0.72	46.96	19.59	27.37	1.007			J
				25:39		0.76	59.18	25.61	33.57	1.013			J
	D	D	SN	25:53	RO	0.62	14.50			1.022			
	D	D	SN	26:19		0.69	19.56			1.039			
320-322			10 Peaks				1,916.09						
37Cl-TCDD										0.921-1.079			
328		DC	NL	0:00			0.19			0.000			
				23:58			439.39	439.39		0.947			
				25:20			16,955.30	16,955.30		1.001	37Cl-TCDD	CLS	
				25:44			342.17	342.17		1.016			
				25:55			65.37	65.37		1.024			
				26:03			59.30	59.30		1.029			
				26:23			24.50	24.50		1.042			
				26:28			12.34	12.34		1.045			
				26:28			4.42	4.42		1.045			
328			8 Peaks				17,902.79						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334		DC	NL	0:00	RO	2.24	13.74			0.000			
				24:09	RO	1.01	105.46	60.27	59.58	0.954			
				25:08		0.82	22,343.10	10,049.70	12,293.40	0.993	13C12-1234-TCDD	RS1	
				25:19		0.81	19,872.67	8,899.07	10,973.60	1.000	13C12-2378-TCDD	IS1	
				25:38		0.69	632.46	257.32	375.14	1.013			
332-334			4 Peaks				42,953.69						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF						1.32-1.78				0.925-1.065			
340-342		DC	NL	0:00	RO	0.88	4.49			0.000			
				26:35		1.53	1,539.34	931.57	607.77	0.931			
	D	D	SN	27:12	RO	2.38	29.78			0.953			
	D	D	SN	27:19	RO	1.30	30.47			0.957			
				27:35		1.60	645.99	397.42	248.57	0.966			
				27:43		1.54	3,695.81	2,239.53	1,456.28	0.971			
				27:53		1.54	883.12	535.12	348.00	0.977			
	M			28:11		1.49	962.00	575.00	387.00	0.987			
				28:17		1.56	1,603.48	978.07	625.41	0.991			
	A			28:29		1.48	611.00	365.00	246.00	0.998			
	M			28:35		1.52	740.00	446.00	294.00	1.001	12378-PeCDF	AN	
				28:43		1.52	675.38	407.32	268.06	1.006			
				28:51		1.57	962.81	588.43	374.38	1.011			
	D	D	SN	29:05		1.51	26.13			1.019			
				29:15		1.48	1,106.61	660.41	446.20	1.025	23478-PeCDF	AN	
				29:24		1.66	1,329.21	829.14	500.07	1.030			
				29:44		1.48	214.69	127.95	86.74	1.041			J
				29:59	RO	2.10	42.41	34.98	16.63	1.050			J
				30:14		1.76	105.01	66.97	38.04	1.059			J
340-342			15 Peaks				15,116.86						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354		DC	NL	0:00		1.38	0.62			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				27:42		1.48	717.62	427.95	289.67	0.970			
				28:11		1.44	22.60	13.32	9.28	0.987			
				28:33		1.49	20,072.79	12,018.00	8,054.79	1.000	13C12-PeCDF 123	IS2	
				28:51		1.59	527.63	323.69	203.94	1.011			
				29:15		1.46	18,154.55	10,782.30	7,372.25	1.025	13C12-PeCDF 234	SUR1	
				30:14	RO	2.50	27.41	26.83	10.75	1.059			
352-354			6 Peaks				39,522.60						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.935-1.022			
356-358	DC	NL		0:00	RO	0.64	0.23			0.000			
				27:48	RO	1.31	947.32	575.82	440.90	0.940			
				28:17	RO	1.22	98.38	59.80	48.90	0.956			J
				28:31		1.56	658.66	401.06	257.60	0.964			
				28:40		1.73	167.91	106.34	61.57	0.969			J
				28:51		1.47	404.12	240.23	163.89	0.975			
				29:01		1.57	93.98	57.47	36.51	0.981			J
				29:06		1.50	162.88	97.64	65.24	0.984			J
				29:19		1.70	167.45	105.39	62.06	0.991			J
				29:26	RO	0.73	72.01	43.77	59.91	0.995			J
				29:35		1.69	135.32	85.00	50.32	1.000	12378-PeCDD	AN	J
				29:44		1.60	86.87	53.46	33.41	1.005			J
				30:04		1.72	70.26	44.41	25.85	1.016			J
	DC	SN		30:26		1.42	2.03			1.029			
356-358			12 Peaks				3,065.16						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	0.75	0.20			0.000			
				28:31		1.77	29.55	18.87	10.68	0.964			
				28:39	RO	1.03	26.06	15.84	15.32	0.968			
				29:35		1.48	11,332.56	6,755.44	4,577.12	1.000	13C12-PeCDD 123	IS3	
				29:43		1.47	1,680.86	1,000.26	680.60	1.005			
				30:10	RO	1.23	29.66	18.03	14.69	1.020			
				30:13	RO	3.40	15.89	21.20	6.23	1.021			
368-370			6 Peaks				13,114.58						

---------- Above: PeCDD / HxCDF Follows ----------

HxCDF				1.05-1.43						0.962-1.047			
374-376	DC	NL		0:00		1.41	26.48			0.000			
				31:04		1.37	671.79	388.00	283.79	0.967			
				31:13		1.30	1,583.81	895.23	688.58	0.971			
				31:23		1.27	157.30	87.89	69.41	0.977			J
				31:31		1.28	197.10	110.48	86.62	0.981			J
				31:41		1.27	96.03	53.80	42.23	0.986			J
				32:01		1.28	1,134.29	637.24	497.05	0.996	123478-HxCDF	AN	
				32:08		1.23	568.03	313.47	254.56	1.000	123678-HxCDF	AN	
				32:14		1.43	137.55	80.83	56.72	1.003			J
				32:26		1.08	231.49	120.12	111.37	1.009			J
				32:37		1.32	490.65	279.37	211.28	1.015	234678-HxCDF	AN	
				33:23		1.36	62.10	35.80	26.30	1.039	123789-HxCDF	AN	J

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				33:27		1.24	118.74	65.76	52.98	1.041			J
	DC	SN		33:44	RO	0.18	0.74			1.050			
	DC	SN		33:46	RO	0.45	2.26			1.051			
374-376			12 Peaks				5,448.88						
13C12-HxCDF				0.43-0.59						0.876-1.124			
384-386	DC	NL		0:00	RO	0.41	7.17			0.000			
				31:03		0.49	84.01	27.74	56.27	0.966			
				31:12		0.53	157.69	54.30	103.39	0.971			
				32:02		0.47	11,171.99	3,593.18	7,578.81	0.997	13C12-HxCDF 478	SUR2	
				32:08		0.48	14,599.00	4,719.22	9,879.78	1.000	13C12-HxCDF 678	IS4	
				32:36		0.48	13,994.99	4,526.81	9,468.18	1.015	13C12-HxCDF 234	ALT2	
				33:07	RO	2.01	22.09	29.34	14.63	1.031			
				33:22		0.47	11,024.27	3,541.35	7,482.92	1.038	13C12-HxCDF 789	ALT1	
384-386			7 Peaks				51,054.04						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.014			
390-392	DC	NL		0:00	RO	0.71	8.42			0.000			
				31:33		1.22	174.40	95.95	78.45	0.962			J
D	D	SN		31:43		1.20	4.15			0.967			
	DC	SN		31:52	RO	2.22	2.26			0.972			
				32:00		1.34	602.43	345.08	257.35	0.976			
				32:13		1.18	364.54	197.24	167.30	0.982			
				32:22		1.15	58.41	31.18	27.23	0.987			J
	DC	SN		32:36	RO	12.58	2.49			0.994			
				32:44		1.07	50.91	26.26	24.65	0.998	123478-HxCDD	AN	J
				32:49		1.28	123.14	69.13	54.01	1.001	123678-HxCDD	AN	J
				33:06		1.17	141.27	76.05	65.22	1.009	123789-HxCDD	AN	J
390-392			7 Peaks				1,515.10						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00		1.35	9.50			0.000			
				32:12		1.42	57.49	33.76	23.73	0.982			
				32:43		1.28	9,090.18	5,107.57	3,982.61	0.997	13C12-HxCDD 478	SUR3	
				32:48		1.28	12,670.09	7,123.21	5,546.88	1.000	13C12-HxCDD 678	IS5	
				33:07		1.26	14,924.29	8,308.36	6,615.93	1.010	13C12-HxCDD 789	RS2	
402-404			4 Peaks				36,742.05						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	1.28	12.44			0.000			
				35:01		1.05	2,030.19	1,040.91	989.28	1.000	1234678-HpCDF	AN	
				35:17		1.01	442.15	222.40	219.75	1.008			
				35:26		1.04	456.68	233.17	223.51	1.012			
D	D	SN		35:36	RO	0.80	17.93			1.017			
D	D	SN		35:41	RO	1.24	16.36			1.020			
				36:33		1.20	231.09	126.04	105.05	1.044	1234789-HpCDF	AN	
D	D	SN		36:40	RO	1.92	8.91			1.048			
408-410			4 Peaks				3,160.11						

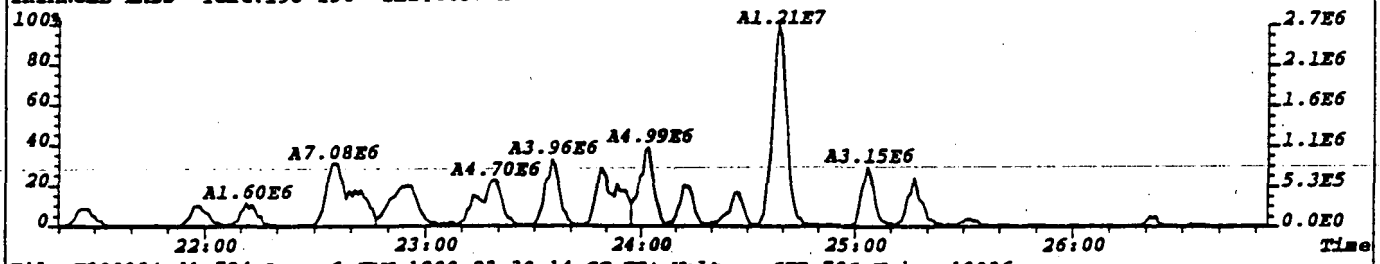
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	1.06	8.86			0.000			
M				35:00	RO	0.36	4,974.55	1,520.00	4,280.00	1.000	13C12-HpCDF 678	IS6	
				35:21	RO	0.14	15.71	4.80	34.83	1.010			
M				36:32	RO	0.35	4,254.55	1,300.00	3,680.00	1.044	13C12-HpCDF 789	SUR4	
418-420			3	Peaks			9,244.81						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00		1.04	3.80			0.000			
D	DC	WL		35:09	RO	0.32	5.12			0.975			
				35:18		1.05	291.54	149.11	142.43	0.980			
D	D	SN		35:33		1.00	12.24			0.987			
				36:03		0.94	308.00	148.96	159.04	1.000	1234678-HpCDD	AN	
D	DC	NH		36:16	RO	1.45	5.39			1.006			
D	DC	NH		36:32	RO	4.07	7.75			1.014			
424-426			2	Peaks			599.54						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.11	15.79			0.000			
				35:17		0.95	75.03	36.54	38.49	0.979			
				36:02		1.04	10,309.02	5,253.24	5,055.78	1.000	13C12-HpCDD 678	IS7	
436-438			2	Peaks			10,384.05						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	1.73	2.40			0.000			
	DC	WL		35:11		0.88	5.61			0.888			
	DC	WL		35:29	RO	0.40	3.50			0.896			
				35:59	RO	0.61	2.97	1.40	2.30	0.909			
	DC	SN		36:11	RO	1.57	1.78			0.914			
				36:17	RO	1.29	3.95	2.70	2.09	0.916			
	DC	SN		37:18	RO	2.93	0.87			0.942			
	DC	SN		38:21	RO	0.53	2.21			0.968			
				38:31	RO	0.18	2.93	1.38	7.82	0.973			
				38:40	RO	1.15	3.95	2.40	2.09	0.976			
				38:53	RO	1.80	2.72	2.59	1.44	0.982			
				39:49		0.87	1,068.35	497.25	571.10	1.005	OCDF	AN	
				40:14	RO	1.09	6.56	3.78	3.47	1.016			
442-444			7	Peaks			1,091.43						
OCDD				0.76-1.02						0.899-1.101			
458-460	DC	NL		0:00	RO	0.03	0.13			0.000			
				39:36		0.81	512.93	229.74	283.19	1.000	OCDD	AN	
				39:54	RO	2.10	4.20	4.66	2.22	1.008			
	DC	SN		40:04	RO	0.48	2.42			1.012			
458-460			2	Peaks			517.13						
13C12-OCDD				0.76-1.02						0.996-1.004			
470-472	DC	NL		0:00	RO	24.20	0.09			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				39:36		0.87	14,978.56	6,952.25	8,026.31	1.000	13C12-OCDD	IS8	
				40:01	RO	3.36	40.24	71.44	21.29	1.011			
470-472			2 Peaks				15,018.80						

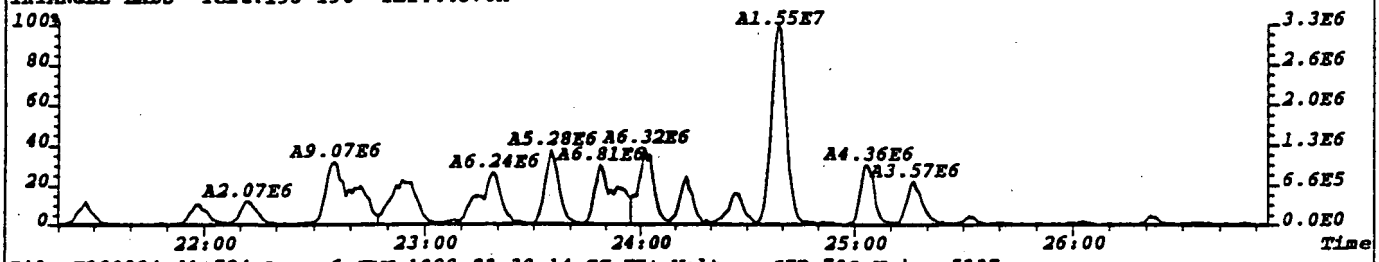
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

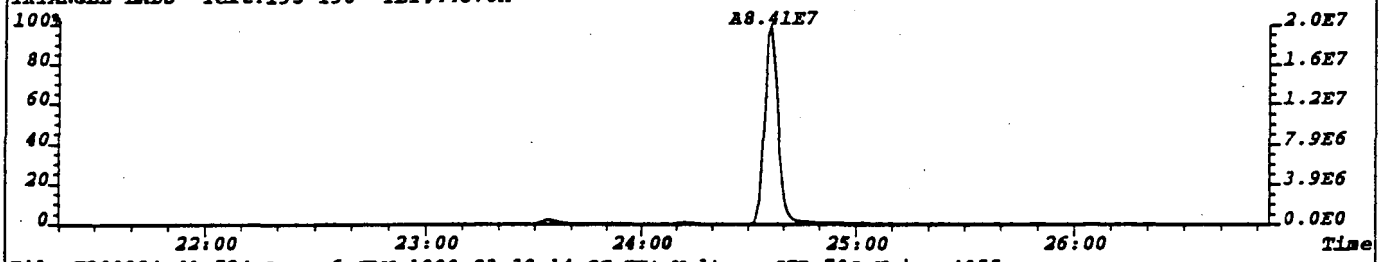
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:5455
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,21820.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



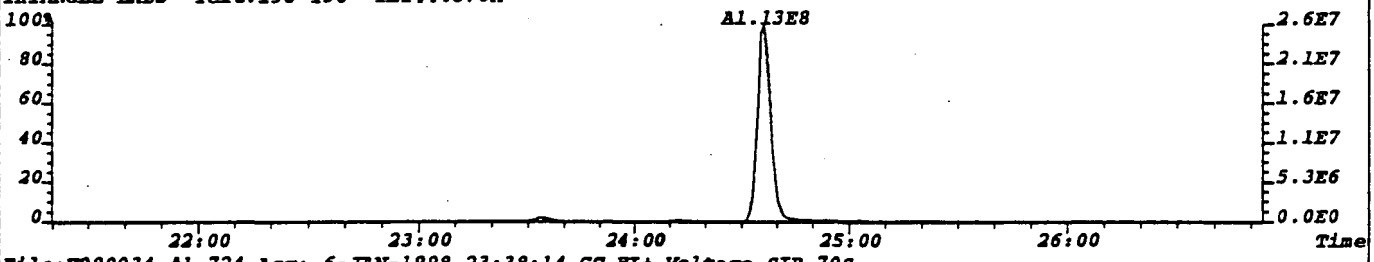
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:10036
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,40144.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



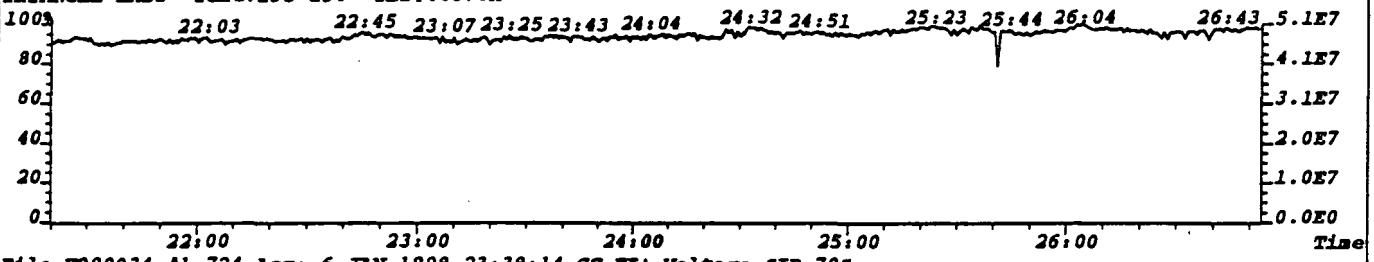
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:5337
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,21348.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



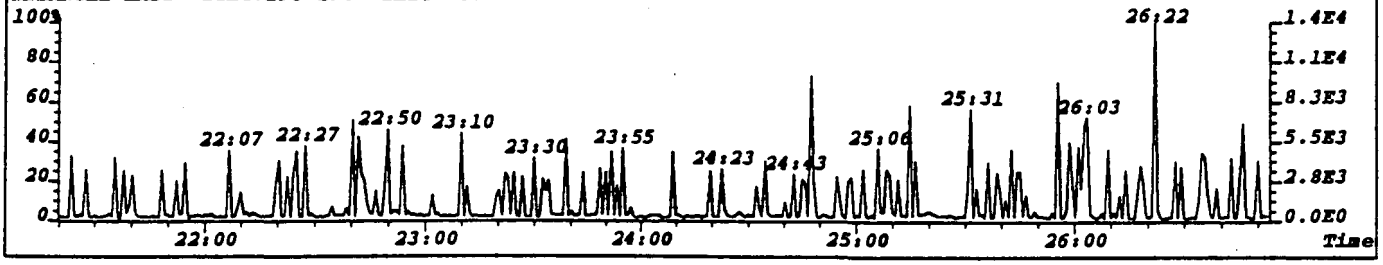
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:4055
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,16220.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A

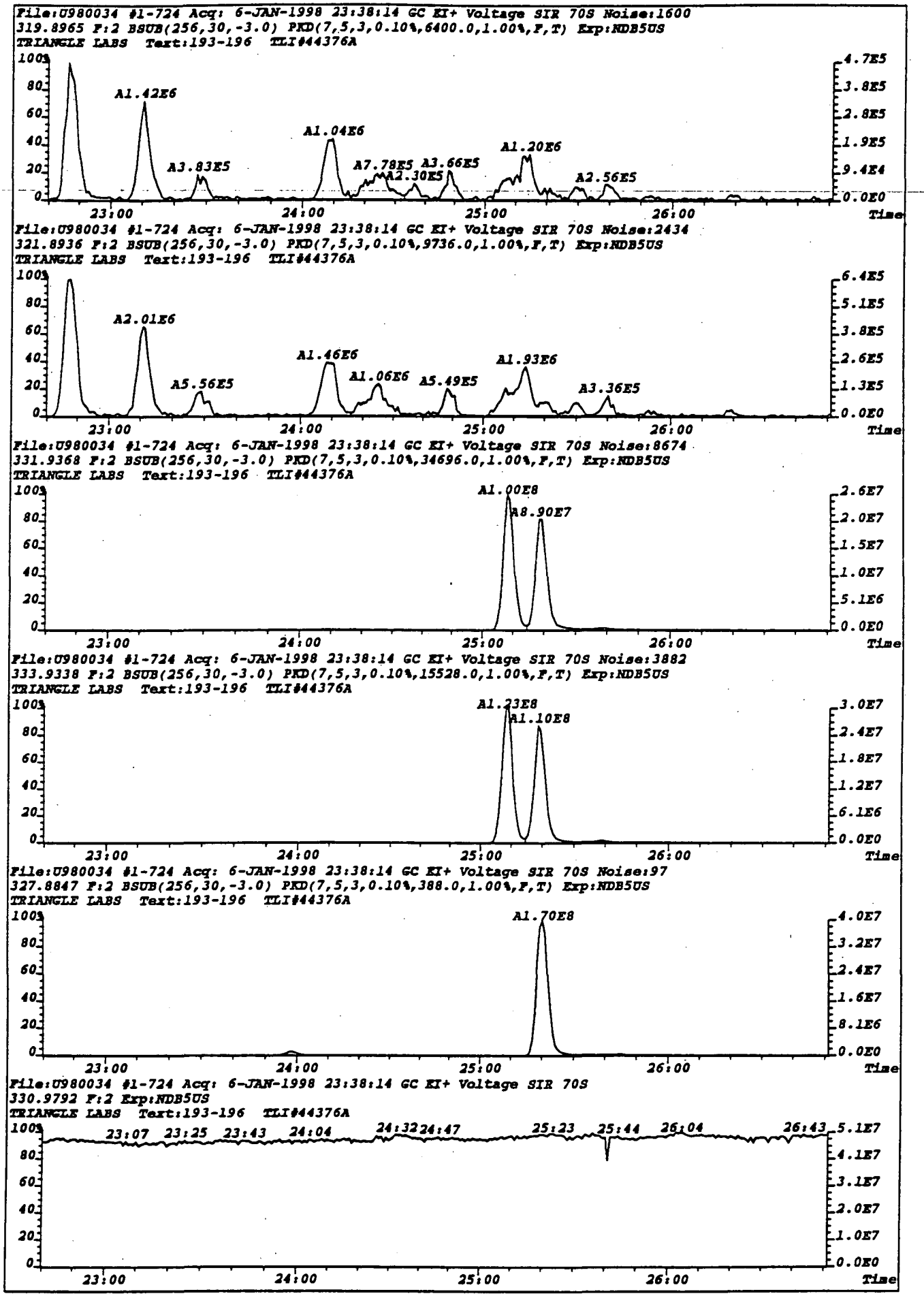


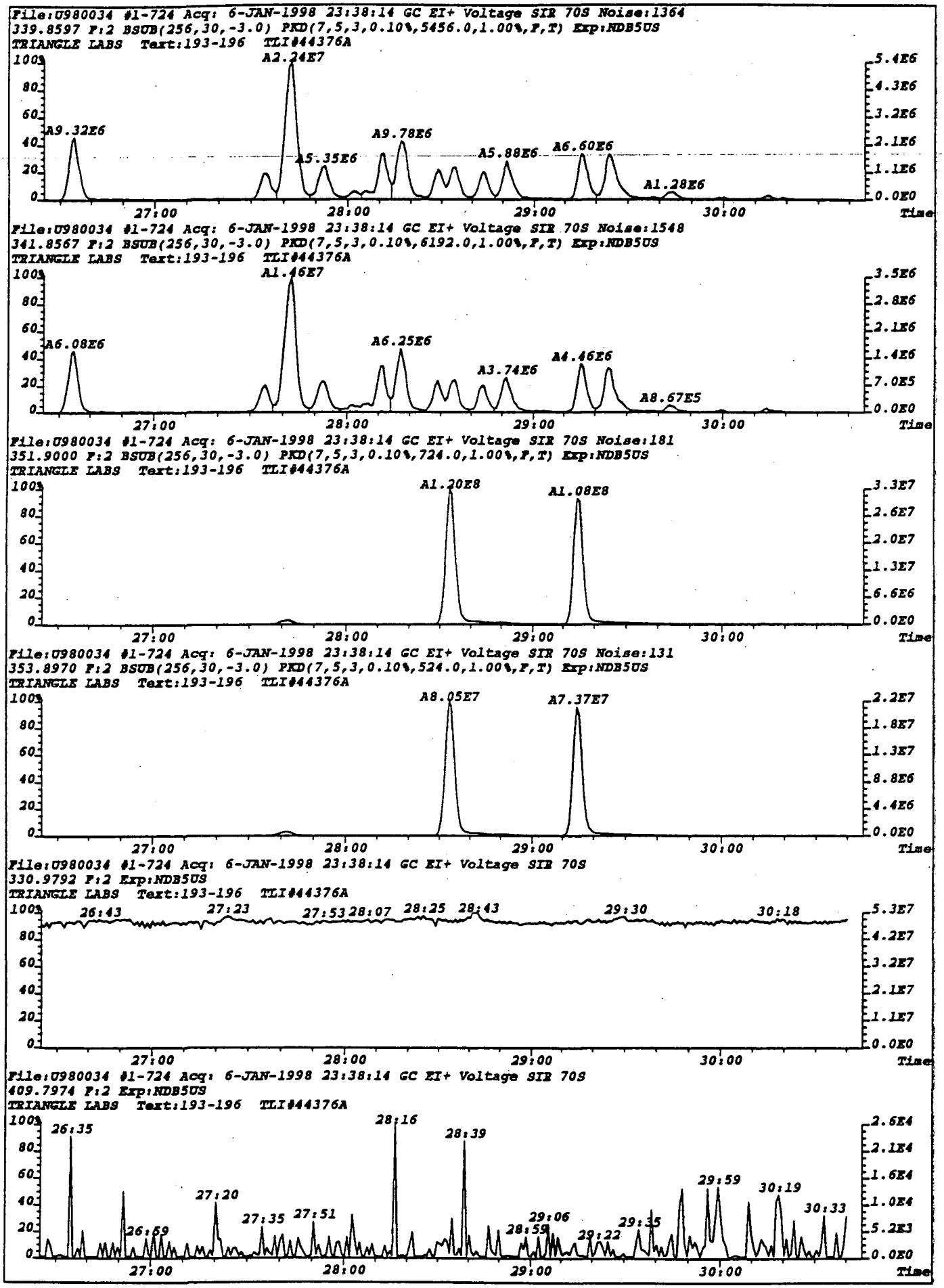
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A

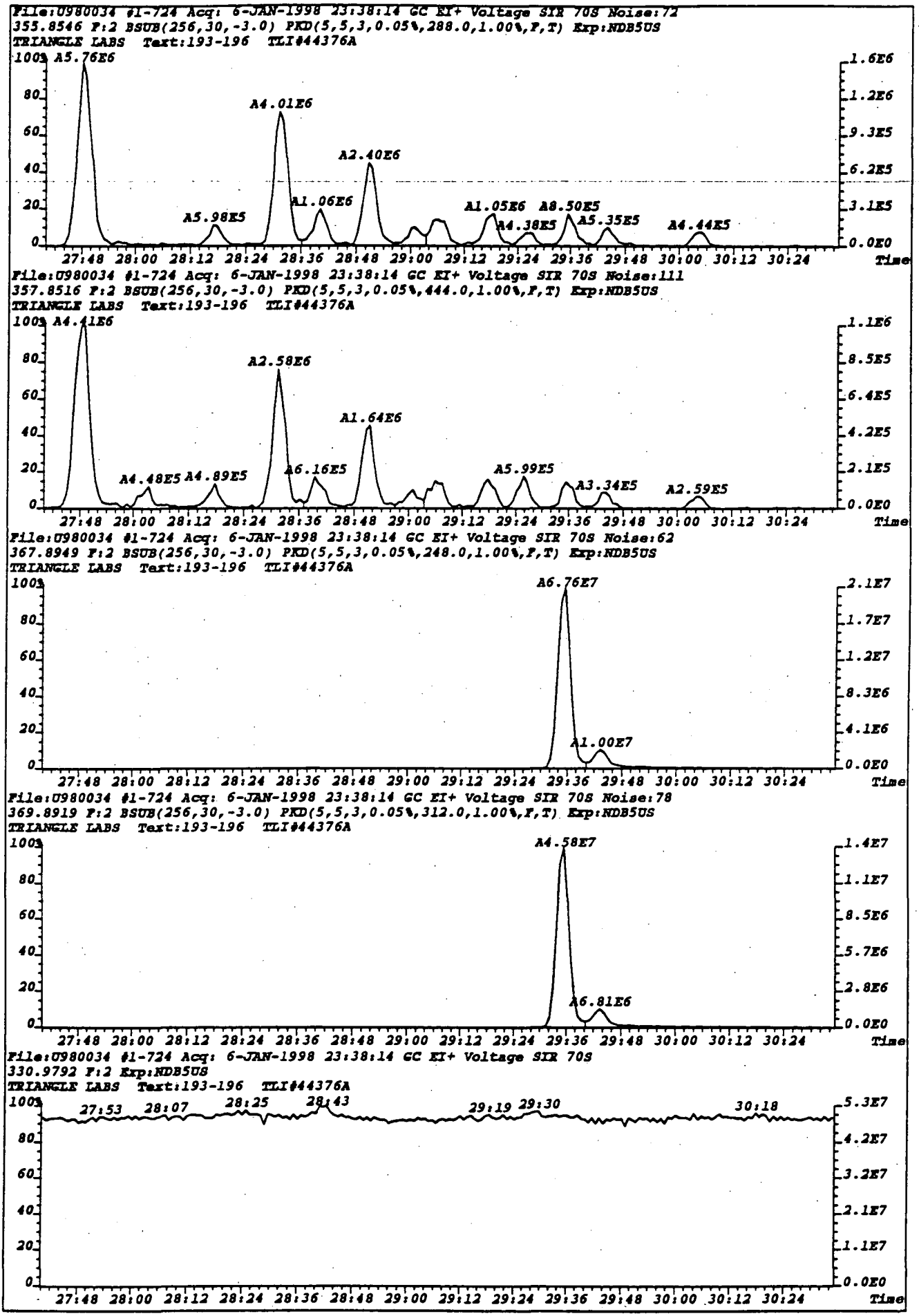


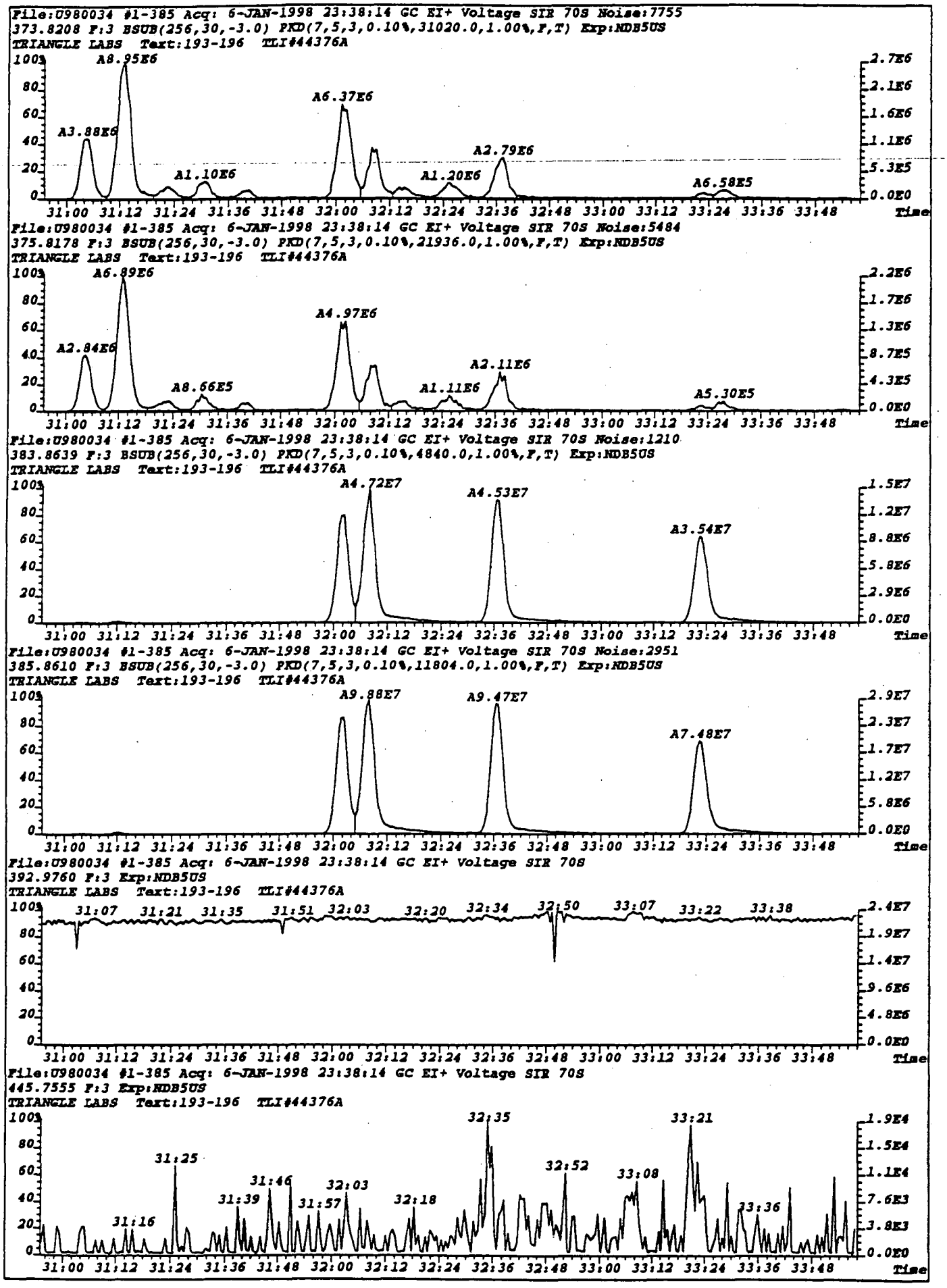
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A

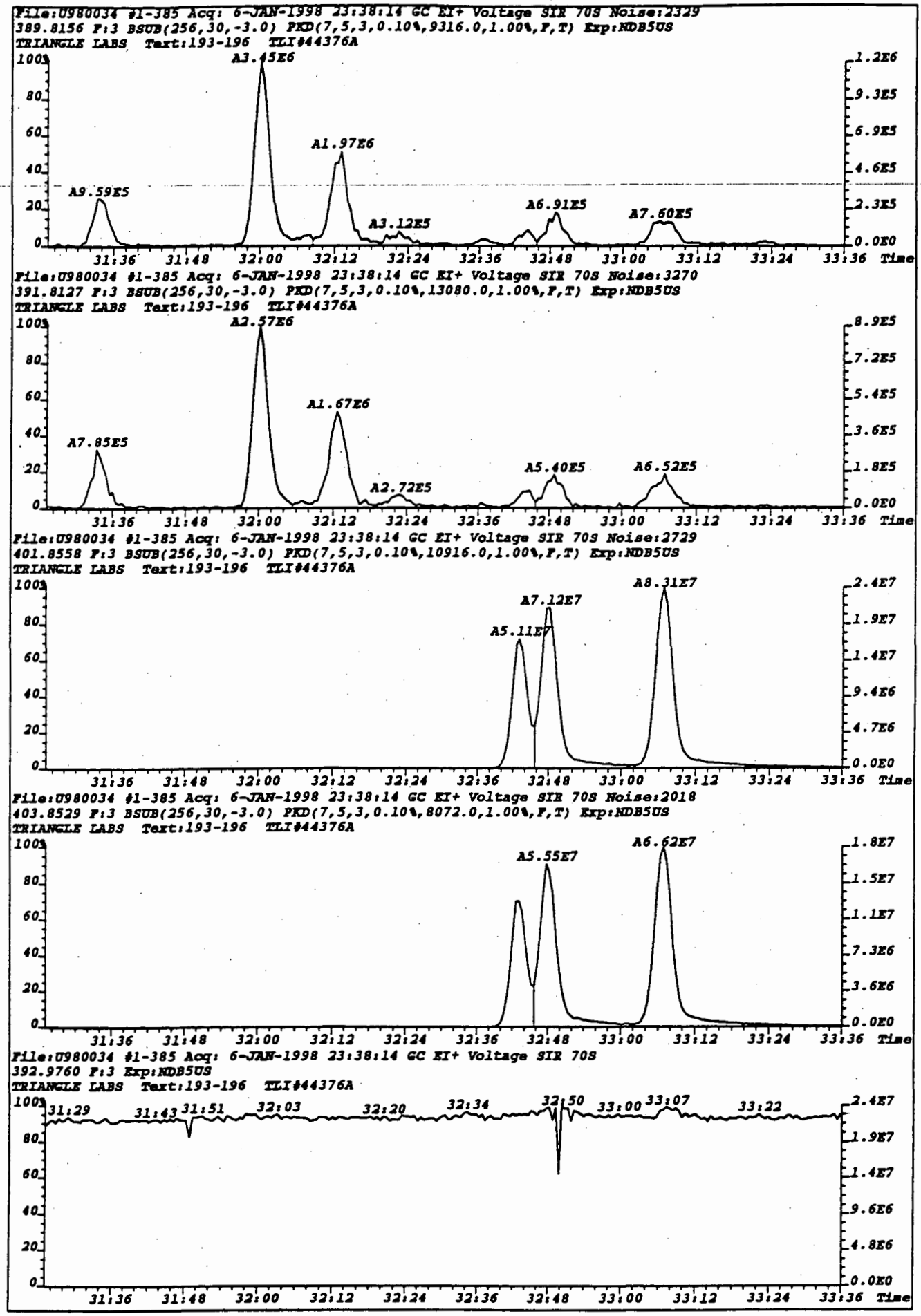



File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:1600
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6400.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.42E6
A3.83E5
A1.04E6
A7.78E5
A3.66E5
A2.30E5
A1.20E6
A2.56E5
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:2434
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9736.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A2.01E6
A5.56E5
A1.46E6
A1.06E6
A5.49E5
A1.93E6
A3.36E5
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:8674
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,34696.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.00E8
A8.90E7
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3882
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15528.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.23E8
A1.10E8
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:97
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,388.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.70E8
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
23:07 23:25 23:43 24:04 24:32 24:47 25:23 25:44 26:04 26:43
Time

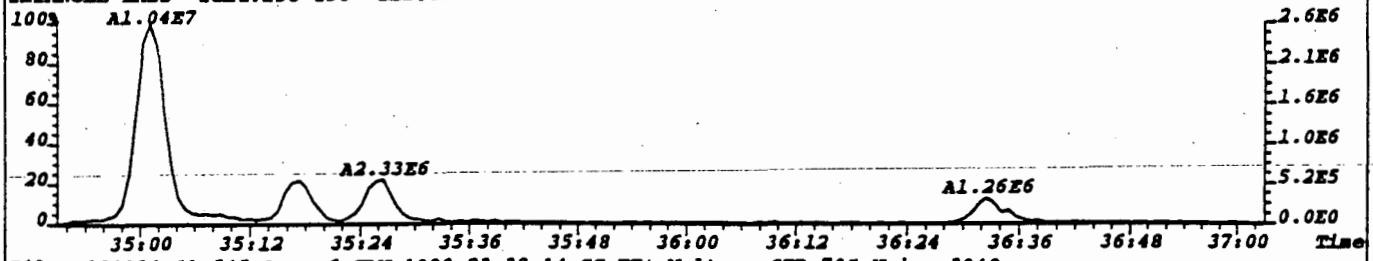

File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:1364
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5456.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A2.24E7
A9.32E6
A9.78E6
A5.35E6
A5.88E6
A6.60E6
A1.28E6
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:1548
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.46E7
A6.08E6
A6.25E6
A3.74E6
A4.46E6
A8.67E5
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:181
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,724.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A1.20E8
A1.08E8
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:131
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,524.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A8.05E7
A7.37E7
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
26:43
27:23
27:53
28:07
28:25
28:43
29:30
30:18
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
26:35
28:16
28:39
27:20
27:35
27:51
26:59
29:06
28:59
29:22
29:35
29:59
30:19
30:33
27:00
28:00
29:00
30:00
Time


File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:72
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,288.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A5.76E6
A4.01E6
A2.40E6
A1.06E6
A5.98E5
A1.05E6
A8.50E5
A4.38E5
A5.35E5
A4.44E5
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:111
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,444.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A4.41E6
A2.58E6
A1.64E6
A4.48E5
A4.89E5
A6.16E5
A5.99E5
A3.34E5
A2.59E5
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:62
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,248.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A6.76E7
A1.00E7
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:78
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A4.58E7
A6.81E6
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
27:53
28:07
28:25
28:43
29:19
29:30
30:18
Time

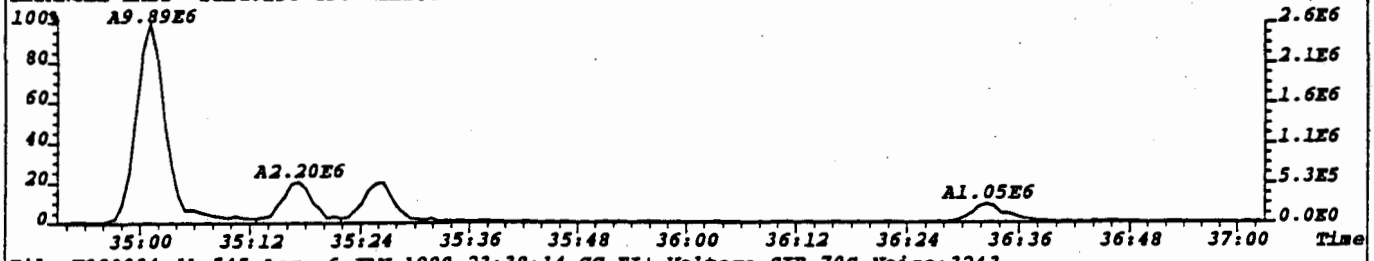

File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:7755
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,31020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A8.95E6
A6.37E6
A3.88E6
A2.79E6
A1.10E6
A1.20E6
A6.58E5
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:5484
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,21936.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A6.89E6
A4.97E6
A2.84E6
A2.11E6
A8.66E5
A1.11E6
A5.30E5
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:1210
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4840.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A4.72E7
A4.53E7
A3.54E7
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:2951
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11804.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A9.88E7
A9.47E7
A7.48E7
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
31:16
31:25
31:39
31:46
31:57
32:03
32:18
32:35
32:52
33:08
33:21
33:36
Time


File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:2329
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A3.45E6
A1.97E6
A9.59E5
A3.12E5
A6.91E5
A7.60E5
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3270
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13080.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A2.57E6
A1.67E6
A7.85E5
A2.72E5
A5.40E5
A6.52E5
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:2729
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10916.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A8.31E7
A7.12E7
A5.11E7
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:2018
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8072.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
A6.62E7
A5.55E7
File:U980034 #1-385 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A
31:29
31:43
31:51
32:03
32:20
32:34
32:50
33:00
33:07
33:22
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
33:36
Time

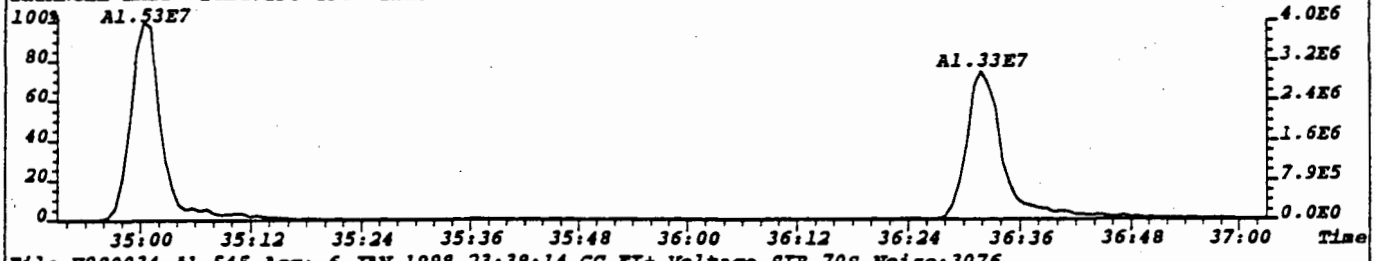
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3889
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,15556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



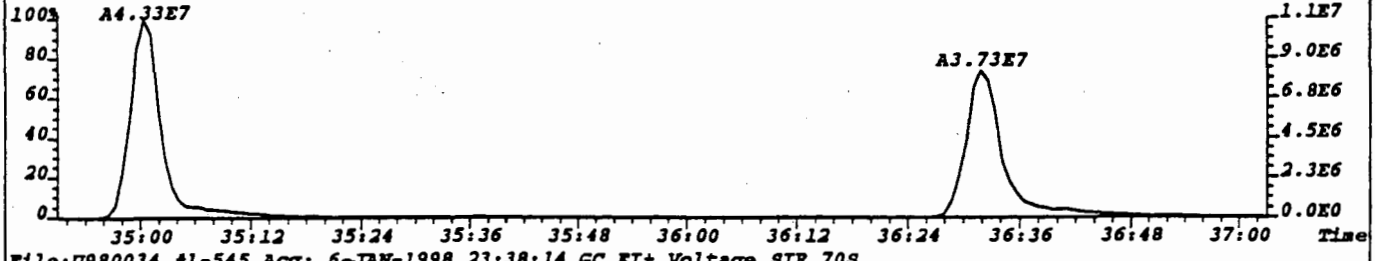
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3049
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



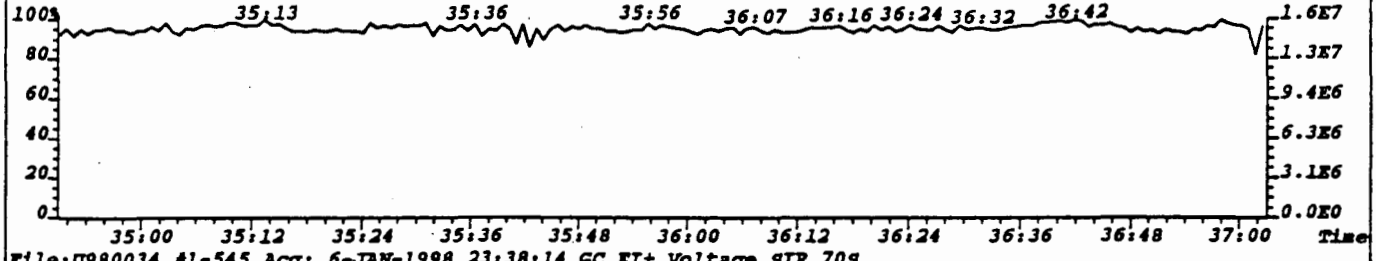
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3243
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12972.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



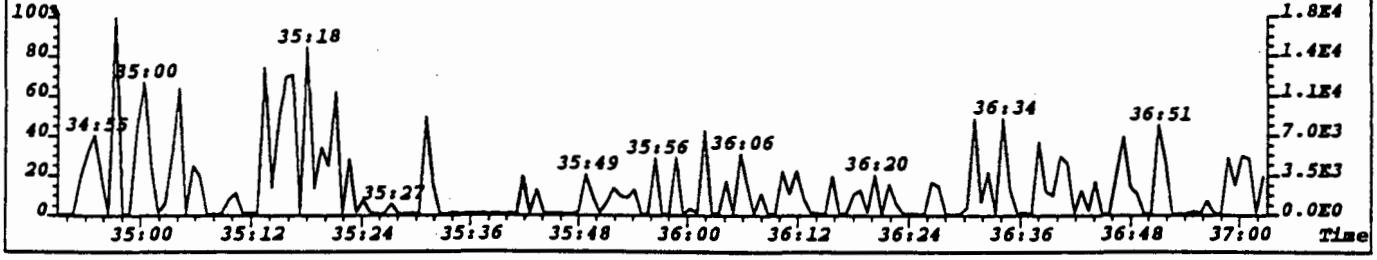
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3076
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12304.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



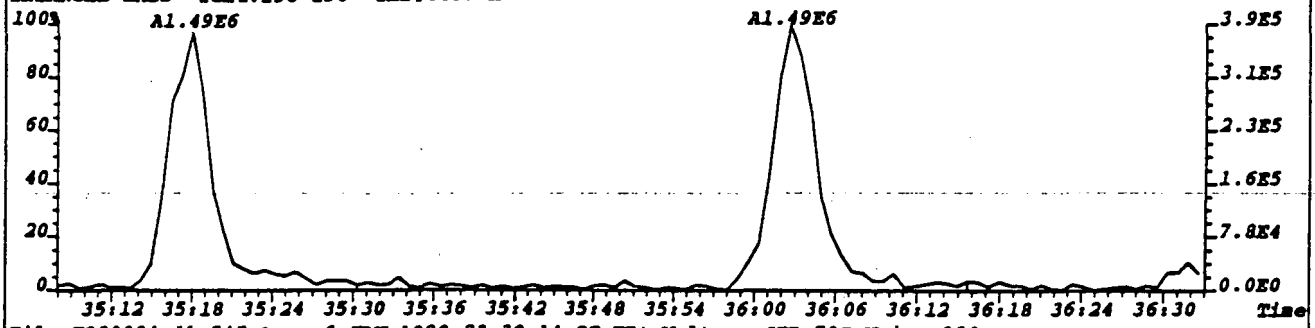
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



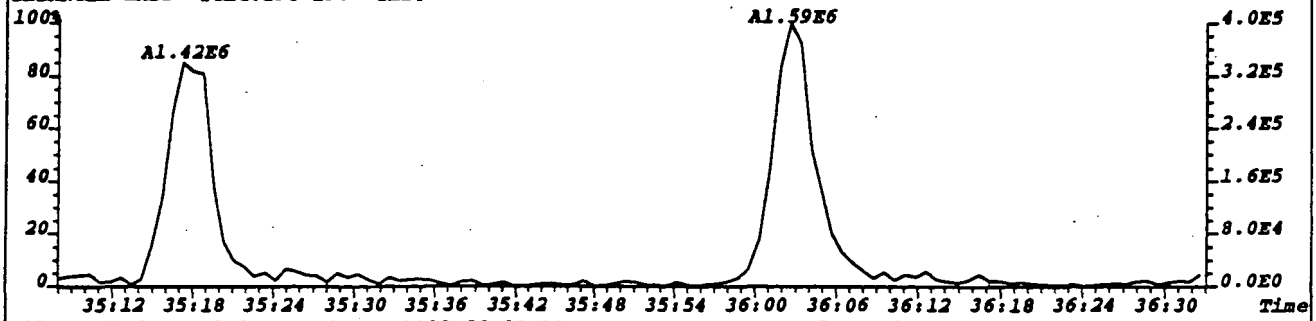
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



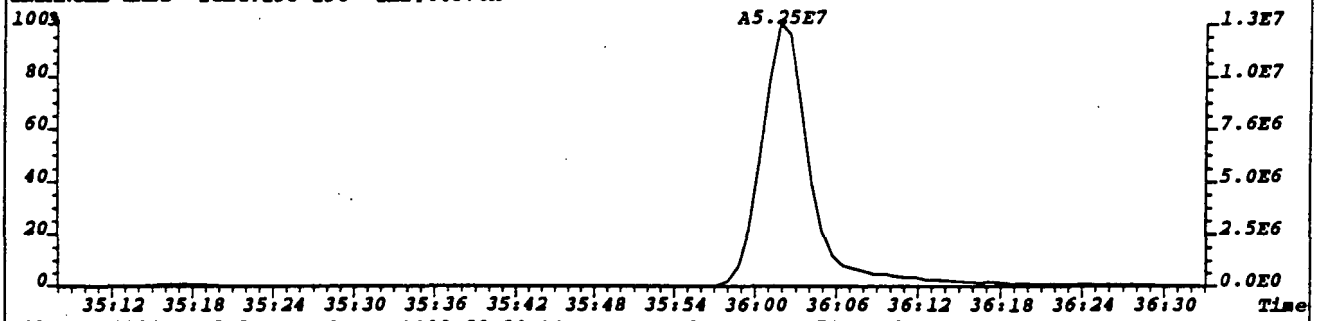
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:969
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3876.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



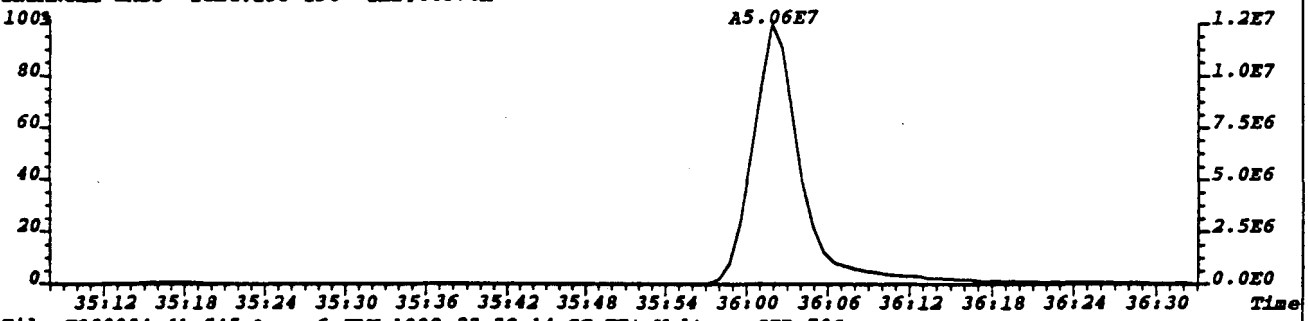
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:930
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



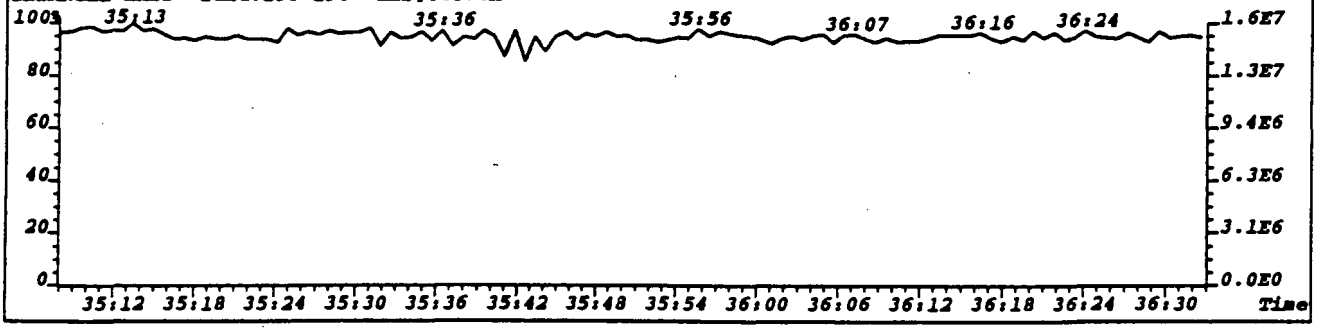
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:4149
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,16596.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



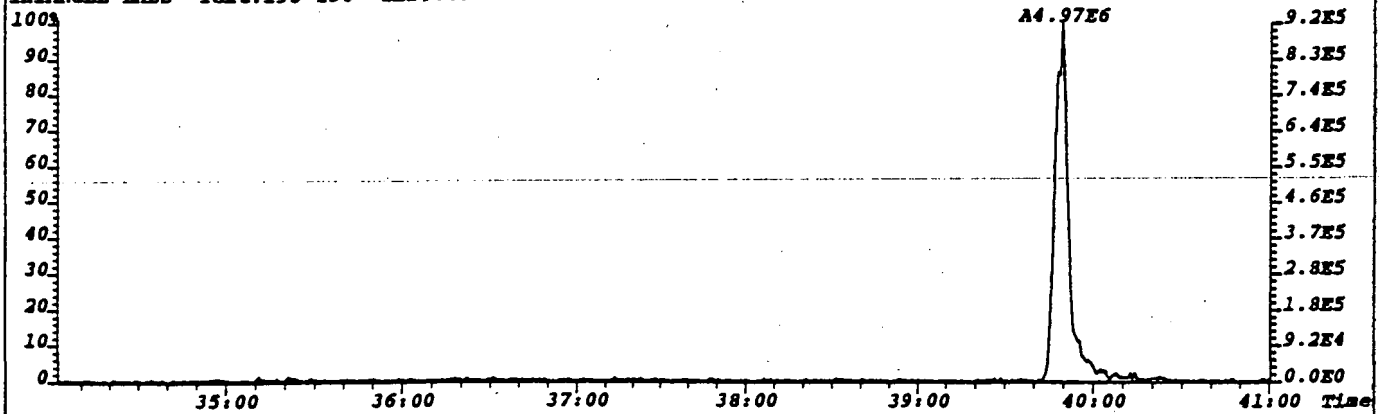
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:3745
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



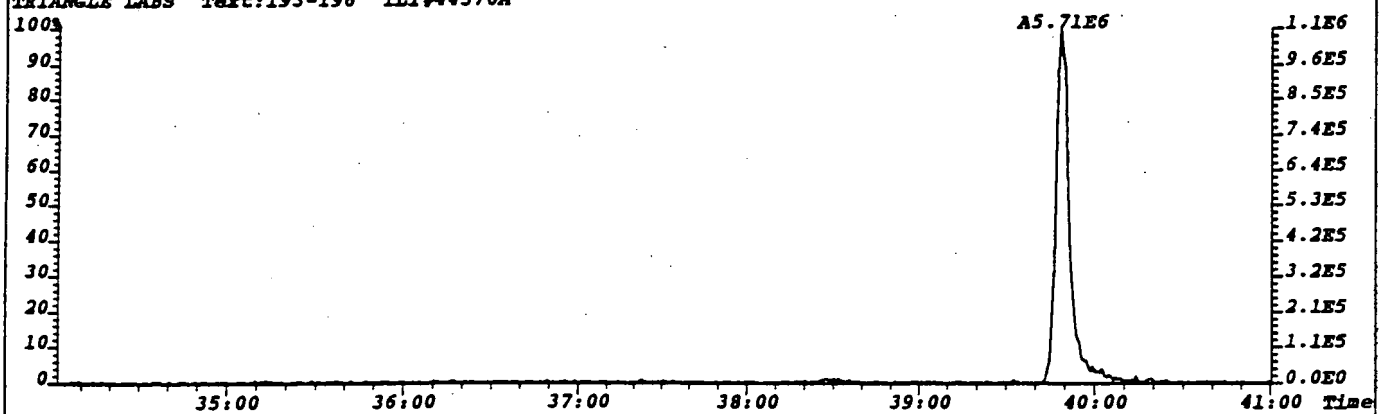
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



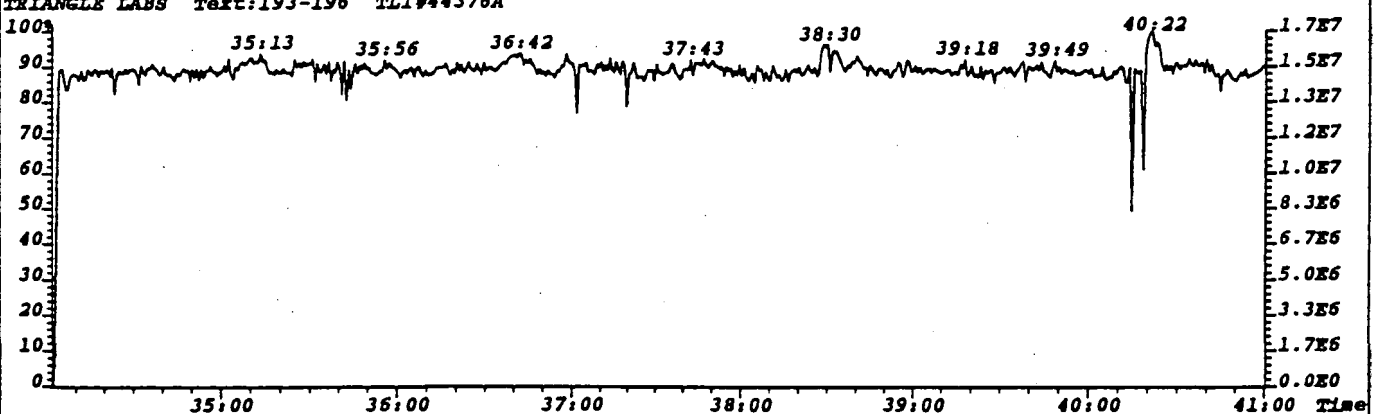
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:1098
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4392.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



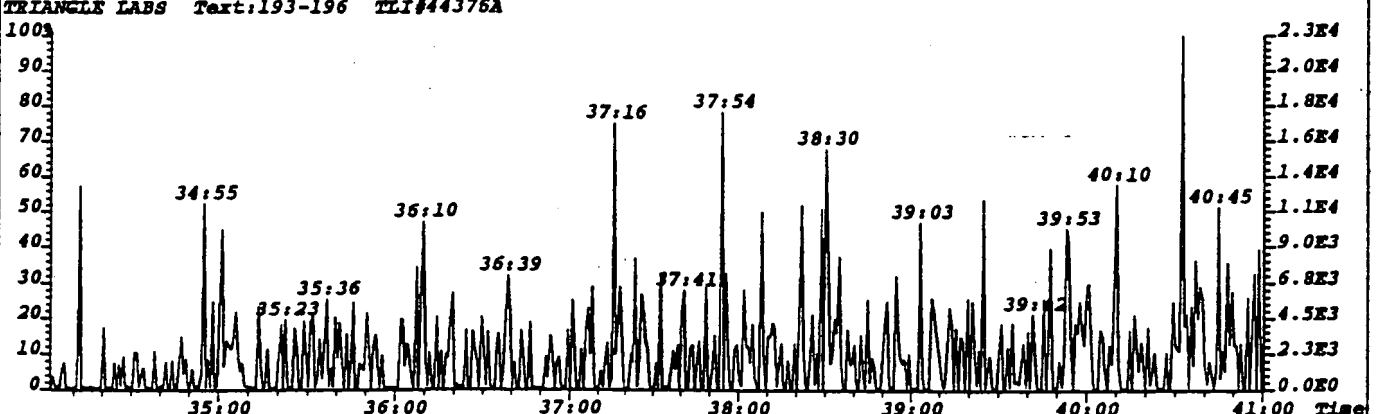
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:634
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



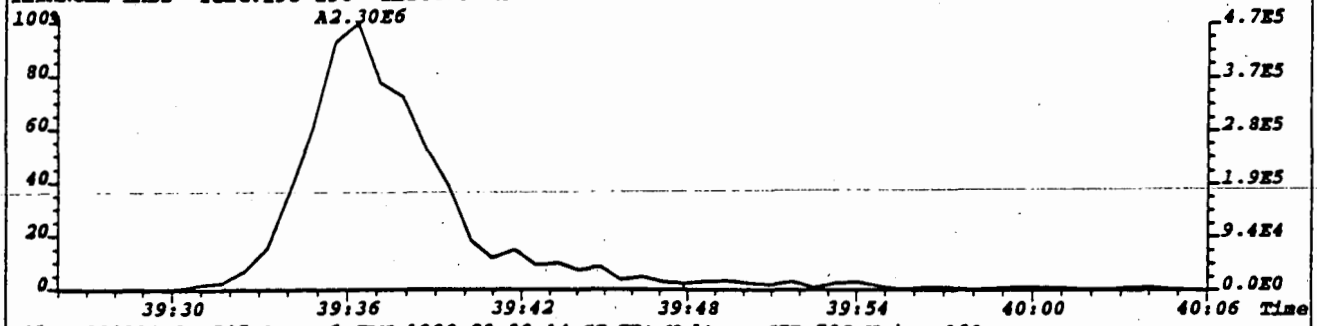
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



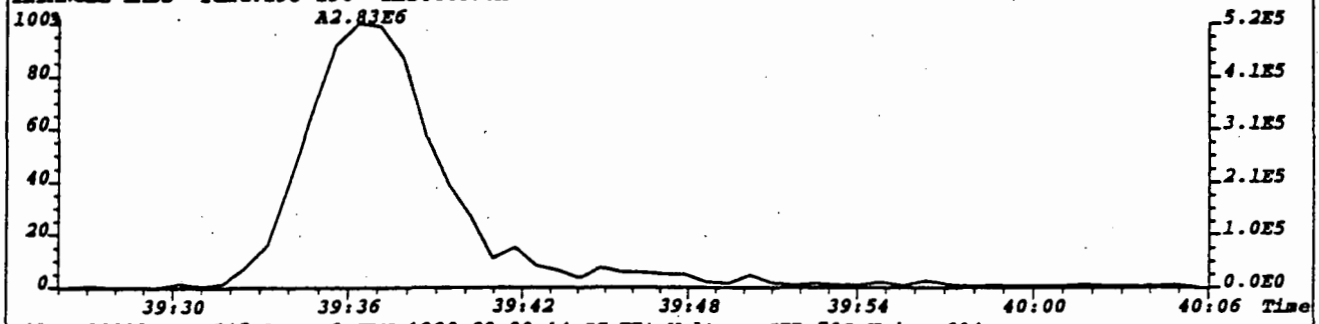
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



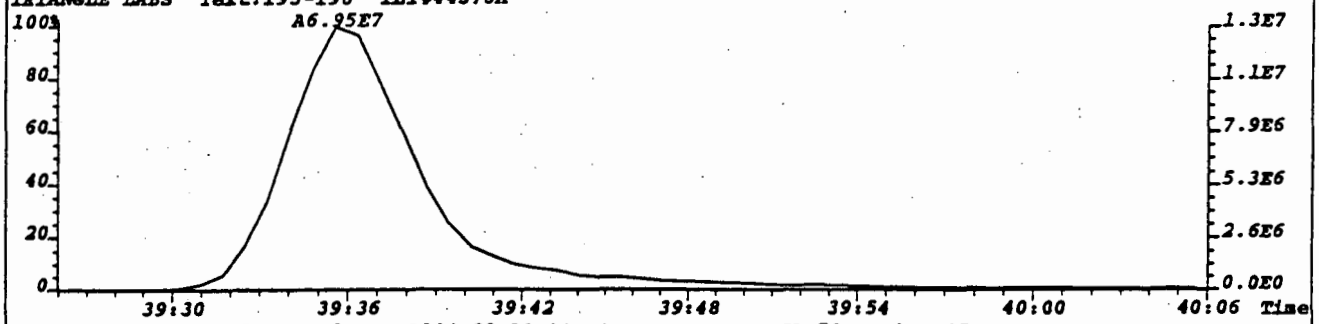
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:29
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



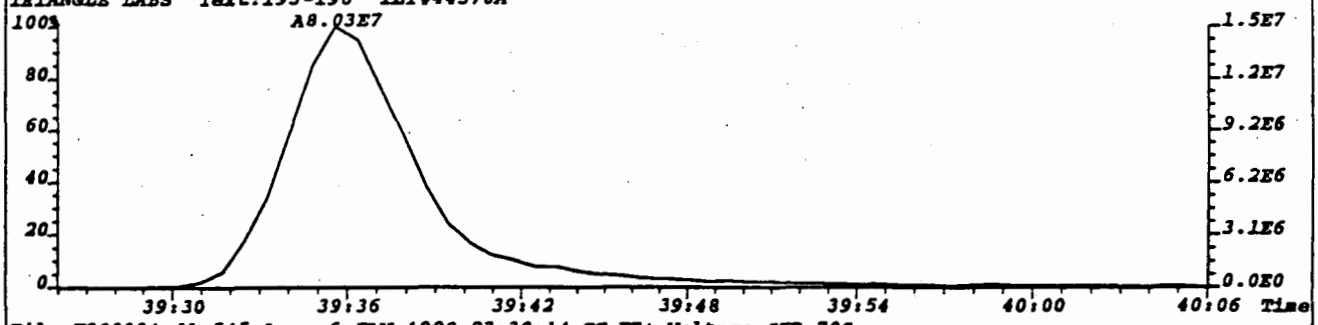
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:868
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3472.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A



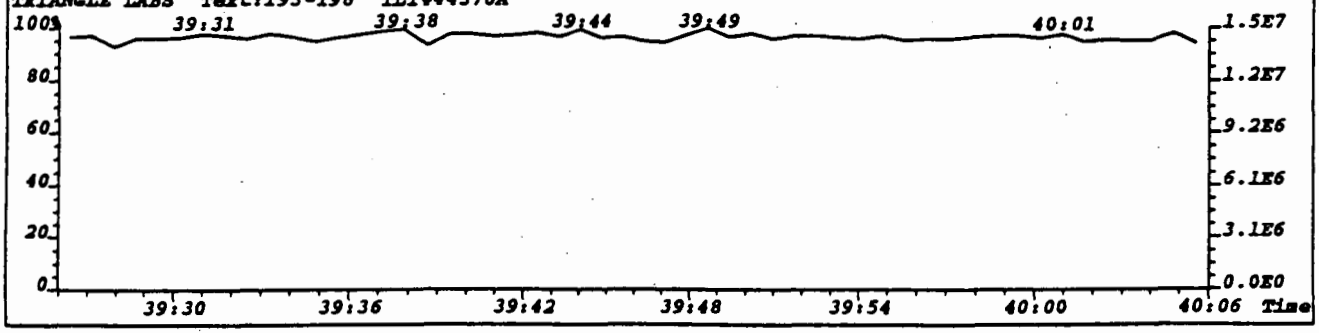
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:604
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2416.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A

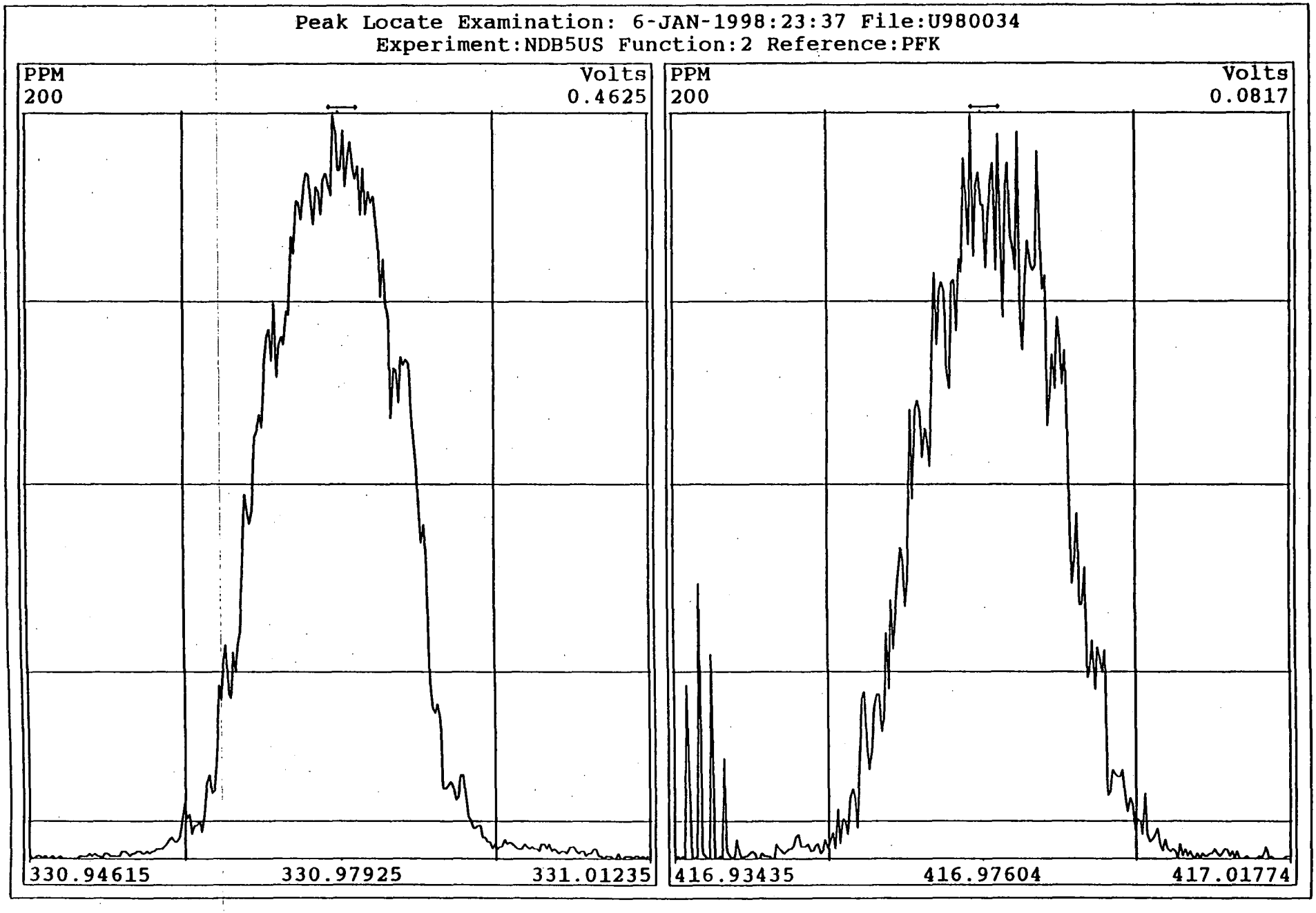


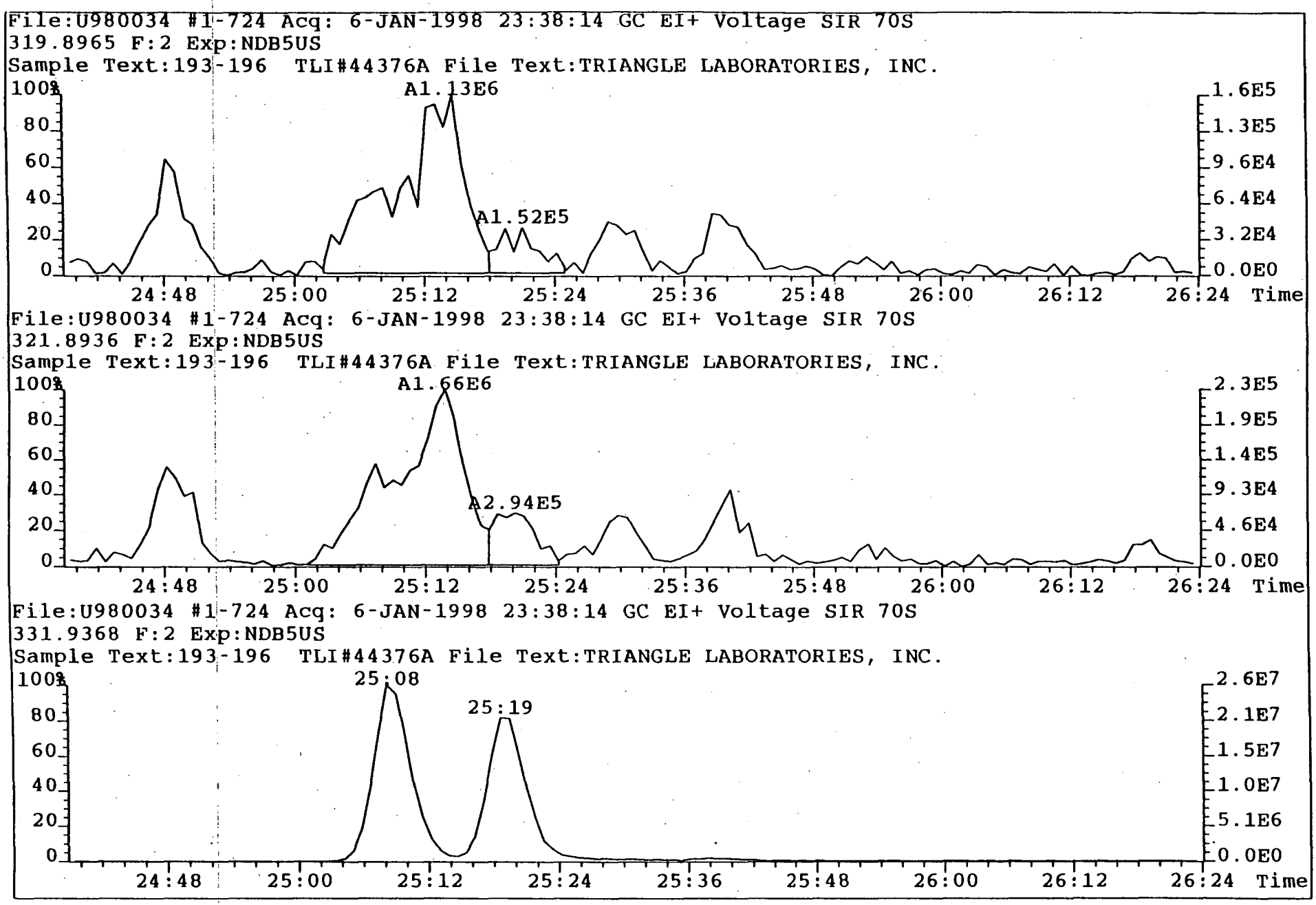
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S Noise:27
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,108.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A

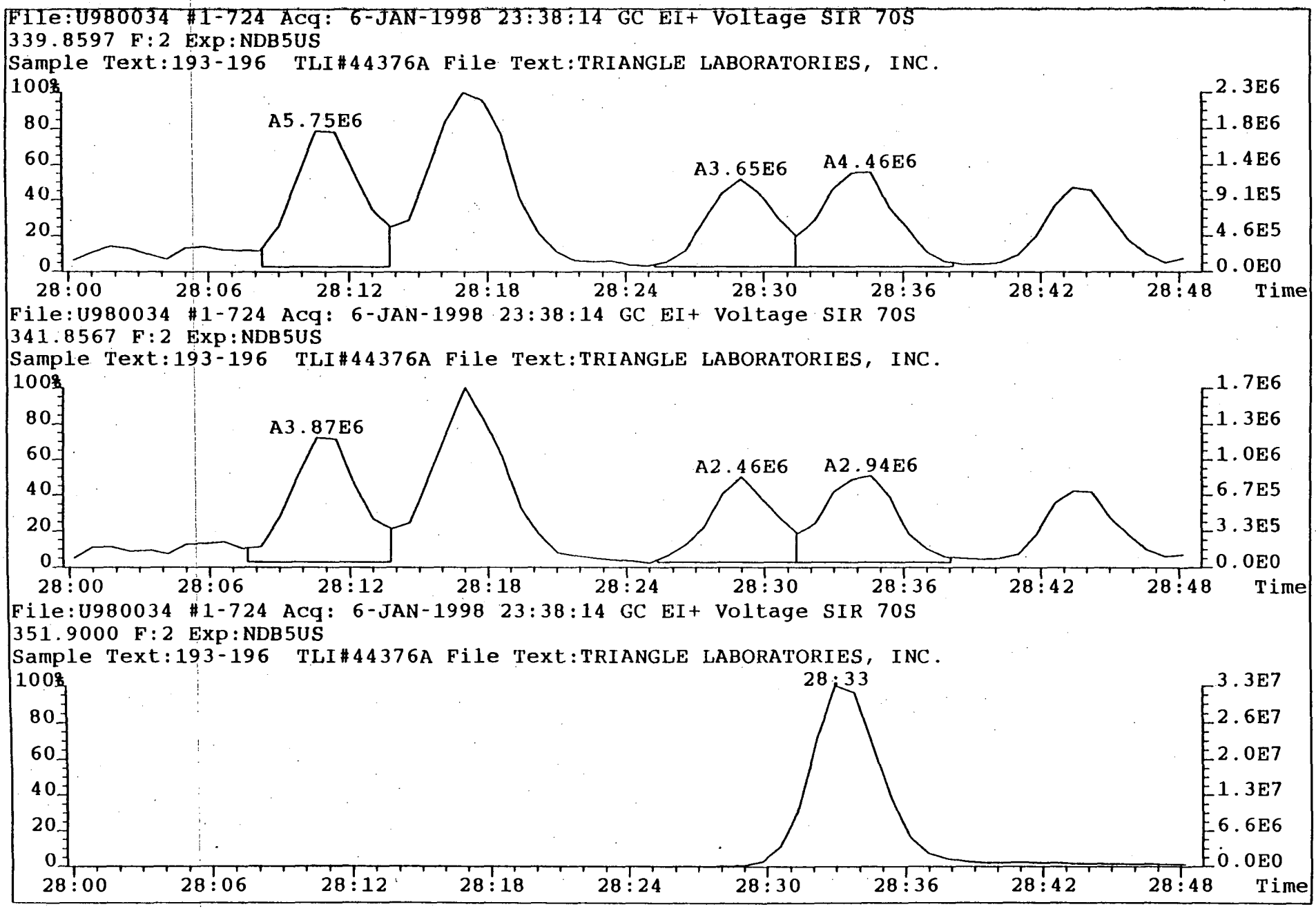


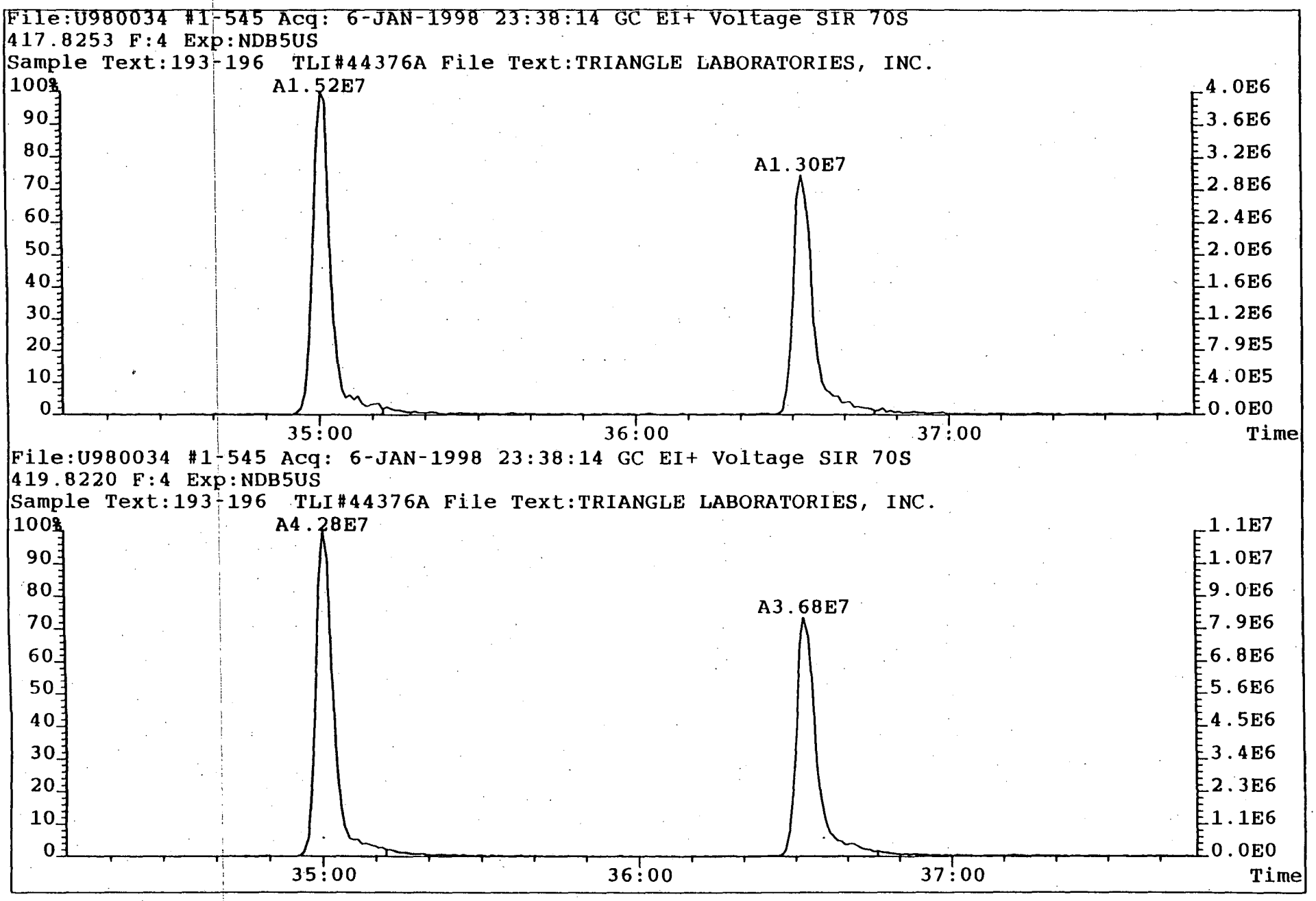
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:193-196 TLI#44376A




Peak Locate Examination: 6-JAN-1998:23:37 File:U980034
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.4625
330.94615
330.97925
331.01235
PPM
200
Volts
0.0817
416.93435
416.97604
417.01774


File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.13E6
A1.52E5
100%
80
60
40
20
0
1.6E5
1.3E5
9.6E4
6.4E4
3.2E4
0.0E0
24:48
25:00
25:12
25:24
25:36
25:48
26:00
26:12
26:24
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.66E6
A2.94E5
2.3E5
1.9E5
1.4E5
9.3E4
4.6E4
0.0E0
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
25:08
25:19
2.6E7
2.1E7
1.5E7
1.0E7
5.1E6
0.0E0


File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A5.75E6
A3.65E6
A4.46E6
2.3E6
1.8E6
1.4E6
9.1E5
4.6E5
0.0E0
28:00
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.87E6
A2.46E6
A2.94E6
1.7E6
1.3E6
1.0E6
6.7E5
3.3E5
0.0E0
28:00
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time
File:U980034 #1-724 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:33
3.3E7
2.6E7
2.0E7
1.3E7
6.6E6
0.0E0
28:00
28:06
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time


File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
417.8253 F:4 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A1.52E7
A1.30E7
4.0E6
3.6E6
3.2E6
2.8E6
2.4E6
2.0E6
1.6E6
1.2E6
7.9E5
4.0E5
0.0E0
90
80
70
60
50
40
30
20
10
0
35:00
36:00
37:00
Time
File:U980034 #1-545 Acq: 6-JAN-1998 23:38:14 GC EI+ Voltage SIR 70S
419.8220 F:4 Exp:NDB5US
Sample Text:193-196 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A4.28E7
A3.68E7
1.1E7
1.0E7
9.0E6
7.9E6
6.8E6
5.6E6
4.5E6
3.4E6
2.3E6
1.1E6
0.0E0
90
80
70
60
50
40
30
20
10
0
35:00
36:00
37:00
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 193-196 — Analysis File: P980102

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-17A-D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.10			0.75	23:06	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.8	93.9	40%-130%	0.78	23:05	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.84	21:54	___

Data Reviewer: _____ 01/09/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980102B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00		0.79	1.88			0.000			
				18:27		0.84	21.38	9.77	11.61	0.799			
	DC	SN		18:48		0.67	0.75			0.814			
	DC	SN		18:52		0.82	0.71			0.817			
	DC	SN		19:00	RO	0.60	1.20			0.823			
				19:07	RO	1.24	2.92	2.05	1.65	0.828			J
				19:28		0.87	24.96	11.59	13.37	0.843			
				19:35		0.75	22.90	9.78	13.12	0.848			
				19:43		0.74	46.42	19.72	26.70	0.854			
				19:53		0.78	22.10	9.68	12.42	0.861			
	DC	SN		20:00	RO	1.81	1.04			0.866			
				20:10		0.77	19.08	8.29	10.79	0.874			
				20:18		0.75	43.34	18.57	24.77	0.879			
				20:28		0.71	23.19	9.64	13.55	0.887			
				20:38		0.75	80.42	34.53	45.89	0.894			
				20:47		0.71	30.59	12.75	17.84	0.900			
				21:10		0.74	151.66	64.30	87.36	0.917			
				21:36		0.74	45.49	19.39	26.10	0.936			
				21:43	RO	0.99	5.56	3.11	3.14	0.941			J
				21:51		0.71	44.06	18.30	25.76	0.947			
				22:06		0.80	40.41	17.99	22.42	0.957			
				22:21		0.69	8.75	3.57	5.18	0.968			
				22:31		0.73	55.17	23.36	31.81	0.975			
				22:59		0.81	52.05	23.24	28.81	0.996			
				23:06		0.75	42.67	18.30	24.37	1.001	2378-TCDF	AN	
				23:19		0.76	52.48	22.63	29.85	1.010			
				23:36		0.75	60.03	25.69	34.34	1.022			
				23:43		0.77	57.70	25.11	32.59	1.027			
				24:30		0.76	36.05	15.57	20.48	1.061			
	DC	SN		24:39		0.89	0.85			1.068			
	DC	SN		24:47	RO	1.08	0.64			1.074			
				25:16	RO	1.30	4.92	3.61	2.78	1.095			J
304-306		25	Peaks				994.30						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.08	2.11			0.000			
	DC	WL		21:07	RO	1.30	2.74			0.915			
	DC	WL		21:35		0.70	11.59			0.935			
	DC	WL		21:51		0.89	35.67			0.947			
				23:05		0.78	1,620.48	710.33	910.15	1.000	13C12-2378-TCDF	ISO	
				23:44	RO	1.18	2.27	1.51	1.28	1.028			
	DC	WH		24:07	RO	3.21	1.20			1.045			
	DC	WH		24:52	RO	1.66	1.08			1.077			

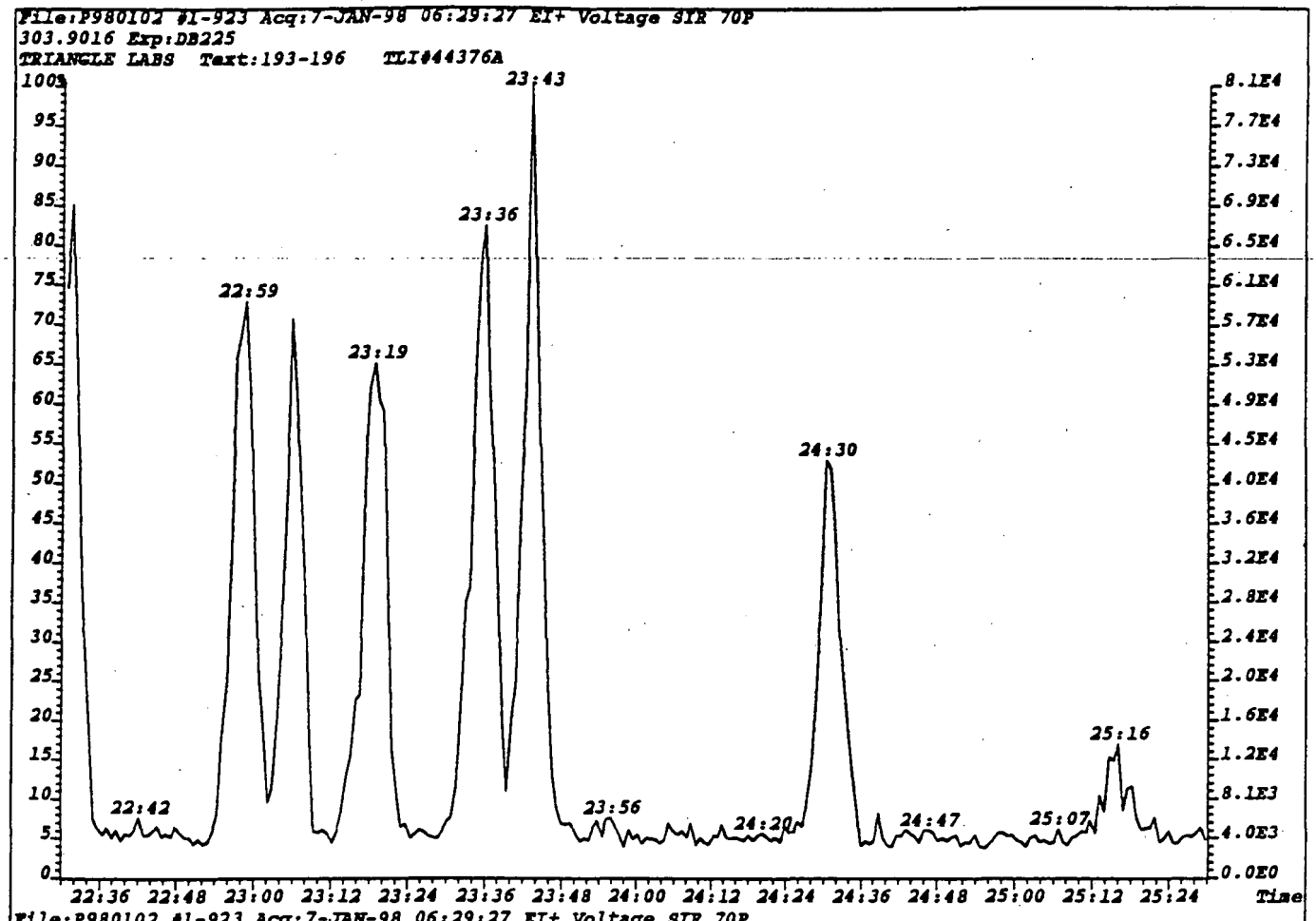
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WH		25:09		0.65	13.22			1.090			
316-318			2 Peaks				1,622.75						

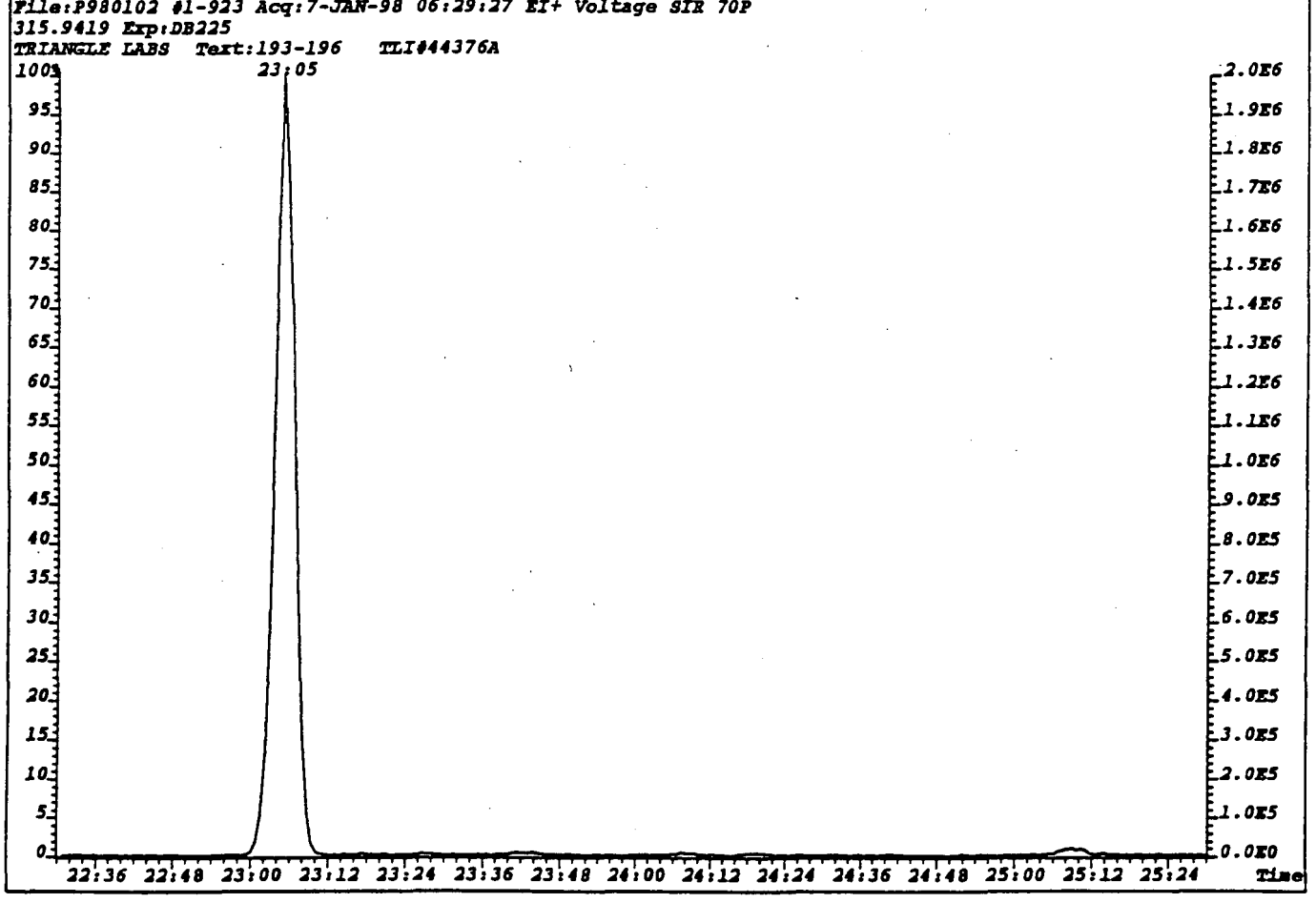
---------- Above: TCDF / TCDD Follows ----------

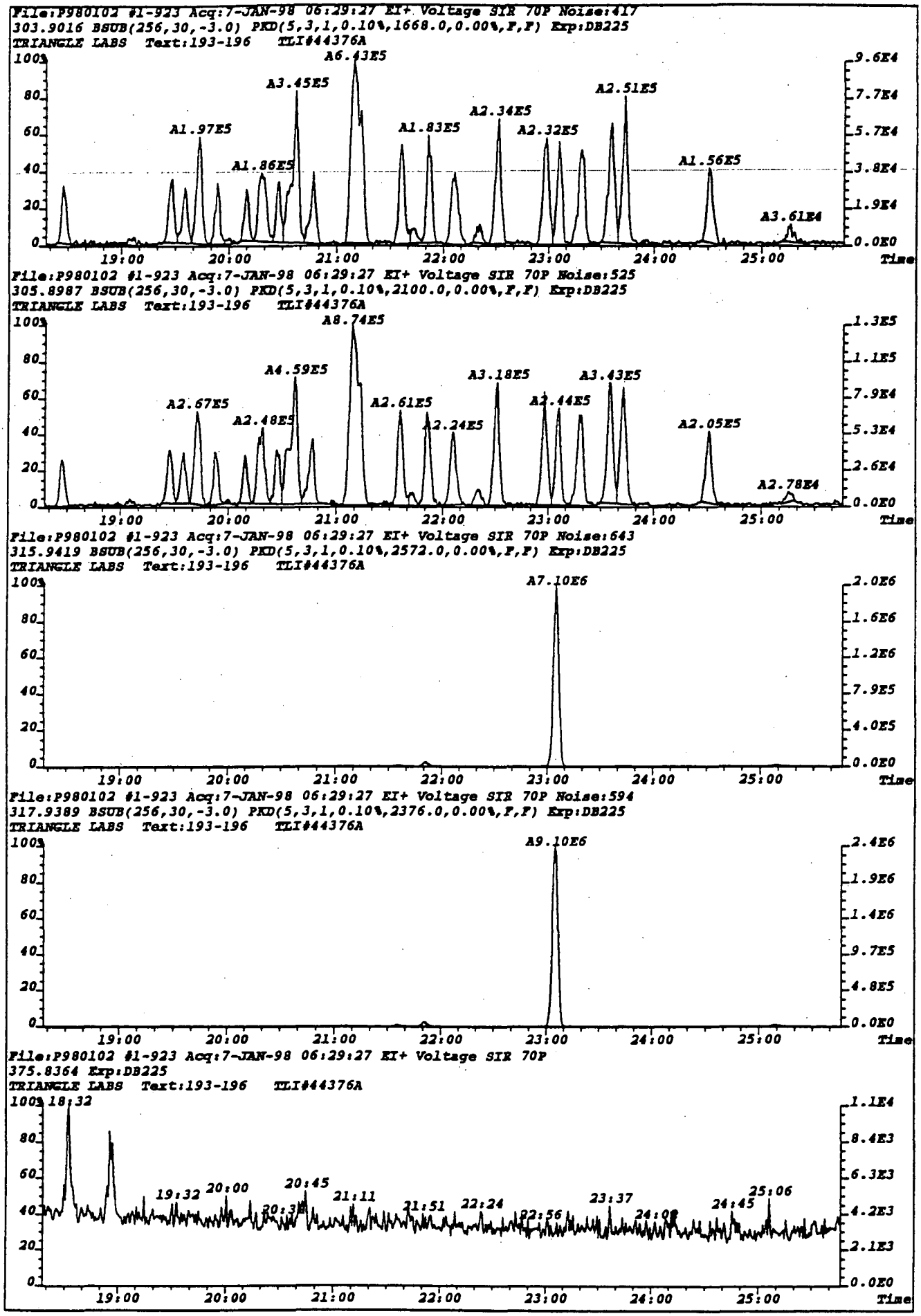
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334	DC	NL		0:00	RO	1.74	1.15			0.000			
				20:29	RO	1.05	4.78	2.84	2.70	0.948			
				21:37		0.79	1,127.78	498.71	629.07	1.000	13C12-2378-TCDD	IS1	
				21:54		0.84	1,243.79	567.80	675.99	1.013	13C12-1234-TCDD	RS1	
				22:41	RO	0.95	14.21	7.61	8.03	1.049			
	DC	WH		23:38	RO	1.52	1.45			1.093			
	DC	WH		24:25		0.81	7.01			1.130			
	DC	WH		24:58	RO	1.73	2.81			1.155			
332-334			4 Peaks				2,390.56						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

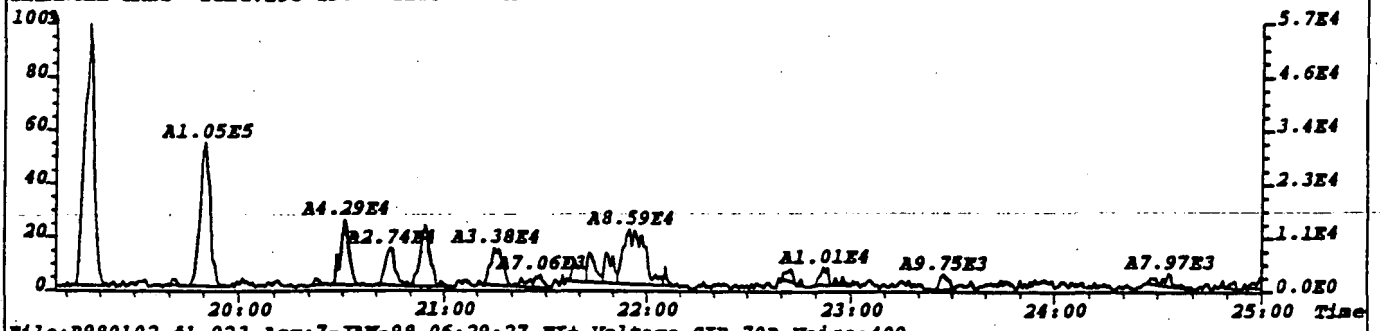
*** End of Report ***


File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
22:42
22:59
23:19
23:36
23:43
23:56
24:20
24:30
24:47
25:07
25:16
Time

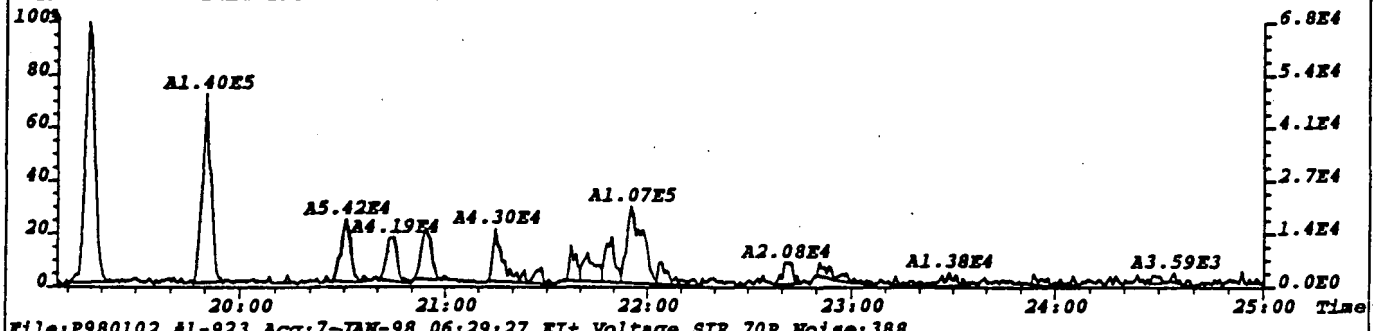

File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
23:05
Time


File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:417
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1668.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
A1.97E5
A3.45E5
A6.43E5
A1.86E5
A1.83E5
A2.34E5
A2.32E5
A2.51E5
A1.56E5
A3.61E4
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:525
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2100.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
A2.67E5
A4.59E5
A8.74E5
A2.48E5
A2.61E5
A2.24E5
A3.18E5
A2.44E5
A3.43E5
A2.05E5
A2.78E4
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:643
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2572.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
A7.10E6
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:594
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2376.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
A9.10E6
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
18:32
19:32
20:00
20:45
21:11
21:51
22:24
23:37
24:45
25:06
Time

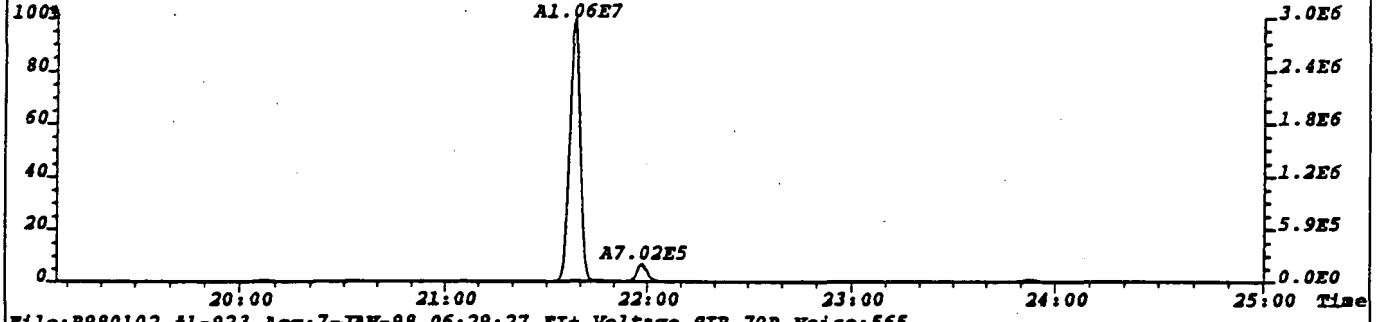
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:344
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1376.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A



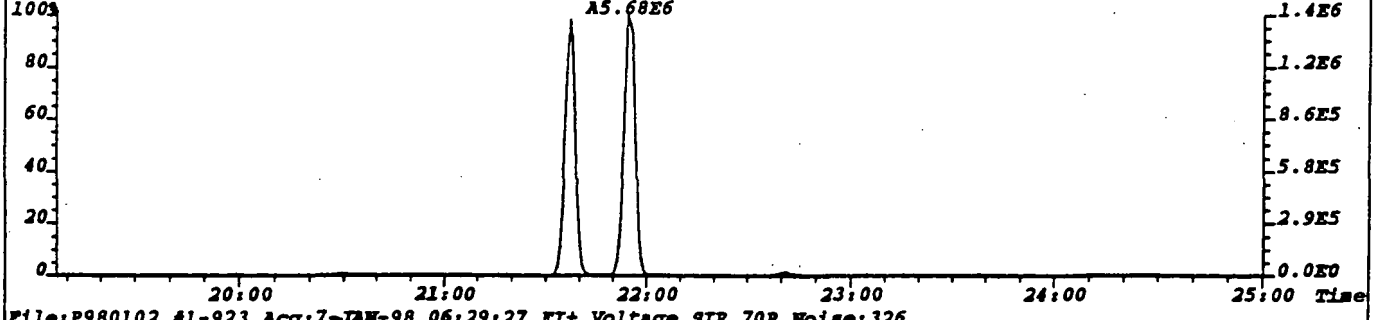
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:409
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1636.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A



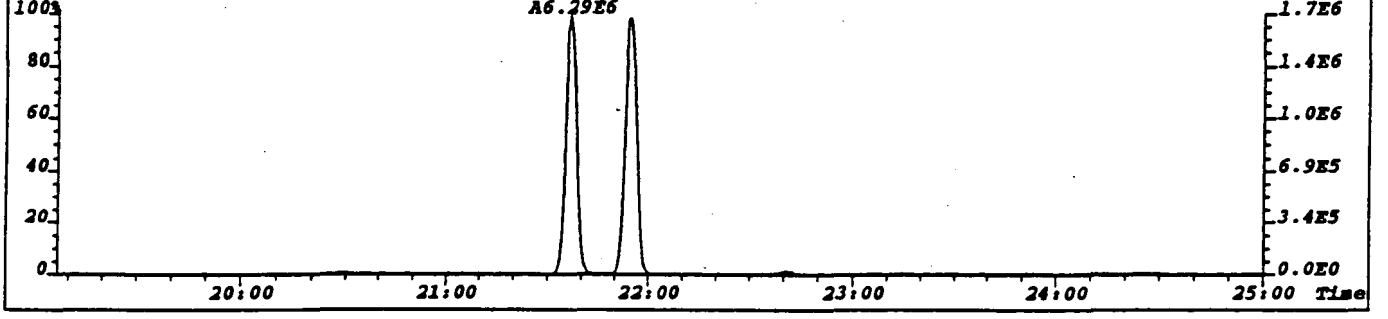
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:388
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1552.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A

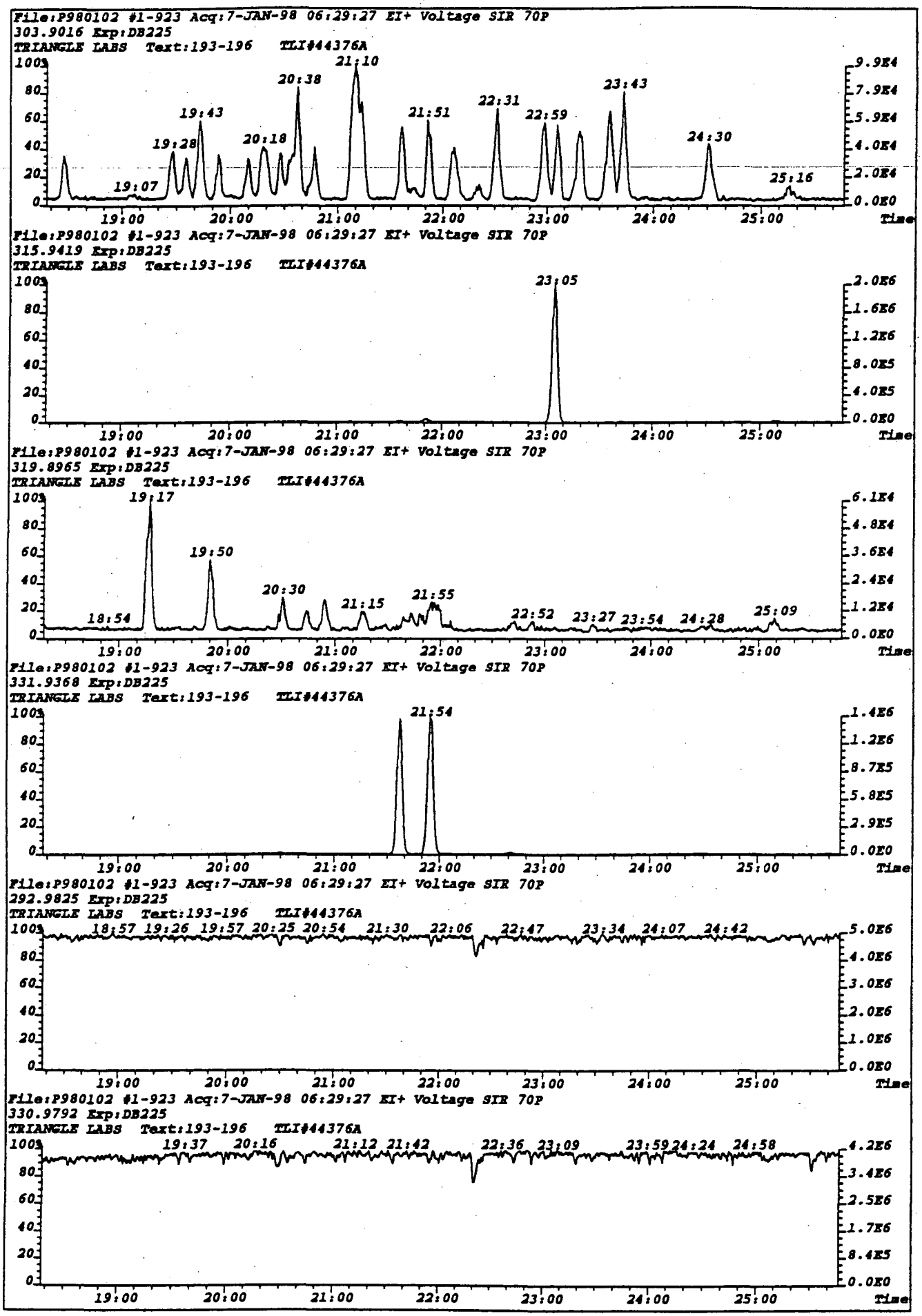


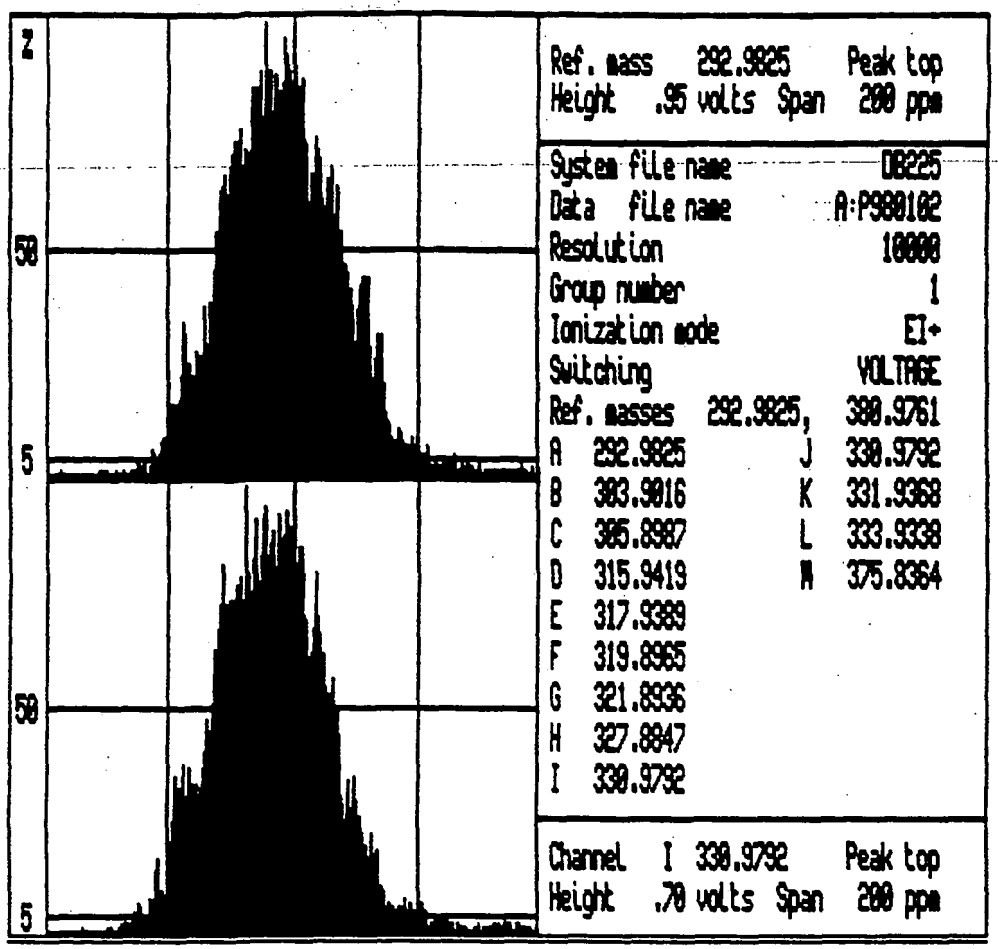
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:565
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2260.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A



File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P Noise:326
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1304.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A




File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
19:07
19:28
19:43
20:18
20:38
21:10
21:51
22:31
22:59
23:43
24:30
25:16
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
23:05
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
18:54
19:17
19:50
20:30
21:15
21:55
22:52
23:27
23:54
24:28
25:09
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
21:54
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
18:57
19:26
19:57
20:25
20:54
21:30
22:06
22:47
23:34
24:07
24:42
Time
File:P980102 #1-923 Acq:7-JAN-98 06:29:27 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:193-196 TLI#44376A
19:37
20:16
21:12
21:42
22:36
23:09
23:59
24:24
24:58
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height .95 volts Span 200 ppm
System file name DB225
Data file name A:P980102
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825 J 330.9792
B 303.9016 K 331.9368
C 305.8987 L 333.9338
D 315.9419 M 375.8364
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
Channel I 330.9792 Peak top
Height .70 volts Span 200 ppm

Eastern Research Group

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 198/199/205/208 FB 20 I — Analysis File: U980036

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	194-59-18A/B	Date Extracted:	12/29/97	ICal:	UF51058
		Date Analyzed:	01/07/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980026	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.07			0.65	25:20	PR_
1,2,3,7,8-PeCDD	0.48			1.71	29:37	___
1,2,3,4,7,8-HxCDD	0.26			1.11	32:44	___
1,2,3,6,7,8-HxCDD	0.46			1.12	32:50	___
1,2,3,7,8,9-HxCDD	0.57			1.14	33:08	___
1,2,3,4,6,7,8-HpCDD	1.2			0.98	36:04	___
1,2,3,4,6,7,8,9-OCDD	0.65			0.77	39:37	___
2,3,7,8-TCDF	7.6			0.76	24:41	___
1,2,3,7,8-PeCDF	1.7			1.49	28:35	___
2,3,4,7,8-PeCDF	2.9			1.51	29:17	___
2,3,4,7,8-HxCDF	6.0			1.25	32:03	___
1,2,3,6,7,8-HxCDF	2.3			1.27	32:09	___
2,3,4,6,7,8-HxCDF	2.4			1.24	32:38	___
1,2,3,7,8,9-HxCDF	0.15			1.20	33:24	PR_
1,2,3,4,6,7,8-HpCDF	6.1			1.08	35:02	___
1,2,3,4,7,8,9-HpCDF	0.72			1.06	36:33	___
1,2,3,4,6,7,8,9-OCDF	1.5			0.87	39:50	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	13.2	11		13.6	___
Total PeCDD	11.0	9		17.2	___
Total HxCDD	9.2	7			___
Total HpCDD	2.8	2			___
Total TCDF	41.5	15		41.8	___
Total PeCDF	44.2	16			___
Total HxCDF	25.8	10		27.2	___
Total HpCDF	10.3	4			___

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: 44376A
Client Sample: 198/199/205/208

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980036

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.3	82.3	40%-130%	0.75	24:38	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.3	81.4	40%-130%	0.80	25:21	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.4	86.0	40%-130%	1.55	28:35	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.7	66.4	40%-130%	1.51	29:36	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.6	90.4	40%-130%	0.50	32:09	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.9	98.6	40%-130%	1.20	32:49	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.2	80.7	25%-130%	0.44	35:01	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.2	80.9	25%-130%	1.04	36:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.9	73.2	25%-130%	0.85	39:37	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.5	86.9	40%-130%	1.52	29:16	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.2	79.7	40%-130%	0.51	32:03	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.2	78.9	40%-130%	1.20	32:44	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.5	88.3	40%-130%	0.39	36:33	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.2	79.1	25:22	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.4	84.6	40%-130%	0.52	33:24	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.4	85.6	40%-130%	0.52	32:38	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:11	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	33:08	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 11:03 01/10/98

Initial ....Date...

Data Review By: CM 1/10/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside
:atio limits has been recalculated according to method requirements.

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306	DC	NL		0:00	RO	0.57	282.76			0.000			
	NK			21:31		0.76	4,063.74	1,753.59	2,310.15	0.873			
	K			22:01		0.73	3,831.01	1,616.08	2,214.93	0.894			
	K			22:15		0.74	4,466.16	1,897.27	2,568.89	0.903			
	K			22:38		0.75	19,441.79	8,306.09	11,135.70	0.919			
	K			22:58		0.74	12,692.43	5,404.45	7,287.98	0.932			
	K			23:21		0.73	14,662.27	6,197.96	8,464.31	0.948			
	K			23:37		0.76	10,358.01	4,487.46	5,870.55	0.959			
				23:51		0.75	13,940.79	5,958.37	7,982.42	0.968			
				24:05		0.76	17,640.47	7,611.67	10,028.80	0.978			
				24:16		0.75	6,717.48	2,885.23	3,832.25	0.985			
				24:29		0.77	6,075.25	2,650.85	3,424.40	0.994			
				24:41		0.76	28,671.60	12,359.70	16,311.90	1.002	2378-TCDF		AN
				25:06		0.73	6,986.04	2,947.67	4,038.37	1.019			
				25:18		0.74	6,201.66	2,627.79	3,573.87	1.027			
				25:34	RO	0.64	846.45	368.23	579.76	1.038			
				26:24		0.80	812.39	361.55	450.84	1.072			
304-306			16 Peaks				157,407.54						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318	DC	NL		0:00	RO	1.03	13.54			0.000			
	DC	WL		22:28	RO	1.46	18.59			0.912			
	DC	WL		23:37		0.83	90.58			0.959			
				23:53		0.70	25.45	10.50	14.95	0.970			
				24:05	RO	0.42	16.76	7.29	17.19	0.978			
				24:13		0.69	85.64	34.97	50.67	0.983			
				24:38		0.75	12,159.47	5,220.14	6,939.33	1.000	13C12-2378-TCDF		ISO
				25:05		0.70	215.23	88.50	126.73	1.018			
	DC	WH		25:50	RO	7.97	11.13			1.049			
	DC	WH		26:09		0.87	41.34			1.062			
	DC	WH		26:24	RO	1.49	9.63			1.072			
	DC	WH		26:30	RO	1.12	9.75			1.076			
316-318			5 Peaks				12,502.55						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.895-1.047			
320-322	DC	NL		0:00	RO	0.14	6.85			0.000			
	NK			22:50		0.78	15,687.02	6,885.29	8,801.73	0.901			
	NK			23:13		0.79	10,610.11	4,676.84	5,933.27	0.916			
	K			23:31	RO	0.94	1,112.82	592.75	628.71	0.928			
	K			24:11		0.77	3,397.69	1,476.47	1,921.22	0.954			
				24:28		0.84	1,959.57	894.32	1,065.25	0.965			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				24:50		0.86	918.86	425.60	493.26	0.980			
M				25:17		0.79	3,500.00	1,540.00	1,960.00	0.997			
AN				25:20		0.65	188.30	74.30	114.00	0.999	2378-TCDD	AN	PR
				25:33		0.81	464.29	207.66	256.63	1.008			
				25:42		0.81	427.28	191.45	235.83	1.014			
				25:54		0.84	193.86	88.49	105.37	1.022			
D	D	SN		26:12	RO	1.27	12.78			1.034			
				26:22		0.70	158.62	65.30	93.32	1.040			J
320-322			12 Peaks				38,618.42						
37Cl-TCDD										0.921-1.079			
328	DC	NL		0:00			39.27			0.000			
	DC	WL		22:43			46.06			0.896			
	DC	WL		22:50			229.28			0.901			
	DC	WL		23:07			724.87			0.912			
	DC	WL		23:14			343.92			0.917			
				24:01			11,516.80	11,516.80		0.947			
				24:20			177.87	177.87		0.960			
				25:22			7,256.94	7,256.94		1.001	37Cl-TCDD	CLS	
				25:46			885.08	885.08		1.016			
				25:57			43.47	43.47		1.024			
				26:03			23.06	23.06		1.028			
328			6 Peaks				19,903.22						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334	DC	NL		0:00	RO	2.43	10.35			0.000			
				24:11		0.74	62.94	26.71	36.23	0.954			
				24:51	RO	4.38	6.30	15.61	3.56	0.980			
				25:11		0.82	10,069.98	4,543.14	5,526.84	0.993	13C12-1234-TCDD	RS1	
				25:21		0.80	9,167.93	4,076.84	5,091.09	1.000	13C12-2378-TCDD	IS1	
				25:41	RO	0.64	465.42	202.47	315.05	1.013			
				25:51	RO	0.61	144.24	62.75	103.30	1.020			
				26:05	RO	0.27	42.02	18.28	68.19	1.029			
				26:24		0.78	42.23	18.48	23.75	1.041			
332-334			8 Peaks				20,001.06						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00		1.74	5.59			0.000			
				26:36		1.56	11,155.56	6,793.30	4,362.26	0.931			
D	D	SN		26:52		1.55	150.42			0.940			
D	D	SN		27:04	RO	2.04	310.39			0.947			
				27:14		1.68	370.11	231.78	138.33	0.953			
				27:21		1.59	363.60	223.34	140.26	0.957			
				27:36		1.56	3,611.75	2,199.59	1,412.16	0.966			
				27:44		1.52	24,471.61	14,748.60	9,723.01	0.970			
				27:54		1.53	6,404.81	3,870.62	2,534.19	0.976			
				28:12		1.48	10,309.80	6,148.96	4,160.84	0.987			
				28:19		1.52	12,795.51	7,717.79	5,077.72	0.991			
M				28:31		1.55	5,630.00	3,420.00	2,210.00	0.998			
AN				28:35		1.49	4,350.00	2,600.00	1,750.00	1.000	12378-PeCDF	AN	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:45		1.62	4,404.76	2,723.47	1,681.29	1.006			
				28:52		1.48	7,634.24	4,550.35	3,083.89	1.010			
				29:17		1.51	7,393.53	4,442.51	2,951.02	1.024	23478-PeCDF		AN
				29:26		1.51	11,230.76	6,747.99	4,482.77	1.030			
				29:45		1.41	2,235.72	1,307.44	928.28	1.041			
				30:15		1.55	670.99	408.34	262.65	1.058			
340-342			16	Peaks			113,032.75						
13C12-PeCDF					1.32-1.78					0.860-1.140			
352-354	DC	NL	0:00	RO	0.93		0.46			0.000			
			27:43		1.51		124.61	74.91	49.70	0.970			
			27:57	RO	1.18		30.76	18.70	15.79	0.978			
			28:35		1.55		9,886.79	6,009.41	3,877.38	1.000	13C12-PeCDF 123		IS2
			29:16		1.52		8,295.52	5,003.64	3,291.88	1.024	13C12-PeCDF 234		SUR1
			29:59		1.47		19.08	11.37	7.71	1.049			
			30:16	RO	0.82		17.19	10.45	12.68	1.059			
352-354			6	Peaks			18,373.95						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD					1.32-1.78					0.935-1.022			
356-358	DC	NL	0:00	RO	1.18		0.33			0.000			
D	DC	WL	27:36	RO	1.01		43.33			0.932			
			27:50	RO	1.11		7,075.03	4,300.51	3,884.25	0.940			
D	D	SN	28:06	RO	0.22		266.58			0.949			
			28:19	RO	1.11		477.24	290.09	261.68	0.957			
			28:33		1.56		5,339.74	3,250.04	2,089.70	0.965			
			28:41		1.54		1,033.63	626.17	407.46	0.969			
			28:52		1.59		3,538.58	2,171.93	1,366.65	0.975			
			29:03		1.40		523.46	305.25	218.21	0.981			
			29:08		1.65		1,020.77	635.00	385.77	0.984			
			29:19		1.54		1,401.26	848.63	552.63	0.990			
			29:28	RO	1.06		664.73	404.05	381.39	0.995			
			29:37		1.71		637.41	402.46	234.95	1.001	12378-PeCDD		AN
			29:45		1.45		512.15	303.14	209.01	1.005			
			30:05		1.73		412.94	261.81	151.13	1.016			
356-358			12	Peaks			22,636.94						
13C12-PeCDD					1.32-1.78					0.865-1.135			
368-370	DC	NL	0:00	RO	1.00		0.26			0.000			
			28:32	RO	2.38		7.85	7.32	3.08	0.964			
			28:40	RO	2.44		4.51	4.32	1.77	0.968			
	DC	SN	29:24		1.62		2.54			0.993			
			29:36		1.51		3,947.50	2,375.84	1,571.66	1.000	13C12-PeCDD 123		IS3
			29:44		1.64		1,019.94	633.98	385.96	1.005			
			30:11		1.53		29.47	17.82	11.65	1.020			
			30:16		1.57		27.45	16.75	10.70	1.023			
			30:25	RO	4.01		7.52	11.82	2.95	1.028			
			30:29	RO	5.20		4.79	9.78	1.88	1.030			
368-370			8	Peaks			5,049.03						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.962-1.047			
374-376	DC	NL		0:00		1.21	297.45			0.000			
				31:05		1.24	6,020.36	3,332.11	2,688.25	0.967			
				31:14		1.24	14,074.33	7,785.94	6,288.39	0.971			
				31:24	RO	1.46	1,745.52	1,139.51	779.25	0.977			
				31:32		1.26	2,129.23	1,189.13	940.10	0.981			
				31:41	RO	1.76	763.93	600.51	341.04	0.985			
				32:03		1.25	10,793.84	5,994.93	4,798.91	0.997	123478-HxCDF	AN	
				32:09		1.27	5,185.94	2,901.21	2,284.73	1.000	123678-HxCDF	AN	
				32:16		1.29	1,819.19	1,024.12	795.07	1.004			
				32:26		1.22	2,129.23	1,168.93	960.30	1.009			
				32:38		1.24	4,213.70	2,329.54	1,884.16	1.015	234678-HxCDF	AN	
	AN			33:24		1.20	233.00	127.00	106.00	1.039	123789-HxCDF	AN	PR
	M			33:29		1.28	1,053.00	591.00	462.00	1.041			
374-376			12 Peaks				50,161.27						
13C12-HxCDF						0.43-0.59				0.876-1.124			
384-386	DC	NL		0:00	RO	2.66	8.34			0.000			
				31:14	RO	0.60	53.62	21.16	35.51	0.971			
				32:03		0.51	4,667.95	1,582.28	3,085.67	0.997	13C12-HxCDF 478	SUR2	
				32:09		0.50	7,103.73	2,366.84	4,736.89	1.000	13C12-HxCDF 678	IS4	
				32:38		0.52	6,067.75	2,065.04	4,002.71	1.015	13C12-HxCDF 234	ALT2	
				33:24		0.52	4,623.28	1,584.73	3,038.55	1.039	13C12-HxCDF 789	ALT1	
384-386			5 Peaks				22,516.33						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL		0:00	RO	0.87	47.22			0.000			
				31:35		1.22	991.11	545.32	445.79	0.962			
	D	D	SN	31:42	RO	1.92	47.85			0.966			
				32:01		1.24	6,242.42	3,456.48	2,785.94	0.976			
				32:13		1.21	2,395.19	1,310.99	1,084.20	0.982			
				32:23		1.09	507.45	265.09	242.36	0.987			
				32:44		1.11	285.62	150.13	135.49	0.997	123478-HxCDD	AN	
				32:50		1.12	644.49	339.85	304.64	1.001	123678-HxCDD	AN	
				33:08		1.14	763.94	406.93	357.01	1.010	123789-HxCDD	AN	
390-392			7 Peaks				11,830.22						
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL		0:00	RO	1.72	6.41			0.000			
				32:13		1.43	20.15	11.85	8.30	0.982			
				32:19	RO	2.02	3.58	3.23	1.60	0.985			
				32:26		1.37	6.73	3.89	2.84	0.988			
				32:36	RO	1.69	3.38	2.55	1.51	0.993			
				32:44		1.20	3,309.24	1,803.79	1,505.45	0.997	13C12-HxCDD 478	SUR3	
				32:49		1.20	5,730.34	3,120.02	2,610.32	1.000	13C12-HxCDD 678	IS5	
				33:08		1.23	5,839.49	3,218.81	2,620.68	1.010	13C12-HxCDD 789	RS2	
402-404			7 Peaks				14,912.91						

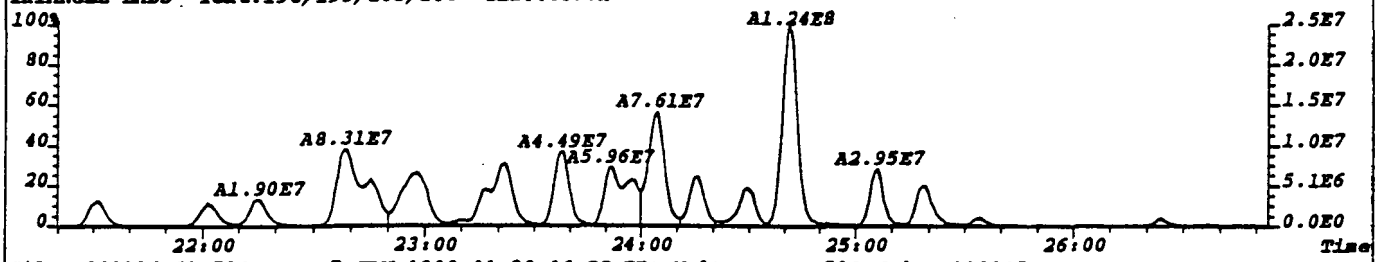
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.996-1.049			
408-410	DC	NL		0:00	RO	1.41	18.54			0.000			
				35:02		1.08	8,272.58	4,286.07	3,986.51	1.000	1234678-HpCDF	AN	
				35:18		1.15	1,862.34	995.50	866.84	1.008			
				35:27		1.02	2,357.44	1,189.54	1,167.90	1.012			
				36:33		1.06	767.32	394.21	373.11	1.044	1234789-HpCDF	AN	
408-410			4	Peaks			13,259.68						
13C12-HpCDF						0.37-0.51				0.943-1.114			
418-420	DC	NL		0:00	RO	1.17	8.67			0.000			
				35:01		0.44	3,872.29	1,177.52	2,694.77	1.000	13C12-HpCDF 678	IS6	
				36:33		0.39	2,742.35	776.40	1,965.95	1.044	13C12-HpCDF 789	SUR4	
418-420			2	Peaks			6,614.64						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.975-1.005			
424-426	DC	NL		0:00	RO	0.30	2.16			0.000			
D	DC	WL		35:11	RO	0.58	30.17			0.976			
				35:18		0.98	1,333.09	660.67	672.42	0.979			
				36:04		0.98	1,055.05	522.16	532.89	1.000	1234678-HpCDD	AN	
D	DC	NH		36:24	RO	1.56	13.12			1.010			
D	DC	NH		36:31		1.04	9.45			1.013			
424-426			2	Peaks			2,388.14						
13C12-HpCDD						0.88-1.20				0.972-1.028			
436-438	DC	NL		0:00	RO	1.66	5.67			0.000			
				35:18		1.04	16.44	8.40	8.04	0.979			
				36:03		1.04	3,428.33	1,745.27	1,683.06	1.000	13C12-HpCDD 678	IS7	
436-438			2	Peaks			3,444.77						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.899-1.101			
442-444	DC	NL		0:00	RO	3.03	2.82			0.000			
	DC	WL		34:41	RO	3.70	1.25			0.875			
	DC	WL		34:54	RO	1.19	3.65			0.881			
	DC	WL		35:01	RO	1.59	4.16			0.884			
	DC	WL		35:13	RO	17.56	1.29			0.889			
	DC	WL		35:23	RO	1.81	6.03			0.893			
				35:50	RO	2.04	3.59	3.87	1.90	0.905			
	DC	SN		37:24	RO	13.61	0.43			0.944			
	DC	SN		38:10		0.92	2.17			0.963			
	DC	SN		38:37	RO	5.71	0.79			0.975			
	DC	SN		38:47	RO	5.60	0.47			0.979			
M				39:50		0.87	1,242.00	579.00	663.00	1.005	OCDF	AN	
				40:18	RO	0.69	10.38	4.89	7.11	1.017			
				40:18	RO	2.13	7.84	8.84	4.15	1.017			
				40:48		0.78	6.46	2.84	3.62	1.030			
442-444			5	Peaks			1,270.27						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00	RO	1.67	0.06			0.000			
				39:37		0.77	418.68	181.84	236.84	1.000	OCDD		AN
				40:00	RO	1.86	6.05	5.94	3.20	1.010			
458-460			2 Peaks				424.73						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00	RO	1.33	0.06			0.000			
				39:37		0.85	4,656.23	2,144.76	2,511.47	1.000	13C12-OCDD		IS8
470-472			1 Peak				4,656.23						

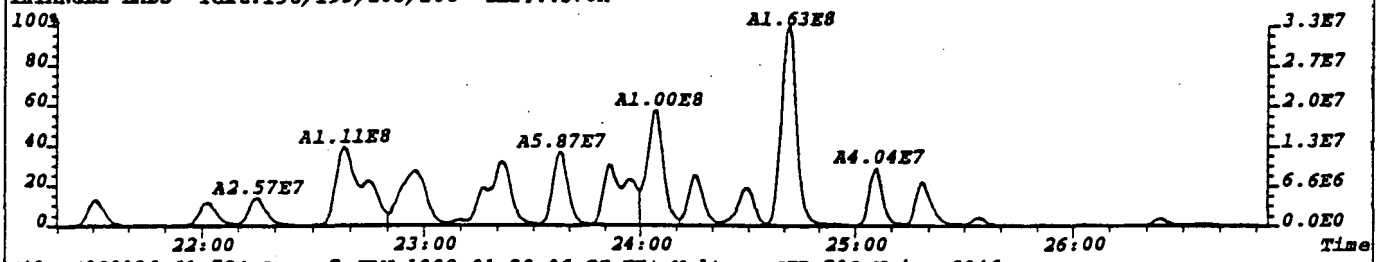
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

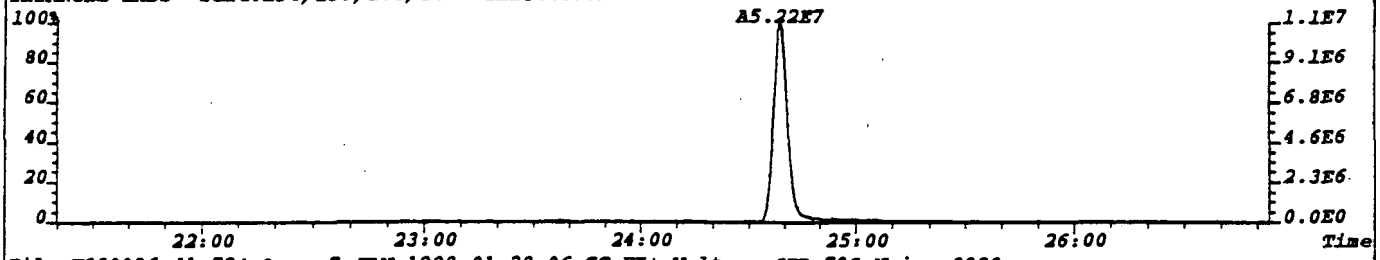
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:61507
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,246028.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



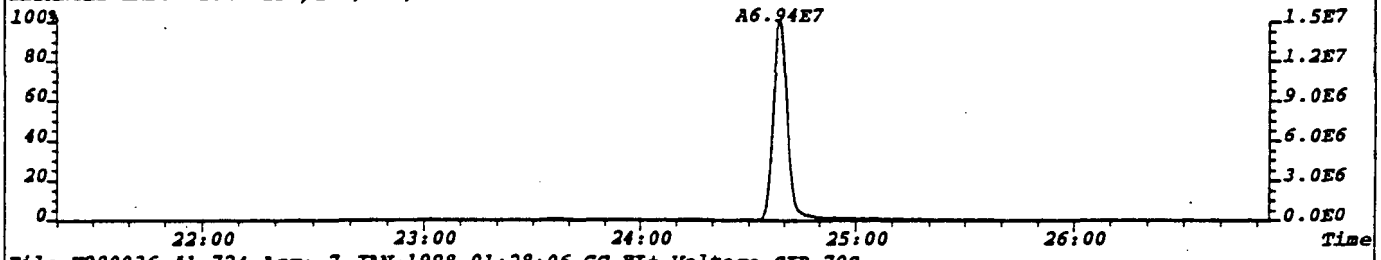
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:108347
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,433388.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



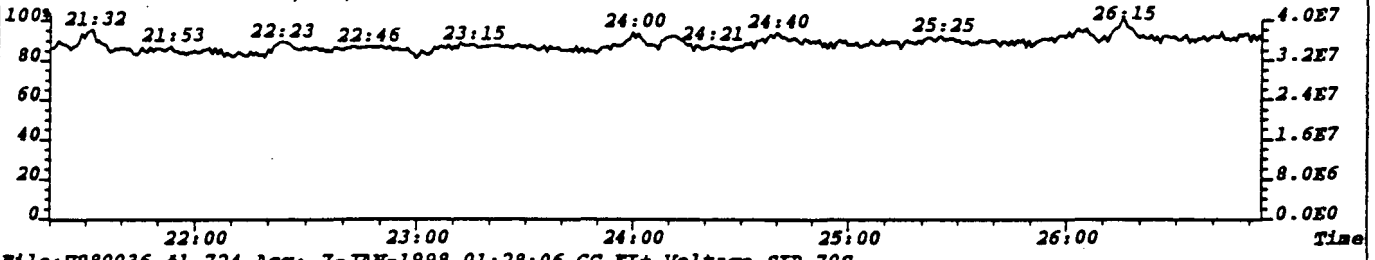
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:3946
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,15784.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



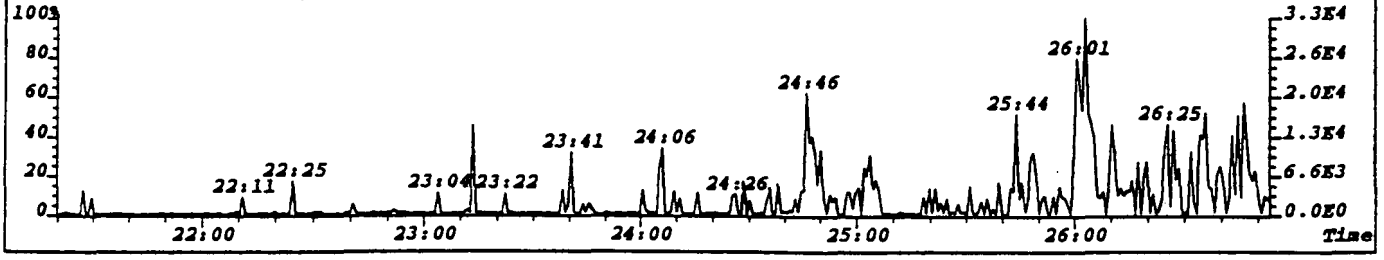
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:3823
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,15292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



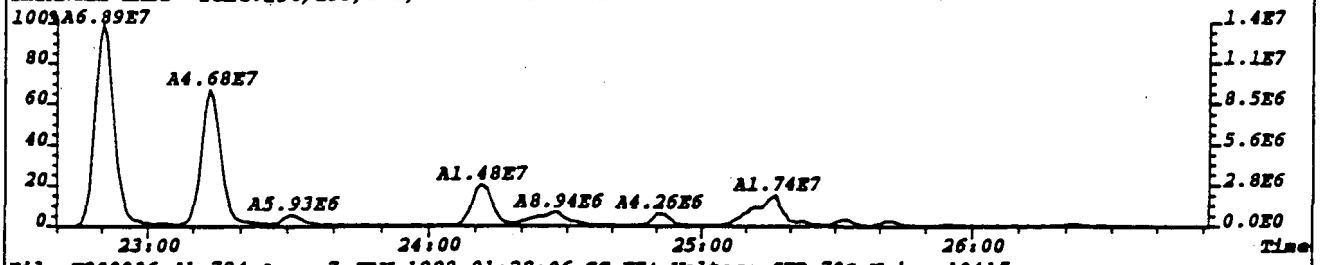
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



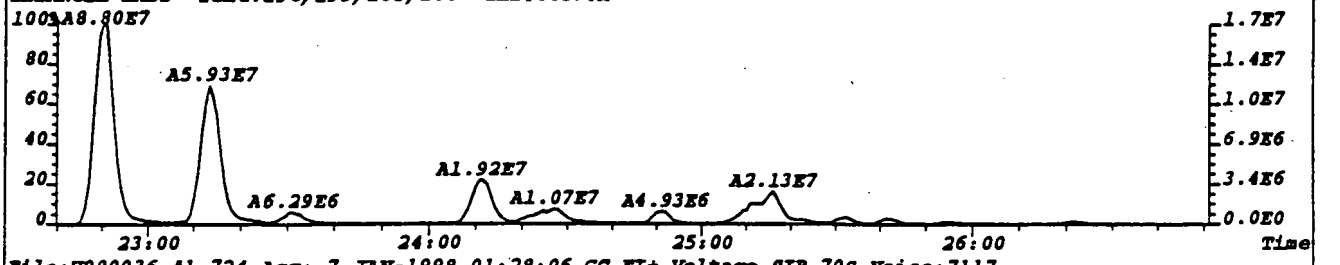
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



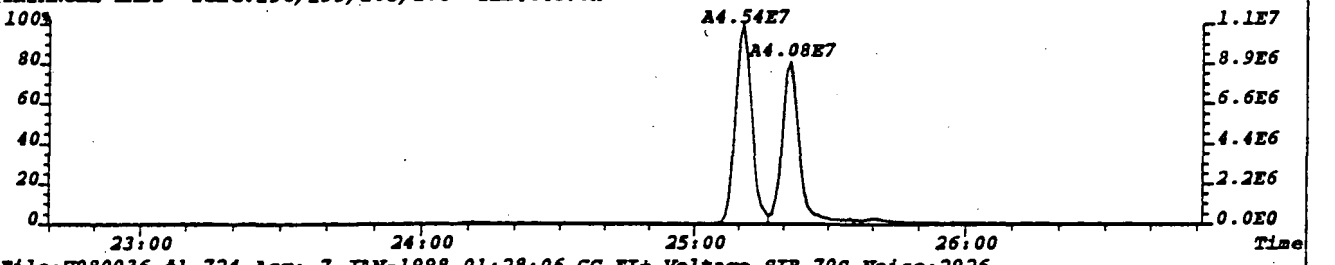
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1489
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5956.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



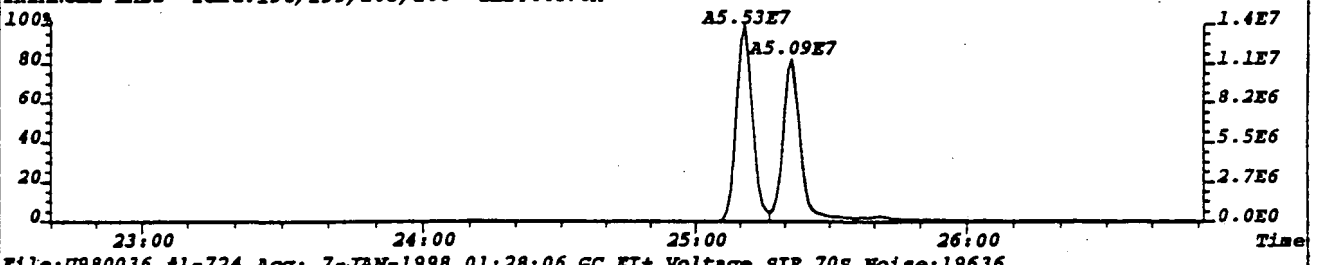
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:10415
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,41660.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



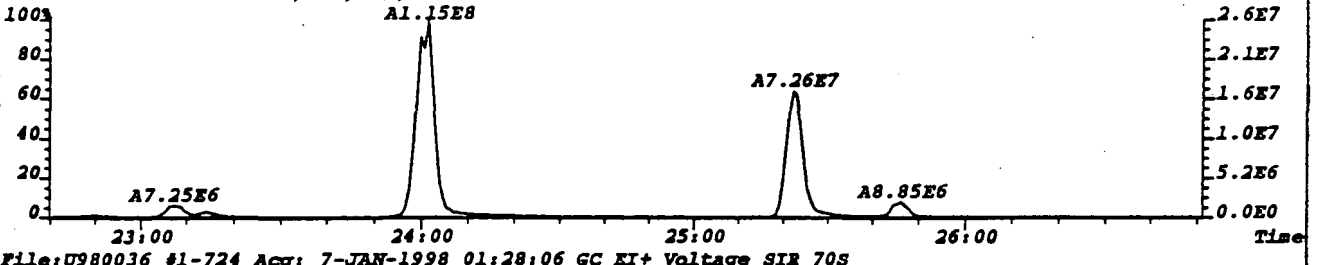
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:7117
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,28468.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



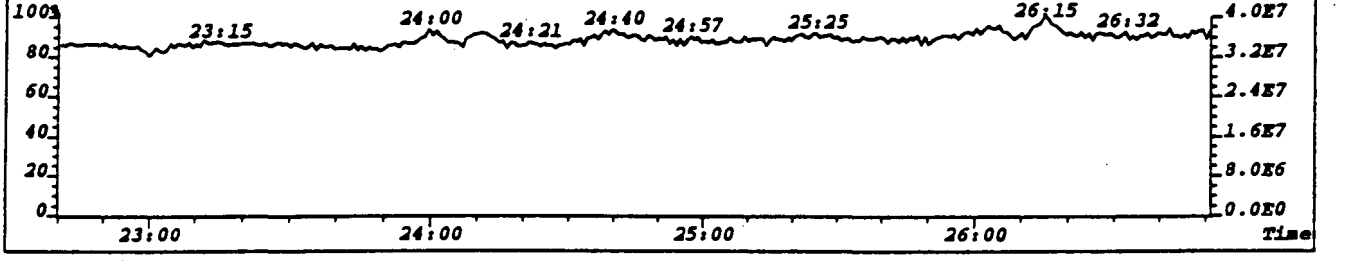
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:2926
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11704.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

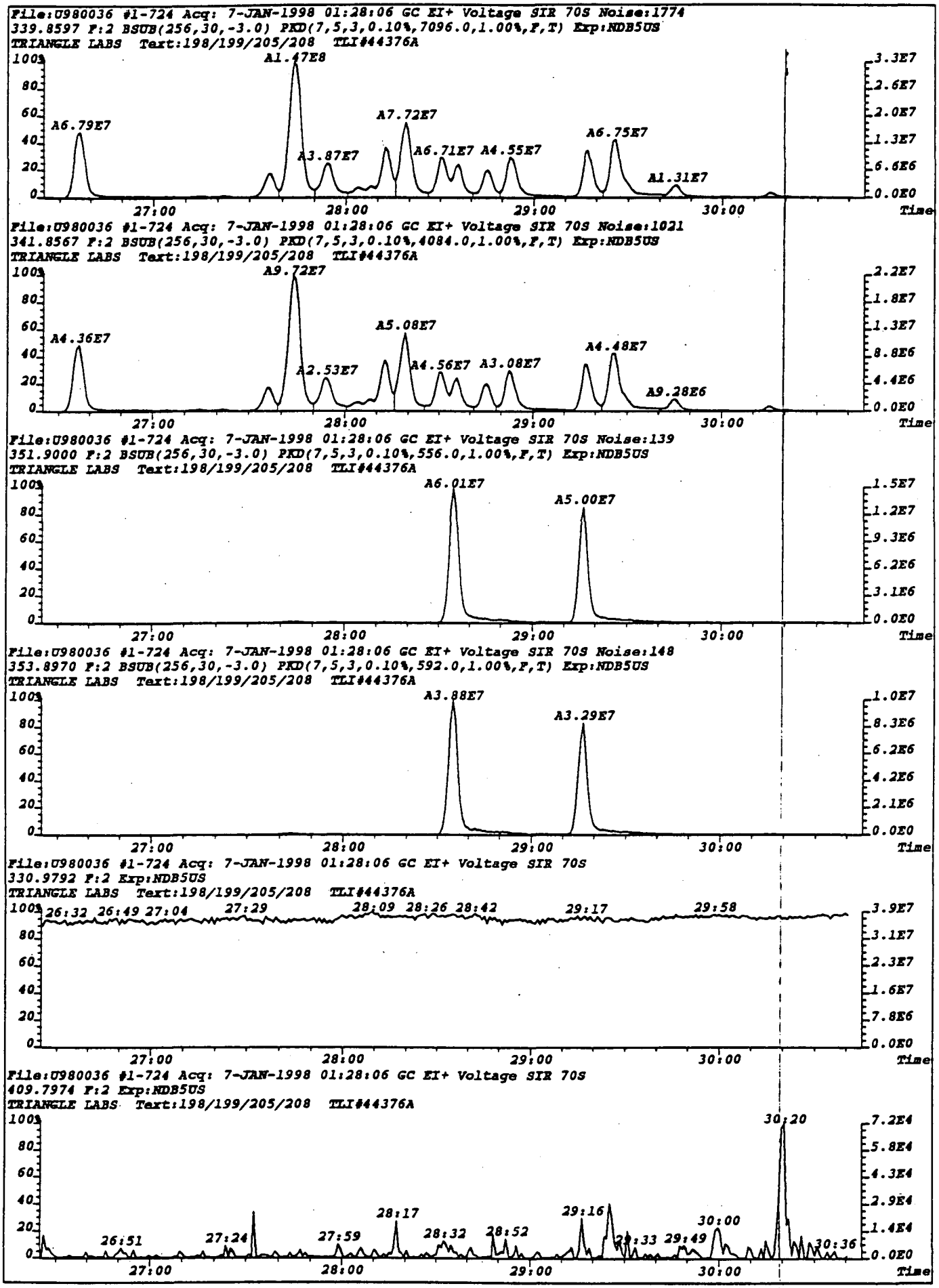


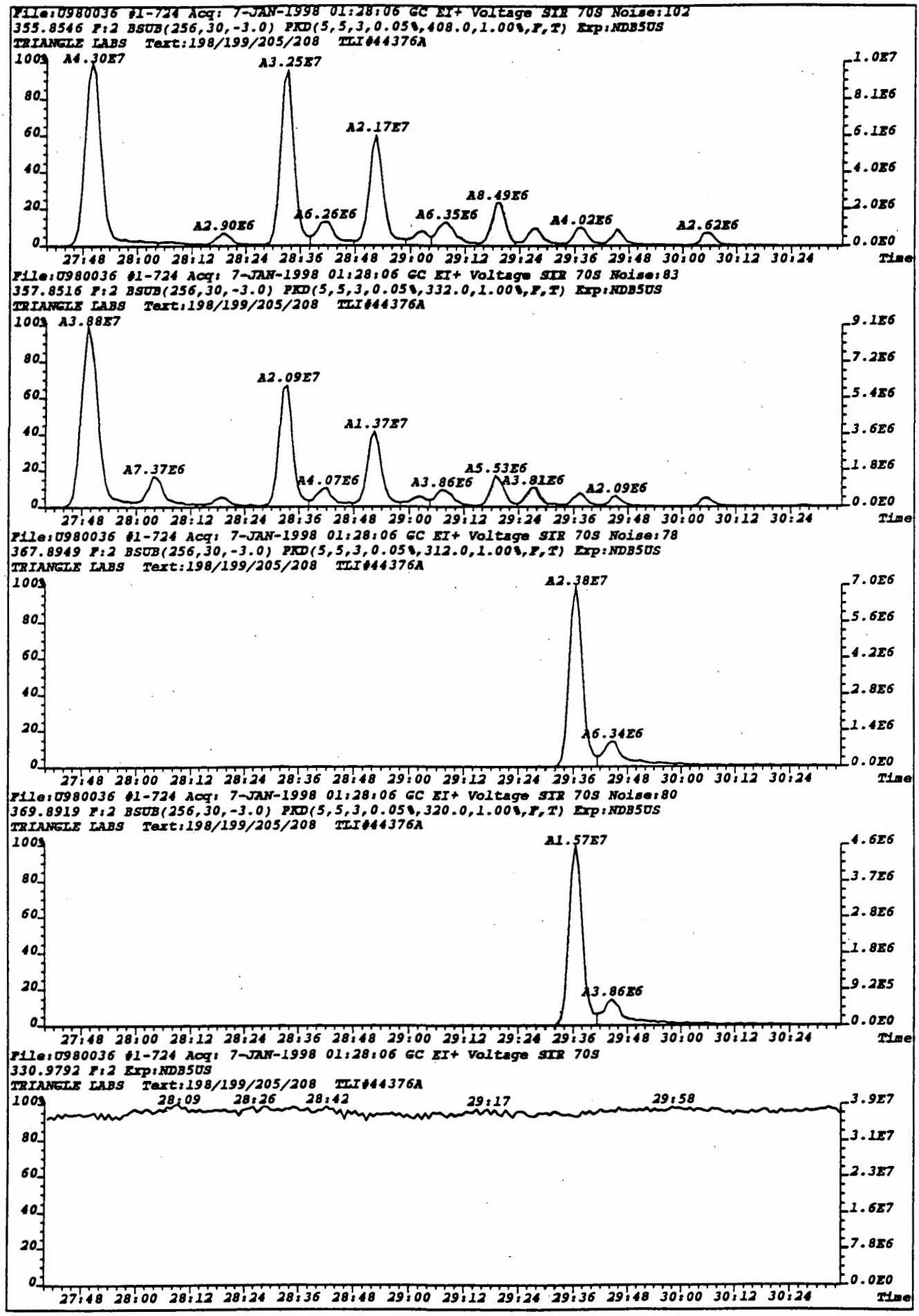
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:19636
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,78544.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

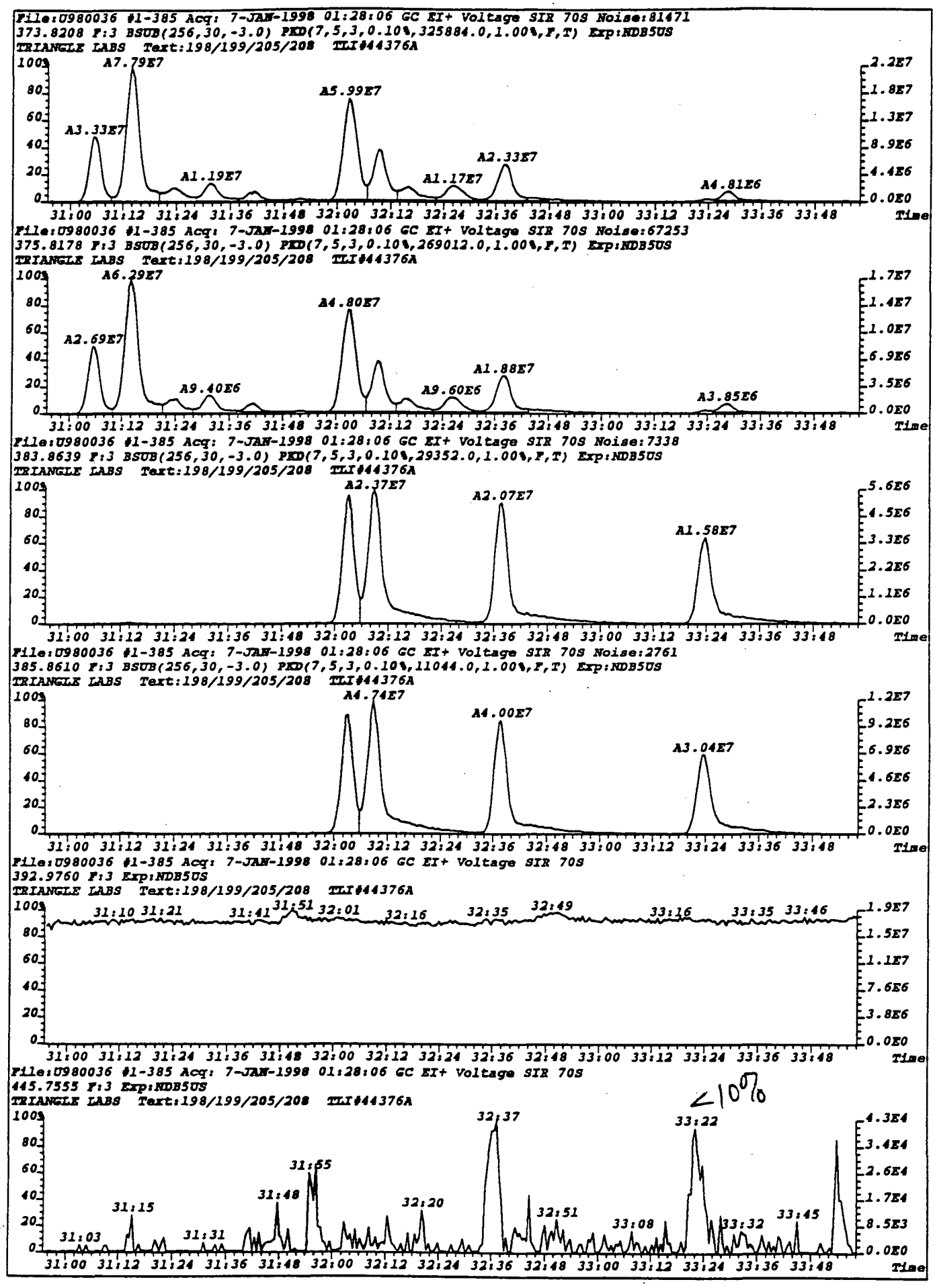


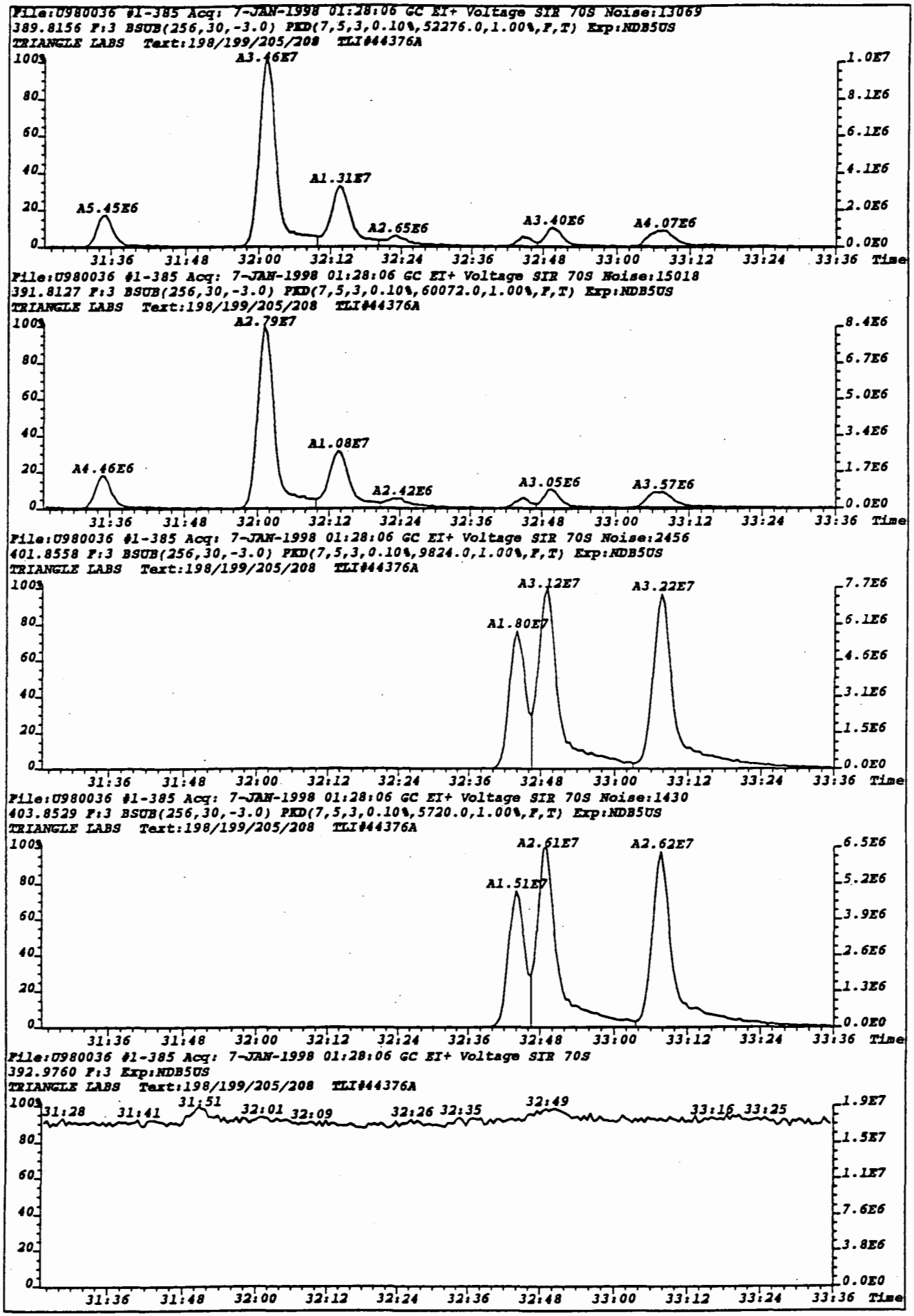
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



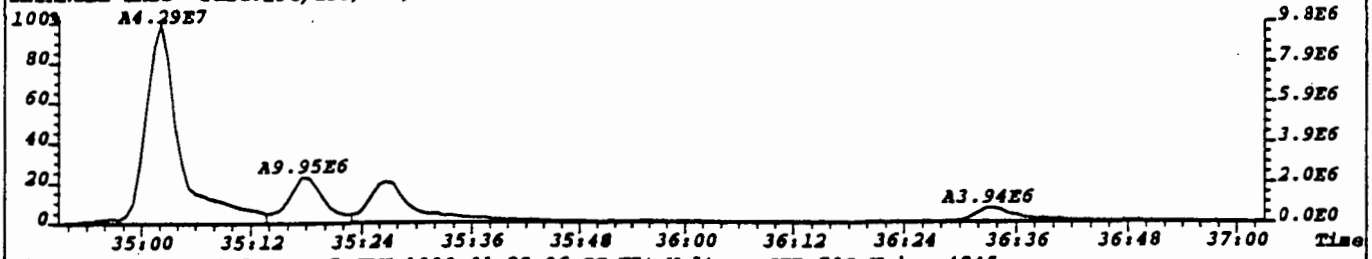

File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1774
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7096.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.47E8
A6.79E7
A3.87E7
A7.72E7
A6.71E7
A4.55E7
A6.75E7
A1.31E7
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1021
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A9.72E7
A4.36E7
A2.53E7
A5.08E7
A4.56E7
A3.08E7
A4.48E7
A9.28E6
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:139
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A6.01E7
A5.00E7
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:148
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,592.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A3.88E7
A3.29E7
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
26:32 26:49 27:04 27:29 28:09 28:26 28:42 29:17 29:58
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
30:20
26:51 27:24 27:59 28:17 28:32 28:52 29:16 29:33 29:49 30:00 30:36
27:00 28:00 29:00 30:00 Time


File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:102
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,408.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A4.30E7
A3.25E7
A2.17E7
A8.49E6
A6.26E6
A6.35E6
A4.02E6
A2.90E6
A2.62E6
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:83
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,332.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A3.88E7
A2.09E7
A1.37E7
A7.37E6
A5.53E6
A4.07E6
A3.86E6
A3.81E6
A2.09E6
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:78
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.38E7
A6.34E6
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:80
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,320.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.57E7
A3.86E6
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
28:09
28:26
28:42
29:17
29:58
Time

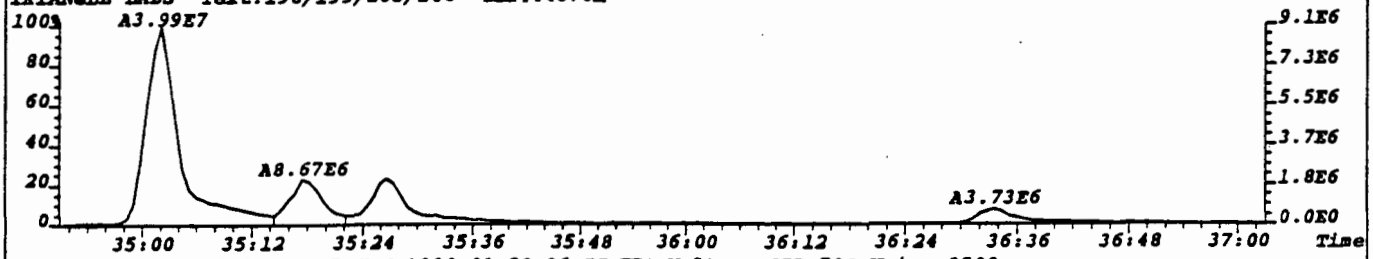

File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:81471
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,325884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A7.79E7
A5.99E7
A3.33E7
A2.33E7
A1.19E7
A1.17E7
A4.81E6
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:67253
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,269012.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A6.29E7
A4.80E7
A2.69E7
A1.88E7
A9.40E6
A9.60E6
A3.85E6
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:7338
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,29352.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.37E7
A2.07E7
A1.58E7
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:2761
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11044.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A4.74E7
A4.00E7
A3.04E7
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
<10%
32:37
33:22
31:55
31:48
31:15
32:20
32:51
33:08
33:45
31:03
31:31
33:32
Time


File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:13069
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,52276.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A3.46E7
A1.31E7
A5.45E6
A2.65E6
A3.40E6
A4.07E6
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:15018
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,60072.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.79E7
A1.08E7
A4.46E6
A2.42E6
A3.05E6
A3.57E6
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:2456
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9824.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A3.12E7
A3.22E7
A1.80E7
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1430
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.61E7
A2.62E7
A1.51E7
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
31:28
31:41
31:51
32:01
32:09
32:26
32:35
32:49
33:16
33:25
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
33:36
Time

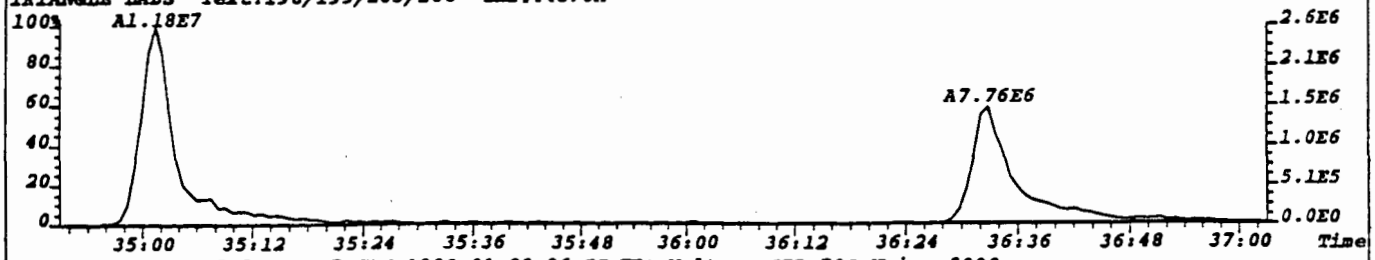
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:6424
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,25696.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



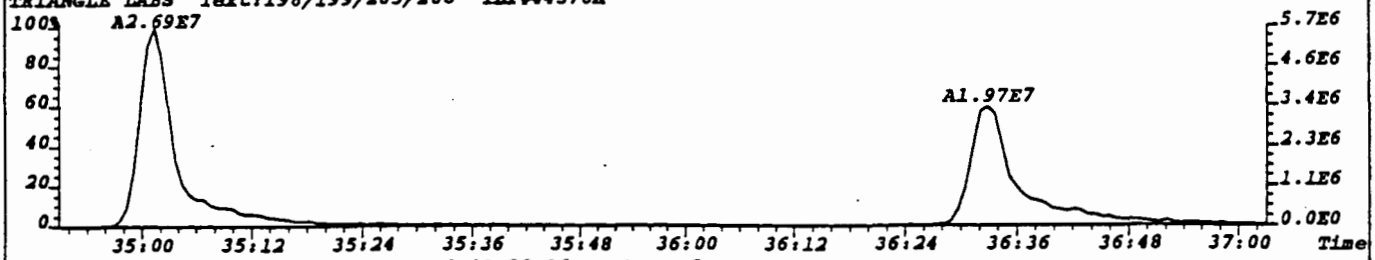
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:4545
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,18180.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



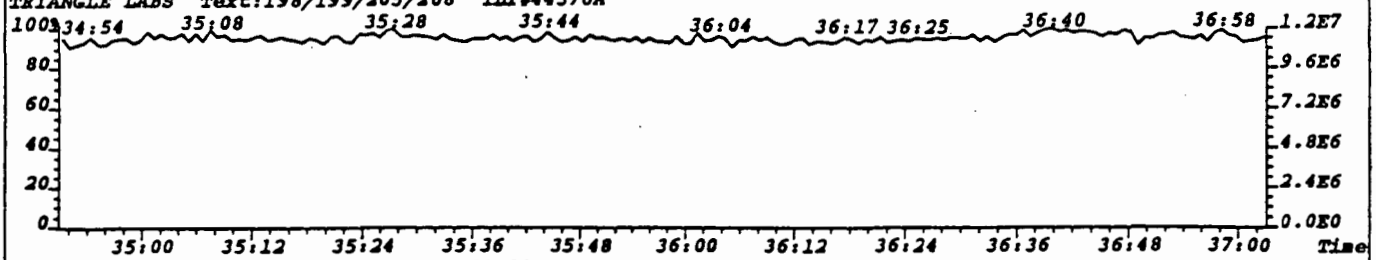
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:3509
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14036.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



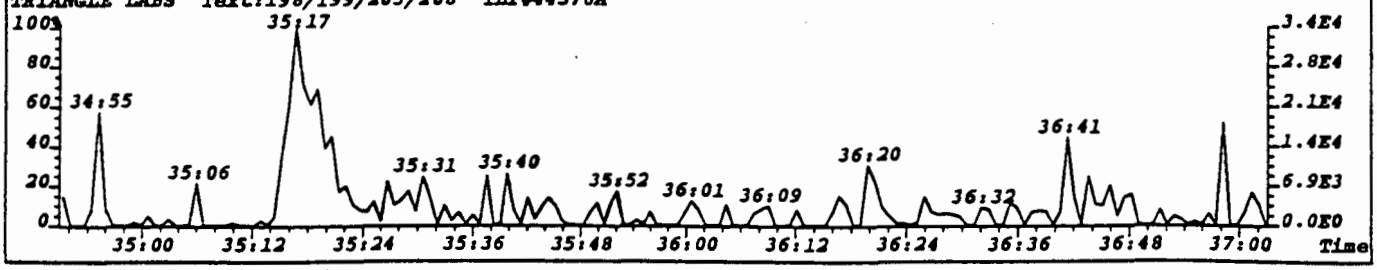
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:3009
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,12036.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



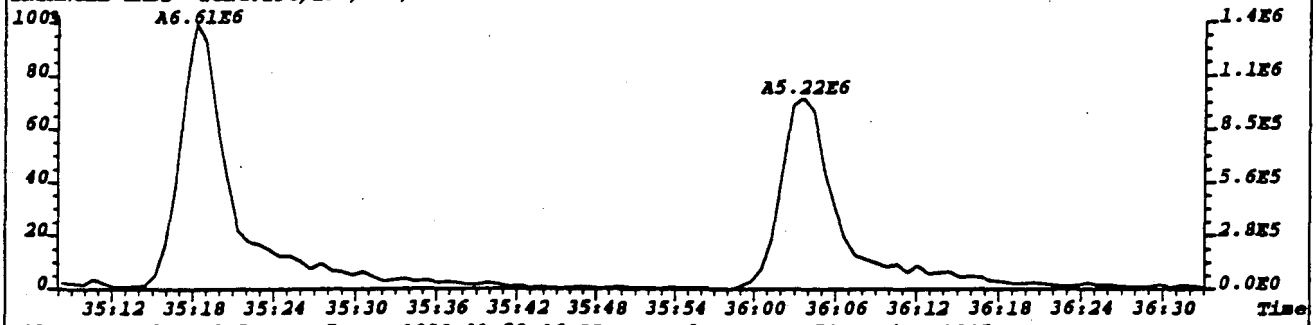
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



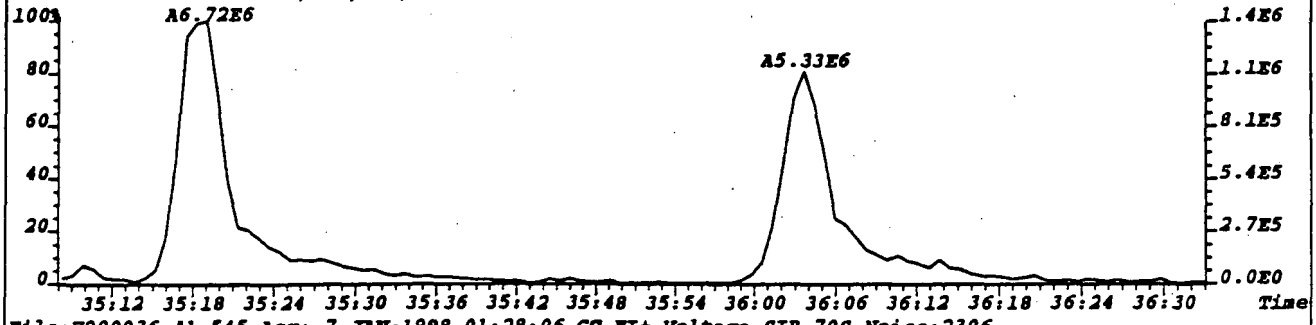
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



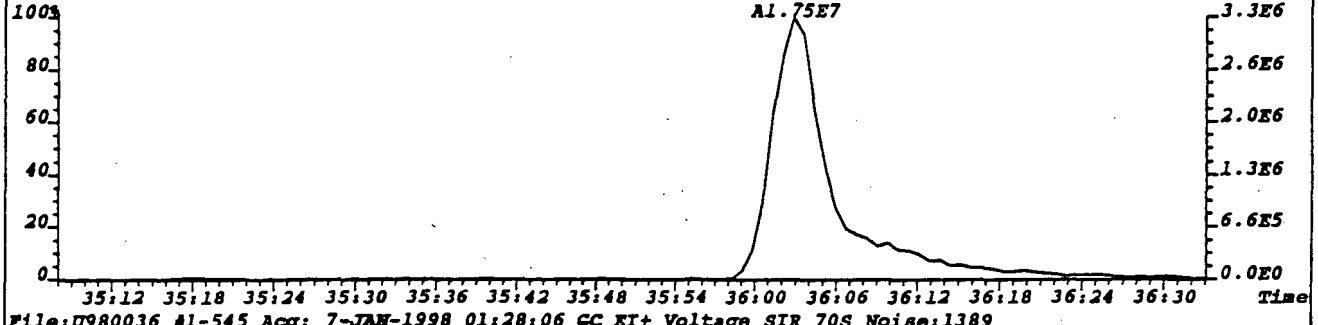
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:552
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2208.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



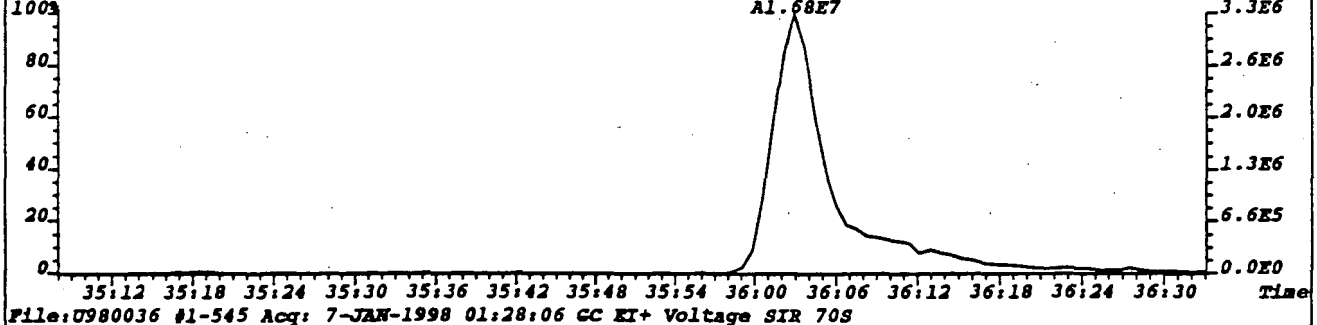
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1845
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7380.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



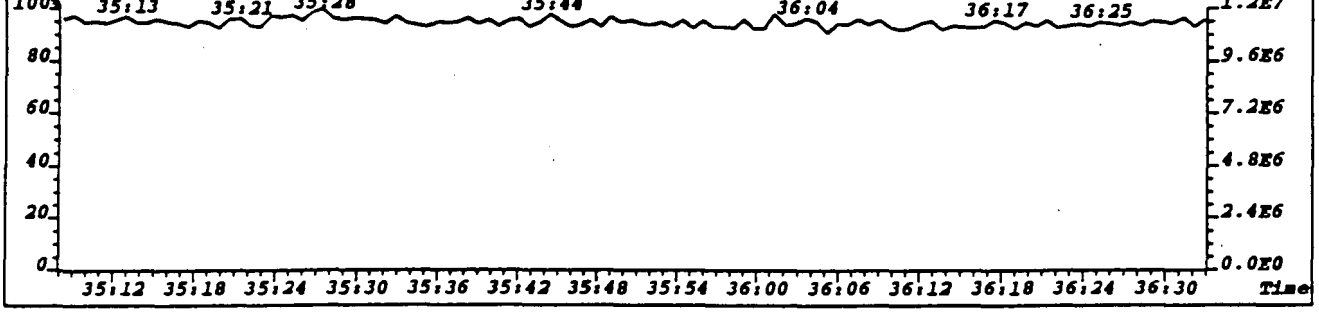
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:2306
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9224.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

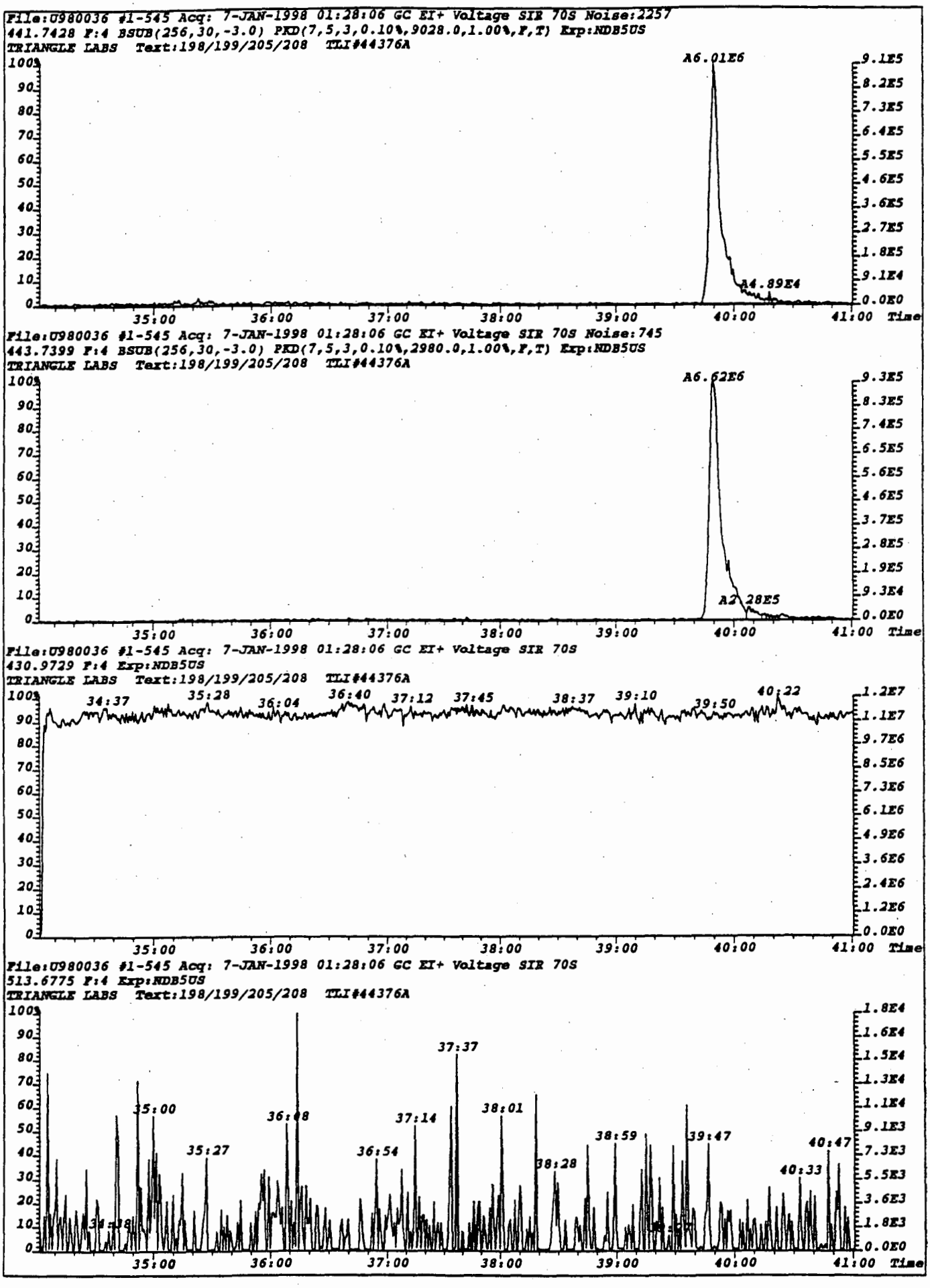


File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:1389
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

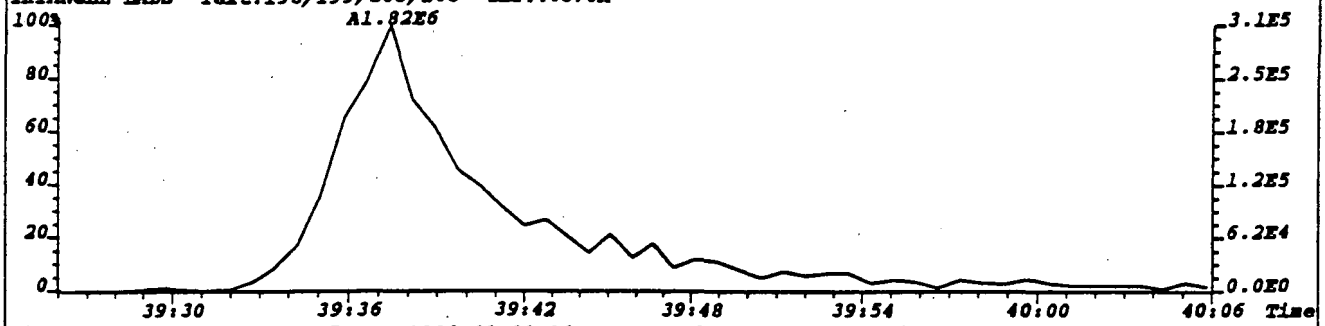


File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

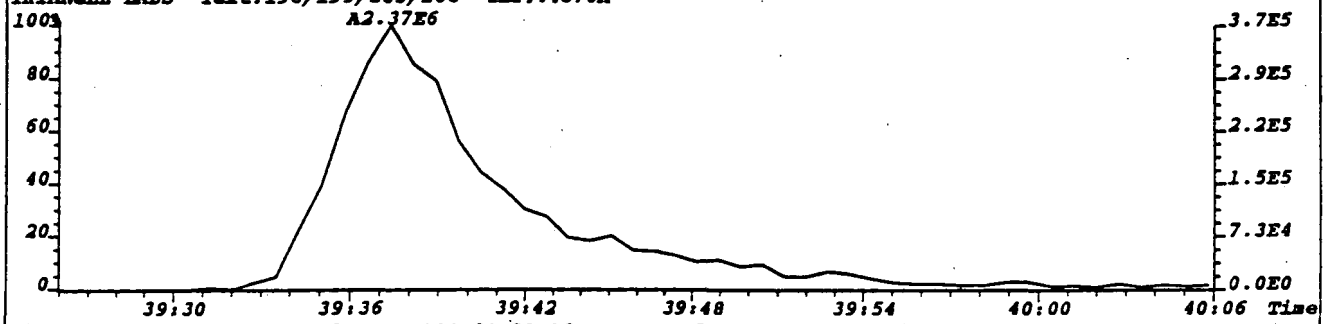



File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:2257
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9028.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A6.01E6
A4.89E4
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:745
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A6.62E6
A2.28E5
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
34:37
35:28
36:04
36:40
37:12
37:45
38:37
39:10
39:50
40:22
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
35:00
35:27
36:08
36:54
37:14
37:37
38:01
38:28
38:59
39:47
40:33
40:47
Time

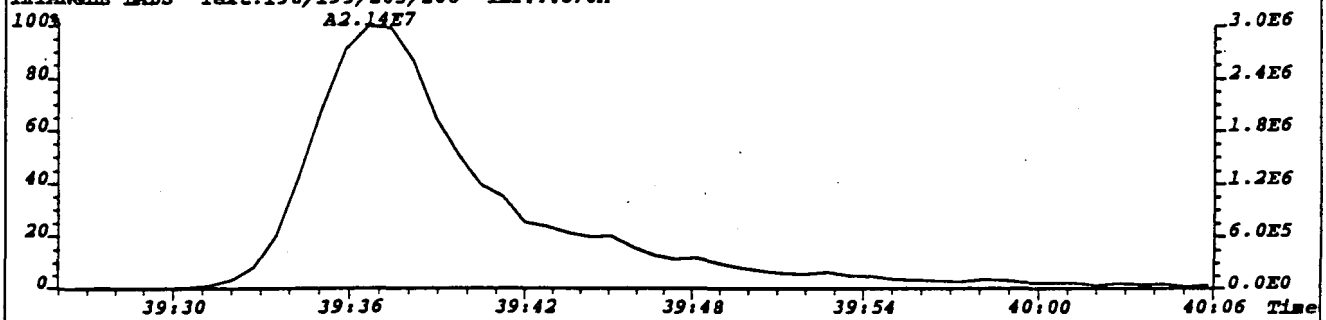
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:23
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,92.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



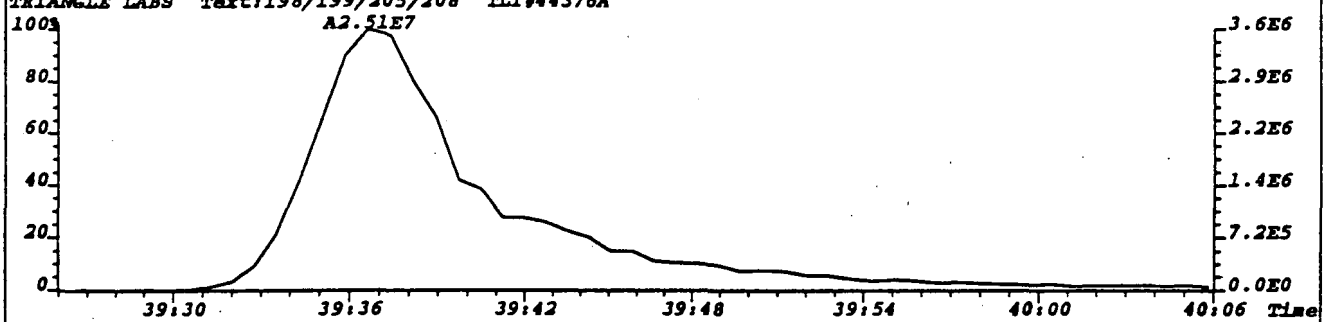
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:17
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,68.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A



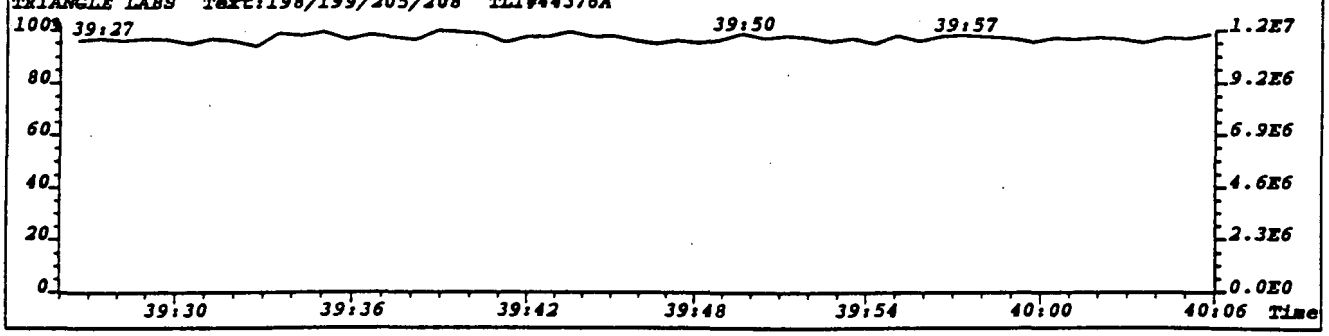
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:20
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

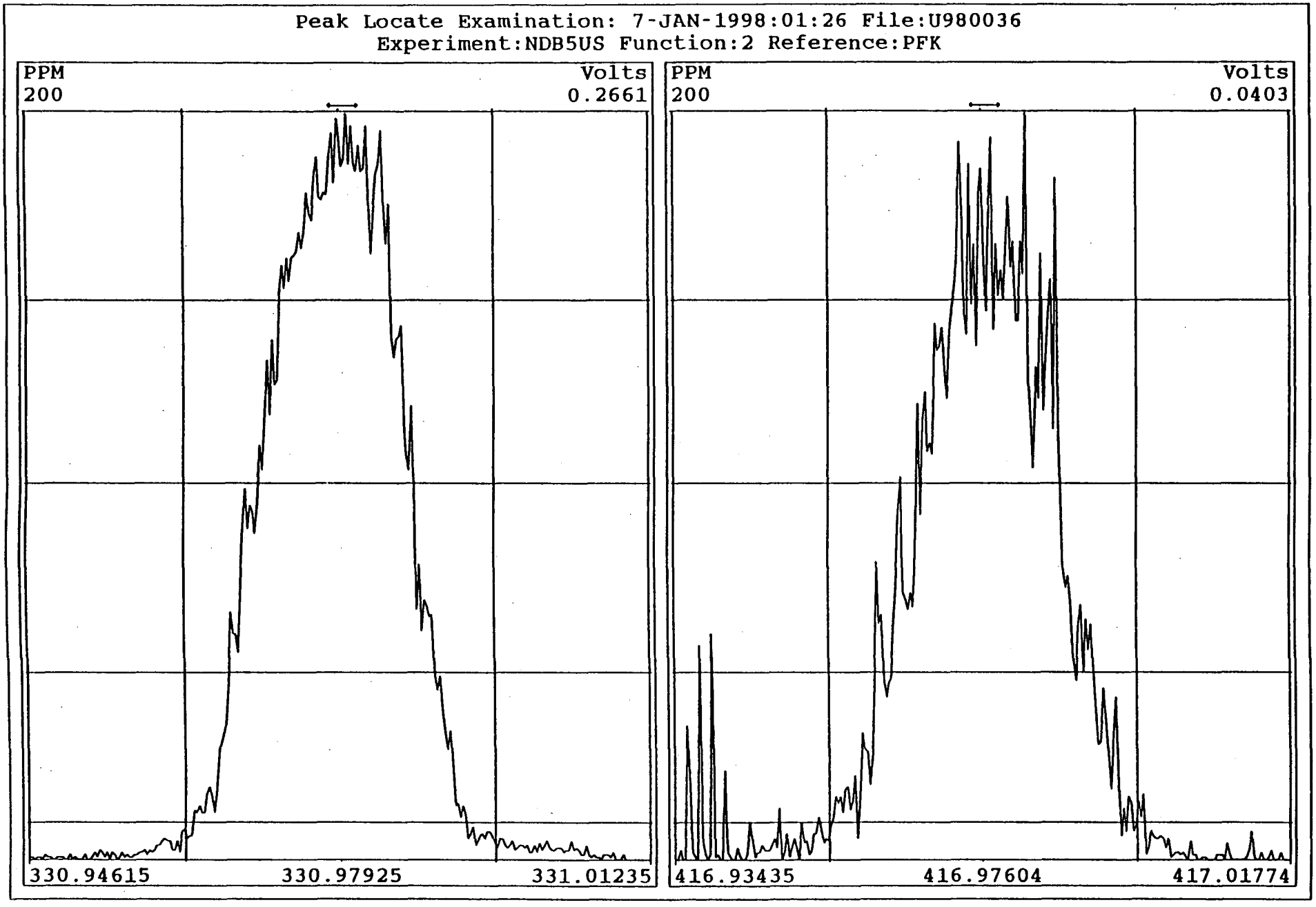


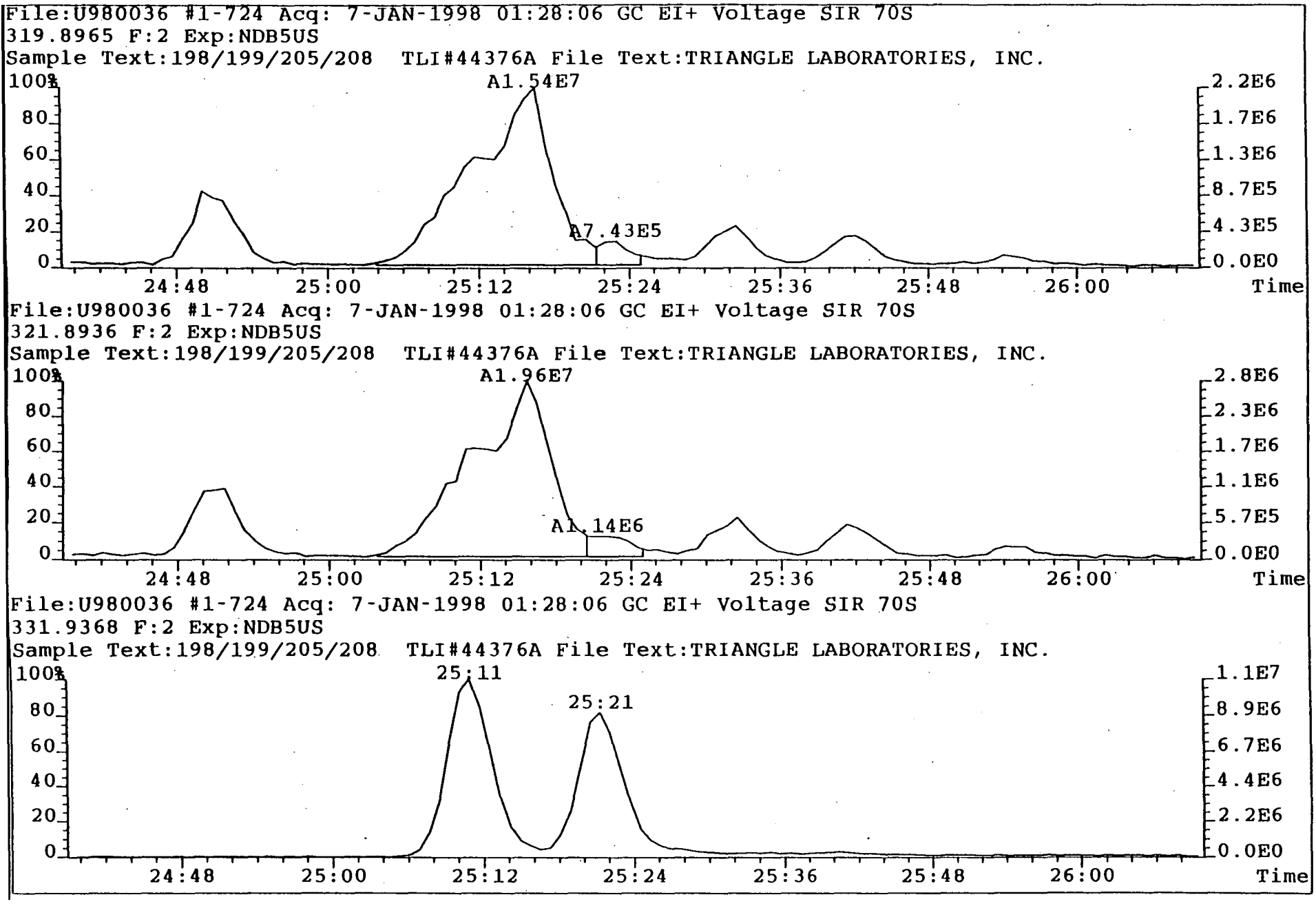
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S Noise:16
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,64.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

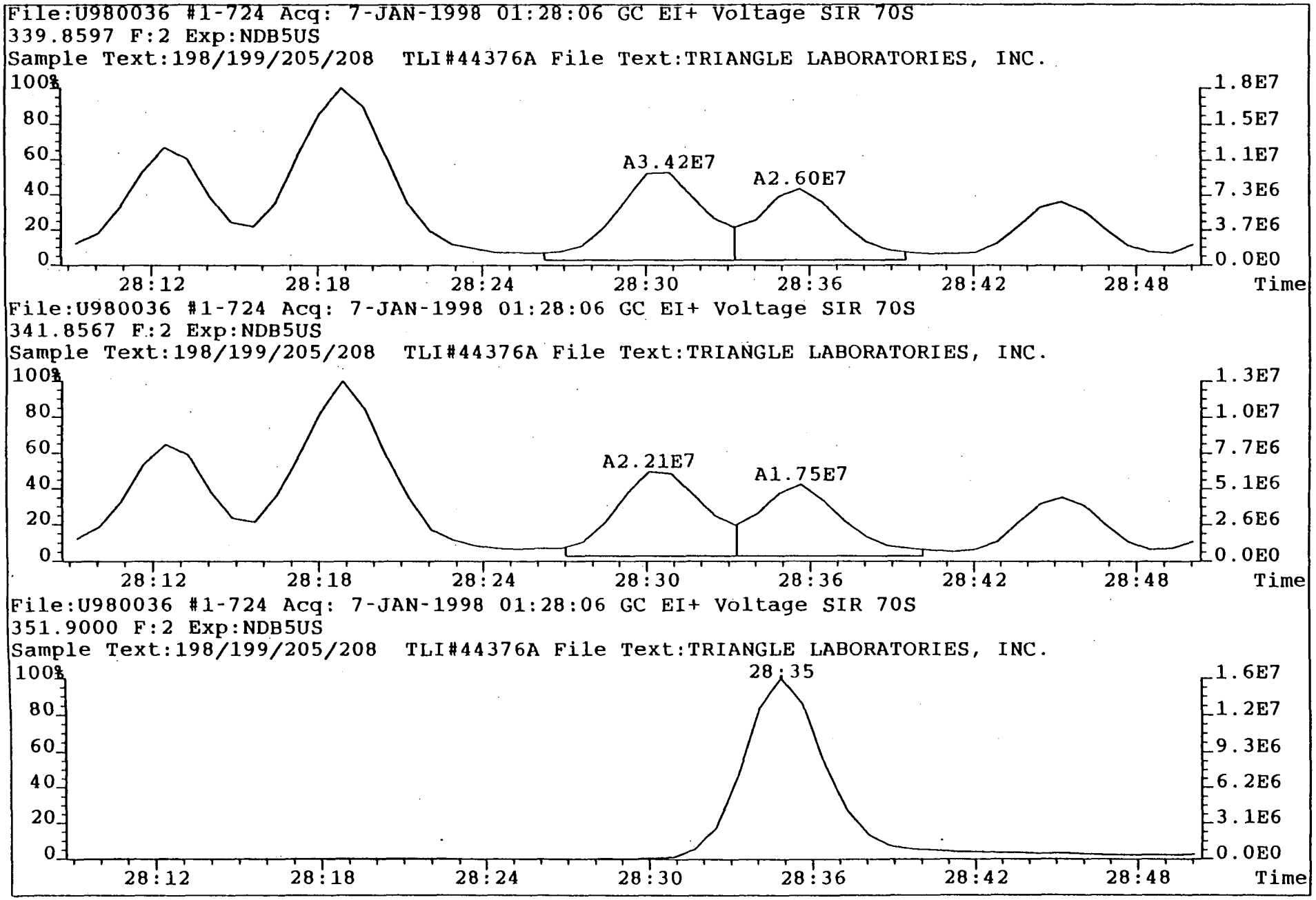


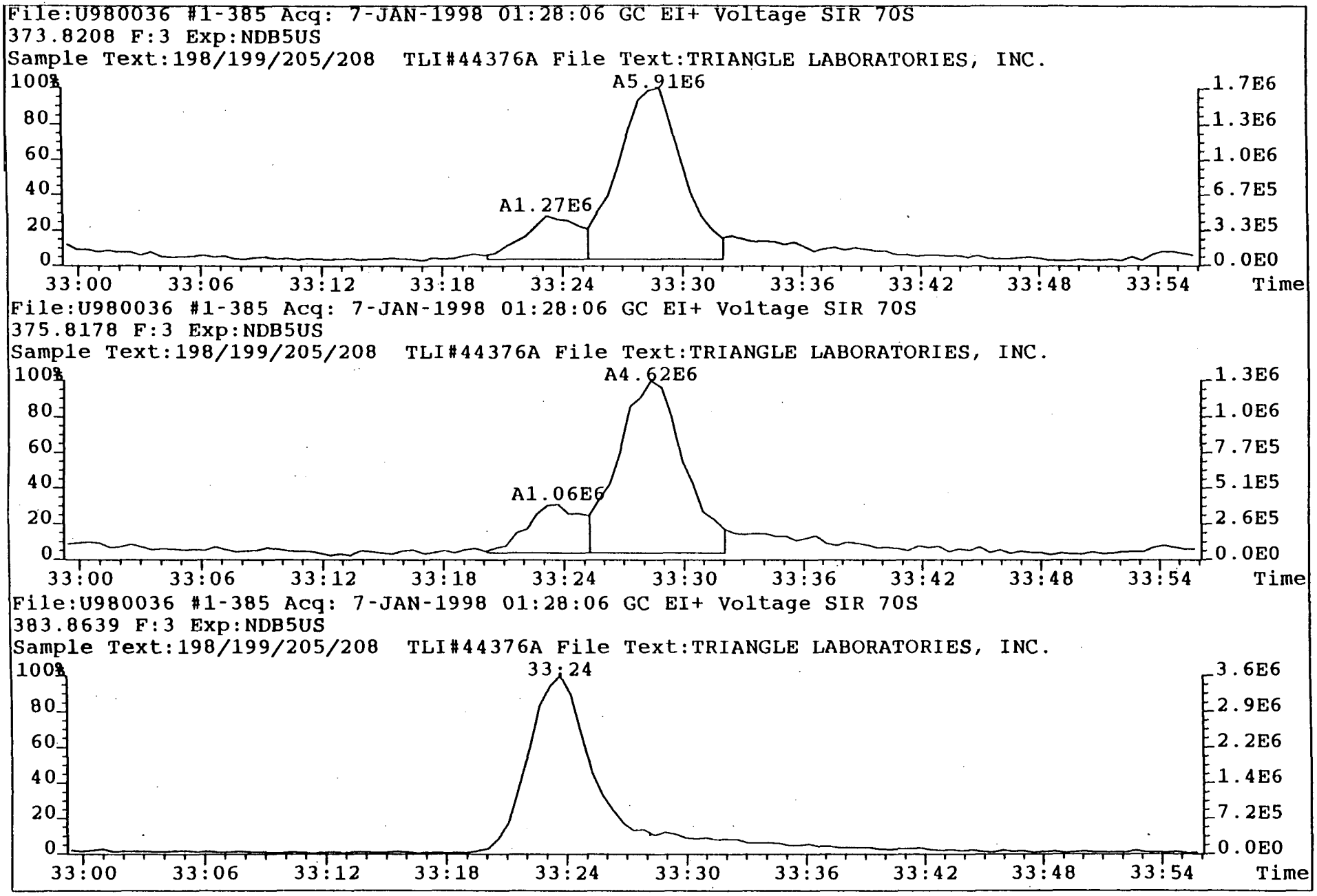
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:198/199/205/208 TLI#44376A

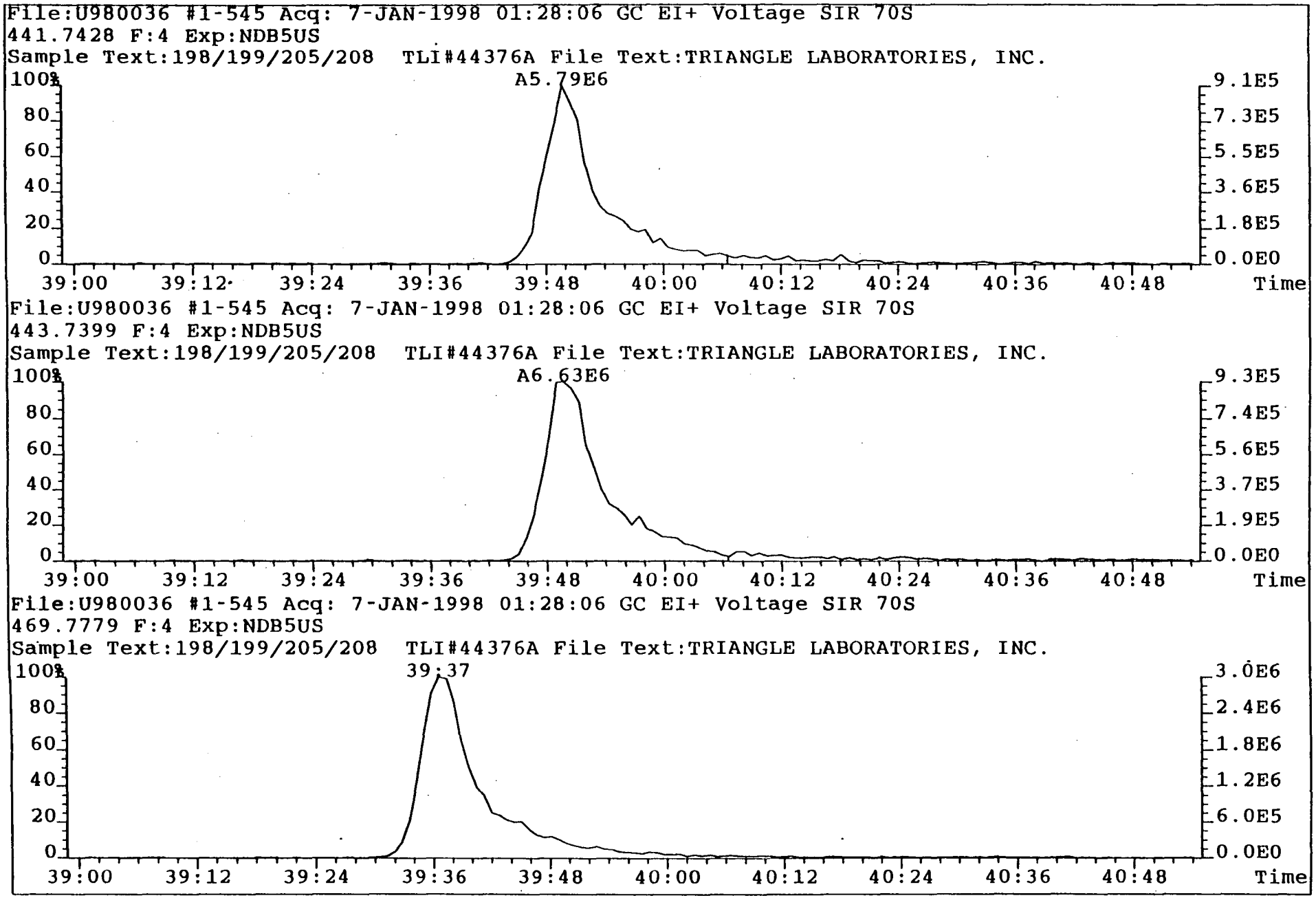



Peak Locate Examination: 7-JAN-1998:01:26 File:U980036
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.2661
330.94615
330.97925
331.01235
PPM
200
Volts
0.0403
416.93435
416.97604
417.01774


File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.54E7
A7.43E5
100%
80
60
40
20
0
2.2E6
1.7E6
1.3E6
8.7E5
4.3E5
0.0E0
24:48
25:00
25:12
25:24
25:36
25:48
26:00
Time
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A1.96E7
A1.14E6
2.8E6
2.3E6
1.7E6
1.1E6
5.7E5
0.0E0
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
25:11
25:21
1.1E7
8.9E6
6.7E6
4.4E6
2.2E6
0.0E0


File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A3.42E7
A2.60E7
1.8E7
1.5E7
1.1E7
7.3E6
3.7E6
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.21E7
A1.75E7
1.3E7
1.0E7
7.7E6
5.1E6
2.6E6
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time
File:U980036 #1-724 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
28:35
1.6E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0
28:12
28:18
28:24
28:30
28:36
28:42
28:48
Time


File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A5.91E6
A1.27E6
1.7E6
1.3E6
1.0E6
6.7E5
3.3E5
0.0E0
33:00 33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A4.62E6
A1.06E6
1.3E6
1.0E6
7.7E5
5.1E5
2.6E5
0.0E0
33:00 33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time
File:U980036 #1-385 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
383.8639 F:3 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
33:24
3.6E6
2.9E6
2.2E6
1.4E6
7.2E5
0.0E0
33:00 33:06 33:12 33:18 33:24 33:30 33:36 33:42 33:48 33:54 Time


File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
441.7428 F:4 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A5.79E6
9.1E5
7.3E5
5.5E5
3.6E5
1.8E5
0.0E0
80
60
40
20
0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48
Time
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
443.7399 F:4 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A6.63E6
9.3E5
7.4E5
5.6E5
3.7E5
1.9E5
0.0E0
80
60
40
20
0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48
Time
File:U980036 #1-545 Acq: 7-JAN-1998 01:28:06 GC EI+ Voltage SIR 70S
469.7779 F:4 Exp:NDB5US
Sample Text:198/199/205/208 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
39:37
3.0E6
2.4E6
1.8E6
1.2E6
6.0E5
0.0E0
80
60
40
20
0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36 40:48
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 198/199/205/208 F.B. 01 — Analysis File: P980104

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-18A/B	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	WK	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	1.4			0.77	23:06	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.7	92.1	40%-130%	0.77	23:05	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	21:54	___

Data Reviewer: _____ 01/09/98

CNF_PSR v2.01, LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:17 01/09/98

Initial ....Date...

Data Review By: CM 1/9/98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980104B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00		0.77	2.95			0.000			
				18:27		0.79	627.47	276.94	350.53	0.799			
				18:43	RO	1.06	20.36	12.24	11.50	0.811			
				18:55		0.69	16.79	6.85	9.94	0.819			
				18:59	RO	1.34	17.17	13.04	9.70	0.822			
				19:05		0.72	48.91	20.48	28.43	0.827			
				19:27		0.75	902.06	388.06	514.00	0.843			
				19:35		0.78	765.41	334.61	430.80	0.848			
				19:42		0.77	1,388.68	602.65	786.03	0.853			
				19:53		0.78	701.16	307.26	393.90	0.861			
				20:00		0.78	110.52	48.53	61.99	0.866			
				20:10		0.77	720.47	312.65	407.82	0.874			
				20:19		0.77	1,520.23	660.68	859.55	0.880			
				20:28		0.78	862.72	376.91	485.81	0.887			
				20:37		0.76	2,531.77	1,092.61	1,439.16	0.893			
				20:46		0.75	907.79	388.98	518.81	0.900			
				21:10		0.76	5,246.57	2,270.75	2,975.82	0.917			
				21:21	RO	0.53	9.77	4.25	8.08	0.925			J
				21:27	RO	1.21	20.36	13.89	11.50	0.929			
				21:36		0.75	1,246.01	533.16	712.85	0.936			
				21:43		0.75	220.26	94.29	125.97	0.941			
				21:51		0.76	1,304.22	562.50	741.72	0.947			
				22:06		0.75	1,243.40	534.02	709.38	0.957			
				22:20		0.77	262.66	114.06	148.60	0.968			
				22:31		0.76	1,539.40	664.60	874.80	0.975			
				22:44		0.75	8.52	3.66	4.86	0.985			J
				22:58		0.75	1,275.94	548.58	727.36	0.995			
				23:06		0.77	955.12	414.23	540.89	1.001	2378-TCDF	AN	
				23:19		0.75	1,471.99	629.98	842.01	1.010			
				23:35		0.76	1,689.13	731.64	957.49	1.022			
				23:42		0.76	1,548.87	669.49	879.38	1.027			
				23:55		0.83	8.23	3.74	4.49	1.036			J
				24:16	RO	1.20	2.53	1.71	1.43	1.051			J
				24:30		0.74	1,002.81	427.67	575.14	1.061			
				24:40		0.84	24.86	11.35	13.51	1.069			
				25:15		0.75	204.37	87.43	116.94	1.094			
	DC	WH		25:42		0.77	17.92			1.113			
304-306			35	Peaks			30,426.53						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00		0.89	2.46			0.000			
	DC	WL		18:31		0.88	3.94			0.802			
	DC	WL		20:07	RO	1.49	4.64			0.871			

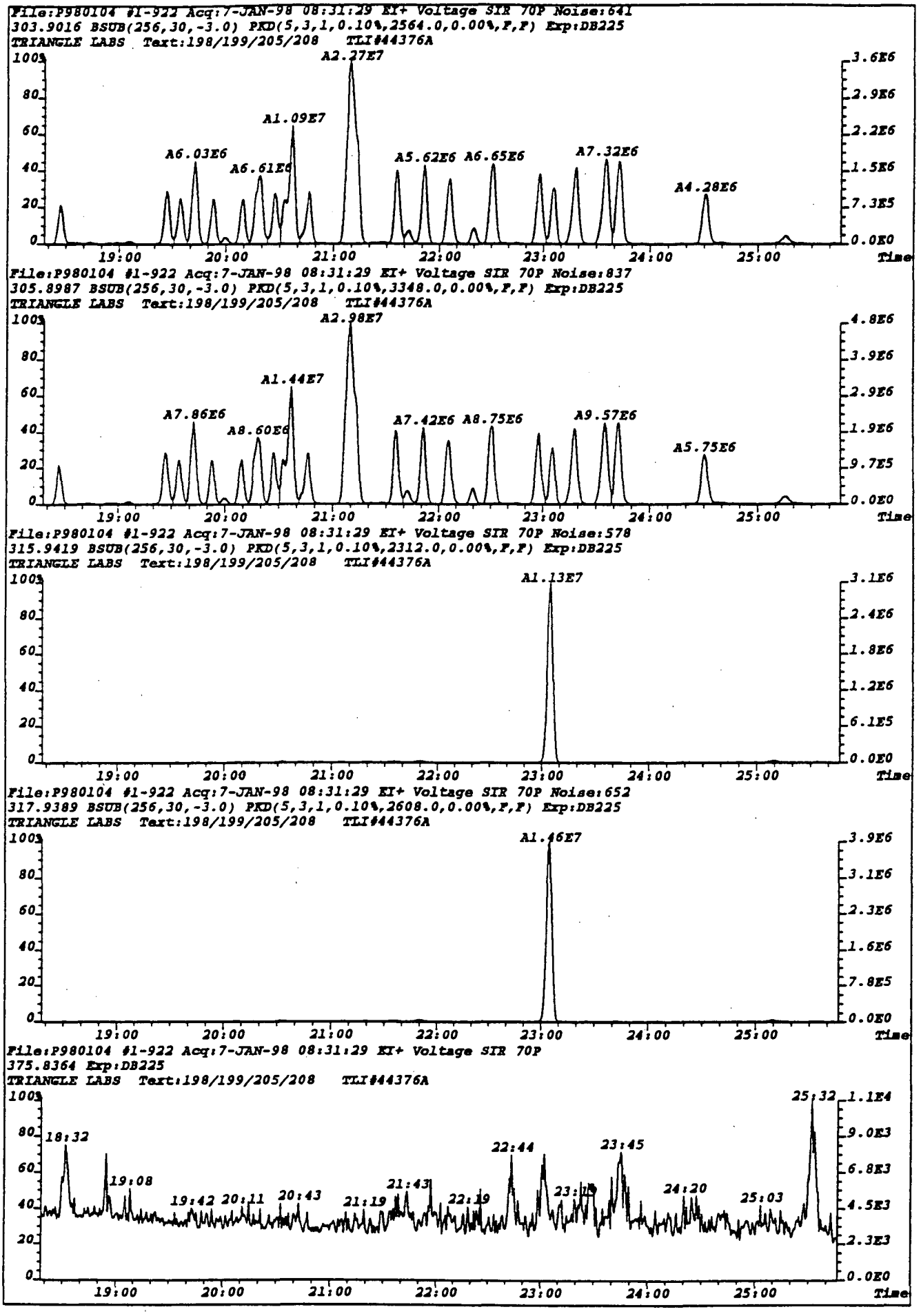
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WL		20:33	RO	0.37	5.10			0.890			
	DC	WL		21:20	RO	1.66	4.50			0.924			
	DC	WL		21:35	RO	0.58	12.11			0.935			
	DC	WL		21:50		0.78	29.42			0.946			
				23:05		0.77	2,584.39	1,127.12	1,457.27	1.000	13C12-2378-TCDF	IS0	
				23:42	RO	1.17	6.18	4.08	3.49	1.027			
				24:03		0.71	4.00	1.66	2.34	1.042			
	DC	WH		24:08	RO	0.94	3.68			1.045			
	DC	WH		25:10		0.73	30.47			1.090			
	DC	WH		25:32	RO	0.59	3.95			1.106			
	DC	WH		25:38	RO	0.95	2.27			1.110			
316-318			3	Peaks			2,594.57						

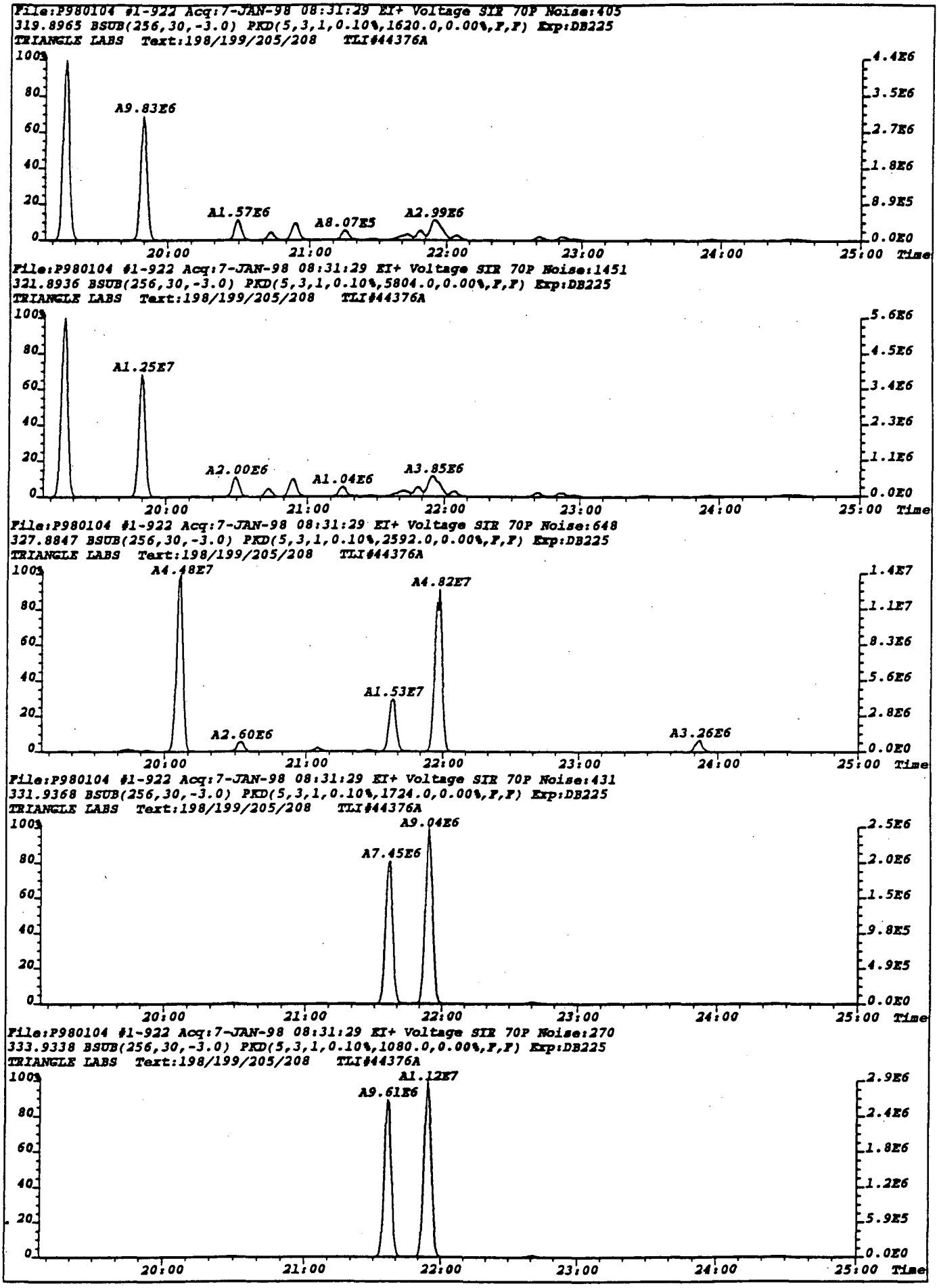
---------- Above: TCDF / TCDD Follows ----------

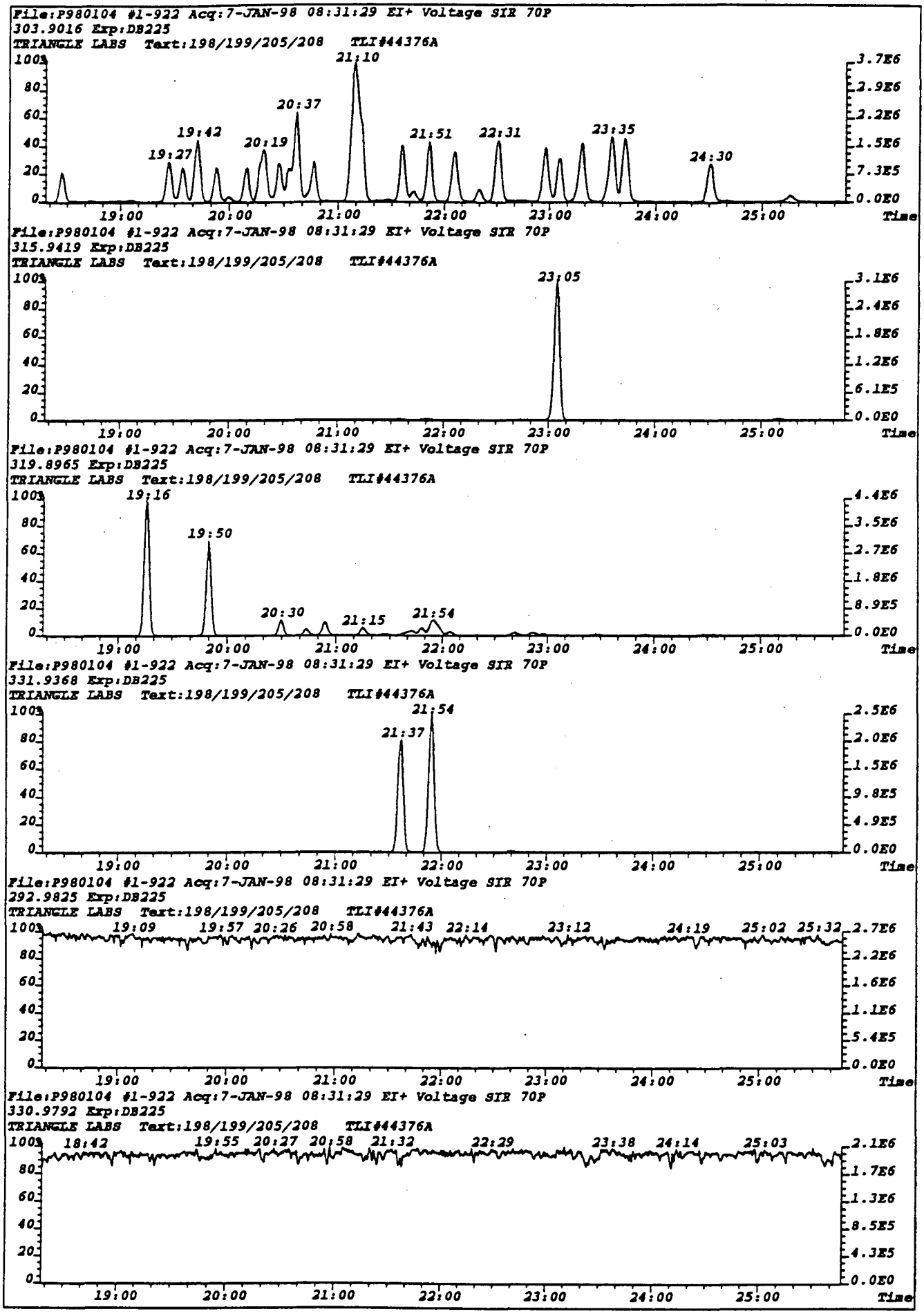
13C12-TCDD				0.65-0.89						0.908-1.092			
332-334	DC	NL		0:00	RO	1.59	0.96			0.000			
				20:29	RO	0.92	6.07	3.16	3.43	0.948			
				21:37		0.77	1,705.95	744.78	961.17	1.000	13C12-2378-TCDD	IS1	
				21:54		0.81	2,020.85	903.66	1,117.19	1.013	13C12-1234-TCDD	RS1	
				22:39		0.67	21.53	8.63	12.90	1.048			
	DC	WH		24:24	RO	1.47	5.42			1.129			
	DC	WH		24:30	RO	0.40	3.10			1.133			
	DC	WH		24:58	RO	0.55	3.29			1.155			
332-334			4	Peaks			3,754.40						

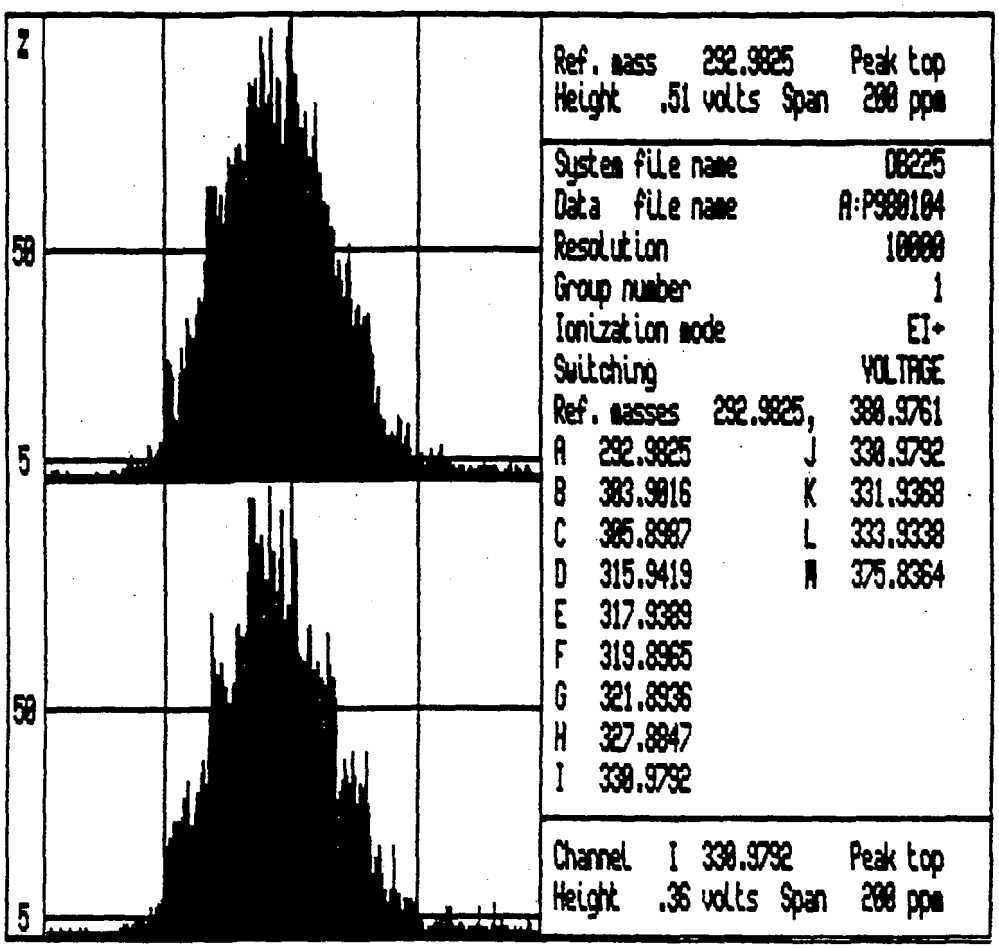
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***


File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:641
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2564.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.27E7
A1.09E7
A6.03E6
A6.61E6
A5.62E6
A6.65E6
A7.32E6
A4.28E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:837
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3348.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A2.98E7
A1.44E7
A7.86E6
A8.60E6
A7.42E6
A8.75E6
A9.57E6
A5.75E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:578
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2312.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.13E7
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:652
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2608.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.46E7
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
18:32
19:08
19:42
20:11
20:43
21:19
21:43
22:19
22:44
23:45
24:20
25:03
25:32
Time


File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:405
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1620.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A9.83E6
A1.57E6
A8.07E5
A2.99E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:1451
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5804.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.25E7
A2.00E6
A1.04E6
A3.85E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:648
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2592.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A4.48E7
A4.82E7
A1.53E7
A2.60E6
A3.26E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:431
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1724.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A9.04E6
A7.45E6
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P Noise:270
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1080.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
A1.12E7
A9.61E6
20:00
21:00
22:00
23:00
24:00
25:00
Time


File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
19:27
19:42
20:19
20:37
21:10
21:51
22:31
23:35
24:30
Time
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
23:05
Time
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
19:16
19:50
20:30
21:15
21:54
Time
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
21:37
21:54
Time
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
Time
File:P980104 #1-922 Acq:7-JAN-98 08:31:29 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:198/199/205/208 TLI#44376A
18:42
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height .51 volts Span 200 ppm
System file name D8225
Data file name A:P980104
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height .36 volts Span 200 ppm

TLI Project: **44376A** FL < RF 0 Method 23 PCDD/PCDF Analysis (a)
Client Sample: **201-204** Analysis File: **U980035**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPMIT204**
TLI ID:	**194-59-19A-D**	Date Extracted:	**12/29/97**	ICal:	**UF51058**
		Date Analyzed:	**01/07/98**	ConCal:	**U980025**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**U980026**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**JM**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.004				
1,2,3,7,8-PeCDD	0.02			1.58	29:36	J
1,2,3,4,7,8-HxCDD	ND	0.01				
1,2,3,6,7,8-HxCDD	0.02			1.12	32:50	J
1,2,3,7,8,9-HxCDD	0.03			1.20	33:07	J
1,2,3,4,6,7,8-HpCDD	EMPC		0.09			J
1,2,3,4,6,7,8,9-OCDD	0.16			0.91	39:37	JB
2,3,7,8-TCDF	0.29			0.76	24:40	B
1,2,3,7,8-PeCDF	0.07			1.73	28:35	J
2,3,4,7,8-PeCDF	0.12			1.65	29:16	
2,3,4,7,8-HxCDF	0.23			1.23	32:02	
1,2,3,6,7,8-HxCDF	0.09			1.22	32:08	J
2,3,4,6,7,8-HxCDF	0.12			1.27	32:37	
1,2,3,7,8,9-HxCDF	ND	0.007				
1,2,3,4,6,7,8-HpCDF	0.43			1.10	35:01	
1,2,3,4,7,8,9-HpCDF	EMPC		0.05			J
1,2,3,4,6,7,8,9-OCDF	0.31			0.83	39:49	

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.22	5			
Total PeCDD	0.24	6		0.42	
Total HxCDD	0.33	5			
Total HpCDD	EMPC			0.18	
Total TCDF	1.5	13		1.5	
Total PeCDF	1.6	12		1.6	
Total HxCDF	0.96	8		1.0	
Total HpCDF	0.65	3		0.70	

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:51 01/10/98

TLI Project: 44376A
Client Sample: 201-204

Method 23 PCDD/PCDF Analysis (a)
Analysis File: U980035

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	73.1	40%-130%	0.75	24:37	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.0	75.1	40%-130%	0.80	25:20	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.1	76.4	40%-130%	1.47	28:34	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.7	68.3	40%-130%	1.49	29:36	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.4	85.4	40%-130%	0.50	32:08	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.6	89.4	40%-130%	1.23	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.2	79.9	25%-130%	0.44	35:00	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.5	86.7	25%-130%	1.04	36:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6.5	81.3	25%-130%	0.85	39:36	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.7	92.0	40%-130%	1.51	29:15	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.3	82.6	40%-130%	0.52	32:02	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.5	86.8	40%-130%	1.22	32:43	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.8	93.8	40%-130%	0.42	36:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.3	82.8	25:21	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.3	81.4	40%-130%	0.50	33:23	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.3	82.8	40%-130%	0.51	32:37	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.83	25:09	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.26	33:07	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:51 01/10/98

Initial ....Date...

Data Review By: CW 1/10/98 Calculated Noise Area: 6.44

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980035B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306		DC	NL	0:00		0.83	42.23			0.000			
	NK			21:28	RO	0.61	162.22	70.57	116.53	0.872			J
	K			21:58		0.85	197.45	90.49	106.96	0.892			J
	K			22:13		0.85	222.91	102.59	120.32	0.903			J
	K			22:37		0.75	859.68	367.39	492.29	0.919			
	K			22:57		0.81	574.89	256.77	318.12	0.932			
	K			23:21		0.74	682.02	290.28	391.74	0.949			
	K			23:36		0.75	504.63	216.22	288.41	0.959			
				23:50		0.75	651.63	278.55	373.08	0.968			
				24:02		0.74	797.03	339.00	458.03	0.976			
				24:13		0.76	338.58	146.19	192.39	0.984			
				24:28		0.70	277.03	113.73	163.30	0.994			
				24:40		0.76	1,416.06	610.62	805.44	1.002	2378-TCDF	AN	
				25:05		0.77	350.18	152.10	198.08	1.019			
				25:17		0.70	312.13	128.53	183.60	1.027			
				26:23	RO	0.90	69.77	35.42	39.42	1.072			J
304-306			15	Peaks			7,416.21						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318		DC	NL	0:00	RO	1.08	13.10			0.000			
		DC	WL	23:35		0.82	192.25			0.958			
				24:14		0.75	96.67	41.33	55.34	0.984			
				24:37		0.75	15,930.94	6,807.62	9,123.32	1.000	13C12-2378-TCDF	IS0	
				25:03	RO	1.00	287.45	161.66	162.40	1.018			
				25:20	RO	0.41	101.21	44.03	107.09	1.029			
				25:33	RO	2.00	32.13	36.35	18.15	1.038			
		DC	WH	25:41		0.76	51.33			1.043			
		DC	WH	25:55	RO	2.99	18.39			1.053			
316-318			5	Peaks			16,448.40						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.895-1.047			
320-322		DC	NL	0:00		0.79	8.10			0.000			
	NK			22:48		0.78	327.67	143.23	184.44	0.900			
	NK			23:12		0.77	215.09	93.88	121.21	0.916			J
	D	D	SN	23:29		0.80	44.08			0.927			
	K			24:10		0.85	114.27	52.44	61.83	0.954			J
	D	D	SN	24:37	RO	1.96	12.44			0.972			
				24:49		0.81	44.33	19.81	24.52	0.980			J
				25:15		0.70	135.20	55.56	79.64	0.997			J
	D	D	SN	25:21	RO	0.46	22.23			1.001	2378-TCDD	AN	
	D	D	SN	25:31	RO	1.05	14.44			1.007			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	D	D	SN	25:41		0.66	19.92			1.014			
	D	D	SN	25:53	RO	0.43	6.87			1.022			
	D	D	SN	26:11	RO	1.20	2.99			1.034			
	D	D	SN	26:19	RO	0.59	11.65			1.039			
320-322			5 Peaks				836.56						
37Cl-TCDD										0.921-1.079			
328		DC	NL	0:00			4.38			0.000			
		DC	WL	23:05			30.68			0.911			
		DC	WL	23:13			13.26			0.916			
				23:58			371.58	371.58		0.946			
				25:21			10,346.40	10,346.40		1.001	37Cl-TCDD	CLS	
				25:45			232.04	232.04		1.016			
				25:57			14.36	14.36		1.024			
				26:00			25.95	25.95		1.026			
				26:02			25.66	25.66		1.028			
				26:05			39.74	39.74		1.030			
				26:13			53.49	53.49		1.035			
				26:28			6.94	6.94		1.045			
				26:34			22.76	22.76		1.049			
				26:40			10.68	10.68		1.053			
328			11 Peaks				11,149.60						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334		DC	NL	0:00	RO	2.48	12.50			0.000			
				24:11		0.84	79.48	36.36	43.12	0.955			
				25:09		0.83	14,863.24	6,726.10	8,137.14	0.993	13C12-1234-TCDD	RS1	
				25:20		0.80	12,486.81	5,539.70	6,947.11	1.000	13C12-2378-TCDD	IS1	
				25:40	RO	1.19	428.43	287.59	242.05	1.013			
332-334			4 Peaks				27,857.96						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342		DC	NL	0:00	RO	0.74	3.36			0.000			
				26:35		1.56	539.70	328.93	210.77	0.931			
	D	D	SN	26:53	RO	0.28	3.65			0.941			
	D	D	SN	27:13	RO	3.27	15.05			0.953			
				27:34		1.48	180.42	107.54	72.88	0.965			J
				27:43		1.53	1,196.09	724.00	472.09	0.970			
				27:53		1.50	291.05	174.51	116.54	0.976			J
				28:12		1.42	490.70	288.30	202.40	0.987			
				28:17		1.54	589.59	357.34	232.25	0.990			
	M			28:29		1.66	229.10	143.00	86.10	0.997			J
	AN			28:35		1.73	228.80	145.00	83.80	1.001	12378-PeCDF	AN	J
				28:44		1.40	214.30	124.95	89.35	1.006			J
				28:52		1.46	328.52	195.00	133.52	1.011			J
	D	D	SN	29:01	RO	1.95	17.37			1.016			
				29:16		1.65	388.97	242.46	146.51	1.025	23478-PeCDF	AN	
				29:25		1.49	526.09	315.23	210.86	1.030			
				29:44	RO	1.90	70.51	52.61	27.65	1.041			J
				29:59	RO	1.23	25.24	15.34	12.48	1.050			J

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:14	RO	1.88	34.55	25.50	13.55	1.058			J
340-342			15 Peaks				5,333.63						
13C12-PeCDF				1.32-1.78					0.860-1.140				
352-354	DC	NL		0:00	RO	1.28	0.38		0.000				
				27:42		1.58	249.75	153.10	96.65	0.970			
				28:10	RO	1.27	8.87	5.39	4.25	0.986			
				28:34		1.47	12,959.42	7,720.06	5,239.36	1.000	13C12-PeCDF 123	IS2	
				28:51	RO	2.34	364.57	334.43	142.97	1.010			
				29:15		1.51	11,517.03	6,920.75	4,596.28	1.024	13C12-PeCDF 234	SUR1	
				29:46	RO	1.11	75.81	46.08	41.70	1.042			
				29:56	RO	0.46	8.57	5.21	11.38	1.048			
352-354			7 Peaks				25,184.02						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78					0.935-1.022				
356-358	DC	NL		0:00	RO	1.31	0.28		0.000				
				27:49	RO	0.94	275.70	167.58	179.01	0.940			
D	D	SN		28:17	RO	0.94	21.50		0.956				
				28:33		1.57	198.31	121.08	77.23	0.965			J
				28:41		1.55	47.29	28.71	18.58	0.969			J
				28:51		1.49	120.28	72.07	48.21	0.975			J
				29:01	RO	2.53	19.41	19.23	7.61	0.980			J
				29:05		1.36	45.76	26.40	19.36	0.983			J
				29:18	RO	1.79	54.80	38.51	21.49	0.990			J
				29:27	RO	1.03	25.85	15.71	15.27	0.995			J
M				29:36		1.58	35.80	21.90	13.90	1.000	12378-PeCDD	AN	J
				29:44		1.48	23.04	13.74	9.30	1.005			J
D	D	SN		30:05	RO	1.87	18.74		1.016				
	DC	SN		30:15		1.66	2.93		1.022				
	DC	SN		30:31	RO	0.97	1.63		1.031				
356-358			10 Peaks				846.24						
13C12-PeCDD				1.32-1.78					0.865-1.135				
368-370	DC	NL		0:00	RO	1.08	0.21		0.000				
				28:31	RO	1.05	10.10	6.14	5.87	0.963			
				28:39	RO	0.73	7.70	4.68	6.42	0.968			
	DC	SN		29:01	RO	0.40	2.02		0.980				
				29:36		1.49	5,985.74	3,586.44	2,399.30	1.000	13C12-PeCDD 123	IS3	
				29:44	RO	1.97	946.18	731.60	371.05	1.005			
				30:08	RO	0.96	28.43	17.28	17.91	1.018			
				30:20	RO	3.69	13.87	20.07	5.44	1.025			
				30:28	RO	0.32	5.03	3.06	9.46	1.029			
				30:30	RO	1.27	13.90	8.45	6.63	1.030			
368-370			8 Peaks				7,010.95						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43					0.962-1.047				
374-376	DC	NL		0:00		1.16	23.81		0.000				
				31:04		1.22	313.97	172.68	141.29	0.967			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				31:13		1.27	741.24	414.36	326.88	0.971			
				31:22	RO	0.84	64.40	35.65	42.24	0.976			J
				31:31		1.21	101.98	55.76	46.22	0.981			J
				31:40	RO	1.00	50.89	28.17	28.26	0.985			J
				32:02		1.23	589.83	324.84	264.99	0.997	123478-HxCDF	AN	
				32:08		1.22	272.50	149.77	122.73	1.000	123678-HxCDF	AN	J
				32:16	RO	0.92	62.05	34.35	37.44	1.004			J
	A			32:24		1.38	103.50	60.00	43.50	1.008			J
				32:37		1.27	293.93	164.31	129.62	1.015	234678-HxCDF	AN	
	D	D	SN	33:23	RO	1.69	16.26			1.039	123789-HxCDF	AN	
				33:28		1.18	59.80	32.36	27.44	1.041			J
374-376			11	Peaks			2,654.09						
13C12-HxCDF				0.43-0.59					0.876-1.124				
384-386		DC	NL	0:00	RO	0.68	6.93			0.000			
				31:05		0.52	37.54	12.90	24.64	0.967			
				31:12		0.51	66.54	22.47	44.07	0.971			
				32:02		0.52	6,804.29	2,322.38	4,481.91	0.997	13C12-HxCDF 478	SUR2	
				32:08		0.50	9,982.93	3,328.07	6,654.86	1.000	13C12-HxCDF 678	IS4	
				32:37		0.51	8,723.69	2,941.31	5,782.38	1.015	13C12-HxCDF 234	ALT2	
				33:23		0.50	6,607.26	2,188.08	4,419.18	1.039	13C12-HxCDF 789	ALT1	
384-386			6	Peaks			32,222.25						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43					0.958-1.014				
390-392		DC	NL	0:00	RO	1.02	6.97			0.000			
				31:34		1.18	61.00	33.03	27.97	0.962			J
	D	D	SN	31:51	RO	1.52	3.32			0.971			
				32:01		1.28	276.41	155.17	121.24	0.976			
				32:13		1.30	136.48	77.15	59.33	0.982			J
	D	D	SN	32:23		1.09	29.36			0.987			
	D	D	SN	32:37	RO	2.21	7.73			0.994			
	D	D	SN	32:45	RO	1.62	16.40			0.998	123478-HxCDD	AN	
				32:50		1.12	45.83	24.20	21.63	1.001	123678-HxCDD	AN	J
	M			33:07		1.20	52.70	28.70	24.00	1.010	123789-HxCDD	AN	J
390-392			5	Peaks			572.42						
13C12-HxCDD				1.05-1.43					0.970-1.030				
402-404		DC	NL	0:00		1.28	7.50			0.000			
				32:13		1.37	25.59	14.80	10.79	0.982			
				32:43		1.22	4,904.99	2,692.26	2,212.73	0.997	13C12-HxCDD 478	SUR3	
				32:48		1.23	7,721.36	4,252.55	3,468.81	1.000	13C12-HxCDD 678	IS5	
				33:07		1.26	8,680.94	4,832.80	3,848.14	1.010	13C12-HxCDD 789	RS2	
402-404			4	Peaks			21,332.88						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20					0.996-1.049				
408-410		DC	NL	0:00		1.16	9.81			0.000			
				35:01		1.10	867.57	453.76	413.81	1.000	1234678-HpCDF	AN	
				35:17		1.06	186.41	95.91	90.50	1.008			

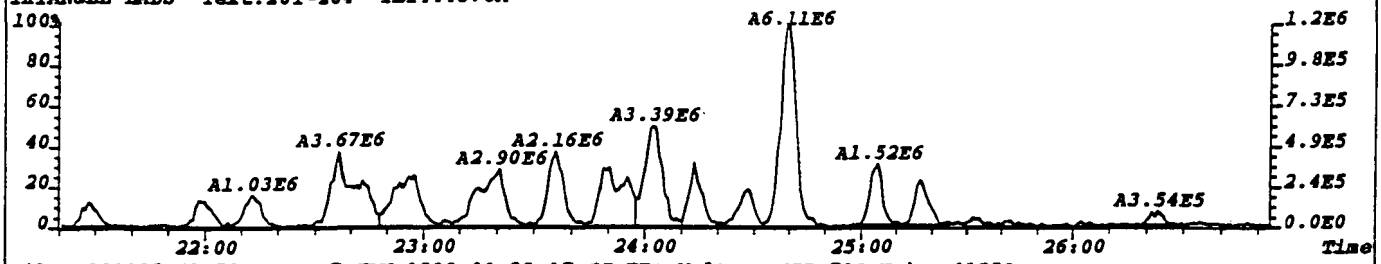
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				35:26		0.97	211.28	104.16	107.12	1.012			
	D	D	SN	36:17	RO	0.53	3.94			1.037			
	D	D	SN	36:23	RO	2.06	2.92			1.040			
	M			36:33	RO	1.24	78.95	48.10	38.70	1.044	1234789-HpCDF	AN	J
	D	D	SN	36:53		1.00	8.25			1.054			
408-410			4 Peaks				1,344.21						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	0.52	14.54			0.000			
				35:00		0.44	5,704.28	1,736.88	3,967.40	1.000	13C12-HpCDF 678	IS6	
				35:30	RO	1.52	11.84	12.49	8.22	1.014			
				36:32		0.42	4,289.75	1,279.16	3,010.59	1.044	13C12-HpCDF 789	SUR4	
				36:55		0.37	63.97	17.19	46.78	1.055			
418-420			4 Peaks				10,069.84						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00	RO	1.36	2.86			0.000			
	D	DC	WL	35:09	RO	0.66	8.30			0.975			
	M			35:18	RO	1.22	125.87	75.40	61.70	0.979			J
	D	D	SN	35:26		1.14	16.01			0.983			
	M			36:03	RO	0.86	119.26	60.80	70.30	1.000	1234678-HpCDD	AN	J
	D	DC	NH	36:33	RO	3.03	7.20			1.014			
424-426			2 Peaks				245.13						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00	RO	0.83	7.79			0.000			
				35:16		1.02	27.75	14.01	13.74	0.978			
				36:03		1.04	5,466.45	2,786.97	2,679.48	1.000	13C12-HpCDD 678	IS7	
436-438			2 Peaks				5,494.20						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.899-1.101			
442-444	DC	NL		0:00	RO	0.04	0.13			0.000			
	DC	WL		34:43		0.83	0.53			0.877			
	DC	WL		35:33	RO	1.31	0.96			0.898			
	DC	SN		36:22	RO	0.55	1.83			0.918			
	DC	SN		36:37	RO	1.17	1.98			0.925			
	DC	SN		37:10		1.01	2.23			0.939			
	DC	SN		37:26	RO	1.34	1.29			0.945			
	DC	SN		37:31	RO	0.51	1.95			0.947			
	DC	SN		37:39	RO	1.07	1.87			0.951			
	DC	SN		37:53	RO	0.58	1.70			0.957			
	DC	SN		38:11	RO	0.47	2.27			0.964			
	DC	SN		38:19	RO	1.60	1.42			0.968			
	DC	SN		38:36	RO	1.20	1.87			0.975			
	DC	SN		38:41		0.88	1.45			0.977			
				39:18	RO	1.06	3.61	2.02	1.91	0.992			
	M			39:49		0.83	412.00	187.00	225.00	1.005	OCDF	AN	
				40:18	RO	1.43	2.59	1.96	1.37	1.018			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		40:22	RO	0.46	2.51			1.019			
	DC	SN		40:52	RO	2.44	0.51			1.032			
442-444			3 Peaks				418.20						
OCDD				0.76-1.02						0.899-1.101			
458-460	DC	NL		0:00	RO	1.67	0.06			0.000			
	DC	SN		39:25	RO	0.38	0.59			0.995			
				39:37		0.91	167.97	80.05	87.92	1.000	OCDD	AN	J
				39:56	RO	0.41	3.76	1.77	4.33	1.008			
	DC	SN		40:04	RO	0.26	0.81			1.012			
458-460			2 Peaks				171.73						
13C12-OCDD				0.76-1.02						0.996-1.004			
470-472	DC	NL		0:00		1.00	0.08			0.000			
				39:36		0.85	7,695.65	3,526.36	4,169.29	1.000	13C12-OCDD	IS8	
470-472			1 Peak				7,695.65						

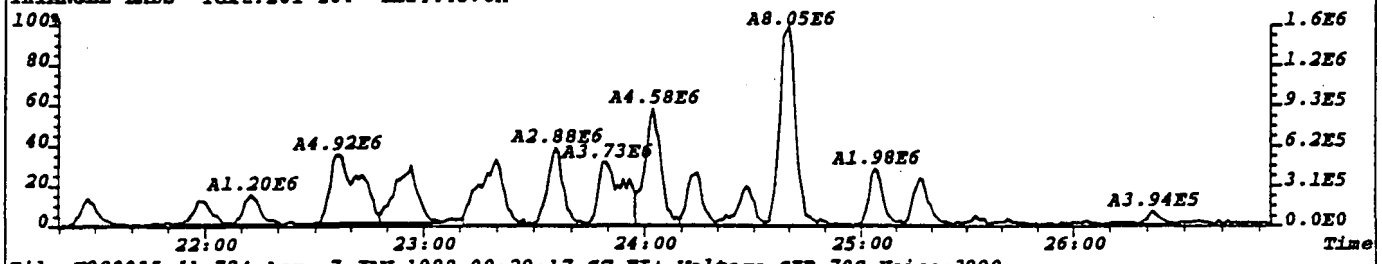
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

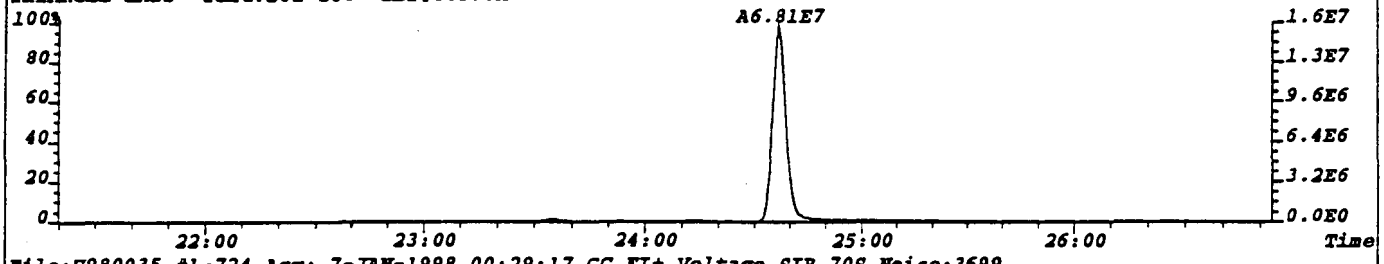
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:9553
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,38212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



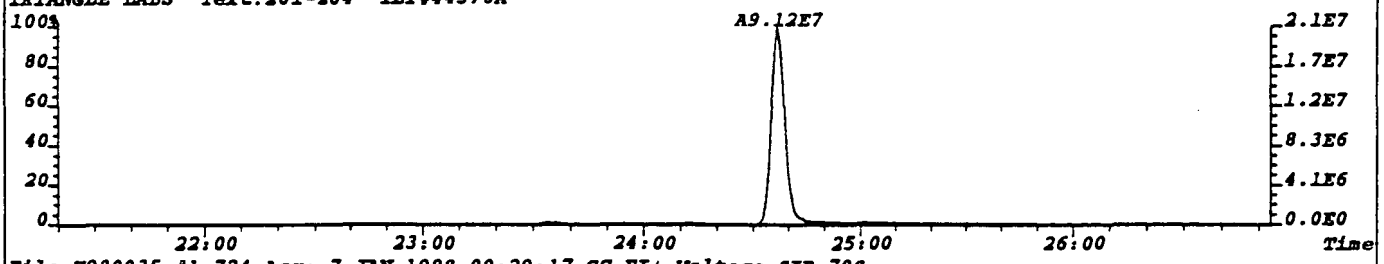
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:11558
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,46232.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



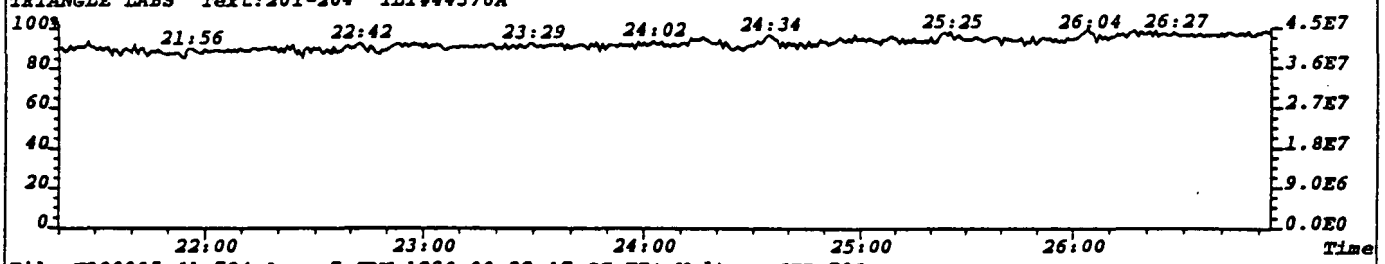
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:3990
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,15960.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



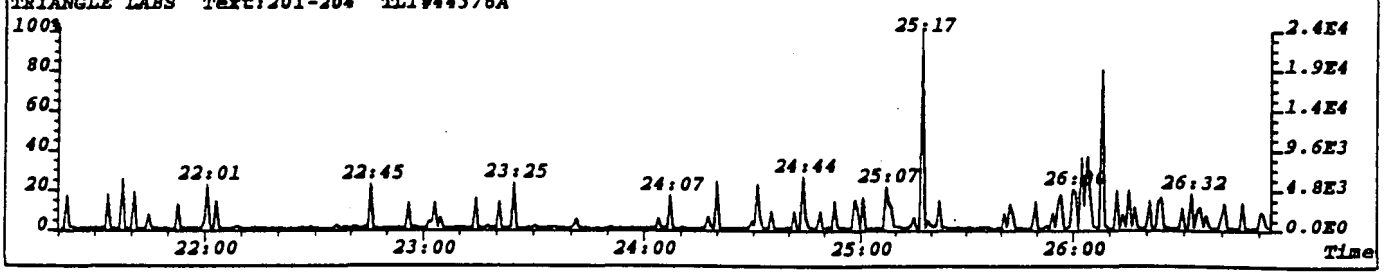
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:3699
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,14796.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

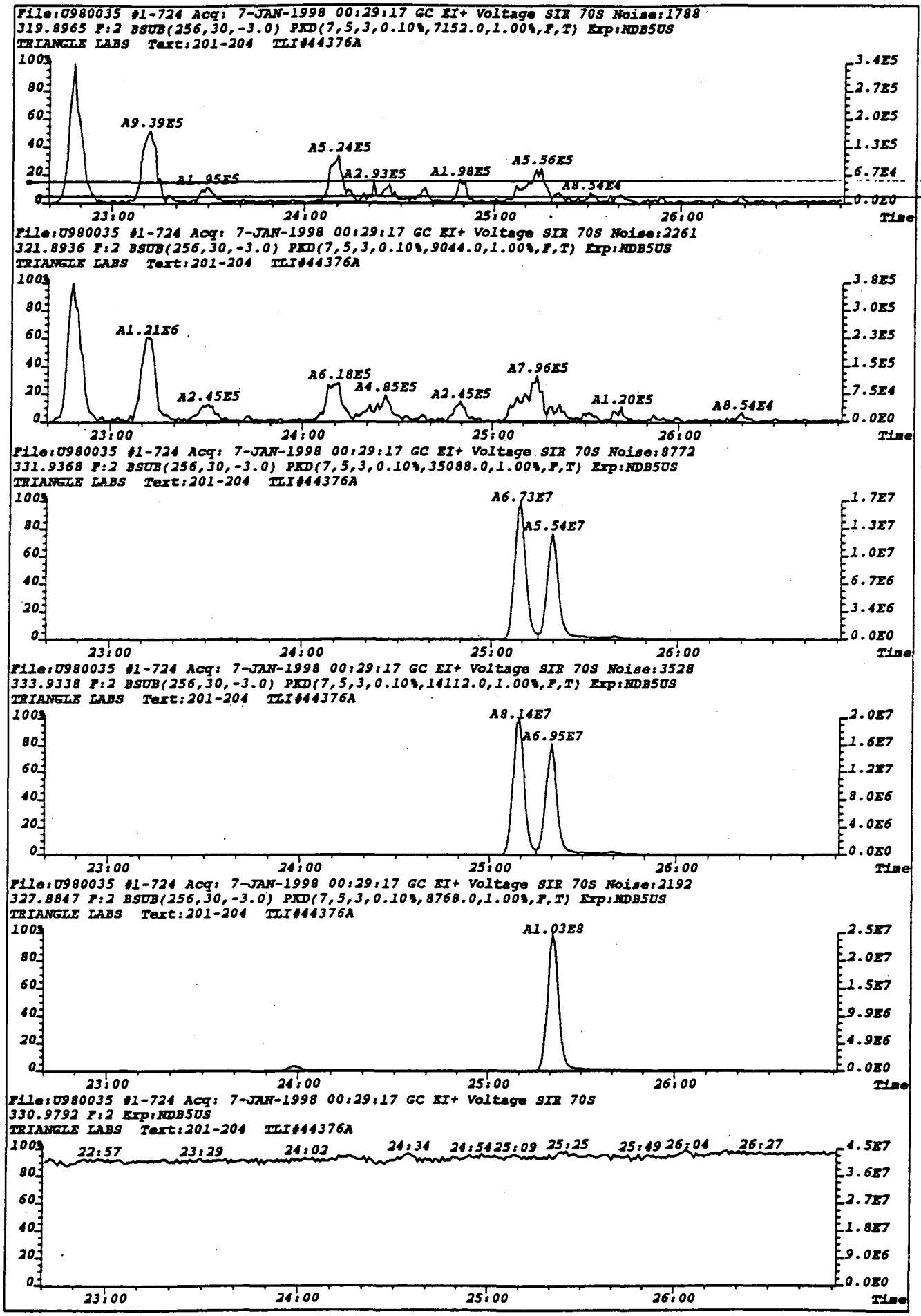


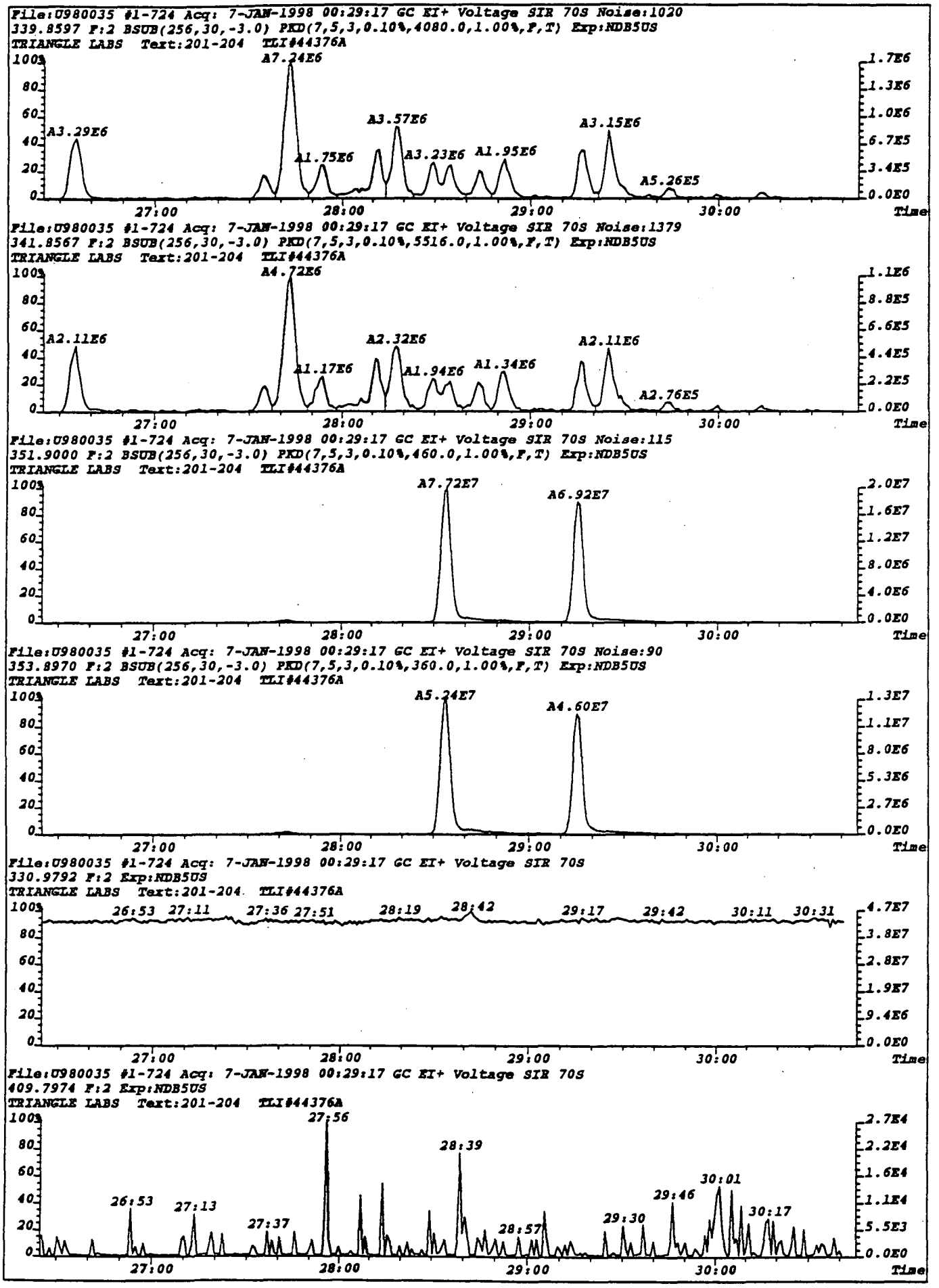
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

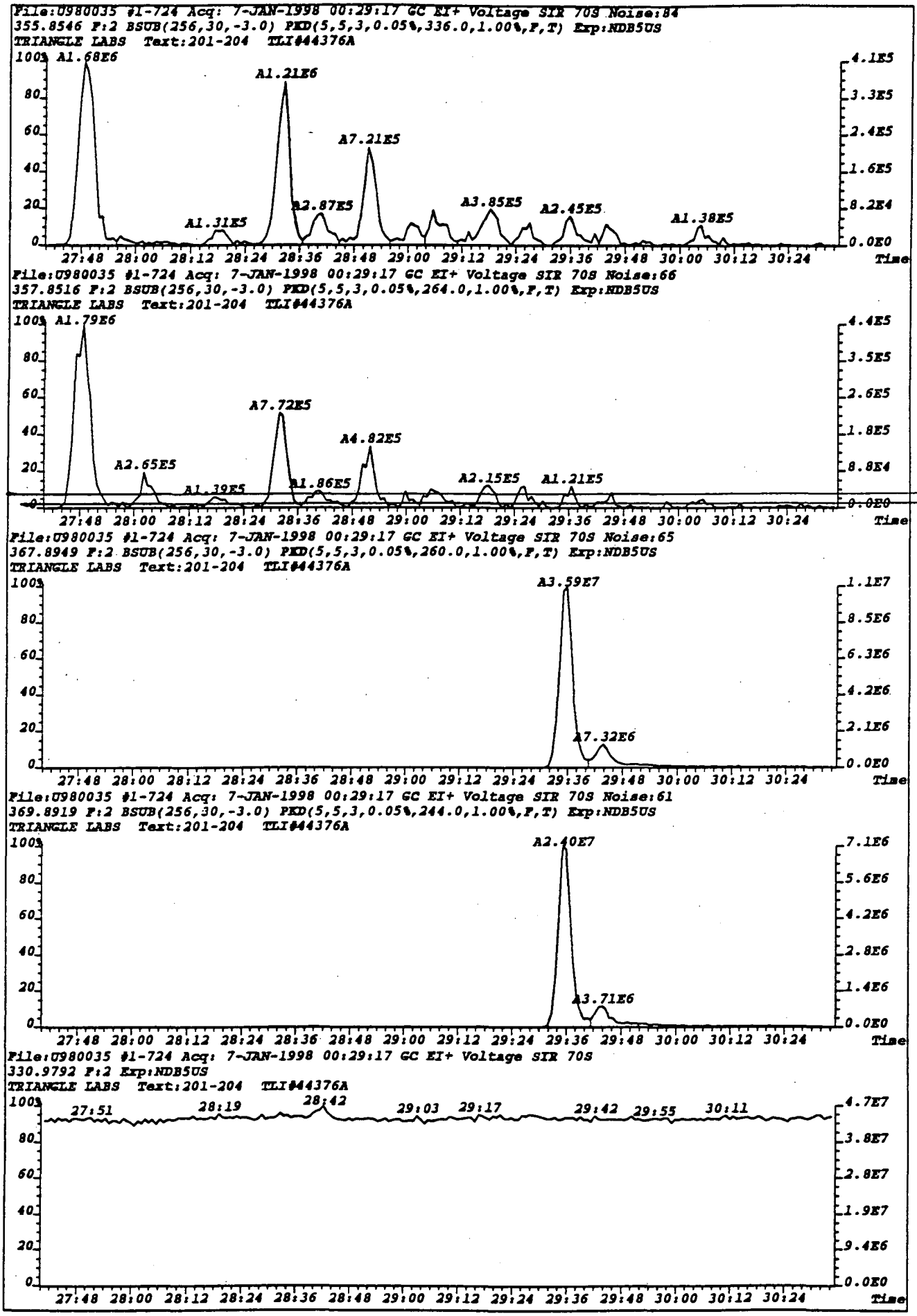


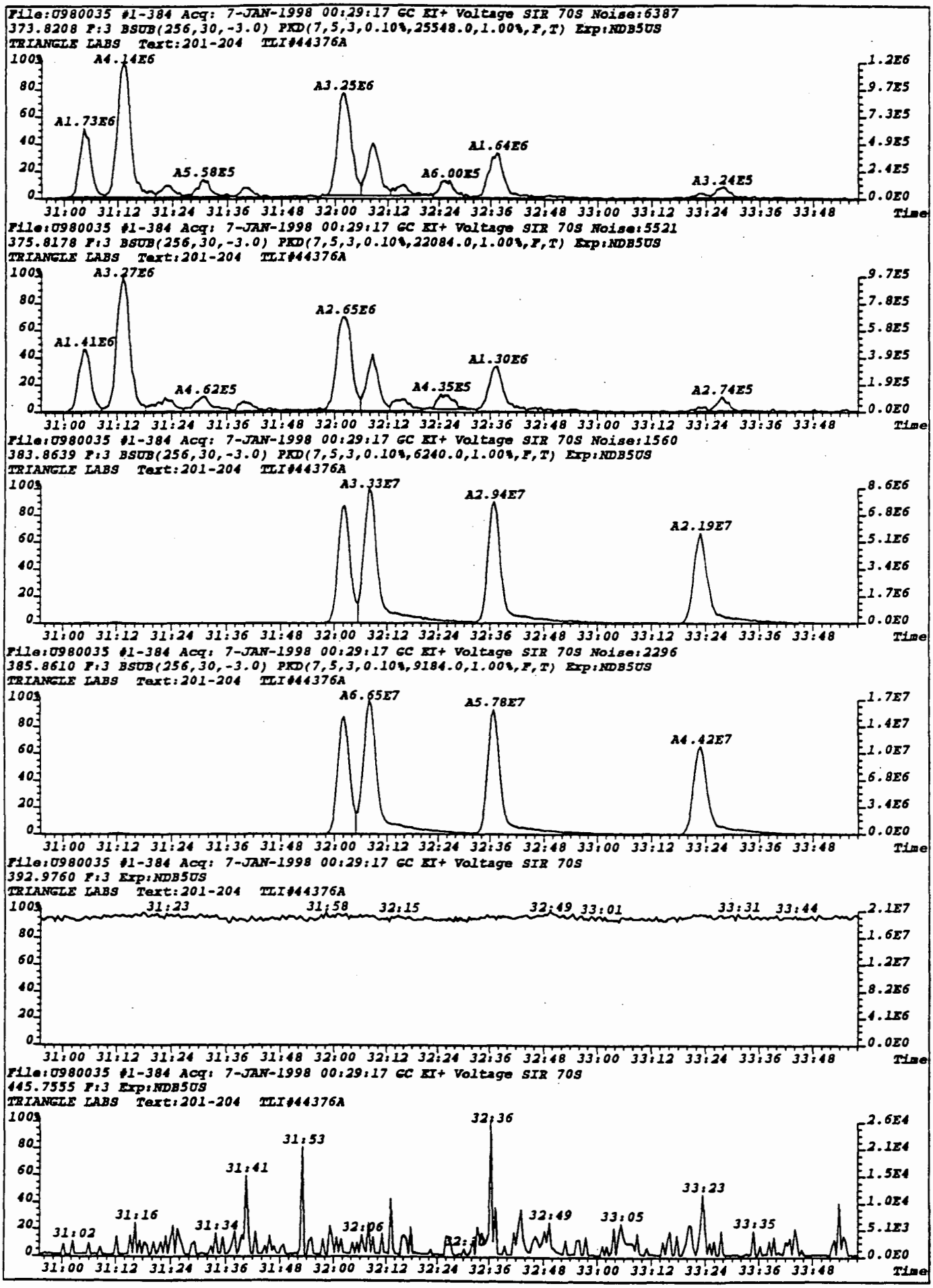
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

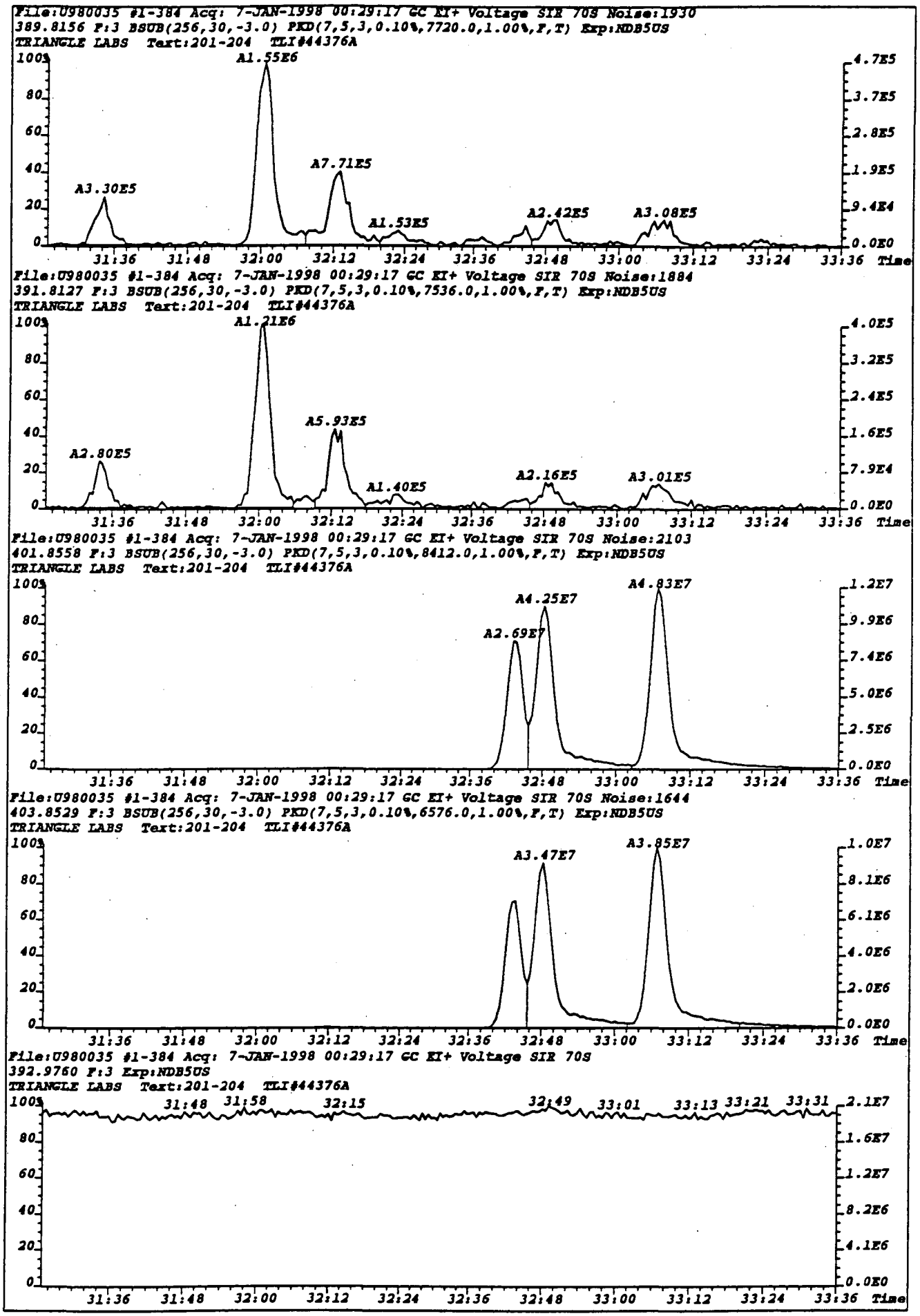



File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1788
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7152.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A9.39E5
A5.24E5
A1.95E5
A2.93E5
A1.98E5
A5.56E5
A8.54E4
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2261
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9044.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.21E6
A2.45E5
A6.18E5
A4.85E5
A2.45E5
A7.96E5
A1.20E5
A8.54E4
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:8772
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,35088.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A6.73E7
A5.54E7
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:3528
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,14112.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A8.14E7
A6.95E7
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2192
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.03E8
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
22:57
23:29
24:02
24:34
24:54
25:09
25:25
25:49
26:04
26:27
23:00
24:00
25:00
26:00
Time

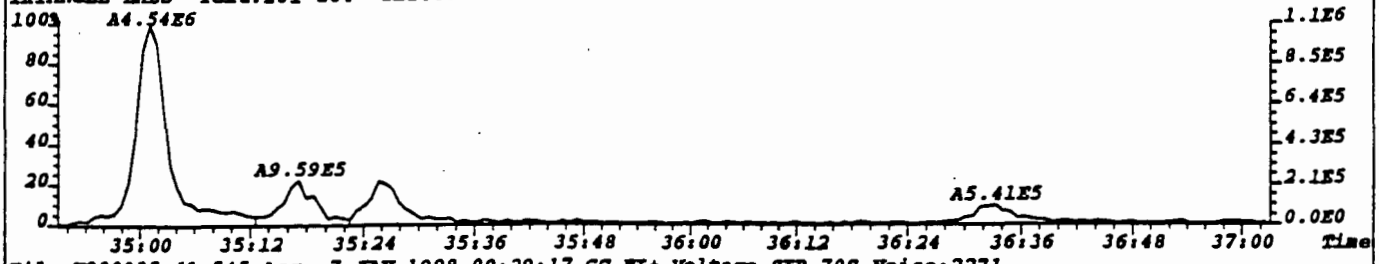

File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1020
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4080.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A7.24E6
A3.29E6
A1.75E6
A3.57E6
A3.23E6
A1.95E6
A3.15E6
A5.26E5
27:00
28:00
29:00
30:00
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1379
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5516.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A4.72E6
A2.11E6
A1.17E6
A2.32E6
A1.94E6
A1.34E6
A2.11E6
A2.76E5
27:00
28:00
29:00
30:00
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:115
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,460.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A7.72E7
A6.92E7
27:00
28:00
29:00
30:00
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:90
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,360.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A5.24E7
A4.60E7
27:00
28:00
29:00
30:00
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
26:53
27:11
27:36
27:51
28:19
28:42
29:17
29:42
30:11
30:31
27:00
28:00
29:00
30:00
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
27:56
28:39
26:53
27:13
27:37
28:57
29:30
29:46
30:01
30:17
27:00
28:00
29:00
30:00
Time


File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:84
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,336.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.68E6
A1.21E6
A7.21E5
A1.31E5
A2.87E5
A3.85E5
A2.45E5
A1.38E5
4.1E5
3.3E5
2.4E5
1.6E5
8.2E4
0.0E0
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:66
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.79E6
A7.72E5
A4.82E5
A2.65E5
A1.39E5
A1.86E5
A2.15E5
A1.21E5
4.4E5
3.5E5
2.6E5
1.8E5
8.8E4
0.0E0
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:65
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,260.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A3.59E7
A7.32E6
1.1E7
8.5E6
6.3E6
4.2E6
2.1E6
0.0E0
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:61
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,244.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A2.40E7
A3.71E6
7.1E6
5.6E6
4.2E6
2.8E6
1.4E6
0.0E0
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
27:51
28:19
28:42
29:03
29:17
29:42
29:55
30:11
4.7E7
3.8E7
2.8E7
1.9E7
9.4E6
0.0E0
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time

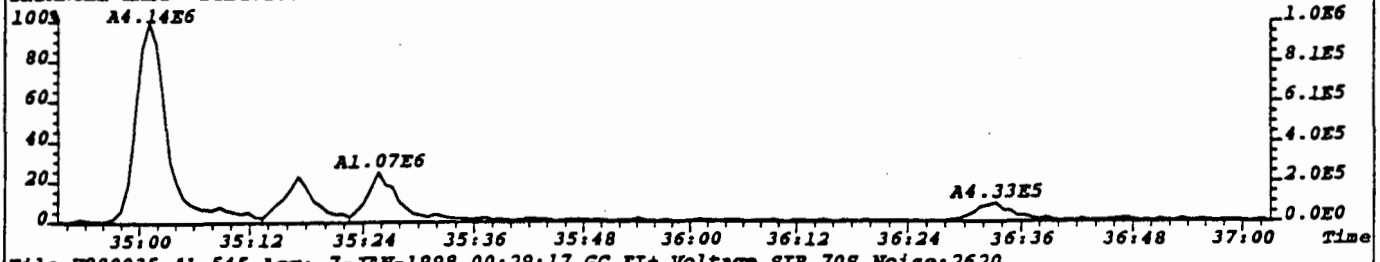

File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:6387
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,25548.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A4.14E6
A3.25E6
A1.73E6
A1.64E6
A5.58E5
A6.00E5
A3.24E5
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:5521
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,22084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A3.27E6
A2.65E6
A1.41E6
A1.30E6
A4.62E5
A4.35E5
A2.74E5
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1560
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6240.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A3.33E7
A2.94E7
A2.19E7
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2296
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9184.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A6.65E7
A5.78E7
A4.42E7
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
32:36
31:53
31:41
31:16
31:02
31:34
32:06
32:49
33:05
33:23
33:35
31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48
Time


File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1930
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.55E6
A7.71E5
A3.30E5
A1.53E5
A2.42E5
A3.08E5
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1884
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A1.21E6
A5.93E5
A2.80E5
A1.40E5
A2.16E5
A3.01E5
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2103
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,8412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A4.83E7
A4.25E7
A2.69E7
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1644
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6576.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
A3.85E7
A3.47E7
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A
Time

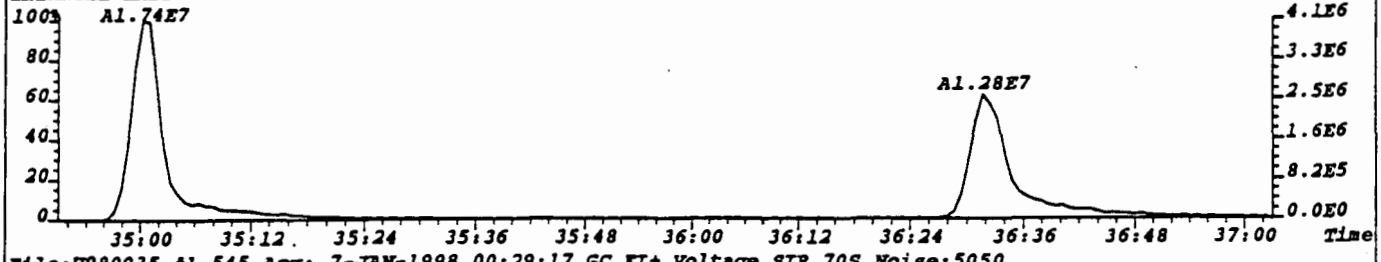
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2634
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



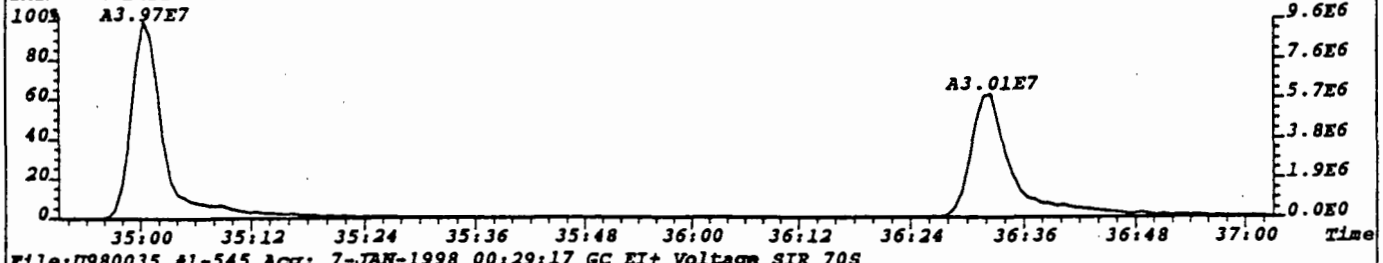
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2271
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



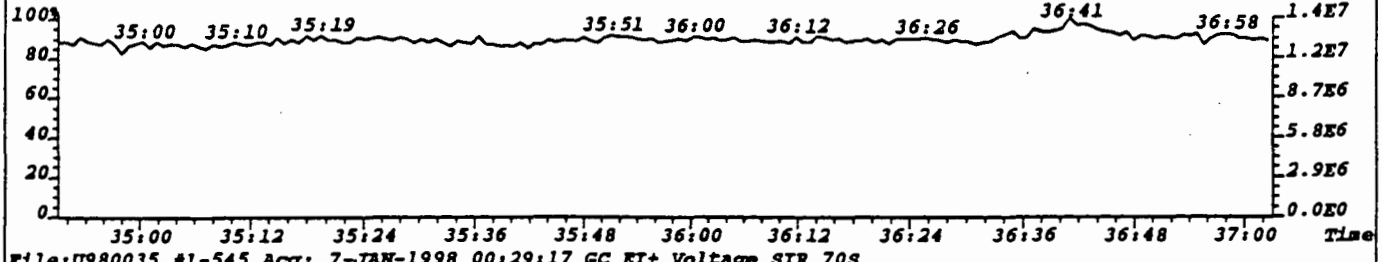
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2620
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,10480.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



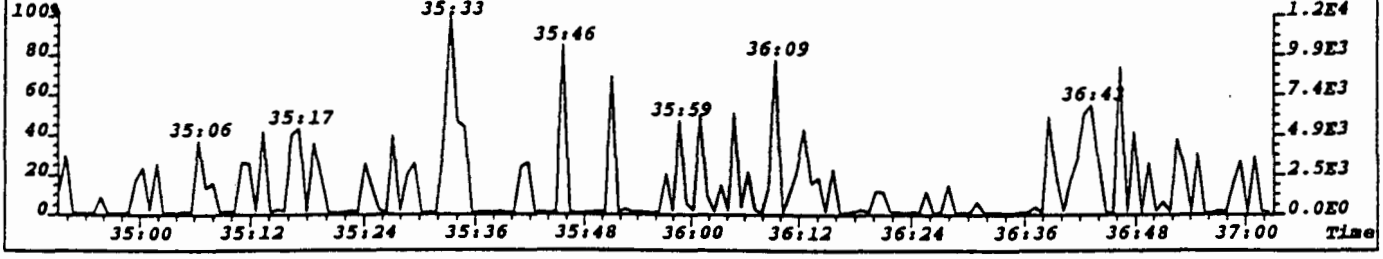
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:5050
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,20200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



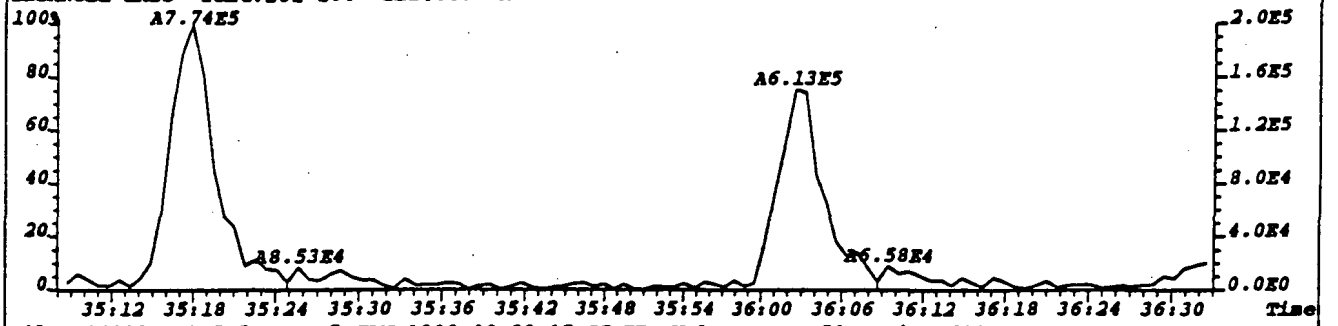
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



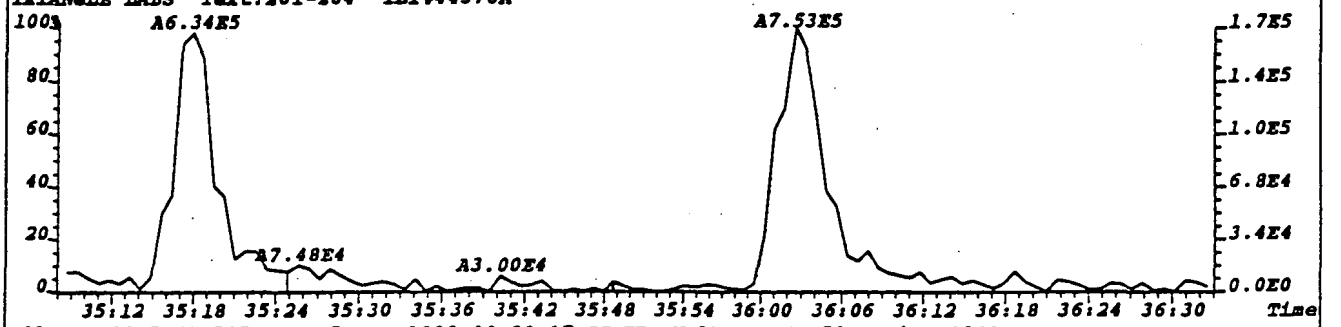
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



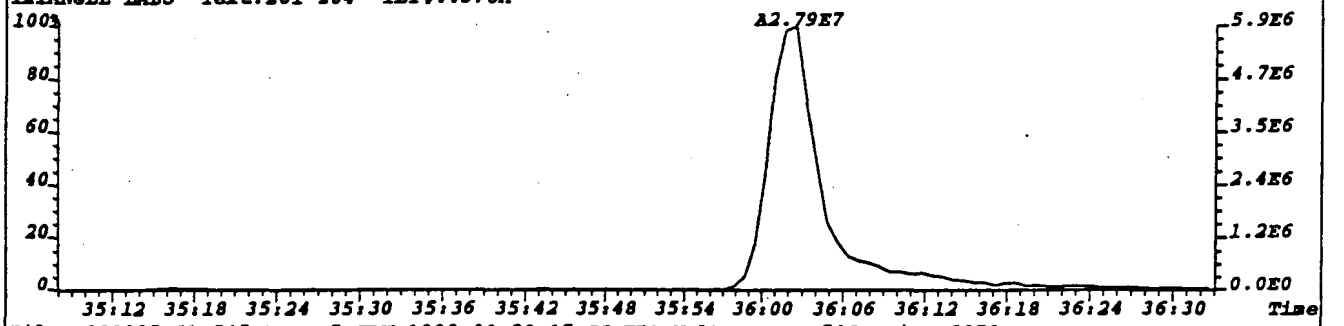
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:954
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



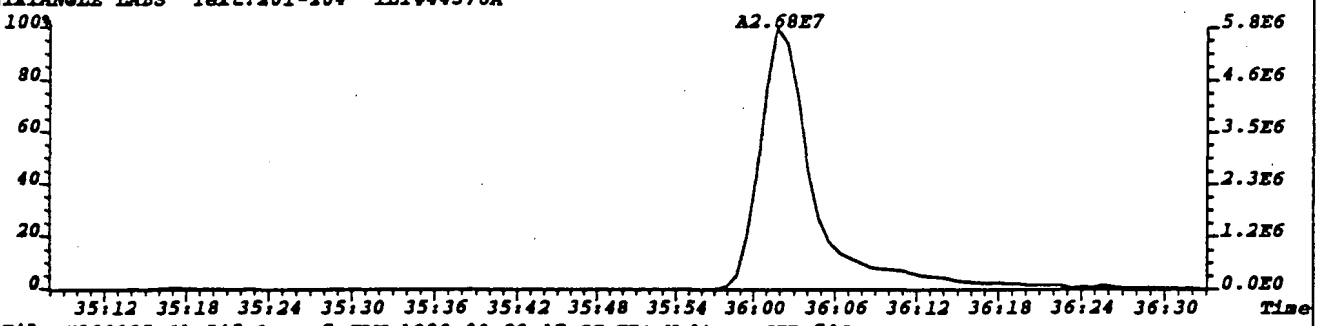
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:699
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,2796.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



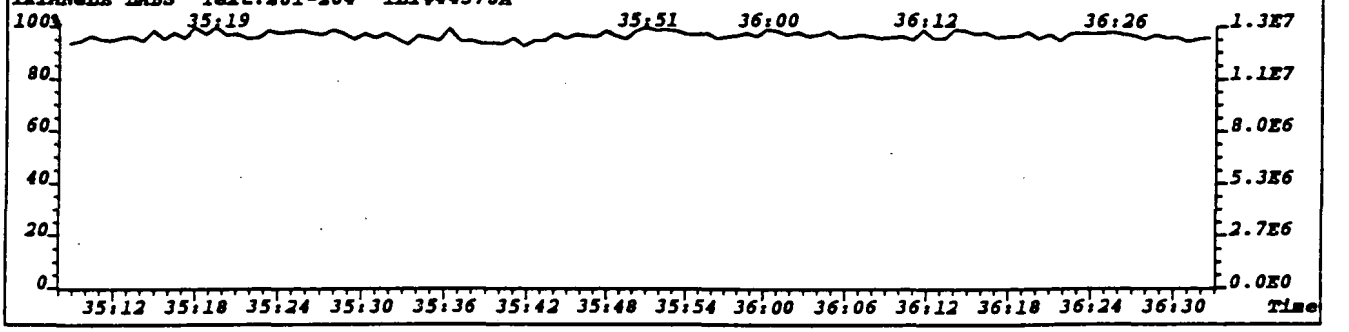
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:1983
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,7932.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



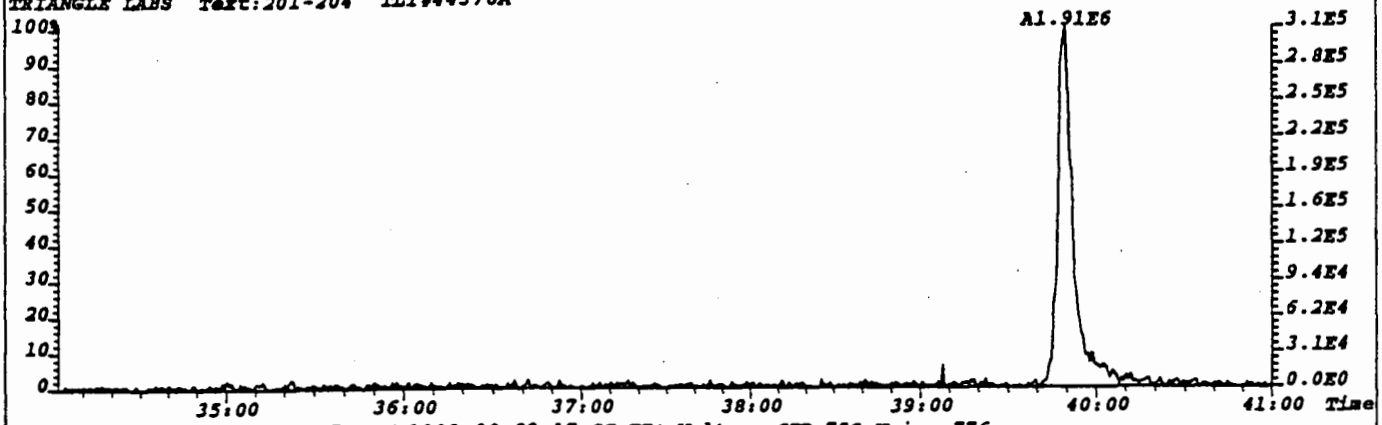
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:2379
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,9516.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



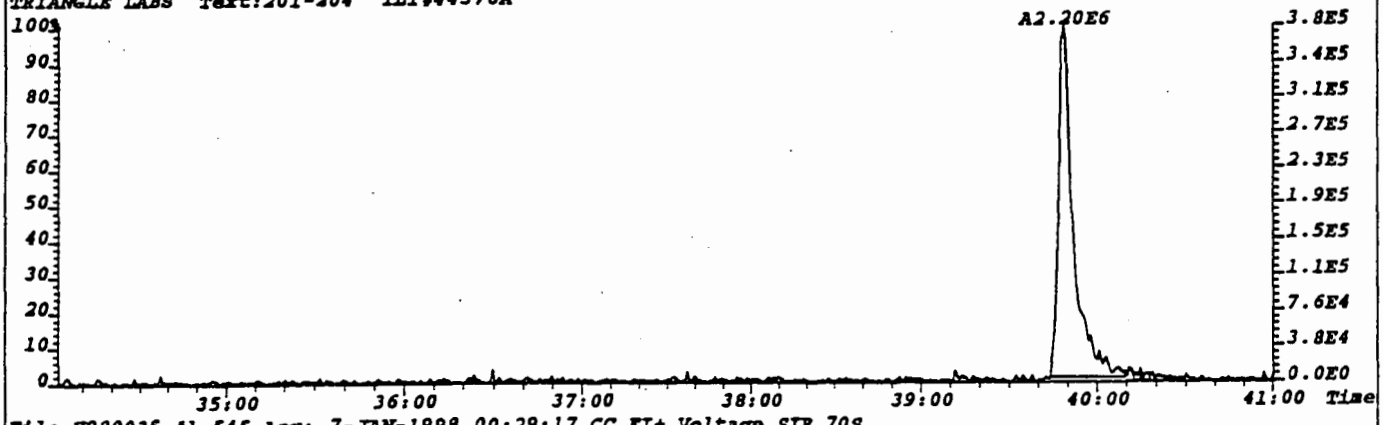
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



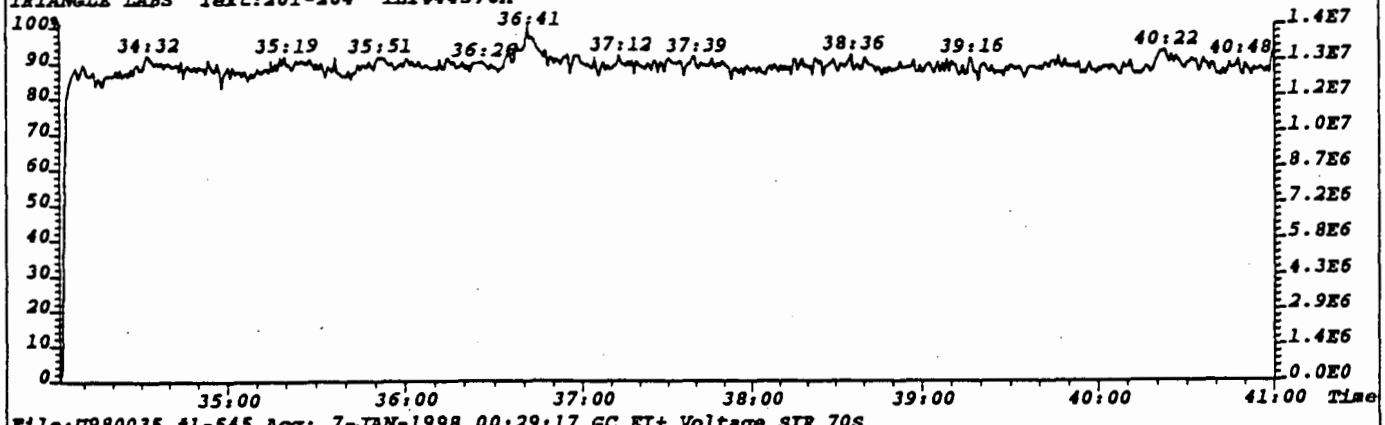
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:31
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,124.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



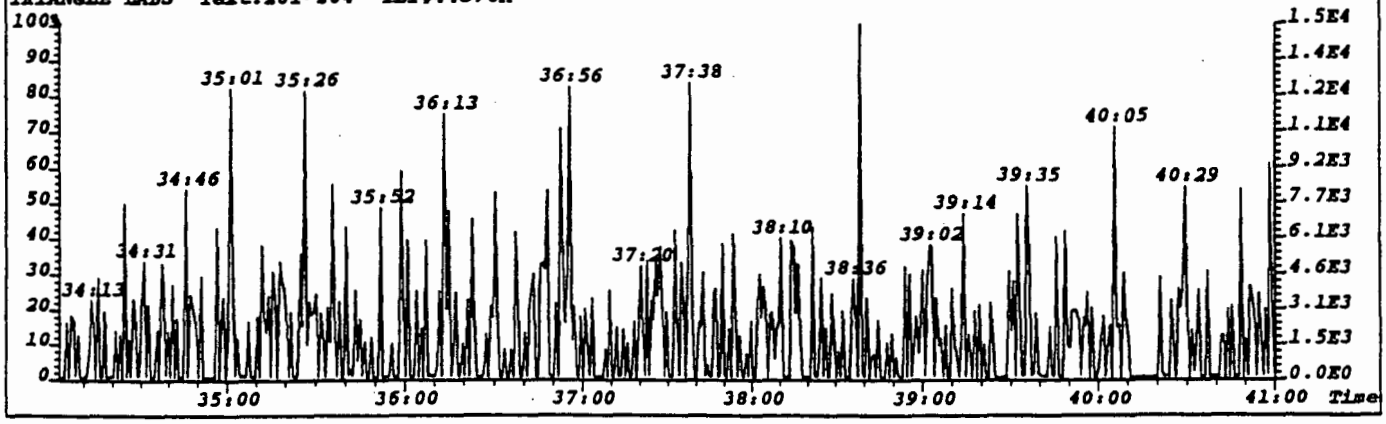
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:776
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3104.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



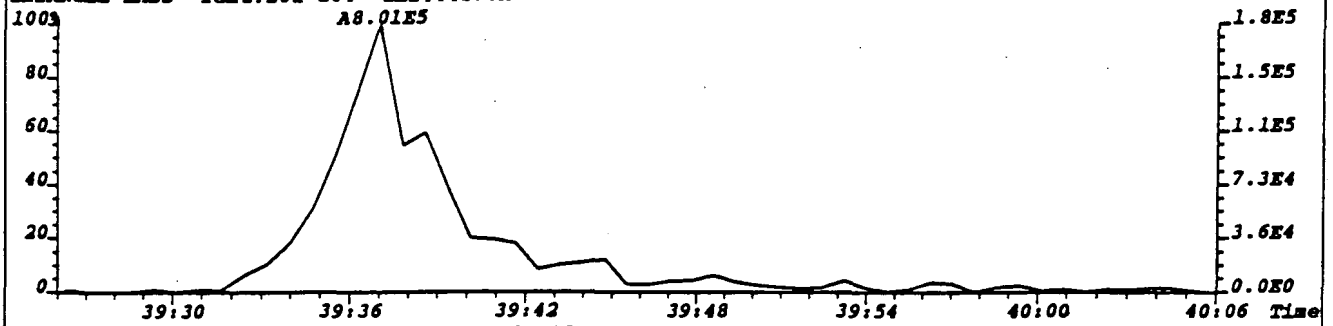
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



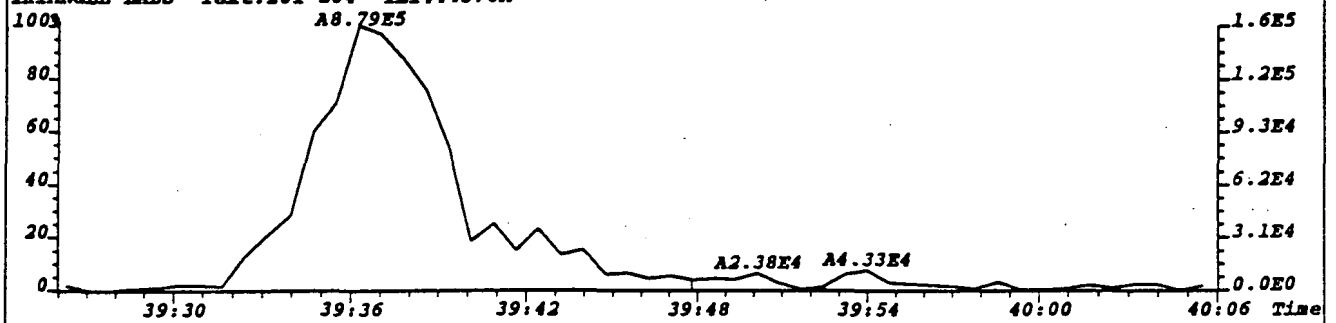
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



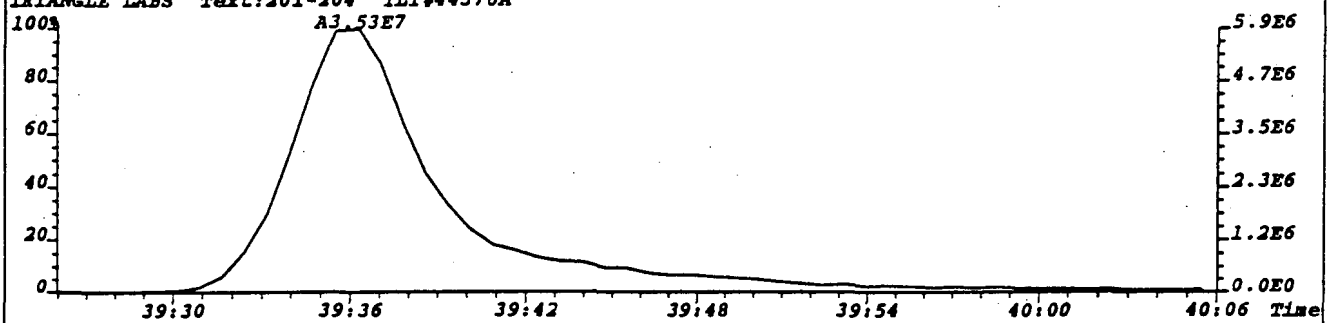
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:27
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,108.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



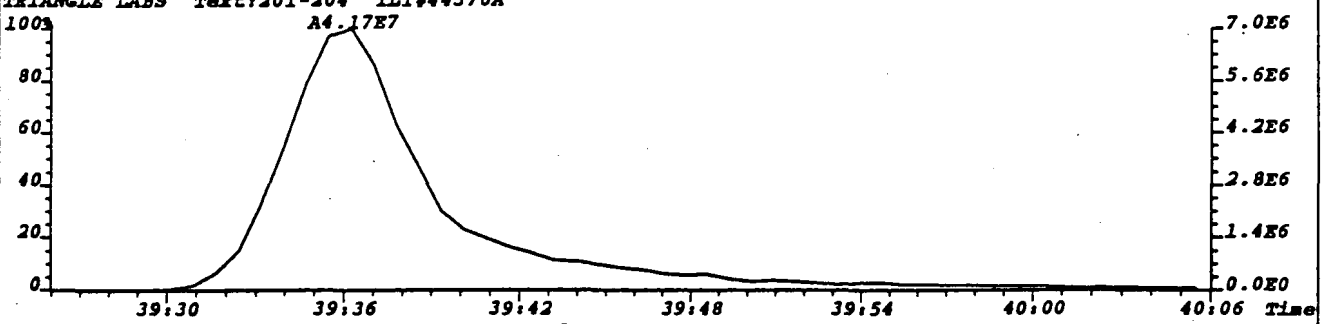
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:15
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,60.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A



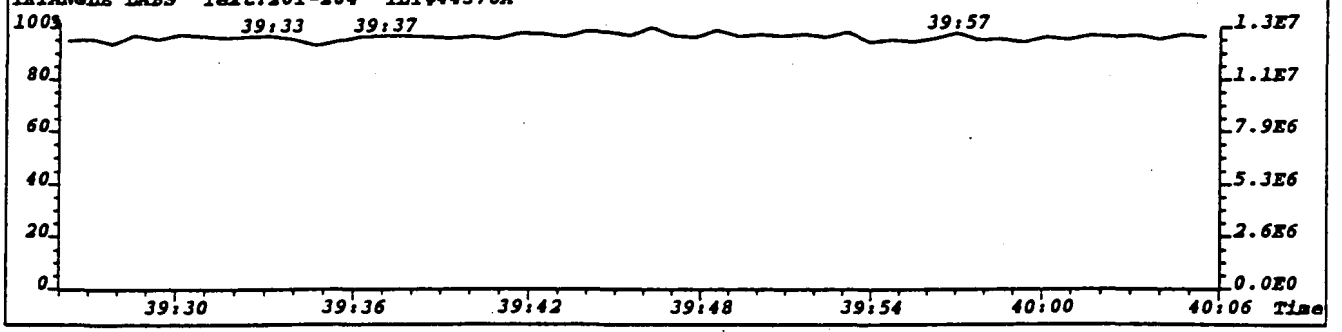
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:21
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,84.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

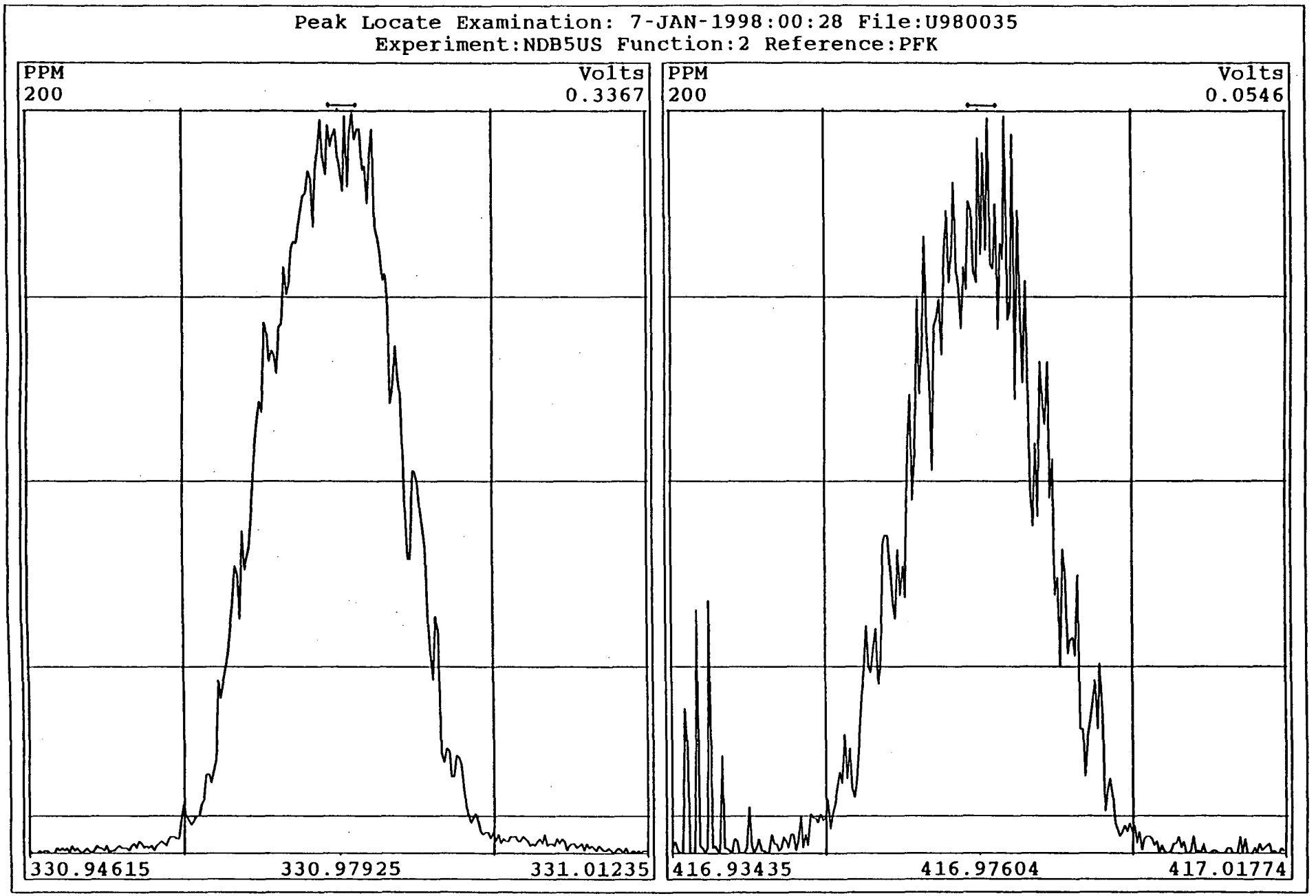


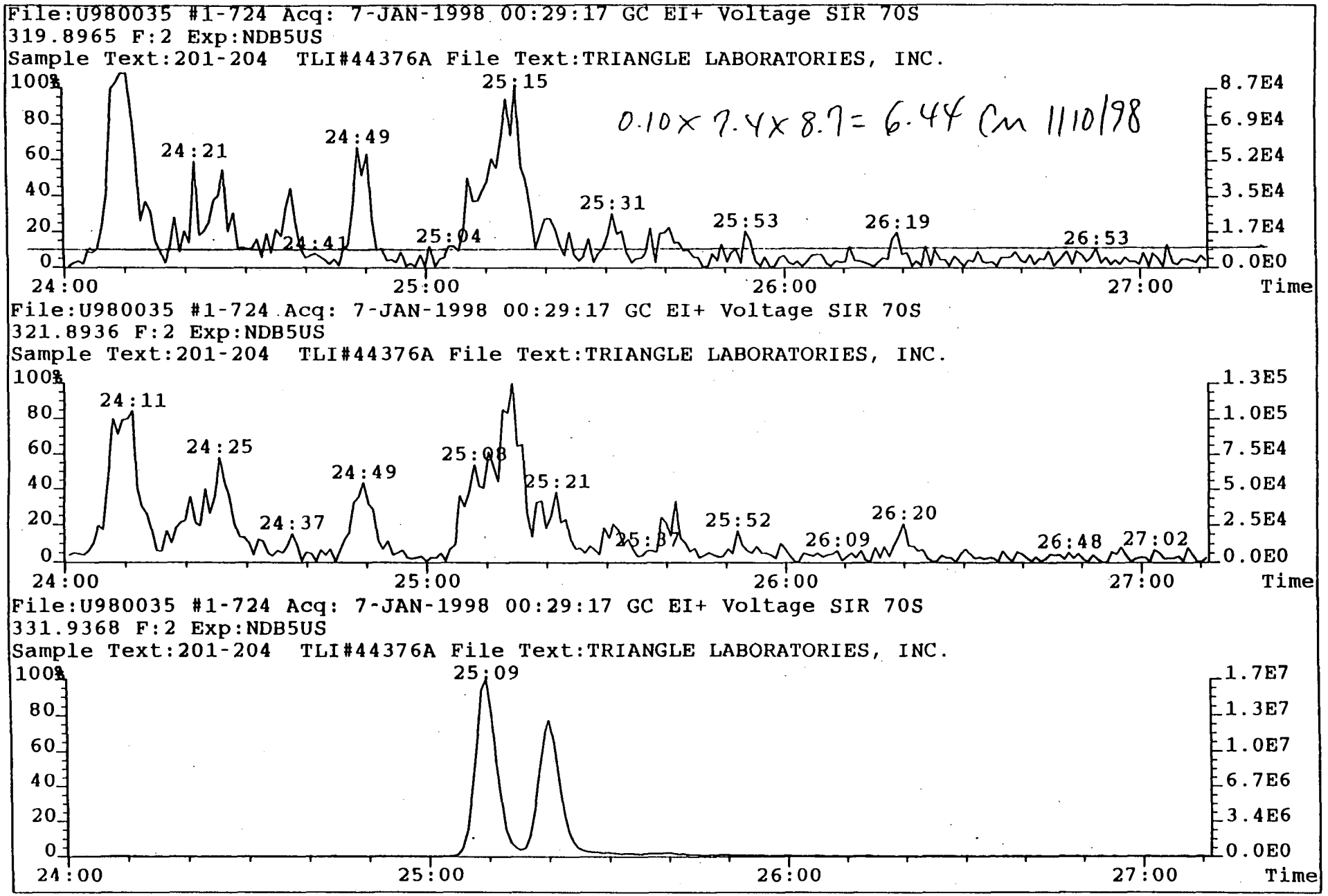
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S Noise:22
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,88.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

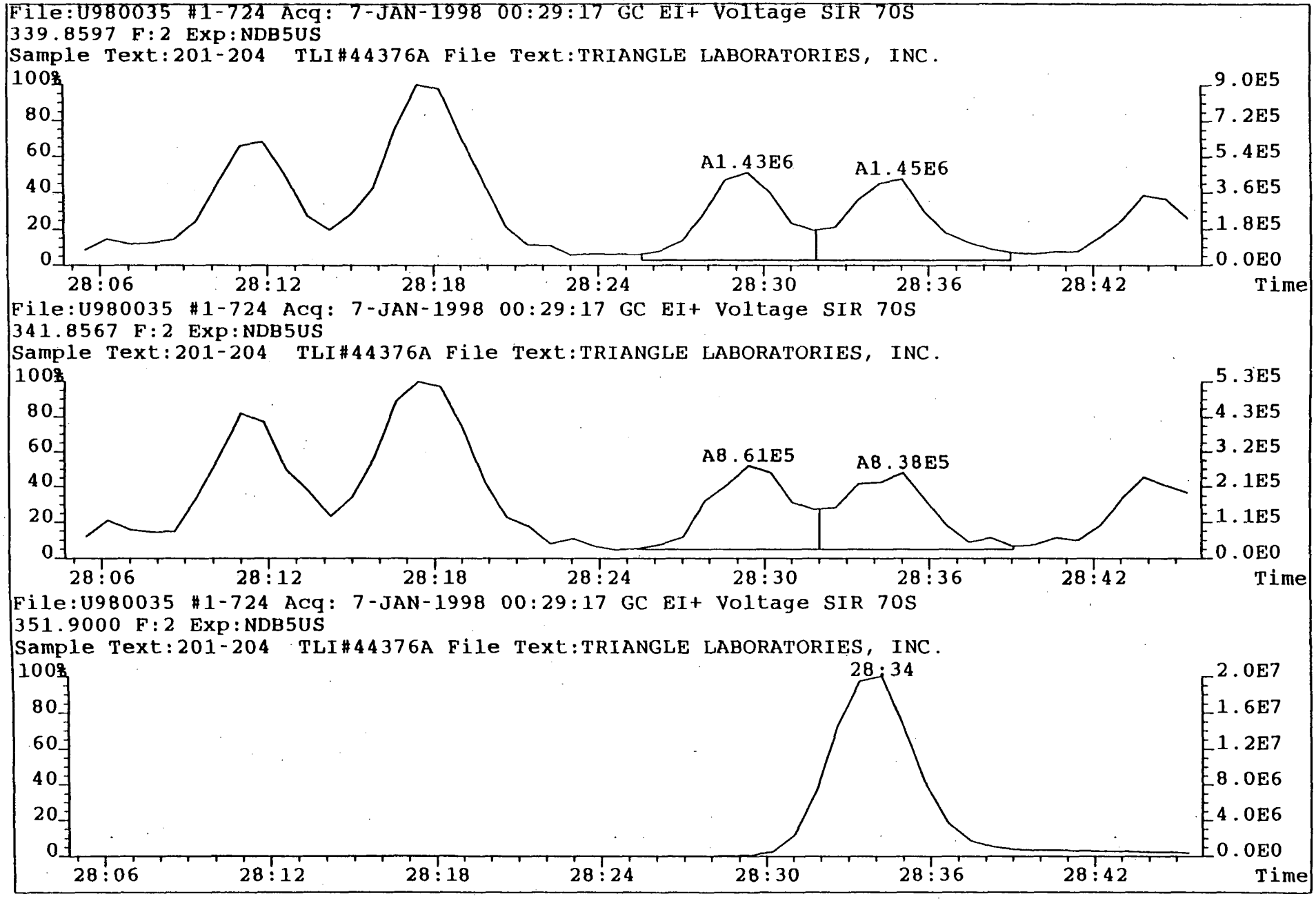


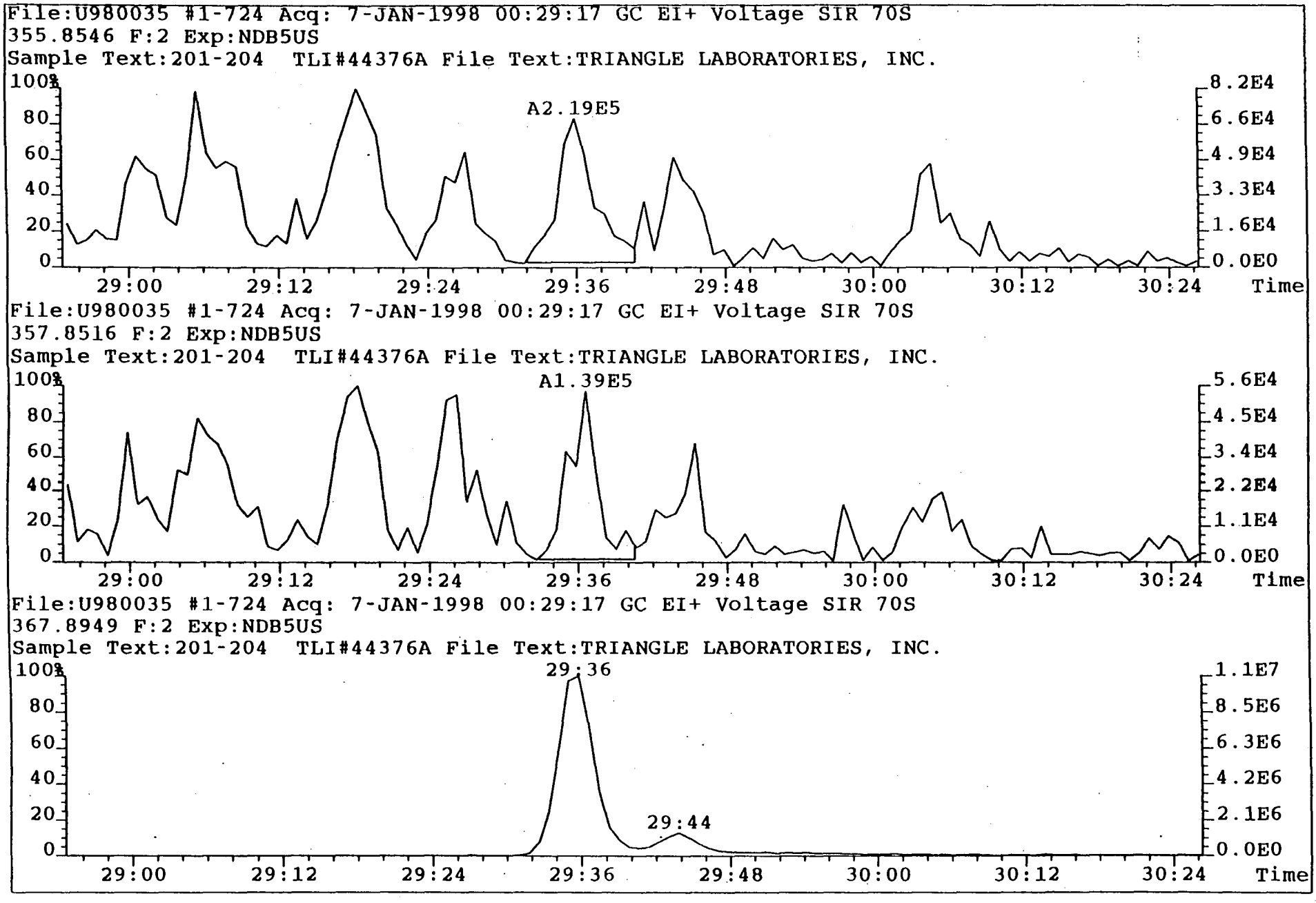
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:201-204 TLI#44376A

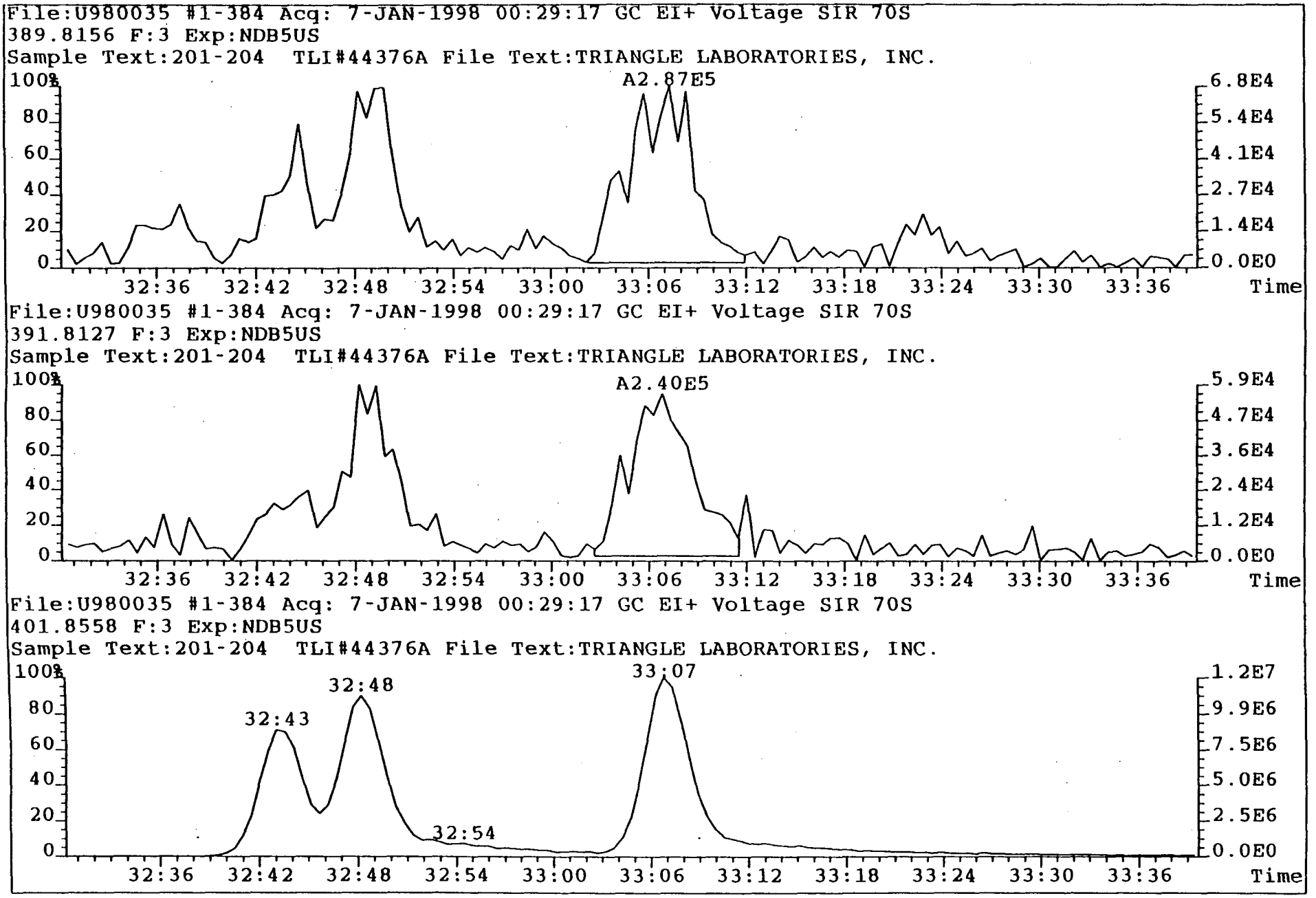


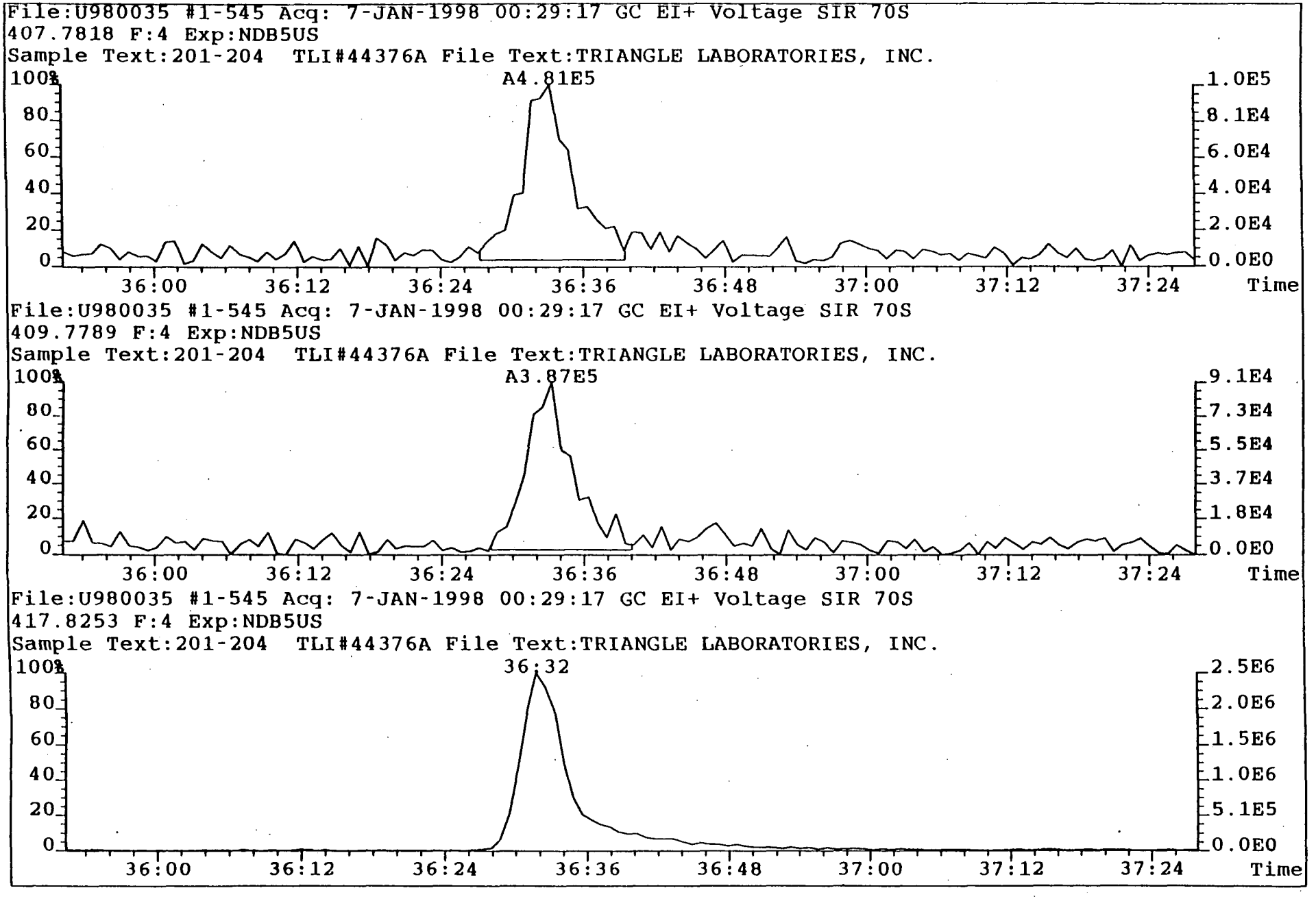

Peak Locate Examination: 7-JAN-1998:00:28 File:U980035
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.3367
330.94615
330.97925
331.01235
PPM
200
Volts
0.0546
416.93435
416.97604
417.01774

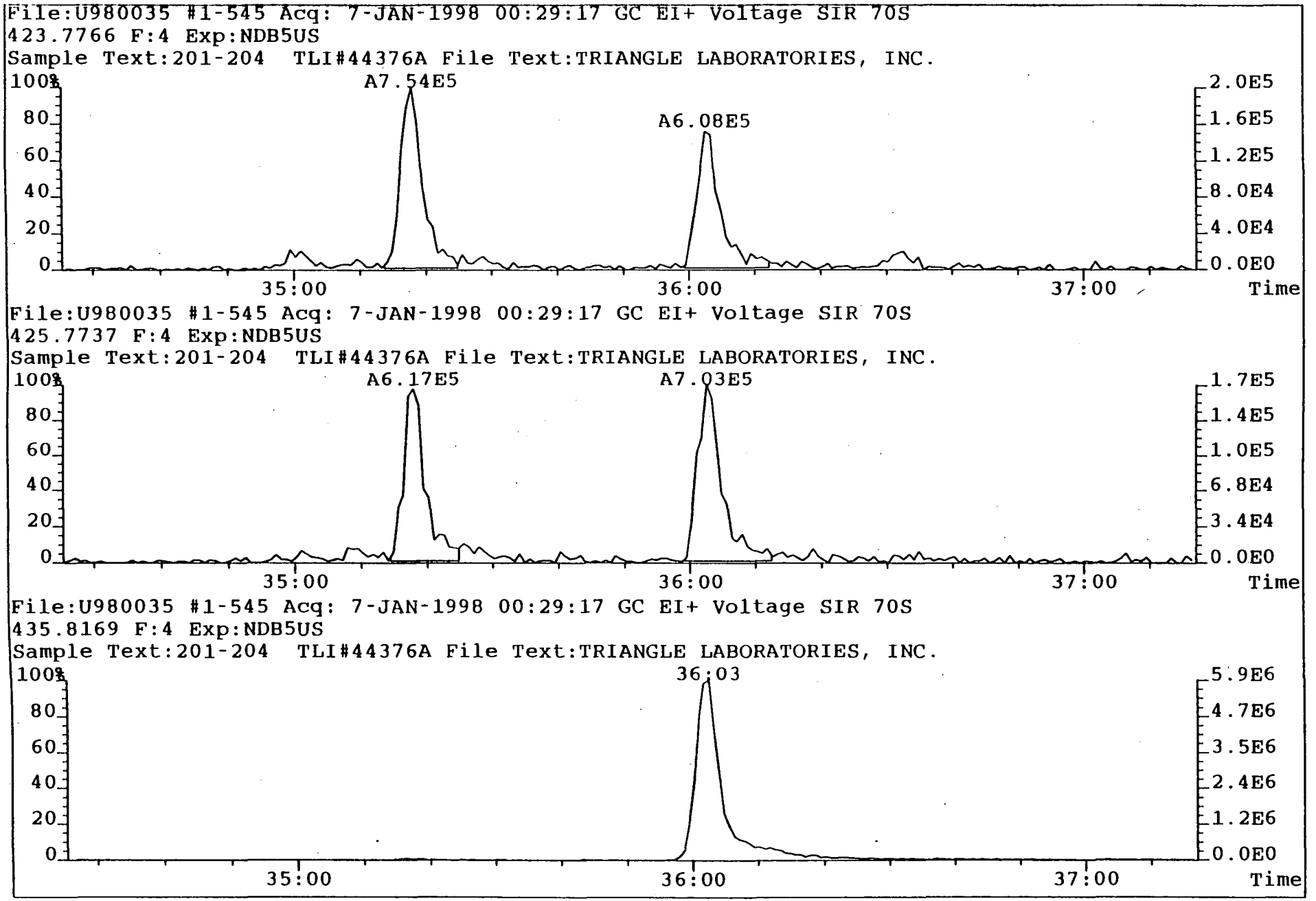

File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
319.8965 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
24:21
24:41
24:49
25:04
25:15
25:31
25:53
26:19
26:53
0.10 x 7.4 x 8.7 = 6.44 CM 1/10/98
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
321.8936 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
24:11
24:25
24:37
24:49
25:08
25:21
25:37
25:52
26:09
26:20
26:48
27:02
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
331.9368 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
25:09
24:00
25:00
26:00
27:00
Time

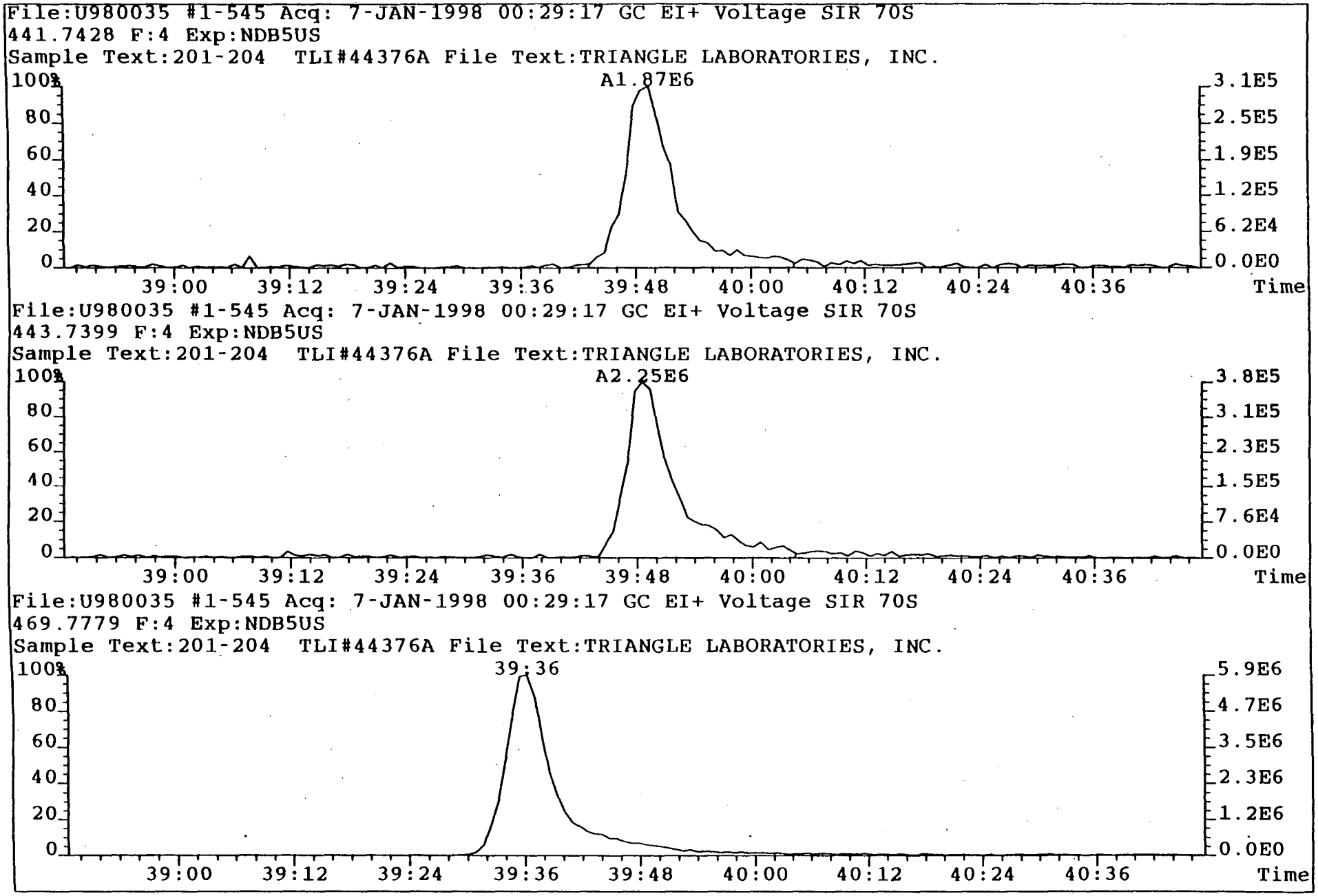

File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
339.8597 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
9.0E5
7.2E5
5.4E5
3.6E5
1.8E5
0.0E0
A1.43E6
A1.45E6
28:06
28:12
28:18
28:24
28:30
28:36
28:42
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
341.8567 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
5.3E5
4.3E5
3.2E5
2.1E5
1.1E5
0.0E0
A8.61E5
A8.38E5
28:06
28:12
28:18
28:24
28:30
28:36
28:42
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
351.9000 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
2.0E7
1.6E7
1.2E7
8.0E6
4.0E6
0.0E0
28:34
28:06
28:12
28:18
28:24
28:30
28:36
28:42
Time


File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
355.8546 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A2.19E5
8.2E4
6.6E4
4.9E4
3.3E4
1.6E4
0.0E0
29:00
29:12
29:24
29:36
29:48
30:00
30:12
30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
357.8516 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
A1.39E5
5.6E4
4.5E4
3.4E4
2.2E4
1.1E4
0.0E0
29:00
29:12
29:24
29:36
29:48
30:00
30:12
30:24
Time
File:U980035 #1-724 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
367.8949 F:2 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
80
60
40
20
0
29:36
29:44
1.1E7
8.5E6
6.3E6
4.2E6
2.1E6
0.0E0
29:00
29:12
29:24
29:36
29:48
30:00
30:12
30:24
Time


File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
389.8156 F:3 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A2.87E5
6.8E4
5.4E4
4.1E4
2.7E4
1.4E4
0.0E0
80
60
40
20
0
32:36 32:42 32:48 32:54 33:00 33:06 33:12 33:18 33:24 33:30 33:36
Time
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
391.8127 F:3 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A2.40E5
5.9E4
4.7E4
3.6E4
2.4E4
1.2E4
0.0E0
80
60
40
20
0
32:36 32:42 32:48 32:54 33:00 33:06 33:12 33:18 33:24 33:30 33:36
Time
File:U980035 #1-384 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
401.8558 F:3 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
32:43
32:48
32:54
33:07
1.2E7
9.9E6
7.5E6
5.0E6
2.5E6
0.0E0
80
60
40
20
0
32:36 32:42 32:48 32:54 33:00 33:06 33:12 33:18 33:24 33:30 33:36
Time


File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
407.7818 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A4.81E5
100%
80
60
40
20
0
1.0E5
8.1E4
6.0E4
4.0E4
2.0E4
0.0E0
36:00
36:12
36:24
36:36
36:48
37:00
37:12
37:24
Time
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
409.7789 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A3.87E5
100%
80
60
40
20
0
9.1E4
7.3E4
5.5E4
3.7E4
1.8E4
0.0E0
36:00
36:12
36:24
36:36
36:48
37:00
37:12
37:24
Time
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
417.8253 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
36:32
100%
80
60
40
20
0
2.5E6
2.0E6
1.5E6
1.0E6
5.1E5
0.0E0
36:00
36:12
36:24
36:36
36:48
37:00
37:12
37:24
Time


File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
423.7766 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A7.54E5
A6.08E5
100%
80
60
40
20
0
2.0E5
1.6E5
1.2E5
8.0E4
4.0E4
0.0E0
35:00
36:00
37:00
Time
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
425.7737 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A6.17E5
A7.03E5
1.7E5
1.4E5
1.0E5
6.8E4
3.4E4
0.0E0
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
435.8169 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
36:03
5.9E6
4.7E6
3.5E6
2.4E6
1.2E6


File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
441.7428 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A1.87E6
80
60
40
20
0
3.1E5
2.5E5
1.9E5
1.2E5
6.2E4
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
443.7399 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
A2.25E6
80
60
40
20
0
3.8E5
3.1E5
2.3E5
1.5E5
7.6E4
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time
File:U980035 #1-545 Acq: 7-JAN-1998 00:29:17 GC EI+ Voltage SIR 70S
469.7779 F:4 Exp:NDB5US
Sample Text:201-204 TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
100%
39:36
80
60
40
20
0
5.9E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0
39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time

Eastern Research Group

TLI Project: 44376A — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 201-204 FOR RFD — Analysis File: P980103

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-19A-D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/07/98	ConCal:	P980092
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P980094	% Lipid:	n/a
GC Column:	DB-225	Analyst:	WK	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.07			0.73	23:06	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.6	89.7	40%-130%	0.76	23:04	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	21:53	___

Data Reviewer: CW 01/09/98

CONF PSR v2.01, LARS 6.10.001

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 10:17 01/09/98

Initial ....Date...

Data Review By: CM 1.9.98 Calculated Noise Area: 1.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

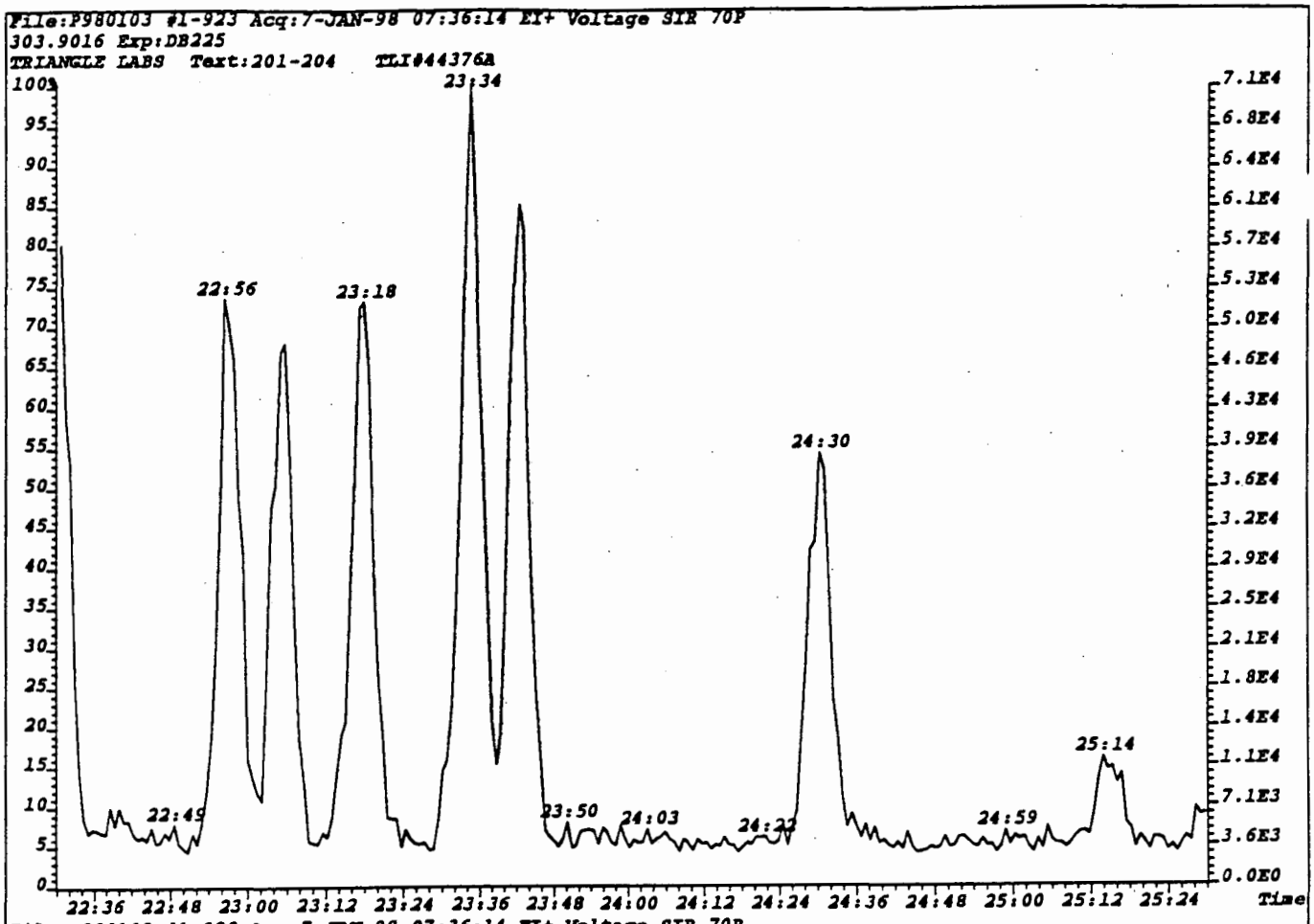
Page No. 1 Listing of P980103B.dbf
01/07/98 Matched GC Peaks / Ratio / Ret. Time

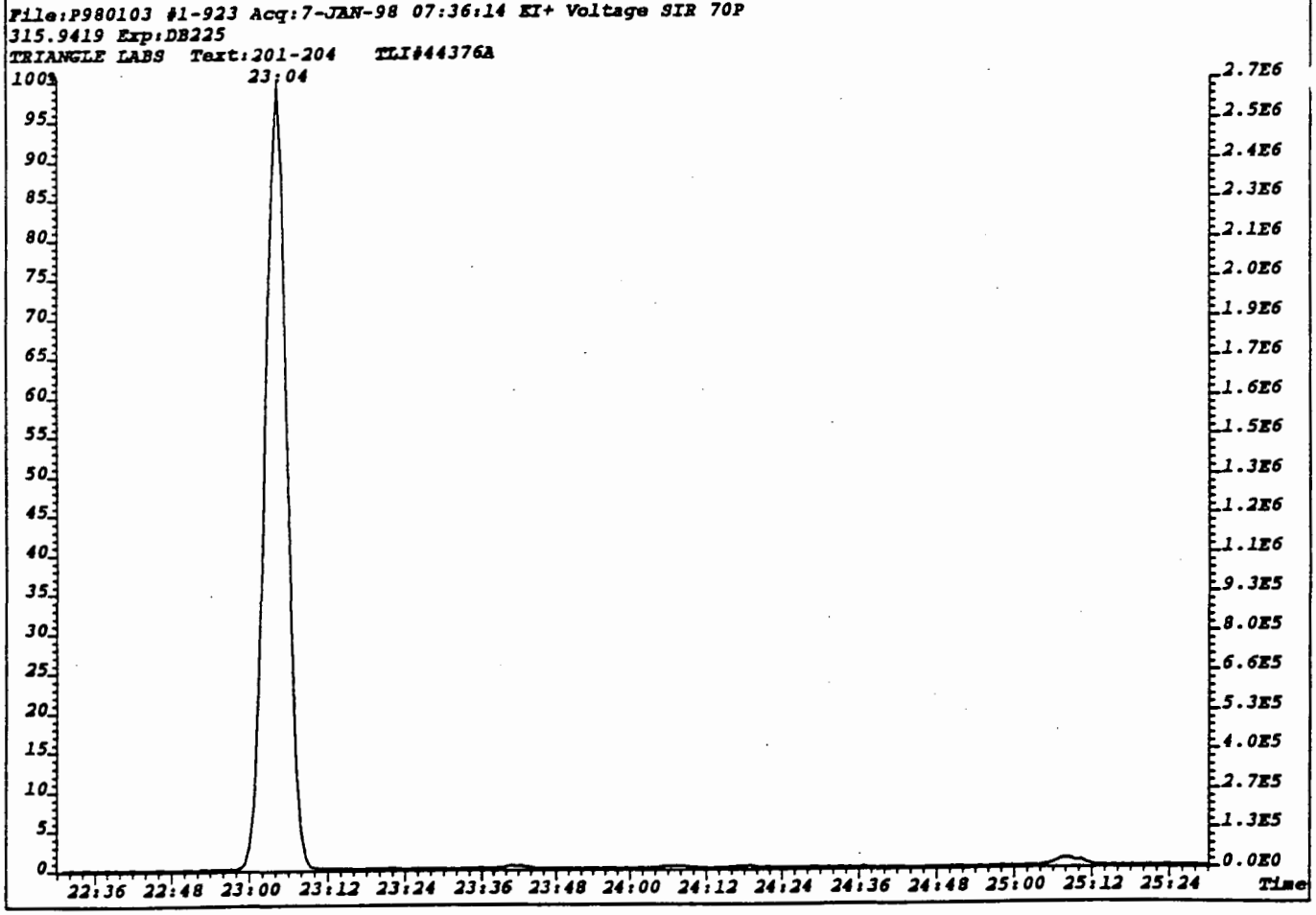
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.792-1.101			
304-306	DC	NL		0:00	RO	0.45	1.03			0.000			
				18:26		0.69	21.93	8.98	12.95	0.799			
	DC	SN		18:34	RO	1.81	0.28			0.805			
				19:03	RO	1.57	2.28	2.02	1.29	0.826			J
				19:27	RO	0.97	21.33	11.65	12.05	0.843			
				19:35		0.75	22.72	9.71	13.01	0.849			
				19:42		0.79	49.12	21.65	27.47	0.854			
				19:53		0.79	19.40	8.57	10.83	0.862			
				20:00		0.78	3.04	1.33	1.71	0.867			J
				20:09		0.75	22.73	9.71	13.02	0.874			
				20:18		0.75	53.58	22.96	30.62	0.880			
				20:27		0.72	28.84	12.10	16.74	0.887			
				20:36		0.70	81.00	33.23	47.77	0.893			
				20:46		0.77	30.97	13.49	17.48	0.900			
				21:09		0.75	157.50	67.73	89.77	0.917			
	DC	SN		21:19		0.68	1.06			0.924			
				21:36		0.71	44.36	18.41	25.95	0.936			
				21:41		0.81	7.93	3.56	4.37	0.940			J
				21:51		0.77	42.29	18.42	23.87	0.947			
				22:05		0.87	39.46	18.33	21.13	0.957			
				22:19		0.72	8.24	3.45	4.79	0.967			J
				22:30		0.70	55.77	23.06	32.71	0.975			
				22:56		0.78	45.55	19.90	25.65	0.994			
				23:06		0.73	39.89	16.86	23.03	1.001	2378-TCDF	AN	
				23:18		0.67	49.33	19.83	29.50	1.010			
				23:34		0.74	63.86	27.23	36.63	1.022			
				23:42		0.77	52.99	22.97	30.02	1.027			
				24:30		0.75	34.18	14.66	19.52	1.062			
				25:14	RO	0.93	7.88	4.15	4.45	1.094			J
	DC	WH		25:32	RO	1.13	4.58			1.107			
304-306			26	Peaks			1,006.17						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00		0.87	2.41			0.000			
	DC	WL		21:34		0.73	13.41			0.935			
	DC	WL		21:49	RO	0.90	26.00			0.946			
				23:04		0.76	2,350.41	1,012.46	1,337.95	1.000	13C12-2378-TCDF	IS0	
	DC	SN		23:26		0.69	1.59			1.016			
				23:41	RO	0.46	5.84	2.54	5.58	1.027			
	DC	WH		24:07	RO	1.11	4.23			1.046			
	DC	WH		25:08	RO	0.93	24.76			1.090			
316-318			2	Peaks			2,356.25						

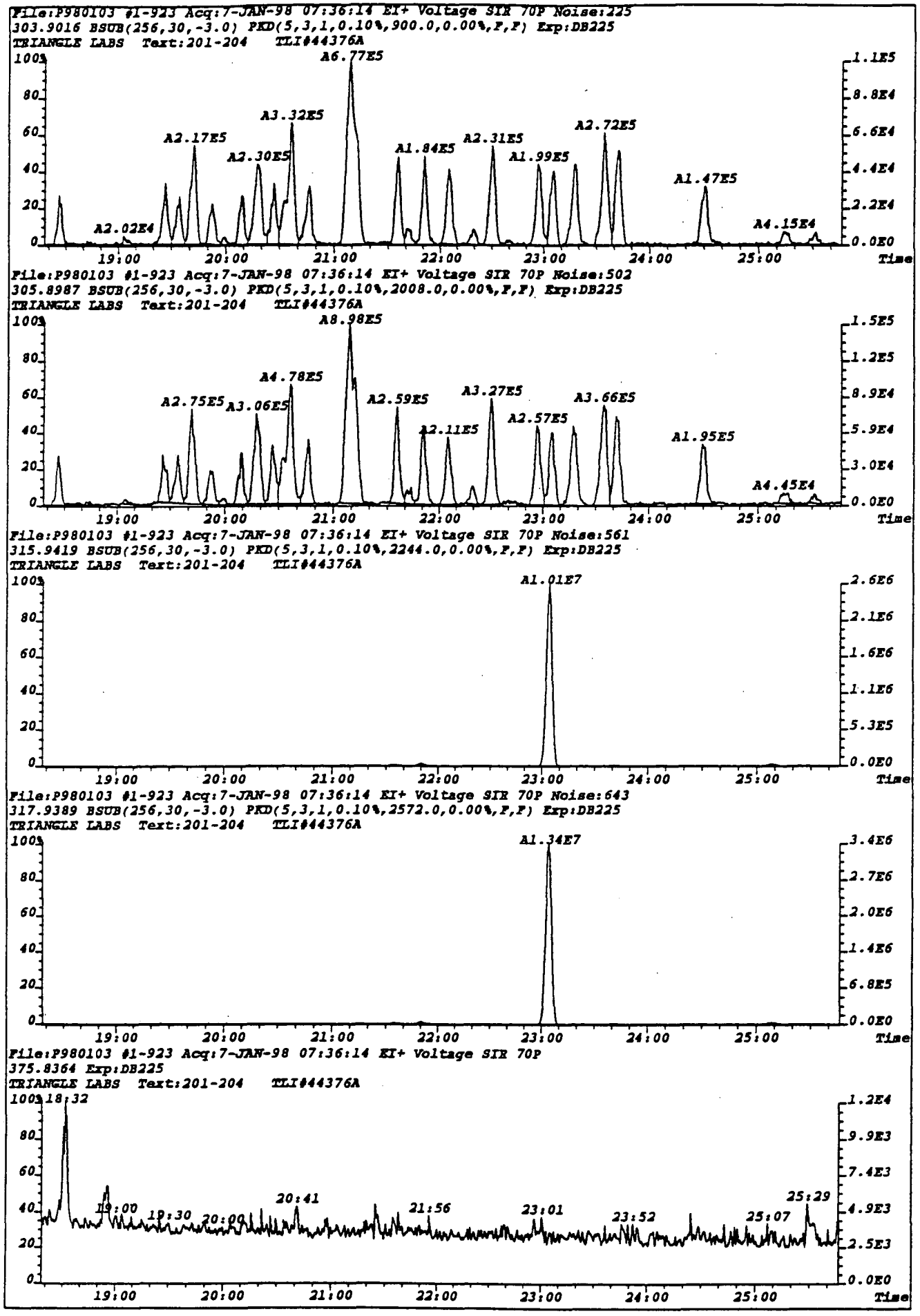
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.908-1.092			
332-334		DC	NL	0:00	RO	1.61	1.10			0.000			
				20:28	RO	0.98	7.22	3.99	4.08	0.948			
				21:36		0.80	1,648.64	733.76	914.88	1.000	13C12-2378-TCDD	IS1	
				21:53		0.81	1,888.28	847.43	1,040.85	1.013	13C12-1234-TCDD	RS1	
				22:39		0.77	21.41	9.28	12.13	1.049			
				23:12		0.73	3.75	1.58	2.17	1.074			
		DC	WH	24:09	RO	0.42	2.44			1.118			
		DC	WH	24:24	RO	0.34	4.78			1.130			
		DC	WH	24:57		0.73	4.83			1.155			
332-334			5	Peaks			3,569.30						

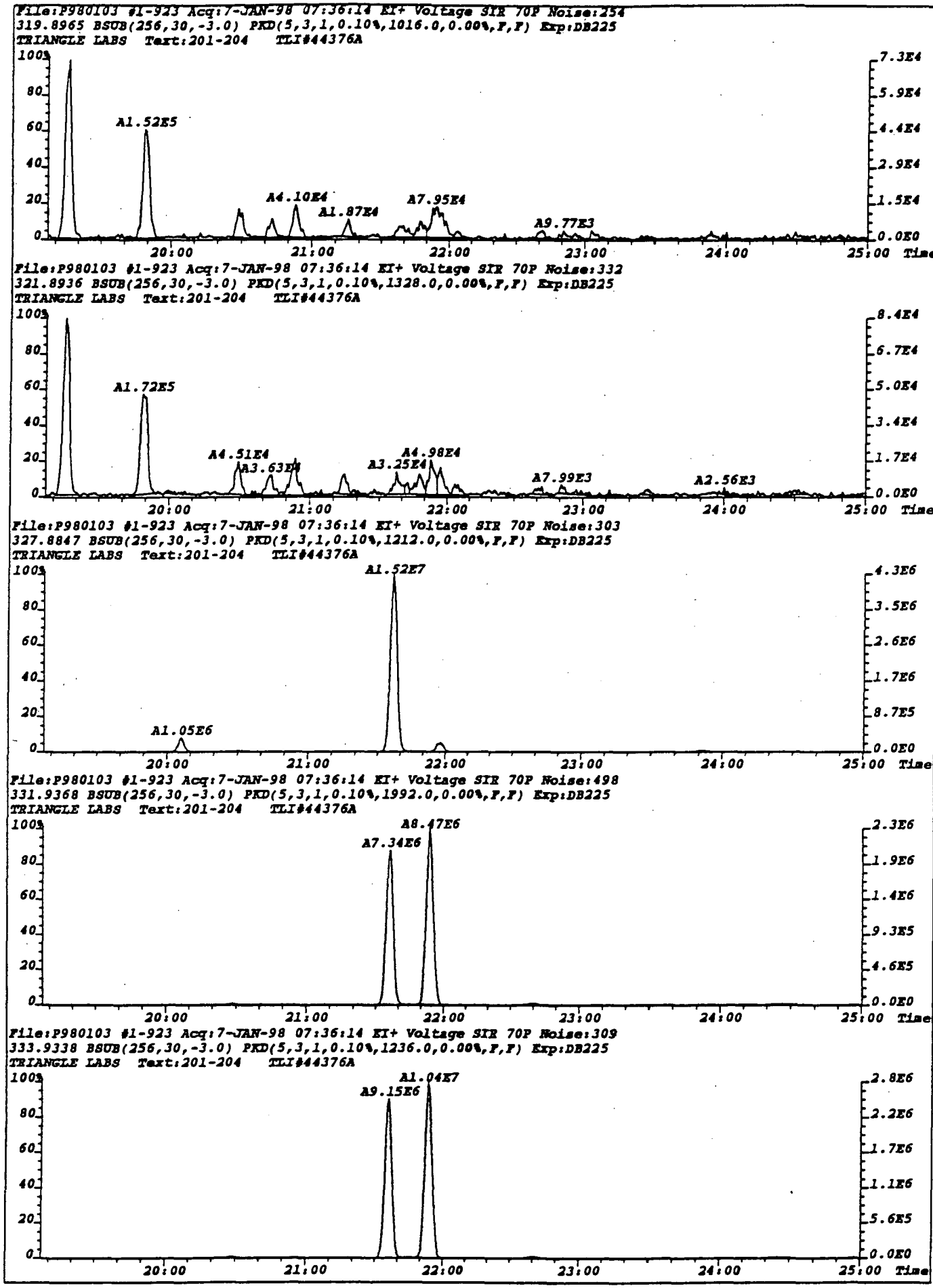
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

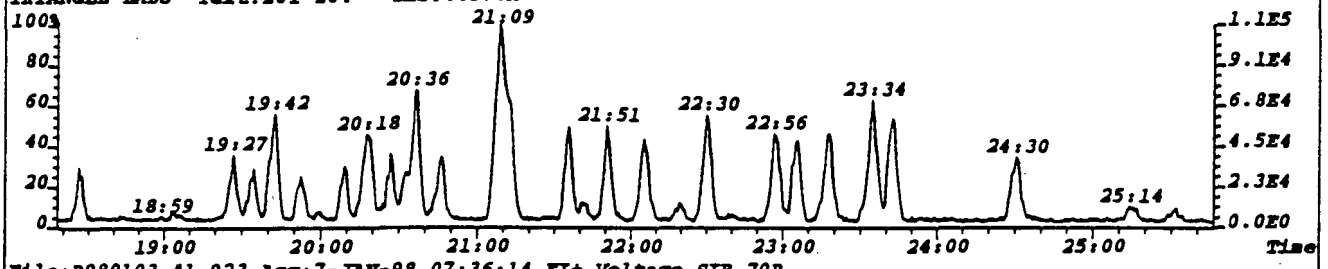

File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
22:56
23:18
23:34
22:49
23:50
24:03
24:22
24:30
24:59
25:14
Time


File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
23:04
Time

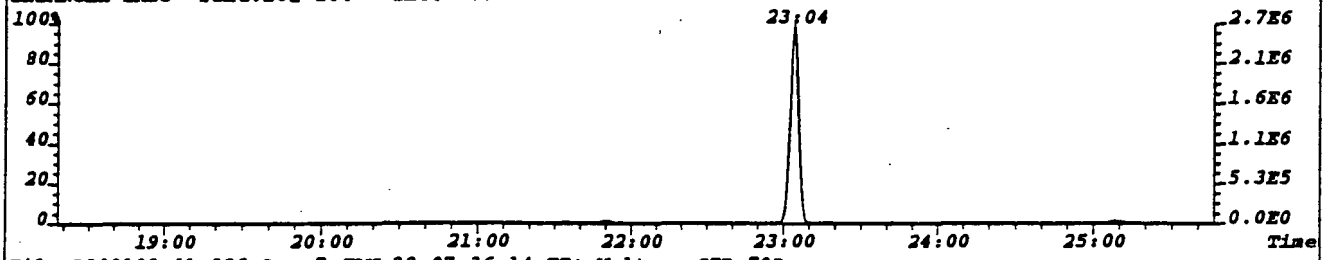

File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:225
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,900.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A6.77E5
A3.32E5
A2.17E5
A2.30E5
A1.84E5
A2.31E5
A1.99E5
A2.72E5
A1.47E5
A2.02E4
A4.15E4
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:502
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2008.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A8.98E5
A4.78E5
A2.75E5
A3.06E5
A2.59E5
A2.11E5
A3.27E5
A2.57E5
A3.66E5
A1.95E5
A4.45E4
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:561
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2244.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.01E7
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:643
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2572.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.34E7
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
18:32
19:00
19:30
20:09
20:41
21:56
23:01
23:52
25:07
25:29
Time


File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:254
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1016.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.52E5
A4.10E4
A1.87E4
A7.95E4
A9.77E3
20:00
21:00
22:00
23:00
24:00
25:00 Time
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:332
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1328.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.72E5
A4.51E4
A3.63E4
A3.25E4
A4.98E4
A7.99E3
A2.56E3
20:00
21:00
22:00
23:00
24:00
25:00 Time
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:303
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1212.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.52E7
A1.05E6
20:00
21:00
22:00
23:00
24:00
25:00 Time
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:498
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1992.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A8.47E6
A7.34E6
20:00
21:00
22:00
23:00
24:00
25:00 Time
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P Noise:309
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1236.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A
A1.04E7
A9.15E6
20:00
21:00
22:00
23:00
24:00
25:00 Time

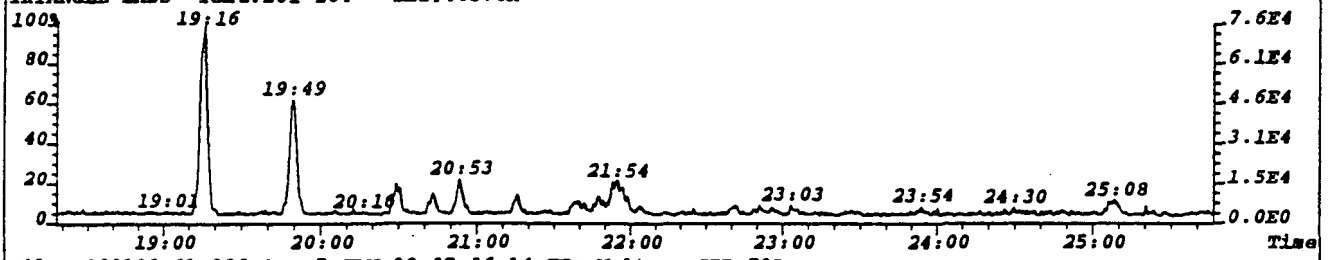
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A



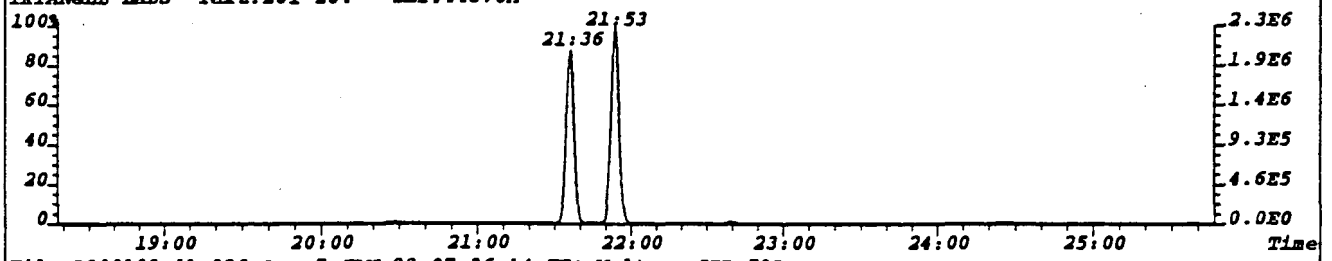
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A



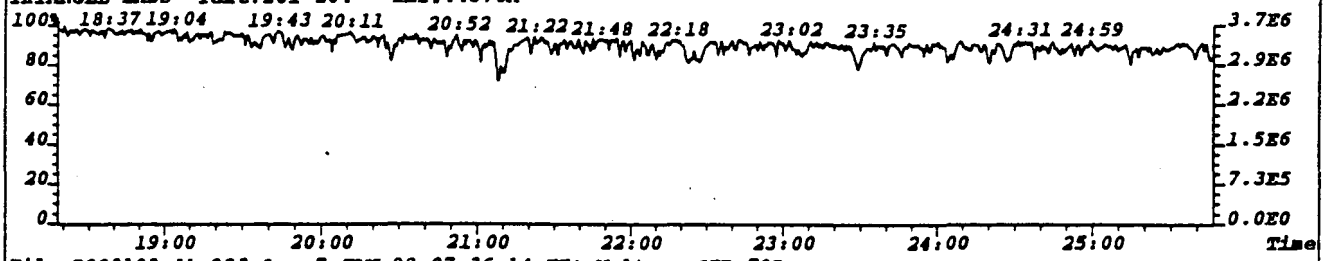
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A



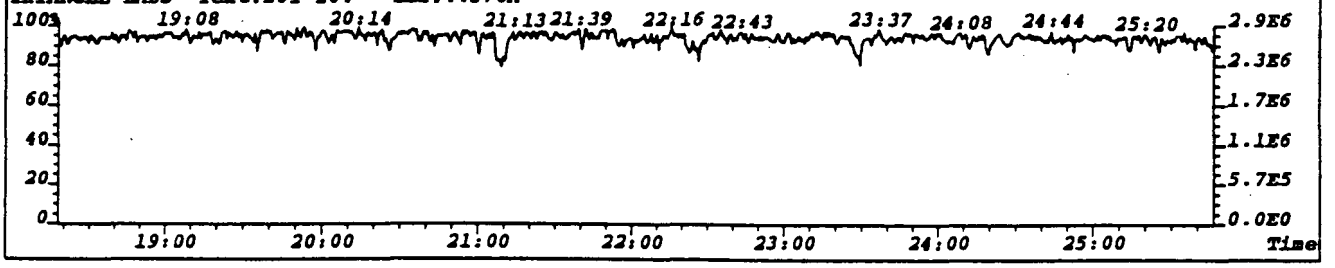
File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A

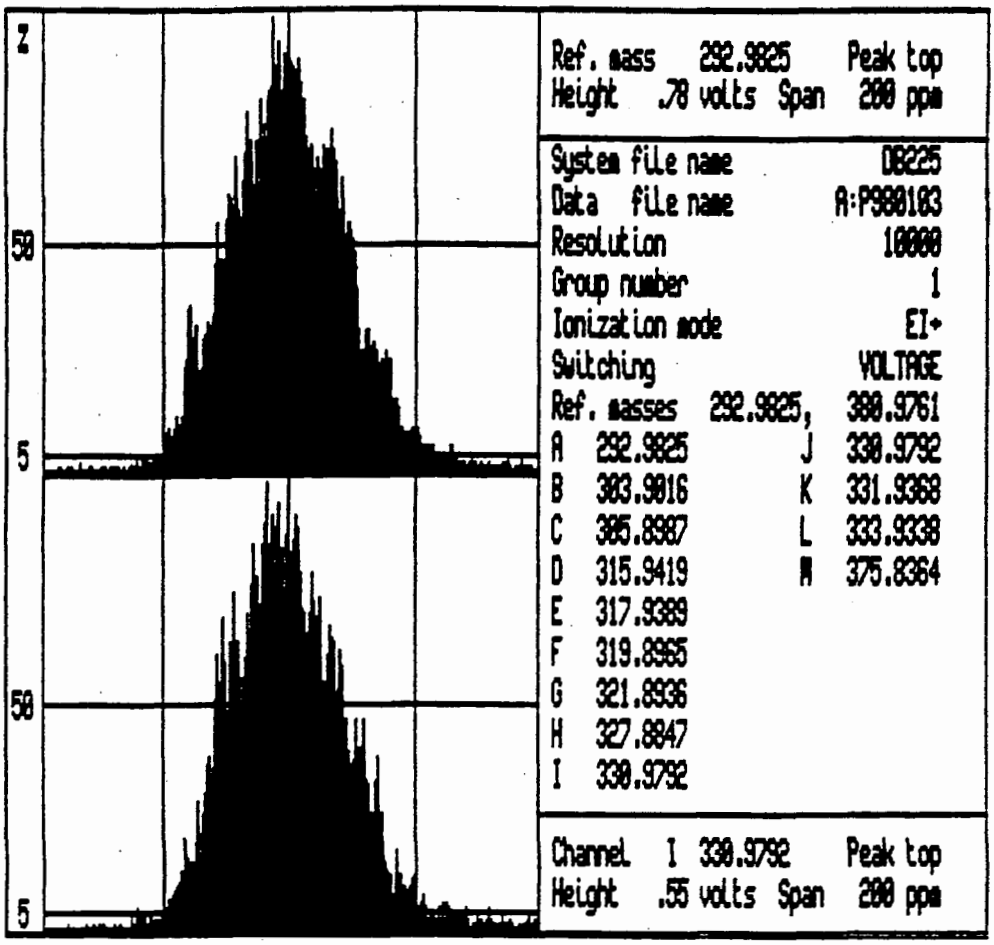


File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A



File:P980103 #1-923 Acq:7-JAN-98 07:36:14 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:201-204 TLI#44376A




Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height .78 volts Span 200 ppm
System file name DB225
Data file name A:P980103
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 368.9761
A 292.9825
B 303.9016
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height .55 volts Span 200 ppm

TLI Project: 44376A — Method 23 PCDD/PCDF Analysis (a)
Client Sample: CleanUp Blk — Analysis File: U980037

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	SOLVENT	Date Received:	12/17/97	Spike File:	SPMIT204
TLI ID:	TLI Clean-Up	Date Extracted:	01/05/98	ICal:	UF51058
		Date Analyzed:	01/07/98	ConCal:	U980025
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	U980037	% Lipid:	n/a
GC Column:	DB-5	Analyst:	JM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.002				
1,2,3,7,8-PeCDD	ND	0.004				
1,2,3,4,7,8-HxCDD	ND	0.005				
1,2,3,6,7,8-HxCDD	ND	0.004				
1,2,3,7,8,9-HxCDD	ND	0.004				
1,2,3,4,6,7,8-HpCDD	ND	0.005				
1,2,3,4,6,7,8,9-OCDD	0.01			0.82	39:36	J
2,3,7,8-TCDF	ND	0.002				
1,2,3,7,8-PeCDF	ND	0.002				
2,3,4,7,8-PeCDF	ND	0.002				
1,2,3,4,7,8-HxCDF	ND	0.004				
1,2,3,6,7,8-HxCDF	ND	0.003				
2,3,4,6,7,8-HxCDF	ND	0.004				
1,2,3,7,8,9-HxCDF	ND	0.004				
1,2,3,4,6,7,8-HpCDF	ND	0.004				
1,2,3,4,7,8,9-HpCDF	ND	0.004				
1,2,3,4,6,7,8,9-OCDF	ND	0.005				

Totals	Amt. (ng)	Number DL	EMPC	Flags
Total MCDD	ND	<0.001		
Total DCDD	ND	<0.001		
Total TriCDD	ND	<0.001		
Total TCDD	ND	0.002		
Total PeCDD	ND	0.004		
Total HxCDD	ND	0.005		
Total HpCDD	ND	0.005		
Total MCDF	ND	<0.001		
Total DCDF	ND	<0.001		
Total TriCDF	ND	<0.001		
Total TCDF	ND	0.002		
Total PeCDF	ND	0.002		
Total HxCDF	ND	0.003		

Continued on next page

MITZ_PSR v1.01, LARS 6.10.081

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 11:07 01/10/98

TLI Project: **44376A** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **CleanUp Blk** Analysis File: **U980037**

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total HpCDF	ND		0.004		—

Internal Standards	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.7	66.8	40%-130%	0.78	24:38	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.8	68.8	40%-130%	0.79	25:20	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.1	76.3	40%-130%	1.55	28:35	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.4	59.6	40%-130%	1.50	29:36	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.7	68.7	40%-130%	0.50	32:08	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.2	78.9	40%-130%	1.21	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.2	81.0	25%-130%	0.41	35:01	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.5	87.2	25%-130%	1.03	36:02	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	6.7	84.3	25%-130%	0.87	39:36	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery		Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	80.8	40%-130%	0.50	33:23	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.4	84.4	40%-130%	0.51	32:37	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	25:10	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	33:07	—

Data Reviewer: _____ 01/10/98

MIT2_PSR v1.01, LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 11:07 01/10/98

Initial ....Date..

Data Review By: CM 1/10/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of U980037B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.867-1.079			
304-306		DC	NL	0:00	RO	0.44	8.18			0.000			
		DC	WL	21:28	RO	1.23	5.45			0.871			
	D	D	SN	24:00	RO	2.26	5.31			0.974			
		DC	SN	24:33	RO	0.00	0.18			0.997			
	D	D	SN	25:09	RO	0.39	9.08			1.021			
	D	D	SN	25:16	RO	0.41	9.47			1.026			
		DC	SN	25:32	RO	0.31	2.94			1.037			
	D	D	SN	26:03	RO	0.34	11.65			1.058			
	D	D	SN	26:14	RO	1.31	4.92			1.065			
304-306			0	Peaks			0.00						
13C12-TCDF						0.65-0.89				0.959-1.041			
316-318		DC	NL	0:00	RO	0.95	7.98			0.000			
				24:13	RO	0.56	39.51	17.19	30.64	0.983			
				24:38		0.78	9,898.83	4,345.47	5,553.36	1.000	13C12-2378-TCDF	IS0	
				25:00	RO	1.08	170.36	103.69	96.25	1.015			
				25:31		0.68	38.43	15.58	22.85	1.036			
		DC	WH	25:55	RO	1.64	14.04			1.052			
		DC	WH	25:57		0.69	24.11			1.053			
		DC	WH	26:16	RO	1.43	5.70			1.066			
		DC	WH	26:17	RO	0.95	12.28			1.067			
		DC	WH	26:22	RO	0.53	10.16			1.070			
316-318			4	Peaks			10,147.13						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.895-1.047			
320-322		DC	NL	0:00	RO	0.09	0.39			0.000			
	N	DC	WL	22:48	RO	0.54	4.53			0.900			
		DC	WL	23:14	RO	1.52	1.95			0.917			
		DC	WL	23:19		0.74	1.48			0.920			
		DC	WL	23:33	RO	0.04	0.16			0.930			
		DC	WL	23:47	RO	0.58	0.97			0.939			
		DC	WL	24:07	RO	5.26	0.48			0.952			
		DC	SN	24:45	RO	7.21	0.51			0.977			
		DC	SN	25:19	RO	1.32	1.31			0.999	2378-TCDD		AN
		DC	SN	25:34	RO	0.60	2.51			1.009			
		DC	SN	26:07		0.78	1.41			1.031			
		DC	SN	26:33		0.75	2.98			1.048			
320-322			0	Peaks			0.00						
13C12-TCDD						0.65-0.89				0.921-1.079			
332-334		DC	NL	0:00	RO	2.40	11.91			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				24:09	RO	0.60	25.01	10.88	18.17	0.953			
				25:10		0.82	10,108.54	4,559.84	5,548.70	0.993	13C12-1234-TCDD	RS1	
				25:20		0.79	7,774.25	3,440.92	4,333.33	1.000	13C12-2378-TCDD	IS1	
				25:40		0.69	307.27	125.92	181.35	1.013			
				25:49	RO	0.20	35.42	15.41	78.11	1.019			
				25:55		0.71	34.33	14.28	20.05	1.023			
				26:03	RO	0.48	97.10	42.24	88.40	1.028			
332-334			7 Peaks				18,381.92						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.925-1.065			
340-342	DC	NL		0:00	RO	0.15	0.48			0.000			
	DC	SN		26:34	RO	0.28	0.95			0.929			
	DC	SN		27:17	RO	0.85	3.73			0.955			
D	D	SN		27:34	RO	0.75	5.05			0.964			
D	D	SN		27:44		1.32	8.41			0.970			
	DC	SN		28:18	RO	0.46	3.01			0.990			
	DC	SN		28:43	RO	0.87	2.16			1.005			
	DC	SN		29:24	RO	0.51	3.83			1.029			
	DC	SN		29:40	RO	0.24	0.87			1.038			
	DC	SN		29:51	RO	0.24	0.97			1.044			
	DC	SN		30:32	RO	0.72	3.26			1.068			
340-342			0 Peaks				0.00						
13C12-PeCDF						1.32-1.78				0.860-1.140			
352-354	DC	NL		0:00	RO	1.31	0.28			0.000			
				27:41	RO	0.67	8.95	5.44	8.17	0.969			
				28:35		1.55	8,807.53	5,357.35	3,450.18	1.000	13C12-PeCDF 123	IS2	
				29:01	RO	1.17	91.26	55.47	47.25	1.015			
				29:09	RO	0.97	50.03	30.41	31.51	1.020			
				29:16	RO	1.99	90.40	70.71	35.45	1.024	13C12-PeCDF 234	SUR1	
				29:35	RO	0.54	9.95	6.05	11.11	1.035			
				30:13		1.73	20.34	12.88	7.46	1.057			
352-354			7 Peaks				9,078.46						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.935-1.022			
356-358	DC	NL		0:00		1.33	0.28			0.000			
	DC	SN		28:11	RO	0.45	0.54			0.952			
	DC	SN		28:34	RO	5.54	2.86			0.965			
	DC	SN		28:51	RO	0.78	1.02			0.975			
	DC	SN		29:03	RO	20.60	0.13			0.981			
	DC	SN		29:23	RO	0.75	1.40			0.993			
	DC	SN		29:31	RO	2.70	1.17			0.997			
	DC	SN		29:39	RO	1.85	2.88			1.002			
	DC	SN		29:45	RO	4.16	1.25			1.005			
	DC	SN		29:51	RO	2.06	1.20			1.008			
	DC	SN		30:01	RO	1.13	1.28			1.014			
	DC	SN		30:19	RO	6.29	0.43			1.024			
	DC	SN		30:26	RO	2.13	2.35			1.028			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		30:32	RO	2.58	1.40			1.032			
356-358			0 Peaks				0.00						
13C12-PeCDD				1.32-1.78						0.865-1.135			
368-370	DC	NL		0:00	RO	1.00	0.16			0.000			
	DC	SN		28:12	RO	1.06	1.63			0.953			
	DC	SN		28:34	RO	0.50	2.20			0.965			
				29:36		1.50	3,551.87	2,132.05	1,419.82	1.000	13C12-PeCDD 123	IS3	
				29:43		1.59	614.34	377.00	237.34	1.004			
				29:54	RO	1.88	125.26	92.56	49.12	1.010			
				30:03	RO	0.67	48.29	29.35	43.95	1.015			
				30:10	RO	0.72	20.37	12.38	17.09	1.019			
				30:18		1.61	30.15	18.58	11.57	1.024			
				30:24		1.47	26.73	15.91	10.82	1.027			
368-370			7 Peaks				4,417.01						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.962-1.047			
374-376	DC	NL		0:00	RO	0.87	2.98			0.000			
	DC	SN		31:05	RO	0.83	3.05			0.967			
	DC	SN		31:10	RO	0.87	2.64			0.970			
	DC	SN		31:19	RO	1.82	1.23			0.975			
	DC	SN		31:41	RO	1.54	3.70			0.986			
	DC	SN		31:52	RO	5.00	1.21			0.992			
	DC	SN		32:03	RO	4.31	1.52			0.997	123478-HxCDF		AN
	DC	SN		32:11	RO	0.48	2.04			1.002			
	DC	SN		33:23	RO	3.92	0.87			1.039	123789-HxCDF		AN
	DC	SN		33:41	RO	3.15	0.74			1.048			
374-376			0 Peaks				0.00						
13C12-HxCDF				0.43-0.59						0.876-1.124			
384-386	DC	NL		0:00	RO	0.71	4.26			0.000			
				31:04	RO	1.23	5.75	4.68	3.81	0.967			
				32:08		0.50	5,695.03	1,909.27	3,785.76	1.000	13C12-HxCDF 678	IS4	
				32:37		0.51	6,312.25	2,133.84	4,178.41	1.015	13C12-HxCDF 234	ALT2	
				33:12	RO	0.19	9.15	3.09	15.91	1.033			
				33:23		0.50	4,656.05	1,543.48	3,112.57	1.039	13C12-HxCDF 789	ALT1	
384-386			5 Peaks				16,678.23						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.014			
390-392	DC	NL		0:00	RO	0.80	0.07			0.000			
	DC	SN		31:32	RO	3.74	0.43			0.961			
	DC	SN		31:35	RO	1.69	1.14			0.963			
	DC	SN		31:52	RO	0.54	0.89			0.972			
	DC	SN		32:01	RO	1.46	3.38			0.976			
	DC	SN		32:08	RO	4.67	2.49			0.980			
	DC	SN		32:20	RO	2.80	1.23			0.986			
	DC	SN		32:33	RO	0.78	0.94			0.992			
	DC	SN		32:37	RO	1.71	4.48			0.994			

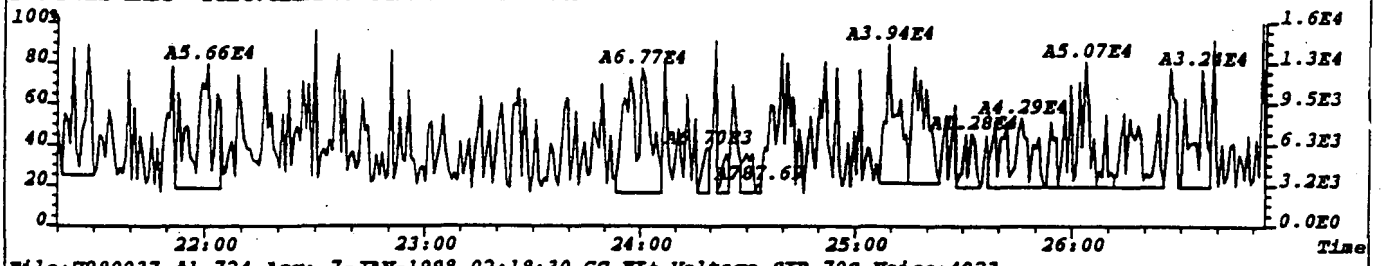
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2:.	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		32:44	RO	1.72	2.20			0.998	123478-HxCDD	AN	
	DC	SN		33:07	RO	0.41	1.16			1.010	123789-HxCDD	AN	
	DC	SN		33:09	RO	0.78	0.98			1.011			
	DC	SN		33:23	RO	3.62	2.20			1.018			
	DC	SN		33:30	RO	1.46	1.79			1.021			
390-392		0 Peaks					0.00						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	1.52	4.12			0.000			
				32:12		1.30	15.14	8.56	6.58	0.982			
				32:48		1.21	4,832.68	2,642.35	2,190.33	1.000	13C12-HxCDD 678	IS5	
				33:07		1.21	6,159.80	3,378.48	2,781.32	1.010	13C12-HxCDD 789	RS2	
				33:27	RO	0.80	108.64	60.14	75.28	1.020			
402-404		4 Peaks					11,116.26						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.049			
408-410	DC	NL		0:00	RO	1.26	3.84			0.000			
	DC	SN		36:36	RO	0.27	1.90			1.045			
	DC	SN		36:52	RO	0.29	1.94			1.053			
408-410		0 Peaks					0.00						
13C12-HpCDF				0.37-0.51						0.943-1.114			
418-420	DC	NL		0:00	RO	0.55	8.38			0.000			
				35:01		0.41	4,102.52	1,201.45	2,901.07	1.000	13C12-HpCDF 678	IS6	
				35:28	RO	0.86	23.56	14.14	16.36	1.013			
				35:33	RO	0.36	39.89	12.19	33.78	1.015			
				35:47	RO	0.87	9.79	5.94	6.80	1.022			
				35:49	RO	0.62	12.97	5.55	9.01	1.023			
				36:01	RO	1.05	6.96	5.07	4.83	1.029			
				36:23	RO	0.65	5.77	2.59	4.01	1.039			
				36:32	RO	1.07	12.70	9.44	8.82	1.043	13C12-HpCDF 789	SUR4	
418-420		8 Peaks					4,214.16						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00		1.00	0.08			0.000			
	DC	SN		35:07		1.09	3.41			0.975			
	DC	SN		35:49	RO	0.75	2.02			0.994			
	DC	SN		36:16	RO	2.12	1.57			1.006			
	DC	SN		36:30	RO	0.46	0.96			1.013			
424-426		0 Peaks					0.00						
13C12-HpCDD				0.88-1.20						0.972-1.028			
436-438	DC	NL		0:00		1.00	6.61			0.000			
				36:02		1.03	3,899.39	1,981.38	1,918.01	1.000	13C12-HpCDD 678	IS7	
436-438		1 Peak					3,899.39						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
OCDF						0.76-1.02				0.899-1.101			
442-444	DC	NL		0:00		1.00	0.08			0.000			
	DC	WL		34:26	RO	1.81	0.40			0.870			
	DC	WL		35:01	RO	0.33	0.59			0.884			
	DC	WL		35:12	RO	3.83	0.45			0.889			
	DC	WL		35:28	RO	2.09	1.00			0.896			
	DC	SN		35:39	RO	2.32	0.95			0.900			
	DC	SN		36:06		0.83	2.12			0.912			
	DC	SN		36:16	RO	2.42	0.59			0.916			
	DC	SN		36:36	RO	0.25	0.55			0.924			
	DC	SN		37:11	RO	0.02	0.06			0.939			
	DC	SN		37:17	RO	0.07	0.06			0.941			
	DC	SN		37:25	RO	1.88	0.49			0.945			
	DC	SN		38:01	RO	2.07	0.77			0.960			
	DC	SN		38:48	RO	0.74	0.74			0.980			
	DC	SN		39:02	RO	0.23	0.74			0.986			
	DC	SN		39:07	RO	0.64	0.83			0.988			
	DC	SN		39:22	RO	4.73	0.28			0.994			
	DC	SN		39:38	RO	0.48	1.00			1.001			
	DC	SN		40:08	RO	0.13	0.62			1.013			
	DC	SN		40:18	RO	2.24	0.64			1.018			
	DC	SN		40:43	RO	0.63	1.10			1.028			
442-444			0	Peaks			0.00						
OCDD						0.76-1.02				0.899-1.101			
458-460	DC	NL		0:00	RO	1.33	0.06			0.000			
	AN			39:36		0.82	9.93	4.46	5.47	1.000	OCDD	AN	J
	DC	SN		40:05	RO	0.41	0.59			1.012			
458-460			1	Peak			9.93						
13C12-OCDD						0.76-1.02				0.996-1.004			
470-472	DC	NL		0:00		1.00	0.08			0.000			
				39:36		0.87	5,658.40	2,640.48	3,017.92	1.000	13C12-OCDD	IS8	
470-472			1	Peak			5,658.40						

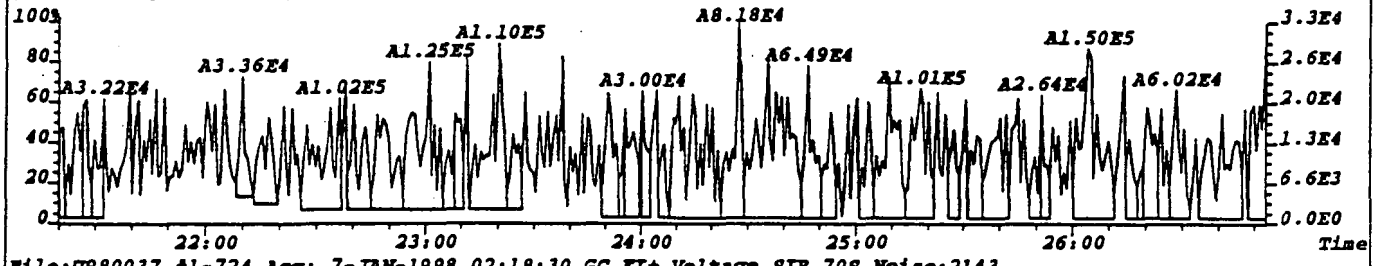
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

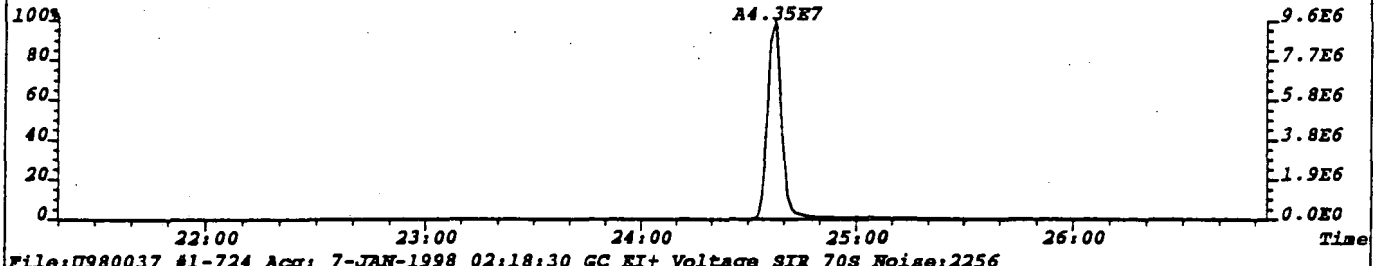
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1779
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,7116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



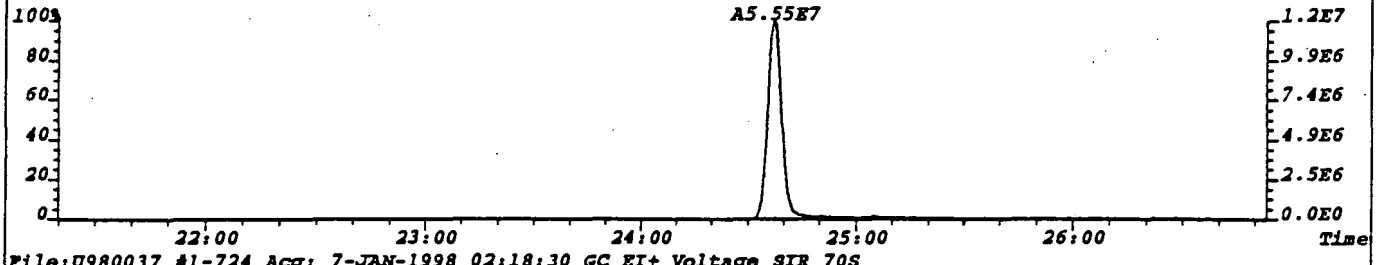
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:4023
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,16092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



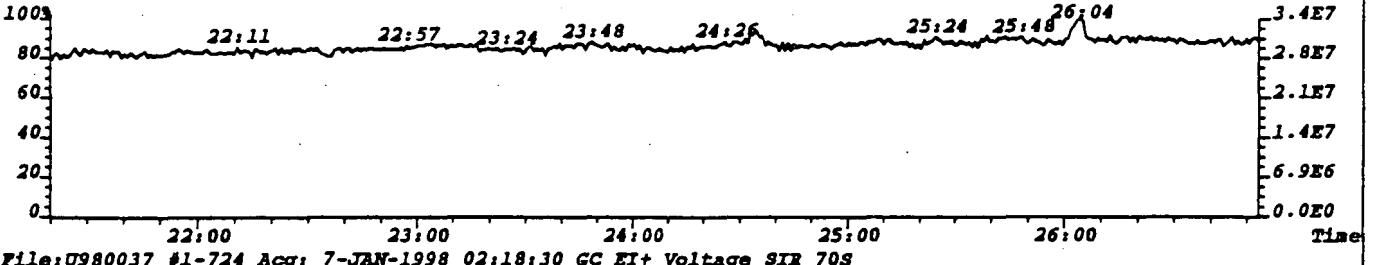
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:2143
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,8572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



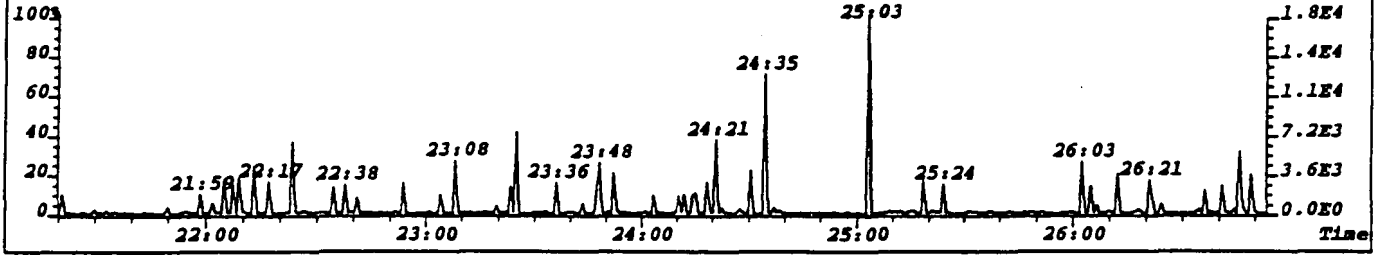
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:2256
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,3,0.10%,9024.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A

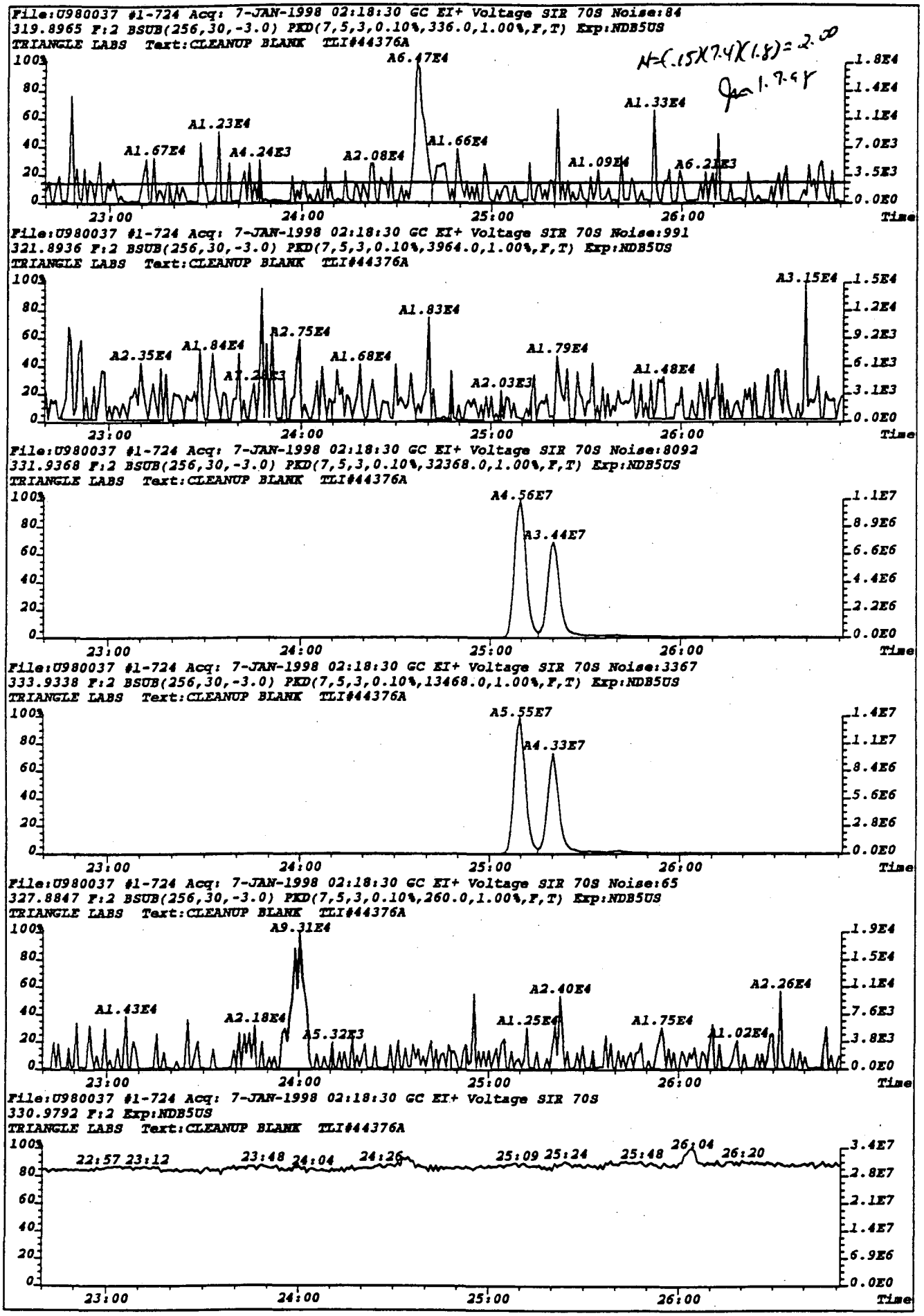


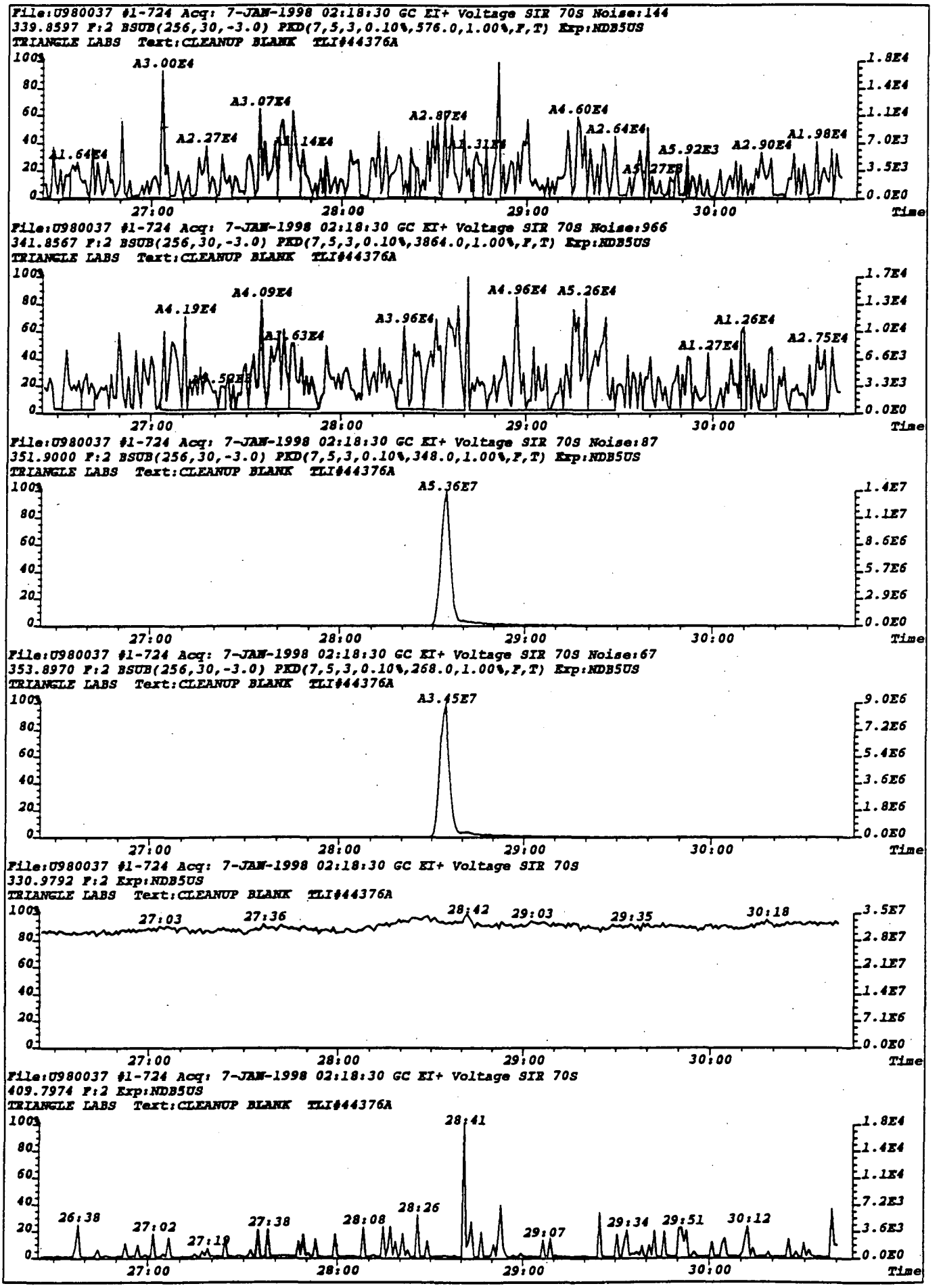
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A

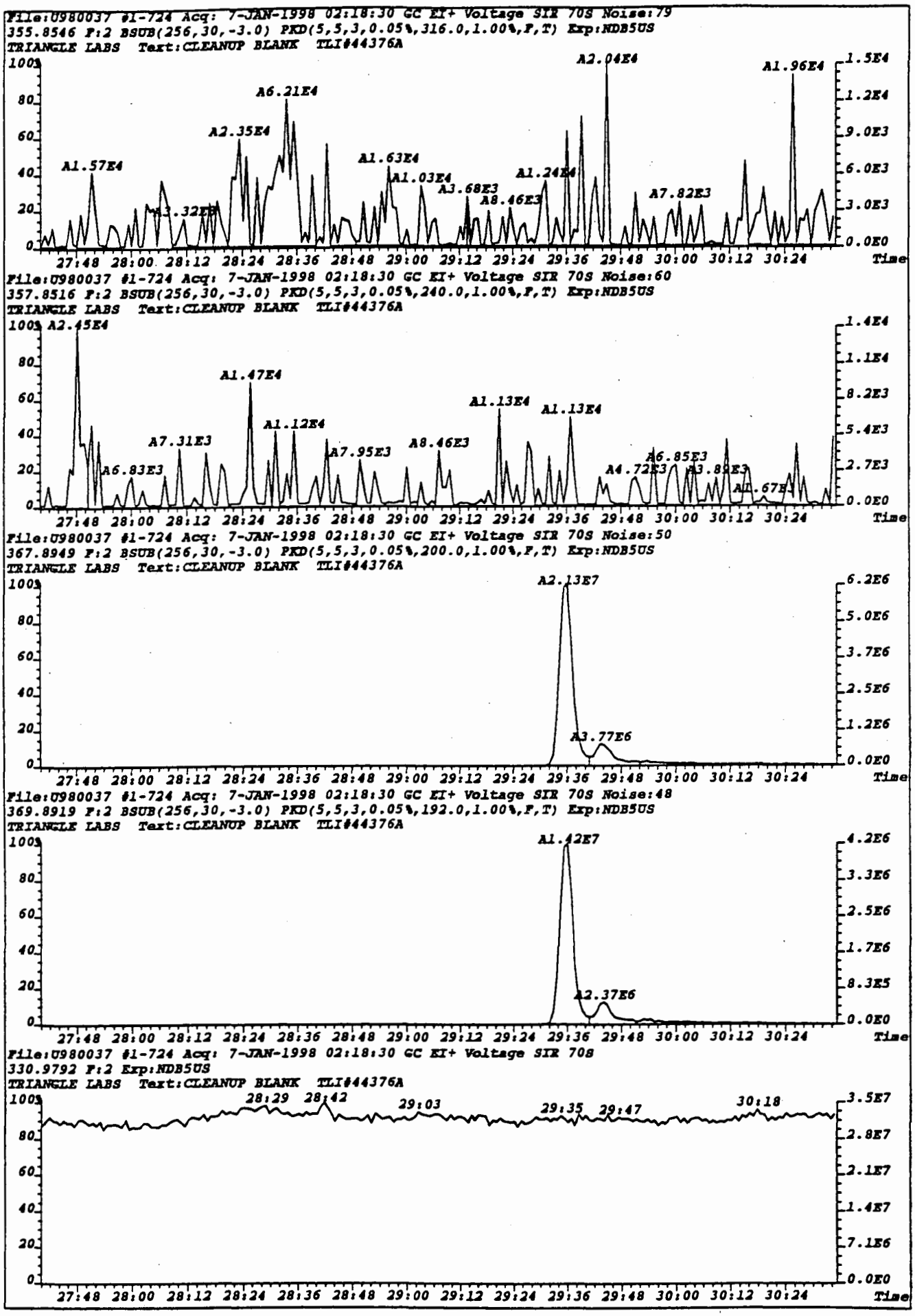


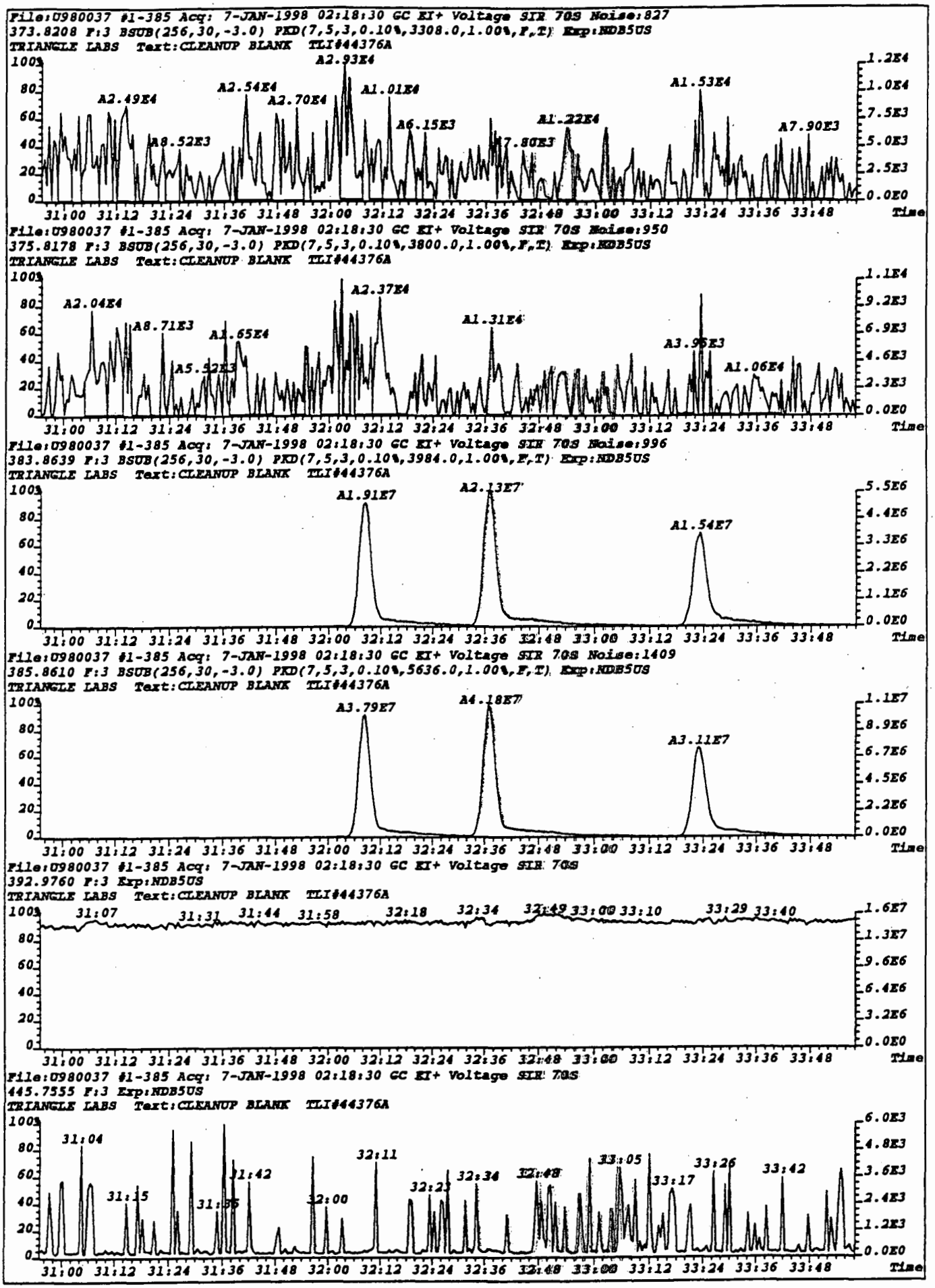
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



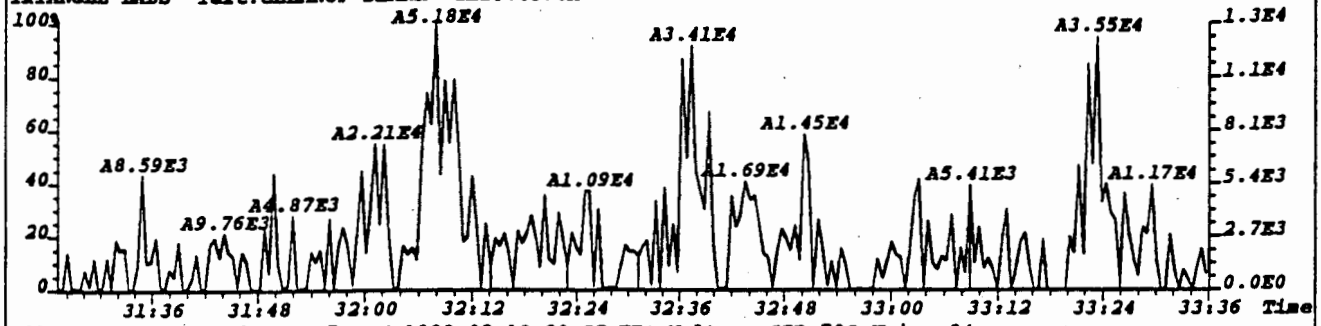

File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:84
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,336.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A6.47E4
A1.23E4
A1.67E4
A4.24E3
A2.08E4
A1.66E4
A1.09E4
A1.33E4
A6.21E3
N=(.15)(7.4)(1.8)=2.00
Jan 1.7.98
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:991
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3964.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A3.15E4
A1.83E4
A2.75E4
A1.84E4
A2.35E4
A1.68E4
A1.79E4
A1.48E4
A2.03E3
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:8092
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,32368.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A4.56E7
A3.44E7
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:3367
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,13468.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A5.55E7
A4.33E7
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:65
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,260.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A9.31E4
A1.43E4
A2.18E4
A5.32E3
A2.40E4
A1.25E4
A1.75E4
A1.02E4
A2.26E4
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
22:57 23:12 23:48 24:04 24:26 25:09 25:24 25:48 26:04 26:20
23:00 24:00 25:00 26:00 Time


File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:144
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,576.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A3.00E4
A3.07E4
A2.87E4
A4.60E4
A2.64E4
A2.27E4
A1.64E4
A5.92E3
A2.90E4
A1.98E4
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:966
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A4.19E4
A4.09E4
A3.96E4
A4.96E4
A5.26E4
A1.26E4
A1.27E4
A2.75E4
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:87
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,348.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A5.36E7
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:67
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,268.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A3.45E7
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
27:03
27:36
28:42
29:03
29:35
30:18
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
28:41
26:38
27:02
27:18
27:38
28:08
28:26
29:07
29:34
29:51
30:12
27:00
28:00
29:00
30:00
Time

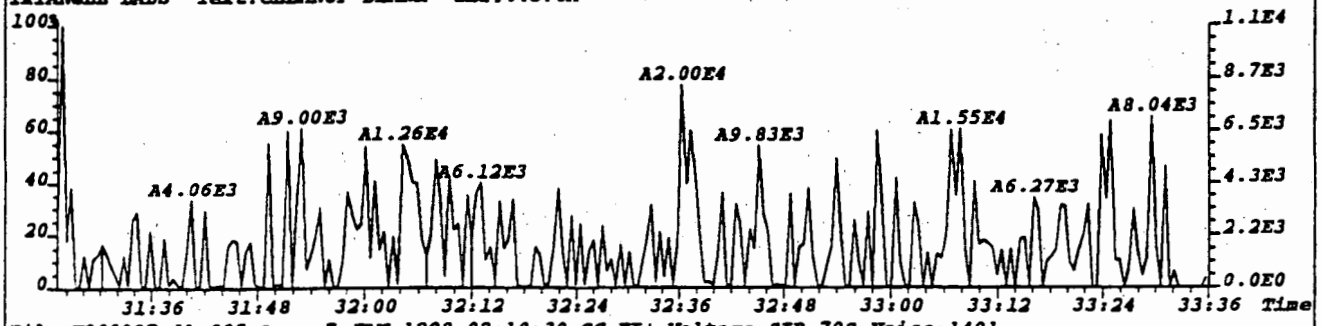

File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:79
355.8546 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.04E4
A1.96E4
A6.21E4
A2.35E4
A1.57E4
A1.63E4
A1.03E4
A3.68E3
A8.46E3
A1.24E4
A7.82E3
A3.32E3
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:60
357.8516 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,240.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.45E4
A1.47E4
A1.13E4
A1.13E4
A1.12E4
A7.31E3
A8.46E3
A7.95E3
A6.85E3
A6.83E3
A4.72E3
A3.89E3
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:50
367.8949 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.13E7
A3.77E6
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:48
369.8919 F:2 BSUB(256,30,-3.0) PKD(5,5,3,0.05%,192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.42E7
A2.37E6
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time
File:U980037 #1-724 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
28:29
28:42
29:03
29:35
29:47
30:18
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24
Time


File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:827
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3308.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.49E4
A8.52E3
A2.54E4
A2.70E4
A2.93E4
A1.01E4
A6.15E3
A7.80E3
A1.22E4
A1.53E4
A7.90E3
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:950
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3800.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.04E4
A8.71E3
A1.65E4
A5.52E3
A2.37E4
A1.31E4
A3.95E3
A1.06E4
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:996
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3984.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.91E7
A2.13E7
A1.54E7
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1409
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5636.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A3.79E7
A4.18E7
A3.11E7
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
31:07
31:31
31:44
31:58
32:18
32:34
33:00
33:10
33:29
33:40
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
31:04
31:15
31:42
32:00
32:11
32:23
32:34
33:05
33:17
33:26
33:42
31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48
Time

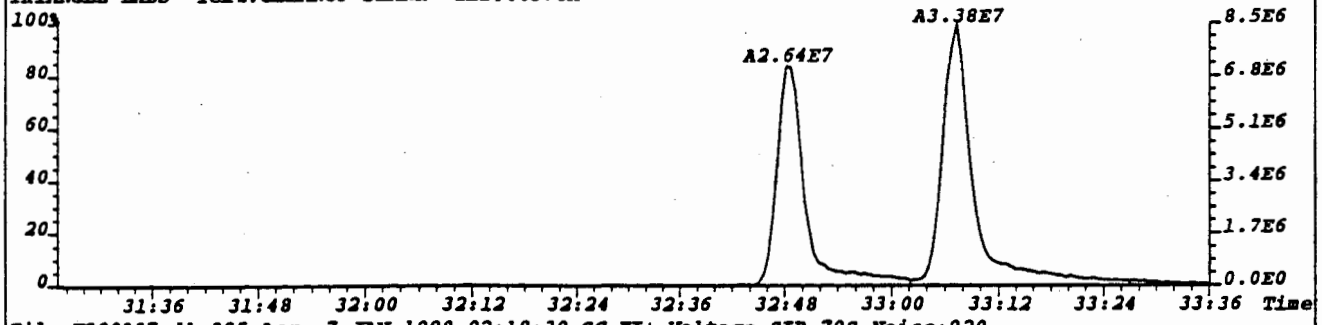
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:22
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,88.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



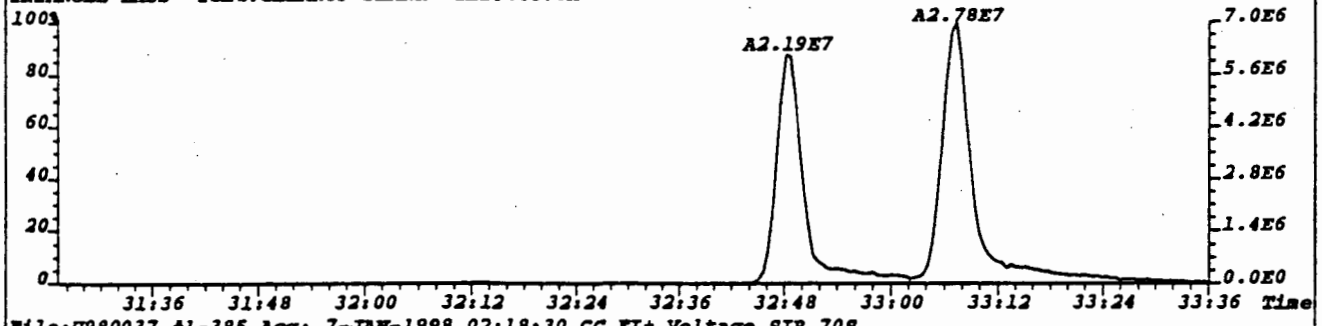
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:24
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,96.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



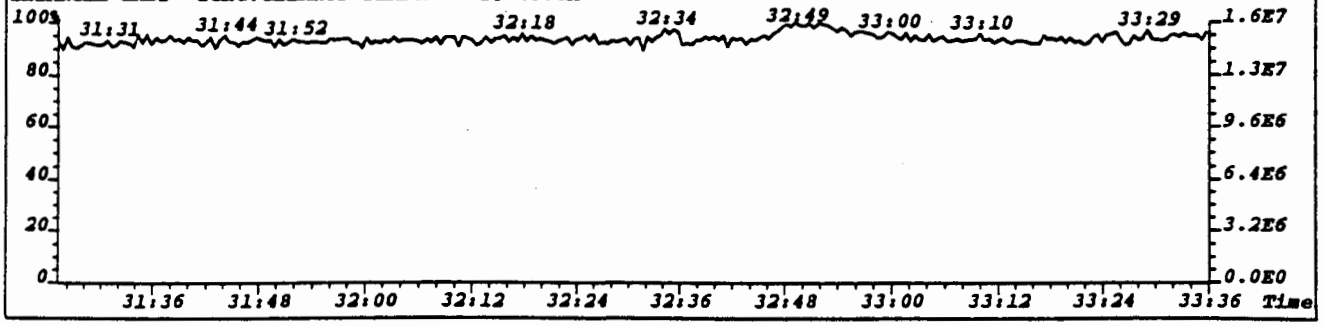
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1401
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,5604.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



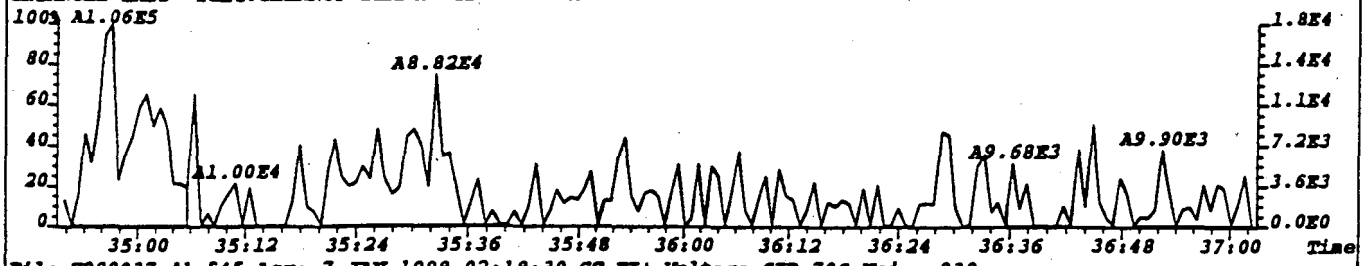
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:920
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3680.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



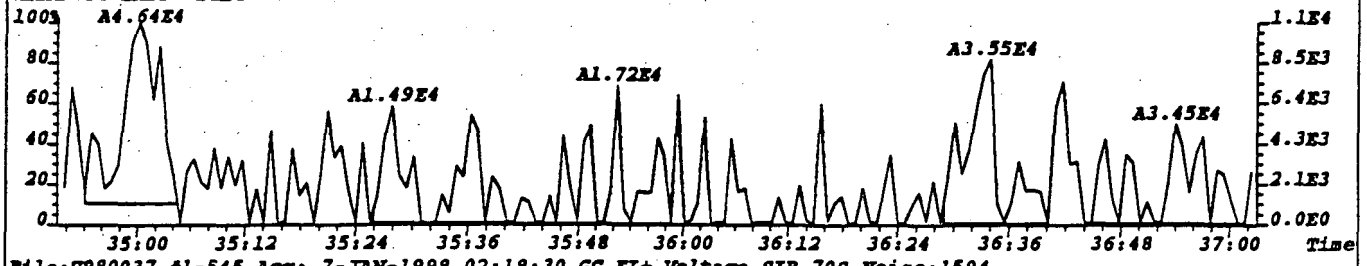
File:U980037 #1-385 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



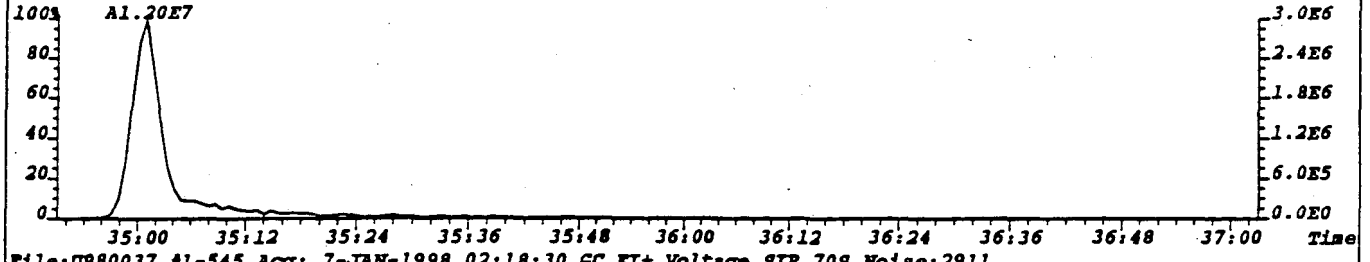
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1180
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,4720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



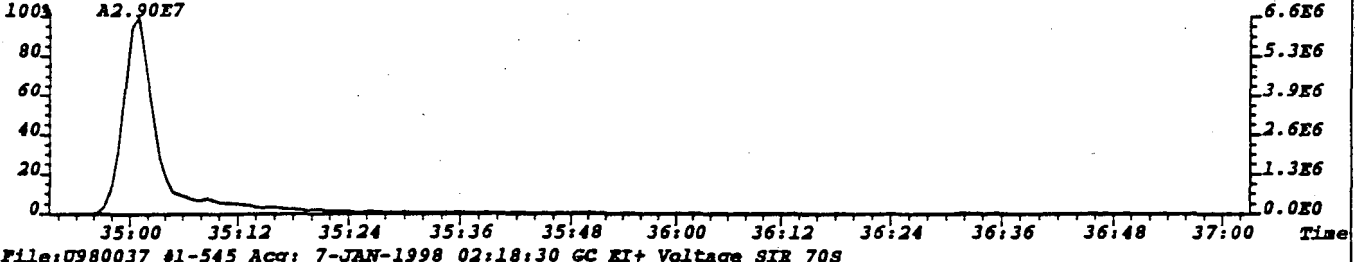
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:939
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,3756.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



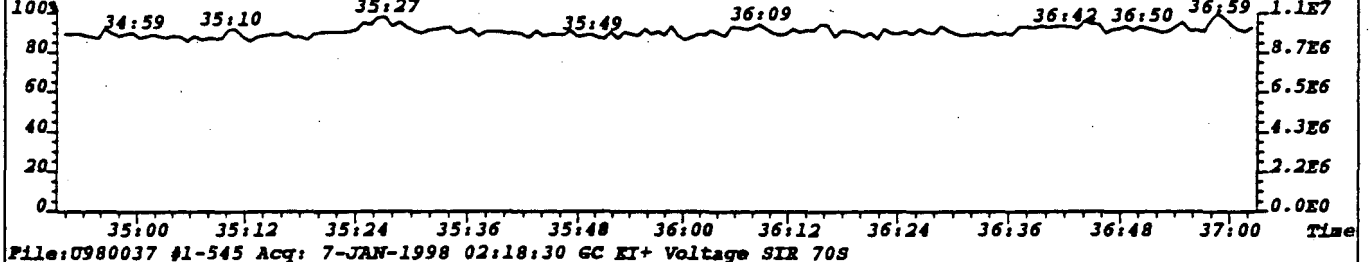
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1594
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6376.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



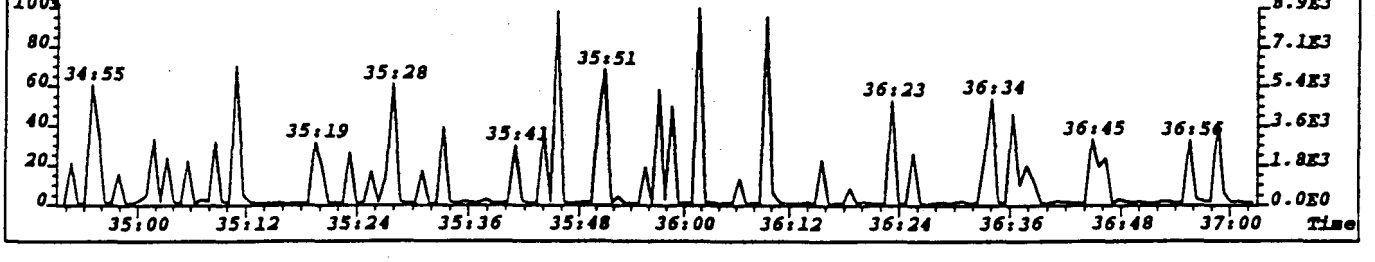
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:2911
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,11644.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A

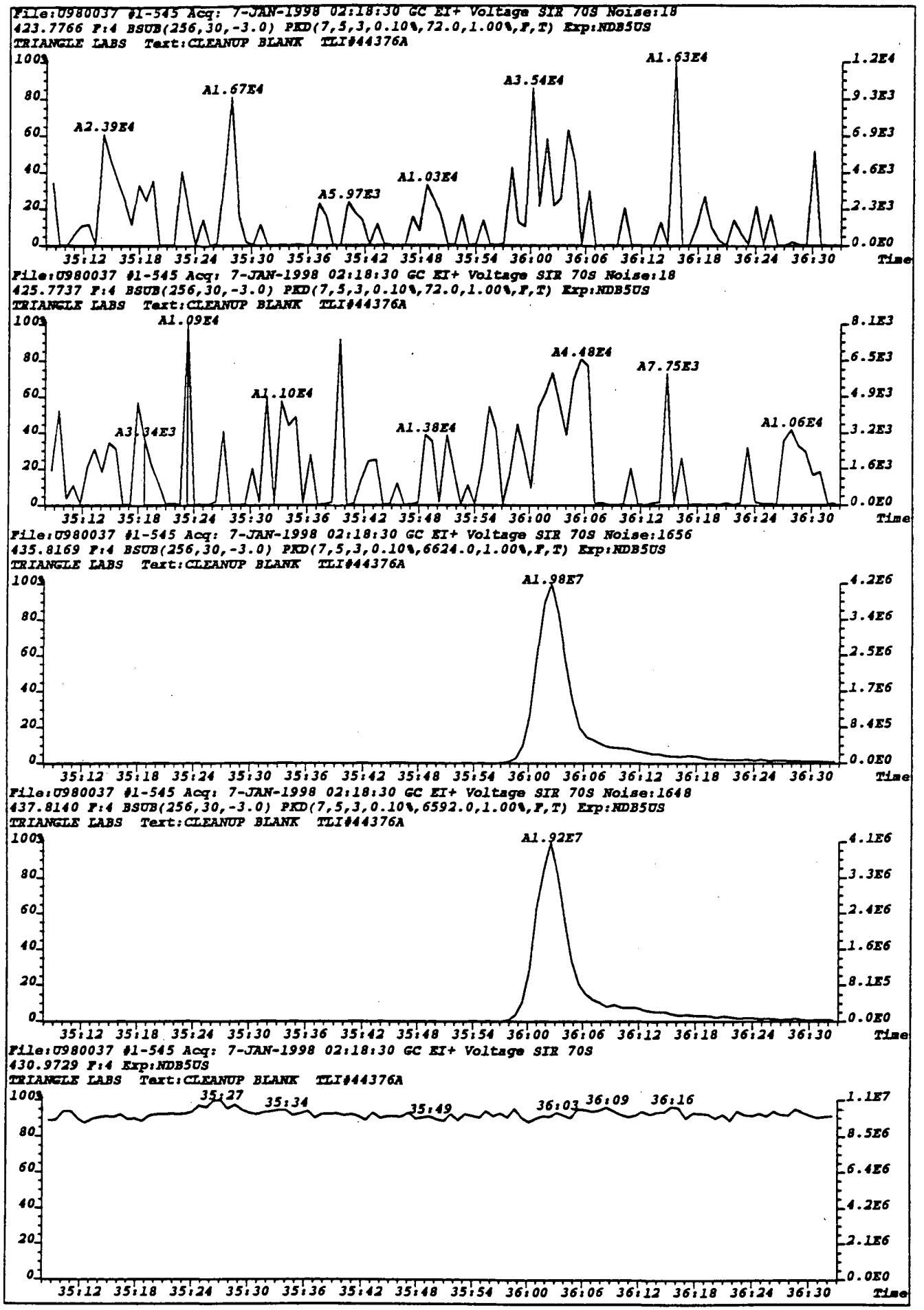


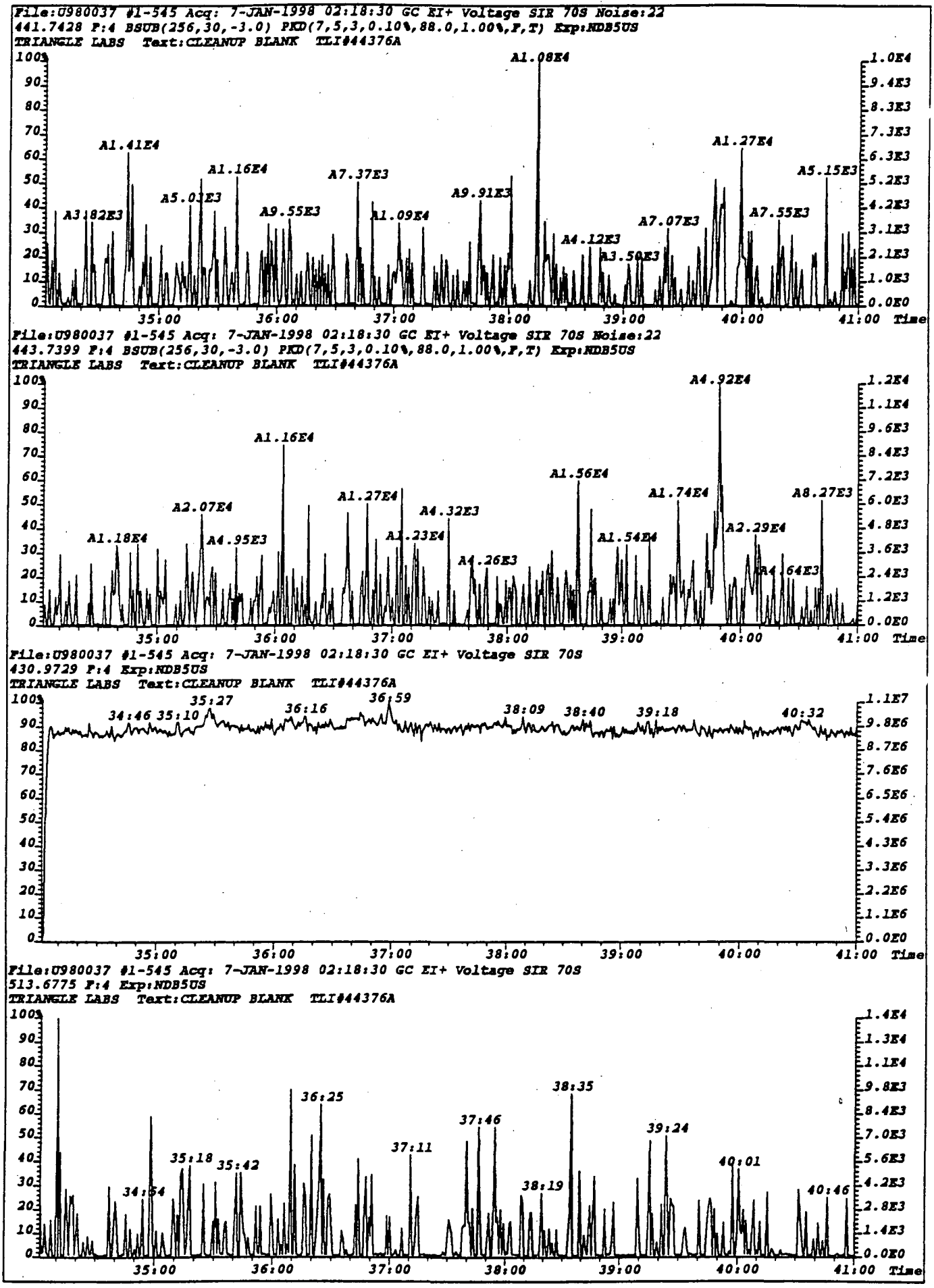
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



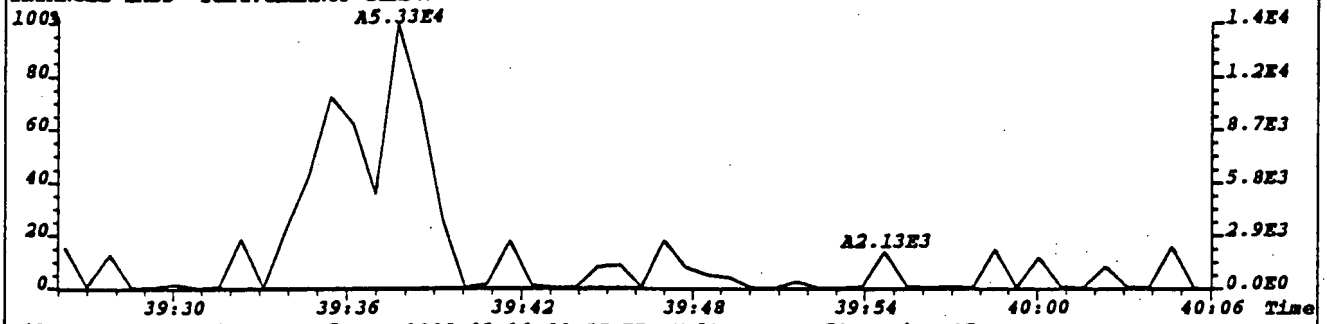
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



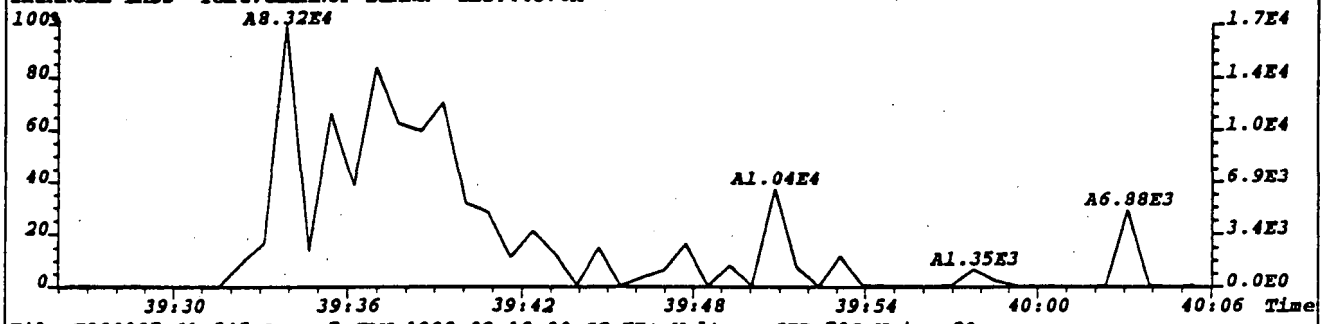

File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:18
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,72.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A2.39E4
A1.67E4
A5.97E3
A1.03E4
A3.54E4
A1.63E4
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:18
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,72.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.09E4
A3.34E3
A1.10E4
A1.38E4
A4.48E4
A7.75E3
A1.06E4
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1656
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.98E7
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:1648
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,6592.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.92E7
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
35:27
35:34
35:49
36:03
36:09
36:16
35:12 35:18 35:24 35:30 35:36 35:42 35:48 35:54 36:00 36:06 36:12 36:18 36:24 36:30
Time


File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:22
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,88.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A1.08E4
A1.41E4
A1.27E4
A1.16E4
A7.37E3
A5.15E3
A5.01E3
A9.91E3
A3.82E3
A9.55E3
A1.09E4
A7.07E3
A7.55E3
A4.12E3
A3.50E3
Time
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:22
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,88.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
A4.92E4
A1.16E4
A1.56E4
A1.27E4
A1.74E4
A8.27E3
A2.07E4
A4.32E3
A2.29E4
A1.18E4
A4.95E3
A1.23E4
A1.54E4
A4.26E3
A4.64E3
Time
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
34:46
35:10
35:27
36:16
36:59
38:09
38:40
39:18
40:32
Time
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A
34:54
35:18
35:42
36:25
37:11
37:46
38:19
38:35
39:24
40:01
40:46
Time

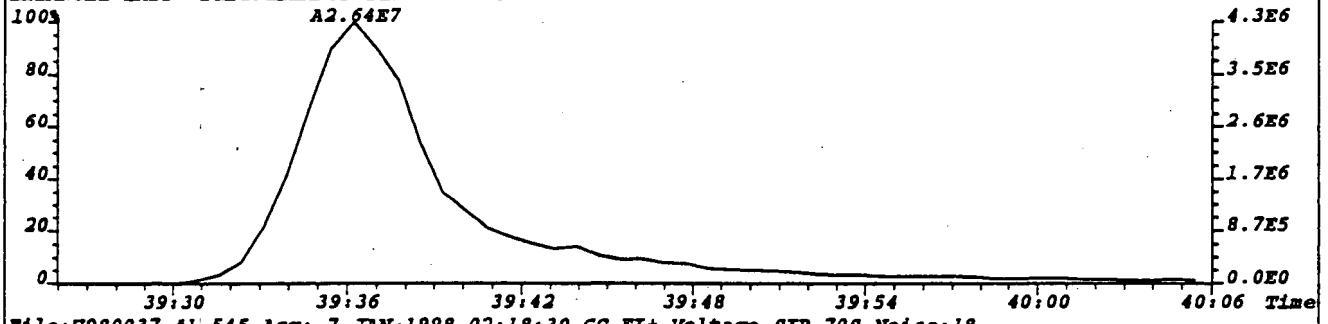
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:20
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



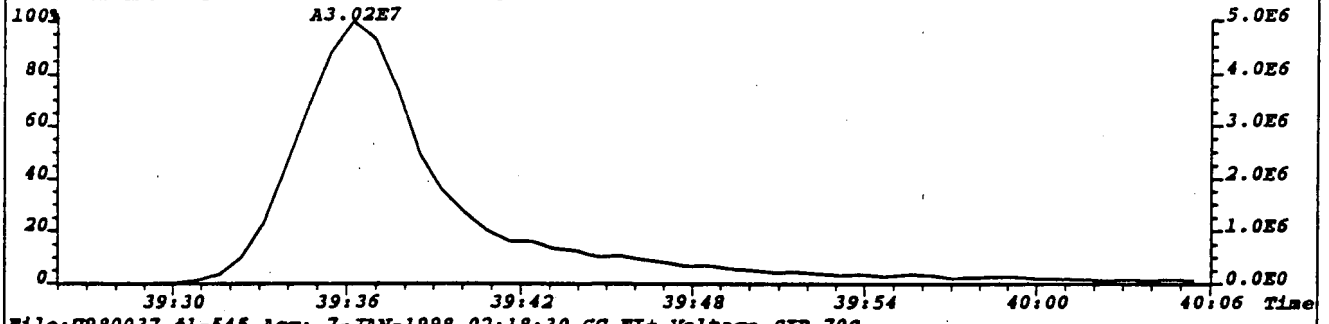
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:17
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,68.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



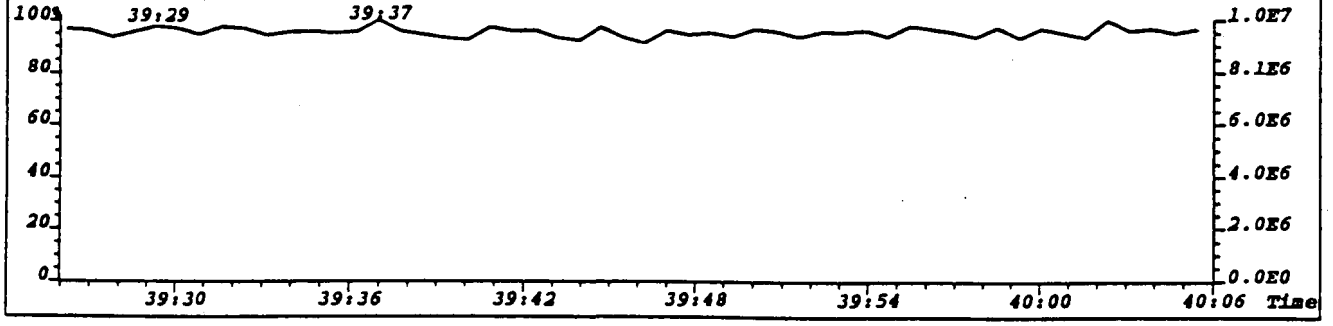
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:20
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,80.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A

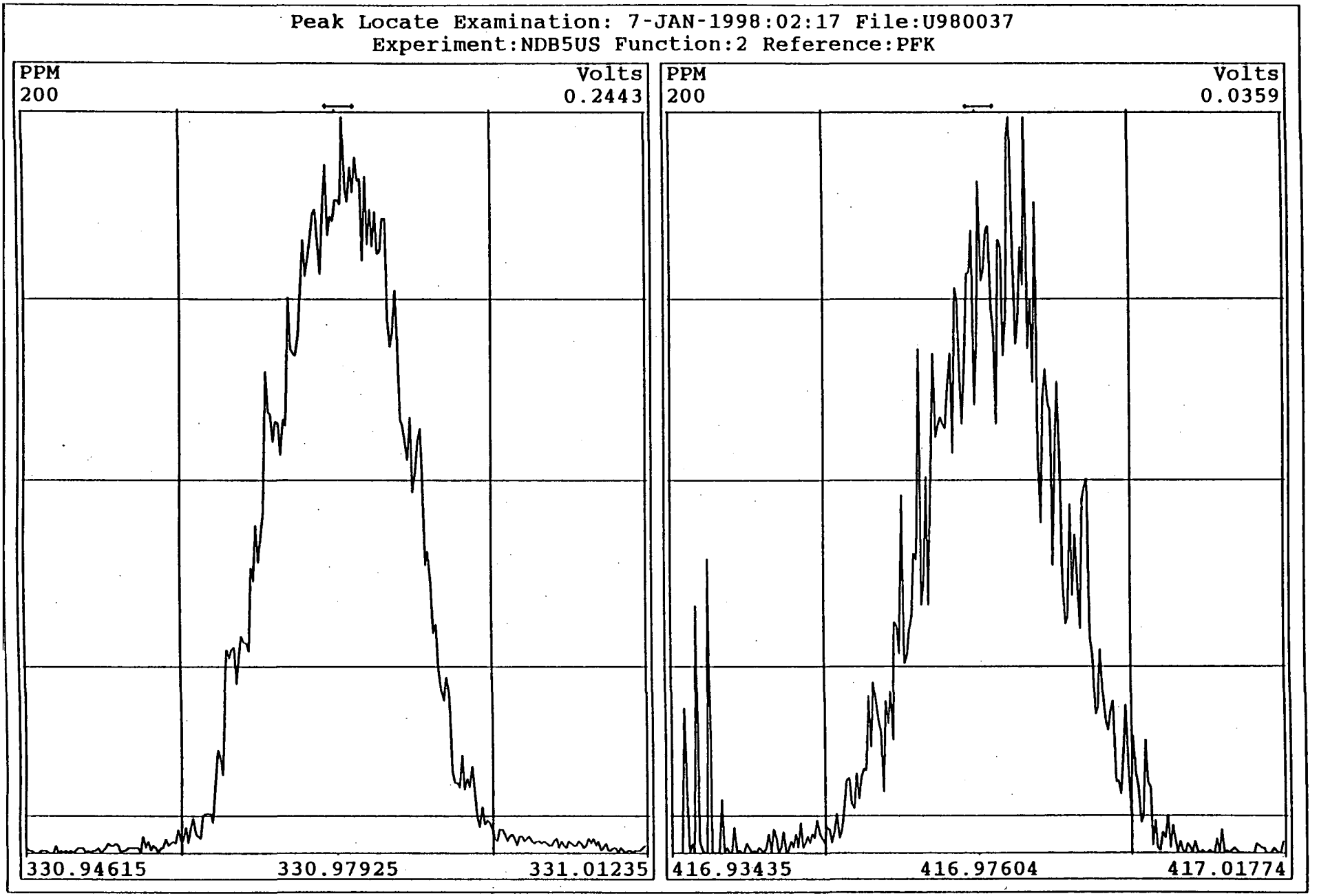


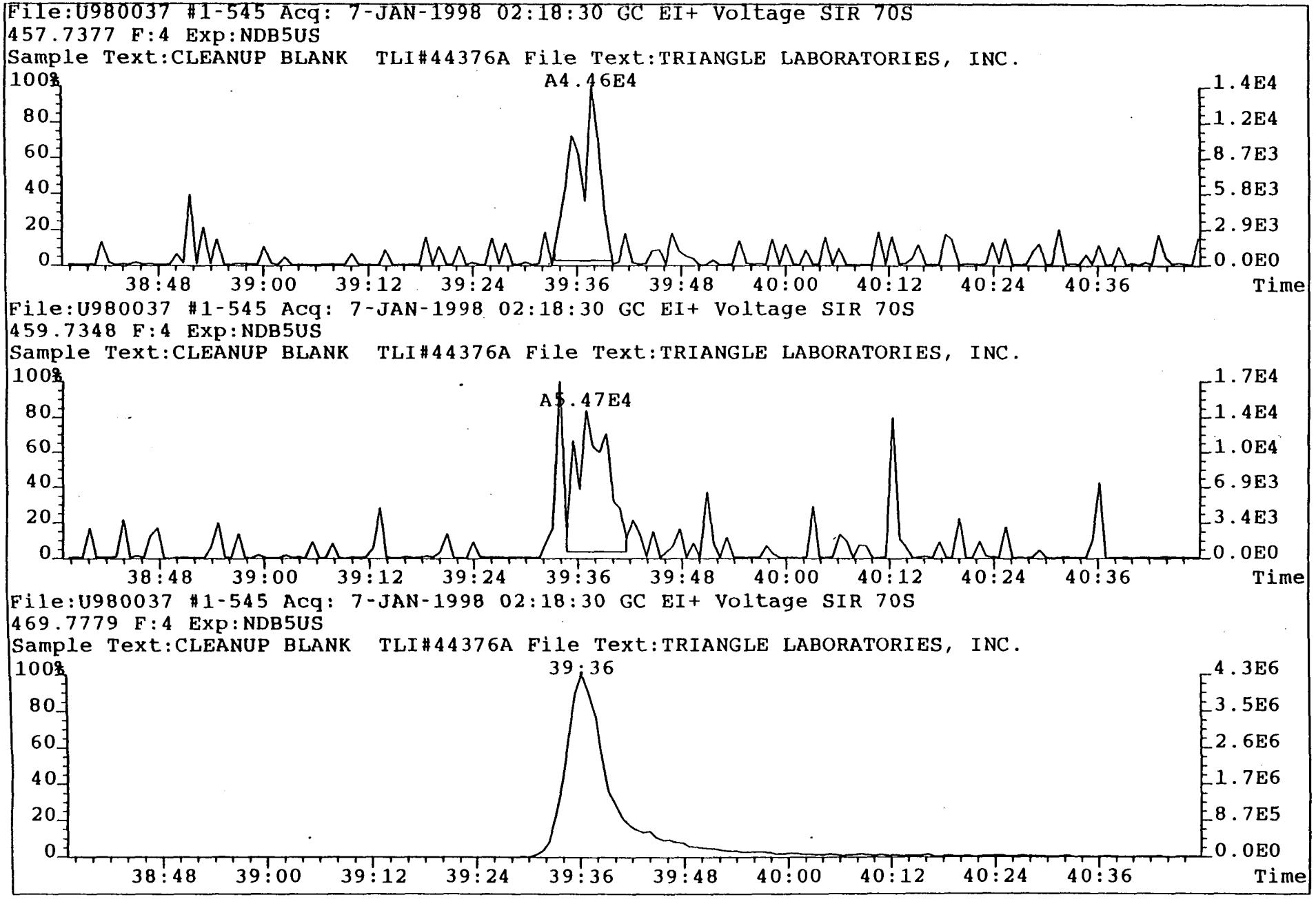
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S Noise:18
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.10%,72.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A



File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:CLEANUP BLANK TLI#44376A




Peak Locate Examination: 7-JAN-1998:02:17 File:U980037
Experiment:NDB5US Function:2 Reference:PFK
PPM
200
Volts
0.2443
330.94615
330.97925
331.01235
PPM
200
Volts
0.0359
416.93435
416.97604
417.01774


File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
457.7377 F:4 Exp:NDB5US
Sample Text:CLEANUP BLANK TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A4.46E4
100%
80
60
40
20
0
1.4E4
1.2E4
8.7E3
5.8E3
2.9E3
0.0E0
38:48 39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
459.7348 F:4 Exp:NDB5US
Sample Text:CLEANUP BLANK TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
A5.47E4
100%
80
60
40
20
0
1.7E4
1.4E4
1.0E4
6.9E3
3.4E3
0.0E0
38:48 39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time
File:U980037 #1-545 Acq: 7-JAN-1998 02:18:30 GC EI+ Voltage SIR 70S
469.7779 F:4 Exp:NDB5US
Sample Text:CLEANUP BLANK TLI#44376A File Text:TRIANGLE LABORATORIES, INC.
39:36
100%
80
60
40
20
0
4.3E6
3.5E6
2.6E6
1.7E6
8.7E5
0.0E0
38:48 39:00 39:12 39:24 39:36 39:48 40:00 40:12 40:24 40:36
Time

TRIANGLE LABS

CALIBRATION DATA

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-34
Fax # 919-544-5491

1-13-98

400A

TRIANGLE LABORATORIES OF RTP, INC. Date: 02/20/96

Initial Calibration Summary for PF22206

Analysis Date....: 02/20/96 Method.....: C2NF

Instrument.....: P GC Column...: DB-225

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
2378-TCDF	1.040	0.109	10%	21:32	14:31	25:31	0.767		10
TOTAL TCDF	1.040	0.109	10%				0.767		10
2378-TCDD	0.992	0.101	10%	20:12	16:11	24:11	0.782		10
TOTAL TCDD	0.992	0.101	10%				0.782		10

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	1.014	0.048	5%	20:12	18:11	22:11			10

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.388	0.062	4%	21:31	20:31	22:31	0.758		10
13C12-2378-TCDD	1.067	0.036	3%	20:11	18:11	22:11	0.786		10

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	20:27			0.794		10

*** End of Report ***

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 23:10 02/20/96

TRIANGLE LABORATORIES, INC. Date: 01/07/98

Initial Calibration Summary for UF51058

Analysis Date....: 01/05/98 Method.....: MIT2

Instrument.....: U

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total MCDF	0.000	0.000	100%		4:35	18:35			0
Total MCDD	0.000	0.000	100%		5:18	19:18			0
Total DCDF	0.000	0.000	100%		11:35	19:35			0
Total DCDD	0.000	0.000	100%		12:18	20:18			0
Total TriCDF	0.000	0.000	100%		15:35	22:35			0
Total TriCDD	0.000	0.000	100%		17:18	23:18			0
1368-TCDF	1.298	0.073	6%	21:26	23:35	30:35	0.745		6
2378-TCDF	1.240	0.132	11%	24:36			0.743		6
TOTAL TCDF	1.240	0.132	11%				0.744		6
1368-TCDD	0.715	0.032	4%	22:46	24:18	31:18	0.776		6
1379-TCDD	0.360	0.021	6%	23:10			0.786		6
2378-TCDD	1.240	0.160	13%	25:19			0.787		6
TOTAL TCDD	1.240	0.160	13%				0.781		6
12378-PeCDF	1.051	0.090	9%	28:33	24:32	32:32	1.526		6
23478-PeCDF	1.019	0.078	8%	29:14			1.530		6
TOTAL PeCDF	1.035	0.084	8%				1.528		6
12378-PeCDD	1.333	0.125	9%	29:34	25:34	33:34	1.580		6
TOTAL PeCDD	1.333	0.125	9%				1.580		6
123478-HxCDF	1.007	0.074	7%	32:01	28:06	36:06	1.283		6
123678-HxCDF	1.253	0.089	7%	32:07			1.245		6
234678-HxCDF	0.985	0.082	8%	32:36			1.262		6
123789-HxCDF	0.870	0.047	5%	33:22			1.263		6
TOTAL HxCDF	1.029	0.071	7%				1.262		6
123478-HxCDD	0.765	0.051	7%	32:43	28:47	36:47	1.257		6
123678-HxCDD	0.976	0.079	8%	32:47			1.211		6
123789-HxCDD	0.941	0.068	7%	33:06			1.234		6
TOTAL HxCDD	0.894	0.064	7%				1.232		6
1234678-HpCDF	1.410	0.098	7%	35:00	30:59	38:59	1.060		6
1234789-HpCDF	1.096	0.071	6%	36:31			1.049		6
TOTAL HpCDF	1.253	0.084	7%				1.055		6
1234678-HpCDD	0.995	0.051	5%	36:01	32:00	40:00	1.028		6
TOTAL HpCDD	0.995	0.051	5%				1.028		6
OCDF	1.377	0.070	5%	39:47	35:34	43:34	0.891		6
OCDD	1.108	0.080	7%	39:35	35:34	43:34	0.836		6

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	1.001	0.056	6%	25:19	23:18	27:18			6
13C12-PeCDF 234	0.966	0.010	1%	29:14	26:32	30:32	1.498		6
13C12-HxCDF 478	0.825	0.042	5%	32:01			0.509		6
13C12-HxCDF 234	0.902	0.043	5%	32:35			0.508		6
13C12-HxCDF 789	0.695	0.042	6%	33:21			0.504		6
13C12-HxCDD 478	0.732	0.024	3%	32:42			1.214		6
13C12-HpCDF 789	0.802	0.016	2%	36:30	32:59	38:59	0.431		6

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TRIANGLE LABORATORIES, INC. Date: 01/07/98

Initial Calibration Summary for UF51058

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.467	0.053	4%	24:35	23:35	25:35	0.755		6
13C12-2378-TCDD	1.118	0.049	4%	25:18	23:18	27:18	0.807		6
13C12-PeCDF 123	1.142	0.075	7%	28:32	24:32	32:32	1.478		6
13C12-PeCDD 123	0.590	0.045	8%	29:34	25:34	33:34	1.506		6
13C12-HxCDF 678	1.346	0.038	3%	32:06	28:06	36:06	0.506		6
13C12-HxCDD 678	0.995	0.017	2%	32:47	31:47	33:47	1.216		6
13C12-HpCDF 678	0.822	0.013	2%	34:59	32:59	38:59	0.434		6
13C12-HpCDD 678	0.726	0.011	2%	36:00	35:00	37:00	1.018		6
13C12-OCDD	0.545	0.038	7%	39:34	37:34	41:34	0.861		6

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	25:08			0.812		6
13C12-HxCDD 789	1.000	0.000	0%	33:05			1.210		6

*** End of Report ***

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/06/98 TRIANGLE LABORATORIES OF RTP, INC.

Continuing Calibration for P980092

Analysis Date....: 01/06/98 Method.....: C2NF

Operator.....: BB Instrument..: P

Init Calibration.: PF22206 Std.Conc....: 5.00

ICal Date.....: 02/20/96

Analysis Time....: 22:08 GC Column...: db-225

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
2378-TCDF	0.890	0.68	18:18 25:26	23:06	1.0000	1.040	-0.150	-14.4%
TOTAL TCDF	0.890	0.68				1.040	-0.150	-14.4%
2378-TCDD	0.895	0.81	19:07 24:40	21:38	1.0000	0.992	-0.097	-9.8%
TOTAL TCDD	0.895	0.81				0.992	-0.097	-9.8%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.912		19:38 23:38	21:38	1.0000	1.014	-0.102	-10.1%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.080	0.77	22:06 24:06	23:06	1.0000	1.388	-0.308	-22.2%
13C12-2378-TCDD	1.081	0.76	19:38 23:38	21:38	1.0000	1.067	0.014	1.3%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.78		21:56	1.0139	1.000	0.000	0.0%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/11/98 TRIANGLE LABORATORIES OF RTP, INC.

Continuing Calibration for U980025

Analysis Date....: 01/07/98 Method.....: MIT2
Operator.....: MC Instrument..: U
Init Calibration.: UF51058 Std.Conc....: 10.00
ICal Date.....: 01/05/98

Analyte Summary Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		4:36 18:36			0.000	0.000	100.0%
Total MCDD	0.000		5:20 19:20			0.000	0.000	100.0%
Total DCDF	0.000		11:36 19:36			0.000	0.000	100.0%
Total DCDD	0.000		12:20 20:20			0.000	0.000	100.0%
Total TriCDF	0.000		15:36 22:36			0.000	0.000	100.0%
Total TriCDD	0.000		17:20 23:20			0.000	0.000	100.0%
1368-TCDF	1.171	0.75	21:20 26:33	21:28	0.8726	1.298	-0.127	-9.8%
2378-TCDF	1.197	0.75		24:38	1.0014	1.240	-0.043	-3.5%
TOTAL TCDF	1.197	0.75				1.240	-0.043	-3.5%
1368-TCDD	0.631	0.77	22:40 26:31	22:48	0.9000	0.715	-0.084	-11.8%
1379-TCDD	0.337	0.77		23:11	0.9151	0.360	-0.023	-6.5%
2378-TCDD	1.151	0.80		25:20	1.0000	1.240	-0.089	-7.2%
TOTAL TCDD	1.151	0.78				1.240	-0.089	-7.2%
12378-PeCDF	1.006	1.51	26:25 30:25	28:34	1.0006	1.051	-0.045	-4.3%
23478-PeCDF	1.025	1.52		29:16	1.0251	1.019	0.006	0.6%
TOTAL PeCDF	1.015	1.52				1.035	-0.020	-1.9%
12378-PeCDD	1.419	1.59	27:40 30:15	29:36	1.0000	1.333	0.086	6.4%
TOTAL PeCDD	1.419	1.59				1.333	0.086	6.4%
123478-HxCDF	1.048	1.25	30:55 33:38	32:03	0.9974	1.007	0.041	4.1%
123678-HxCDF	1.244	1.25		32:08	1.0000	1.253	-0.009	-0.7%
234678-HxCDF	1.056	1.26		32:37	1.0150	0.985	0.071	7.2%
123789-HxCDF	0.975	1.25		33:23	1.0389	0.870	0.105	12.1%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:05 01/11/98

TOTAL HxCDF	1.081	1.25				1.029	0.052	5.1%
123478-HxCDD	0.771	1.32	31:25 33:16	32:44	0.9980	0.765	0.006	0.7%
123678-HxCDD	0.943	1.17		32:49	1.0005	0.976	-0.033	-3.4%
123789-HxCDD	0.941	1.23		33:08	1.0102	0.941	0.000	0.0%
TOTAL HxCDD	0.885	1.23				0.894	-0.009	-1.0%
1234678-HpCDF	1.401	1.06	34:51 36:43	35:01	1.0005	1.410	-0.009	-0.6%
1234789-HpCDF	1.155	1.04		36:32	1.0438	1.096	0.059	5.4%
TOTAL HpCDF	1.278	1.05				1.253	0.025	2.0%
1234678-HpCDD	0.994	1.04	35:08 36:13	36:03	1.0005	0.995	-0.001	-0.1%
TOTAL HpCDD	0.994	1.04				0.995	-0.001	-0.1%
OCDF	1.307	0.90	35:36 43:36	39:49	1.0055	1.377	-0.070	-5.1%
OCDD	1.077	0.85	35:36 43:36	39:37	1.0004	1.108	-0.031	-2.8%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	1.047		23:20 27:20	25:20	1.0000	1.001	0.046	4.5%
13C12-PeCDF 234	1.002	1.51	24:33 32:33	29:15	1.0245	0.966	0.036	3.7%
13C12-HxCDF 478	0.883	0.50		32:02	0.9969	0.825	0.058	7.1%
13C12-HxCDF 234	0.979	0.50		32:37	1.0150	0.902	0.077	8.6%
13C12-HxCDF 789	0.782	0.50		33:23	1.0389	0.695	0.087	12.5%
13C12-HxCDD 478	0.751	1.21		32:43	0.9975	0.732	0.019	2.6%
13C12-HpCDF 789	0.845	0.43	33:00 39:00	36:32	1.0438	0.802	0.043	5.3%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.444	0.74	23:36 25:36	24:36	1.0000	1.467	-0.023	-1.5%
13C12-2378-TCDD	1.113	0.80	23:20 27:20	25:20	1.0000	1.118	-0.005	-0.4%
13C12-PeCDF 123	1.223	1.48	24:33 32:33	28:33	1.0000	1.142	0.081	7.1%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

13C12-PeCDD 123	0.592	1.46	25:36 33:36	29:36	1.0000	0.590	0.002	0.4%
13C12-HxCDF 678	1.212	0.50	28:08 36:08	32:08	1.0000	1.346	-0.134	-9.9%
13C12-HxCDD 678	0.972	1.21	31:48 33:48	32:48	1.0000	0.995	-0.023	-2.4%
13C12-HpCDF 678	0.871	0.43	33:00 39:00	35:00	1.0000	0.822	0.049	6.0%
13C12-HpCDD 678	0.776	1.02	35:02 37:02	36:02	1.0000	0.726	0.050	6.9%
13C12-OCDD	0.637	0.86	39:26 39:46	39:36	1.0000	0.545	0.092	16.9%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.81		25:09	0.9928	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.20		33:07	1.0097	1.000	0.000	0.0%

QC Front End Check: 1.0515

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 23 (6/93)

Date:	January 15, 1998
Client ID:	Eastern Research Group
P.O. Number:	
TLI Project Number:	44376

This report should only be reproduced in full. Any partial reproduction of this report requires permission from Triangle Laboratories, Inc.

Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in Method 23 (6/93). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results only from the Method 23 dioxin/furan analysis of nine M23 samples.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples.

Quality Control Remarks

This release of this particular set of Eastern Research Group analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Nineteen M23 trains were received from Eastern Research Group in good condition on December 17, 1997 at ambient temperature and stored in a refrigerator at 4 °C.

Sample Preparation Laboratory: Samples109-112, 113-116, 117-120/216/217/218, 121-124/219, 129-132, 133-136, and 137-140 were processed through additional cleanup due to a yellow residue present after concentration. A cleanup blank, identified as the CleanUp Blk, was prepared along with the samples.

Mass Spectrometry: None

Data Review: The analyses of samples 105-108, 109-112, 113-116, 121-124/219, 117-120/216/217/218, and 125-128 exhibit the presence of saturated analyte signals (signals outside the dynamic range of the instrument). The affected analytes are flagged "S" on the quantitation report. The results for these analytes are reported as greater than the upper calibration limit for that analyte, and should be considered a minimum estimate of the actual concentration present in the sample.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of EPA Method 23 (6/93). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Eastern Research Group have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy J. Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Released by

Stuart Jefferys
Report Preparation Chemist

The total number of pages in the data package is : 414 .

TRIANGLE LABS

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Accredidation pending. Certificate Number 0226-01. Accreditation for technical competence in Environmental Testing.(Including Waste Water, Sol/Haz Waste, Pulp/Paper, and Air Matrices) Parameters are AOX/TOX, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1998. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1998. Certificate number OS-00397. Dioxin in drinking water.

State of Arizona, Department of Health Services. Expires May 26, 1998. Certificate #AZ0423. Drinking Water for Dioxin, Dioxin in WW and S/H Waste.

State of Arkansas, Department of Pollution Control and Ecology. Expires February 18, 1998. Pulp/paper, soil, water, and Hazardous Waste for Dioxin/Furan; AOX/TOX, Volatiles, Semi-volatiles, and Metals.

State of California, Department of Health Services. Expires August 31, 1999. Certificate #1922. Selected Metals in Waste Water; Volatiles, Semi-volatiles, and Dioxin/furan in WW and Sol/Haz Waste. Dioxin in drinking water.

State of Connecticut, Department of Health Services. Expires September 30, 1999. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1998. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1998.Dioxin in DW. Drinking Water ID HRS# 87424. Metals, Extractable Organics (GC/MS), Pesticides/PCB's (GC) and Volatiles (GC/MS) in Environmental Samples. Environmental water ID HRS# E87411.

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-1411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Hawaii Department of Health. Expires March 1, 1998. Dioxin in drinking water. "Accepted" status for regulatory purposes .

Idaho Department of Health and Welfare. Expires December 31, 1998. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non portable Water and Solid and Hazardous Waste. Method 1613 for drinking water. ID #'s - Drinking water and/or pollution control - E-215. Solid or Hazardous Waste - E-1209.

Commonwealth of Kentucky, Department for Environmental Protection. Expires December 31, 1998. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30, 1998. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires June 3, 1998. Drinking water by Method 1613.

Mississippi State Department of Health. No expiration date. Dioxin in drinking water.

Montana Department of Health and Environmental Services. Expires December 31, 1998. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Expires June 30, 1998. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Recertification pending. Dioxin in drinking water.

New York State Department of Health. Expires April 1, 1998. ID #11026. Environmental Analyses of non-potable Water, Solid and Hazardous Waste. Method 1613 in DW.

State of North Carolina, Department of Environment Health and Natural Resources Expires August 31, 1999. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 2000. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1998. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Oklahoma Department of Environmental Quality. Expires August 31, 1998. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires April 1, 1998. Certificate number #99040001 (drinking water). Expires August 31, 1999. Certificate number #99040002 (other parameters). Dioxin/Furans, BNA, Volatiles, and PCBs/pesticides under Clean Water Act, 2,3,7,8-TCDD for Drinking Water, and Organic extractables for Solid and Hazardous Waste.

State of Tennessee. Department of Environment and Conservation. Expires February 5, 1999. ID #02992. Method 1613 Drinking water only.

U.S. Department of Agriculture Soil Permit. Expires September 30, 2001. Permit No. S-3790. Under the authority of the Federal Plant Pest Act, permission is granted to receive foreign soil samples for use in laboratory analysis.

U.S. Army Corps of Engineers. Recertification Pending. Validated to perform methods 8280 & 8290 for Lockbourne Landfill Site Investigation, Defense Distribution Depot Projects, and assorted projects for the USACE North Pacific Division Laboratory.

U.S. EPA Region V. Expires November 14, 1999. Dioxin in drinking water.

U.S. EPA Region VIII, for the State of Wyoming. Expires November 12, 1998. Dioxin in drinking water.

State of Utah, Department of Health. Expires December 31, 1998. Certificate Number E-166. Certification for the following parameters: Semi-Volatiles and Volatiles under RCRA; Volatiles under Clean Water Act; Dioxin/furans by Method 8280; Drinking water for Dioxin by Method 1613; Metals including Mercury and Microwave Digestion.

Commonwealth of Virginia, Department of General Services, Division of Consolidated Laboratory Services. Expires June 30, 1998. ID # 00341. Dioxin in drinking water.

State of Washington, Department of Ecology. Expires September 11, 1998. Lab Accreditation Number C067. Scope of Accreditation applies to water analyses for Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans, BNA Extr (Semivolatile) Organics and Purgeable (Volatile) Organics.

State of Washington, Department of Health. Expires April 30, 1998. Dioxin in drinking water. Lab I.D. 129

State of West Virginia, Department of Health. Expires December 31, 1998. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires August 31, 1998. Laboratory ID Number 999869530. Certification for the following categories of Organics: Purgeable, Base/Neutral, Acid, PCBs, and Dioxin. Expires November 14, 1999. Laboratory ID 999869530. Dioxin in drinking water.

PHARMACEUTICAL

Drug Enforcement Agency (DEA). Expires November 30, 1998. Registration number RT01195835. Controlled substance registration for schedules 1,2,3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1998. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires June 1998. ID #'s 001500 1053481. Annual registration of drug establishment. Annual registration of drug establishment.

OTHER

Clinical Laboratory Improvement Amendments (CLIA) Registration. Expires May 30, 1999. ID # 34D0705123. Department of Health & Human Services, Health Care Financing Administration.

U.S. EPA Large Quantity Hazardous Waste Generator. No expiration date. EPA ID #NCD982156879. Permit indicates that the laboratory is a large generator of hazardous waste.

North Carolina General License for Radiation Protection. No. expiration date. License No. 032-875-OG. The general license applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with specific requirements.

DOCUMENT CONTROL

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

GZ 12/18/97

Eastern Research Group COC

COPY

03

Culp Aluminum Alloys
CHAIN OF CUSTODY

RELINQUISHED BY = Marc Culble DATE = 12/17/97 RECEIVED BY: GE Engel DATE: 12/18/97
RELINQUISHED BY = _____ DATE = _____ RECEIVED BY: _____ DATE: _____

SAMPLE ID	FIELD ID						SAMPLE TYPE	PRESERVATIVE	COMMENTS	ANALYSIS
CAA-105	CAA-	120597	M23-	CDBOUT-	FILTER	1	METHOD 23, CDBOUT, RUN 1	FILTER		DIOXIN / FURAN
CAA-106	CAA-	120597	M23-	CDBOUT-	PR	1	METHOD 23, CDBOUT, RUN 1	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-107	CAA-	120597	M23-	CDBOUT-	PRT/CRT	1	METHOD 23, CDBOUT, RUN 1	TOLUENE RINSE		DIOXIN / FURAN
CAA-108	CAA-	120597	M23-	CDBOUT-	XAD	1	METHOD 23, CDBOUT, RUN 1	XAD TRAP		DIOXIN / FURAN
CAA-109	CAA-	120697	M23-	CDBOUT-	FILTER	2	METHOD 23, CDBOUT, RUN 2	FILTER		DIOXIN / FURAN
CAA-110	CAA-	120697	M23-	CDBOUT-	PR	2	METHOD 23, CDBOUT, RUN 2	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-111	CAA-	120697	M23-	CDBOUT-	PRT/CRT	2	METHOD 23, CDBOUT, RUN 2	TOLUENE RINSE		DIOXIN / FURAN
CAA-112	CAA-	120697	M23-	CDBOUT-	XAD	2	METHOD 23, CDBOUT, RUN 2	XAD TRAP		DIOXIN / FURAN
CAA-113	CAA-	120797	M23-	CDBOUT-	FILTER	3	METHOD 23, CDBOUT, RUN 3	FILTER		DIOXIN / FURAN
CAA-114	CAA-	120797	M23-	CDBOUT-	PR	3	METHOD 23, CDBOUT, RUN 3	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-115	CAA-	120797	M23-	CDBOUT-	PRT/CRT	3	METHOD 23, CDBOUT, RUN 3	TOLUENE RINSE		DIOXIN / FURAN
CAA-116	CAA-	120797	M23-	CDBOUT-	XAD	3	METHOD 23, CDBOUT, RUN 3	XAD TRAP		DIOXIN / FURAN
CAA-117	CAA-	120597	M23-	CDBIN-	FILTER	1	METHOD 23, CDBIN, RUN 1	FILTER		DIOXIN / FURAN
CAA-118	CAA-	120597	M23-	CDBIN-	PR	1	M23, CDBIN, RUN 1 (Bottle 1 of 2)	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-119	CAA-	120597	M23-	CDBIN-	PRT/CRT	1	METHOD 23, CDBIN, RUN 1	TOLUENE RINSE		DIOXIN / FURAN
CAA-120	CAA-	120597	M23-	CDBIN-	XAD	1	METHOD 23, CDBIN, RUN 1	XAD TRAP		DIOXIN / FURAN
CAA-121	CAA-	120697	M23-	CDBIN-	FILTER	2	METHOD 23, CDBIN, RUN 2	FILTER		DIOXIN / FURAN
CAA-122	CAA-	120697	M23-	CDBIN-	PR	2	METHOD 23, CDBIN, RUN 2	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-123	CAA-	120697	M23-	CDBIN-	PRT/CRT	2	METHOD 23, CDBIN, RUN 2	TOLUENE RINSE		DIOXIN / FURAN
CAA-124	CAA-	120697	M23-	CDBIN-	XAD	2	METHOD 23, CDBIN, RUN 2	XAD TRAP		DIOXIN / FURAN
CAA-125	CAA-	120797	M23-	CDBIN-	FILTER	3	METHOD 23, CDBIN, RUN 3	FILTER		DIOXIN / FURAN
CAA-126	CAA-	120797	M23-	CDBIN-	PR	3	METHOD 23, CDBIN, RUN 3	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-127	CAA-	120797	M23-	CDBIN-	PRT/CRT	3	METHOD 23, CDBIN, RUN 3	TOLUENE RINSE		DIOXIN / FURAN
CAA-128	CAA-	120797	M23-	CDBIN-	XAD	3	METHOD 23, CDBIN, RUN 3	XAD TRAP		DIOXIN / FURAN
CAA-129	CAA-	120897	M23-	RF1-OUT-	FILTER	1	METHOD 23, RF1-OUT, RUN 1	FILTER		DIOXIN / FURAN
CAA-130	CAA-	120897	M23-	RF1-OUT-	PR	1	METHOD 23, RF1-OUT, RUN 1	ACETONE/MECL RINSE		DIOXIN / FURAN
CAA-131	CAA-	120897	M23-	RF1-OUT-	PRT/CRT	1	METHOD 23, RF1-OUT, RUN 1	TOLUENE RINSE		DIOXIN / FURAN

CAA-132	CAA-	120897	M23-	RF1-OUT-	XAD	1	METHOD 23, RF1-OUT, RUN 1	XAD TRAP	DIOXIN / FURAN
CAA-133	CAA-	120997	M23-	RF1-OUT-	FILTER	2	METHOD 23, RF1-OUT, RUN 2	FILTER	DIOXIN / FURAN
CAA-134	CAA-	120997	M23-	RF1-OUT-	PR	2	METHOD 23, RF1-OUT, RUN 2	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-135	CAA-	120997	M23-	RF1-OUT-	PRT/CRT	2	METHOD 23, RF1-OUT, RUN 2	TOLUENE RINSE	DIOXIN / FURAN
CAA-136	CAA-	120997	M23-	RF1-OUT-	XAD	2	METHOD 23, RF1-OUT, RUN 2	XAD TRAP	DIOXIN / FURAN
CAA-137	CAA-	121197	M23-	RF1-OUT-	FILTER	3	METHOD 23, RF1-OUT, RUN 3	FILTER	DIOXIN / FURAN
CAA-138	CAA-	121197	M23-	RF1-OUT-	PR	3	METHOD 23, RF1-OUT, RUN 3	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-139	CAA-	121197	M23-	RF1-OUT-	PRT/CRT	3	METHOD 23, RF1-OUT, RUN 3	TOLUENE RINSE	DIOXIN / FURAN
CAA-140	CAA-	121197	M23-	RF1-OUT-	XAD	3	METHOD 23, RF1-OUT, RUN 3	XAD TRAP	DIOXIN / FURAN
CAA-141	CAA-	121197	M23-	RF2-OUT-	FILTER	4	METHOD 23, RF2-OUT, RUN 4	FILTER	DIOXIN / FURAN
CAA-142	CAA-	121197	M23-	RF2-OUT-	PR	4	METHOD 23, RF2-OUT, RUN 4	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-143	CAA-	121197	M23-	RF2-OUT-	PRT/CRT	4	METHOD 23, RF2-OUT, RUN 4	TOLUENE RINSE	DIOXIN / FURAN
CAA-144	CAA-	121197	M23-	RF2-OUT-	XAD	4	METHOD 23, RF2-OUT, RUN 4	XAD TRAP	DIOXIN / FURAN
CAA-153	CAA-	120997	M23-	RF1-IN-	FILTER	1	METHOD 23, RF1-IN, RUN 1	FILTER	DIOXIN / FURAN
CAA-154	CAA-	120997	M23-	RF1-IN-	PR	1	METHOD 23, RF1-IN, RUN 1	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-155	CAA-	120997	M23-	RF1-IN-	PRT/CRT	1	METHOD 23, RF1-IN, RUN 1	TOLUENE RINSE	DIOXIN / FURAN
CAA-156	CAA-	120897	M23-	RF1-IN-	XAD	1	METHOD 23, RF1-IN, RUN 1	XAD TRAP	DIOXIN / FURAN
CAA-157	CAA-	120997	M23-	RF1-IN-	FILTER	2	METHOD 23, RF1-IN, RUN 2	FILTER	DIOXIN / FURAN
CAA-158	CAA-	120997	M23-	RF1-IN-	PR	2	M 23, RF1-IN, RUN 2 (Bottle 1 of 2)	ACETONE/MECL RINSE(1 of 2)	DIOXIN / FURAN
CAA-159	CAA-	120997	M23-	RF1-IN-	PRT/CRT	2	METHOD 23, RF1-IN, RUN 2	TOLUENE RINSE	DIOXIN / FURAN
CAA-160	CAA-	120997	M23-	RF1-IN-	XAD	2	METHOD 23, RF1-IN, RUN 2	XAD TRAP	DIOXIN / FURAN
CAA-161	CAA-	121197	M23-	RF1-IN-	FILTER	3	METHOD 23, RF1-IN, RUN 3	FILTER	DIOXIN / FURAN
CAA-162	CAA-	121197	M23-	RF1-IN-	PR	3	METHOD 23, RF1-IN, RUN 3	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-163	CAA-	121197	M23-	RF1-IN-	PRT/CRT	3	METHOD 23, RF1-IN, RUN 3	TOLUENE RINSE	DIOXIN / FURAN
CAA-164	CAA-	121197	M23-	RF1-IN-	XAD	3	METHOD 23, RF1-IN, RUN 3	XAD TRAP	DIOXIN / FURAN
CAA-165	CAA-	121197	M23-	RF2-IN-	FILTER	4	METHOD 23, RF2-IN, RUN 4	FILTER	DIOXIN / FURAN
CAA-166	CAA-	120997	M23-	RF1-IN-	PR	2	M 23, RF1-IN, RUN 2(Bottle 2 of 2)	ACETONE/MECL RINSE(2 of 2)	DIOXIN / FURAN
CAA-167	CAA-	121197	M23-	RF2-IN-	PRT/CRT	4	METHOD 23, RF2-IN, RUN 4	TOLUENE RINSE	DIOXIN / FURAN
CAA-168	CAA-	121197	M23-	RF2-IN-	XAD	4	METHOD 23, RF2-IN, RUN 4	XAD TRAP	DIOXIN / FURAN
CAA-177	CAA-	120797	M23-	RBLK1	FILTER	1	METHOD 23, REAGENT BLANK	FILTER	DIOXIN / FURAN
CAA-178	CAA-	121597	M23-	RBLK2	PR	2	METHOD 23, REAGENT BLANK	ACETONE	DIOXIN / FURAN
CAA-179	CAA-	121597	M23-	RBLK2	PRT/CRT	2	METHOD 23, REAGENT BLANK	TOLUENE	DIOXIN / FURAN

CAA-180	CAA-	121597	M23-	RBLK2	XAD	2	METHOD 23, REAGENT BLANK	XAD TRAP	DIOXIN / FURAN
CAA-181	CAA-	120797	M23-	RBLK2	FILTER	2	METHOD 23, REAGENT BLANK	FILTER	DIOXIN / FURAN
CAA-182	CAA-	120397	M23-	RBLK1	PR	1	METHOD 23, REAGENT BLANK	ACETONE	DIOXIN / FURAN
CAA-183	CAA-	120397	M23-	RBLK1	PRT/CRT	1	METHOD 23, REAGENT BLANK	TOLUENE	DIOXIN / FURAN
CAA-184	CAA-	120997	M23-	RBLK1	XAD	1	METHOD 23, REAGENT BLANK	XAD TRAP	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKOUT	FILTER	1	GLASSWARE BLK CDBOUTLET	FILTER	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKOUT	PR	1	GLASSWARE BLK CDBOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKOUT	PRT/CRT	1	GLASSWARE BLK CDBOUTLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKOUT	set1	1	GLASSWARE BLK RFOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKIN	set1	1	GLASSWARE BLK RFINLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKIN	PR	1	GLASSWARE BLK CDBINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
[redacted]	CAA-	120397	M23-	GBLKIN	PRT/CRT	1	GLASSWARE BLK CDBINLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	120797	M23-	GBLKIN	set1	1	GLASSWARE BLK RFINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-193	CAA-	120697	M23-	FBLKCDBOUT	FILTER	1	M23 FIELD BLANK CDBOUTLET	FILTER	DIOXIN / FURAN
CAA-194	CAA-	120697	M23-	FBLKCDBOUT	PR	1	M23 FIELD BLANK CDBOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-195	CAA-	120697	M23-	FBLKCDBOUT	PRT/CRT	1	M23 FIELD BLANK CDBOUTLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-196	CAA-	120697	M23-	FBLKCDBOUT	XAD	1	M23 FIELD BLANK CDBOUTLET	XAD TRAP	DIOXIN / FURAN
[redacted]	CAA-	_____	M23-	FBLKCDBIN	FILTER	1	M23 FIELD BLANK CDBINLET	FILTER	DIOXIN / FURAN
CAA-198	CAA-	121097	M23-	FBLKRF1IN	PR	1	M23 FIELD BLANK RF1INLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-199	CAA-	121097	M23-	FBLKRF1IN	PRT/CRT	1	M23 FIELD BLANK RF1INLET	TOLUENE RINSE	DIOXIN / FURAN
[redacted]	CAA-	_____	M23-	FBLKCDBIN	XAD	1	M23 FIELD BLANK CDBINLET	XAD TRAP	DIOXIN / FURAN
CAA-201	CAA-	120997	M23-	FBLKRFOUT	FILTER	2	M23 FIELD BLANK RFOUTLET	FILTER	DIOXIN / FURAN
CAA-202	CAA-	120997	M23-	FBLKRFOUT	PR	2	M23 FIELD BLANK RFOUTLET	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-203	CAA-	120997	M23-	FBLKRFOUT	PRT/CRT	2	M23 FIELD BLANK RFOUTLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-204	CAA-	121097	M23-	FBLKRFOUT	XAD	2	M23 FIELD BLANK RFOUTLET	XAD TRAP	DIOXIN / FURAN
CAA-205	CAA-	121097	M23-	FBLKRFIN	FILTER	2	M23 FIELD BLANK RFINLET	FILTER	DIOXIN / FURAN
NP CAA-206	CAA-	_____	M23-	FBLKRFIN	PR	2	M23 FIELD BLANK RFINLET	ACETONE/MECL RINSE	DIOXIN / FURAN
NP CAA-207	CAA-	_____	M23-	FBLKRFIN	PRT/CRT	2	M23 FIELD BLANK RFINLET	TOLUENE RINSE	DIOXIN / FURAN
CAA-208	CAA-	121097	M23-	FBLKRFIN	XAD	2	M23 FIELD BLANK RFINLET	XAD TRAP	DIOXIN / FURAN
CAA-209	CAA-	120397	M23-	REAGENT BL	MeCL	1	M23 REAGENT BLANK 1 (MeCL)	REAGENT BLANK (MeCL)	DIOXIN / FURAN
CAA-216	CAA-	120597	M23-	CDBIN	FILTER	1	M23 CDBIN RUN 1 (FILTER 2 OF 3)	FILTER	DIOXIN / FURAN
CAA-217	CAA-	120597	M23-	CDBIN	FILTER	1	M23 CDBIN RUN 1 (FILTER 3 OF 3)	FILTER	DIOXIN / FURAN

CAA-218	CAA-	120597	M23-	CDBIN	PR	1	M23 CDBIN RUN 1 (PR 2 OF 2)	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-219	CAA-	120697	M23-	CDBIN	FILTER	2	M23 CDBIN RUN 2 (FILTER 2 OF 2)	FILTER	DIOXIN / FURAN
CAA-225	CAA-	121197	M23-	RF1 IN	PR	4	Method23 RF1 INLET RUN 4	ACETONE/MECL RINSE	DIOXIN / FURAN
CAA-226	CAA-	121597	M23-	REAGENT BL	MeCL	2	M23 REAGENT BLANK 2 (MeCL)	REAGENT BLANK (MeCL)	DIOXIN / FURAN

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44376 | Book 194
Chain of Custody : Present | Container...: Intact | Client: ELS01 - Eastern Laboratory Services, Inc.
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A | Date Received 12/17/97 | By | Page 59
Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED

TLI Number.. / mR/H:CPM.	Client Sample ID / Client COC ID	Matrix / Location	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-1A	CAA-105	FILTER	DB 12-28-97	DB 12-28-97							
	CAA-105	C02			12-29-97						
194-59-1B	CAA-106	ACE/MECL2 RINSE									
	CAA-106	C02		USED							
194-59-1C	CAA-107	TOLUENE									
	CAA-107	C02									
194-59-1D	CAA-108	XAD									
	CAA-108	C02									
194-59-2A	CAA-109	FILTER									
	CAA-109	C02									
194-59-2B	CAA-110	ACE/MECL2 RINSE									
	CAA-110	C02		USED							
194-59-2C	CAA-111	TOLUENE									
	CAA-111	C02				USED					
194-59-2D	CAA-112	XAD									
	CAA-112	C02									
194-59-3A	CAA-113	FILTER									
	CAA-113	C02									
194-59-3B	CAA-114	ACE/MECL2 RINSE									
	CAA-114	C02		USED							
194-59-3C	CAA-115	TOLUENE									
	CAA-115	C02									
194-59-3D	CAA-116	XAD									
	CAA-116	C02									
194-59-4A	CAA-117	FILTER									
	CAA-117	C02									
194-59-4B	CAA-118	ACE/MECL2 RINSE	DB 12-28-97	DB USED 12-28-97							
	CAA-118	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent
Chain of Custody : Present | Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376
Client: ELS01 - Eastern Laboratory Services, Inc.

Book 194 Page 59

Date Received 12/17/97 By

Ice Chest NO COOLANT

Carrier and Number HAND DELIVERED

TLI Number.. / mR/H:CPM.	Client Sample ID..... / Client COC ID.....*	Matrix / Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-4C	CAA-119	TOLUENE	LDB 12-29-97	LDB 12-29-97	12-29-97	12-29-97					
	CAA-119	C02									
194-59-4D	CAA-120	XAD									
	CAA-120	C02									
194-59-5A	CAA-121	FILTER									
	CAA-121	C02									
194-59-5B	CAA-122	ACE/MECL2 RINSE		USED							
	CAA-122	C02									
194-59-5C	CAA-123	TOLUENE									
	CAA-123	C02									
194-59-5D	CAA-124	XAD									
	CAA-124	C02									
194-59-6A	CAA-125	FILTER				USED					
	CAA-125	C02									
194-59-6B	CAA-126	ACE/MECL2 RINSE		USED							
	CAA-126	C02									
194-59-6C	CAA-127	TOLUENE									
	CAA-127	C02									
194-59-6D	CAA-128	XAD									
	CAA-128	C02									
194-59-7A	CAA-129	FILTER									
	CAA-129	C02									
194-59-7B	CAA-130	ACE/MECL2 RINSE		USED							
	CAA-130	C02									
194-59-7C	CAA-131	TOLUENE									
	CAA-131	C02									
194-59-7D	CAA-132	XAD	LDB 12-28-97	LDB 12-28-97							
	CAA-132	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

14

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent
Chain of Custody : Present | Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376
Client: ELS01 - Eastern Laboratory Services, Inc.

Book 194 Page 59

Date Received 12/17/97 | By

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID.....*	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-8A	CAA-133	FILTER	NB 12-28-97	NB 12-29-97	12-29-97	12-29-97					
	CAA-133	C02									
194-59-8B	CAA-134	ACE/MECL2 RINSE		USED							
	CAA-134	C02									
194-59-8C	CAA-135	TOLUENE									
	CAA-135	C02									
194-59-8D	CAA-136	XAD									
	CAA-136	C02									
194-59-9A	CAA-137	FILTER									
	CAA-137	C02									
194-59-9B	CAA-138	ACE/MECL2 RINSE		USED							
	CAA-138	C02									
194-59-9C	CAA-139	TOLUENE									
	CAA-139	C02									
194-59-9D	CAA-140	XAD									
	CAA-140	C02									
194-59-10A	CAA-141	FILTER									
	CAA-141	C02									
194-59-10B	CAA-142	ACE/MECL2 RINSE		USED							
	CAA-142	C02									
194-59-10C	CAA-143	TOLUENE									
	CAA-143	C02									
194-59-10D	CAA-144	XAD									
	CAA-144	C02									
194-59-11A	CAA-153	FILTER									
	CAA-153	C02									
194-59-11B	CAA-154	ACE/MECL2 RINSE	NB 12-28-97	NB USED 12-28-97							
	CAA-154	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- [illegible] IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent
Chain of Custody : Present | Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376
Client: ELS01 - Eastern Laboratory Services, Inc.

Book 194

Date Received 12/17/97 By [signature] Page

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED 59

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID.....	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-11C	CAA-155	TOLUENE	JOB 12-28-97	JOB 12-28-97	12-29-97	12-29-97					
	CAA-155	C02									
194-59-11D	CAA-156	XAD									
	CAA-156	C02									
194-59-12A	CAA-157	FILTER									
	CAA-157	C02									
194-59-12B	CAA-158	ACE/MECL2 RINSE 1OF2		USED							
	CAA-158	C02									
194-59-12C	CAA-166	ACE/MECL2 RINSE 2OF2									
	CAA-166	C02									
194-59-12D	CAA-159	TOLUENE									
	CAA-159	C02									
194-59-12E	CAA-160	XAD									
	CAA-160	C02									
194-59-13A	CAA-161	FILTER				USED					
	CAA-161	C02									
194-59-13B	CAA-162	ACE/MECL2 RINSE		USED							
	CAA-162	C02									
194-59-13C	CAA-163	TOLUENE									
	CAA-163	C02									
194-59-13D	CAA-164	XAD									
	CAA-164	C02									
194-59-14A	CAA-165	FILTER									
	CAA-165	C02									
194-59-14C	CAA-167	TOLUENE									
	CAA-167	C02									
194-59-14D	CAA-168	XAD	JOB 12-28-97	JOB 12-29-97							
	CAA-168	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent
Chain of Custody : Present | Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376
Client: ELS01 - Eastern Laboratory Services, Inc.

Date Received 12/17/97 | By

Ice Chest NO COOLANT | Carrier and Number HAND DELIVERED

Book 194 Page 59

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID.....	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-15A	CAA-177	FILTER	NJB 12-24-97	RJB 12-24-97							
	CAA-177	C02			12-29-97	12-29-97					
194-59-15B	CAA-178	ACETONE		USED							
	CAA-178	C02									
194-59-15C	CAA-179	TOLUENE									
	CAA-179	C02									
194-59-15D	CAA-180	XAD									
	CAA-180	C02									
194-59-16A	CAA-181	FILTER									
	CAA-181	C02									
194-59-16B	CAA-182	ACETONE		USED							
	CAA-182	C02									
194-59-16C	CAA-183	TOLUENE									
	CAA-183	C02				USED					
194-59-16D	CAA-184	XAD									
	CAA-184	C02									
194-59-17A	CAA-193	FILTER									
	CAA-193	C02									
194-59-17B	CAA-194	ACE/MECL2 RINSE		USED							
	CAA-194	C02									
194-59-17C	CAA-195	TOLUENE									
	CAA-195	C02									
194-59-17D	CAA-196	XAD									
	CAA-196	C02									
194-59-18A	CAA-198	ACE/MECL2 RINSE		USED							
	CAA-198	C02									
194-59-18B	CAA-199	TOLUENE	NJB 12-24-97	RJB 12-24-97							
	CAA-199	C02									

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- IN RECORD/CHAIN OF CUSTODY

Custody Sea. : Absent — Sample Seals: Absent
Chain of Custody : Present — Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44376
Client: ELS01 - Eastern Laboratory Services, Inc.

Book 194 Page 59

Date Received 12/17/97 By

Ice Chest NO COOLANT — Carrier and Number HAND DELIVERED

TLI Number.. ....Client Sample ID..... .....Matrix mR/H:CPM. .....Client COC ID.....* Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-59-19A CAA-201 FILTER CAA-201 C02	DB 12-29-97	DB 12-29-97							
194-59-19B CAA-202 ACE/MECL2 RINSE CAA-202 C02		USED	12-29-97	12-29-97					
194-59-19C CAA-203 TOLUENE CAA-203 C02									
194-59-19D CAA-204 XAD CAA-204 C02									
194-59-20A CAA-205 FILTER CAA-205 C02									
194-59-20B CAA-208 XAD CAA-208 C02									
194-59-21 CAA-209 REAGENT BLANK MECL2 CAA-209 C02		USED							
194-59-22A CAA-216 FILTER CAA-216 C02				USED					
194-59-22B CAA-217 FILTER CAA-217 C02									
194-59-22C CAA-218 ACE/MECL2 RINSE CAA-218 C02		USED							
194-59-23 CAA-219 FILTER CAA-218 C02									
194-59-24 CAA-225 ACE/MECL2 RINSE CAA-225 C02		USED							
194-59-25 CAA-226 REAGENT BLANK MECL2 CAA-226 C02	DB 12-29-97	DB 12-29-97 USED							

Receiving Remarks: NO COOLANT. CAA-206 AND CAA207 ARE NOT PRESENT.

Archive Remarks:

TRIANGLE LABORATORIES, INC.
SAMPLE TRACKING AND PROJECT MANAGEMENT FORM

----------ADMINISTRATIVE INFORMATION----------

TLI Proj#: 44376-	Samples: 9	TurnAround.: 21 Day(s)
Prod Code: D23061	Matrix.: M23Train	Hold Time..: 30 Day(s)
DetectLim: .05 ng	Type...: A	Start Date.: 12/17/97
	Recvd..: 12/17/97	Ship By....: 01/05/98
		DWL Due Dt.: 12/24/97

Analyte List.: Method 23:T-O (Toluene combined

Method.....: Method 23:Tetra-Octa (Tol Combined)		
Client Proj..: Culp Aluminum Alloys		
Client.....: Eastern Research Group (ERG02)		
P.O. No.....: Signed OA	Collect Dt/Tm:	SeeCOC
Contact.....: Jim McGaughey	Phone.....:	919/461-1209
Proj. Mgr....: Amy J. Boehm	Fax.....:	919/461-1579
	Sample Origin:	NC

----------SPECIAL INSTRUCTIONS / QA REQUIREMENTS----------

Prespike Standard: USD-C, USD-S
Prespike Amount..: 4.0ng

----------REPORTING REQUIREMENTS----------

Reporting Format: Report Option II

See MILES for Instructions/Communications.

Completed by: _____ DATE: _____

Reviewed by: _____ DATE: 12/21/97 (PMGT0197)

Received in 4th 12/24/97

PROJECT COMMUNICATION TRACKING FORM page ___ of ___

TLI Project Number: 44376

Use this form to record all exchanges of information between production units as well as personnel handling this project. Decisions, corrective actions and recommendations must also appear on this tracking document.

Date -	Name	Comment / Decision / Resolution / Action / Observation					
12-9-97	[illegible]		PREP PROJECT	FILTER	XAD	GLASSWOOL	
		(1)	04047	BROWN	WHITE	WHITE	RINSES = YELLOW TINT
		(2)		LT BRO	White	White	AFTER CONCENTRATION
		(3)		LT BROWN	WHITE	WHITE	
		(4)		(3) BROWN	WHITE	WHITE/BROWN	
		(5)		(2) BROWN	WHITE	WHITE	
		(6)		BROWN	WHITE	WHITE	
		(7)		BLACK	YELLOW/WHITE	YELLOW	
		(8)		BROWN-GRAY	YELLOW/WHITE	YELLOW	
		(9)		Lt. GRAY	WHITE	WHITE	
		(BLANK)	V	N/A	WHITE	N/A	
		(LCS)	N/A	N/A	WHITE	N/A	
		(LCSD)	N/A	N/A	WHITE	N/A	
		USED 32.26 GRAMS XAD SPIKED LOT# P-1078 FOR THE LCS AND LCSD					
		+ALL RINSES HAD TO BE FILTERED THROUGH THE THIMBLE PRIOR TO CONCENTRATION, DUE TO AMOUNT OF PARTICULATE					
		Triangle Laboratories, Inc. TLI PROJECT# 04047 DATE 11/25/97 TLI BLANK SPIKE 4.0ng USF-C USF-S SPIKER [illegible] PREPARER G.L. EASTERN RES. GRP.					BLANK (4), (5), (6) - HAD EXCESSIVE PARTICULATE WITH THE FILTER IN THE PETRI DISH - BROWN FINE POWDER

Project 44376

001

ELS01-Eastern Laboratory Services, Inc.
CAA-106
Project: 44376
194-59-1B acetone/ MeCl2

002

ELS01-Eastern Laboratory Services, Inc.
CAA-110
Project: 44376
194-59-2B
acetone/MeCl2

003

ELS01-Eastern Laboratory Services, Inc.
CAA-114
Project: 44376
194-59-3B
acetone/MeCl2

004

ELS01-Eastern Laboratory Services, Inc.
CAA-118
Project: 44376
194-59-4B
acetone/MeCl2

004

ELS01-Eastern Laboratory Services, Inc.
CAA-218
Project: 4
194-59-2

005

ELS01-Eastern Laboratory Services, Inc.
CAA-122
Project: 44376
194-59-5B
acetone/MeCl2

006

ELS01-Eastern Laboratory Services, Inc.
CAA-126
Project: 44376
194-59-6B acetone/MeCl2

007

ELS01-Eastern Laboratory Services, Inc.
CAA-130
Project: 44376
194-59-7B acetone/MeCl2

008

ELS01-Eastern Laboratory Services, Inc.
CAA-134
Project: 44376
194-59-8B acetone/MeCl2

009

ELS01-Eastern Laboratory Services, Inc.
CAA-138
Project: 44376
194-59-9B
acetone/ MeCl2

TRIANGLE LABORATORIES, INC.
Wet Lab MM5/PUF Observations
Project: 44376

Sample #	crd	TLI_Number..	Customer.Sample.Id.....	F. No	XAD Color.....	Filter Color.....	Glass Wool Color.....	PUF Color.....	Odor.....	Air Q.No.	Entered.By.....	Date....	Time....	S
000		TLI Blank	TLI XAD BLANK	0	WHITE	NA	NA	NA	NA	04047	HILLKT	12/29	13:45	P
001		194-59-1A-1D	105-108	1	WHITE	BROWN	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
002		194-59-2A-D	109-112	1	WHITE	LT BROWN	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
003		194-59-3A-3D	113-116	1	WHITE	LT BROWN	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
004		194-59-4A-D/	117-120/216/217/218	3	WHITE	BROWN	WHITEBROWN	NA	NONE	04047	HILLKT	12/29	13:45	P
005		194-59-5A-D/	121-124/219	2	WHITE	BROWN	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
006		194-59-6A-6D	125-128	1	WHITE	BROWN	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
007		194-59-7A-7D	129-132	1	YELOWWHITE	BLACK	YELLOW	NA	NONE	04047	HILLKT	12/29	13:45	P
008		194-59-8A-8D	133-136	1	YELOWWHITE	BROWN GRAY	YELLOW	NA	NONE	04047	HILLKT	12/29	13:45	P
009		194-59-9A-9D	137-140	1	WHITE	LT GRAY	WHITE	NA	NONE	04047	HILLKT	12/29	13:45	P
020		TLI LCS	TLI LCS	0	LOT P-1078	NA	NA	NA	NA	NA	HILLKT	12/29	13:45	P
021		TLI LCSD	TLI LCSD	0	LOT P-1078	NA	NA	NA	NA	NA	HILLKT	12/29	13:45	P

*** End of Report ***

TRIANGLE LABORATORIES, INC. PAGE 1 OF 2

Dioxin Sample Preparation Tracking & Management Form

[redacted]ect: 44376 Client: Eastern Research Group (ERG02)

Solvent(s)/Acid(s): HEXANE / _____ / _____ Method: Method 23:Tetra-Octa (Tol Combined) Matrix: MS TRAIN

Lot Numbers: 97605D / _____ / _____ Extraction Date: 12/29/97

IS Spike: 40 µl conc: 0.1000 ng/µl

SS Spike: ____ µl conc: ____ ng/µl

MS Spike: 0 µl conc: 0.0000 ng/µl

LCS Spike: 0 µl conc: 0.0000 ng/µl

OPR Spike: 20 µl conc: 0.01 ng/µl

S#.crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	GROSS WEIGHT Before	GROSS WEIGHT After	SAMPLE SIZE g / ml	KH	KH	JSM		Chemist
					5675C	5670C	5895A		Spike #
					MF-1	USF-MX	USF-A		* ID
					12/01/97	12/01/98	11/6/98	__/__/__	* Expir
				TRAIN	12/29/97	12/29/97	12/30/97	__/__/__	* Date
					12 : 44	12 : 44	9 : 30 AM	__ : __	* Time
					0.1 ng/µl	0.01 ng/µl	0.1 ng/µl	____ng/µl	* Conc.
					40 µl	40 µl	40 µl	____ µl	* Vol. EXTRACT ½
000	TLI Blank / TLI XAD BLANK	NA	NA	1	TLW		SBM JA.		Any Left yes/no
001	194-59-1A-1D / 105-108	NA	NA	1	TLW		SBM JA.		Any Left yes/no
002	194-59-2A-D / 109-112	NA	NA	1	TLW		SBM JA.		Any Left yes/no
003	194-59-3A-3D / 113-116	NA	NA	1	TLW		SBM JA.		Any Left yes/no
004	194-59-4A-D/22A B/CCB 12-29-97 / 117-120/216/217/218	NA	NA	1	TLW		SBM JA.		Any Left yes/no
005	194-59-5A-D/23 / 121-124/219	NA	NA	1	TLW		SBM JA.		Any Left yes/no
006	194-59-6A-6D / 125-128	NA	NA	1	TLW		SBM JA.		Any Left yes/no
007	194-59-7A-7D / 129-132	NA	NA	1	TLW		SBM JA.		Any Left yes/no
008	194-59-8A-8D / 133-136	NA	NA	1	TLW		SBM JA.		Any Left yes/no
009	194-59-9A-9D / 137-140	NA	NA	1	TLW		SBM JA.		Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal.

Comments: _____

Initials: RW/KH Date: 12/29/97

Initials of both SPIKER AND OBSERVER must be entered. XXXXX = Gross Weight not provided for WATER Samples.

REV 05/27/97 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Dioxin Sample Preparation Tracking & Management Form

Project: 44376 Client: Eastern Research Group (ERG02)

Solvent(s)/Acid(s): Toluene / _____ / _____ Method: Method 23:Tetra-Octa (Tol Combined) Matrix: M25TO

Lot Numbers: 976050 / _____ / _____ Extraction Date: 12/29/97

IS Spike: 40 µl conc: 0.1000 ng/µl

SS Spike: ___ µl conc: __.____ ng/µl

MS Spike: 0 µl conc: 0.0000 ng/µl

LCS Spike: 0 µl conc: 0.0000 ng/µl

OPR Spike: 20 µl conc: 0.01 ng/µl

S#.crd	TLI SAMPLE ID / CLIENT SAMPLE ID	GROSS WEIGHT Before	GROSS WEIGHT After	SAMPLE SIZE g / ml				
					SBm	KH	SBm	Chemist
					5675C	5670C	5595A	Spike #
					USF I	USF MX	USF-A	* ID
					12/04/98	12/21/98	11/6/98	* Expir
					12/29/97	12/29/97	12/30/97	* Date
					12:44	12:44	9:31AM	* Time
					0.1 ng/µl	0.01 ng/µl	0.1 ng/µl	* Conc.
					40 µl	40 µl	40 µl	* Vol.
020	TLI LCS TLI LCS LOT P-10773	NA	NA	1	TLW	TLW	SBm	Any Left yes/no
021	TLI LCSD TLI LCSD	NA	NA	1	TLW	TLW	SBm	Any Left yes/no
022	[redacted]				5675D 12/31/97 USF-I 0.1 ng/ml 20µl CAT/JSY		5595A 12/31/97 USF-A 0.1 ng/ml 20µl CAT/JSY	Any Left yes/no
								Any Left yes/no
								Any Left yes/no
								Any Left yes/no
								Any Left yes/no
								Any Left yes/no
								Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal.

Comments: * Cleanup blank was created during slicc (after division) 50%/50% CPH 12/31/97

Initials: TLW/KH Date: 12/29/97

Initials of both SPIKER AND OBSERVER must be entered. XXXXX = Gross Weight not provided for WATER Samples.

REV 05/27/97 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 44376

Ext S#.crd and TLI Number	1	2	4A	6	3	4B	7	8	9	10	
020 TLI LCS	KH	SBR JL.	JL.	JL.	JL.	JL.	JL	7SH 12/31/97	SBR 1/2/98		
021 TLI LCSD	12-29-97 ↓	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97 ↓	↓ 12/31/97	↓		
44376-022 [redacted] Clean-up										CPH 1/3/98	CPH 1/5/98

Enter the procedure number below into the box at the top of each column to signify the step performed.
Initial and date each sample for each numbered procedure performed.

#	PROCEDURE	SOP.#	.v..	DETAILS (circle)
(1)	EXTRACTION	111	3	Time On 17 : 00 (122992 KH) Time Off 05 : 00 (123097)
				Soxhlet / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
(2)	SPIKE AFTER EXT'N			
(3)	ADD TRIDECANE			Lot# TRI-1-3-46
(4)	ROTOVAP	DSP124	V.8	40mL / 10mL / Dryness
(5)	COMBINE			
(6)	DIV./LIP. DETERM.	111	8	20%/80% 50%/50% 5mL/20mL Other_____
(7)	SOLVENT EXCHANGE			Iso-Octane Lot# 977164 Heptane Lot#_____
(8)	CLEANUP	double column #12	5	DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
(9)	TRANSFER	272	2	(EE) 1/5/98
10)	ADDITIONAL CLEANUP			Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / DSP260(10g)
	FINAL TRANSFER	272	2	

Comments: Toluene Lot # 976050 used to rinse flask for division
J. Davis 12/30/97

Rev 11/25/97 (PSTMF 4)

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 44376

Transfer From: DWLH5 To: DMS5

	Initials..	Date.....	Time...
Released by:	SK	1/5/98	12:01
Accepted by:	MS	1/5/98	16:41

MILES.ID.....		TLI_No.....	Cust.Id.....
44376-	-000	TLI Blank	TLI XAD BLANK
44376-	-001	194-59-1A-1D	105-108
44376-	-002	194-59-2A-D	109-112
44376-	-003	194-59-3A-3D	113-116
44376-	-004	194-59-4A-D/	117-120/216/217/218
44376-	-005	194-59-5A-D/	121-124/219
44376-	-006	194-59-6A-6D	125-128
44376-	-007	194-59-7A-7D	129-132
44376-	-008	194-59-8A-8D	133-136
44376-	-009	194-59-9A-9D	137-140
44376-	-020	TLI LCS	TLI LCS
44376-	-021	TLI LCSD	TLI LCSD
44376-	-022	TLI Clean-Up	CleanUp Blk

XfrCOC (Rev 11/01/94)

Additional comments or instructions:

TRIANGLE LABORATORIES, INC.

thod: Method 23:Tetra-Octa (Tol Combined) HR GC/HRMS ANALYSIS

quired Detection Limit: .05 ng PROJECT: 44376

S#.crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	GC/MS FILENAME COLUMN: DB5	CONFIRM	CONFIRM FILENAME COLUMN: DB225	USF-RS VOLUME SOLN ID	USF-RS INIT. DATE	ANALYSIS COMMENTS
	SAMPLE INFORMATION	1ST COLUMN		2ND COLUMN	RS Conc 20 µl @ 100.0 PG/µl		
000	TLI Blank / TLI XAD BLANK	T980152 ~~F980116~~	Y	x980083	20 µl 5768C	1/15/98 MAS	
001	194-59-1A-1D / 105-108	T980153 ~~F980117~~	Y	x980084			
002	194-59-2A-D / 109-112	T980154 ~~F980118~~	Y	x980085			
003	194-59-3A-3D / 113-116	T980155 ~~F980119~~	Y	x980086			
004	194-59-4A-D/22A/B 9S 12/26/97 / 117-120/216/217/218	T980156 ~~F980114~~	Y	87			
	194-59-5A-D/23 9S 12/26/97 / 121-124/219	T980157 ~~F980115~~	Y	88			
006	194-59-6A-6D / 125-128	T980158 ~~F980116~~	Y	P980166 6 IR	1-10-98		
007	194-59-7A-7D / 129-132	T980159	Y	P980167			
008	194-59-8A-8D / 133-136	T980163	Y	P980168			
009	194-59-9A-9D / 137-140	T980164	Y	P980169			
020	TLI LCS / TLI LCS	T980165	ND				
021	TLI LCSD / TLI LCSD	T980166					

Comments: 22 TLI Cleanup T980167 Y/CS ND ~2.5 S/N 120 µl .5768C MAS 1/15/98 Type: A

GS 1/10/98

Spike File: SPX23704

Amt of Extract: 50%

REV 03/07/95 (PSTMF 6)

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70T	DB-5	7/48503	702	20ul	US	NDBSUS
				Signature		1/6/98 Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
T980144	1/6/98	07:57	44501	195-85-2A	3	9712 - 8284 -002	AUTO	2.4 E6	KB 1/6/98	
T980145	↓	08:40	↓	195-85-3A	4	9712 - 8284 - 003	↓	2.1 E6	↓	
T980146	↓	09:28	↓	195-85-4A	5	9712 - 8284 - 004	↓	23 E6	↓	
T980147	16-98	10:16	—	5033	—	RTCHK	RTCHK	20%	BR 1.6.98	Good
148	↓	11:45	—	5758A	—	42/8290 ConCal 5.0	5758A 1ppm	1.9 E6	↓	ΔSdL Good
~~149~~			~~44348r1~~	~~TLI Blank~~	0	TLI XAD Blank	Auto		BR 1.6.98	
50			↓	194-31-5A/B2	5	110 LNAM-C2-M23-5				
51			44376	TLI Blank	0	TLI XAD Blank				wrong entry
52				194-59-1A-1D	1	105 - 108				BR 1.6.98
53				-2A-D	2	109 - 112				
54				-3A-3D	3	113 - 116				
55				-4A-D/23/B	4	117 - 120/216/217/218				
56				-5A-D/23	5	121 - 124/219				

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

Triang[redacted]boratories, Inc.
[redacted]un Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70T	DB5	7442523	T02	2.0µl	US	NDB5US
						1.6.98
				Signature		Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
57	1.6.98		44376	194-59-6A-6D	6	125-128	Auto		RR 1.6-98	
58				-7A-7D		129-132				
59				-8A-8D		133-136				Inj vol auto
60				-9A-9D		137-140				RR 1.6-98
61				TLI LCS		TLI LCS				
62				TLI LCSD		TLI LCSD				
63										
T980 149	1.6.98	13:06	—	5768C	—	RS100	Auto	2.2 EG	RR 1.6-98	
150		13:52	44348R1	TLI Blank	0	TLI XAD Blank		3.0 EG		
151		14:37		194-31-5A/B	5	HOLNAM-CZ-M23-5		2.9 EG		
152		15:23	44376	TLI Blank	0	TLI XAD Blank		3.2 EG		
153		16:09		194-59-1A-D	1	105-108		3.6 EG	CV 1/6/98	
154		16:54		194-59-2A-D	2	109-112		3.9 EG		

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70T	DB5	7442523	T02	2.0µl	UN	NDBSU5

HR — Signature
1-8-98 — Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
T980155	1-6-98	17:40	44376	194-5A-3A-3D	3	113-116	Auto	3.4 E6	RS 1-6-98	
156		18:26		-4A-D/22A/B	4	117-120/216/217/218		3.7 E6		
157		19:12		-5AD/23	5	121-124/219		3.5 E6		
158		17:58		-6D	6	125-128		3.3 E6		
159		20:43		-7D	7	129-132		3.7 E6		
~~160~~				-8D	8	133-136				Reset clock to accurate per RMS CRV 1/6/98
161				-9D	9	~~137-140~~				
162				TLI LCS	20	TLI LCS				Rod not acquired CLJ 1/6/98
~~163~~				~~TLI LCSD~~	~~21~~	~~TLI LCSD~~				
T980160	1-6-98	21:36	—	5758A	—	8290/M23/MIT Cal Cals	5758A Ions		CRV 1-6-98	
T980161	1-6-98	22:22	—	5733	—	CtChk	CtChk	20%	CRV 1-6-98	
T980162	1/6/98	23:34	—		—	RS-100	Auto	1.5 E6	CRV 1/6-98	
T980163	1/7/98	0:15	44376	194-5A-3A-3D	8	133-136	Auto	1.6 E6	CRV 1/6/98	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 23145
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70T	DB5	7442523	T02	2.0 µl	US	NDB5US

MS RE 1/8/98

Signature: Mara Stern Date: 1/8/98

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
T980164	1/7/98	1:07	44376	194-59-9A-9D	9	137-140	Auto	3.1 A6	CRV MS 1/7/98	
T980165	↓	1:57	↓	TLI LCS	20	TLI LCS	↓	3.3 E6	1/7/98	
T980166		2:37	44376	TLI LCSD	21	TLI LCSD		3.5 E6		
T980167		3:23	44376	Clean Up	22	Clean Up Blank		3.1 A6		
T980168		4:12	44390A	TLI Blank	0	TLI Sludge Blank		3.0 E6		
T980169		4:57	44390A	194-737	1	LA090-SL-127-SL15		3.0 E6		
T980170		5:43	44390A	TLI LCS	2	TLI LCS		3.0 E6		
T980171		6:29	44390A	TLI LCSD	3	TLI LCSD		8.7 EV		
T980172	↓	7:15	44397	TLI Blank	0	TLI Blank		2.4 E6		
T980173	1/7/98	8:00	44397	194-80-1	1	MS163-00-127-SA265-1	Auto	3.3 E6	CRV 1/7/98	
T980174			↓	TLI LCS	2	TLI LCS			↓	Not Shot
T980175			44397	TLI LCSD	3	TLI LCSD	Auto		CRV 1/7/98 MS DE 1/8/98	(Problem on clock)
T980176	1/7/98	9:07	—	5758A	—	8240 ConCal 5.0	5758A ICAL#3	4.1 E6	DLW 1/7/98	good f/B

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 9:36
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
30X	DB225	57294	TTI	2.0µl	x-conf-TT	x-conf-TT

Signature: Brent J Clem
Date: 1/7/98

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
X980080	1/7/98	11:23	—	5787	—	TETRA Concal 5.0	5787 5.0	1.2 E7	BJC 1/7/98	Good F+B BJC 1/7/98
X980081	1/7/98	12:43	—	5633	—	RTCHK	RTCHK	16%	BJC 1/7/98	Δ5+L BJC Good 1/7/98
X980082	1/7/98	13:56	—	5768C	—	RS-100	XD271	2.1 E7	BJC 1/7/98	Clean BJC 1/7/98
X980083	1/7/98	16:35	44376	TLI Blank ~~44376~~	0	TLI Blank	XD271	7.9 EC	KAS 1/7/98	
X980084	1/7/98	17:21	44376	105-108	1	105-108	XD271	2.1 E7	KAS 1/7/98	
X980085	1/7/98	18:07	44376	194-57-2A-D ~~109-112~~	2	109-112	XD271	2.4 E7	KAS 1/7/98	
X980086	1/7/98	19:00	44376	A4-5T-3A-D	3	113-116	XD271	2.9 E7	KAS 1/7/98	
X980087	1/7/98	19:47	44376 44377	194-57-D/22 HP	4	117-120/216/217/218	XD271	3.6 EC	KAS 1/7/98	
X980088	1/7/98	20:48	44376 44377	A4-5A-D123	5	121-124/219	XD271	2.3 E7	KAS 1/7/98	
X980089	1/7/98	21:45	44182C-1	TLI Water Blank	0	TLI Blank	XD271	1.6 E7	KAS 1/7/98	
~~X980090~~	~~1/7/98~~			195-02-1	1	M5163 wo-1203-WTP1AR	XD271		KAS 1/7/98	Did Not Shoot
X980089Q0	1/7/98	23:13	—	7787	—	Tetra Tech 5	Tetra Tech	1.5 E7	KAS 1/7/98	Δ5+L Good F+B KAS 1/7/98
X980091	1/8/98	00:01	—	5633	—	RTCHK	RTCHK	16%	KAS 1/7/98	No Good

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 11:23 PM (23:23)
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

Triangle Laboratories,

Run I

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	
70P	DB225	7.7293T	T1	2.0 µl	DB225	DB225
				Signature		Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P980154	1/9/98	16:10	44435A	195-19-2I	7	EPA Audit Sample #33	P1068	9.2 E5	MS 1/9/98	M23
P980155	1/9/98	17:53	44489B	195-73-2	2	SWD-2-19-97-G	P1068	5.4 E5	MS 1/9/98	1613
P980156	1/9/98	18:39	44489B	195-73-3	4	1W11-06-97-6	P1068	7.3 E5	MS 1/9/98	1613
P980157	1/9/98	19:26	44462	195-46-1	2	PQ397-D	P1068	7.8 E5	MS 1/9/98	1613
P980158	1/9/98	20:22	44489C	195-73-4	2	12-24-97-0004	P1068	6.1 E5	MS 1/9/98	1613
P980159	1/9/98	21:10	44513	195-97-H	2	002	P1068	5.3 E5	MS 1/9/98	1613
P980160	1/9/98	21:56	44238rl	193-19-19	5	DT239	P1068	5.1 E5	MS 1/9/98	8250
P980161	1/9/98	22:42	44182C	RI Blank	0	TLI Water Blank	P1068	1.3 E6	MS 1/9/98	8296
P980162	1/9/98	23:31	—	5787	—	Tetra Conc 5.0	Tetra 5.0 5787	6.9 E5	MS 1/9/98	
P980163	1/10/98	09:21	—	5633	—	RTCHK	RTCHK	17%	WB 1-10-98	Acct WL 1-10-98
P980164	1/10/98	10:21	—	5787	—	TETRA CONC 5.0	TETRA 5.0	1.0 E6	WB 1-10-98	Good WB 1-10-98
P980165	1/10/98	11:44 10:22	—	5768C	—	RS-100	P1068	1.0 E6	WB 1-10-98	CLEAN WB 1-10-98
P980166	1/10/98	12:29	44376	194-59-64D	6	125-128	1	2.4 E6	WB 1-10-98	

* Transcribed from chromatographic data

** Dated Initials required

ConCal Due: 0.39 MS 1/9/98

ConCal Due: _____

srvr1/qe/forms/hrrunlog.doc (02/05/97)

Triangle Laboratories, Inc.

Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70P	DB 225	J5F2935	TT1	2 0 µl	DB 225	DB 225
				WR Signature	1-10-98 Date	

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P980167	1-10-98	13:36	44376	194-59-TB0	7	129-132	P1101	L1 EC	WR 1/10/98	
P980168	1-10-98	14:26	1	194-59-SA-D	8	133-136	1	L1 EC	1	
P980169	1-10-98	15:13	44376	194-59-TA-D	9	137-140	1	3.2 EC	WR 1-10-98	
P980170	1-10-98		44416	TH BLANK	0	TH H23 BLANK	1		WR 1-10-98	

* Transcribed from chromatographic data

** Dated Initials required

ConCal Due: 22:22

ConCal Due: _____

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 44376

Ext S#.crd and TLI Number	1	2	4A	6	3	4B	7	8	9	10	11
000 TLI Blank	TLW	JL.	JL.	JL.	JL.	JL.	JL	JSY 12/31/97 RA	SFM 1/2/98		
001 194-59-1A-1D	12-29-97										
002 194-59-2A-D											
003 194-59-3A-3D											
004 194-59-4A-D/22 A/B SS 12/26/97											
005 194-59-5A-D/23 SS 12/26/97										CPH/JSY 1/3/98	CPH 1/5/98
006 194-59-6A-6D											
007 194-59-7A-7D										CPH/JSY 1/3/98	CPH 1/5/98
008 194-59-8A-8D											
009 194-59-9A-9D	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97	12/31/97		1/7/98	1/5/98

Enter the procedure number below into the box at the top of each column to signify the step performed.
Initial and date each sample for each numbered procedure performed.

#.. ....PROCEDURE....	SOP.#.	.v..	DETAILS (circle) (12/29/97 X) (12/30/97)
(1) EXTRACTION	111	2	Time On 13 : 00 Time Off 05 : 00
			Soxhlet / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
(2) SPIKE AFTER EXT'N			
(3) ADD TRIDECANE			Lot# TRI-3-46
(4) ROTOVAP	DSP124	v.8	40mL / 10mL / Dryness B
(5) COMBINE			
(6) DIV./LIP. DETERM.	111	8	20%/80% 50%/50% 5mL/20mL Other_____
(7) SOLVENT EXCHANGE			Iso-Octane Lot# 977164 Heptane Lot#_____
(8) CLEANUP (DC #7,8,9)		5	DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
(9) TRANSFER	272	2	FE SK 1/5/98
(10) ADDITIONAL CLEANUP			Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / DSP260(10g)
( ) FINAL TRANSFER	272	2	

Comments: Toluene Lot # 976050 used to rinse flask for division. J. Lewis 12/30/97

Rev 11/25/97 (PSTMF 4)

SAMPLE DATA

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

TRIANGLE LABORATORIES OF RTP, INC.
Sample Result Summary for Project 44376
Method 8290X Full Screen Analyses (DB-5)
01/15/98

Data File	T980152	T980154		T980155		T980156	
Sample ID	TLI XAD BLANK	109-112 ✓		113-116 ✓		117-120/216/217 /218	
Units	ng	ng		ng		ng	
Extraction Date	12/29/97	12/29/97		12/29/97		12/29/97	
Analysis Date	01/06/98	01/06/98		01/06/98		01/06/98	
Instrument	T	T		T		T	
Matrix	XAD	M23TRAIN		M23TRAIN		M23TRAIN	
Extraction Type	Soxhlet	Soxhlet		Soxhlet		Soxhlet	
Analytes							
2378-TCDD	(0.007)	1.4		1.5		2.0	
12378-PeCDD	(0.01)	6.6		7.6		16.4	
123478-HxCDD	(0.01)	1.7	Q	2.4	Q	18.8	
123678-HxCDD	(0.01)	2.7		3.3		40.2	E
123789-HxCDD	(0.01)	3.8	QPR	5.0	QPR	65.1	PRE
1234678-HpCDD	(0.01)	2.6		2.5		~~131~~ >20	SE
OCDD	{0.02} J	1.5		1.3		108	E
2378-TCDF	0.03	~~(66.0)~~ >4	SE	~~(72.7)~~ >4	SE	~~(103)~~ >4	SE
12378-PeCDF	(0.01)	32.7		37.5		44.3	E
23478-PeCDF	(0.01)	43.9	E	50.9	E	~~(80.4)~~ >20	QSE
123478-HxCDF	(0.01)	29.0		35.3		~~96.8~~ >20	QSE
123678-HxCDF	(0.009)	12.8		16.4		~~59.2~~ >20	SE
234678-HxCDF	(0.01)	8.3		9.5		~~82.3~~ >20	SE
123789-HxCDF	(0.01)	0.37	PR	0.46	PR	5.0	PR
1234678-HpCDF	(0.01)	7.2		8.2		~~126~~ >20	SE
1234789-HpCDF	(0.02)	0.78		0.76		31.6	Q
OCDF	(0.01)	0.82		0.73		49.6	
TOTAL TCDD	(0.007)	84.5	E	99.1	E	~~307~~ >4	SE
TOTAL PeCDD	(0.01)	164	E	193	E	~~147~~ >20	SQE
TOTAL HxCDD	(0.01)	55.8	Q	75.8	Q	~~470~~ >20	SQE
TOTAL HpCDD	(0.01)	5.5		5.4		~~249~~ >20	SE
TOTAL TCDF	0.04	~~486~~ >4	SQE	~~554~~ >4	SQE	~~343~~ >4	SQE
TOTAL PeCDF	(0.01)	~~399~~ >20	SE	~~456~~ >20	SE	~~308~~ >20	SQE
TOTAL HxCDF	(0.01)	141	E	178	E	~~498~~ >20	SQE
TOTAL HpCDF	(0.01)	9.2	X	10.3	X	~~237~~ >20	SEQ
Other Standards Percent Recovery Summary (% Rec)							
37Cl-TCDD	84.4	88.6		88.5		90.8	
13C12-PeCDF 234	98.4	101		97.4		115	Q
13C12-HxCDF 478	85.3	102		96.6		83.4	Q
13C12-HxCDD 478	102	137	Q	142	Q	116	
13C12-HpCDF 789	95.5	99.4		96.9		126	Q
Other Standards Percent Recovery Summary (% Rec)							
13C12-HxCDF 789	71.7	79.7		83.2		95.8	
13C12-HxCDF 234	69.8	73.6		76.1		82.6	
Internal Standards Percent Recovery Summary (% Rec)							
13C12-2378-TCDF	61.4	54.5	Q	57.1	Q	52.7	Q
13C12-2378-TCDD	65.5	70.6		75.7		79.6	
13C12-PeCDF 123	62.3	71.1		74.1		72.7	Q
13C12-PeCDD 123	81.5	85.8		90.5		106	

changes by JG 1/15/98

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Data File	T980152	T980154	T980155	T980156
Sample ID	TLI XAD BLANK	109-112	113-116	117-120/216/217 /218
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/06/98
Instrument	T	T	T	T
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Internal Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 678	64.8	69.7	75.5	86.7
13C12-HxCDD 678	81.9	63.3 Q	62.8 Q	89.7
13C12-HpCDF 678	64.5	77.0	81.2	85.4 Q
13C12-HpCDD 678	100	103	109	119
13C12-OCDD	114	112	114	134

Change by 1/15/98

Data File	T980157		T980158		T980159		T980163	
Sample ID	121-124/219		125-128		129-132		133-136	
Units	ng		ng		ng		ng	
Extraction Date	12/29/97		12/29/97		12/29/97		12/29/97	
Analysis Date	01/06/98		01/06/98		01/06/98		01/07/98	
Instrument	T		T		T		T	
Matrix	M23TRAIN		M23TRAIN		M23TRAIN		M23TRAIN	
Extraction Type	Soxhlet		Soxhlet		Soxhlet		Soxhlet	
Analytes								
2378-TCDD	2.5		0.86		0.04		0.02	
12378-PeCDD	14.3		6.3		0.18		0.05	J
123478-HxCDD	17.0	Q	6.0		0.17		0.02	J
123678-HxCDD	31.2		12.0		0.27		0.04	J
123789-HxCDD	55.3	QPRE	18.8	PR	0.41	PR	0.06	PRJ
1234678-HpCDD	98.8	E	40.3	E	1.2		0.16	
OCDD	79.8		34.5		1.8		0.27	B
2378-TCDF	~~(132)~~ 74	SE	~~94.7~~ 74	SE	4.1		2.9	
12378-PeCDF	~~(67.5)~~ 720	SE	19.1		0.91		0.29	
23478-PeCDF	~~(97.5)~~ 720	QSE	35.3		1.6		0.40	
123478-HxCDF	~~127~~ 720	QSE	64.6	E	3.5		0.54	
123678-HxCDF	~~79.2~~ 720	SE	27.0		1.3		0.21	
234678-HxCDF	~~107~~ 720	SE	34.4		1.7		0.23	
123789-HxCDF	7.2	PR	1.5	PR	0.09	PRJ	0.01	PRJ
1234678-HpCDF	~~152~~ 720	SE	77.6	E	4.8		0.68	
1234789-HpCDF	39.9	Q	9.1		0.87		0.11	
OCDF	52.4		17.4		4.0		1.2	
TOTAL TCDD	~~359~~ 74	SE	280	E	4.5		4.4	
TOTAL PeCDD	~~190~~ 720	SQE	260	E	2.9		0.83	
TOTAL HxCDD	~~452~~ 720	SQE	210	E	4.2		0.72	
TOTAL HpCDD	196	E	83.1	E	2.3		0.32	
TOTAL TCDF	~~376~~ 74	SQE	~~655~~ 74	SQE	26.1	Q	24.0	Q
TOTAL PeCDF	~~50.6~~ 720	SQE	~~438~~ 720	SE	21.4		7.3	
TOTAL HxCDF	~~671~~ 720	SQE	270	E	13.9	Q	2.3	
TOTAL HpCDF	~~299~~ 720	SEQ	116	E	8.1		1.1	
Other Standards Percent Recovery Summary (% Rec)								
37Cl-TCDD	96.3		92.1		82.6		86.1	
13C12-PeCDF 234	103	Q	86.8		94.1		94.5	
13C12-HxCDF 478	84.2	Q	103		99.9		97.5	
13C12-HxCDD 478	129	Q	107		104		95.8	
13C12-HpCDF 789	127	Q	99.5		107		114	
Other Standards Percent Recovery Summary (% Rec)								
13C12-HxCDF 789	85.3		49.9		82.5		82.1	
13C12-HxCDF 234	71.4		45.8		76.1		76.0	
Internal Standards Percent Recovery Summary (% Rec)								
13C12-2378-TCDF	45.0	Q	41.3	Q	66.7		72.2	
13C12-2378-TCDD	62.2		47.3		67.7		73.4	
13C12-PeCDF 123	67.0	Q	52.0		76.8		81.6	
13C12-PeCDD 123	86.7		56.6		90.6		90.0	

changes by SJ 1/15/98

Data File	T980157	T980158	T980159	T980163
Sample ID	121-124/219	125-128	129-132	133-136
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/06/98	01/06/98	01/06/98	01/07/98
Instrument	T	T	T	T
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Internal Standards	Percent Recovery Summary (% Rec)			
13C12-HxCDF 678	71.9	47.7	75.8	77.1
13C12-HxCDD 678	69.3 Q	53.5	90.7	95.5
13C12-HpCDF 678	74.2 Q	55.5	86.6	84.2
13C12-HpCDD 678	112	69.5	112	110
13C12-OCDD	119	72.3	109	112

change by
SF 1/15/98

Data File	T980164		T980153		T980167
Sample ID	137-140		105-108		CleanUp Blk
Units	ng		ng		ng
Extraction Date	12/29/97		12/29/97		12/31/97
Analysis Date	01/07/98		01/06/98		01/07/98
Instrument	T		T		T
Matrix	M23TRAIN		M23TRAIN		XAD
Extraction Type	Soxhlet		Soxhlet		Soxhlet
Analytes					
2378-TCDD	0.04		2.5		(0.003)
12378-PeCDD	0.06	J	10.2		(0.004)
123478-HxCDD	0.02	J	3.4	Q	(0.005)
123678-HxCDD	0.05	J	4.5		(0.004)
123789-HxCDD	0.06	PRJ	7.4	QPR	(0.004)
1234678-HpCDD	0.12		5.4		(0.004)
OCDD	0.16	JB	3.2		{0.02} JB
2378-TCDF	4.2		~~(98.2)~~	SE	(0.003)
12378-PeCDF	0.38		52.7	E	(0.003)
23478-PeCDF	0.51		67.9	E	(0.003)
123478-HxCDF	0.56		42.9	E	(0.003)
123678-HxCDF	0.21		19.7		(0.003)
234678-HxCDF	0.22		12.3		(0.004)
123789-HxCDF	0.01	PRJ	0.68	PR	(0.004)
1234678-HpCDF	0.41		11.7		(0.003)
1234789-HpCDF	{0.05}	J	1.4		(0.004)
OCDF	0.24		1.7		(0.004)
TOTAL TCDD	7.4		175	E	(0.003)
TOTAL PeCDD	1.1		~~169~~	SE	(0.004)
TOTAL HxCDD	0.86		103	QE	(0.004)
TOTAL HpCDD	0.26		11.0		(0.004)
TOTAL TCDF	34.0	Q	~~1070~~	SQE	(0.003)
TOTAL PeCDF	9.9		~~541~~	SE	(0.003)
TOTAL HxCDF	2.4		~~209~~	SE	(0.003)
TOTAL HpCDF	0.60		15.3	X	(0.003)
Other Standards Percent Recovery Summary (% Rec)					
37Cl-TCDD	84.8		92.6		
13C12-PeCDF 234	97.4		99.6		
13C12-HxCDF 478	100		94.4		
13C12-HxCDD 478	101		158	Q	
13C12-HpCDF 789	108		101		
Other Standards Percent Recovery Summary (% Rec)					
13C12-HxCDF 789	80.0		76.1		74.5
13C12-HxCDF 234	71.7		70.4		69.2
Internal Standards Percent Recovery Summary (% Rec)					
13C12-2378-TCDF	64.1		43.0	Q	52.5
13C12-2378-TCDD	64.3		68.7		54.6
13C12-PeCDF 123	75.6		73.6		68.7
13C12-PeCDD 123	90.9		83.3		76.8

changed by 1/15/98

Data File	T980164	T980153	T980167
Sample ID	137-140	105-108	CleanUp Blk
Units	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/31/97
Analysis Date	01/07/98	01/06/98	01/07/98
Instrument	T	T	T
Matrix	M23TRAIN	M23TRAIN	XAD
Extraction Type	Soxhlet	Soxhlet	Soxhlet
Internal Standards Percent Recovery Summary (% Rec)			
13C12-HxCDF 678	71.9	71.7	63.7
13C12-HxCDD 678	90.2	54.3 Q	80.6
13C12-HpCDF 678	83.4	77.0	84.9
13C12-HpCDD 678	109	102	108
13C12-OCDD	108	110	115

{Estimated Maximum Possible Concentration}, (Detection Limit).

Sample Result Summary for Project 44376 01/11/98

Method 23X (DB-225)

Data File	X980083	X980084	X980085	X980086
Sample ID	TLI XAD BLANK	105-108	109-112	113-116
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/07/98	01/07/98	01/07/98	01/07/98
Instrument	X	X	X	X
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDF	0.02	49.4 E	26.2 E	28.4 E
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	73.0	86.7	83.4	92.8

Data File	X980087	X980088	P980166	P980167
Sample ID	117-120/216/217/218	121-124/219	125-128	129-132
Units	ng	ng	ng	ng
Extraction Date	12/29/97	12/29/97	12/29/97	12/29/97
Analysis Date	01/07/98	01/07/98	01/10/98	01/10/98
Instrument	X	X	P	P
Matrix	M23TRAIN	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDF	62.8 E	85.0 E	17.5	0.83
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	109	78.8	51.0	74.3

Data File	P980168	P980169
Sample ID	133-136	137-140
Units	ng	ng
Extraction Date	12/29/97	12/29/97
Analysis Date	01/10/98	01/10/98
Instrument	P	P
Matrix	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet
Analytes		
2378-TCDF	0.57	0.69
Internal Standards Percent Recovery Summary (% Rec)		
13C12-2378-TCDF	73.9	72.5

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A **'B'** flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag is used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample.

An **'E'** flag is used to indicate a concentration based on an analyte to internal standard ratio which exceeds the range of the calibration curve. Values which are outside the calibration curve are estimates only.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'J'** flag is used to indicate a concentration based on an analyte to internal standard ratio which is below the calibration curve. Values which are outside the calibration curve are estimates only.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

An **'S'** flag indicates that the response of a specific PCDD/PCDF isomer has exceeded the normal dynamic range of the mass spectrometer detection system. The corresponding signal is saturated and the reported analyte concentration is a 'minimum estimate'. When the 'S' qualifier is used in the reporting of 'totals', there is saturation of one (not necessarily from a specific isomer) or more saturated signals for a given class of

compounds. Results for saturated analytes are reported as greater than the upper calibration limit.

A **'U'** flag is used to indicate that a specific isomer cannot be resolved from a large, co-eluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A **'V'** flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

An **'X'** flag is used to indicate that a polychlorodibenzofuran (PCDF) peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is at least ten percent of the total PCDF peak intensity. Total PCDF values are flagged 'X' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are either reported as "estimated maximum possible concentration (EMPC) values without regard to the isotopic abundance ratio, or are included in the detection limit value depending on the analytical method

Method 23 Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$Amt_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$Amt_{(\sigma)}$	=	amount of a given analyte, expressed in nanograms (ng) or picograms (pg).
A_σ	=	integrated current for the characteristic ions of the analyte
A_β	=	integrated current of the characteristic ions of the corresponding internal standard
Q_β	=	amount of internal standard added to the sample before extraction
$RRF_{(\sigma)}$	=	mean analyte relative response factor from the initial calibration
W	=	sample weight or volume (W = 1.0 for Method 23 samples)

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$	=	estimated detection limit for a target analyte, expressed in ng or pg
2.5	=	minimum response required for a GC signal
F	=	an empirical number that approximates the area to height ratio for a GC signal. (F = 3.7 for all dioxin/furan analyses)
H	=	height of the noise
A_β	=	integrated current of the characteristic ions of the corresponding internal standard
Q_β	=	amount of internal standard added to the sample before extraction
$RRF_{(\sigma)}$	=	mean analyte relative response factor from the initial calibration
W	=	sample weight or volume

Eastern Research Group

TLI Project: 44376 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: TLI XAD BLANK — Analysis File: T980152

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPX23704
TLI ID:	TLI Blank	Date Extracted:	12/29/97	ICal:	TF5D177
		Date Analyzed:	01/06/98	ConCal:	T980148
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T980152	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BR	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.007				
1,2,3,7,8-PeCDD	ND	0.01				
1,2,3,4,7,8-HxCDD	ND	0.01				
1,2,3,6,7,8-HxCDD	ND	0.01				
1,2,3,7,8,9-HxCDD	ND	0.01				
1,2,3,4,6,7,8-HpCDD	ND	0.01				
1,2,3,4,6,7,8,9-OCDD	EMPC		0.02			J
2,3,7,8-TCDF	0.03			0.81	25:40	
1,2,3,7,8-PeCDF	ND	0.01				
2,3,4,7,8-PeCDF	ND	0.01				
1,2,3,4,7,8-HxCDF	ND	0.01				
1,2,3,6,7,8-HxCDF	ND	0.009				
2,3,4,6,7,8-HxCDF	ND	0.01				
1,2,3,7,8,9-HxCDF	ND	0.01				
1,2,3,4,6,7,8-HpCDF	ND	0.01				
1,2,3,4,7,8,9-HpCDF	ND	0.02				
1,2,3,4,6,7,8,9-OCDF	ND	0.01				

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	ND		0.007		
Total PeCDD	ND		0.01		
Total HxCDD	ND		0.01		
Total HpCDD	ND		0.01		
Total TCDF	0.04	2			
Total PeCDF	ND		0.01		
Total HxCDF	ND		0.01		
Total HpCDF	ND		0.01		

X237_PSR v2.01, LARS 6.10.08i

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 11:48 01/10/98

TLI Project: 44376 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: TLI XAD BLANK — Analysis File: T980152

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.5	61.4	40%-130%	0.75	25:39	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.6	65.5	40%-130%	0.80	26:21	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.5	62.3	40%-130%	1.52	29:30	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.3	81.5	40%-130%	1.49	30:30	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.6	64.8	40%-130%	0.53	32:59	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.3	81.9	40%-130%	1.17	33:41	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.6	64.5	25%-130%	0.45	35:59	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.0	100	25%-130%	1.01	37:04	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.1	114	25%-130%	0.91	40:55	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	84.4	70%-140%		26:21	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.9	98.4	70%-140%	1.52	30:10	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.4	85.3	70%-140%	0.49	32:53	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4.1	102	70%-140%	1.19	33:36	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.8	95.5	70%-140%	0.45	37:36	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.9	71.7	40%-130%	0.51	34:18	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.8	69.8	40%-130%	0.52	33:29	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:10	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.15	34:01	—

Data Reviewer: 6 44 01/10/98

X237_PSR v2.01, LARS 6.10.08i

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 11:48 01/10/98

Initial ....Date...

Data Review By: CSH 1/10/98 Calculated Noise Area: 2.19

The Total Area for each peak with an ion abundance ratio outside
atio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980152B.dbf
01/10/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.878-1.073			
304-306	DC	NL		0:00	RO	1.61	1.72			0.000			
	DC	SN		23:50	RO	1.62	2.64			0.929			
				25:17		0.88	12.98	6.07	6.91	0.986			J
				25:40		0.81	21.81	9.75	12.06	1.001	2378-TCDF	AN	
	DC	SN		26:32	RO	3.67	0.87			1.034			
	DC	SN		27:12	RO	2.61	2.41			1.060			
304-306			2	Peaks			34.79						
13C12-TCDF						0.65-0.89				0.961-1.039			
316-318	DC	NL		0:00	RO	1.67	1.27			0.000			
				24:40		0.82	113.56	51.30	62.26	0.962			
				24:57	RO	0.90	12.39	6.28	7.00	0.973			
				25:15	RO	0.93	27.67	14.61	15.63	0.984			
				25:39		0.75	2,533.83	1,086.30	1,447.53	1.000	13C12-2378-TCDF	ISO	
				26:06	RO	1.04	17.12	10.06	9.67	1.018			
	DC	SN		26:20	RO	0.25	1.45			1.027			
316-318			5	Peaks			2,704.57						

---------- Above: TCDF / TCDD Follows ----------

CDD						0.65-0.89				0.903-1.045			
320-322	DC	NL		0:00		0.72	0.86			0.000			
	DC	SN		23:52	RO	1.05	2.99			0.906			
	DC	SN		24:11	RO	1.33	1.45			0.918			
	DC	SN		24:16	RO	0.51	1.61			0.921			
	DC	SN		24:37	RO	0.17	0.28			0.934			
	DC	SN		24:57	RO	0.28	0.85			0.947			
	DC	SN		25:26	RO	2.08	0.42			0.965			
	DC	SN		25:40	RO	1.11	3.29			0.974			
	DC	SN		26:02	RO	1.20	0.27			0.988			
	DC	SN		26:21		0.85	3.55			1.000	2378-TCDD	AN	
	DC	SN		26:36	RO	4.37	0.53			1.009			
	DC	SN		26:49	RO	1.75	0.57			1.018			
	DC	SN		27:02	RO	3.83	0.51			1.026			
	DC	SN		27:09	RO	0.17	0.78			1.030			
	DC	WH		27:43	RO	0.40	1.20			1.052			
320-322			0	Peaks			0.00						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			0.74			0.000			
	DC	SN		24:28			1.26			0.929			
				25:01			11.57	11.57		0.949			
	DC	SN		25:19			0.92			0.961			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				26:21			1,853.93	1,853.93		1.000	37Cl-TCDD	SUR1	
				26:43			5.05	5.05		1.014			
	DC	SN		27:05			1.05			1.028			
	DC	SN		27:38			2.11			1.049			
	DC	SN		27:47			1.50			1.054			
328			3	Peaks			1,870.55						
13C12-TCDD				0.65-0.89						0.924-1.076			
332-334	DC	NL		0:00	RO	2.11	3.42			0.000			
	DC	WL		24:02	RO	4.55	1.96			0.912			
	DC	SN		24:48	RO	1.46	3.12			0.941			
				25:14	RO	1.00	18.62	10.56	10.52	0.958			
				26:10		0.81	2,670.14	1,191.70	1,478.44	0.993	13C12-1234-TCDD	RS1	
				26:21		0.80	2,183.11	967.35	1,215.76	1.000	13C12-2378-TCDD	IS1	
				26:40	RO	0.98	38.07	21.10	21.51	1.012			
332-334			4	Peaks			4,909.94						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF				1.32-1.78						0.931-1.063			
340-342	DC	NL		0:00	RO	0.76	0.72			0.000			
	DC	SN		27:32		1.65	3.79			0.933			
	DC	SN		27:53	RO	0.43	0.64			0.945			
	DC	SN		28:04	RO	0.15	0.16			0.951			
	DC	SN		28:08	RO	0.58	0.43			0.954			
	DC	SN		28:14	RO	0.42	0.43			0.957			
	DC	SN		28:31	RO	0.86	1.68			0.967			
	DC	SN		28:41	RO	1.93	4.18			0.972			
	DC	SN		28:52	RO	2.57	1.30			0.979			
	DC	SN		29:01	RO	1.00	1.79			0.984			
	DC	SN		29:08	RO	1.10	2.96			0.988			
	DC	SN		29:14		1.44	2.73			0.991			
	DC	SN		29:23		1.42	1.55			0.996			
	DC	SN		29:31	RO	0.95	1.25			1.001	12378-PeCDF	AN	
	DC	SN		29:47	RO	0.63	1.09			1.010			
	DC	SN		29:54	RO	0.68	0.63			1.014			
	DC	SN		30:12	RO	0.98	1.69			1.024	23478-PeCDF	AN	
	DC	SN		30:23	RO	0.93	1.74			1.030			
	DC	SN		30:30		1.65	1.75			1.034			
	DC	SN		30:35	RO	0.55	0.67			1.037			
	DC	SN		30:46	RO	5.63	0.61			1.043			
	DC	SN		31:09		1.42	2.66			1.056			
340-342			0	Peaks			0.00						
13C12-PeCDF				1.32-1.78						0.864-1.136			
352-354	DC	NL		0:00		1.47	0.47			0.000			
	DC	SN		27:24	RO	3.75	1.45			0.929			
				28:38		1.59	165.40	101.52	63.88	0.971			
				29:07	RO	0.92	4.77	2.90	3.14	0.987			
				29:30		1.52	2,129.72	1,284.48	845.24	1.000	13C12-PeCDF 123	IS2	
				29:47		1.45	26.73	15.81	10.92	1.010			
				30:10		1.52	2,079.94	1,253.83	826.11	1.023	13C12-PeCDF 234	SUR2	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:31	RO	1.21	5.73	3.48	2.88	1.034			
	DC	SN		30:51	RO	0.89	1.18			1.046			
	DC	SN		30:58	RO	1.20	1.17			1.050			
	DC	SN		31:08	RO	1.30	5.07			1.055			
	DC	SN		31:35		1.65	1.59			1.071			
352-354			6	Peaks			4,412.29						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.939-1.022			
356-358	DC	NL		0:00	RO	2.33	1.10			0.000			
	DC	SN		28:45	RO	0.25	1.46			0.943			
	DC	SN		29:38		1.66	2.55			0.972			
	DC	SN		29:47		1.70	3.08			0.977			
	DC	SN		29:56	RO	0.65	2.01			0.981			
	DC	SN		30:04	RO	2.06	1.63			0.986			
	DC	WH		31:16	RO	2.50	1.28			1.025			
	DC	WH		31:32	RO	0.13	0.38			1.034			
356-358			0	Peaks			0.00						
13C12-PeCDD						1.32-1.78				0.869-1.131			
368-370	DC	NL		0:00		1.42	0.46			0.000			
				29:28	RO	0.87	5.59	3.40	3.93	0.966			
				29:35		1.61	8.77	5.41	3.36	0.970			
	DC	SN		29:54	RO	2.75	1.53			0.980			
	DC	SN		30:13	RO	0.97	1.63			0.991			
				30:30		1.49	1,545.28	925.89	619.39	1.000	13C12-PeCDD 123	IS3	
				30:38		1.41	169.38	99.19	70.19	1.004			
	DC	SN		30:49	RO	2.36	3.72			1.010			
	DC	SN		31:00	RO	0.24	1.23			1.016			
	DC	SN		31:08	RO	1.06	1.20			1.021			
368-370			4	Peaks			1,729.02						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.964-1.049			
374-376	DC	NL		0:00	RO	1.61	1.48			0.000			
	DC	SN		32:01		1.13	0.83			0.971			
	DC	SN		32:12	RO	0.48	0.58			0.976			
	DC	SN		32:16	RO	2.21	0.63			0.978			
	DC	SN		32:27	RO	0.81	0.79			0.984			
	DC	SN		32:38	RO	10.31	0.29			0.989			
	DC	SN		32:53	RO	1.46	2.08			0.997			
	DC	SN		32:56	RO	3.66	0.99			0.998	123478-HxCDF	AN	
	DC	SN		33:07	RO	3.00	0.47			1.004			
	DC	SN		33:11	RO	0.54	0.78			1.006			
	DC	SN		33:29	RO	1.56	2.02			1.015	234678-HxCDF	AN	
	DC	SN		33:38	RO	0.32	0.74			1.020			
	DC	SN		33:47	RO	1.02	0.99			1.024			
374-376			0	Peaks			0.00						

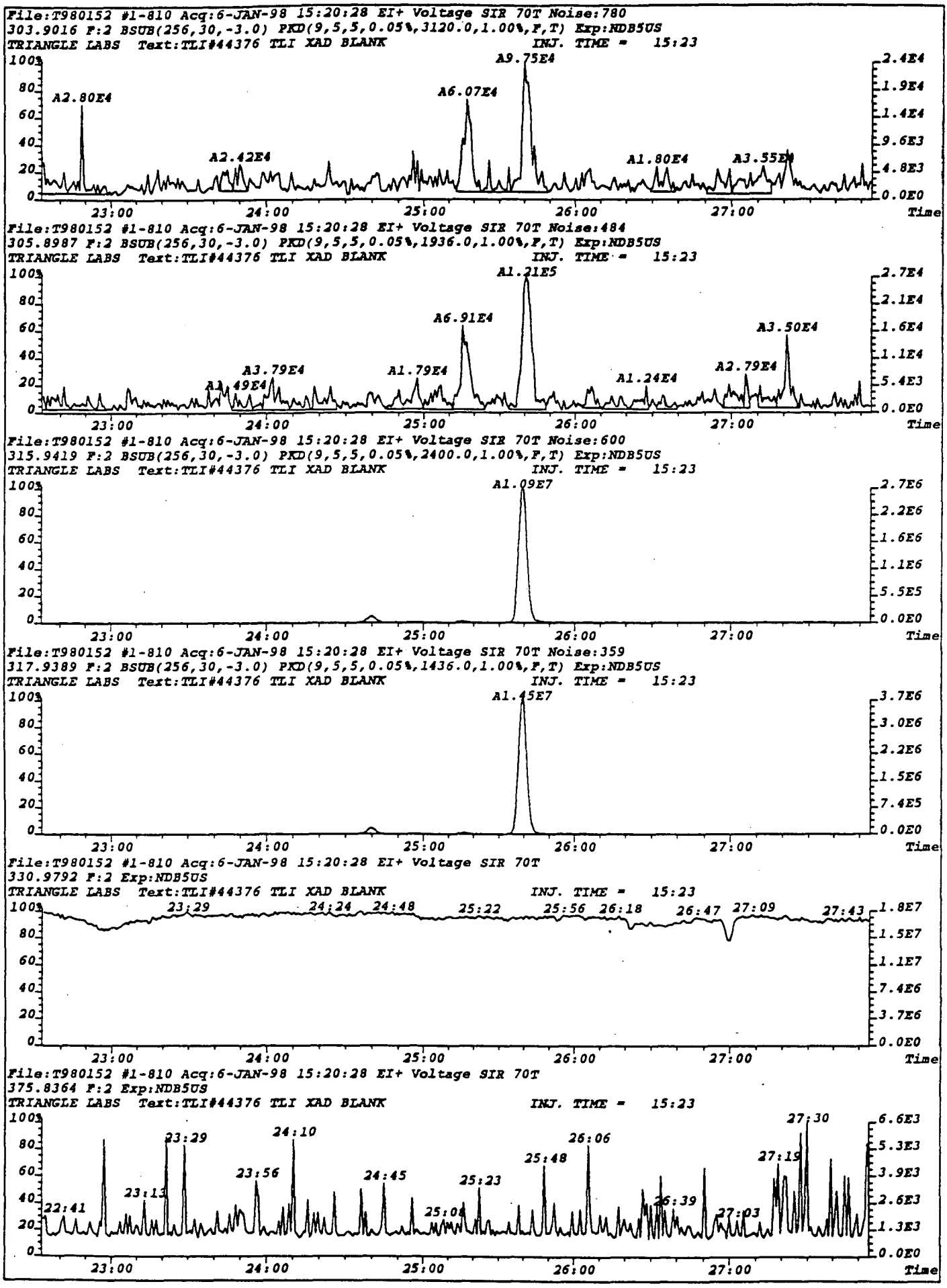
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HxCDF						0.43-0.59				0.879-1.121			
384-386	DC	NL		0:00		0.59	4.44			0.000			
				31:56		0.57	22.42	8.16	14.26	0.968			
				32:03		0.53	42.13	14.68	27.45	0.972			
	DC	SN		32:12		0.54	1.03			0.976			
				32:53		0.49	1,489.87	491.62	998.25	0.997	13C12-HxCDF	478	SUR3
				32:59		0.53	1,896.59	654.96	1,241.63	1.000	13C12-HxCDF	678	IS4
				33:29		0.52	1,949.81	663.44	1,286.37	1.015	13C12-HxCDF	234	ALT2
	DC	SN		34:07	RO	0.72	2.13			1.034			
				34:18		0.51	1,583.78	533.58	1,050.20	1.040	13C12-HxCDF	789	ALT1
	DC	SN		34:34	RO	0.28	6.28			1.048			
	DC	SN		34:39	RO	0.76	2.02			1.051			
	DC	SN		34:39	RO	0.82	3.22			1.051			
384-386			6	Peaks			6,984.60						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.015			
390-392	DC	NL		0:00		1.05	1.78			0.000			
D	D	SN		32:51		1.10	6.67			0.975			
	DC	SN		33:03	RO	0.65	1.55			0.981			
	DC	SN		33:14	RO	0.66	0.70			0.987			
	DC	SN		33:20		1.06	0.66			0.990			
	DC	SN		33:26	RO	0.23	0.58			0.993			
	DC	SN		33:51	RO	0.63	0.45			1.005			
	DC	WH		34:18	RO	0.88	1.26			1.018			
390-392			0	Peaks			0.00						
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL		0:00	RO	1.83	1.72			0.000			
				33:04	RO	0.98	13.44	7.44	7.58	0.982			
				33:36		1.19	1,397.26	758.52	638.74	0.998	13C12-HxCDD	478	SUR4
				33:41		1.17	1,695.05	915.70	779.35	1.000	13C12-HxCDD	678	IS5
				34:01		1.15	2,073.12	1,110.55	962.57	1.010	13C12-HxCDD	789	RS2
	DC	SN		34:14	RO	4.41	5.64			1.016			
	DC	SN		34:29	RO	0.26	1.68			1.024			
402-404			4	Peaks			5,178.87						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.998-1.053			
408-410	DC	NL		0:00	RO	0.84	0.90			0.000			
	DC	SN		36:01	RO	1.24	2.98			1.001	1234678-HpCDF		AN
	DC	SN		36:15		0.93	1.99			1.007			
	DC	SN		36:31	RO	6.03	0.59			1.015			
	DC	SN		36:42	RO	0.36	0.61			1.020			
	DC	SN		36:55	RO	3.45	0.78			1.026			
	DC	SN		37:29	RO	1.71	0.71			1.042			
	DC	WH		38:06	RO	0.19	0.24			1.059			
408-410			0	Peaks			0.00						

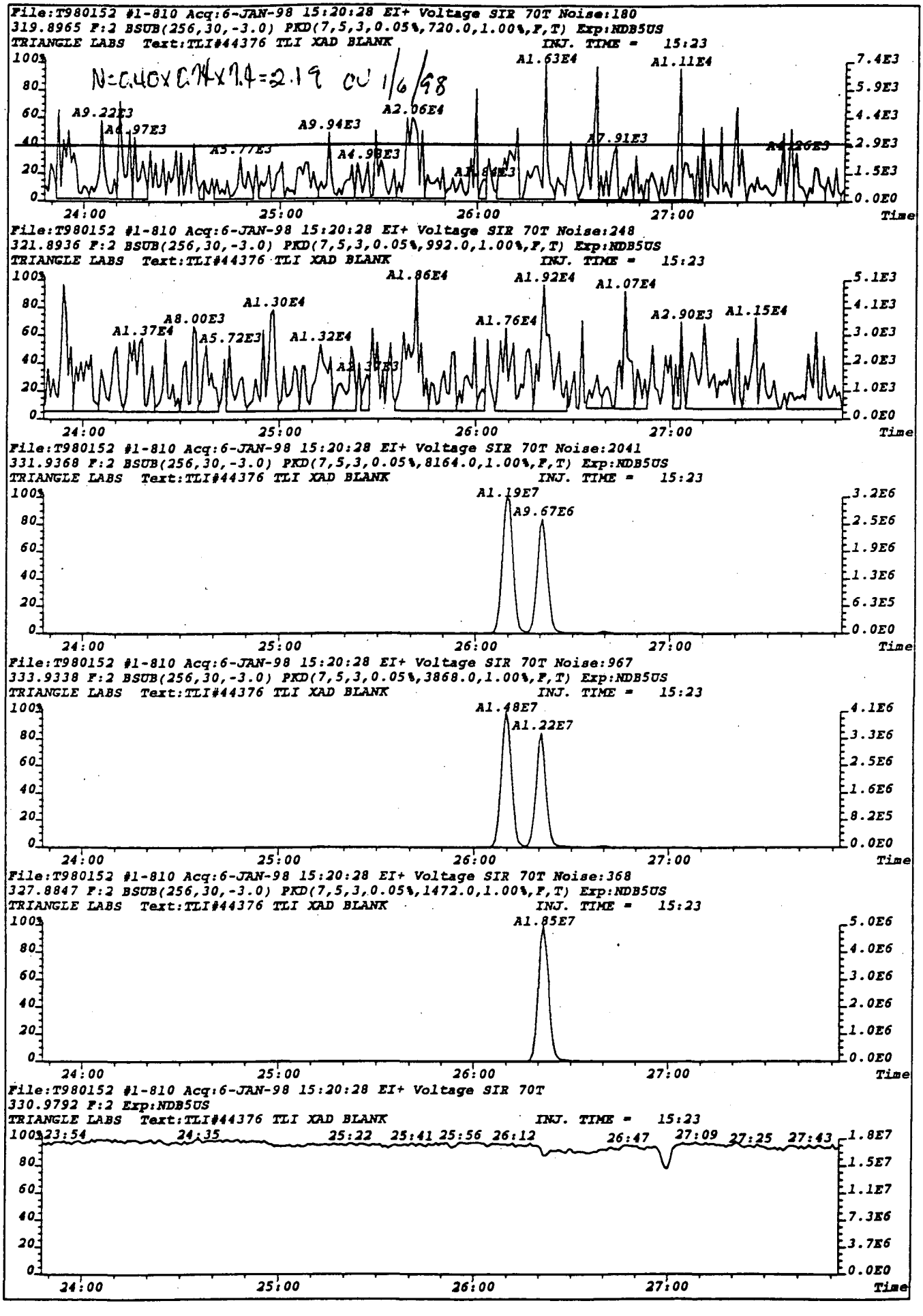
Compound/ %_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	0.57	1.84			0.000			
				35:59		0.45	1,190.64	369.83	820.81	1.000	13C12-HpCDF 678	IS6	
	DC	SN		36:22	RO	0.54	3.21			1.011			
	DC	SN		36:37	RO	1.34	0.92			1.018			
	DC	SN		36:47	RO	0.34	0.56			1.022			
	DC	SN		36:51	RO	0.87	1.25			1.024			
	DC	SN		37:17	RO	0.85	1.14			1.036			
				37:36		0.45	886.66	276.72	609.94	1.045	13C12-HpCDF 789	SUR5	
	DC	SN		38:12		0.50	2.63			1.062			
418-420			2	Peaks			2,077.30						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.976-1.006			
424-426	DC	NL		0:00	RO	2.50	0.29			0.000			
	DC	SN		36:20	RO	4.21	0.39			0.980			
	DC	SN		36:32	RO	1.56	0.84			0.986			
	DC	SN		36:59	RO	0.54	0.55			0.998			
	DC	SN		37:04	RO	1.51	2.06			1.000	1234678-HpCDD	AN	
	DC	WH		37:39	RO	0.47	0.71			1.016			
424-426			0	Peaks			0.00						
13C12-HpCDD				0.88-1.20						0.973-1.027			
436-438	DC	NL		0:00	RO	2.72	0.88			0.000			
				36:17		0.93	21.86	10.54	11.32	0.979			
				37:04		1.01	1,499.74	752.23	747.51	1.000	13C12-HpCDD 678	IS7	
436-438			2	Peaks			1,521.60						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.902-1.098			
442-444	DC	NL		0:00	RO	1.08	0.93			0.000			
	DC	WL		35:29	RO	0.32	0.74			0.867			
	DC	WL		35:37		0.89	1.02			0.870			
	DC	WL		35:49	RO	0.59	1.08			0.875			
	DC	WL		36:15	RO	0.38	0.76			0.886			
	DC	WL		36:39	RO	0.72	0.91			0.896			
	DC	SN		37:03	RO	1.03	3.21			0.905			
	DC	SN		37:13	RO	2.20	1.02			0.910			
	DC	SN		37:39		0.78	2.14			0.920			
	DC	SN		37:42	RO	1.73	1.04			0.921			
	DC	SN		37:51	RO	1.42	1.21			0.925			
	DC	SN		38:08	RO	0.52	1.19			0.932			
	DC	SN		38:40	RO	2.20	0.93			0.945			
	DC	SN		39:05		1.01	1.75			0.955			
	DC	SN		39:32	RO	0.40	0.89			0.966			
	DC	SN		39:43	RO	1.10	1.97			0.971			
	DC	SN		40:11	RO	0.46	0.36			0.982			
	DC	SN		40:38	RO	0.55	0.66			0.993			
	DC	SN		40:44		0.86	1.64			0.996			
	DC	SN		40:57	RO	5.63	0.15			1.001			

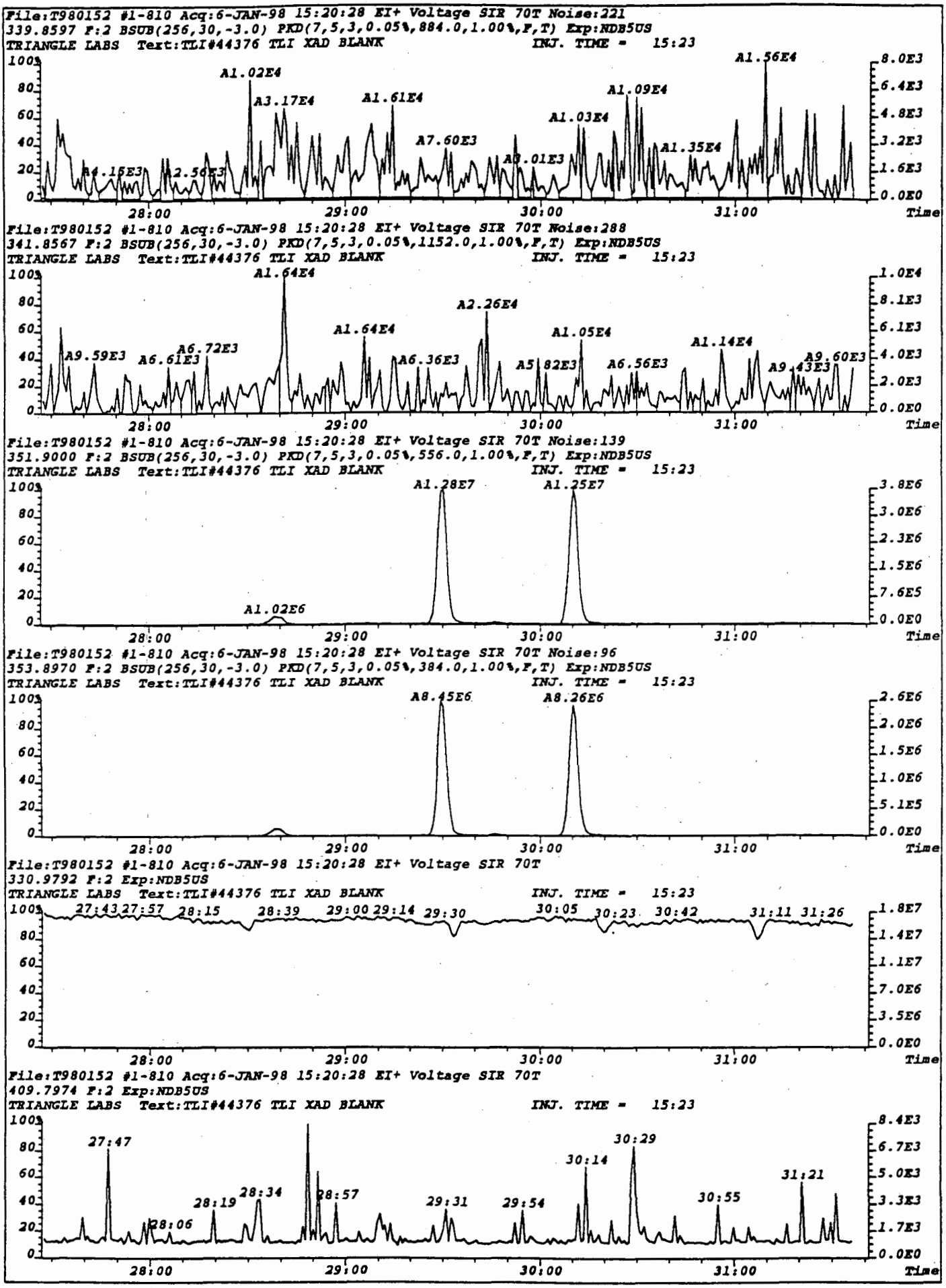
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		41:33	RO	0.32	0.68			1.015			
	DC	SN		41:43	RO	0.51	0.87			1.020			
	DC	SN		42:05	RO	0.47	0.89			1.029			
442-444		0	Peaks				0.00						
OCDD				0.76-1.02						0.902-1.098			
458-460	DC	NL		0:00	RO	3.64	0.21			0.000			
M				40:57	RO	1.07	6.24	3.54	3.30	1.001	OCDD	AN	J
	DC	SN		41:09	RO	2.47	0.36			1.006			
	DC	SN		41:30	RO	0.43	0.40			1.014			
458-460		1	Peak				6.24						
13C12-OCDD				0.76-1.02						0.998-1.006			
470-472	DC	NL		0:00		1.00	0.20			0.000			
				40:55		0.91	2,317.28	1,107.15	1,210.13	1.000	13C12-OCDD	IS8	
	DC	WH		41:17	RO	1.10	8.58			1.009			
	DC	WH		41:24	RO	0.32	3.74			1.012			
470-472		1	Peak				2,317.28						

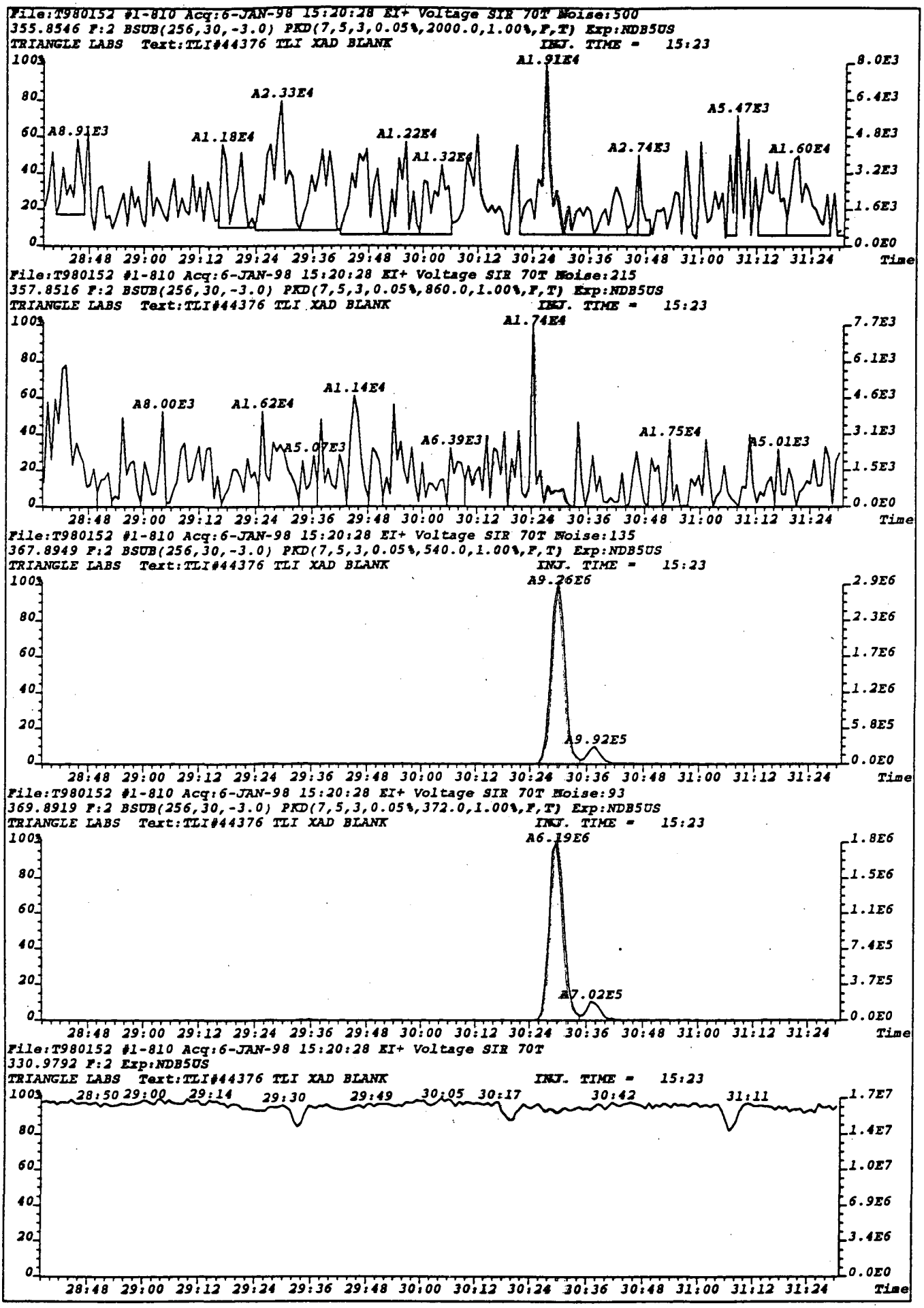
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

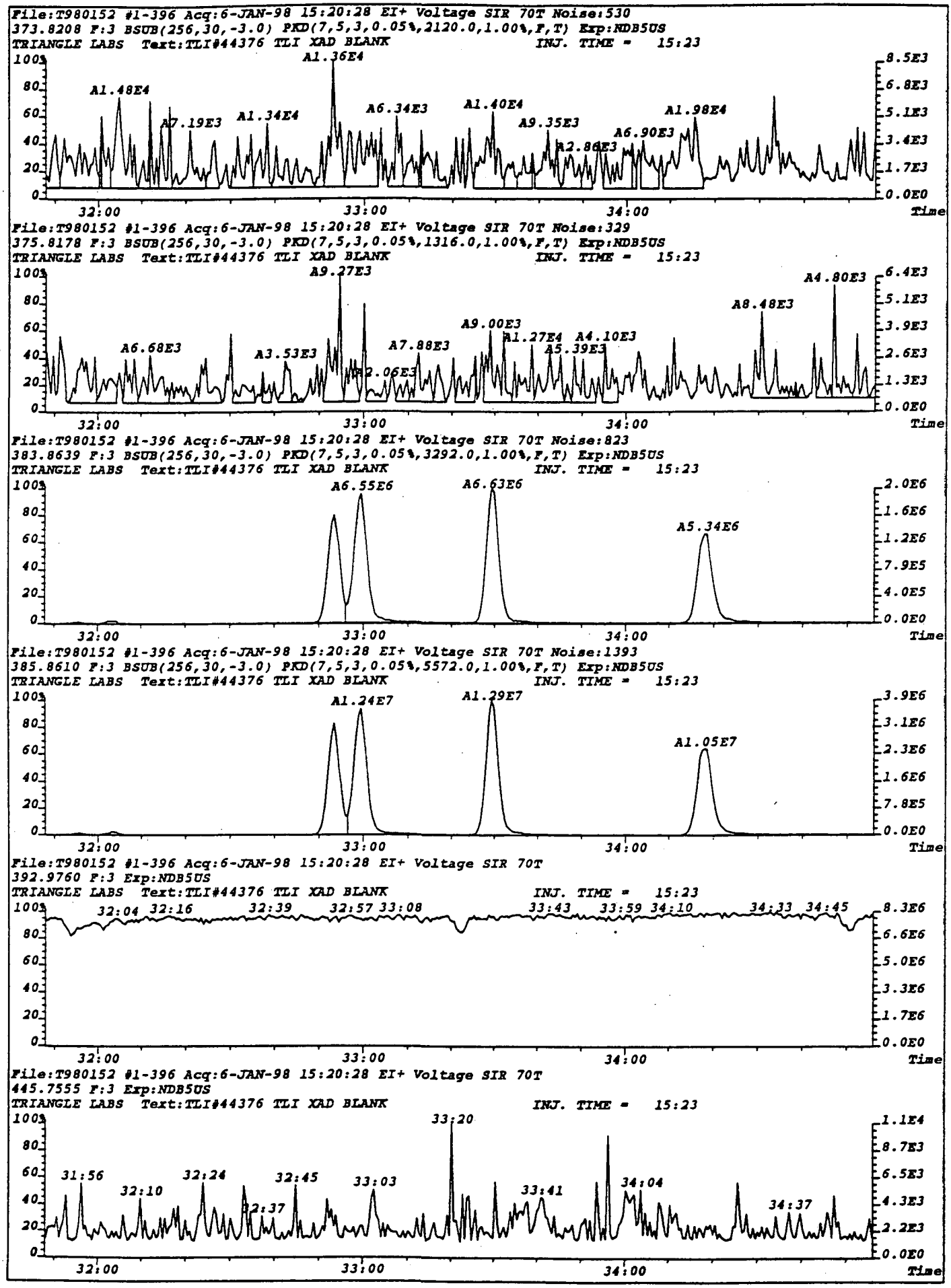
*** End of Report ***

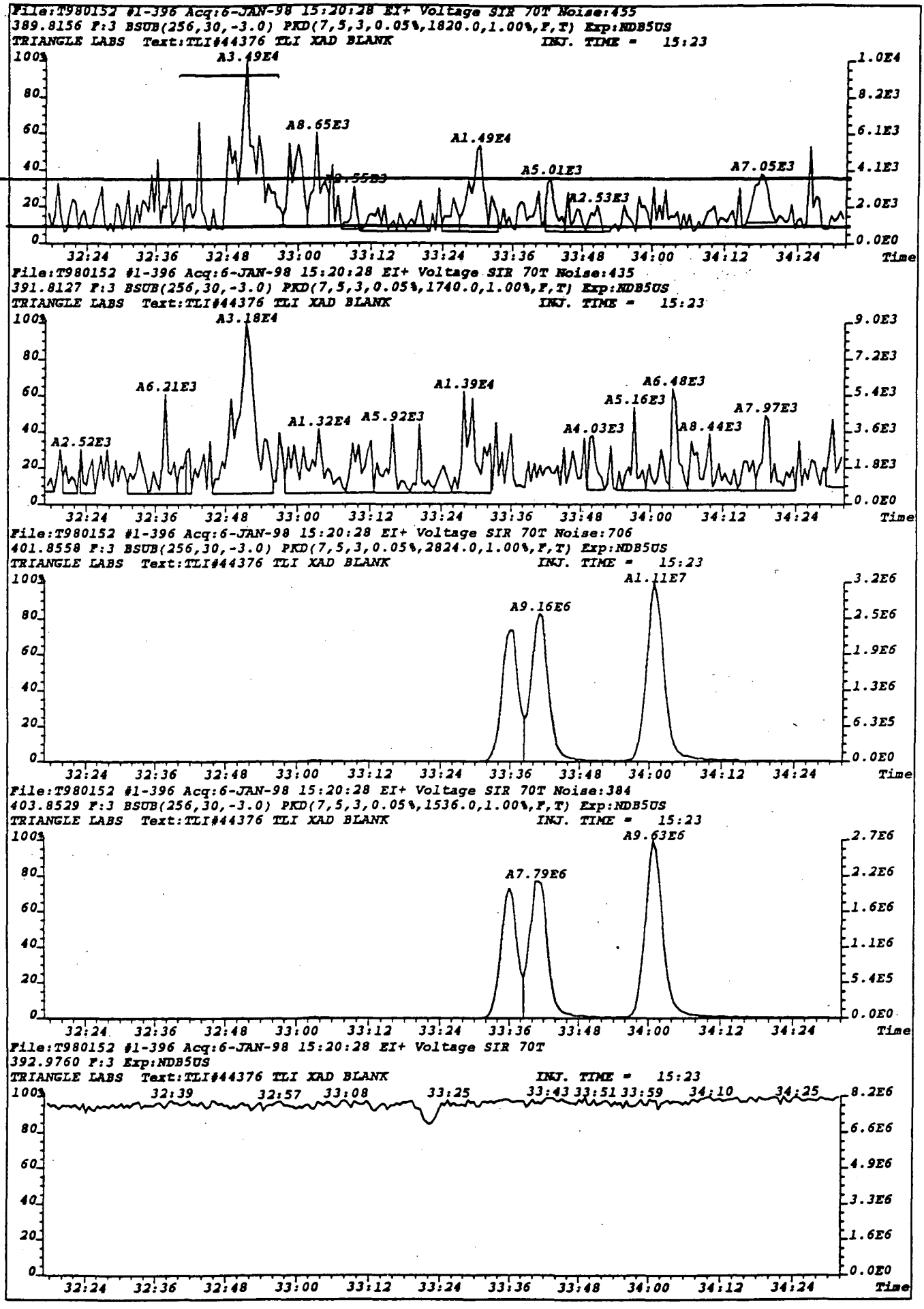

File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:780
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A2.80E4
A2.42E4
A6.07E4
A9.75E4
A1.80E4
A3.55E4
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:484
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1936.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.49E4
A3.79E4
A1.79E4
A6.91E4
A1.21E5
A1.24E4
A2.79E4
A3.50E4
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:600
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,2400.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.09E7
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:359
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1436.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.45E7
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
23:29
24:24
24:48
25:22
25:56
26:18
26:47
27:09
27:43
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
22:41
23:13
23:29
23:56
24:10
24:45
25:08
25:23
25:48
26:06
26:39
27:03
27:15
27:30
23:00
24:00
25:00
26:00
27:00
Time

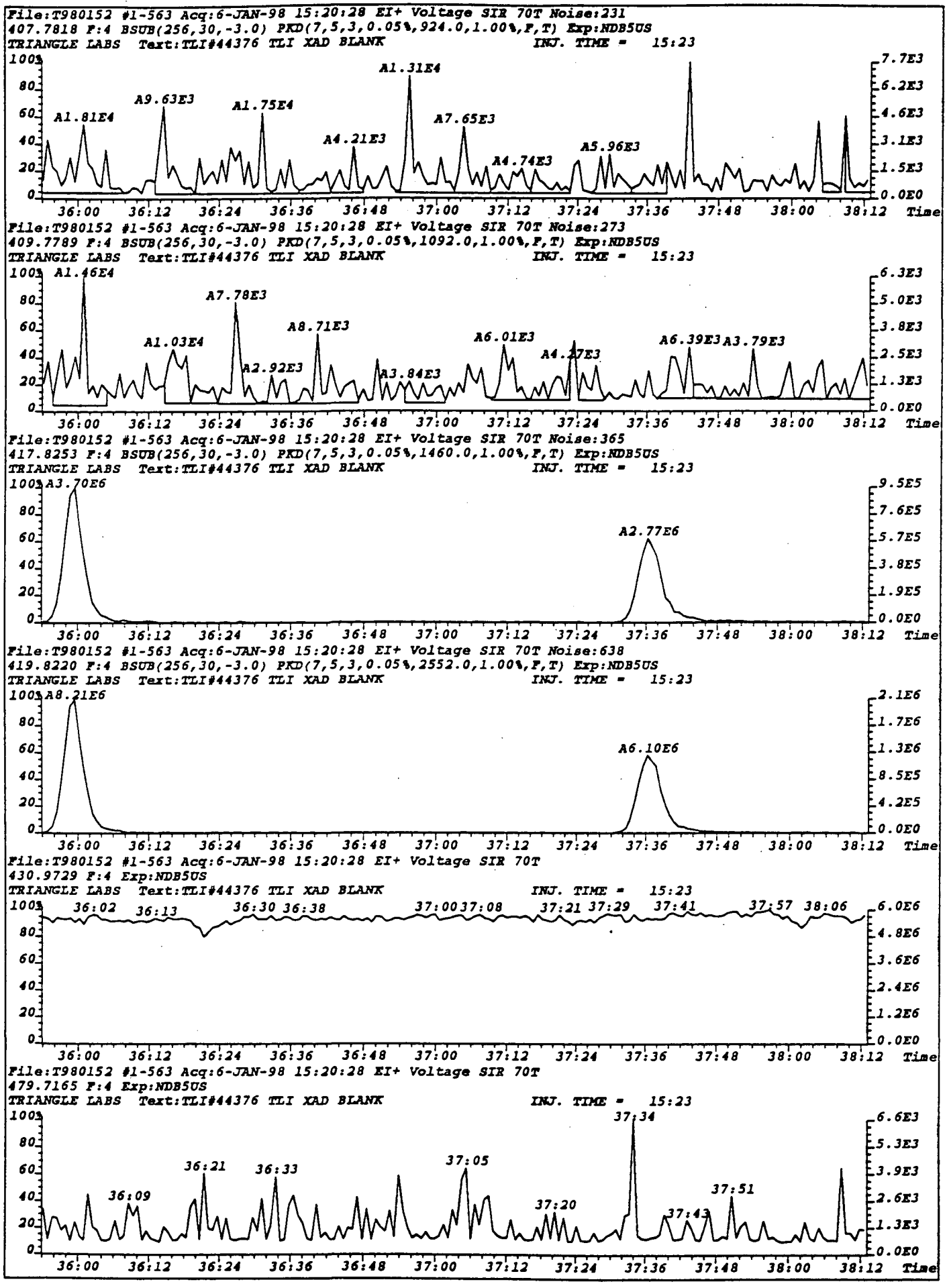

File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:180
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
N=0.40x0.74x9.4=2.19 CV 1/6/98
A9.22E3
A9.97E3
A5.77E3
A9.94E3
A4.98E3
A2.06E4
A1.63E4
A7.91E3
A1.11E4
A1.26E3
24:00
25:00
26:00
27:00
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:248
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,992.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A1.37E4
A8.00E3
A1.30E4
A5.72E3
A1.32E4
A1.86E4
A1.76E4
A1.92E4
A1.07E4
A2.90E3
A1.15E4
24:00
25:00
26:00
27:00
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:2041
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8164.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A1.19E7
A9.67E6
24:00
25:00
26:00
27:00
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:967
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3868.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A1.48E7
A1.22E7
24:00
25:00
26:00
27:00
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:368
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1472.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A1.85E7
24:00
25:00
26:00
27:00
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
23:54
24:35
25:22
25:41
25:56
26:12
26:47
27:09
27:25
27:43
24:00
25:00
26:00
27:00
Time

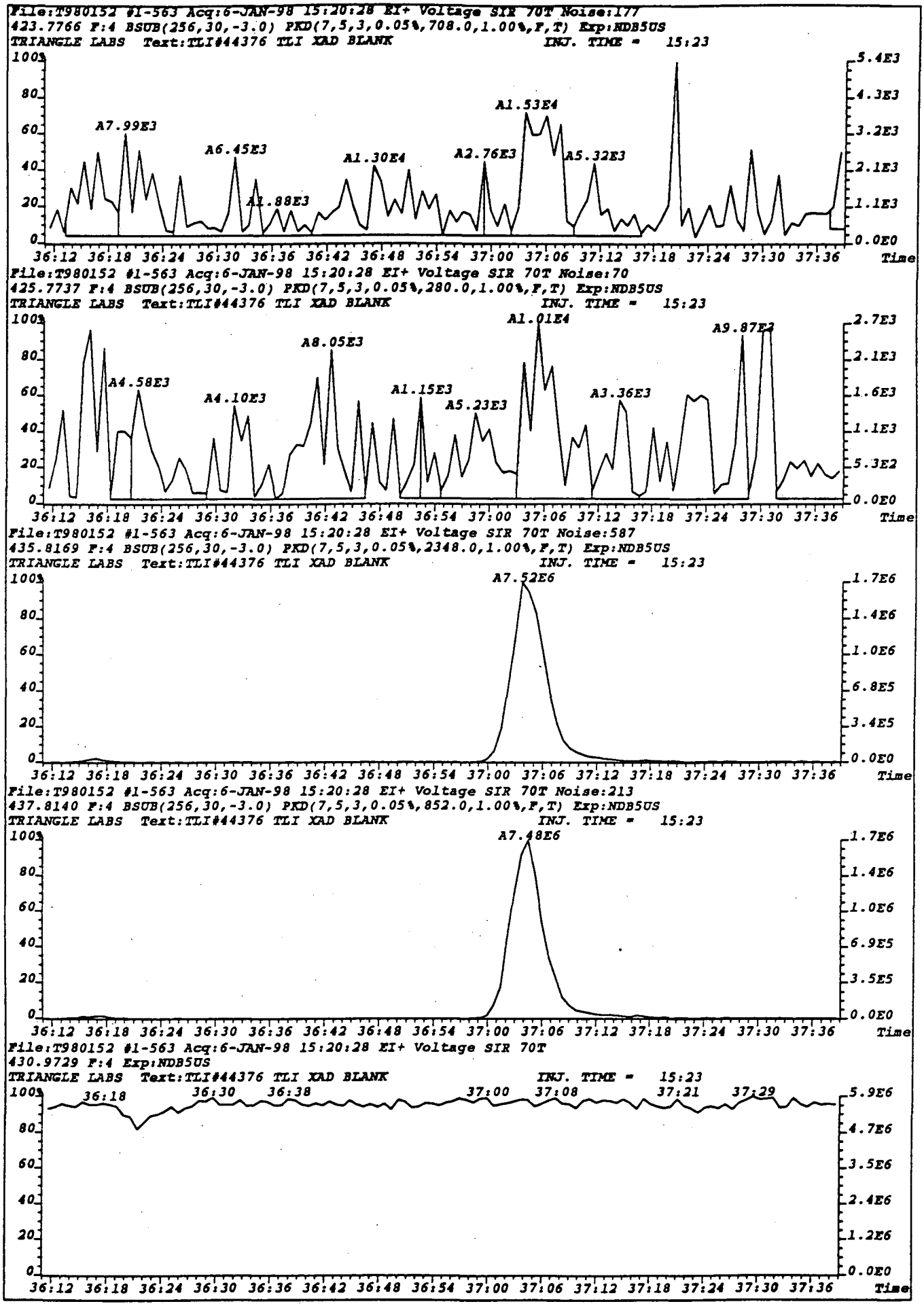

File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:221
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.02E4
A3.17E4
A1.61E4
A7.60E3
A1.03E4
A1.09E4
A1.56E4
A1.35E4
A4.15E3
A2.56E3
A8.01E3
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:288
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1152.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.64E4
A2.26E4
A1.64E4
A1.05E4
A1.14E4
A9.59E3
A6.61E3
A6.72E3
A6.36E3
A5.82E3
A6.56E3
A9.43E3
A9.60E3
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:139
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.28E7
A1.25E7
A1.02E6
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:96
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,384.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A8.45E6
A8.26E6
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
27:43 27:57 28:15 28:39 29:00 29:14 29:30 30:05 30:23 30:42 31:11 31:26
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
27:47
28:06
28:19
28:34
28:57
29:31
29:54
30:14
30:29
30:55
31:21
28:00
29:00
30:00
31:00
Time

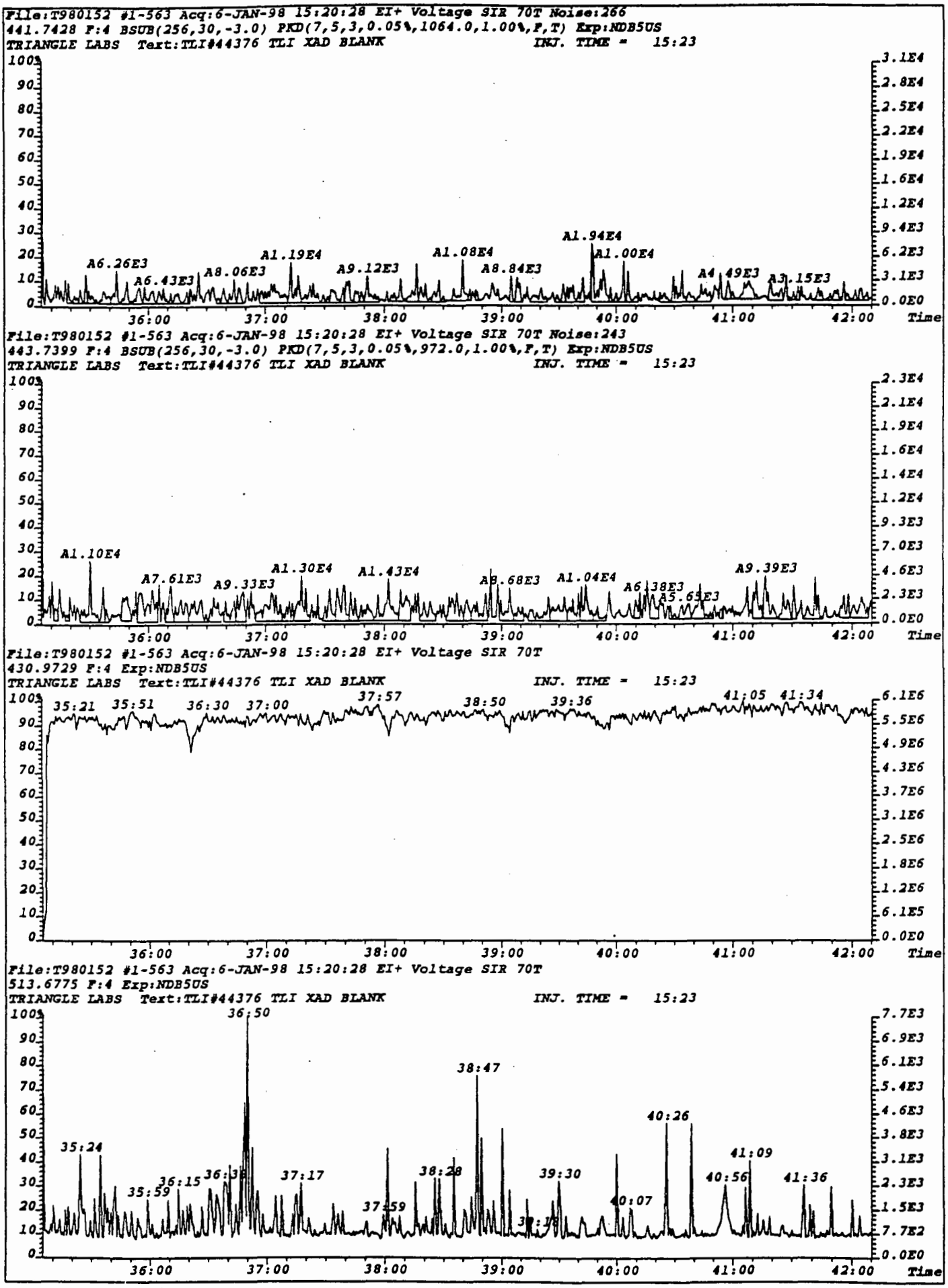

File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:500
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A8.91E3
A1.18E4
A2.33E4
A1.22E4
A1.32E4
A1.91E4
A2.74E3
A5.47E3
A1.60E4
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:215
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A8.00E3
A1.62E4
A5.07E3
A1.14E4
A6.39E3
A1.74E4
A1.75E4
A5.01E3
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:135
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,540.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A9.26E6
A9.92E5
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:93
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,372.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
A6.19E6
A7.02E5
Time
File:T980152 #1-810 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23
Time

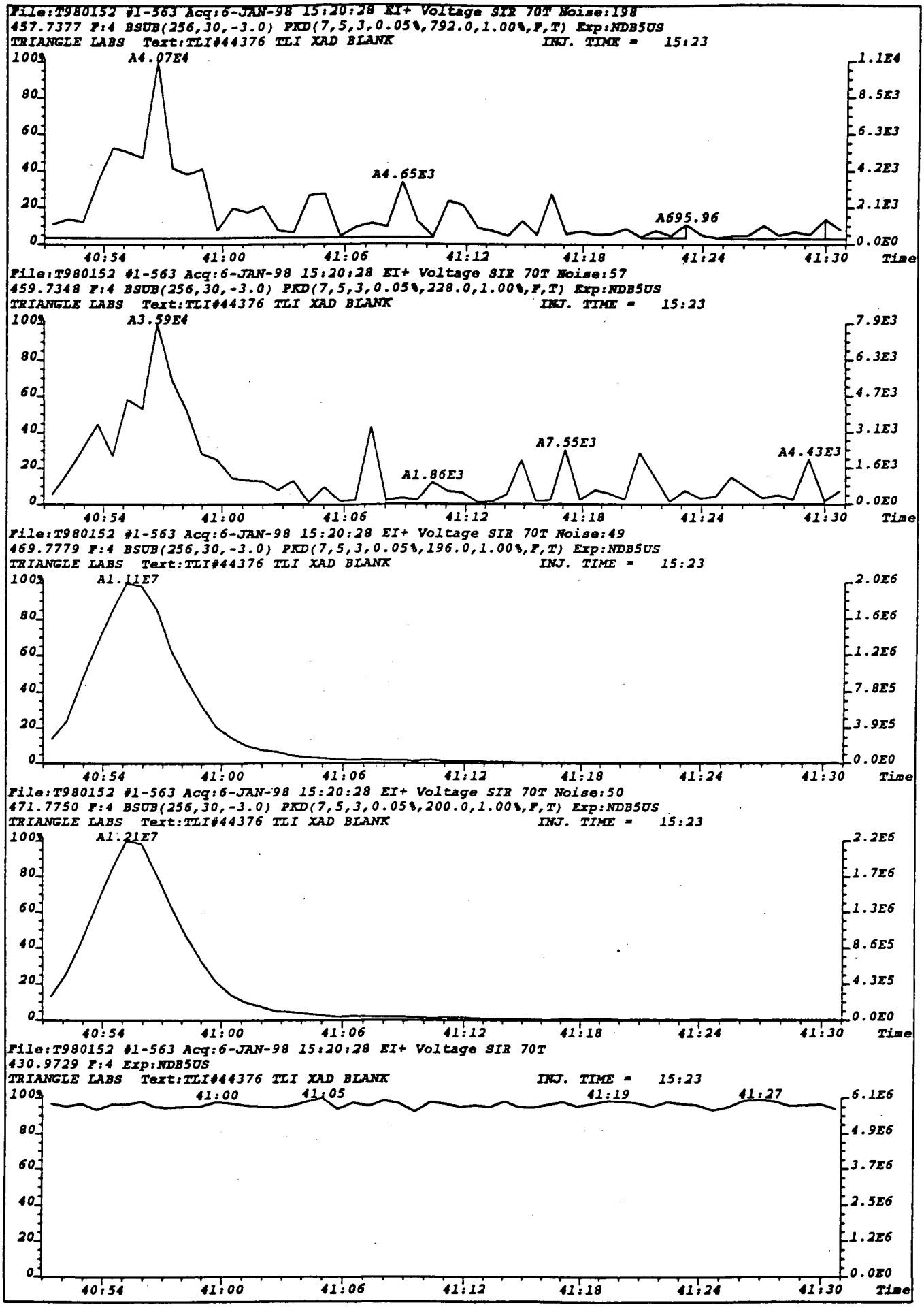

File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:530
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.48E4
A7.19E3
A1.34E4
A1.36E4
A6.34E3
A1.40E4
A9.35E3
A2.86E3
A6.90E3
A1.98E4
32:00
33:00
34:00
Time
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:329
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A6.68E3
A3.53E3
A9.27E3
A7.88E3
A9.00E3
A1.27E4
A4.10E3
A5.39E3
A8.48E3
A4.80E3
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:823
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A6.55E6
A6.63E6
A5.34E6
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:1393
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.24E7
A1.29E7
A1.05E7
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
32:04 32:16 32:39 32:57 33:08 33:43 33:59 34:10 34:33 34:45
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
31:56
32:10
32:24
32:37
32:45
33:03
33:20
33:41
34:04
34:37

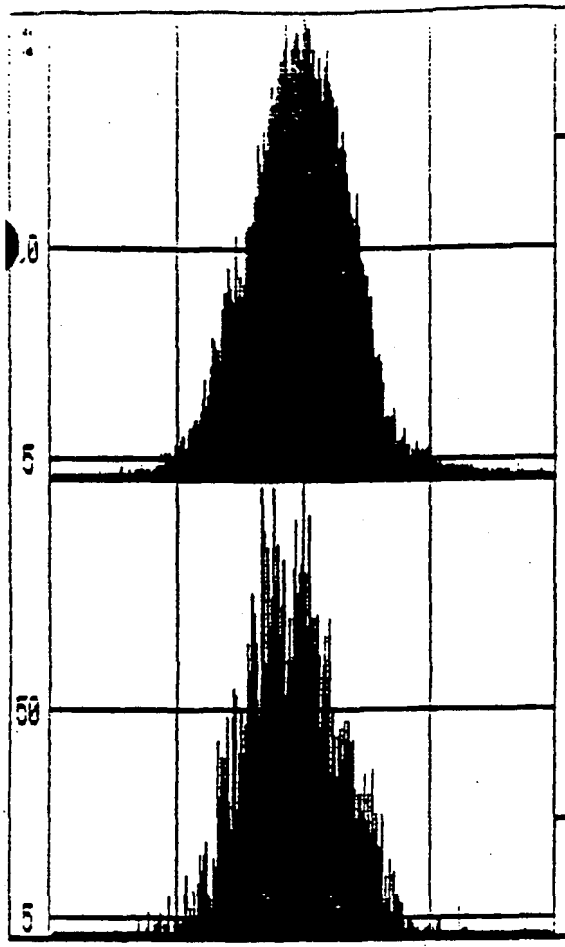

File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:455
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1820.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A3.49E4
A8.65E3
A1.49E4
A5.01E3
A7.05E3
A2.53E3
Time
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:435
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1740.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A3.18E4
A6.21E3
A1.39E4
A6.48E3
A5.16E3
A7.97E3
A1.32E4
A5.92E3
A4.03E3
A8.44E3
A2.52E3
Time
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:706
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2824.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.11E7
A9.16E6
Time
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:384
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A9.63E6
A7.79E6
Time
File:T980152 #1-396 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
Time


File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:231
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,924.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.81E4
A9.63E3
A1.75E4
A4.21E3
A1.31E4
A7.65E3
A4.74E3
A5.96E3
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:273
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.46E4
A1.03E4
A7.78E3
A2.92E3
A8.71E3
A3.84E3
A6.01E3
A4.27E3
A6.39E3
A3.79E3
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:365
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1460.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A3.70E6
A2.77E6
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:638
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2552.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A8.21E6
A6.10E6
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
36:09
36:21
36:33
37:05
37:20
37:34
37:43
37:51
Time


File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:177
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A7.99E3
A6.45E3
A1.88E3
A1.30E4
A2.76E3
A1.53E4
A5.32E3
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:70
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,280.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A4.58E3
A4.10E3
A8.05E3
A1.15E3
A5.23E3
A1.01E4
A3.36E3
A9.87E2
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:587
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2348.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A7.52E6
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:213
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,852.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A7.48E6
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time


File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:266
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1064.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A6.26E3
A6.43E3
A8.06E3
A1.19E4
A9.12E3
A1.08E4
A8.84E3
A1.94E4
A1.00E4
A4.49E3
A3.15E3
Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:243
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,972.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.10E4
A7.61E3
A9.33E3
A1.30E4
A1.43E4
A1.04E4
A6.38E3
A5.69E3
A9.39E3
Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
35:21
35:51
36:30
37:00
37:57
38:50
39:36
41:05
41:34
Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
36:50
38:47
40:26
35:24
41:09
36:15
35:59
37:17
38:28
39:30
40:56
41:36
37:59
40:07
Time


File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:198
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,792.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A4.07E4
A4.65E3
A695.96
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:57
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A3.59E4
A1.86E3
A7.55E3
A4.43E3
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:49
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.11E7
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T Noise:50
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
A1.21E7
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 TLI XAD BLANK INJ. TIME = 15:23
41:00
41:05
41:19
41:27
40:54
41:06
41:12
41:18
41:24
41:30
Time

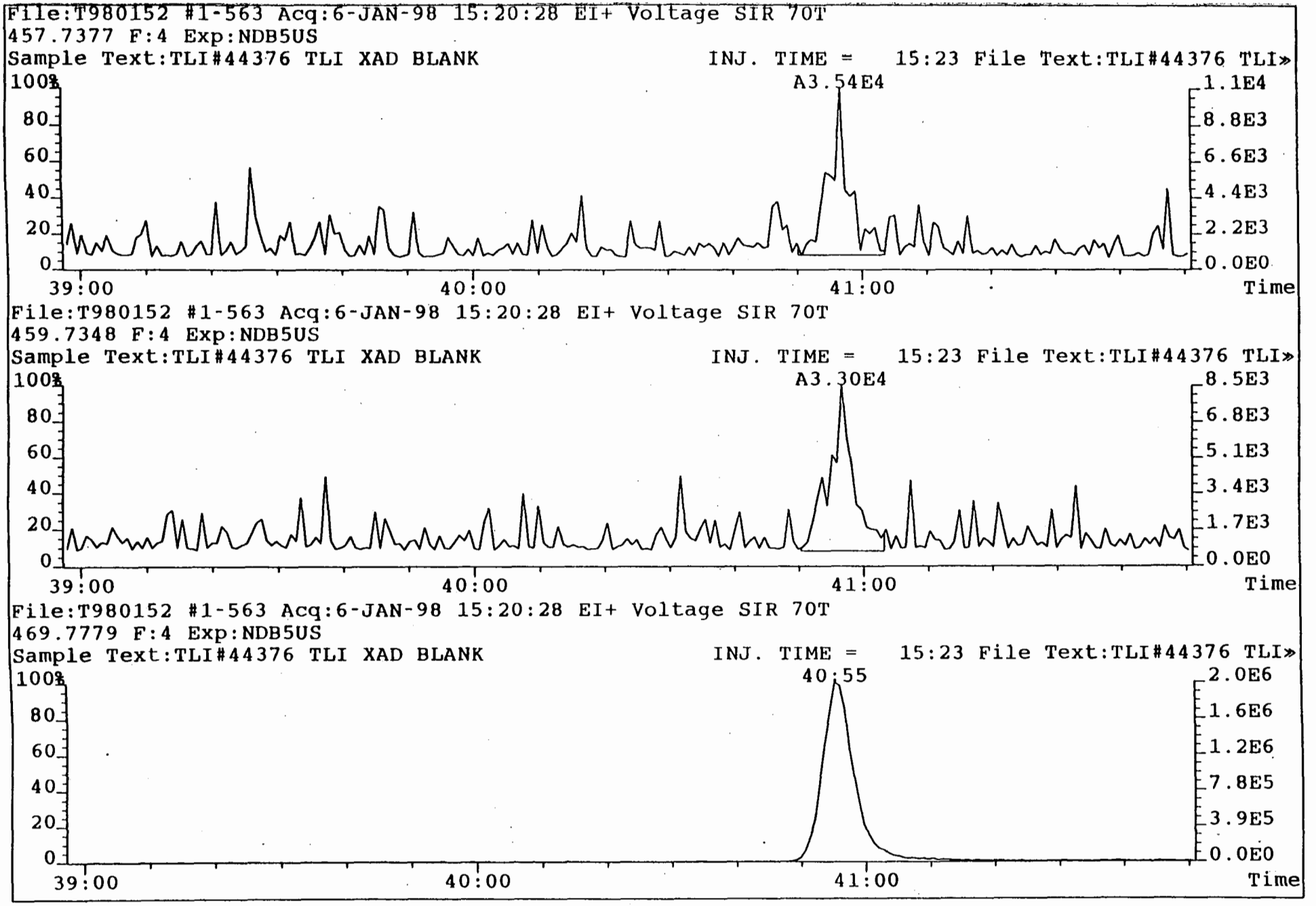


Channel I 330.3792 Peak top
Height 3.59 volts Span 200 ppm

System file name	NOBBUS
Data file name	A:T980148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm


File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
457.7377 F:4 Exp:NDB5US
Sample Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23 File Text:TLI#44376 TLI»
A3.54E4
100%
80
60
40
20
0
1.1E4
8.8E3
6.6E3
4.4E3
2.2E3
0.0E0
39:00
40:00
41:00
Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
459.7348 F:4 Exp:NDB5US
Sample Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23 File Text:TLI#44376 TLI»
A3.30E4
100%
80
60
40
20
0
8.5E3
6.8E3
5.1E3
3.4E3
1.7E3
0.0E0
39:00
40:00
41:00
Time
File:T980152 #1-563 Acq:6-JAN-98 15:20:28 EI+ Voltage SIR 70T
469.7779 F:4 Exp:NDB5US
Sample Text:TLI#44376 TLI XAD BLANK
INJ. TIME = 15:23 File Text:TLI#44376 TLI»
40:55
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
39:00
40:00
41:00
Time

1/19/99

Eastern Research Group

TLI Project: 44376 Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: TLI XAD BLANK Analysis File: X980083

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPC2NF04
TLI ID:	TLI Blank	Date Extracted:	12/29/97	ICal:	XF24087
		Date Analyzed:	01/07/98	ConCal:	X980080
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.02			0.69	21:29	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	73.0	40%-130%	0.79	21:28	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.78	20:29	___

Data Reviewer: 699 01/11/98

C2NF_PSR v2.01, LARS 6.10.08i

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:32 01/11/98

Initial ....Date...

Data Review By: GM 1/12/98 Calculated Noise Area: 4.36

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

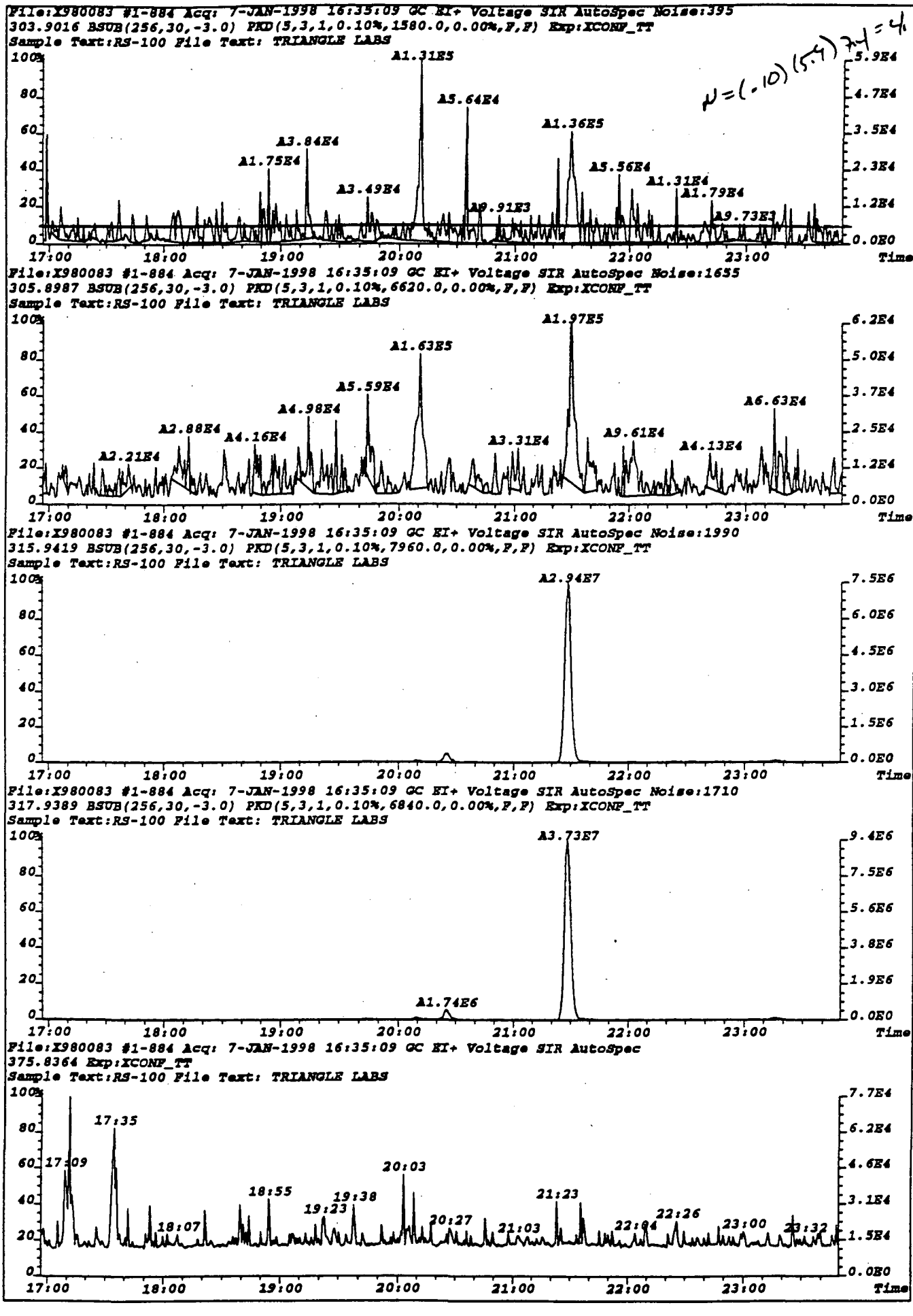
Page No. 1 Listing of X980083B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.790-1.095			
304-306	DC	NL		0:00	RO	0.24	1.82			0.000			
	DC	SN		17:06	RO	1.76	2.05			0.797			
	DC	SN		17:33	RO	1.35	1.72			0.818			
	DC	SN		17:37	RO	1.15	1.96			0.821			
	DC	SN		18:07	RO	1.05	6.76			0.844			
	DC	SN		18:54		0.72	4.19			0.880			
	DC	SN		18:58	RO	1.15	5.01			0.884			
	DC	SN		19:08	RO	2.06	2.32			0.891			
	DC	SN		19:13		0.77	8.82			0.895			
	DC	SN		19:23	RO	0.36	4.53			0.903			
	DC	SN		19:30	RO	0.96	3.40			0.908			
	DC	SN		19:44	RO	0.62	8.02			0.919			
	DC	SN		19:58	RO	2.00	0.62			0.930			
				20:11		0.80	29.42	13.10	16.32	0.940			J
	DC	SN		20:41	RO	1.41	2.48			0.964			
	DC	SN		20:52	RO	0.48	2.28			0.972			
				21:29		0.69	33.30	13.60	19.70	1.001	2378-TCDF		AN
	DC	SN		21:37	RO	0.21	2.67			1.007			
	DC	SN		21:55	RO	4.18	2.35			1.021			
	DC	SN		22:01	RO	0.44	9.75			1.026			
	DC	SN		22:15	RO	3.08	0.85			1.036			
	DC	SN		22:24		0.72	3.14			1.043			
	DC	SN		22:42	RO	0.43	4.11			1.057			
	DC	SN		23:20	RO	2.05	4.67			1.087			
	DC	SN		23:27	RO	0.27	0.71			1.092			
	DC	WH		23:51	RO	1.66	2.74			1.111			
304-306		2	Peaks				62.72						
13C12-TCDF				0.65-0.89						0.953-1.047			
316-318	DC	NL		0:00	RO	1.16	6.05			0.000			
	DC	WL		17:29	RO	1.00	4.02			0.814			
	DC	WL		18:29		0.82	4.99			0.861			
	DC	WL		19:45		0.69	20.42			0.920			
	DC	WL		20:09	RO	0.60	54.13			0.939			
	DC	WL		20:25		0.79	311.01			0.951			
				21:28		0.79	6,671.69	2,943.01	3,728.68	1.000	13C12-2378-TCDF		ISO
				21:43	RO	0.43	16.09	7.00	16.44	1.012			
	DC	SN		21:47	RO	1.01	9.31			1.015			
	DC	SN		21:53	RO	0.28	6.78			1.019			
				22:00	RO	0.61	26.69	11.61	19.04	1.025			
	DC	SN		22:06		0.81	5.59			1.030			
	DC	SN		22:24	RO	2.30	8.66			1.043			
	DC	WH		22:34	RO	6.56	5.49			1.051			

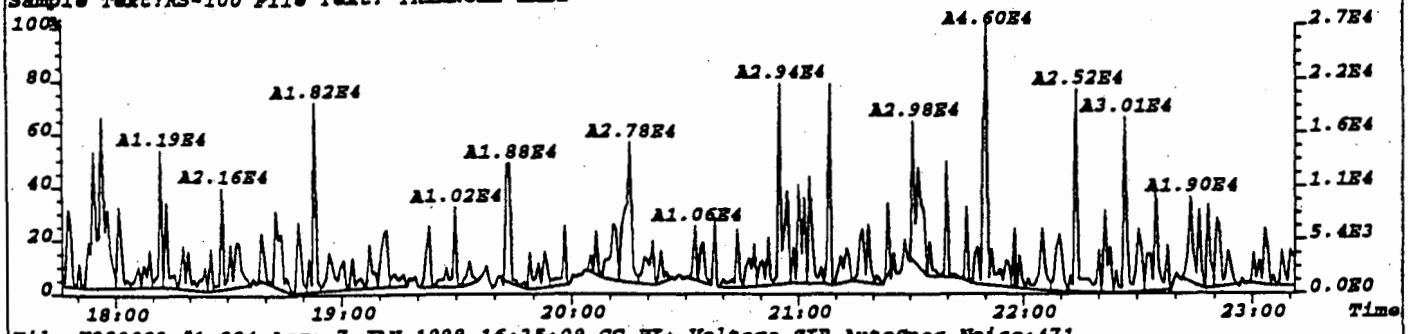
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC		WH	22:52	RO	1.66	5.12			1.065			
	DC		WH	23:08	RO	3.49	3.86			1.078			
	DC		WH	23:16		0.84	79.28			1.084			
	DC		WH	23:28		0.81	3.99			1.093			
	DC		WH	23:44	RO	0.48	3.56			1.106			
	DC		WH	23:48	RO	2.18	4.62			1.109			
316-318		3	Peaks				6,714.47						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.901-1.099			
332-334	DC		NL	0:00	RO	1.73	14.85			0.000			
	DC		SN	19:53	RO	1.89	7.95			0.984			
				20:12		0.76	5,158.35	2,225.85	2,932.50	1.000	13C12-2378-TCDD	IS1	
				20:29		0.78	6,562.13	2,866.51	3,695.62	1.014	13C12-1234-TCDD	RS1	
				21:08	RO	0.31	36.32	15.80	50.50	1.046			
	DC		SN	21:14		0.66	9.48			1.051			
				21:36	RO	1.10	19.88	12.32	11.23	1.069			
				21:58	RO	1.04	16.87	9.94	9.53	1.087			
332-334		5	Peaks				11,793.55						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
% -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
.el.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

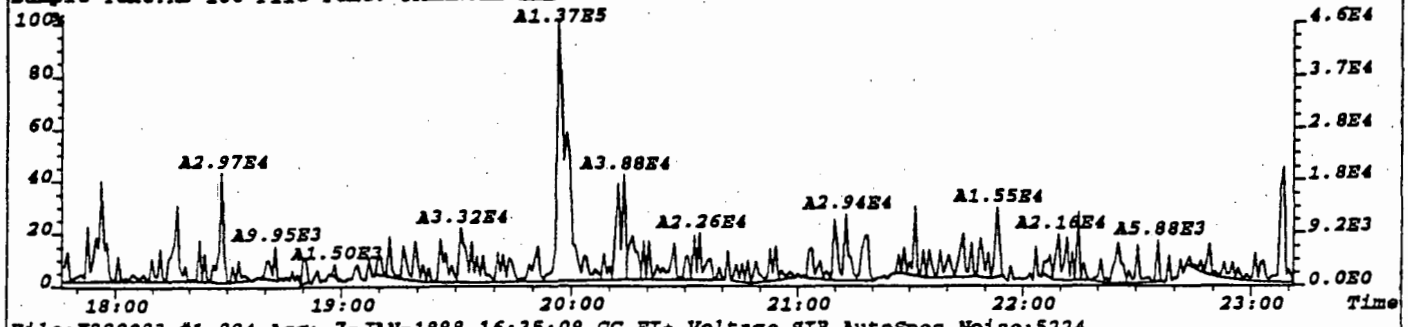
*** End of Report ***


File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:395
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1580.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS
A1.31E5
A5.64E4
A1.36E5
A3.84E4
A1.75E4
A5.56E4
A1.31E4
A3.49E4
A1.79E4
A9.91E3
A9.73E3
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:1655
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6620.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS
A1.97E5
A1.63E5
A5.59E4
A4.98E4
A6.63E4
A2.88E4
A4.16E4
A3.31E4
A9.61E4
A2.21E4
A4.13E4
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:1990
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,7960.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS
A2.94E7
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:1710
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6840.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS
A3.73E7
A1.74E6
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS
17:09
17:35
18:07
18:55
19:23
19:38
20:03
20:27
21:03
21:23
22:04
22:26
23:00
23:32
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time

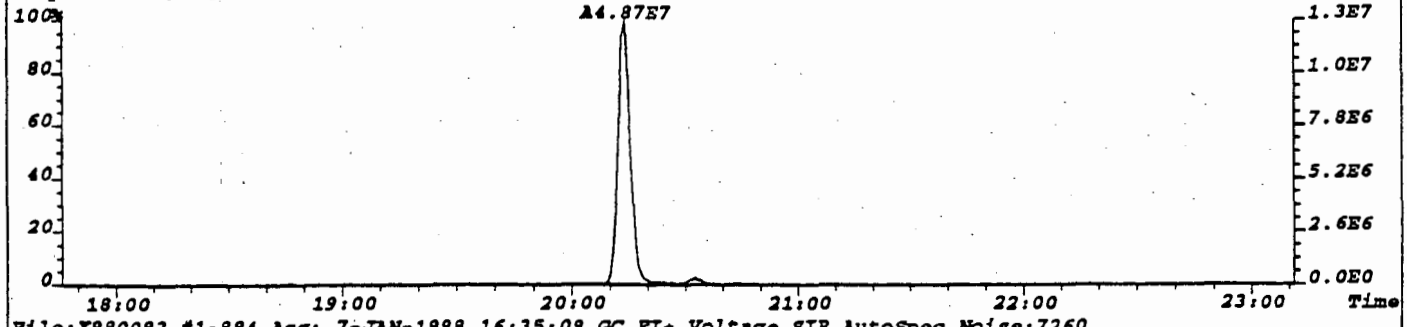
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:422
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1688.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



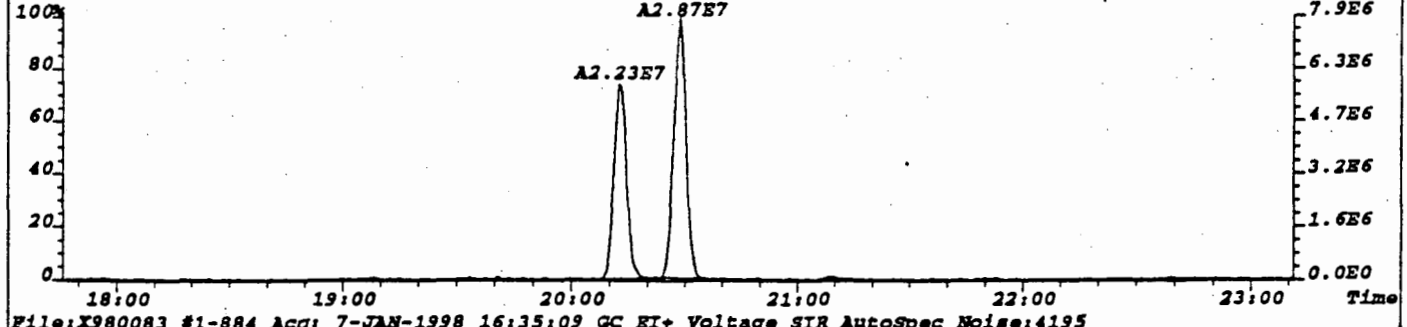
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:471
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1884.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



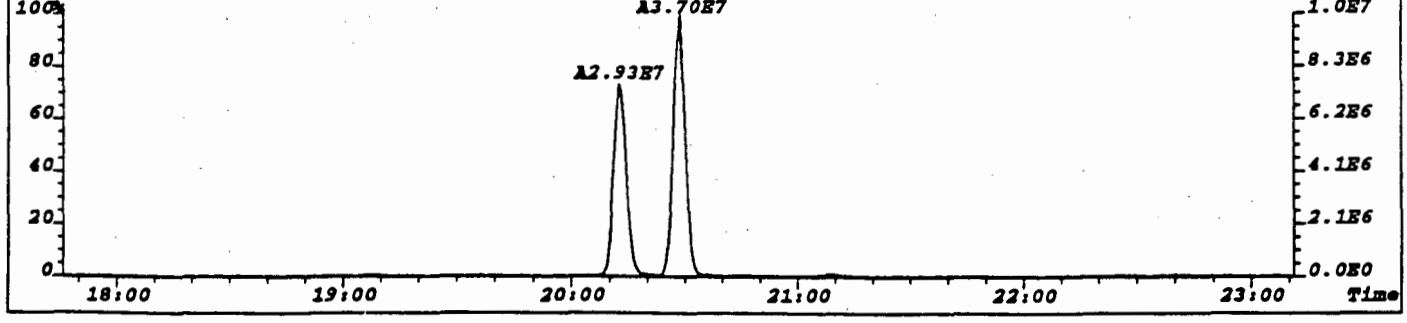
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:5224
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,20896.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



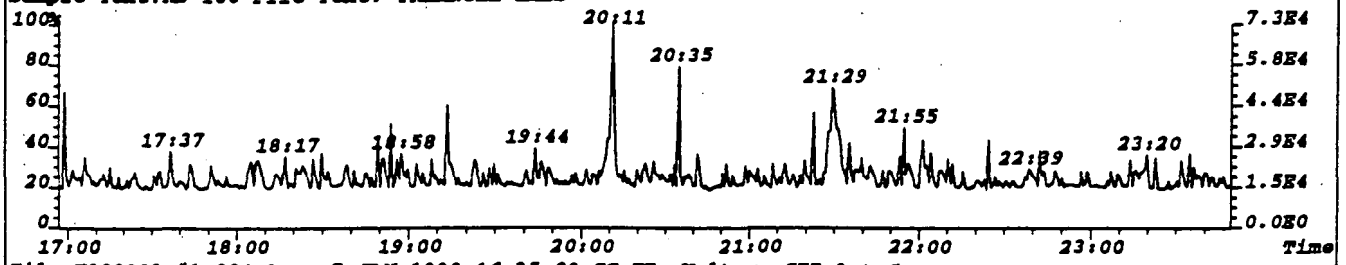
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:7260
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,29040.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec Noise:4195
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,16780.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS

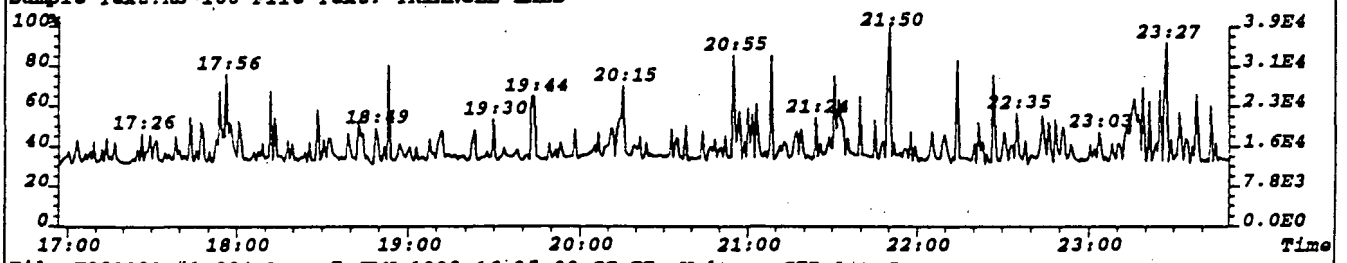


File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS

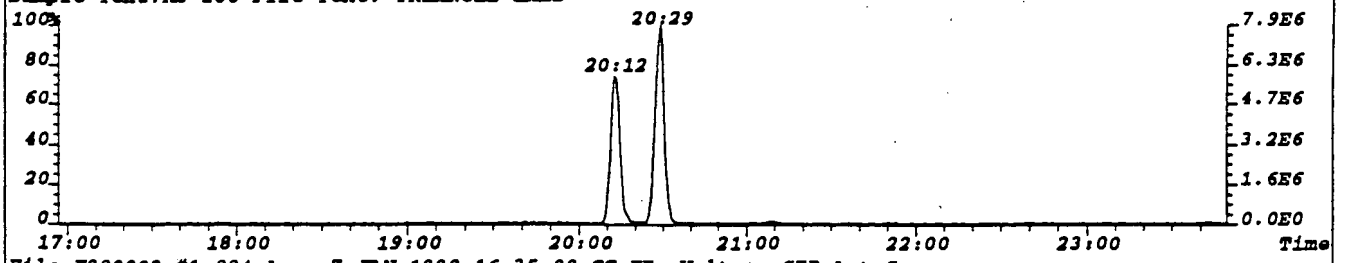


File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS

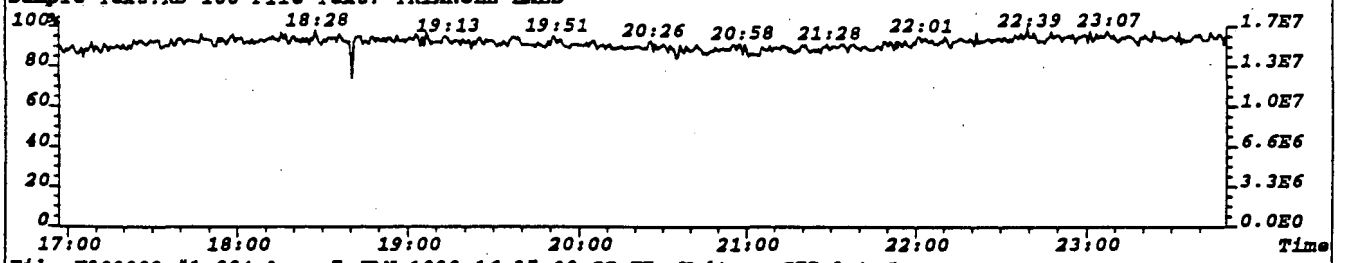
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



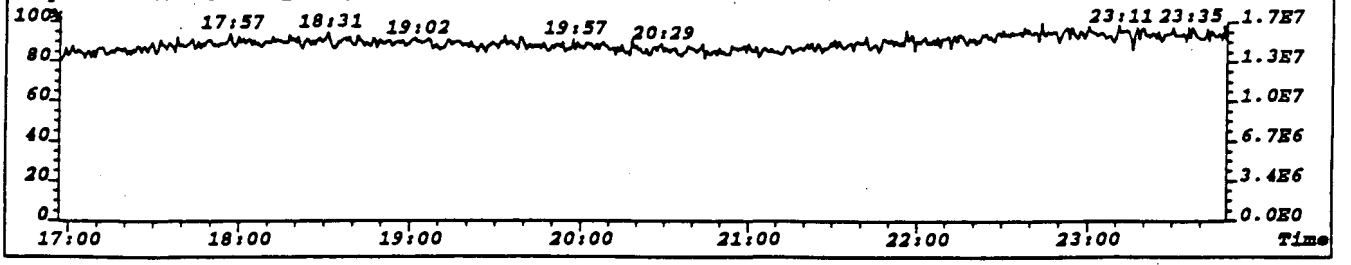
File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS

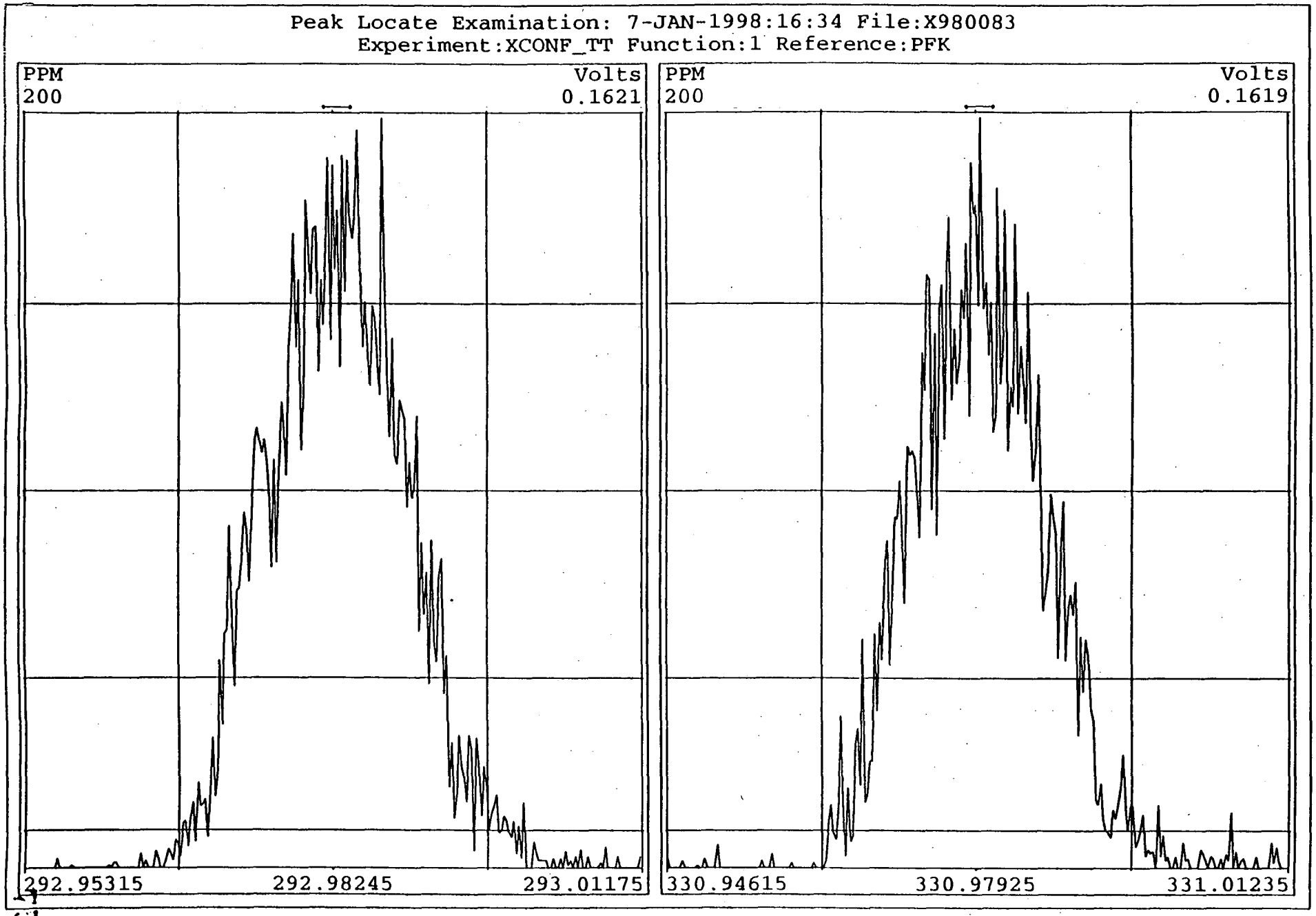


File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS



File:X980083 #1-884 Acq: 7-JAN-1998 16:35:09 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:RS-100 File Text: TRIANGLE LABS




Peak Locate Examination: 7-JAN-1998:16:34 File:X980083
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
0.1621
292.95315
292.98245
293.01175
PPM
200
Volts
0.1619
330.94615
330.97925
331.01235

Eastern Research Group

TLI Project: **44376** CD 0 1 Method 23 PCDD/PCDF Analysis (a)
Client Sample: **105-108** Analysis File: **T98015**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-1A-1D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	2.5			0.78	26:22	___
1,2,3,7,8-PeCDD	10.2			1.54	30:34	___
1,2,3,4,7,8-HxCDD	3.4			1.24	33:37	Q__
1,2,3,6,7,8-HxCDD	4.5			1.24	33:42	___
1,2,3,7,8,9-HxCDD	7.4			1.22	34:01	QPR
1,2,3,4,6,7,8-HpCDD	5.4			1.01	37:05	___
1,2,3,4,6,7,8,9-OCDD	3.2			0.82	40:56	___
2,3,7,8-TCDF	EMPC		~~98.2~~ 74			SE_
1,2,3,7,8-PeCDF	52.7		GCS	1.44	29:32	E__
2,3,4,7,8-PeCDF	67.9		1/15/98	1.47	30:14	E__
1,2,3,4,7,8-HxCDF	42.9			1.26	32:54	E__
1,2,3,6,7,8-HxCDF	19.7			1.26	33:00	___
2,3,4,6,7,8-HxCDF	12.3			1.26	33:31	___
1,2,3,7,8,9-HxCDF	0.68			1.33	34:18	PR_
1,2,3,4,6,7,8-HpCDF	11.7			1.03	36:00	___
1,2,3,4,7,8,9-HpCDF	1.4			1.09	37:37	___
1,2,3,4,6,7,8,9-OCDF	1.7			0.92	41:09	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	175	13			E__
Total PeCDD	~~169~~ > 20	9		~~265~~ 720	SE_
Total HxCDD	103	7			QE_
Total HpCDD	11.0	2			___
Total TCDF	~~1070~~ > 4	16		~~1260~~ 74	SQE
Total PeCDF	~~541~~ > 20	15		~~796~~ > 20	SE_
Total HxCDF	~~209~~ > 20	12		~~213~~ > 20	SE_
Total HpCDF	15.3	3		19.2 GCS 1/15/98	X__

X237_PSR v2.01, LARS 6.10.0

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:25 01/15/98

TLI Project: 44376
Client Sample: 105-108

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980153

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	1.7	43.0	40%-130%	0.79	25:42	Q___
$^{13}C_{12}$-2,3,7,8-TCDD	2.7	68.7	40%-130%	0.80	26:21	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.9	73.6	40%-130%	1.52	29:31	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.3	83.3	40%-130%	1.49	30:33	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.9	71.7	40%-130%	0.51	32:59	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.2	54.3	40%-130%	1.18	33:42	Q___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.1	77.0	25%-130%	0.45	35:59	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.1	102	25%-130%	1.01	37:05	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	8.8	110	25%-130%	0.92	40:55	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.7	92.6	70%-140%		26:22	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.0	99.6	70%-140%	1.52	30:13	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.8	94.4	70%-140%	0.53	32:53	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	6.3	158	70%-140%	1.19	33:36	Q___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.0	101	70%-140%	0.44	37:36	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.0	76.1	40%-130%	0.52	34:18	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.8	70.4	40%-130%	0.51	33:30	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:10	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.17	34:01	___

Data Reviewer: GGS 01/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:25 01/15/98

Initial ....Date...

Data Review By: GGS 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980153B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.878-1.073			
304-306	DC	NL		0:00	RO	2.85	2.35			0.000			
				22:40		0.80	19,730.66	8,772.36	10,958.30	0.882			QE
				23:08		0.81	24,624.80	11,028.30	13,596.50	0.900			QE
				23:21		0.81	24,162.70	10,792.50	13,370.20	0.909			QE
				23:43		0.86	113,145.70	52,377.40	60,768.30	0.923			QSE
				24:01		0.80	73,975.10	32,989.90	40,985.20	0.935			QE
				24:25		0.83	83,824.10	38,058.50	45,765.60	0.950			QSE
				24:41	RO	0.90	61,582.73	31,292.20	34,792.50	0.960			QSE
				24:53		0.82	97,515.10	43,928.80	53,586.30	0.968			QSE
				25:06		0.85	63,400.70	29,183.50	34,217.20	0.977			QSE
				25:17		0.81	42,158.30	18,822.30	23,336.00	0.984			QE
				25:31		0.80	40,473.10	18,010.30	22,462.80	0.993			QE
				25:43	RO	0.95	63,393.44	34,073.50	35,815.50	1.001	2378-TCDF	AN	SE
				26:06		0.87	50,651.20	23,585.80	27,065.40	1.016			QSE
				26:18		0.80	40,702.10	18,132.20	22,569.90	1.023			QE
				26:33		0.81	7,508.21	3,369.58	4,138.63	1.033			QE
				26:50		0.82	311.61	140.53	171.08	1.044			Q
				27:22		0.80	4,713.17	2,095.99	2,617.18	1.065			Q
				27:35		0.79	1,265.07	559.87	705.20	1.073			Q
304-306			18 Peaks				813,137.79						
13C12-TCDF						0.65-0.89				0.961-1.039			
316-318	DC	NL		0:00	RO	1.74	3.45			0.000			
	DC	WL		22:40	RO	2.44	8.92			0.882			
	DC	WL		23:08	RO	4.48	10.51			0.900			
	DC	WL		23:21	RO	2.21	11.03			0.909			
	DC	WL		23:29	RO	1.39	20.07			0.914			
	DC	WL		23:43	RO	2.54	51.35			0.923			
	DC	WL		24:04	RO	1.47	77.81			0.936			
	DC	WL		24:25	RO	2.21	44.98			0.950			
	DC	WL		24:41	RO	1.77	49.42			0.960			
				24:53	RO	2.07	60.94	71.16	34.43	0.968			
				25:30	RO	1.09	69.61	43.01	39.33	0.992			
				25:42		0.79	1,884.86	833.89	1,050.97	1.000	13C12-2378-TCDF	ISO	Q
				26:06	RO	1.56	42.14	37.15	23.61	1.016			
				26:18	RO	1.34	45.17	34.21	25.52	1.023			
	DC	WH		27:05	RO	2.35	7.65			1.054			
	DC	WH		27:35	RO	1.38	10.96			1.073			
316-318			5 Peaks				2,102.72						

---------- Above: TCDF / TCDD Follows ----------

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDD				0.65-0.89						0.903-1.045			
320-322	DC	NL		0:00	RO	1.14	3.35			0.000			
				23:55		0.78	32,139.20	14,123.50	18,015.70	0.908			E
				24:17		0.77	21,103.15	9,188.25	11,914.90	0.922			E
				24:34		0.78	9,007.22	3,953.61	5,053.61	0.932			E
				25:13		0.78	22,731.86	9,964.66	12,767.20	0.957			E
				25:29		0.78	16,407.17	7,203.11	9,204.06	0.967			E
				25:52		0.77	8,655.50	3,773.35	4,882.15	0.982			E
				26:10		0.78	8,081.92	3,543.83	4,538.09	0.993			E
				26:16		0.78	14,079.57	6,179.31	7,900.26	0.997			E
				26:22		0.78	2,106.84	925.35	1,181.49	1.001	2378-TCDD	AN	
				26:31		0.78	3,636.36	1,595.40	2,040.96	1.006			
				26:40		0.78	4,020.79	1,760.69	2,260.10	1.012			
				26:53		0.78	1,243.23	546.45	696.78	1.020			
				27:20		0.79	1,217.05	536.26	680.79	1.037			
320-322			13	Peaks			144,429.86						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			3.44			0.000			
	DC	WL		23:55			166.71			0.908			
	DC	WL		24:09			531.24			0.917			
	DC	WL		24:17			287.35			0.922			
				24:34			66.98	66.98		0.932			
				25:01			3,268.57	3,268.57		0.949			
				25:13			128.58	128.58		0.957			
				25:29			90.03	90.03		0.967			
				25:45			32.21	32.21		0.977			
				25:52			68.21	68.21		0.982			
				26:09			55.77	55.77		0.992			
				26:22			2,262.40	2,262.40		1.001	37Cl-TCDD	SUR1	
				26:31			77.49	77.49		1.006			
				26:43			5,311.12	5,311.12		1.014			
				27:20			7.89	7.89		1.037			
				27:32			10.93	10.93		1.045			
				27:37			7.97	7.97		1.048			
				27:43			10.92	10.92		1.052			
328			14	Peaks			11,399.07						
13C12-TCDD					0.65-0.89					0.924-1.076			
332-334	DC	NL		0:00	RO	1.98	5.73			0.000			
				25:14	RO	0.95	18.30	9.81	10.34	0.958			
				26:10		0.81	2,834.11	1,264.87	1,569.24	0.993	13C12-1234-TCDD	RS1	
				26:21		0.80	2,428.19	1,080.05	1,348.14	1.000	13C12-2378-TCDD	IS1	
				26:40	RO	0.61	34.41	14.97	24.42	1.012			
332-334			4	Peaks			5,315.01						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF				1.32-1.78						0.931-1.063			
340-342	DC	NL		0:00	RO	1.20	2.62			0.000			
				27:35	RO	1.12	53,788.38	32,694.90	29,186.10	0.935			SE
				27:51		1.43	1,540.23	906.51	633.72	0.944			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:01	RO	1.25	450.89	274.07	218.42	0.949			
				28:11	RO	1.08	1,691.39	1,028.10	952.37	0.955			
				28:33		1.40	41,266.30	24,037.00	17,229.30	0.967			SE
				28:41	RO	1.07	76,271.82	46,361.30	43,312.90	0.972			SE
				28:51		1.38	46,254.00	26,837.20	19,416.80	0.977			SE
				29:04		1.48	15,887.94	9,473.38	6,414.56	0.985			
				29:09		1.34	42,450.40	24,300.60	18,149.80	0.988			SE
				29:14	RO	1.20	48,347.34	29,387.60	24,530.40	0.990			SE
				29:26		1.47	27,964.40	16,650.70	11,313.70	0.997			
				29:32		1.44	37,339.20	22,006.40	15,332.80	1.001	12378-PeCDF	AN	E
				29:40		1.48	31,383.90	18,715.70	12,668.20	1.005			E
				29:48		1.47	40,938.10	24,362.30	16,575.80	1.010			E
				30:05		1.38	624.82	361.81	263.01	1.019			
				30:14		1.47	48,078.00	28,588.90	19,489.10	1.024	23478-PeCDF	AN	E
				30:25		1.50	41,831.30	25,071.20	16,760.10	1.030			E
				30:42		1.50	2,439.53	1,464.09	975.44	1.040			Q
				30:52		1.48	1,657.17	988.45	668.72	1.046			
				31:09		1.49	3,560.26	2,128.84	1,431.42	1.055			
		DC	WH	31:36		1.46	54.94			1.071			
340-342			20	Peaks			563,765.37						
13C12-PeCDF				1.32-1.78					0.864-1.136				
352-354		DC	NL	0:00	RO	1.16	1.22			0.000			
				27:35	RO	2.63	50.64	52.25	19.86	0.935			
		DC	SN	27:43	RO	1.28	4.69			0.939			
		DC	SN	28:11	RO	0.64	2.48			0.955			
				28:33	RO	2.06	28.69	23.18	11.25	0.967			
				28:41	RO	2.56	130.66	131.00	51.24	0.972			
				28:51	RO	1.17	63.32	38.49	32.86	0.977			
				29:09	RO	2.57	24.58	24.77	9.64	0.988			
				29:15	RO	2.23	44.47	38.89	17.44	0.991			
				29:31		1.52	2,670.85	1,609.42	1,061.43	1.000	13C12-PeCDF 123	IS2	
				29:40	RO	1.90	43.76	32.58	17.16	1.005			
				29:47		1.65	62.78	39.05	23.73	1.009			
				29:56	RO	1.04	5.54	3.37	3.23	1.014			
				30:13		1.52	2,641.13	1,593.71	1,047.42	1.024	13C12-PeCDF 234	SUR2	
				30:24	RO	2.40	37.54	35.28	14.72	1.030			
		DC	SN	30:53	RO	2.29	2.52			1.046			
		DC	SN	31:00	RO	1.14	3.47			1.050			
				31:08	RO	2.26	9.77	8.64	3.83	1.055			
				31:26	RO	0.75	4.41	2.68	3.56	1.065			
352-354			14	Peaks			5,818.14						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78					0.939-1.022				
356-358		DC	NL	0:00	RO	1.02	2.07			0.000			
				28:48	RO	1.22	49,412.09	30,034.80	24,660.70	0.943			SE
				29:14		1.55	4,801.07	2,916.34	1,884.73	0.957			
				29:29		1.54	29,982.10	18,191.90	11,790.20	0.965			E
				29:36		1.52	7,403.47	4,468.33	2,935.14	0.969			
				29:48		1.55	20,654.24	12,560.60	8,093.64	0.975			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:03		1.55	12,393.62	7,531.10	4,862.52	0.984			
				30:16		1.58	6,754.91	4,140.58	2,614.33	0.991			
	A			30:26	RO	0.84	2,615.81	1,590.00	1,890.00	0.996			
				30:34		1.54	5,536.05	3,359.42	2,176.63	1.001	12378-PeCDD	AN	
				30:39		1.55	1,245.86	756.37	489.49	1.003			Q
				30:59		1.52	2,625.97	1,585.56	1,040.41	1.014			
356-358			11	Peaks			143,425.19						
13C12-PeCDD				1.32-1.78					0.869-1.131				
368-370	DC	NL		0:00	RO	1.20	0.99			0.000			
				28:47	RO	3.01	43.73	51.67	17.15	0.942			
				29:09	RO	1.27	8.24	5.01	3.93	0.954			
				29:15	RO	1.09	7.04	4.28	3.94	0.957			
				29:29	RO	2.10	27.57	22.68	10.81	0.965			
				29:48	RO	1.89	14.33	10.64	5.62	0.975			
	DC	SN		30:02	RO	4.05	6.04			0.983			
				30:14	RO	2.27	11.55	10.27	4.53	0.990			
	DC	SN		30:22	RO	1.92	4.82			0.994			
				30:33		1.49	1,675.27	1,001.12	674.15	1.000	13C12-PeCDD 123	IS3	
	DC	SN		30:53	RO	5.33	1.40			1.011			
				31:00	RO	1.29	5.53	3.36	2.61	1.015			
	DC	SN		31:32	RO	1.29	2.98			1.032			
368-370			8	Peaks			1,793.26						

---------- Above: PeCDD / HxCDF Follows ----------

HxCDF				1.05-1.43					0.964-1.049				
374-376	DC	NL		0:00	RO	1.48	133.15			0.000			
				31:57		1.26	17,101.65	9,543.13	7,558.52	0.969			
				32:05		1.18	45,449.20	24,603.90	20,845.30	0.973			SE
				32:14		1.23	3,709.53	2,044.94	1,664.59	0.977			
				32:22		1.24	4,903.93	2,714.63	2,189.30	0.981			
				32:31		1.28	3,149.19	1,765.64	1,383.55	0.986			
	X		X	32:44	RO	1.30	698.40	394.48	303.92	0.992			
				32:54		1.26	27,385.20	15,260.60	12,124.60	0.997	123478-HxCDF	AN	E
				33:00		1.26	14,162.63	7,899.76	6,262.87	1.001	123678-HxCDF	AN	
				33:07		1.27	2,616.76	1,465.07	1,151.69	1.004			
				33:19		1.24	4,266.03	2,365.57	1,900.46	1.010			
	AX		X	33:26	RO	1.27	621.00	347.00	274.00	1.014			
	M			33:31		1.26	7,080.00	3,950.00	3,130.00	1.016	234678-HxCDF	AN	
	MX		X	34:14	RO	1.23	1,155.00	637.00	518.00	1.038			
	AN			34:18		1.33	368.00	210.00	158.00	1.040	123789-HxCDF	AN	PR
	M			34:23		1.26	1,324.00	738.00	586.00	1.042			
	DC	WH		34:47		1.27	302.92			1.055			
374-376			15	Peaks			133,990.52						
13C12-HxCDF				0.43-0.59					0.879-1.121				
384-386	DC	NL		0:00	RO	1.05	4.58			0.000			
				31:56	RO	2.06	8.37	11.40	5.54	0.968			
				32:05	RO	1.61	26.67	28.51	17.66	0.973			
	DC	SN		32:22	RO	3.27	1.45			0.981			
				32:53		0.53	1,923.59	668.31	1,255.28	0.997	13C12-HxCDF 478	SUR3	

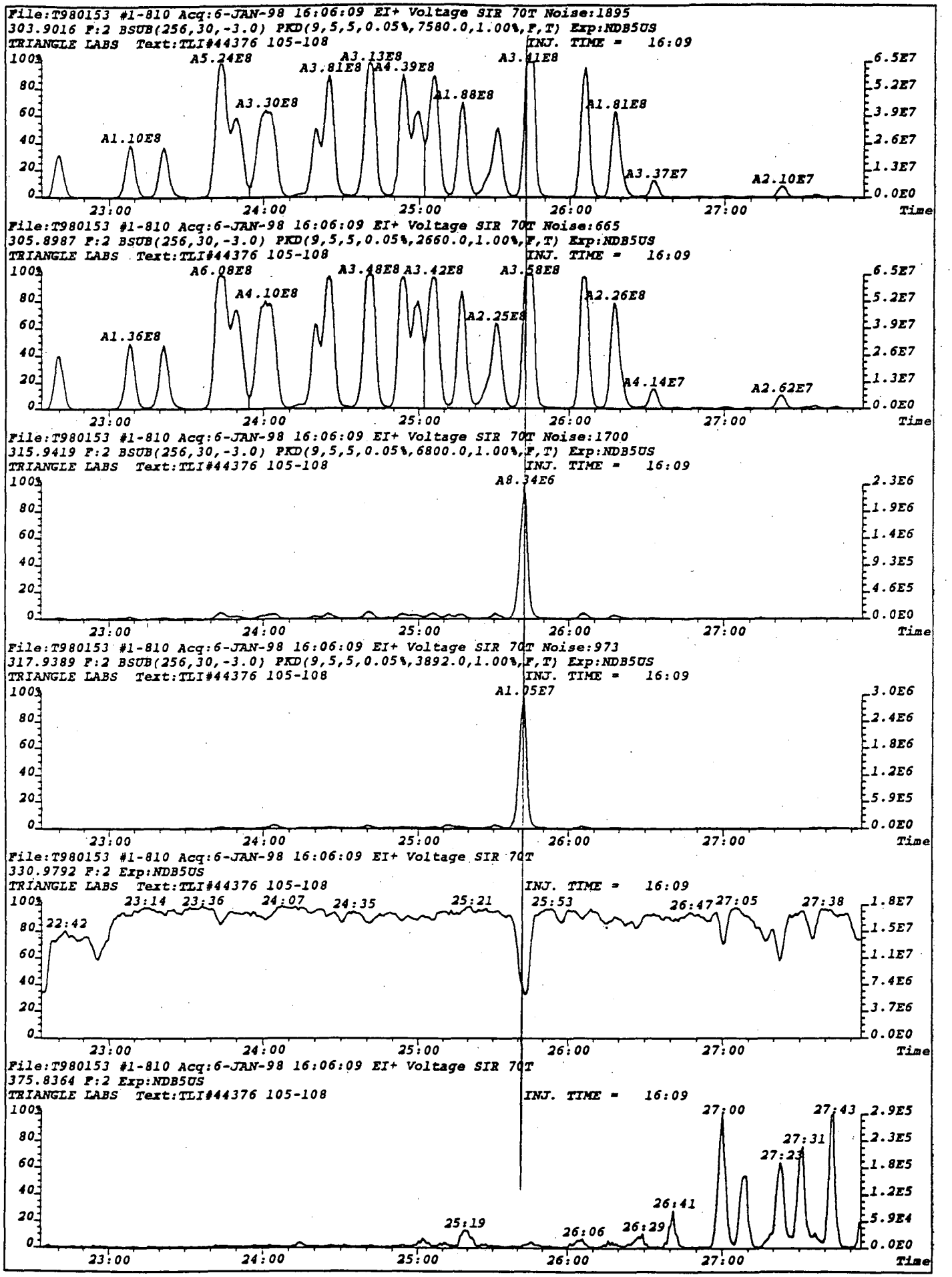
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:59		0.51	2,213.12	751.65	1,461.47	1.000	13C12-HxCDF 678	IS4	
				33:30		0.51	2,072.07	701.84	1,370.23	1.016	13C12-HxCDF 234	ALT2	
	DC	SN	33:46	RO	0.33	2.40			1.024				
	DC	SN	34:02	RO	3.55	0.63			1.032				
			34:18		0.52	1,773.53	606.72	1,166.81	1.040	13C12-HxCDF 789	ALT1	
	DC	SN	34:30	RO	0.22	4.62			1.046				
384-386		6	Peaks			8,017.35							
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43					0.958-1.015				
390-392	DC	NL	0:00	RO	0.77	8.74			0.000				
			32:25		1.22	4,697.62	2,584.90	2,112.72	0.962				Q
			32:52		1.21	11,857.20	6,494.05	5,363.15	0.975				QE
			33:05		1.22	7,632.77	4,187.41	3,445.36	0.982				Q
			33:16		1.25	807.28	447.92	359.36	0.987				Q
			33:37		1.24	876.15	484.37	391.78	0.998	123478-HxCDD	AN		Q
			33:42		1.24	1,334.98	737.95	597.03	1.000	123678-HxCDD	AN		
			34:01		1.22	2,187.27	1,204.00	983.27	1.009	123789-HxCDD	AN		QPR
390-392		7	Peaks			29,393.27							
13C12-HxCDD				1.05-1.43					0.970-1.030				
402-404	DC	NL	0:00	RO	2.14	3.81			0.000				
			33:04	RO	1.50	14.56	9.76	6.50	0.981				
	DC	SN	33:16	RO	2.64	5.04			0.987				
			33:36		1.19	1,518.94	823.86	695.08	0.997	13C12-HxCDD 478	SUR4		Q
			33:42		1.18	1,184.11	640.10	544.01	1.000	13C12-HxCDD 678	IS5		Q
			34:01		1.17	2,185.31	1,177.94	1,007.37	1.009	13C12-HxCDD 789	RS2		
			34:11	RO	0.78	10.31	5.71	7.35	1.014				
402-404		5	Peaks			4,913.23							
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20					0.998-1.053				
408-410	DC	NL	0:00	RO	1.26	6.43			0.000				
			36:00		1.03	6,468.11	3,287.09	3,181.02	1.000	1234678-HpCDF	AN		
X		X	36:16	RO	1.08	1,911.71	990.63	921.08	1.008				
			36:26		1.05	1,049.87	536.57	513.30	1.013				
D	D	NH	37:06	RO	1.42	15.22			1.031				
D	D	NH	37:21	RO	1.67	14.93			1.038				
			37:37		1.09	582.52	303.26	279.26	1.045	1234789-HpCDF	AN		
	DC	WH	38:11		1.10	34.48			1.061				
408-410		4	Peaks			10,012.21							
13C12-HpCDF				0.37-0.51					0.944-1.111				
418-420	DC	NL	0:00	RO	1.07	1.84			0.000				
			35:59		0.45	1,499.56	468.35	1,031.21	1.000	13C12-HpCDF 678	IS6		
	DC	SN	36:26	RO	1.73	1.51			1.013				
			37:36		0.44	1,176.39	360.80	815.59	1.045	13C12-HpCDF 789	SUR5		
	DC	SN	37:59		0.48	2.72			1.056				
418-420		2	Peaks			2,675.95							

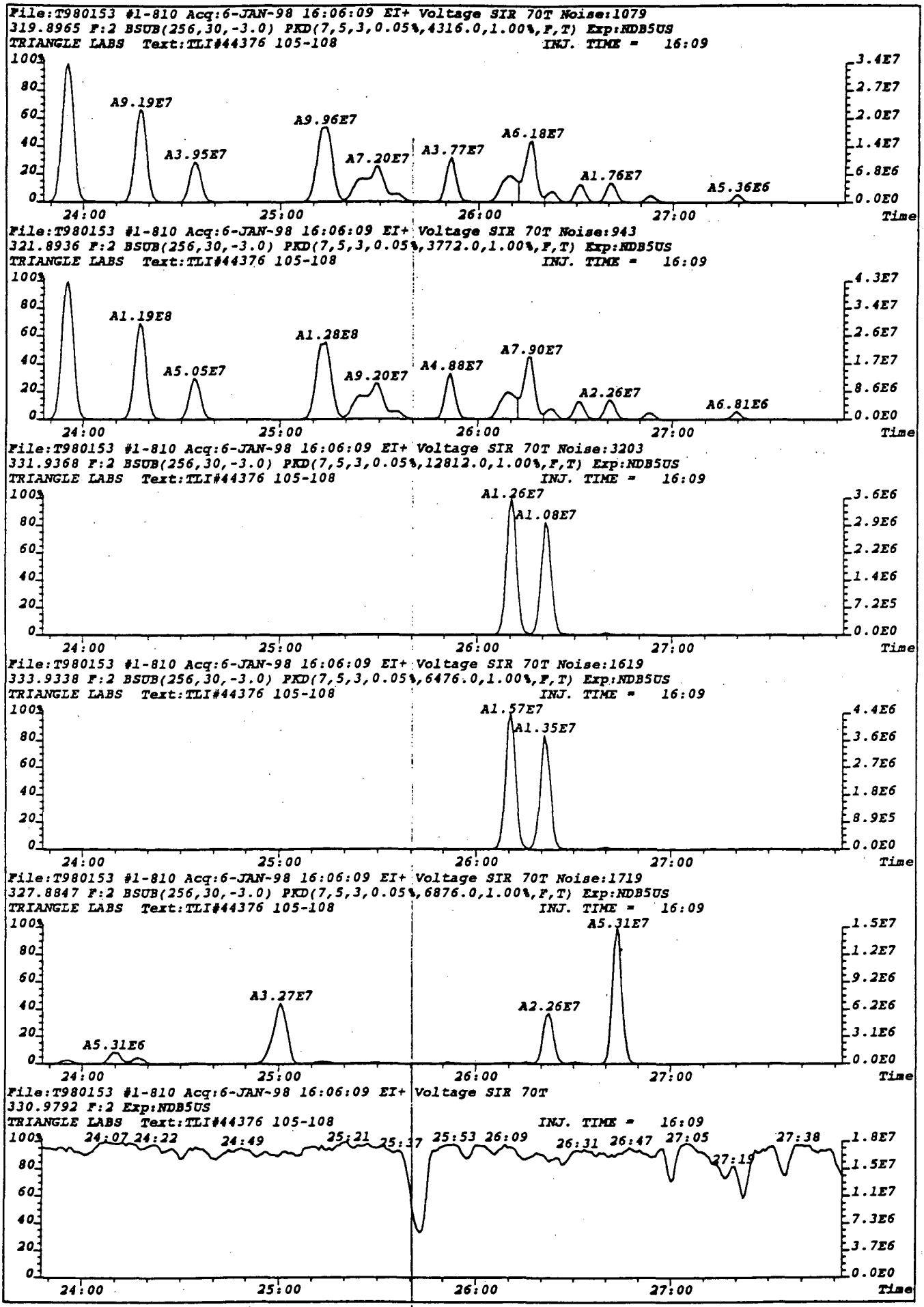
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.976-1.006			
424-426	DC	NL		0:00	RO	1.59	1.84			0.000			
				36:18		0.99	2,335.78	1,161.42	1,174.36	0.979			
				37:05		1.01	2,247.54	1,128.65	1,118.89	1.000	1234678-HpCDD		AN
	DC	WH		37:37		1.19	6.39			1.014			
424-426				2 Peaks			4,583.32						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00		1.06	2.35			0.000			
				36:16	RO	1.22	8.08	4.83	3.96	0.978			
	DC	SN		36:38		1.01	1.49			0.988			
				37:05		1.01	1,604.33	807.10	797.23	1.000	13C12-HpCDD 678		IS7
	DC	SN		37:23	RO	0.79	4.61			1.008			
				37:26		1.17	6.15	3.32	2.83	1.009			
436-438				3 Peaks			1,618.56						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00		0.96	0.38			0.000			
	DC	WL		35:16	RO	0.63	0.64			0.862			
	DC	WL		35:40	RO	0.42	0.72			0.872			
	DC	WL		35:46	RO	1.76	0.64			0.874			
	DC	WL		36:02		0.80	2.21			0.881			
	DC	WL		36:15		0.83	18.47			0.886			
	DC	WL		36:26	RO	1.12	1.08			0.890			
	DC	WL		36:33	RO	1.50	0.72			0.893			
	DC	WL		36:39	RO	0.53	0.45			0.896			
	DC	WL		36:46	RO	0.34	0.93			0.899			
	DC	SN		37:05	RO	1.21	2.66			0.906			
	DC	SN		37:12		0.86	0.91			0.909			
	DC	SN		37:20	RO	1.11	1.53			0.912			
	DC	SN		37:36	RO	0.28	0.34			0.919			
	DC	SN		37:43	RO	0.26	0.47			0.922			
	DC	SN		37:49	RO	1.62	0.55			0.924			
	DC	SN		38:15	RO	1.67	1.10			0.935			
	DC	SN		38:31	RO	1.48	1.66			0.941			
	DC	SN		38:39	RO	1.07	0.55			0.945			
				39:05		0.94	49.16	23.82	25.34	0.955			
	DC	SN		39:15		0.79	1.00			0.959			
	DC	SN		39:26		0.98	0.99			0.964			
	DC	SN		39:33	RO	3.97	0.55			0.967			
	DC	SN		39:39	RO	0.61	1.40			0.969			
	DC	SN		39:52	RO	0.25	0.53			0.974			
	DC	SN		40:16	RO	0.32	0.89			0.984			
	DC	SN		40:20	RO	0.40	0.96			0.986			
	DC	SN		40:52		0.97	1.14			0.999			
	DC	SN		41:00	RO	1.83	1.53			1.002			
				41:09		0.92	715.06	343.02	372.04	1.006	OCDF		AN
				41:25		0.93	57.23	27.60	29.63	1.012			

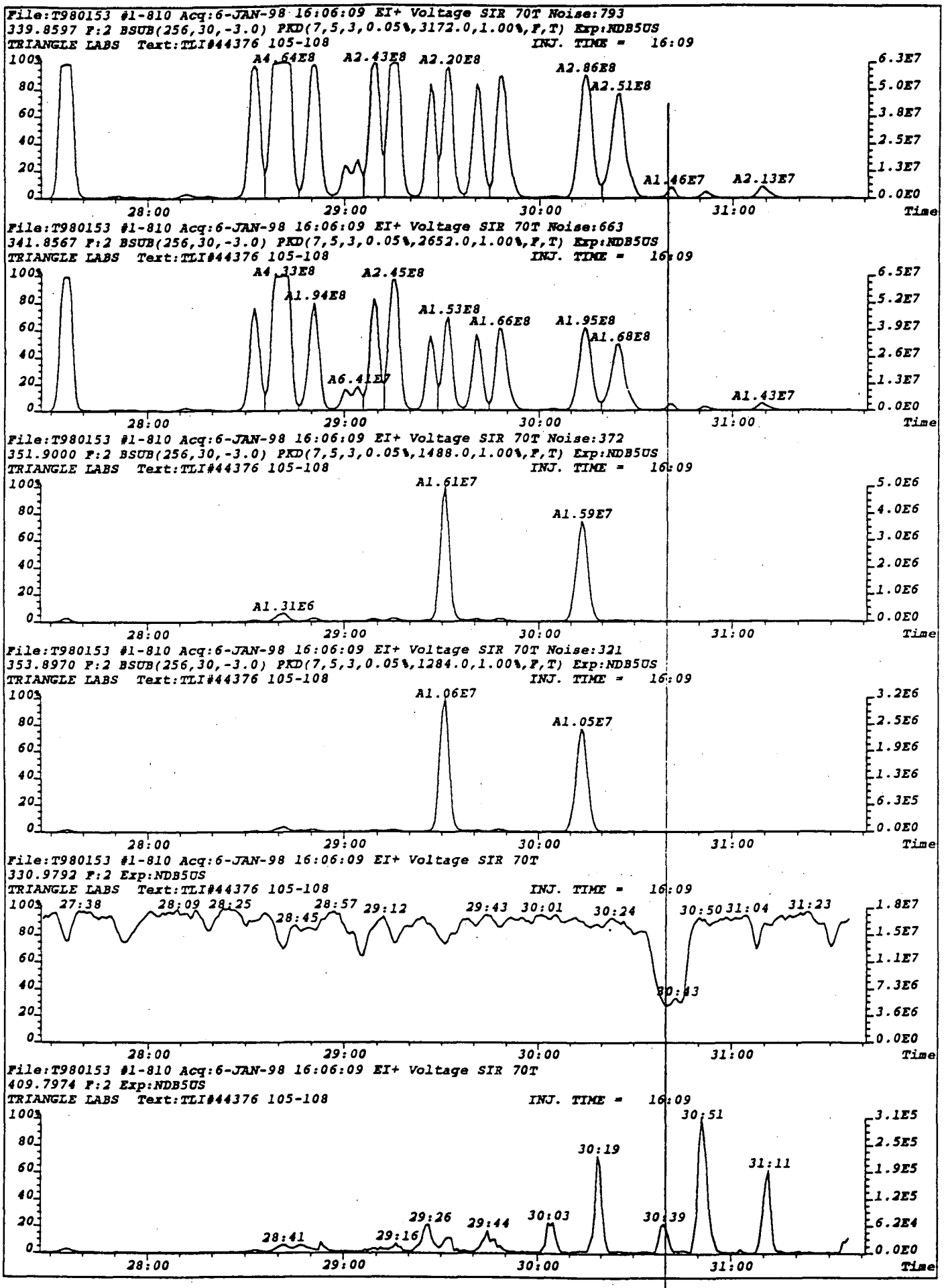
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		41:39	RO	0.61	2.06			1.018			
	DC	SN		41:50	RO	0.49	2.51			1.022			
	DC	SN		41:56		0.76	1.37			1.025			
442-444			3 Peaks				821.45						
OCDD				0.76-1.02						0.902-1.098			
458-460	DC	NL		0:00	RO	0.73	0.34			0.000			
				40:56		0.82	1,055.02	476.03	578.99	1.000	OCDD		AN
	DC	SN		41:16	RO	1.29	3.57			1.009			
	DC	SN		41:30	RO	0.68	2.48			1.014			
458-460			1 Peak				1,055.02						
13C12-OCDD				0.76-1.02						0.998-1.006			
470-472	DC	NL		0:00	RO	1.29	0.26			0.000			
				40:55		0.92	2,360.58	1,131.89	1,228.69	1.000	13C12-OCDD		IS8
470-472			1 Peak				2,360.58						

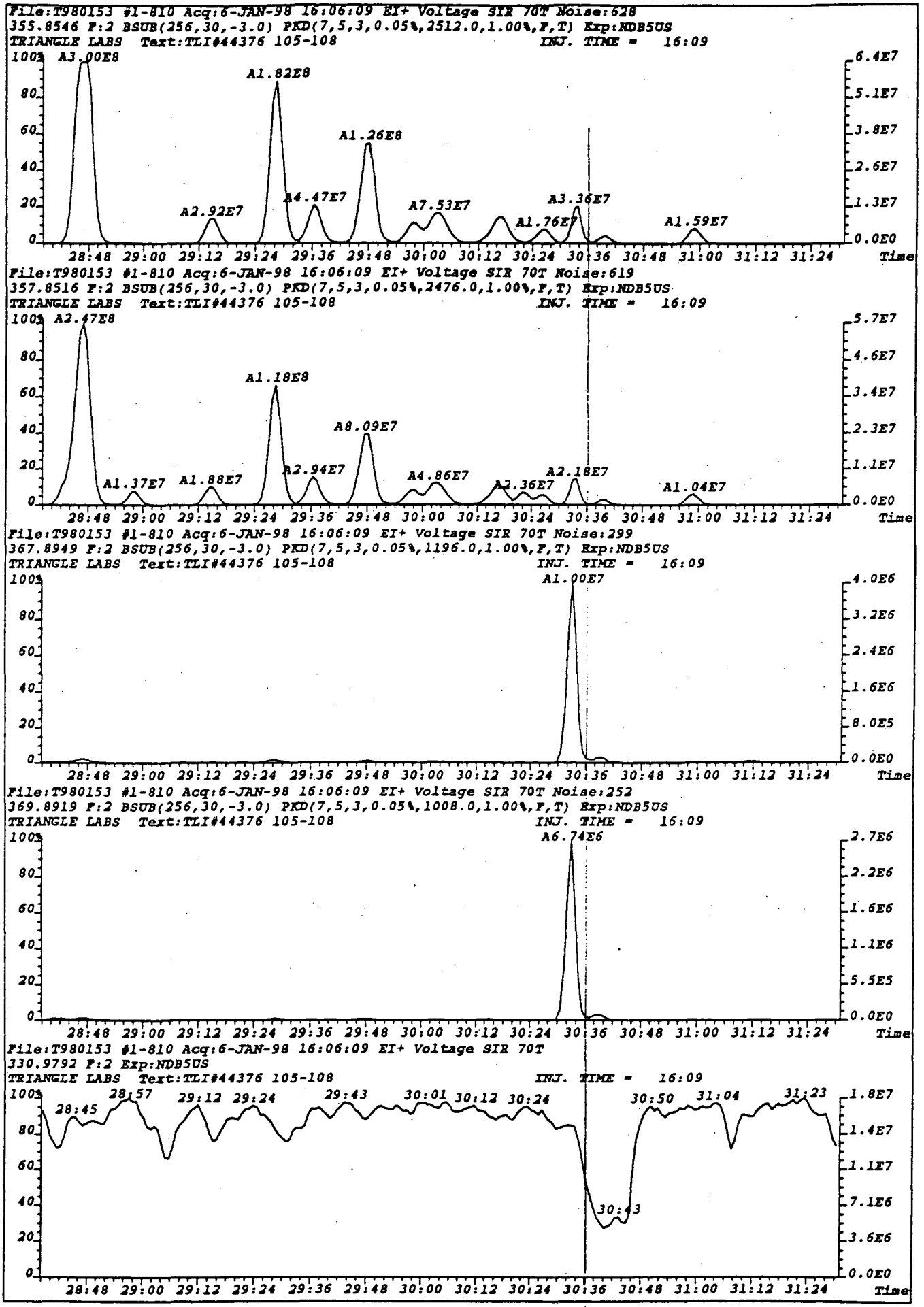
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

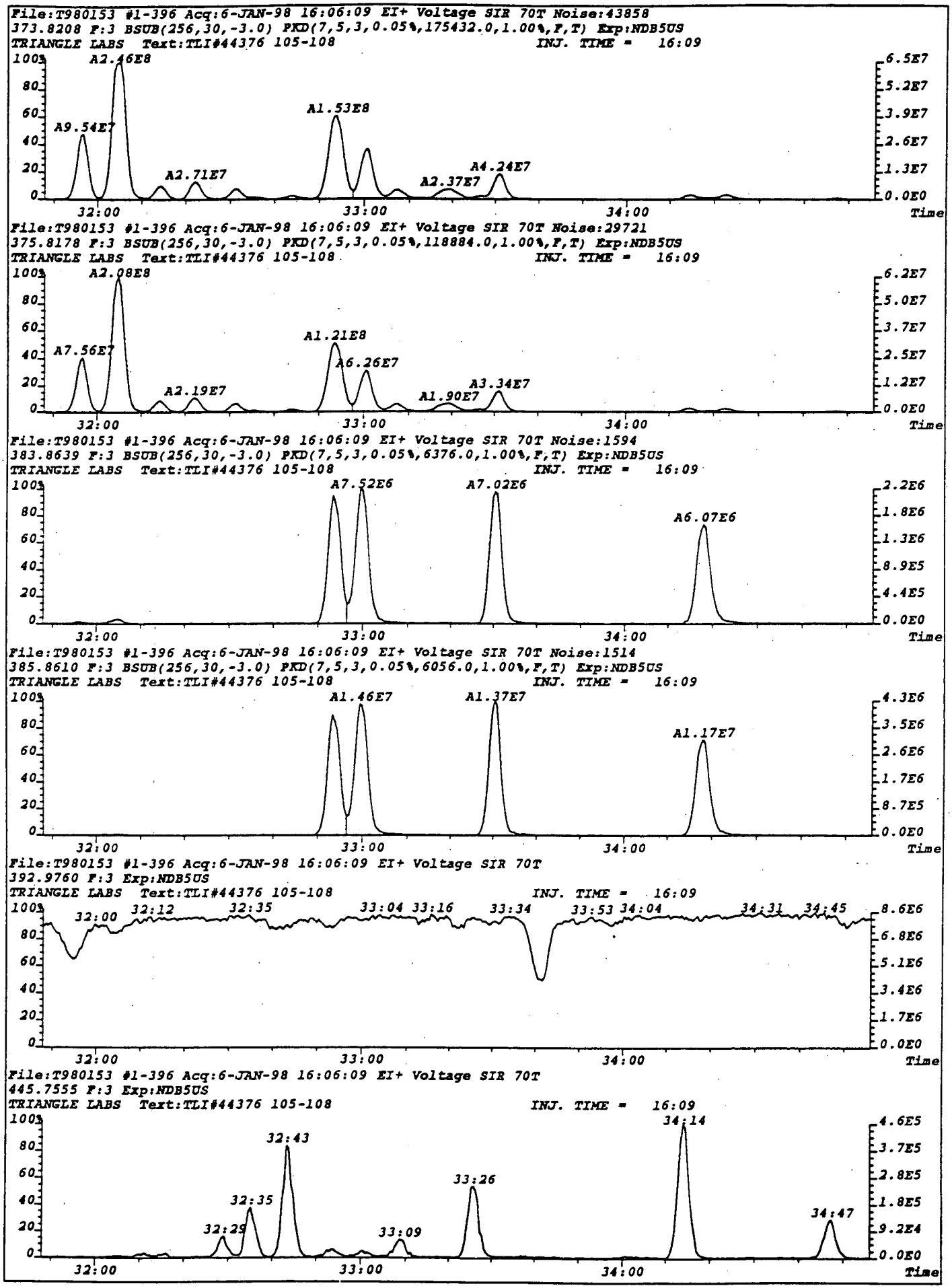
*** End of Report ***

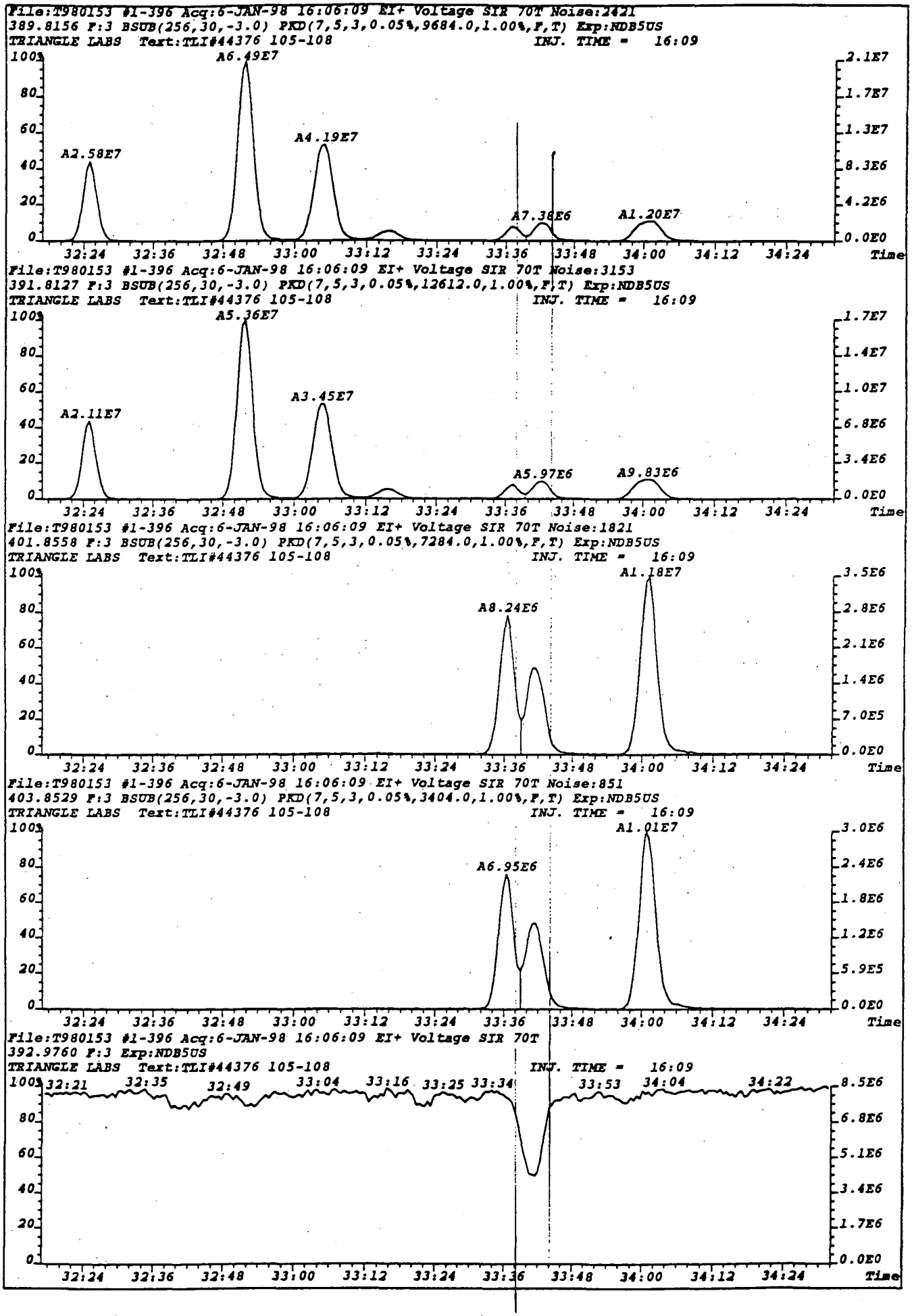

File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1895
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,7580.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A5.24E8
A3.13E8
A3.81E8
A4.39E8
A3.41E8
A3.30E8
A1.88E8
A1.81E8
A1.10E8
A3.37E7
A2.10E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:665
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,2660.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A6.08E8
A3.48E8
A3.42E8
A3.58E8
A4.10E8
A2.25E8
A2.26E8
A1.36E8
A4.14E7
A2.62E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1700
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,6800.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A8.34E6
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:973
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3892.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.05E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
22:42
23:14
23:36
24:07
24:35
25:21
25:53
26:47
27:05
27:38
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
25:19
26:06
26:29
26:41
27:00
27:23
27:31
27:43
23:00
24:00
25:00
26:00
27:00
Time


File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1079
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A9.19E7
A3.95E7
A9.96E7
A7.20E7
A3.77E7
A6.18E7
A1.76E7
A5.36E6
24:00
25:00
26:00
27:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:943
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3772.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.19E8
A5.05E7
A1.28E8
A9.20E7
A4.88E7
A7.90E7
A2.26E7
A6.81E6
24:00
25:00
26:00
27:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:3203
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12812.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.26E7
A1.08E7
24:00
25:00
26:00
27:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1619
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6476.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.57E7
A1.35E7
24:00
25:00
26:00
27:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1719
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6876.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A5.31E7
A3.27E7
A2.26E7
A5.31E6
24:00
25:00
26:00
27:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
24:07 24:22 24:49 25:21 25:37 25:53 26:09 26:31 26:47 27:05 27:19 27:38
24:00
25:00
26:00
27:00
Time

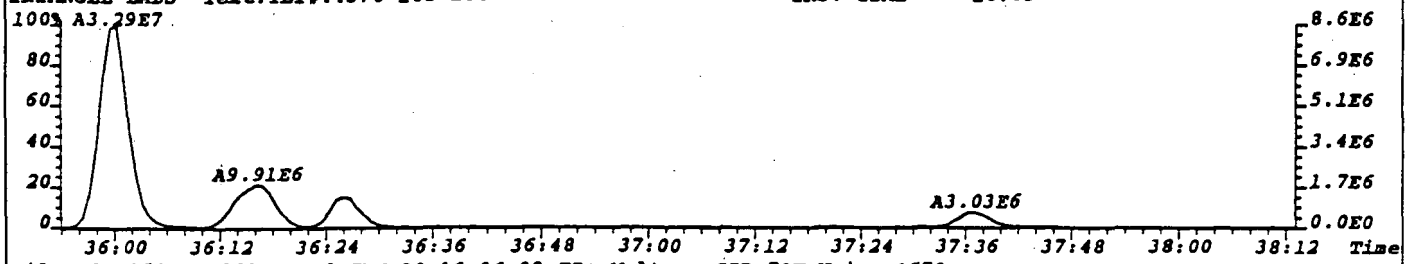

File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:793
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3172.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A4.64E8 A2.43E8 A2.20E8 A2.86E8 A2.51E8 A1.46E7 A2.13E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:663
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2652.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A4.33E8 A2.45E8 A1.94E8 A1.53E8 A1.66E8 A1.95E8 A1.68E8 A6.41E7 A1.43E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:372
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1488.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.61E7 A1.59E7 A1.31E6
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:321
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.06E7 A1.05E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
27:38 28:09 28:25 28:45 28:57 29:12 29:43 30:01 30:24 30:50 31:04 31:23
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
28:41 29:16 29:26 29:44 30:03 30:19 30:39 30:51 31:11
28:00 29:00 30:00 31:00 Time


File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:628
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2512.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A3.00E8
A1.82E8
A1.26E8
A2.92E7
A4.47E7
A7.53E7
A1.76E7
A3.36E7
A1.59E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:619
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2476.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A2.47E8
A1.18E8
A8.09E7
A1.37E7
A1.88E7
A2.94E7
A4.86E7
A2.36E7
A2.18E7
A1.04E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:299
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.00E7
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:252
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1008.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A6.74E6
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
28:45
28:57
29:12
29:24
29:43
30:01
30:12
30:24
30:43
30:50
31:04
31:23
28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24
Time

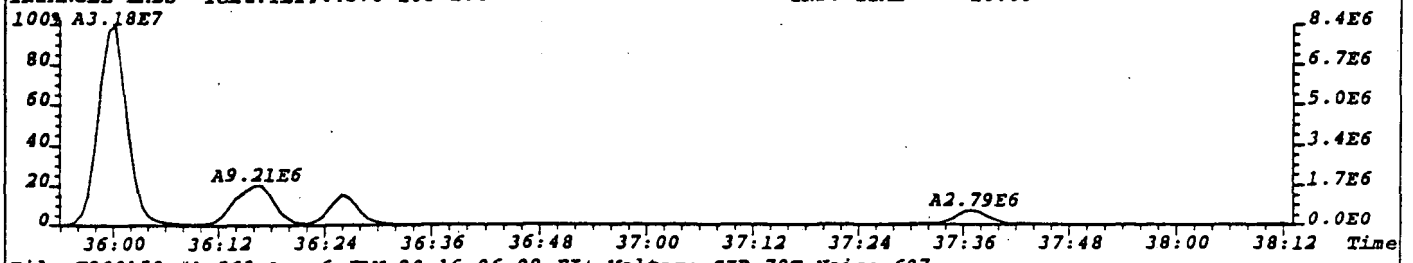

File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:43858
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,175432.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A2.46E8
A9.54E7
A1.53E8
A2.71E7
A2.37E7
A4.24E7
32:00
33:00
34:00
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:29721
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,118884.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A2.08E8
A7.56E7
A1.21E8
A6.26E7
A2.19E7
A1.90E7
A3.34E7
32:00
33:00
34:00
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1594
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6376.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A7.52E6
A7.02E6
A6.07E6
32:00
33:00
34:00
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1514
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6056.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
A1.46E7
A1.37E7
A1.17E7
32:00
33:00
34:00
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
32:00
32:12
32:35
33:04
33:16
33:34
33:53
34:04
34:31
34:45
32:00
33:00
34:00
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09
32:43
34:14
33:26
32:35
32:29
33:09
34:47
32:00
33:00
34:00
Time


File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:2421
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9684.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A6.49E7
A4.19E7
A2.58E7
A7.38E6
A1.20E7
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:3153
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12612.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A5.36E7
A3.45E7
A2.11E7
A5.97E6
A9.83E6
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1821
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.18E7
A8.24E6
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:851
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3404.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.01E7
A6.95E6
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
Time

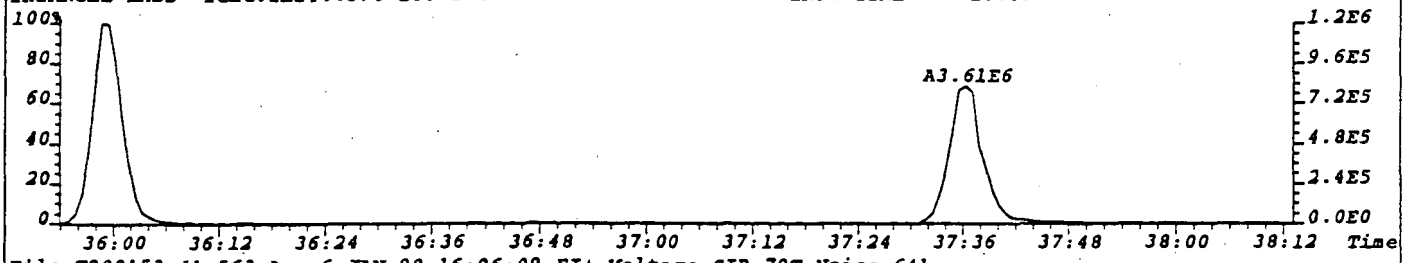
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1979
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7916.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



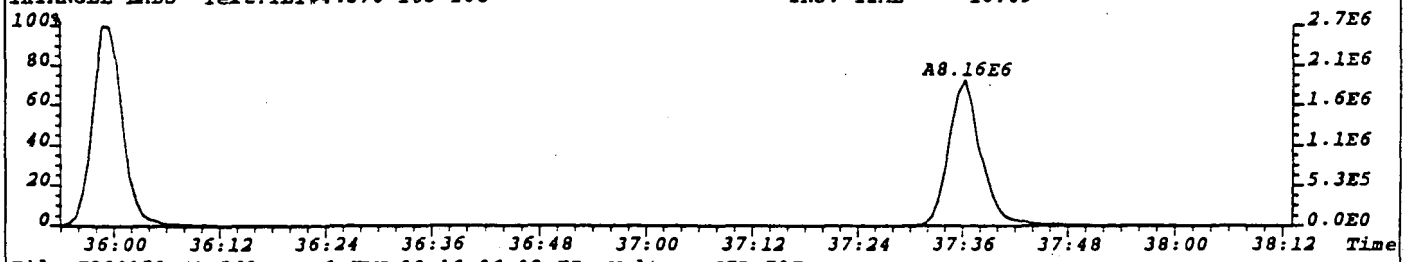
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:1573
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



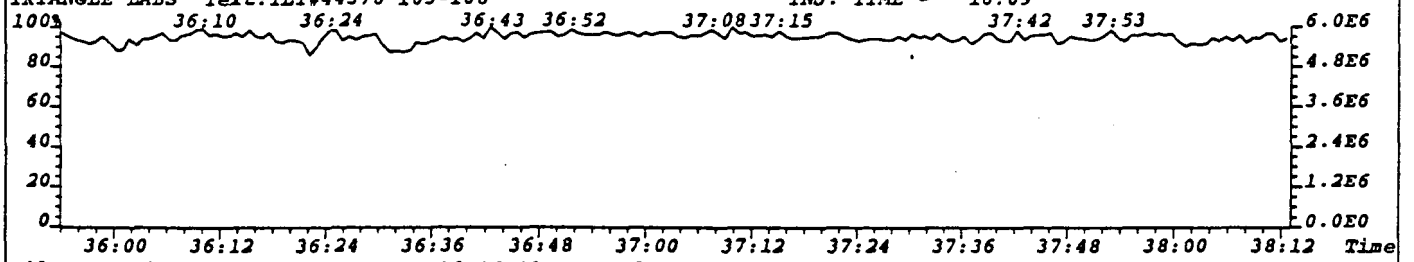
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:687
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2748.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



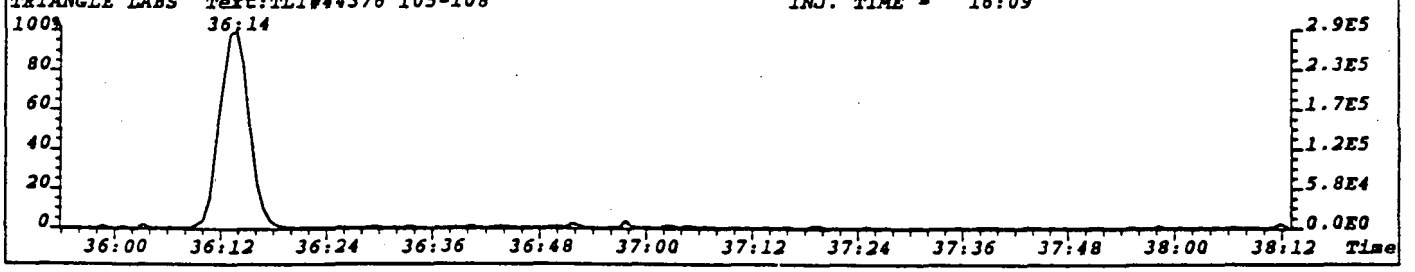
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:641
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2564.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09

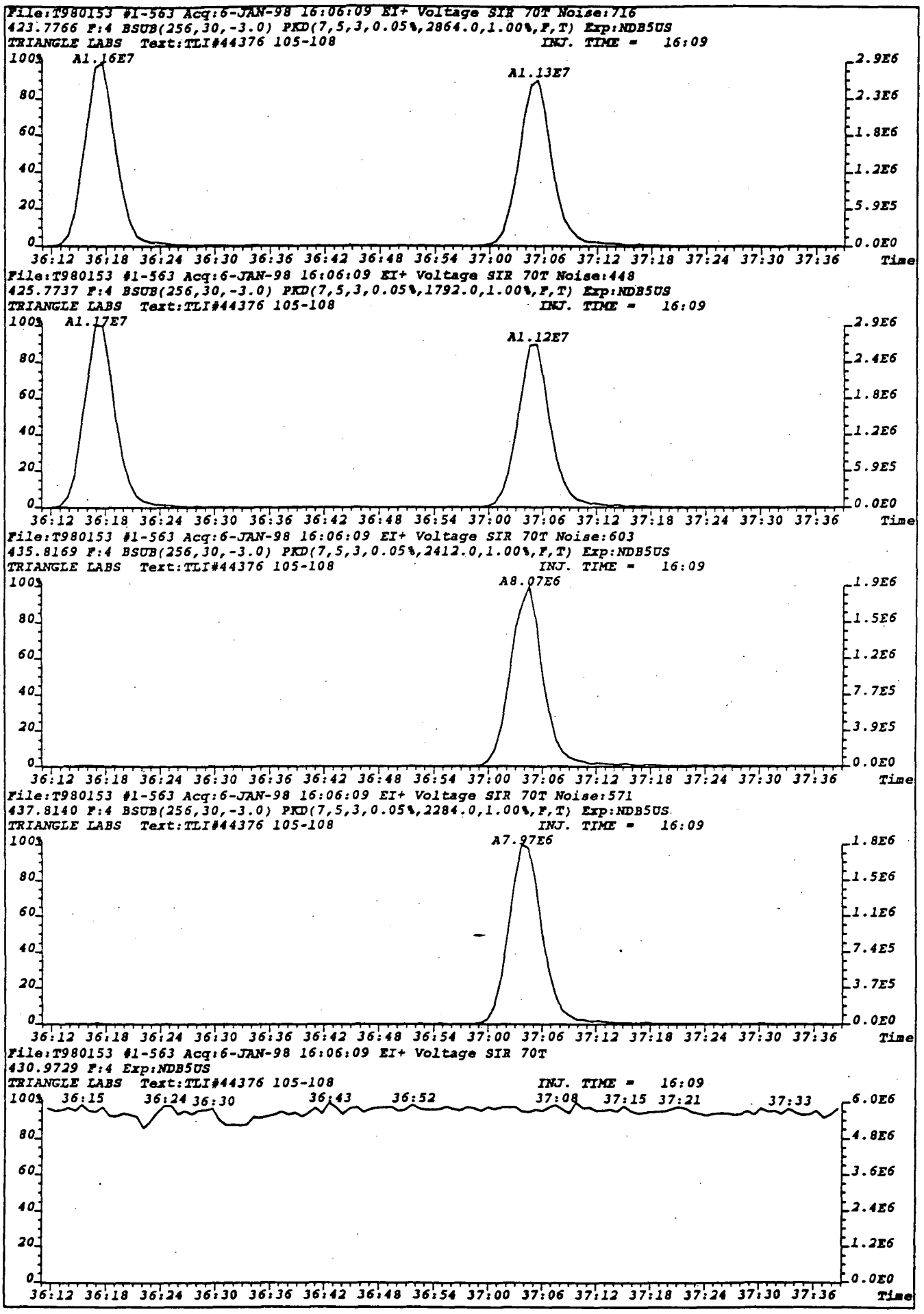


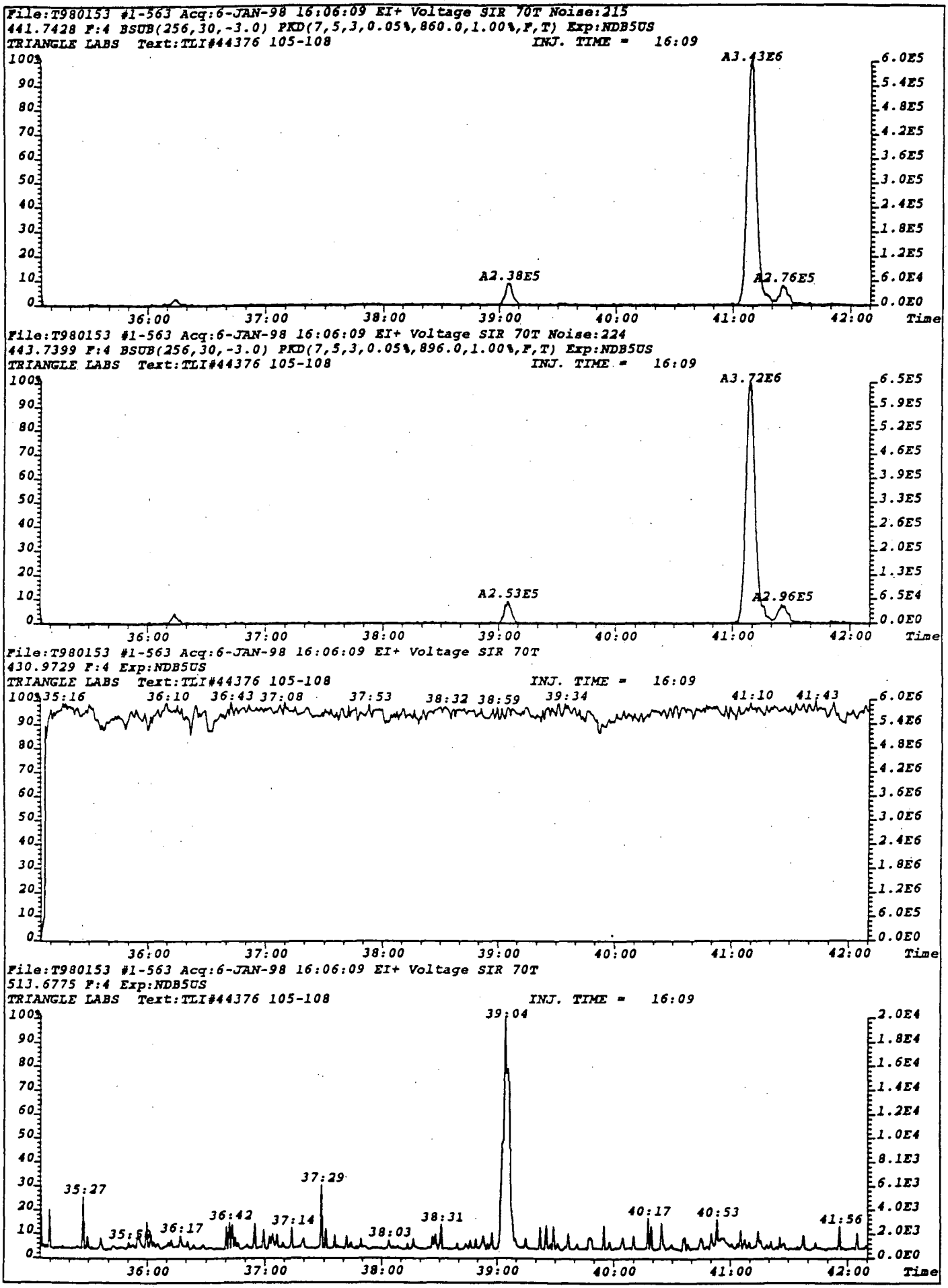
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



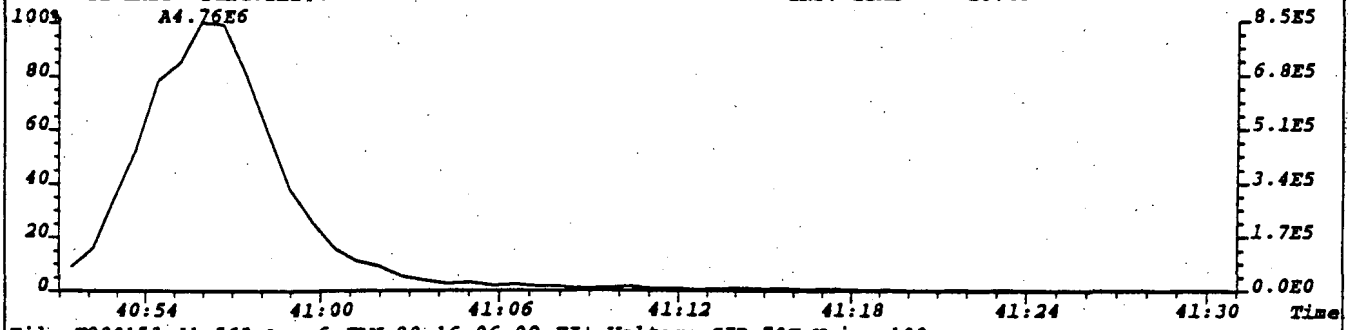
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



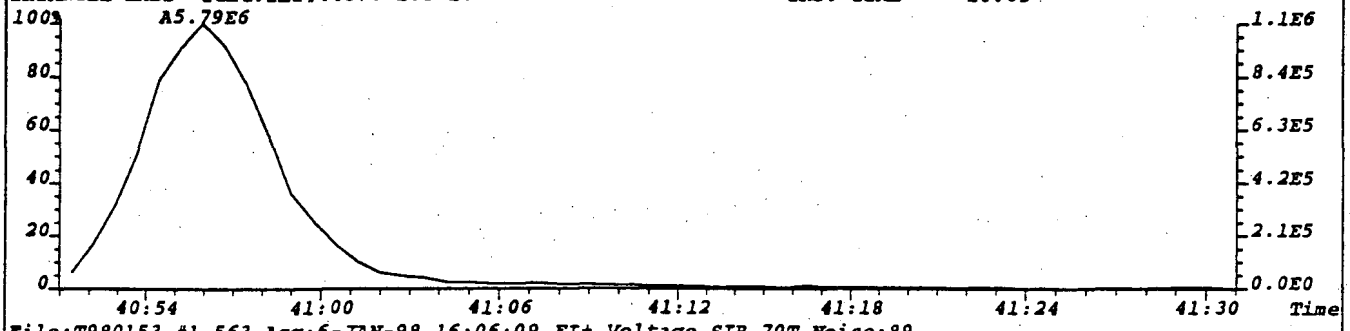

File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:716
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.16E7
A1.13E7
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:448
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1792.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A1.17E7
A1.12E7
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:603
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A8.07E6
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:571
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A7.97E6
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
Time


File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:215
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A3.43E6
A2.38E5
A2.76E5
Time
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:224
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,896.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
A3.72E6
A2.53E5
A2.96E5
Time
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
Time
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108
INJ. TIME = 16:09
Time

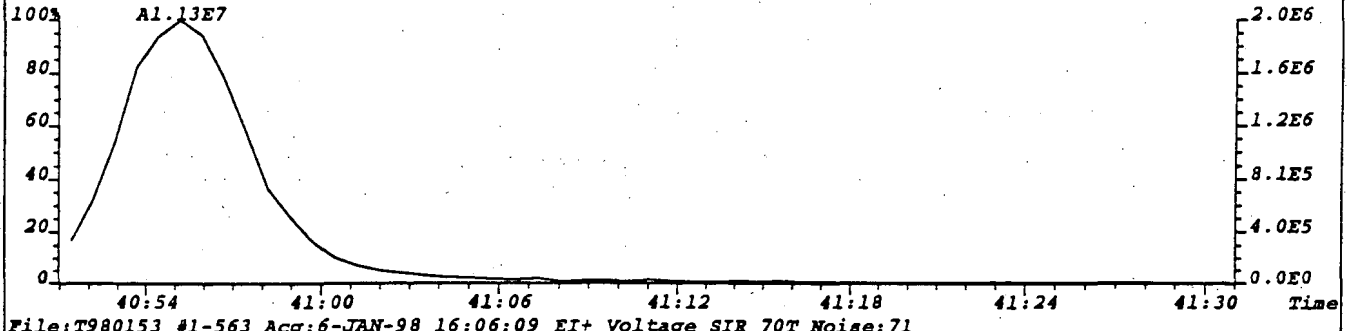
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:78
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



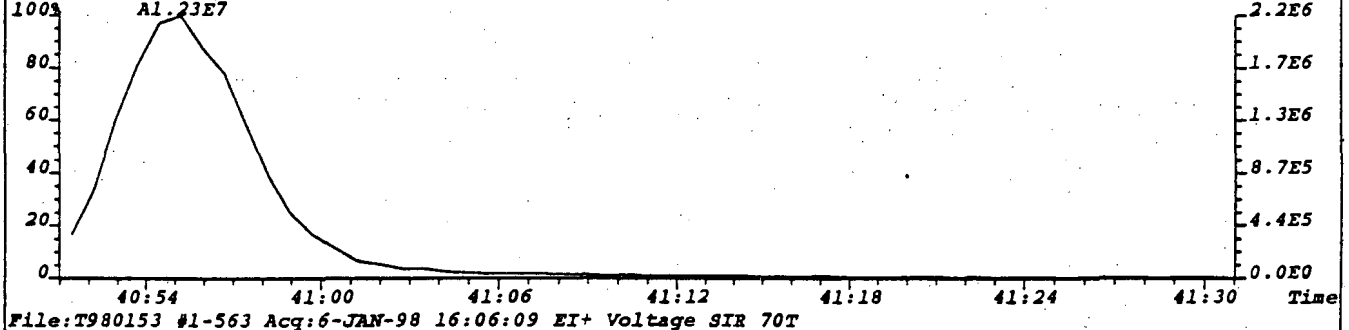
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:108
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,432.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



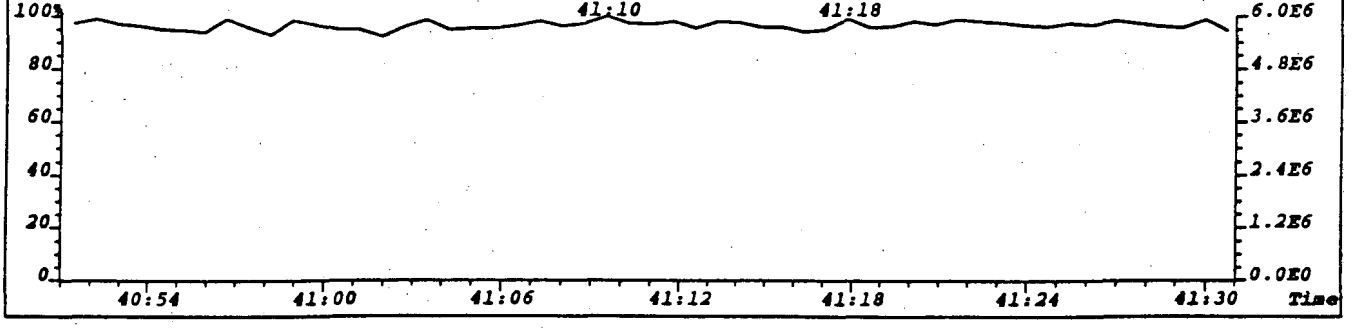
File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:89
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,356.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09

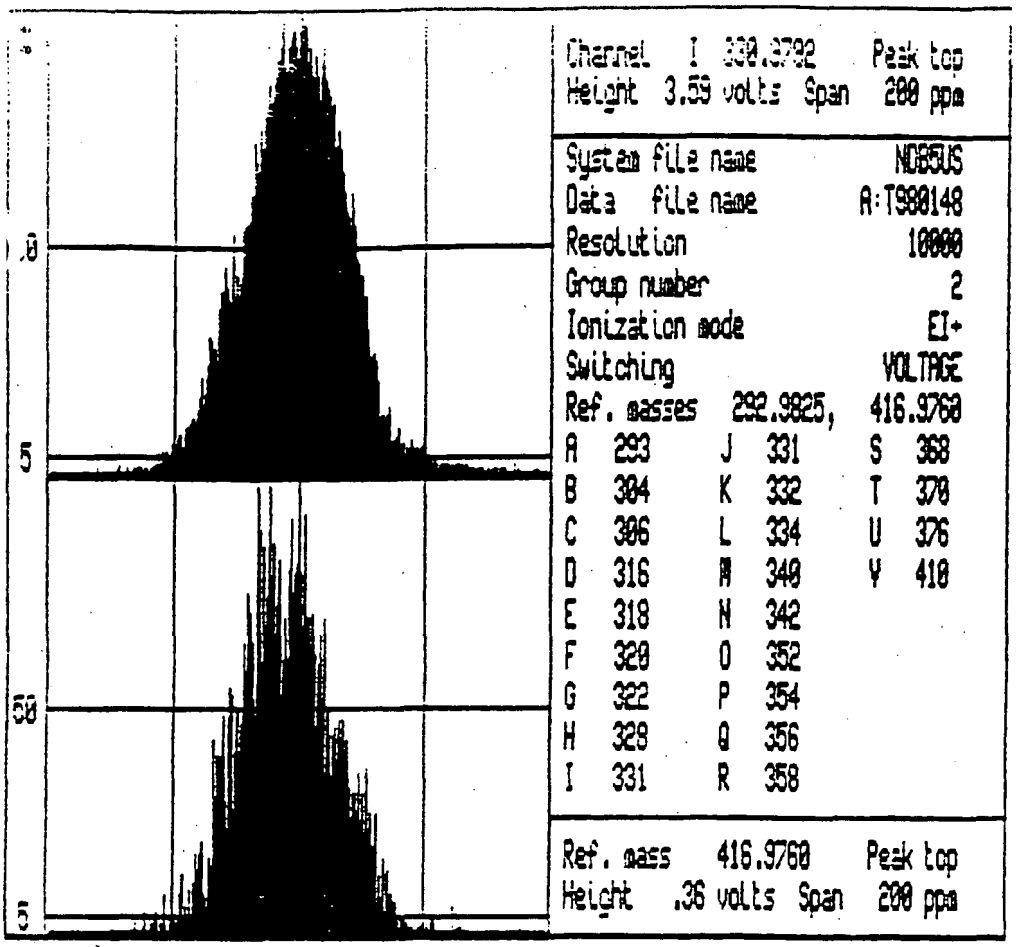


File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T Noise:71
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



File:T980153 #1-563 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 105-108 INJ. TIME = 16:09



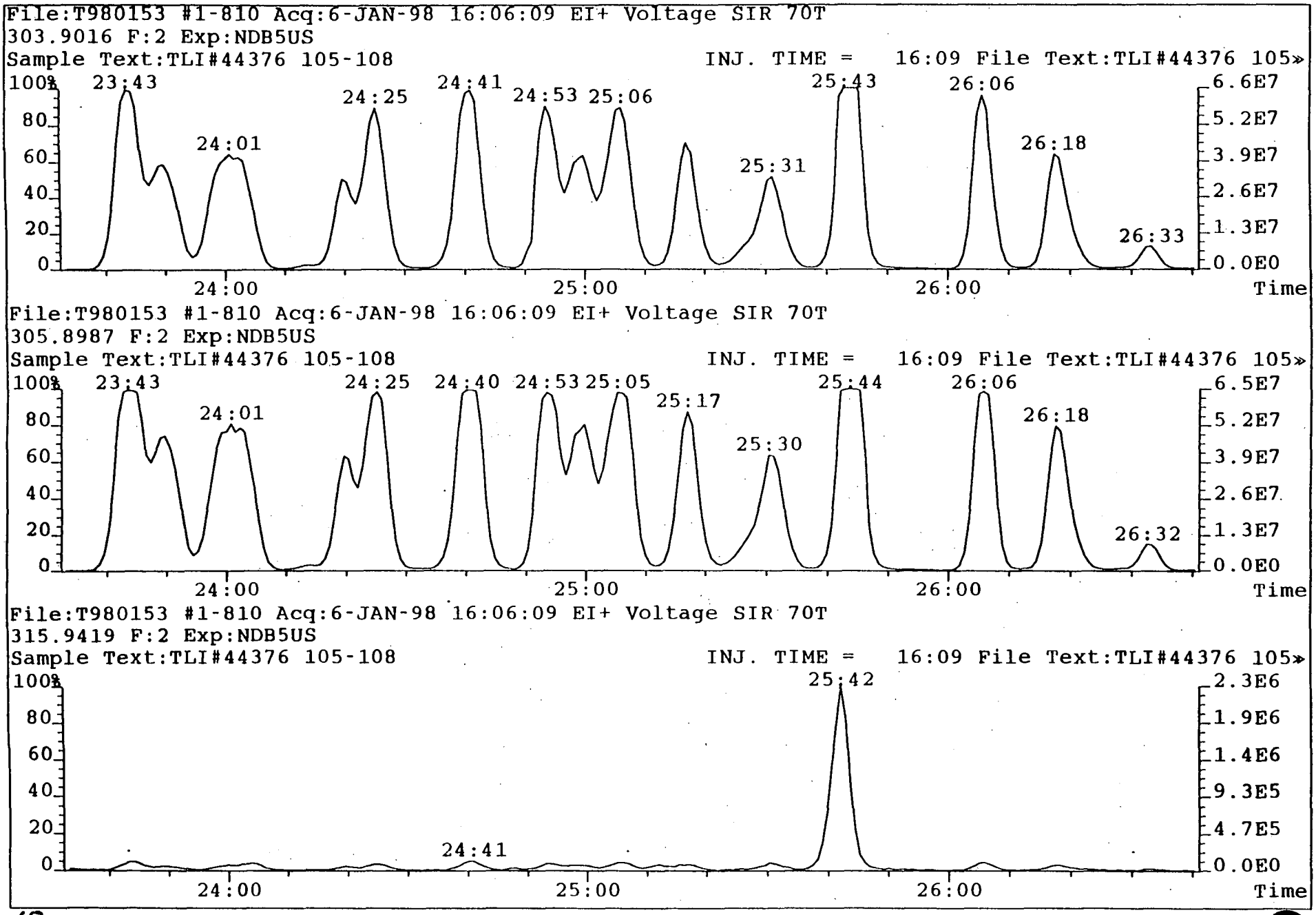


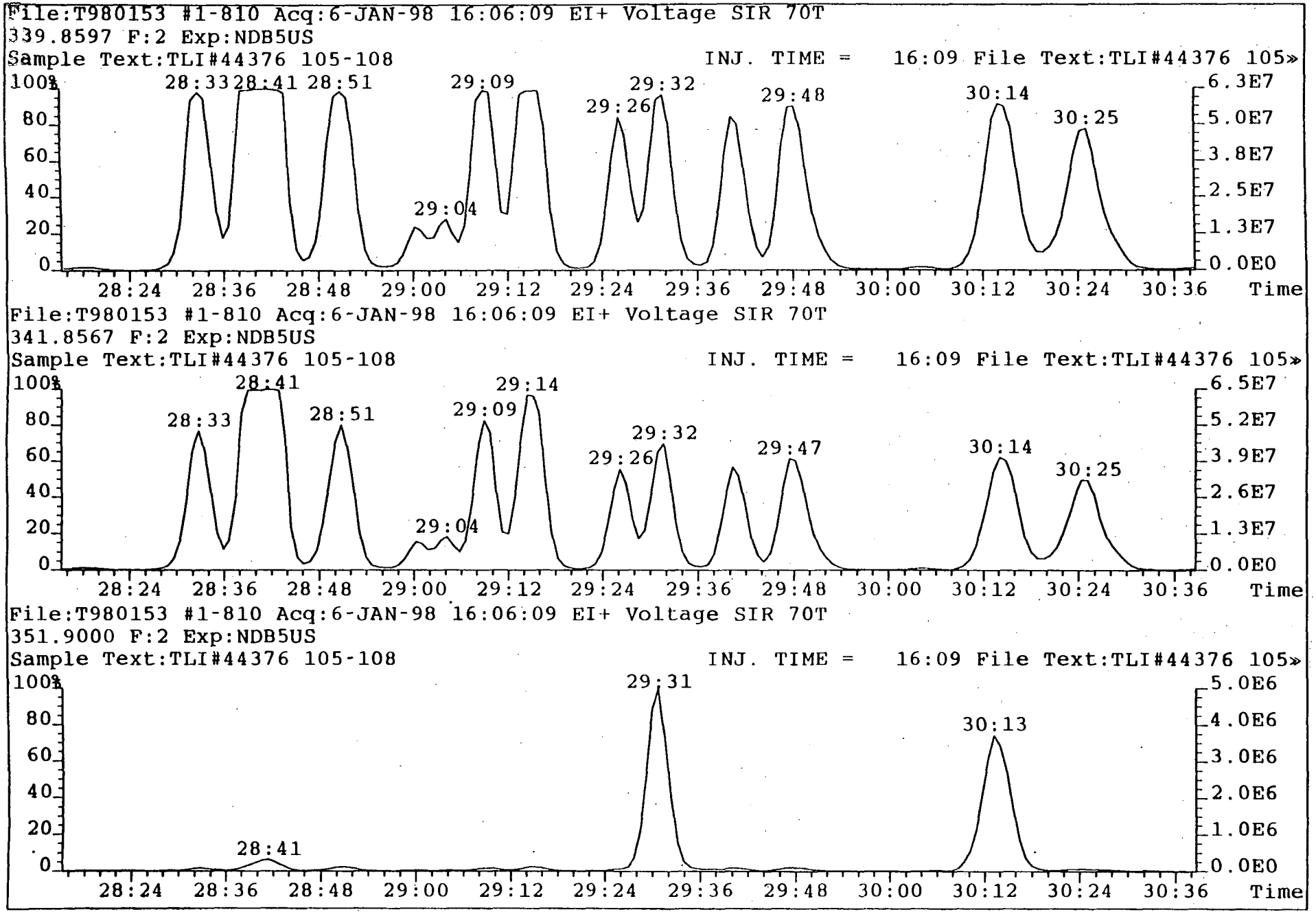
Channel I 330.3792 Peak top
Height 3.59 volts Span 200 ppm

System file name	NOBBUS
Data file name	A:T980148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

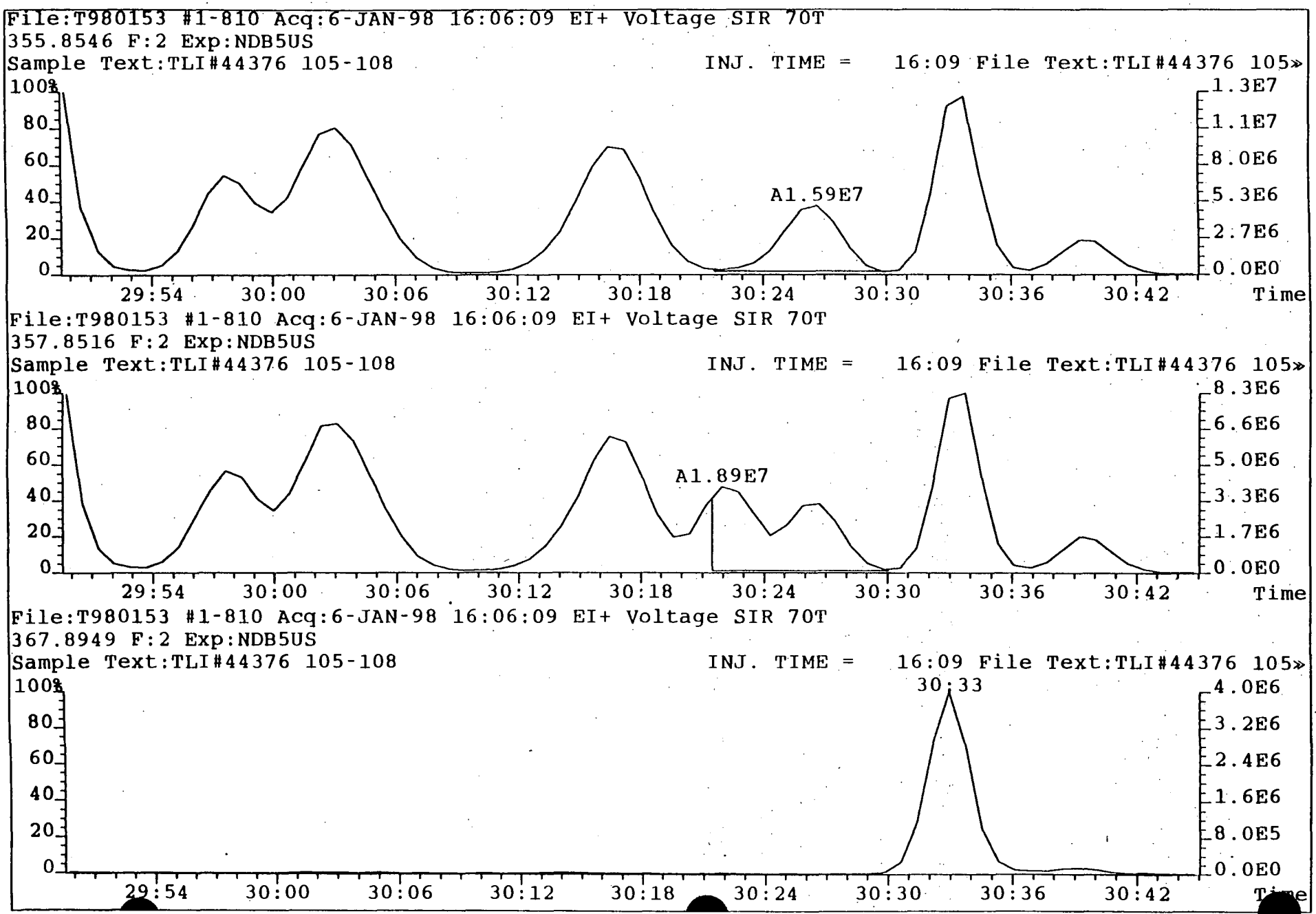
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

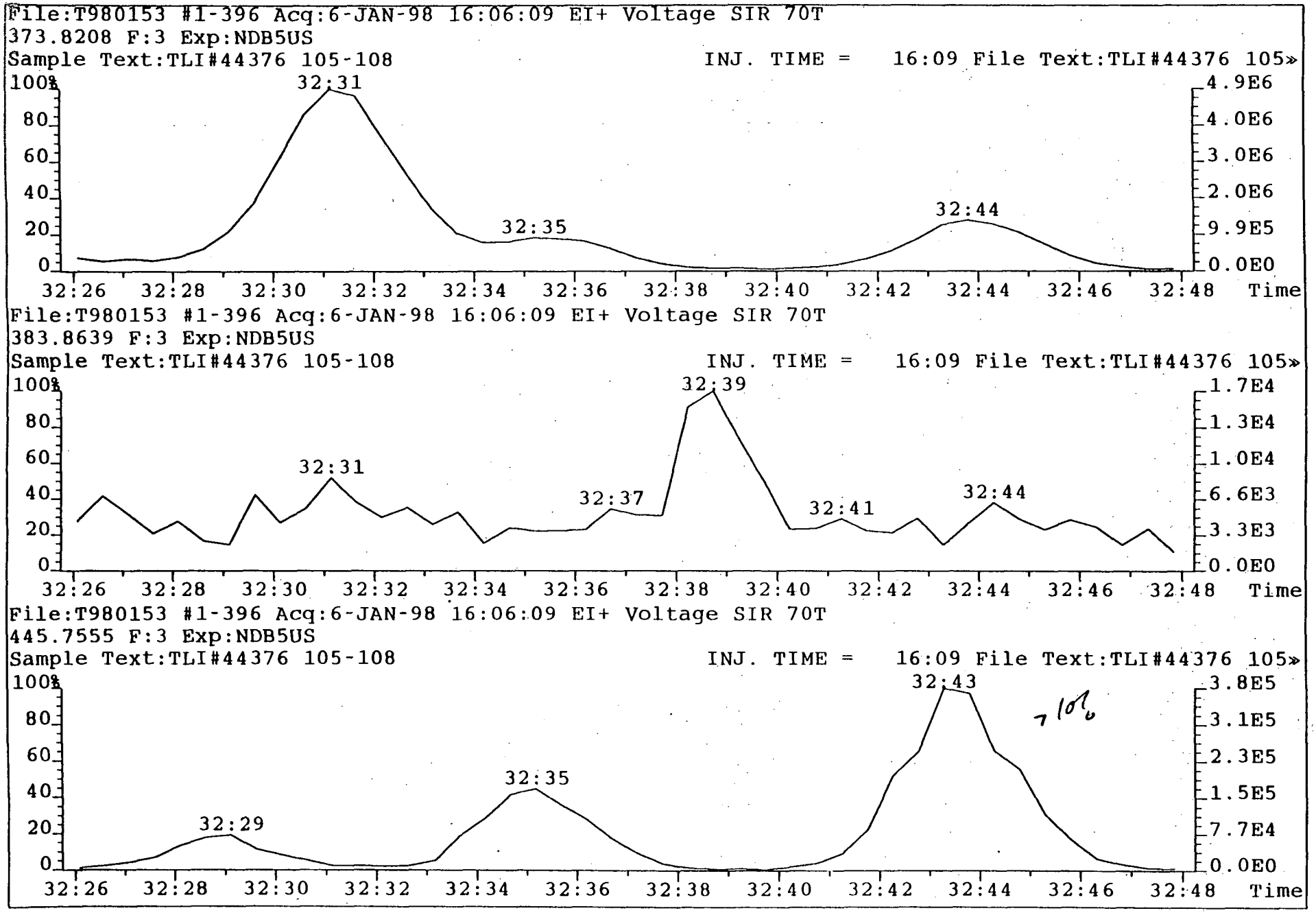
Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm


File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
303.9016 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
23:43
24:01
24:25
24:41
24:53
25:06
25:31
25:43
26:06
26:18
26:33
6.6E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
24:00
25:00
26:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
305.8987 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
23:43
24:01
24:25
24:40
24:53
25:05
25:17
25:30
25:44
26:06
26:18
26:32
6.5E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
24:00
25:00
26:00
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
315.9419 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
24:41
25:42
2.3E6
1.9E6
1.4E6
9.3E5
4.7E5
0.0E0
24:00
25:00
26:00
Time

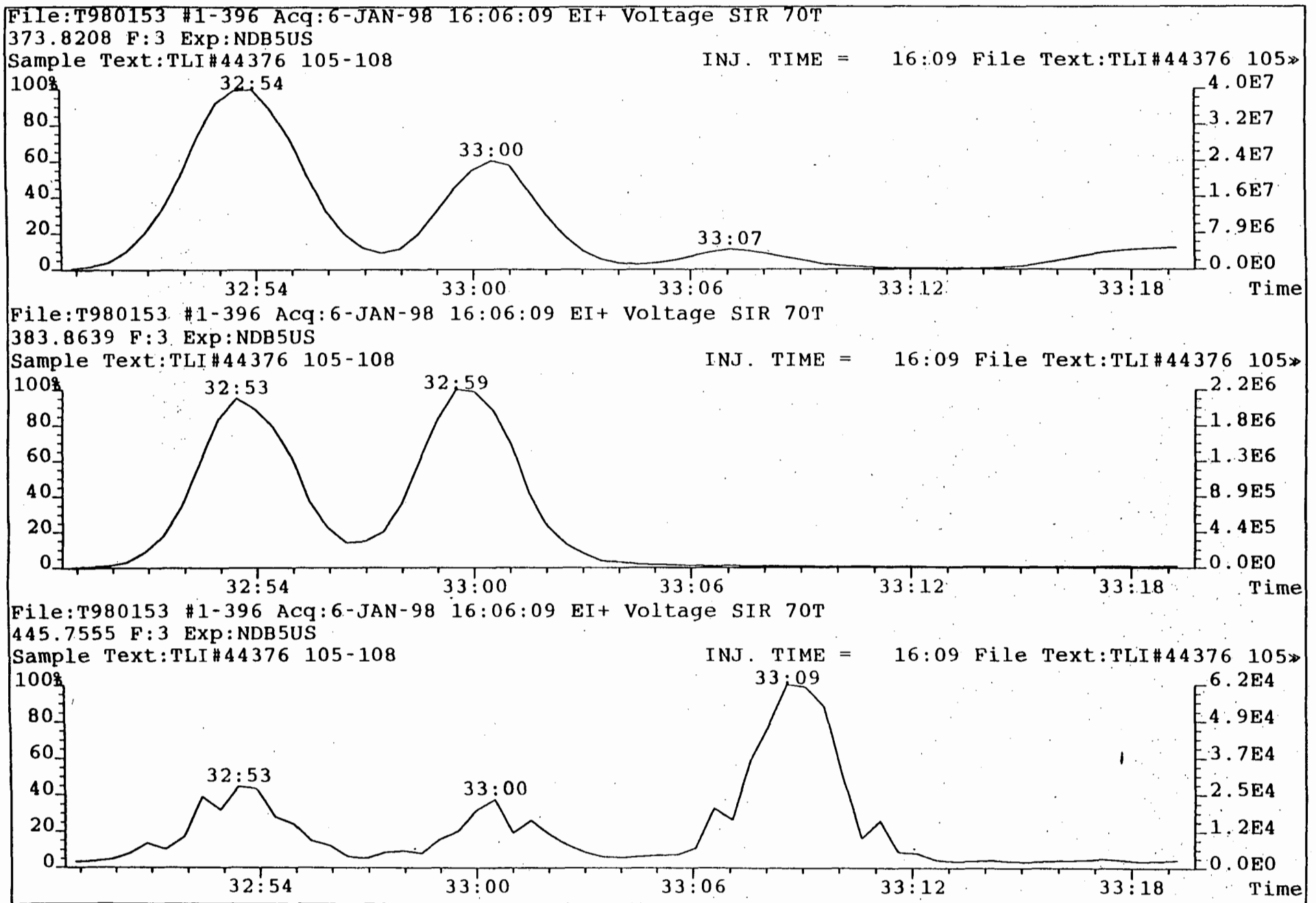

File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
28:33 28:41 28:51 29:09 29:26 29:32 29:48 30:14 30:25 29:04
6.3E7 5.0E7 3.8E7 2.5E7 1.3E7 0.0E0
28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
341.8567 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
28:33 28:41 28:51 29:09 29:14 29:26 29:32 29:47 30:14 30:25 29:04
6.5E7 5.2E7 3.9E7 2.6E7 1.3E7 0.0E0
28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
29:31 30:13 28:41
5.0E6 4.0E6 3.0E6 2.0E6 1.0E6 0.0E0
28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 Time

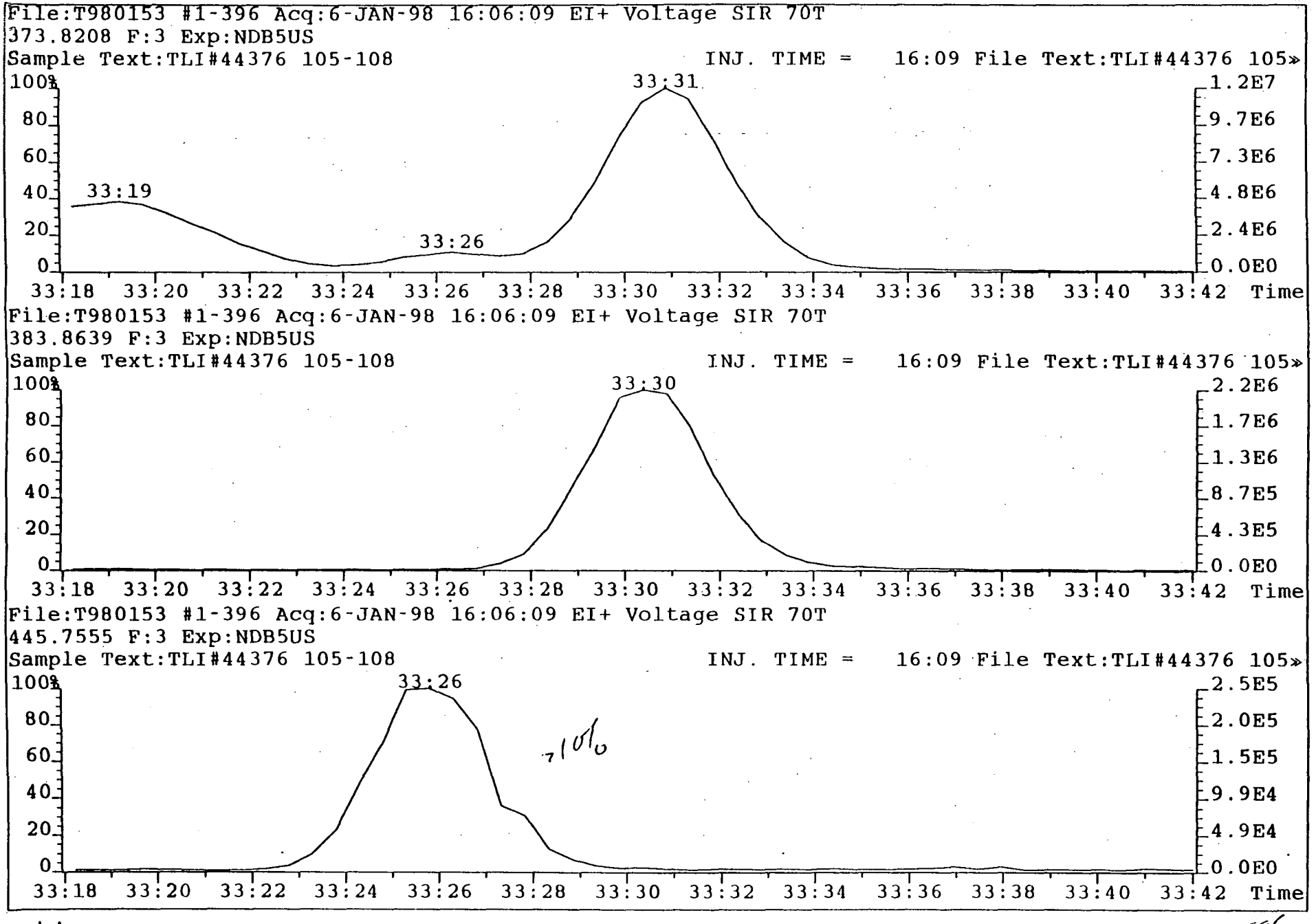
GSS 1/10/95

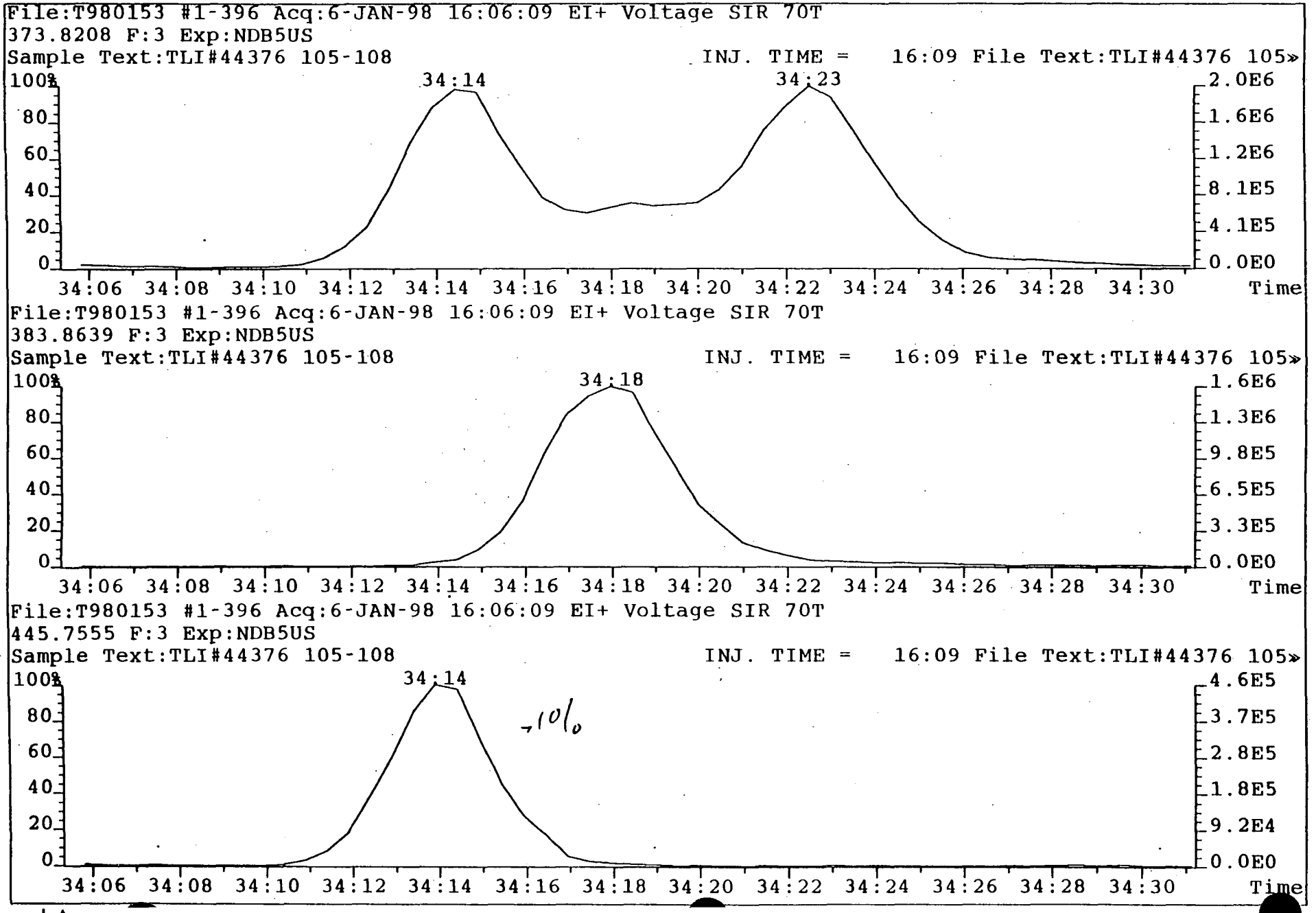

File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
355.8546 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
100%
80
60
40
20
0
1.3E7
1.1E7
8.0E6
5.3E6
2.7E6
0.0E0
A1.59E7
29:54
30:00
30:06
30:12
30:18
30:24
30:30
30:36
30:42
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
357.8516 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
100%
80
60
40
20
0
8.3E6
6.6E6
5.0E6
3.3E6
1.7E6
0.0E0
A1.89E7
29:54
30:00
30:06
30:12
30:18
30:24
30:30
30:36
30:42
Time
File:T980153 #1-810 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
367.8949 F:2 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
100%
80
60
40
20
0
30:33
4.0E6
3.2E6
2.4E6
1.6E6
8.0E5
0.0E0
29:54
30:00
30:06
30:12
30:18
30:24
30:30
30:36
30:42
Time

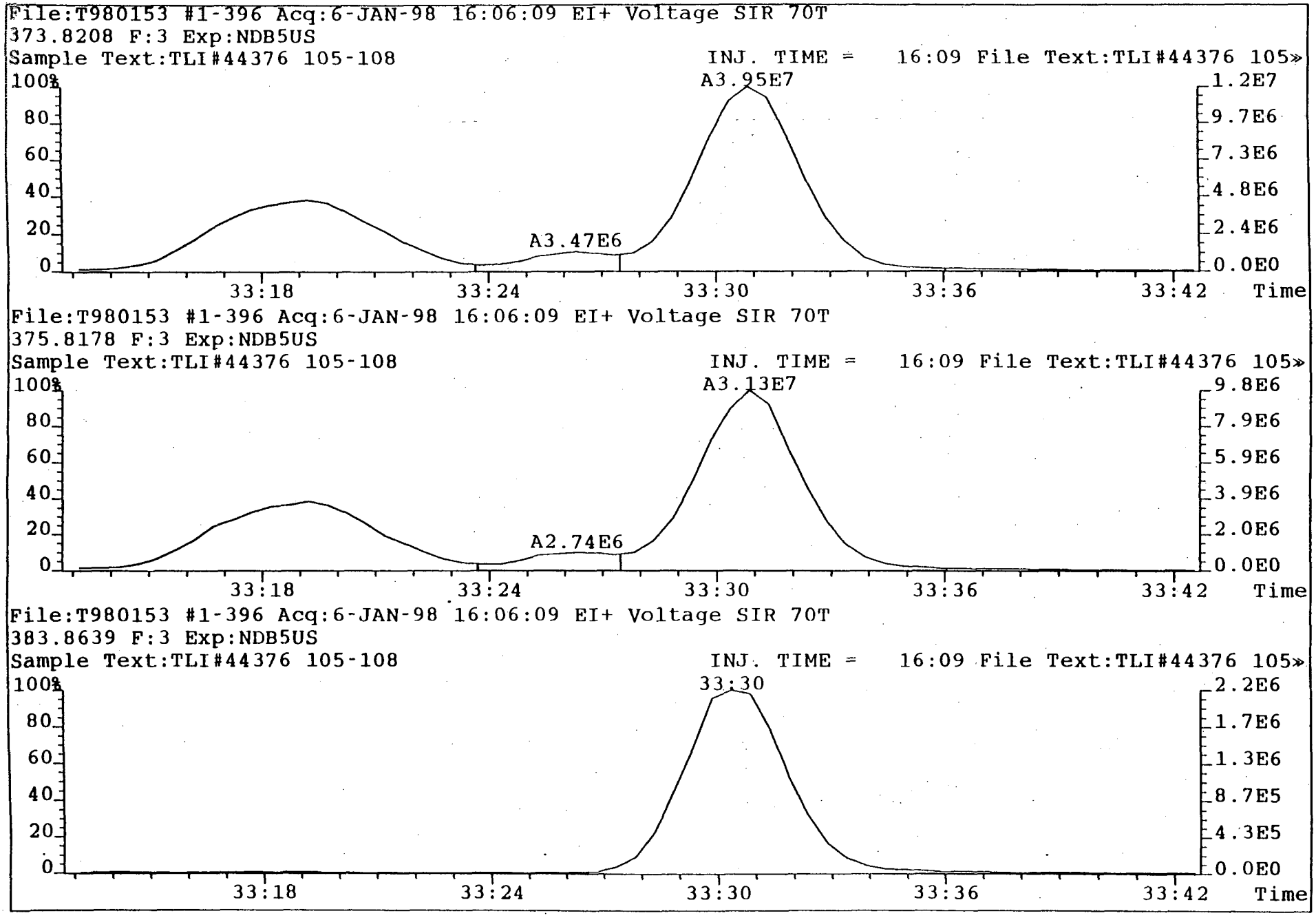

File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
32:31
32:35
32:44
4.9E6
4.0E6
3.0E6
2.0E6
9.9E5
0.0E0
32:26 32:28 32:30 32:32 32:34 32:36 32:38 32:40 32:42 32:44 32:46 32:48 Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
32:39
32:31
32:37
32:41
32:44
1.7E4
1.3E4
1.0E4
6.6E3
3.3E3
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 Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
32:43
32:35
32:29
3.8E5
3.1E5
2.3E5
1.5E5
7.7E4
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 Time

99

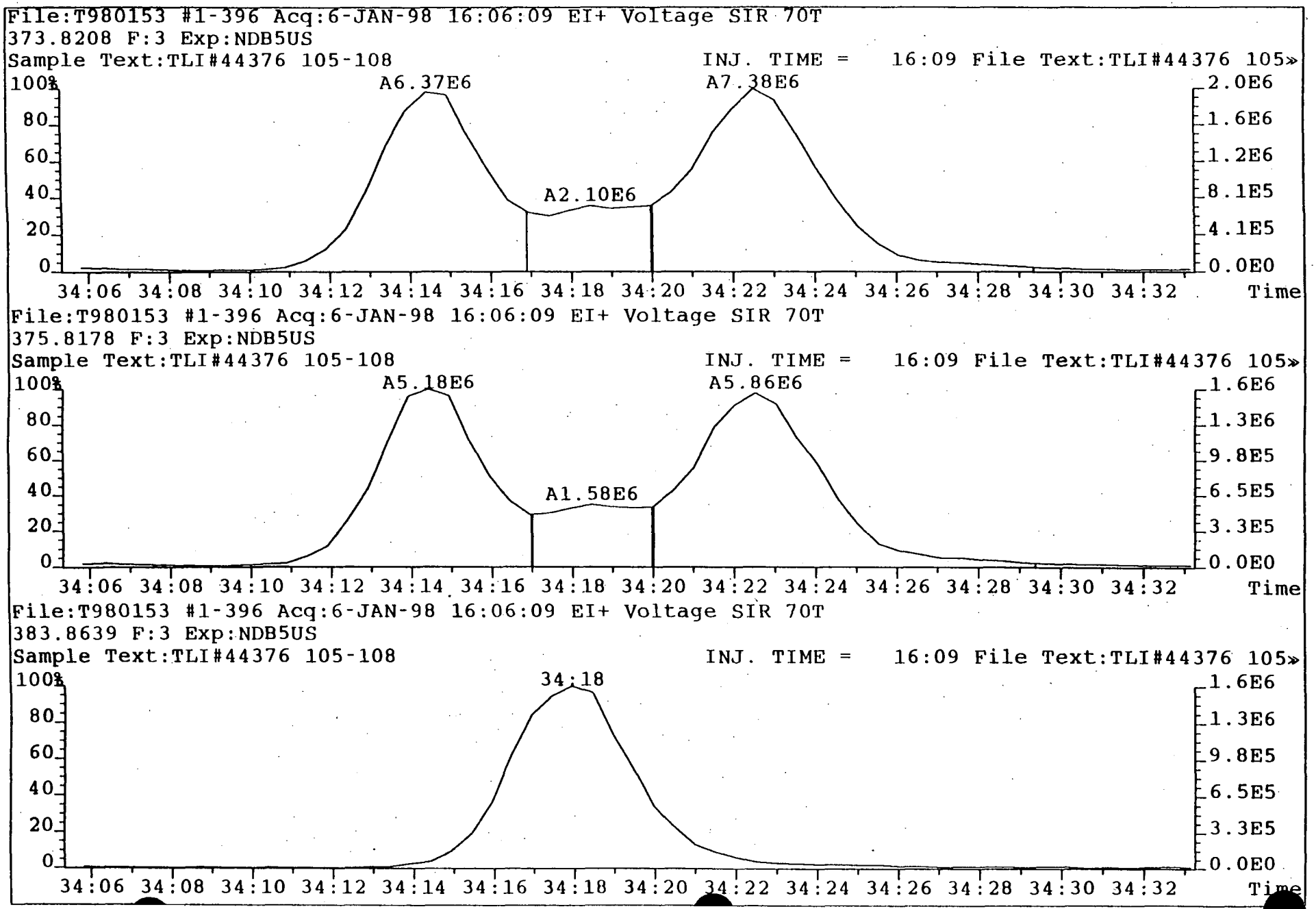

File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
32:54
33:00
33:07
4.0E7
3.2E7
2.4E7
1.6E7
7.9E6
0.0E0
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
32:53
32:59
2.2E6
1.8E6
1.3E6
8.9E5
4.4E5
0.0E0
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
33:09
32:53
33:00
6.2E4
4.9E4
3.7E4
2.5E4
1.2E4
0.0E0
Time
100
32:54
33:00
33:06
33:12
33:18


File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
33:31
33:19
33:26
1.2E7
9.7E6
7.3E6
4.8E6
2.4E6
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
33:30
2.2E6
1.7E6
1.3E6
8.7E5
4.3E5
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
33:26
~10%
2.5E5
2.0E5
1.5E5
9.9E4
4.9E4
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 Time


File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
34:14
34:23
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
8.1E5
4.1E5
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
34:18
100%
80
60
40
20
0
1.6E6
1.3E6
9.8E5
6.5E5
3.3E5
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
34:14
~10%
100%
80
60
40
20
0
4.6E5
3.7E5
2.8E5
1.8E5
9.2E4
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30
Time


File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
A3.95E7
A3.47E6
100%
80
60
40
20
0
1.2E7
9.7E6
7.3E6
4.8E6
2.4E6
0.0E0
33:18
33:24
33:30
33:36
33:42
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
A3.13E7
A2.74E6
9.8E6
7.9E6
5.9E6
3.9E6
2.0E6
0.0E0
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
33:30
2.2E6
1.7E6
1.3E6
8.7E5
4.3E5

GAS
1/18/98


File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
A6.37E6
A7.38E6
A2.10E6
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
8.1E5
4.1E5
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 34:32
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
A5.18E6
A5.86E6
A1.58E6
100%
80
60
40
20
0
1.6E6
1.3E6
9.8E5
6.5E5
3.3E5
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 34:32
Time
File:T980153 #1-396 Acq:6-JAN-98 16:06:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 105-108
INJ. TIME = 16:09 File Text:TLI#44376 105»
34:18
100%
80
60
40
20
0
1.6E6
1.3E6
9.8E5
6.5E5
3.3E5
0.0E0
34:06 34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 34:32
Time

Eastern Research Group

TLI Project: 44376 — Method 23 TCDD/TCDF Analysis (DB-225)

Client Sample: 105-108 CN 01 — Analysis File: X980084

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-1A-1D	Date Extracted:	12/29/97	ICal:	XF24087
		Date Analyzed:	01/07/98	ConCal:	X980080
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	49.4			0.78	21:30	E__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.5	86.7	40%-130%	0.81	21:30	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	20:28	___

Data Reviewer: EGS 01/11/98

CZNF_PSR v2.01, LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:33 01/11/98

Initial ....Date...

Data Review By: GG 1/11/99 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

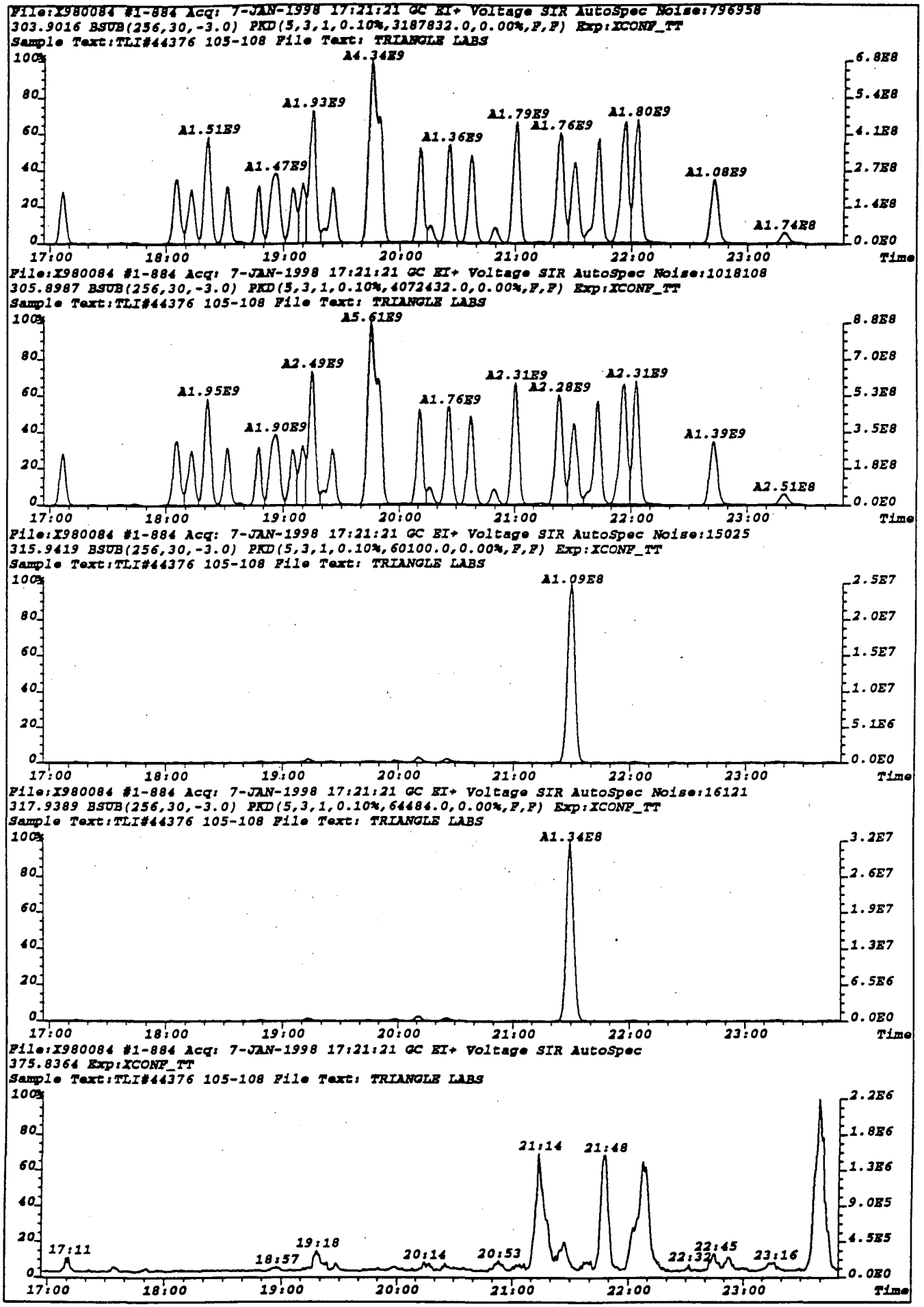
Page No. 1 Listing of X980084B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89					0.790-1.095				
304-306	DC	NL		0:00		0.78	3,630.14			0.000			
				17:07		0.78	155,289.90	67,903.90	87,386.00	0.796			E
				17:45		0.77	3,104.58	1,352.02	1,752.56	0.826			
				18:06		0.78	220,483.60	96,370.60	124,113.00	0.842			E
				18:13		0.77	181,477.60	79,156.60	102,321.00	0.847			E
				18:21		0.78	346,719.00	151,477.00	195,242.00	0.853			E
				18:31		0.78	179,887.50	78,779.50	101,108.00	0.861			E
				18:47		0.78	154,107.80	67,358.20	86,749.60	0.874			E
				18:56		0.78	337,259.00	147,338.00	189,921.00	0.881			E
				19:05		0.86	172,637.50	80,046.80	92,590.70	0.888			E
				19:10		0.69	166,572.40	67,981.80	98,590.60	0.891			E
				19:14		0.78	441,386.00	192,838.00	248,548.00	0.895			E
				19:25		0.78	204,266.80	89,524.80	114,742.00	0.903			E
				19:45		0.77	994,948.00	434,202.00	560,746.00	0.919			E
				20:10		0.78	287,477.00	125,570.00	161,907.00	0.938			E
				20:16		0.78	49,475.40	21,730.20	27,745.20	0.943			
				20:26		0.78	312,168.00	136,429.00	175,739.00	0.950			E
				20:37		0.77	290,893.00	126,895.00	163,998.00	0.959			E
				20:49		0.78	48,539.30	21,205.40	27,333.90	0.968			
				21:00		0.77	409,332.00	178,518.00	230,814.00	0.977			E
				21:23		0.77	403,907.00	176,299.00	227,608.00	0.995			E
				21:30		0.78	290,292.00	126,997.00	163,295.00	1.000	2378-TCDF	AN	E
				21:43		0.78	368,767.00	161,205.00	207,562.00	1.010			E
				21:57		0.77	448,171.00	195,548.00	252,623.00	1.021			E
				22:02		0.78	411,603.00	180,201.00	231,402.00	1.025			E
				22:43		0.78	246,237.00	107,736.00	138,501.00	1.057			E
				23:19		0.69	42,524.90	17,384.40	25,140.50	1.084			
304-306			26	Peaks			7,167,526.28						
13C12-TCDF				0.65-0.89					0.953-1.047				
316-318	DC	NL		0:00	RO	0.93	57.06			0.000			
	DC	WL		17:14	RO	0.92	79.28			0.802			
	DC	WL		18:49		0.73	130.52			0.875			
	DC	WL		19:13	RO	1.34	218.81			0.894			
	DC	WL		19:44	RO	1.86	40.07			0.918			
	DC	WL		19:58		0.71	206.31			0.929			
	DC	WL		20:10		0.85	565.38			0.938			
	DC	WL		20:25	RO	1.06	329.80			0.950			
				21:00	RO	1.55	52.98	46.43	29.93	0.977			
				21:06		0.79	26.87	11.85	15.02	0.981			
				21:30		0.81	24,298.10	10,895.00	13,403.10	1.000	13C12-2378-TCDF	ISO	
				22:02	RO	1.29	80.96	58.83	45.74	1.025			
	DC	WH		23:16	RO	0.45	60.98			1.082			

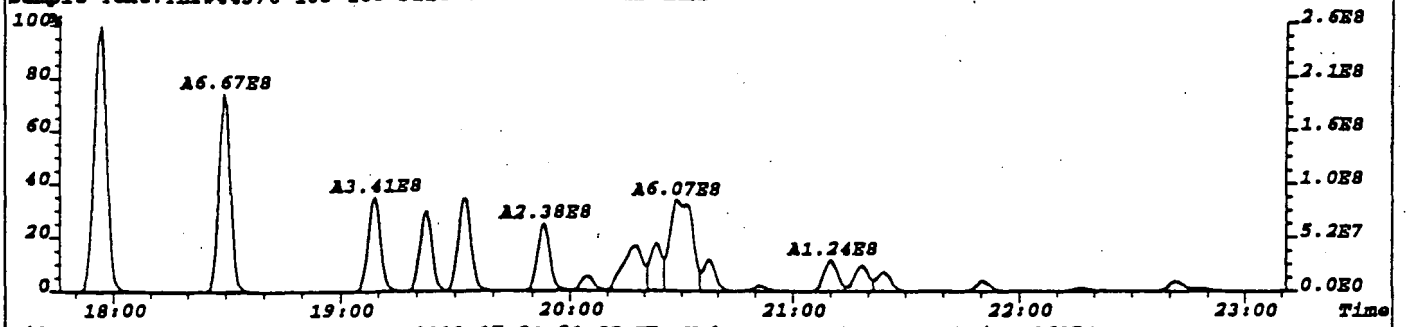
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WH		23:45	RO	1.37	103.44			1.105			
316-318		4 Peaks					24,458.91						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.901-1.099			
332-334	DC	NL		0:00	RO	1.76	28.59			0.000			
				20:13		0.79	17,380.86	7,688.81	9,692.05	1.000	13C12-2378-TCDD	IS1	
				20:28		0.80	20,140.88	8,942.48	11,198.40	1.012	13C12-1234-TCDD	RS1	
				20:42		0.82	30.26	13.59	16.67	1.024			
				20:48	RO	2.24	7.86	9.94	4.44	1.029			
				21:09	RO	1.01	199.59	114.36	112.76	1.046			
	DC	WH		22:44	RO	0.43	81.97			1.124			
	DC	WH		22:50	RO	1.21	18.28			1.129			
	DC	WH		23:09	RO	1.07	27.38			1.145			
332-334		5 Peaks					37,759.45						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

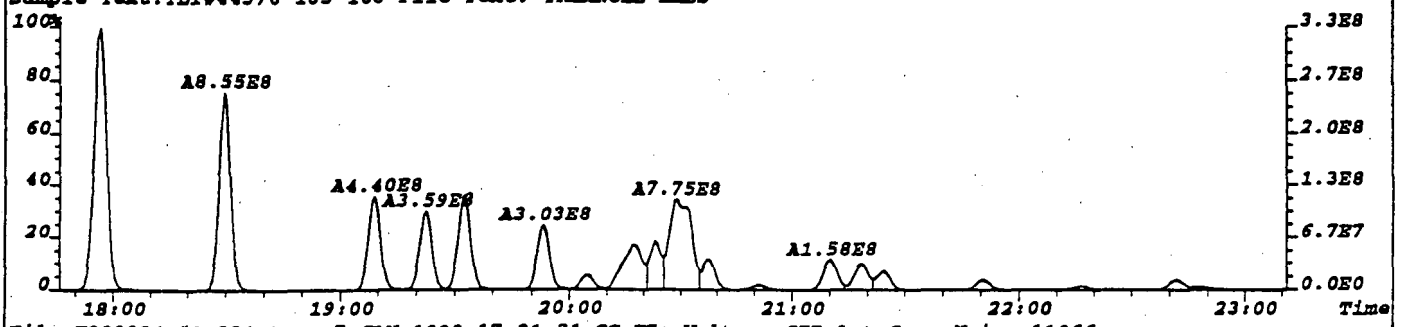
*** End of Report ***


File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:796958
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3187832.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.51E9
A1.47E9
A1.93E9
A4.34E9
A1.36E9
A1.79E9
A1.76E9
A1.80E9
A1.08E9
A1.74E8
Time
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:1018108
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4072432.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.95E9
A1.90E9
A2.49E9
A5.61E9
A1.76E9
A2.31E9
A2.28E9
A2.31E9
A1.39E9
A2.51E8
Time
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:15025
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,60100.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.09E8
Time
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:16121
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,64484.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.34E8
Time
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:11
18:57
19:18
20:14
20:53
21:14
21:48
22:32
22:45
23:16
Time

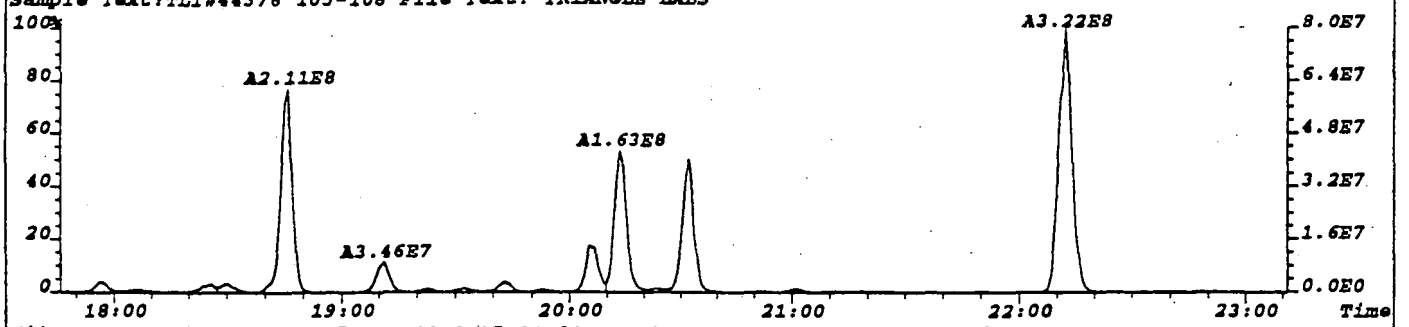
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:10978
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,43912.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



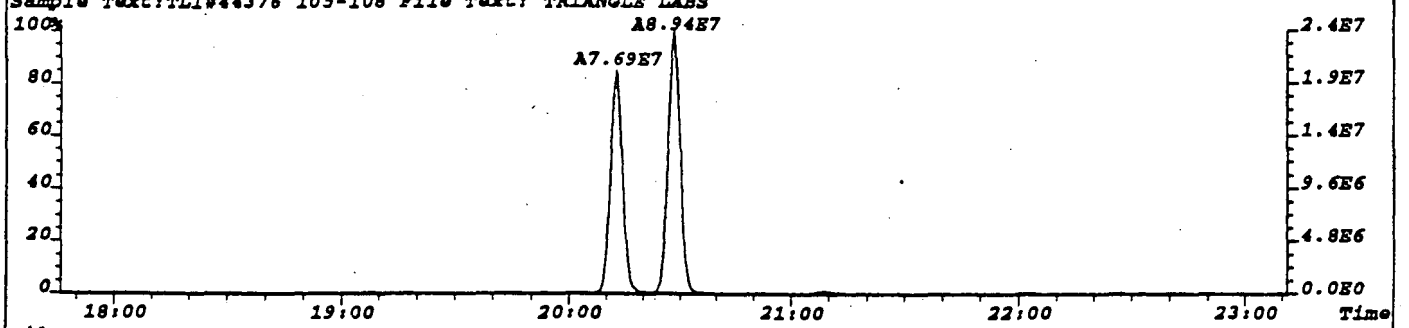
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:26374
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,105496.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



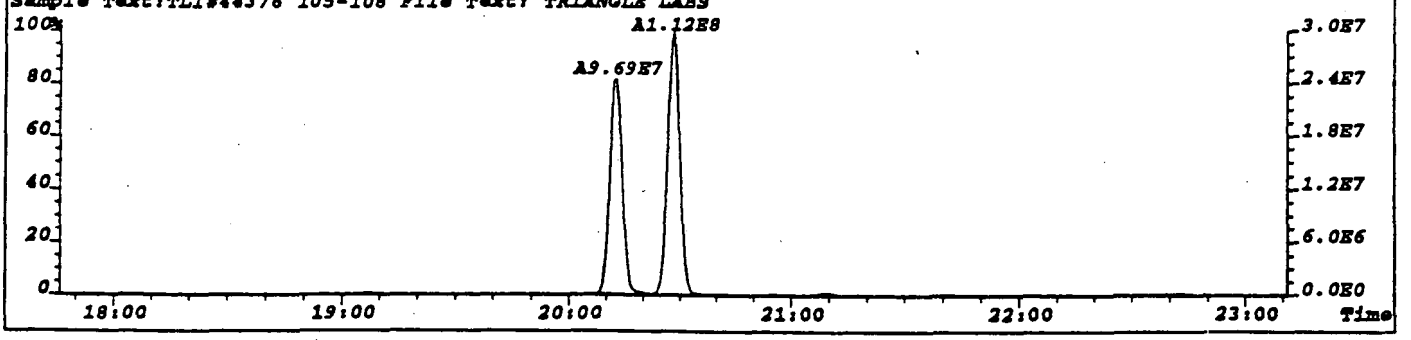
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:11066
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,44264.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS

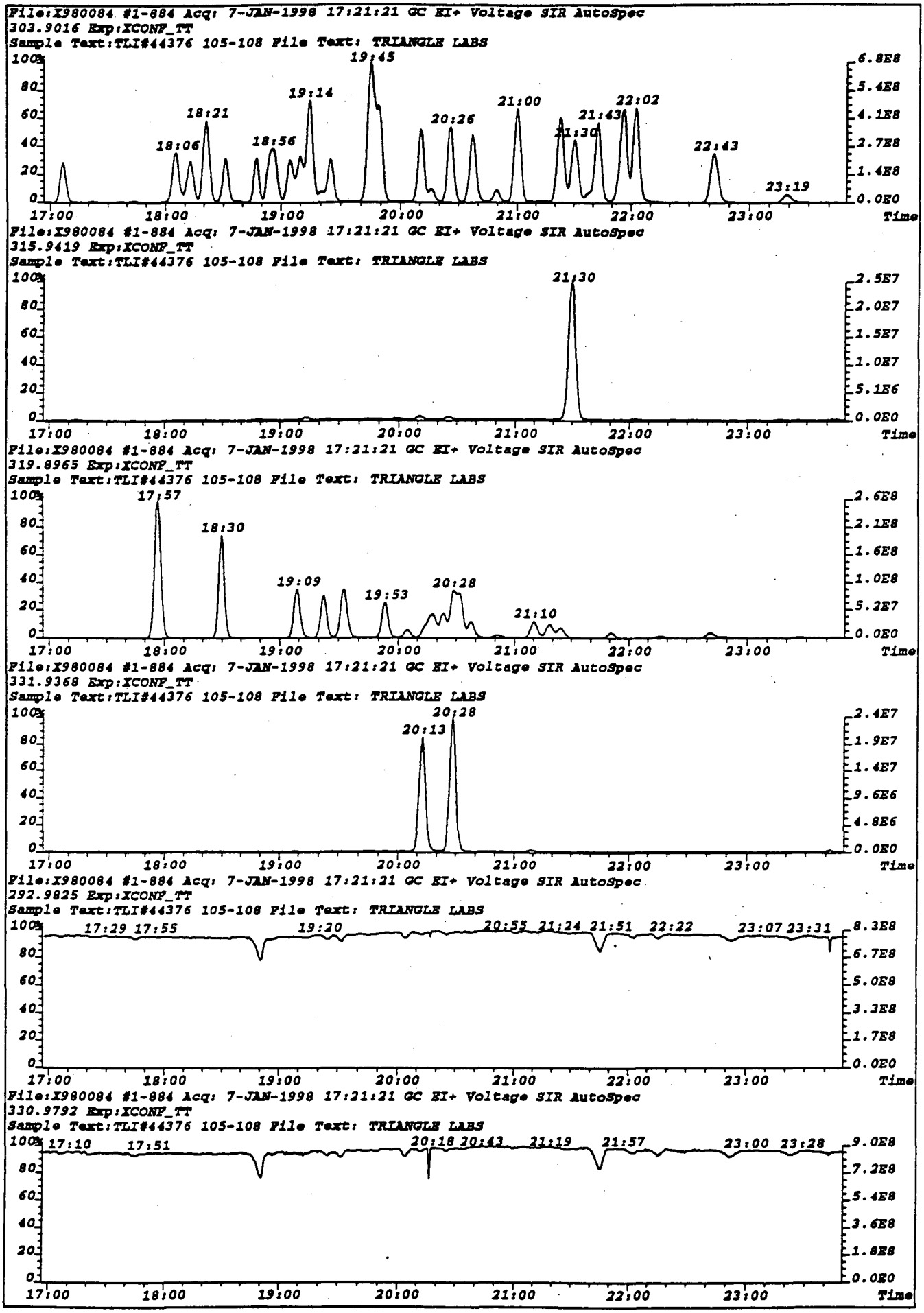


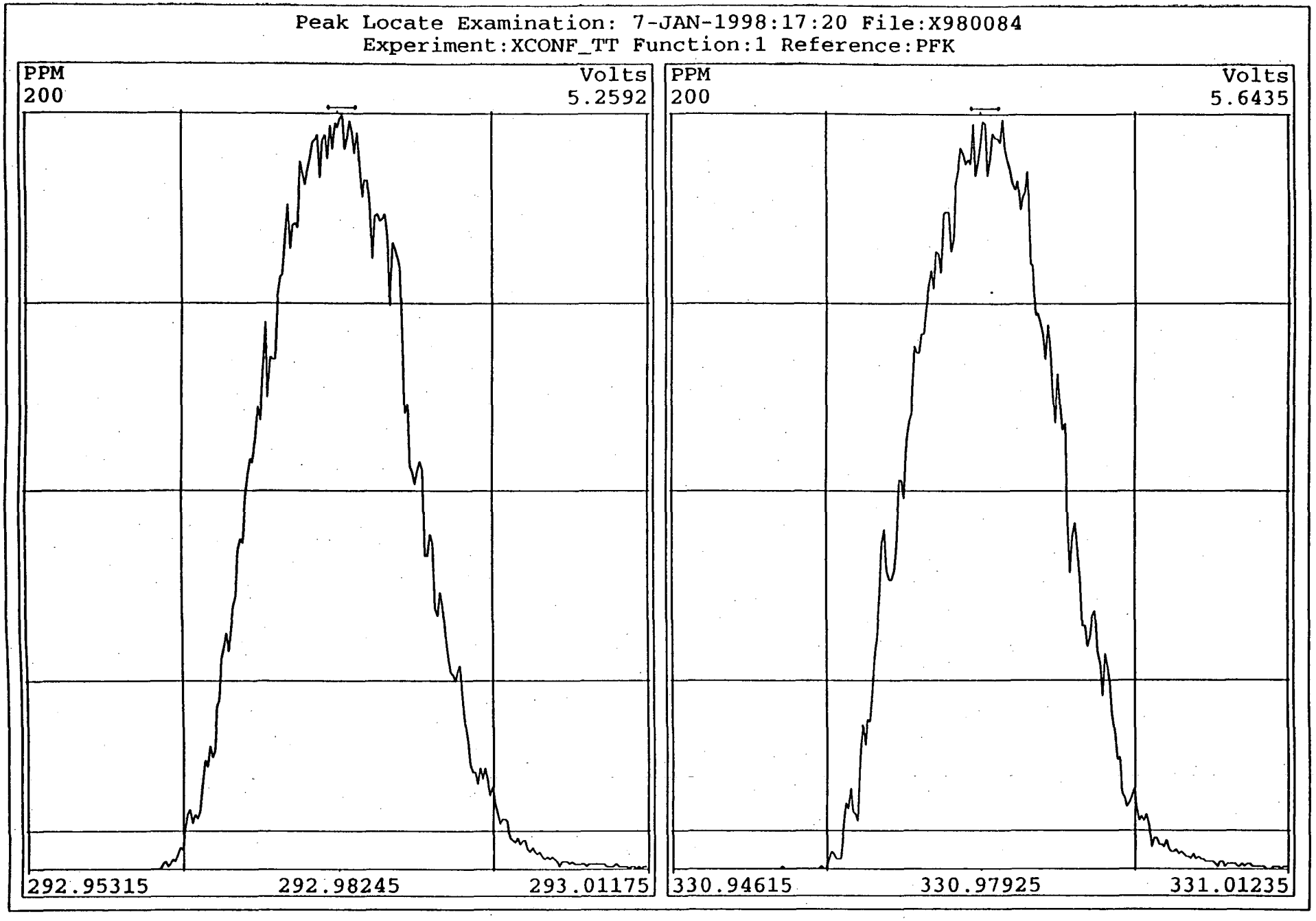
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:14246
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,56984.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec Noise:8075
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,32300.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS




File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
18:06
18:21
18:56
19:14
19:45
20:26
21:00
21:30
21:43
22:02
22:43
23:19
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
21:30
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:57
18:30
19:09
19:53
20:28
21:10
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
20:13
20:28
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:29
17:55
19:20
20:55
21:24
21:51
22:22
23:07
23:31
File:X980084 #1-884 Acq: 7-JAN-1998 17:21:21 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:10
17:51
20:18
20:43
21:19
21:57
23:00
23:28
Time


Peak Locate Examination: 7-JAN-1998:17:20 File:X980084
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
5.2592
292.95315
292.98245
293.01175
PPM
200
Volts
5.6435
330.94615
330.97925
331.01235

Eastern Research Group

TLI Project: **44376** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **109-112** Analysis File: **T980154**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-2A-D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	1.4			0.79	26:21	___
1,2,3,7,8-PeCDD	6.6			1.58	30:33	___
1,2,3,4,7,8-HxCDD	1.7			1.22	33:37	Q__
1,2,3,6,7,8-HxCDD	2.7			1.24	33:42	___
1,2,3,7,8,9-HxCDD	3.8			1.22	34:01	QPR
1,2,3,4,6,7,8-HpCDD	2.6			1.01	37:05	___
1,2,3,4,6,7,8,9-OCDD	1.5			0.83	40:56	___
2,3,7,8-TCDF	EMPC		~~66.0~~ > 4			SE_
1,2,3,7,8-PeCDF	32.7		dss 1/15/99	1.50	29:31	___
2,3,4,7,8-PeCDF	43.9			1.48	30:14	E__
1,2,3,4,7,8-HxCDF	29.0			1.26	32:53	___
1,2,3,6,7,8-HxCDF	12.8			1.31	33:00	___
2,3,4,6,7,8-HxCDF	8.3			1.26	33:30	___
1,2,3,7,8,9-HxCDF	0.37			1.24	34:17	PR_
1,2,3,4,6,7,8-HpCDF	7.2			1.04	35:59	___
1,2,3,4,7,8,9-HpCDF	0.78			1.02	37:37	___
1,2,3,4,6,7,8,9-OCDF	0.82			0.85	41:09	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	84.5	13			E__
Total PeCDD	164	10		167	E__
Total HxCDD	55.8	7			Q__
Total HpCDD	5.5	2			___
Total TCDF	~~486~~ > 4	15		~~552~~ > 4	SQE
Total PeCDF	~~399~~ > 20	16		~~549~~ > 20	SE_
Total HxCDF	141	13		143	E__
Total HpCDF	9.2	3		11.3 dss 1/15/99	X__

X237_PSR v2.01, LARS 6

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:26 01/15/98

112

Eastern Research Group

TLI Project: 44376
Client Sample: 109-112

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980154

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.2	54.5	40%-130%	0.76	25:41	Q___
$^{13}C_{12}$-2,3,7,8-TCDD	2.8	70.6	40%-130%	0.79	26:21	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.8	71.1	40%-130%	1.54	29:30	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.4	85.8	40%-130%	1.49	30:33	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.8	69.7	40%-130%	0.52	32:59	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.5	63.3	40%-130%	1.16	33:42	Q___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.1	77.0	25%-130%	0.43	35:59	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.1	103	25%-130%	1.04	37:04	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.0	112	25%-130%	0.91	40:55	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.5	88.6	70%-140%		26:21	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.1	101	70%-140%	1.52	30:13	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.1	102	70%-140%	0.53	32:53	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	5.5	137	70%-140%	1.15	33:36	Q___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.0	99.4	70%-140%	0.42	37:36	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	79.7	40%-130%	0.51	34:17	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.9	73.6	40%-130%	0.52	33:30	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:10	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.16	34:01	___

Data Reviewer: 6 4 9 01/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:26 01/15/98

Initial ....Date...

Data Review By: [illegible] 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980154B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89					0.878-1.073				
304-306	DC	NL		0:00	RO	1.09	4.51			0.000			
				22:39		0.80	12,646.24	5,614.06	7,032.18	0.882			QE
				23:08		0.81	13,761.79	6,144.32	7,617.47	0.901			QE
				23:21		0.79	14,125.51	6,242.97	7,882.54	0.909			QE
				23:43		0.80	69,194.90	30,772.50	38,422.40	0.923			QE
				24:01		0.81	41,243.20	18,400.00	22,843.20	0.935			QE
				24:25		0.81	48,048.70	21,470.10	26,578.60	0.951			QE
				24:40		0.80	42,448.20	18,893.40	23,554.80	0.960			QE
				24:53		0.80	58,573.50	25,972.90	32,600.60	0.969			QE
				25:05		0.80	36,366.10	16,147.50	20,218.60	0.977			QE
				25:17		0.80	23,120.30	10,256.90	12,863.40	0.984			QE
				25:30		0.81	22,784.00	10,180.90	12,603.10	0.993			QE
				25:42	RO	0.94	60,792.77	32,130.40	34,346.20	1.001	2378-TCDF	AN	SE
				26:06		0.80	32,740.00	14,575.90	18,164.10	1.016			QE
				26:18		0.80	25,020.30	11,142.40	13,877.90	1.024			QE
				26:32		0.77	4,281.68	1,860.96	2,420.72	1.033			Q
				27:22		0.83	3,316.89	1,503.55	1,813.34	1.066			Q
	DC	WH		27:35		0.88	834.92			1.074			
304-306			16	Peaks			508,464.08						
13C12-TCDF				0.65-0.89					0.961-1.039				
316-318	DC	NL		0:00	RO	1.49	3.04			0.000			
	DC	WL		22:40	RO	1.36	9.31			0.883			
	DC	WL		23:08	RO	3.02	8.46			0.901			
	DC	WL		23:21	RO	2.71	5.31			0.909			
	DC	WL		23:30	RO	1.47	13.66			0.915			
	DC	WL		23:43	RO	2.54	29.28			0.923			
	DC	WL		24:03	RO	1.41	42.09			0.936			
	DC	WL		24:25	RO	1.84	27.10			0.951			
	DC	WL		24:39	RO	1.17	62.22			0.960			
				25:17	RO	0.54	79.19	34.45	63.36	0.984			
				25:30	RO	1.25	33.86	23.82	19.13	0.993			
				25:41		0.76	2,688.50	1,160.50	1,528.00	1.000	13C12-2378-TCDF	ISO	Q
				26:05	RO	1.34	31.47	23.77	17.78	1.016			
				26:18	RO	2.16	18.53	22.59	10.47	1.024			
	DC	WH		27:05	RO	1.05	8.53			1.055			
	DC	WH		27:35		0.72	22.57			1.074			
316-318			5	Peaks			2,851.55						
---------- Above: TCDF / TCDD Follows ----------													
TCDD				0.65-0.89					0.903-1.045				
320-322	DC	NL		0:00		0.86	3.64			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				23:55		0.78	18,298.82	8,016.72	10,282.10	0.908			E
				24:17		0.79	11,344.82	5,011.46	6,333.36	0.922			E
				24:34		0.77	4,826.63	2,100.19	2,726.44	0.932			
				25:13		0.78	12,393.57	5,418.78	6,974.79	0.957			E
				25:29		0.77	9,000.84	3,929.63	5,071.21	0.967			E
				25:51		0.78	4,860.02	2,125.26	2,734.76	0.981			
	M			26:08		0.78	4,850.00	2,130.00	2,720.00	0.992			
	M			26:15		0.78	7,960.00	3,490.00	4,470.00	0.996			E
	AN			26:21		0.79	1,316.00	581.00	735.00	1.000	2378-TCDD	AN	
				26:31		0.77	2,123.64	925.05	1,198.59	1.006			
				26:40		0.78	2,412.22	1,053.87	1,358.35	1.012			
				26:53		0.80	742.93	330.60	412.33	1.020			
				27:19		0.79	816.41	361.21	455.20	1.037			
320-322			13 Peaks				80,945.90						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			2.23			0.000			
	DC	WL		23:55			94.71			0.908			
	DC	WL		24:09			48.71			0.917			
	DC	WL		24:17			135.16			0.922			
				24:34			31.47	31.47		0.932			
				25:01			1,930.59	1,930.59		0.949			
				25:13			75.64	75.64		0.957			
				25:29			49.02	49.02		0.967			
				25:44			21.97	21.97		0.977			
				25:51			34.43	34.43		0.981			
				26:09			28.37	28.37		0.992			
				26:21			2,507.66	2,507.66		1.000	37Cl-TCDD	SUR1	
				26:30			48.18	48.18		1.006			
				26:43			3,200.31	3,200.31		1.014			
				27:20			4.44	4.44		1.037			
				27:31			3.83	3.83		1.044			
				27:42			7.23	7.23		1.051			
				28:00			6.39	6.39		1.063			
328			14 Peaks				7,949.53						
13C12-TCDD						0.65-0.89				0.924-1.076			
332-334	DC	NL		0:00	RO	2.20	3.56			0.000			
				25:13		0.69	17.78	7.28	10.50	0.957			
				26:10		0.81	3,192.46	1,425.78	1,766.68	0.993	13C12-1234-TCDD	RS1	
				26:21		0.79	2,812.06	1,241.61	1,570.45	1.000	13C12-2378-TCDD	IS1	
				26:40	RO	0.64	46.46	20.21	31.63	1.012			
332-334			4 Peaks				6,068.76						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF						1.32-1.78				0.931-1.063			
340-342	DC	NL		0:00	RO	1.19	2.63			0.000			
				27:35	RO	1.24	46,348.47	28,172.60	22,765.20	0.935			SE
				27:49		1.47	935.47	556.46	379.01	0.943			
				28:00		1.53	266.27	161.21	105.06	0.949			
				28:11		1.57	858.53	524.40	334.13	0.955			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compoumd.Name..	ID..	Flags.
				28:19	RO	1.23	356.16	216.49	176.10	0.960			
				28:33		1.48	27,642.60	16,494.00	11,148.60	0.968			
				28:41	RO	1.10	67,998.14	41,332.20	37,727.40	0.972			SE
				28:50		1.48	31,725.10	18,948.80	12,776.30	0.977			E
				29:09		1.48	41,009.60	24,491.60	16,518.00	0.988			E
				29:14		1.43	41,577.00	24,478.30	17,098.70	0.991			E
	A			29:26		1.49	18,890.00	11,300.00	7,590.00	0.998			
	M			29:31		1.50	25,200.00	15,100.00	10,100.00	1.001	12378-PeCDF	AN	
				29:40		1.48	21,296.35	12,716.00	8,580.35	1.006			
				29:47		1.50	27,786.80	16,650.20	11,136.60	1.010			
				30:04	RO	1.86	330.61	241.48	129.65	1.019			
				30:14		1.48	33,812.80	20,201.40	13,611.40	1.025	23478-PeCDF	AN	E
				30:24		1.49	31,434.50	18,825.00	12,609.50	1.031			E
				30:41		1.51	1,695.47	1,020.95	674.52	1.040			Q
				30:51		1.46	941.40	558.75	382.65	1.046			
				31:09		1.50	2,183.12	1,310.34	872.78	1.056			
	DC	WH		31:36		1.45	64.67			1.071			
340-342			20 Peaks				422,288.39						
13C12-PeCDF					1.32-1.78					0.864-1.136			
352-354	DC	NL		0:00	RO	1.07	1.02			0.000			
				27:35	RO	2.28	37.46	33.43	14.69	0.935			
	DC	SN		27:42	RO	1.83	2.45			0.939			
	DC	SN		27:52	RO	2.29	2.86			0.945			
	DC	SN		28:21	RO	2.09	2.81			0.961			
				28:33	RO	2.78	16.27	17.74	6.38	0.968			
				28:41	RO	2.01	149.20	117.52	58.51	0.972			
				28:51	RO	1.18	40.29	24.49	20.82	0.978			
				29:09	RO	2.14	23.87	20.00	9.36	0.988			
				29:14	RO	2.19	28.31	24.31	11.10	0.991			
				29:30		1.54	2,904.57	1,762.72	1,141.85	1.000	13C12-PeCDF 123	IS2	
				29:47		1.53	53.02	32.09	20.93	1.010			
				29:57	RO	0.68	4.75	2.89	4.25	1.015			
				30:13		1.52	2,923.33	1,763.48	1,159.85	1.024	13C12-PeCDF 234	SUR2	
				30:25	RO	1.96	31.62	24.31	12.40	1.031			
				31:08	RO	1.20	11.78	7.16	5.96	1.055			
352-354			12 Peaks				6,224.47						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD					1.32-1.78					0.939-1.022			
356-358	DC	NL		0:00	RO	1.24	1.51			0.000			
				28:46		1.47	39,331.90	23,389.00	15,942.90	0.942			E
				29:14		1.54	3,236.73	1,961.96	1,274.77	0.957			
				29:29		1.53	20,725.48	12,547.30	8,178.18	0.965			
				29:36		1.54	5,069.73	3,076.67	1,993.06	0.969			
				29:47		1.56	14,407.24	8,788.04	5,619.20	0.975			
				30:03		1.54	8,609.49	5,215.44	3,394.05	0.984			
				30:16		1.58	4,683.73	2,866.20	1,817.53	0.991			
	A			30:26	RO	0.95	2,056.45	1,250.00	1,310.00	0.996			
				30:33		1.58	4,148.38	2,542.12	1,606.26	1.000	12378-PeCDD	AN	
				30:39		1.50	965.12	579.61	385.51	1.003			Q

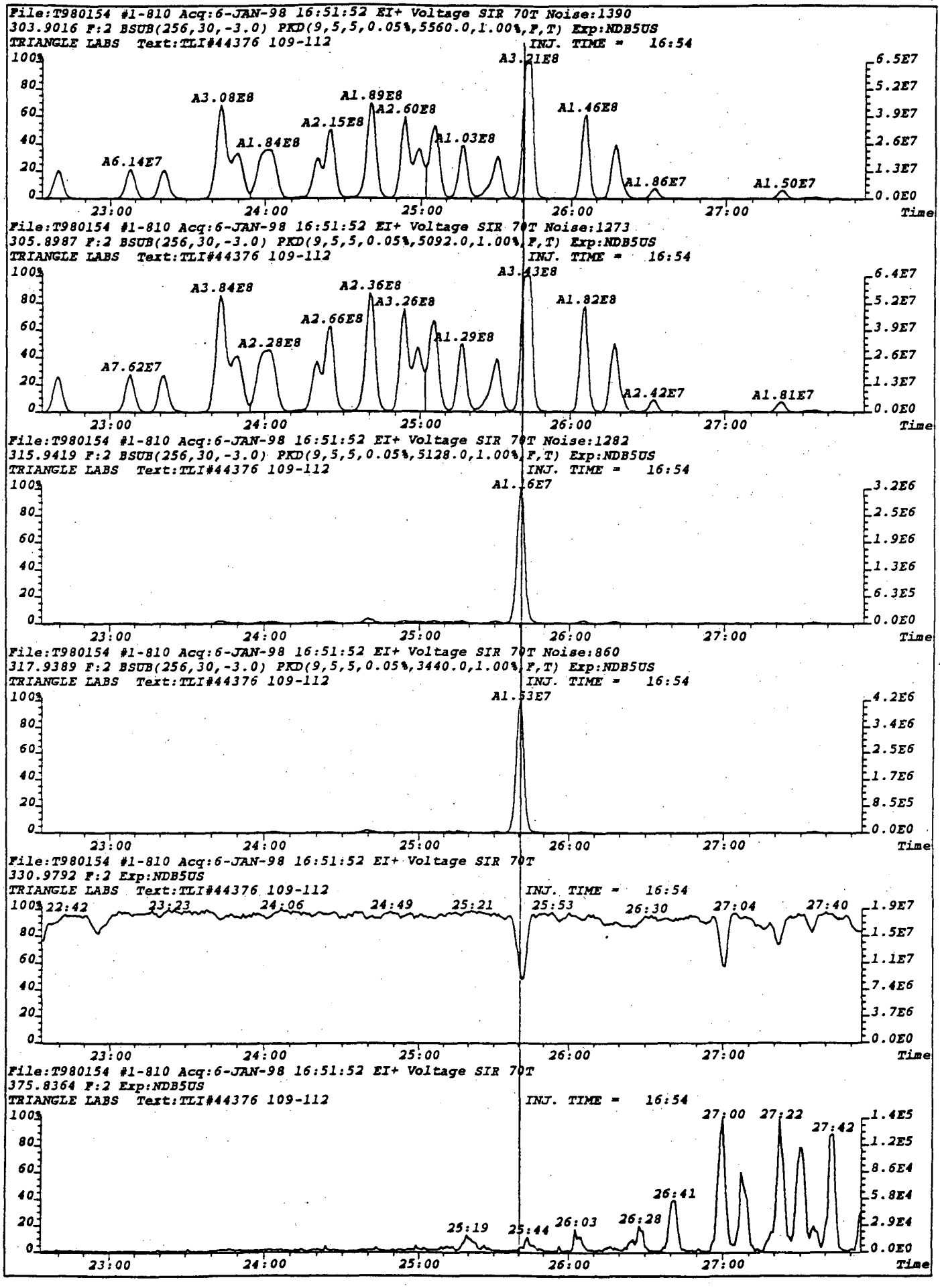
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:58		1.57	1,916.47	1,171.04	745.43	1.014			
356-358			11 Peaks				105,150.72						
13C12-PeCDD				1.32-1.78						0.869-1.131			
368-370	DC	NL		0:00	RO	0.58	0.54			0.000			
				28:46	RO	2.76	28.69	31.05	11.25	0.942			
				29:14	RO	1.98	7.93	6.17	3.11	0.957			
				29:28	RO	2.08	21.47	17.49	8.42	0.965			
				29:36		1.44	8.59	5.07	3.52	0.969			
				29:47		1.64	12.21	7.58	4.63	0.975			
				30:04	RO	2.66	7.19	7.51	2.82	0.984			
				30:14		1.76	8.90	5.68	3.22	0.990			
	DC	SN		30:24		1.72	4.76			0.995			
				30:33		1.49	1,945.11	1,164.58	780.53	1.000	13C12-PeCDD 123	IS3	
	DC	SN		31:00		1.76	5.93			1.015			
368-370			8 Peaks				2,040.09						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.964-1.049			
374-376	DC	NL		0:00		1.11	123.98			0.000			
				31:56		1.27	11,144.59	6,230.16	4,914.43	0.968			
				32:04		1.24	36,065.00	19,940.40	16,124.60	0.972			E
				32:14		1.27	2,653.64	1,483.43	1,170.21	0.977			
				32:22		1.24	3,522.68	1,951.13	1,571.55	0.981			
				32:31		1.26	2,042.01	1,138.16	903.85	0.986			
				32:44		1.32	390.24	221.96	168.28	0.992			
				32:53		1.26	20,458.37	11,415.20	9,043.17	0.997	123478-HxCDF	AN	
				33:00		1.31	10,140.65	5,746.49	4,394.16	1.001	123678-HxCDF	AN	
				33:07		1.28	1,967.41	1,104.72	862.69	1.004			
				33:18		1.26	3,122.90	1,740.50	1,382.40	1.010			
	AX		X	33:25	RO	1.22	349.00	192.00	157.00	1.013			
	M			33:30		1.26	5,280.00	2,940.00	2,340.00	1.016	234678-HxCDF	AN	
	MX		X	34:14	RO	1.29	753.00	424.00	329.00	1.038			
	AN			34:17		1.24	222.30	123.00	99.30	1.039	123789-HxCDF	AN	PR
	M			34:22		1.25	967.00	537.00	430.00	1.042			
	DC	WH		34:47		1.26	167.45			1.055			
374-376			15 Peaks				99,078.79						
13C12-HxCDF				0.43-0.59						0.879-1.121			
384-386	DC	NL		0:00	RO	1.38	3.88			0.000			
				31:56	RO	1.35	8.98	8.03	5.95	0.968			
				32:04	RO	1.20	32.31	25.70	21.40	0.972			
				32:53		0.53	2,295.64	791.71	1,503.93	0.997	13C12-HxCDF 478	SUR3	
				32:59		0.52	2,444.39	835.13	1,609.26	1.000	13C12-HxCDF 678	IS4	
				33:15		0.52	8.08	2.75	5.33	1.008			
				33:30		0.52	2,461.81	837.73	1,624.08	1.016	13C12-HxCDF 234	ALT2	
	DC	SN		33:44	RO	0.95	3.52			1.023			
	DC	SN		33:54		0.53	3.71			1.028			
	DC	SN		34:01	RO	0.65	4.09			1.031			
				34:17		0.51	2,110.03	713.42	1,396.61	1.039	13C12-HxCDF 789	ALT1	
384-386			7 Peaks				9,361.24						

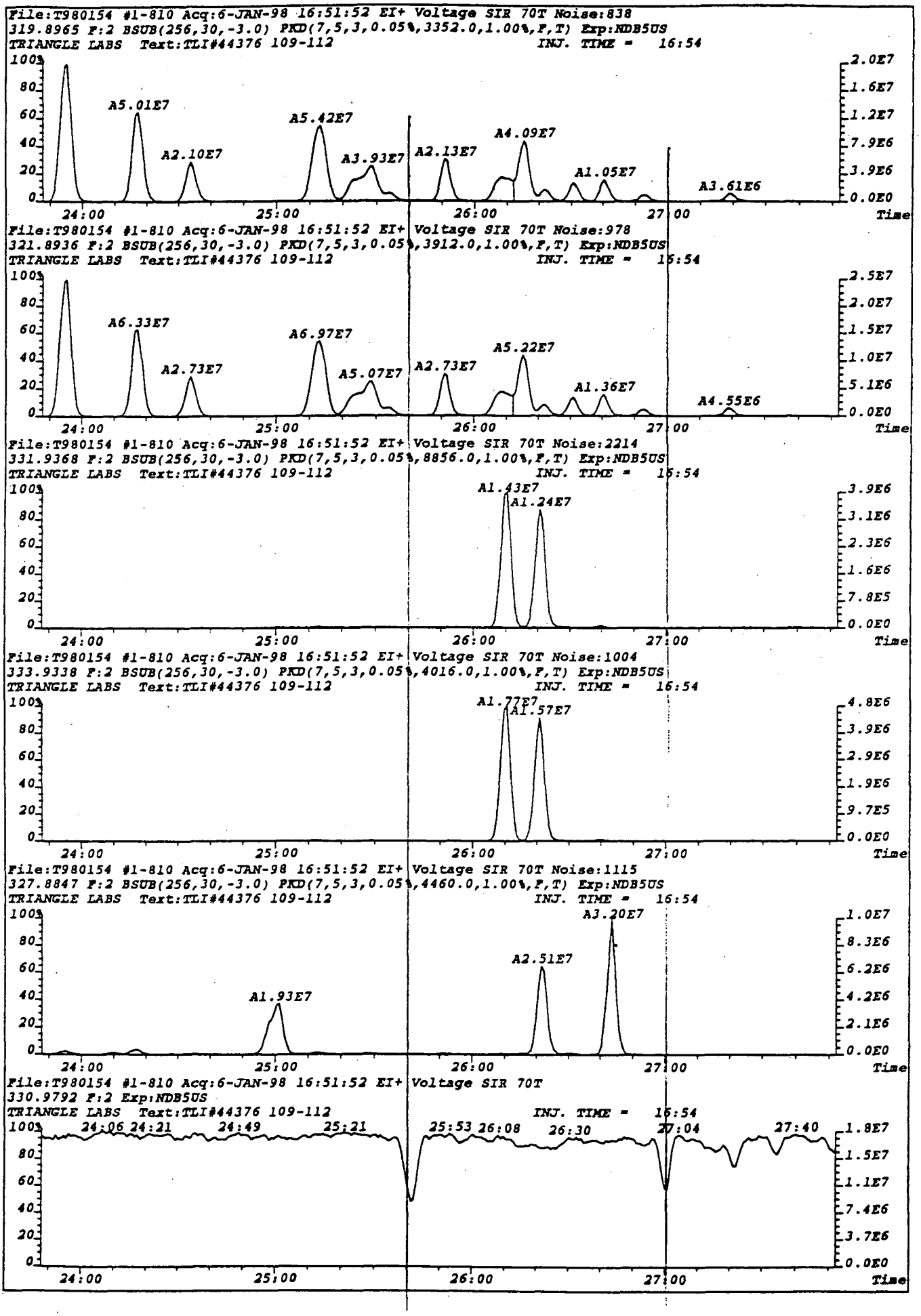
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.015			
390-392	DC	NL		0:00		1.14	9.72			0.000			
				32:25		1.21	3,394.10	1,855.18	1,538.92	0.962			Q
				32:51		1.22	8,553.92	4,693.87	3,860.05	0.975			Q
				33:05		1.22	5,388.67	2,962.75	2,425.92	0.982			Q
				33:15		1.24	553.16	305.72	247.44	0.987			Q
				33:37		1.22	604.09	332.31	271.78	0.998	123478-HxCDD	AN	Q
				33:42		1.24	1,061.66	587.91	473.75	1.000	123678-HxCDD	AN	
				34:01		1.22	1,496.43	822.70	673.73	1.009	123789-HxCDD	AN	QPR
390-392		7	Peaks				21,052.03						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	1.66	3.58			0.000			
				33:03	RO	1.00	12.99	7.19	7.20	0.981			
	DC	SN		33:16	RO	1.99	4.05			0.987			
				33:36		1.15	1,741.18	929.78	811.40	0.997	13C12-HxCDD 478	SUR4	Q
				33:42		1.16	1,569.35	844.15	725.20	1.000	13C12-HxCDD 678	IS5	Q
				34:01		1.16	2,483.98	1,333.55	1,150.43	1.009	13C12-HxCDD 789	RS2	
402-404		4	Peaks				5,807.50						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.998-1.053			
408-410	DC	NL		0:00		1.13	4.59			0.000			
				35:59		1.04	4,510.99	2,303.10	2,207.89	1.000	1234678-HpCDF	AN	
X		X		36:16	RO	1.05	1,171.37	601.11	570.26	1.008			
				36:26		1.04	669.12	340.44	328.68	1.013			
	DC	SN		36:41	RO	1.55	4.39			1.019			
D	D	NH		37:21		0.97	9.03			1.038			
				37:37		1.02	371.82	187.37	184.45	1.045	1234789-HpCDF	AN	
	DC	WH		38:12	RO	1.27	16.10			1.062			
408-410		4	Peaks				6,723.30						
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	1.09	1.83			0.000			
				35:59		0.43	1,704.95	513.42	1,191.53	1.000	13C12-HpCDF 678	IS6	
	DC	SN		36:28	RO	0.60	2.29			1.013			
				37:36		0.42	1,321.85	393.79	928.06	1.045	13C12-HpCDF 789	SUR5	
418-420		2	Peaks				3,026.80						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.976-1.006			
424-426	DC	NL		0:00	RO	1.78	0.82			0.000			
				36:17		1.03	1,360.92	690.51	670.41	0.979			
				37:05		1.01	1,250.84	628.04	622.80	1.000	1234678-HpCDD	AN	
	DC	WH		37:36	RO	1.78	4.69			1.014			
424-426		2	Peaks				2,611.76						

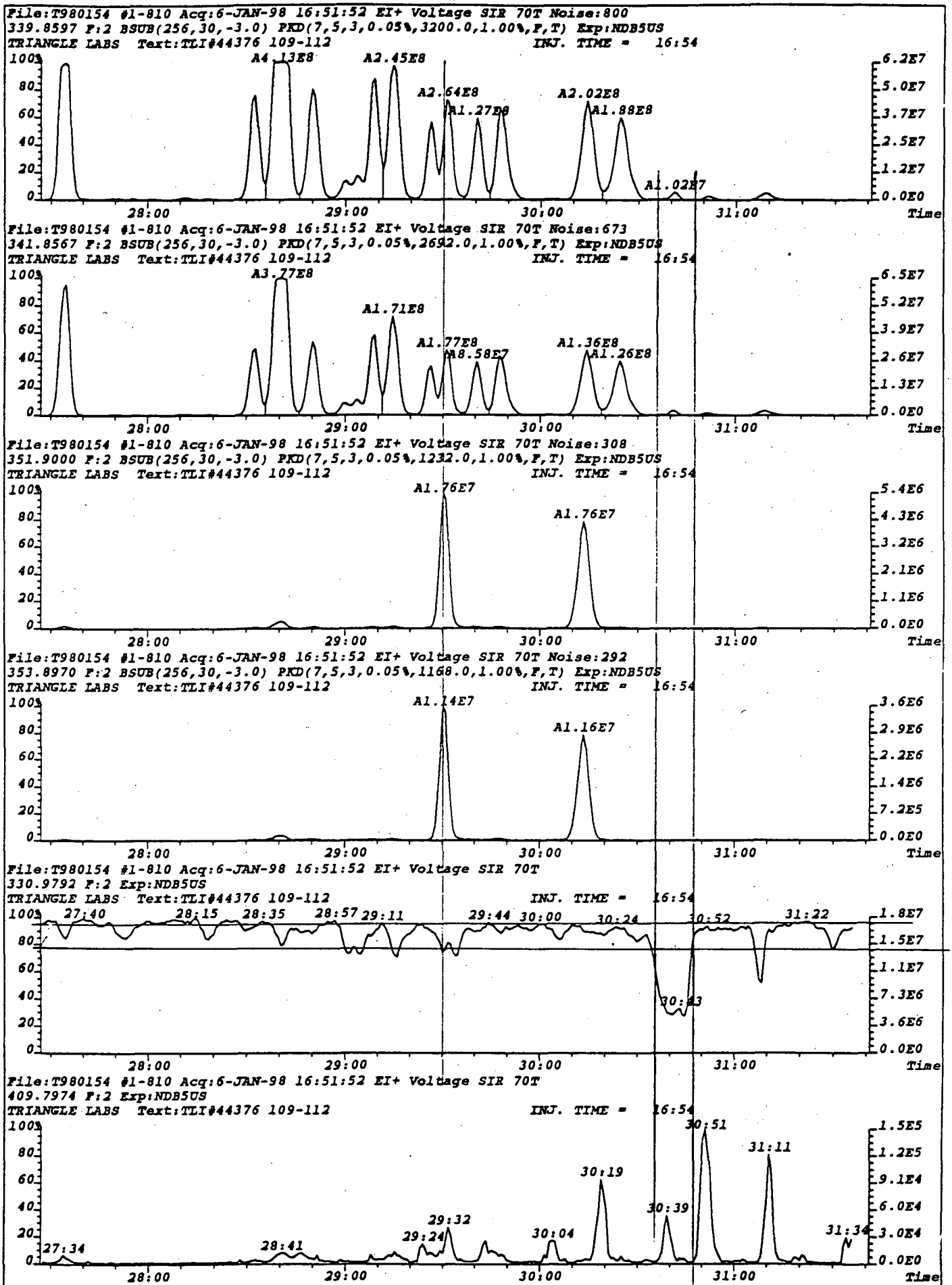
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HpCDD				0.88-1.20						0.973-1.027			
436-438	DC	NL		0:00	RO	1.45	1.88			0.000			
				36:17	RO	1.31	12.42	7.97	6.09	0.979			
	DC	SN		36:30	RO	3.48	1.26			0.985			
				37:04		1.04	1,848.56	944.06	904.50	1.000	13C12-HpCDD	678	IS7
				37:19	RO	1.94	10.06	9.58	4.93	1.007			
436-438			3	Peaks			1,871.04						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.902-1.098			
442-444	DC	NL		0:00		0.94	0.99			0.000			
	DC	WL		35:34	RO	0.43	1.06			0.869			
	DC	WL		35:51		1.02	1.07			0.876			
	DC	WL		36:14	RO	1.04	9.03			0.886			
	DC	WL		36:47		1.00	1.34			0.899			
	DC	SN		37:05		1.02	2.66			0.906			
	DC	SN		38:17	RO	1.12	1.13			0.936			
	DC	SN		38:36	RO	2.45	0.42			0.943			
	DC	SN		39:22		0.96	1.10			0.962			
	DC	SN		39:39	RO	1.15	0.64			0.969			
	DC	SN		39:47	RO	0.43	0.81			0.972			
	DC	SN		39:53	RO	0.45	1.00			0.975			
	DC	SN		40:15	RO	0.30	0.76			0.984			
				41:09		0.95	404.72	186.18	218.54	1.006	OCDF		AN
				41:26	RO	0.73	16.50	7.77	10.66	1.013			
	DC	SN		41:43	RO	0.55	0.81			1.020			
442-444			2	Peaks			421.22						
OCDD				0.76-1.02						0.902-1.098			
458-460	DC	NL		0:00	RO	1.09	0.21			0.000			
				40:56		0.83	559.29	254.23	305.06	1.000	OCDD		AN
	DC	SN		41:16	RO	1.13	2.53			1.009			
458-460			1	Peak			559.29						
13C12-OCDD				0.76-1.02						0.998-1.006			
470-472	DC	NL		0:00	RO	1.08	0.25			0.000			
				40:55		0.91	2,736.81	1,302.66	1,434.15	1.000	13C12-OCDD		IS8
	DC	WH		41:28	RO	0.31	3.14			1.013			
470-472			1	Peak			2,736.81						

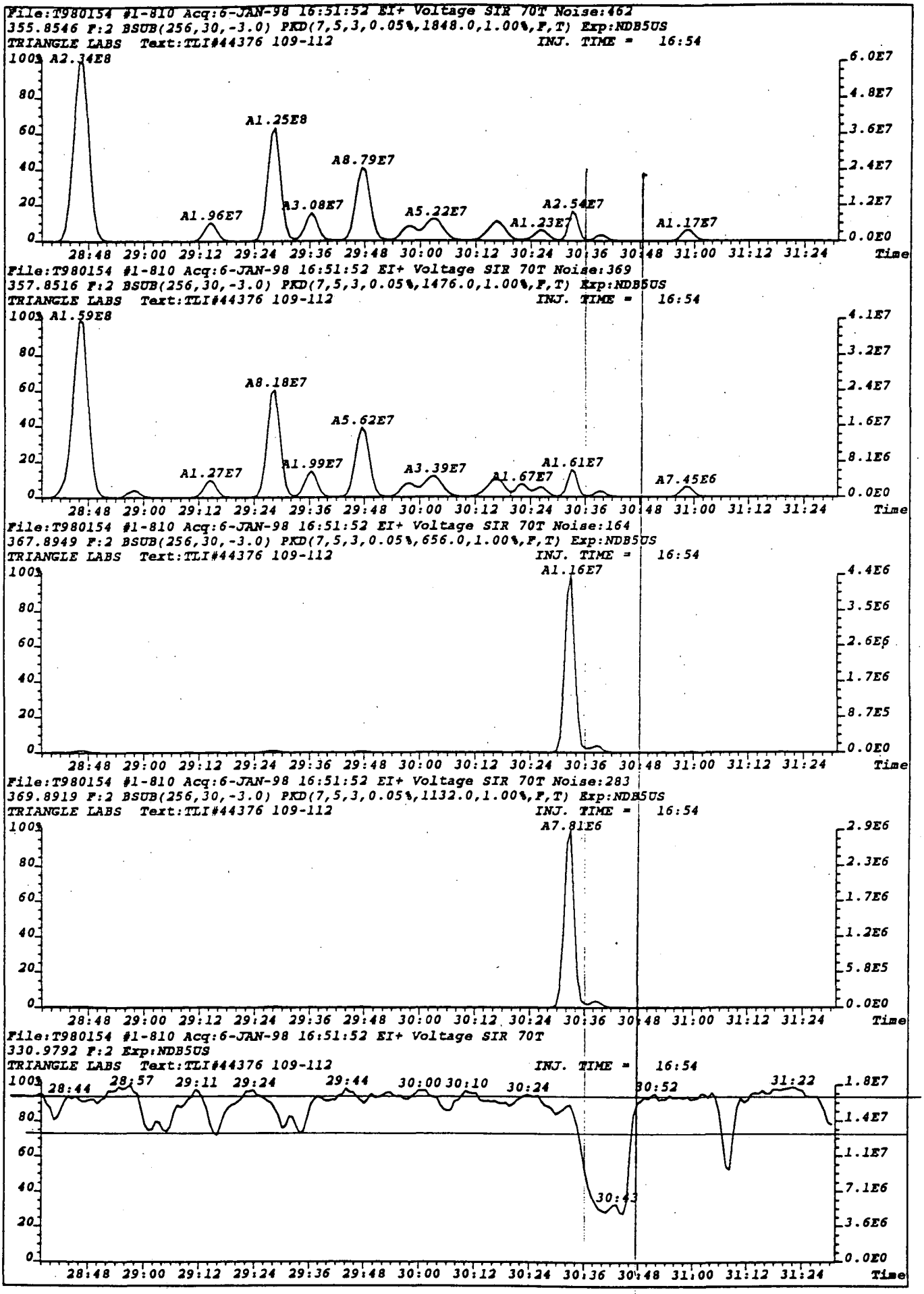
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

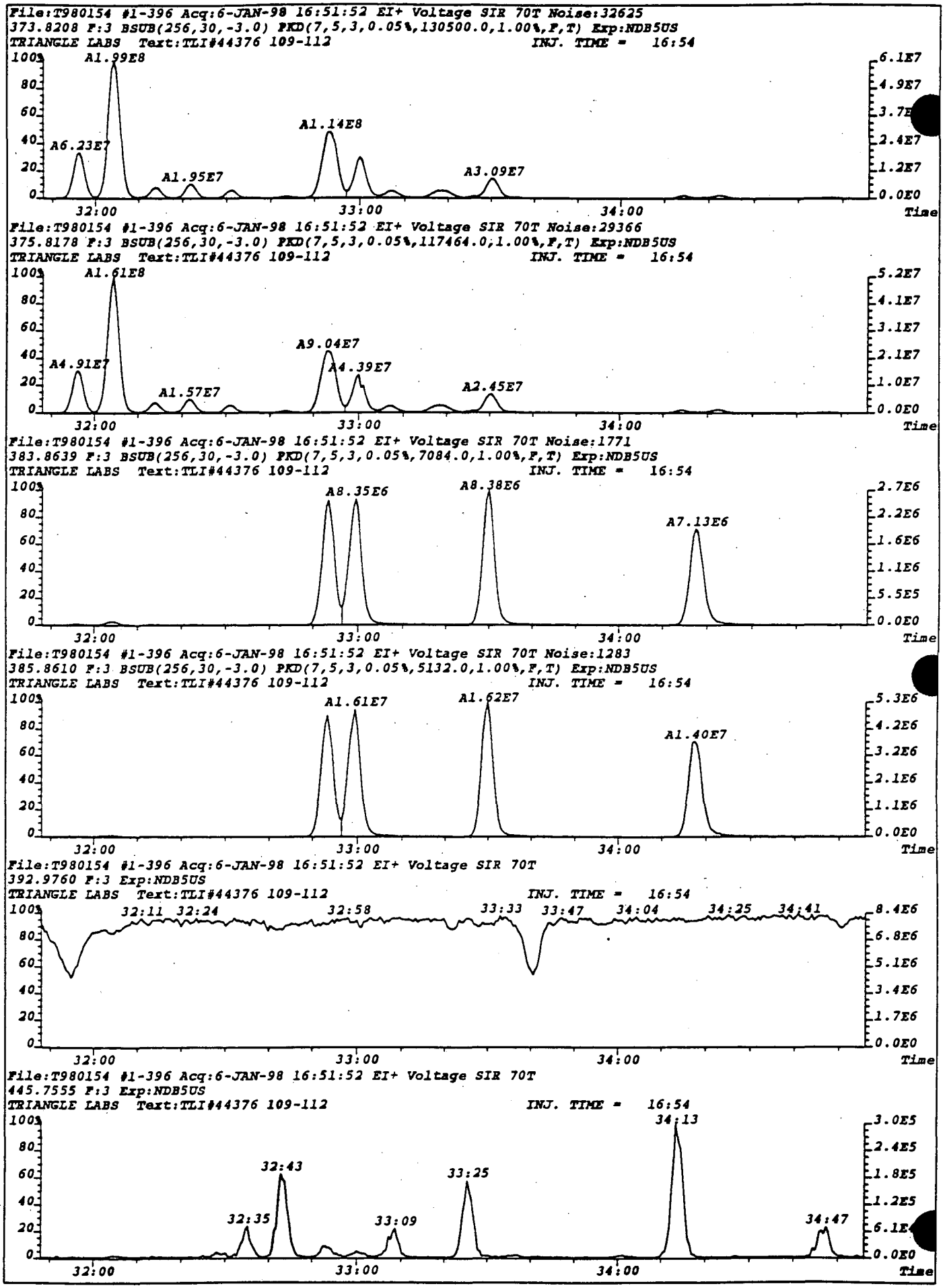
*** End of Report ***

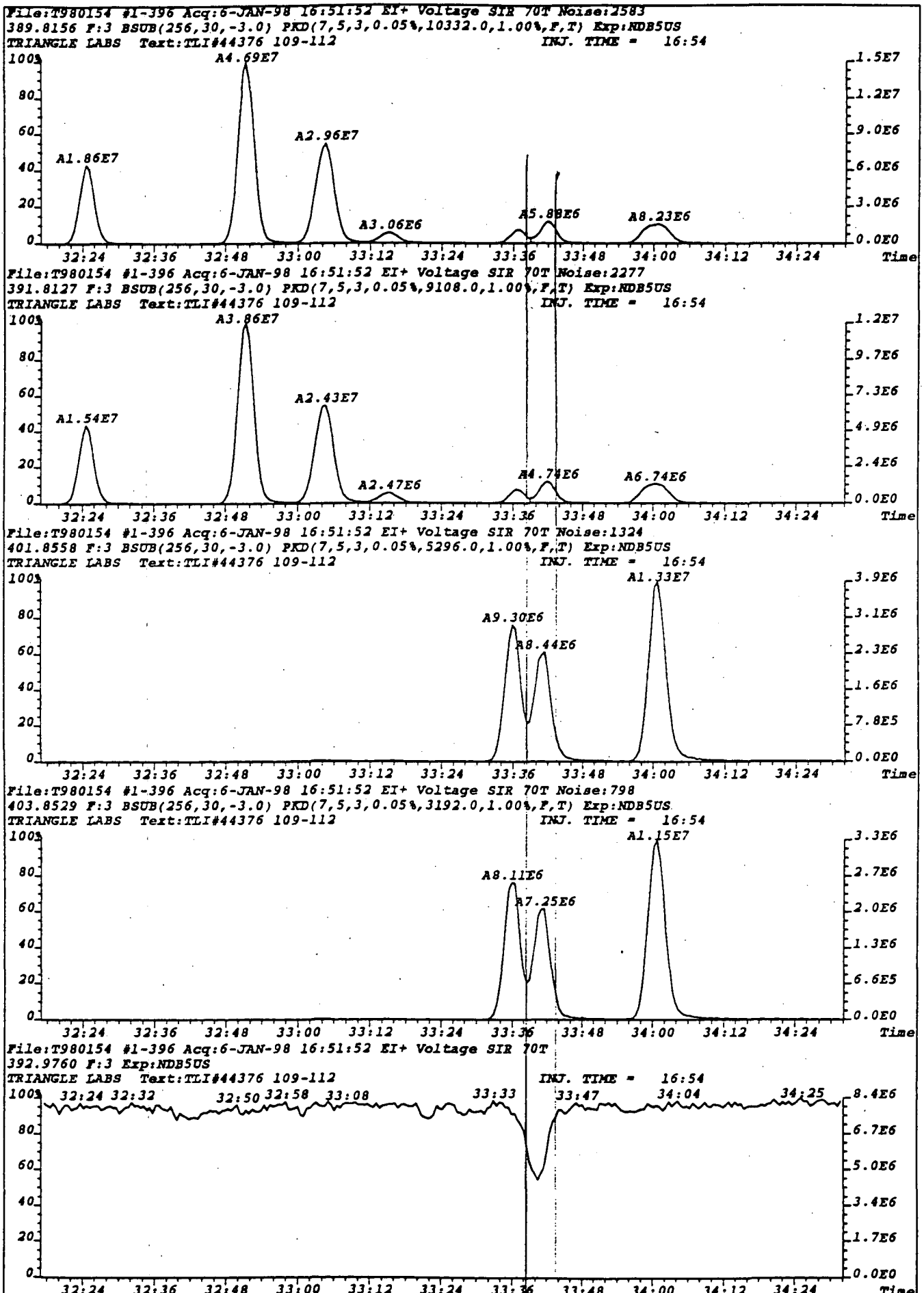

File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1390
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,5560.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A6.14E7
A3.08E8
A1.84E8
A2.15E8
A1.89E8
A2.60E8
A1.03E8
A3.21E8
A1.46E8
A1.86E7
A1.50E7
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1273
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,5092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A7.62E7
A3.84E8
A2.28E8
A2.66E8
A2.36E8
A3.26E8
A1.29E8
A3.43E8
A1.82E8
A2.42E7
A1.81E7
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1282
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,5128.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:860
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3440.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
22:42
23:23
24:06
24:49
25:21
25:53
26:30
27:04
27:40
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
25:19
25:44
26:03
26:28
26:41
27:00
27:22
27:42
Time


File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:838
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3352.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A5.01E7
A2.10E7
A5.42E7
A3.93E7
A2.13E7
A4.09E7
A1.05E7
A3.61E6
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:978
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3912.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A6.33E7
A2.73E7
A6.97E7
A5.07E7
A2.73E7
A5.22E7
A1.36E7
A4.55E6
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:2214
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8856.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.43E7
A1.24E7
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1004
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4016.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.77E7
A1.57E7
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1115
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4460.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.93E7
A2.51E7
A3.20E7
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
24:06 24:21 24:49 25:21
25:53 26:08 26:30 27:04 27:40
Time

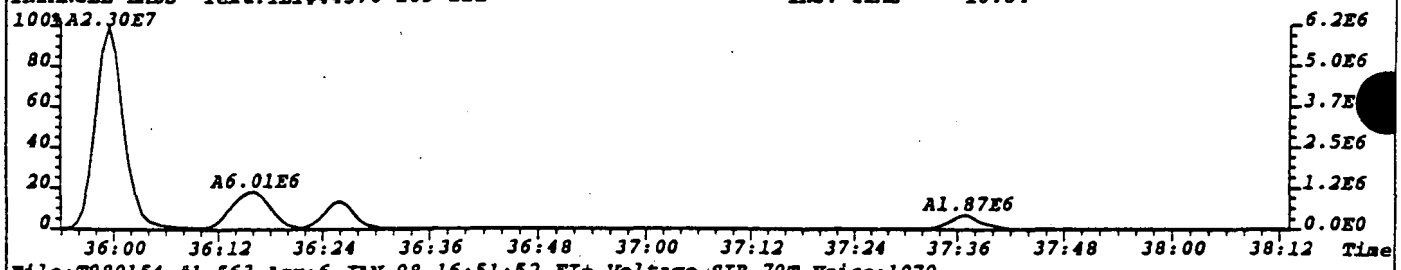

File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:800
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A4.13E8
A2.45E8
A2.64E8
A1.27E8
A2.02E8
A1.88E8
A1.02E7
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:673
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A3.77E8
A1.71E8
A1.77E8
A8.58E7
A1.36E8
A1.26E8
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:308
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1232.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.76E7
A1.76E7
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:292
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1168.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.14E7
A1.16E7
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
27:40
28:15
28:35
28:57
29:11
29:44
30:00
30:24
30:52
31:22
30:43
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
27:34
28:41
29:24
29:32
30:04
30:19
30:39
30:51
31:11
31:34
28:00
29:00
30:00
31:00
Time


File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:462
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1848.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A2.34E8
A1.25E8
A8.79E7
A1.96E7
A3.08E7
A5.22E7
A1.23E7
A2.54E7
A1.17E7
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:369
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1476.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.59E8
A8.18E7
A5.62E7
A1.27E7
A1.99E7
A3.39E7
A1.67E7
A1.61E7
A7.45E6
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:164
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,656.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.16E7
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:283
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1132.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A7.81E6
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
28:44
28:57
29:11
29:24
29:44
30:00
30:10
30:24
30:43
30:52
31:22
Time

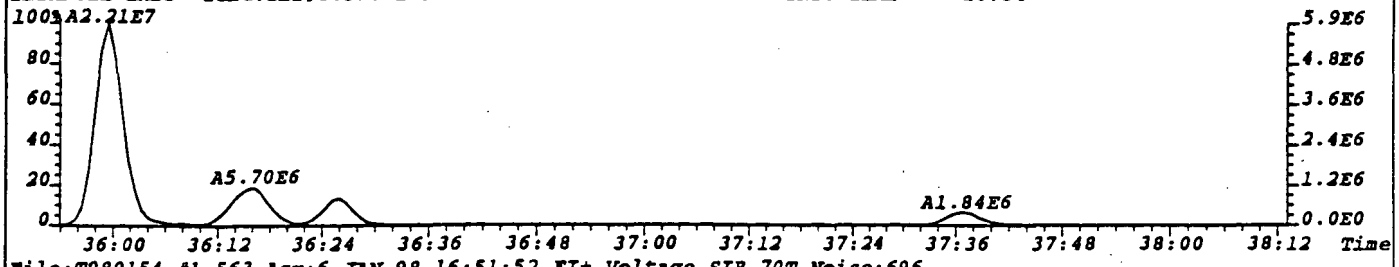

File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:32625
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,130500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.99E8
A6.23E7
A1.95E7
A1.14E8
A3.09E7
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:29366
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,117464.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.61E8
A4.91E7
A1.57E7
A9.04E7
A4.39E7
A2.45E7
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1771
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A8.35E6
A8.38E6
A7.13E6
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1283
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5132.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
A1.61E7
A1.62E7
A1.40E7
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
32:11 32:24 32:58 33:33 33:47 34:04 34:25 34:41
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54
32:35
32:43
33:09
33:25
34:13
34:47
32:00
33:00
34:00
Time


File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:2583
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10332.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A4.69E7
A2.96E7
A1.86E7
A3.06E6
A5.88E6
A8.23E6
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:2277
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9108.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A3.86E7
A2.43E7
A1.54E7
A2.47E6
A4.74E6
A6.74E6
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1324
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5296.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.33E7
A9.30E6
A8.44E6
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:798
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.15E7
A8.11E6
A7.25E6
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
32:24 32:32 32:50 32:58 33:08 33:33 33:47 34:04 34:25
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24
Time

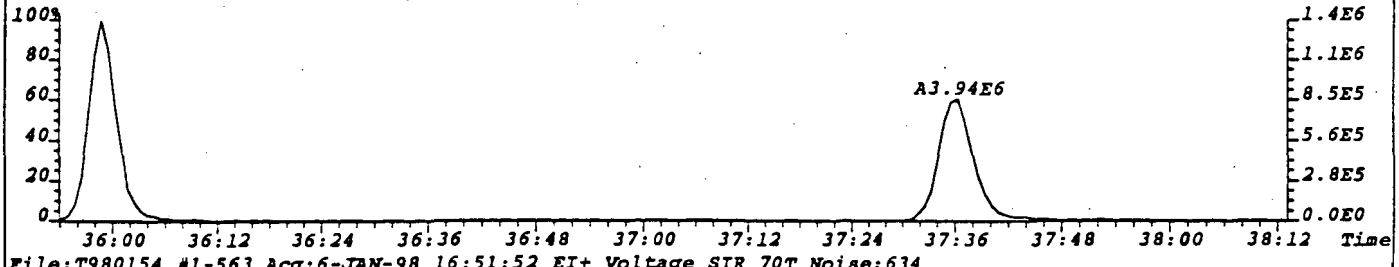
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1216
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



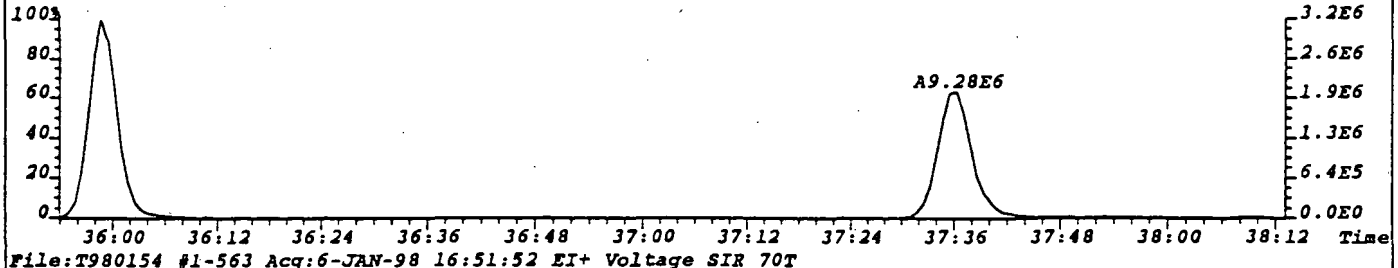
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:1079
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



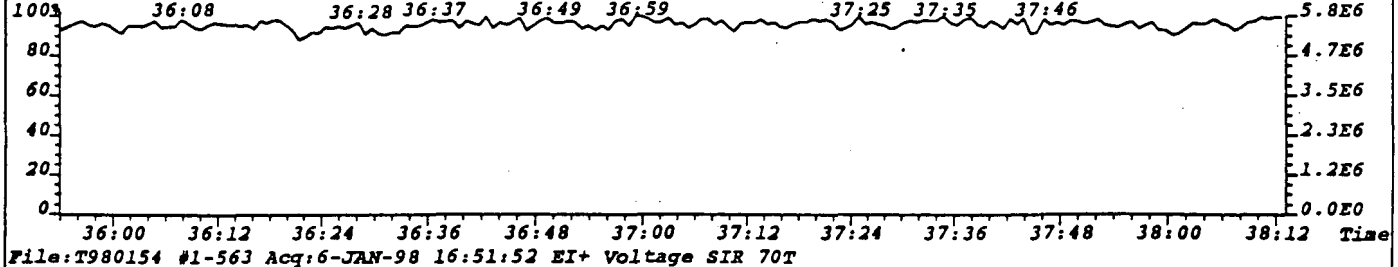
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:696
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2784.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



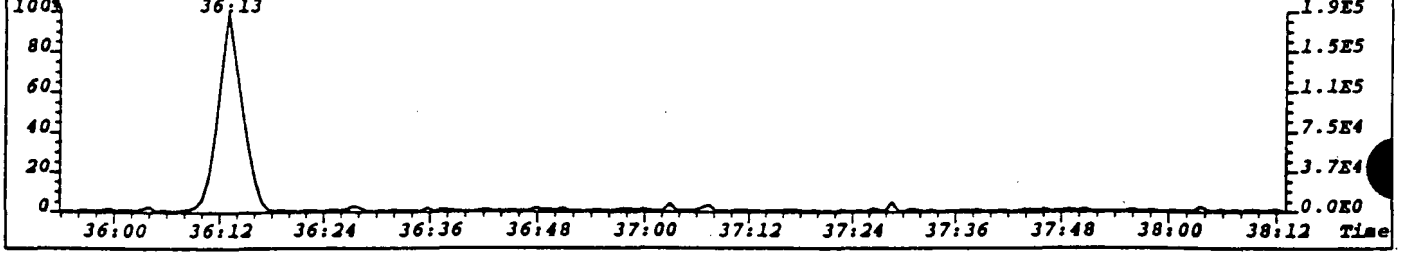
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:634
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54

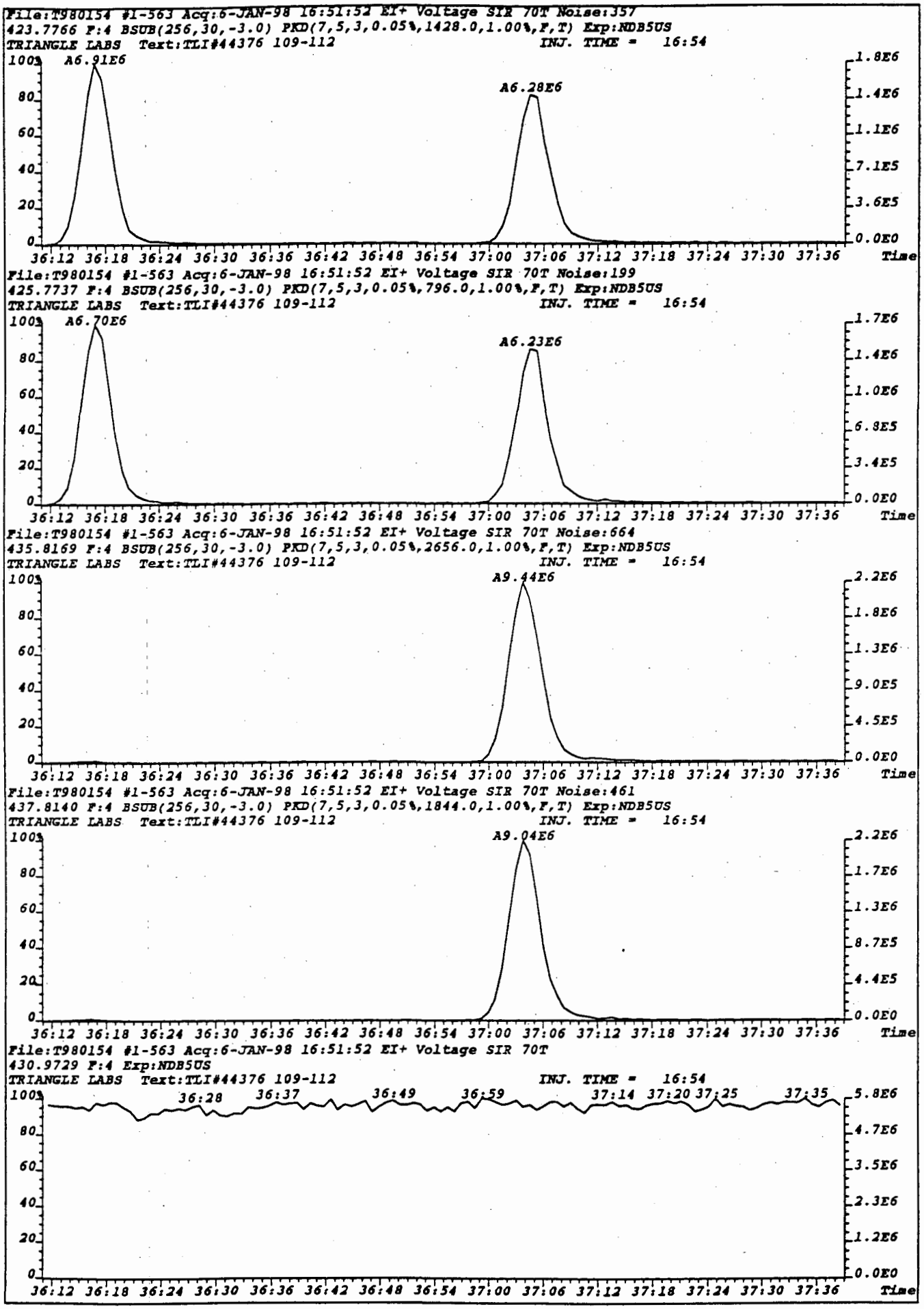


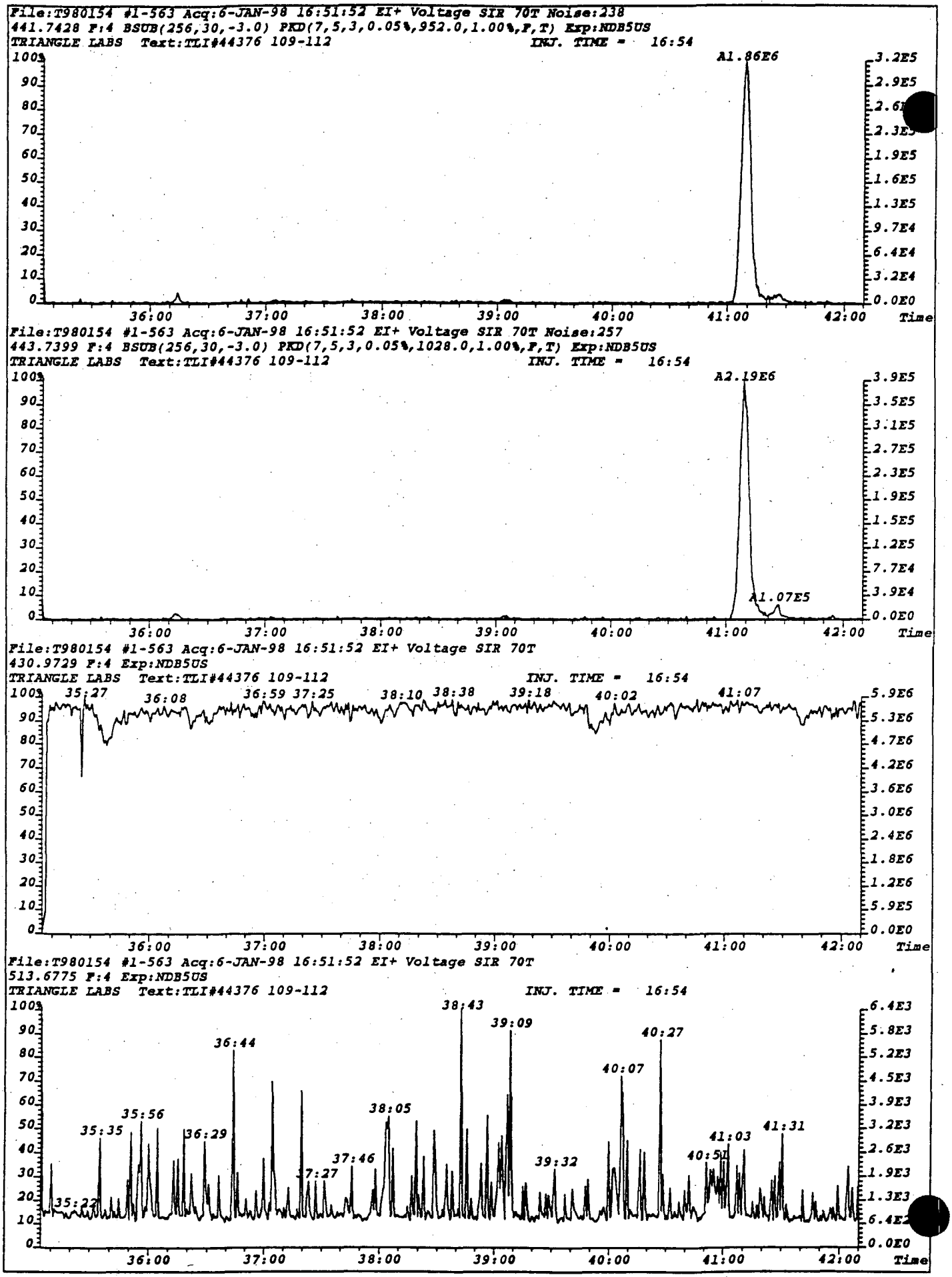
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



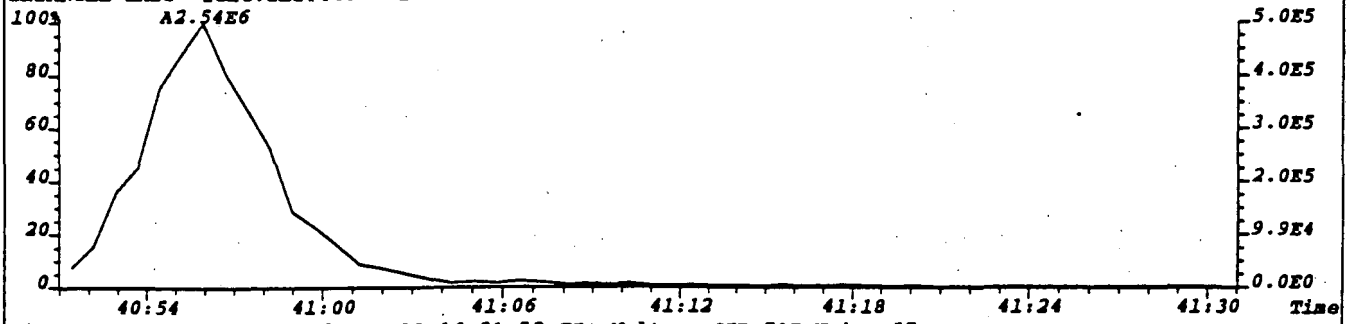
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



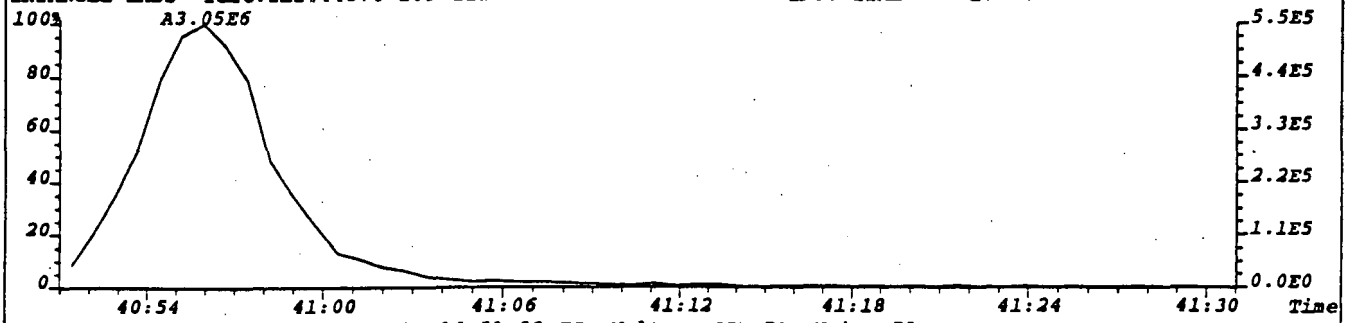

File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:357
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1428.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A6.91E6
A6.28E6
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:199
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,796.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A6.70E6
A6.23E6
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:664
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2656.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A9.44E6
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:461
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1844.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A9.04E6
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36
Time


File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:238
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,952.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A1.86E6
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:257
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1028.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
A2.19E6
A1.07E5
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
35:27
36:08
36:59
37:25
38:10
38:38
39:18
40:02
41:07
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112
INJ. TIME = 16:54
35:22
35:35
35:56
36:29
36:44
37:27
37:46
38:05
38:43
39:09
39:32
40:07
40:27
40:51
41:03
41:31
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

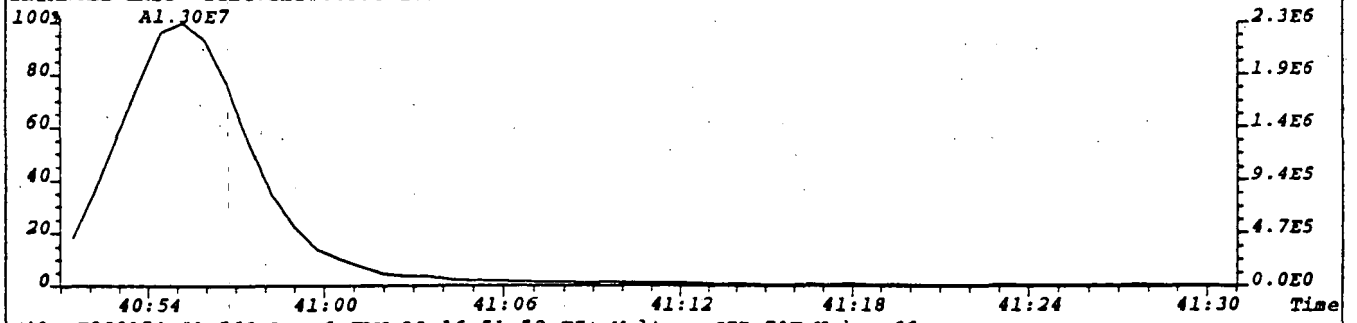
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:59
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,236.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



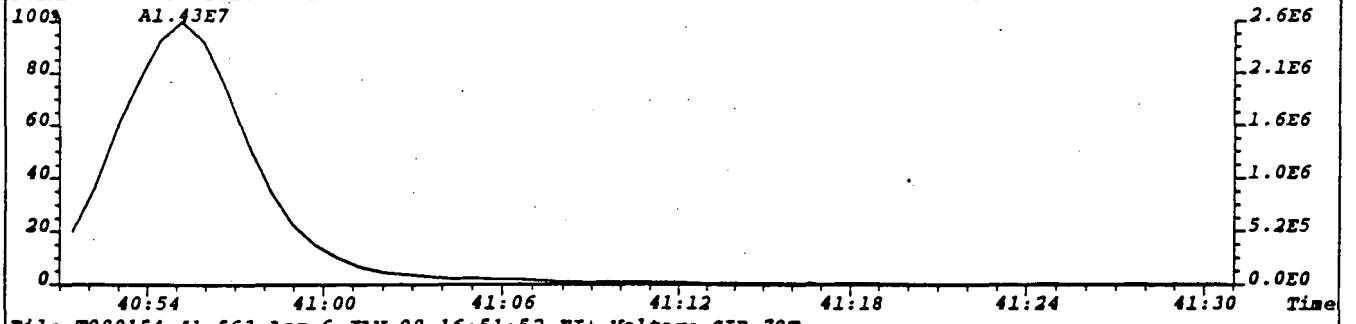
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:57
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



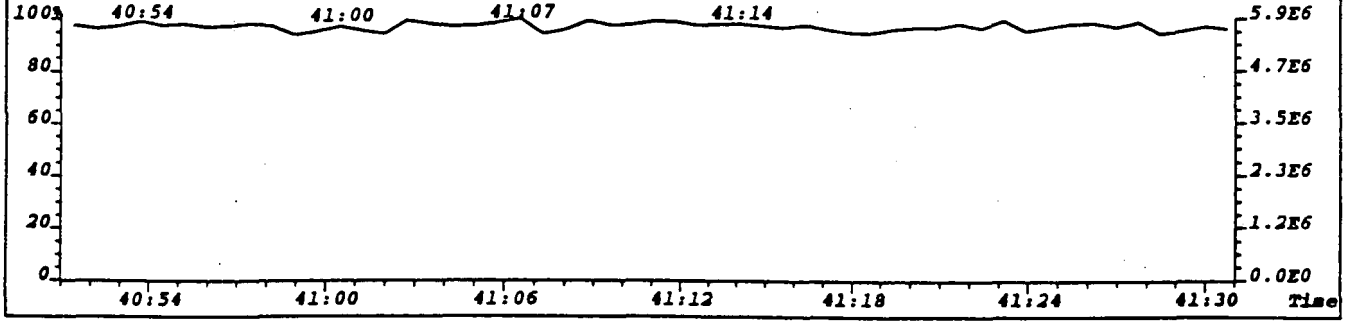
File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:72
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,288.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54

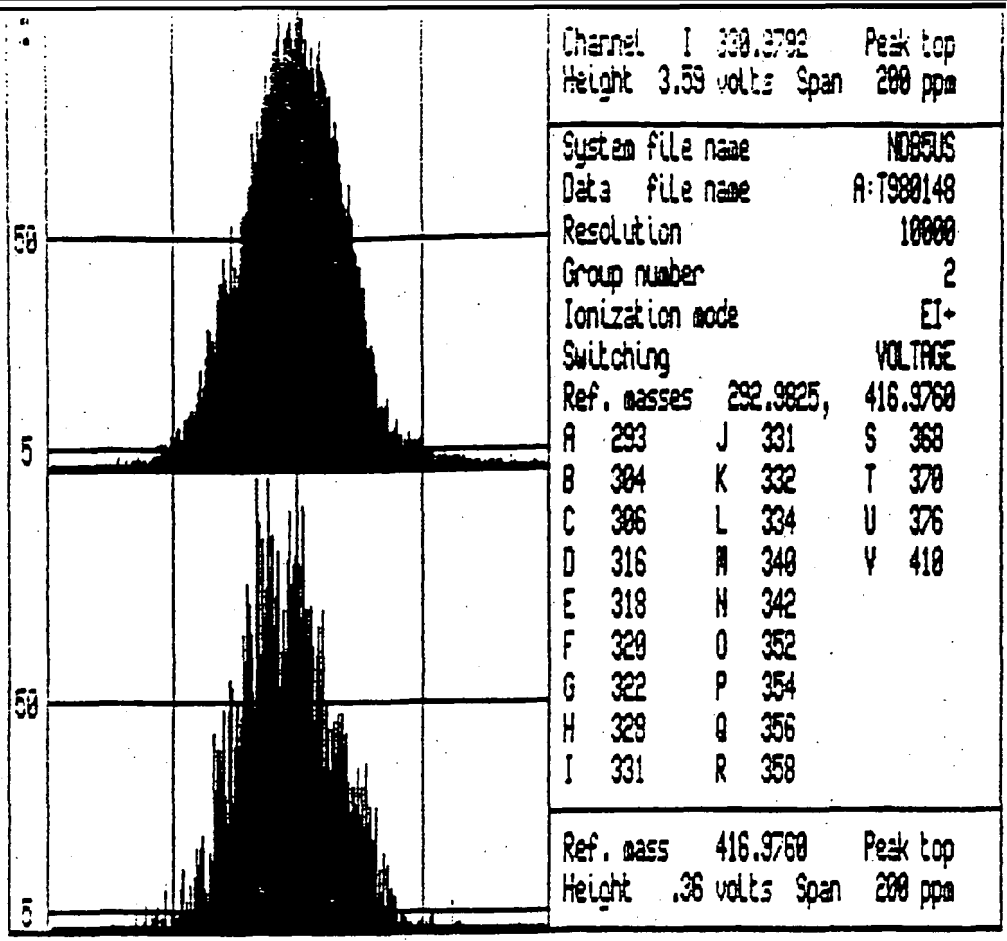


File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T Noise:66
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



File:T980154 #1-563 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 109-112 INJ. TIME = 16:54



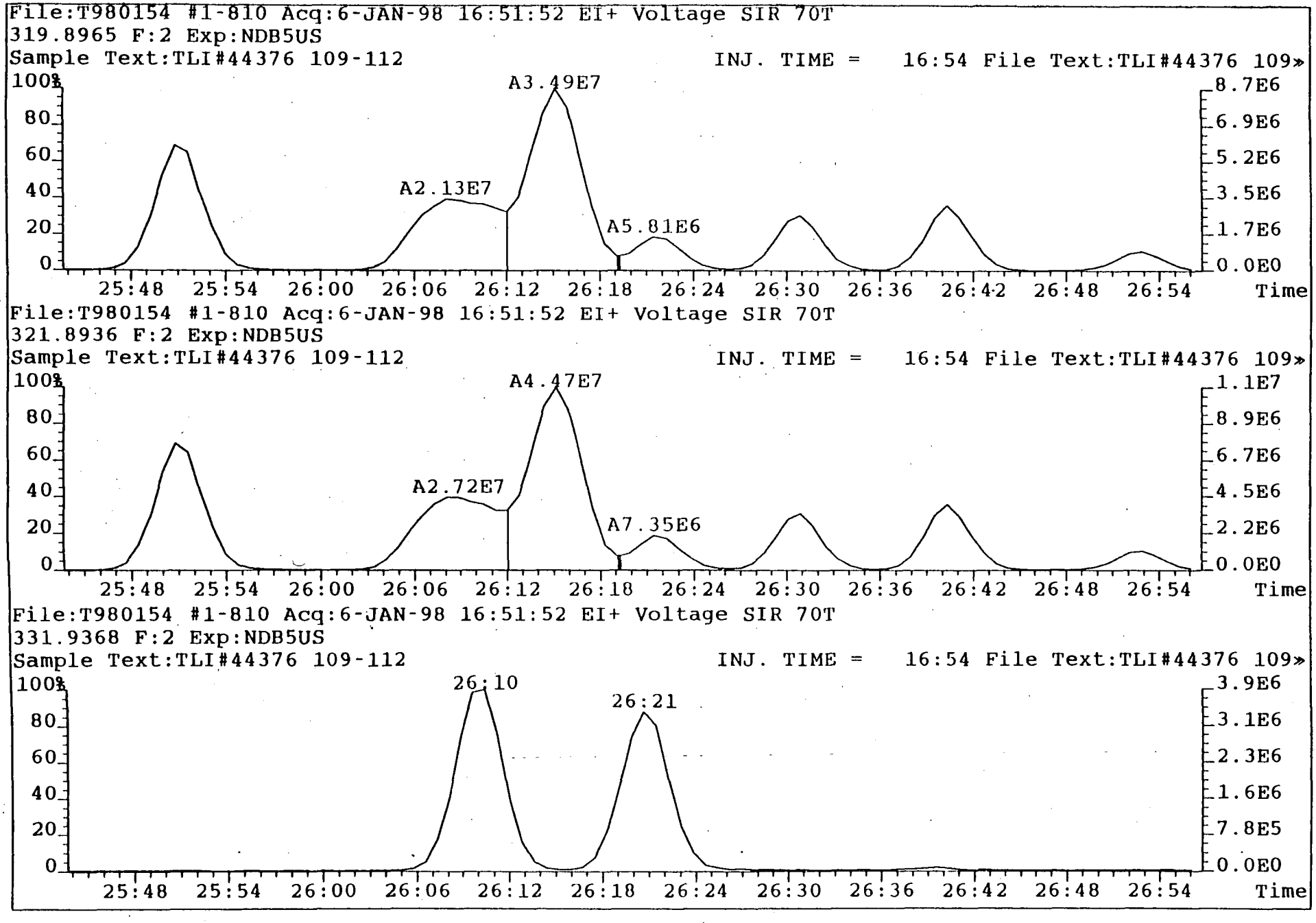


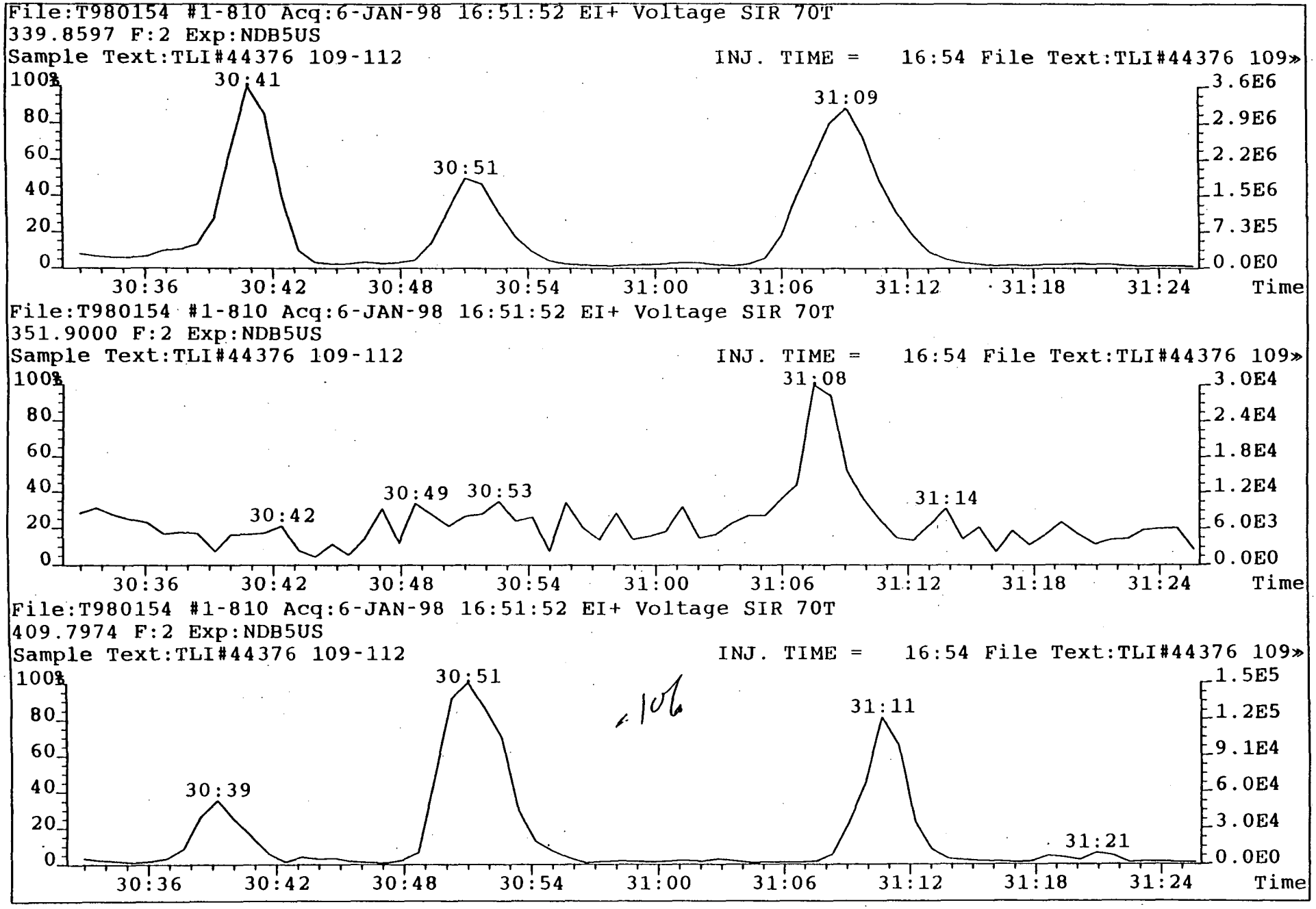
Channel I 330.3792 Peak top
Height 3.59 volts Span 200 ppm

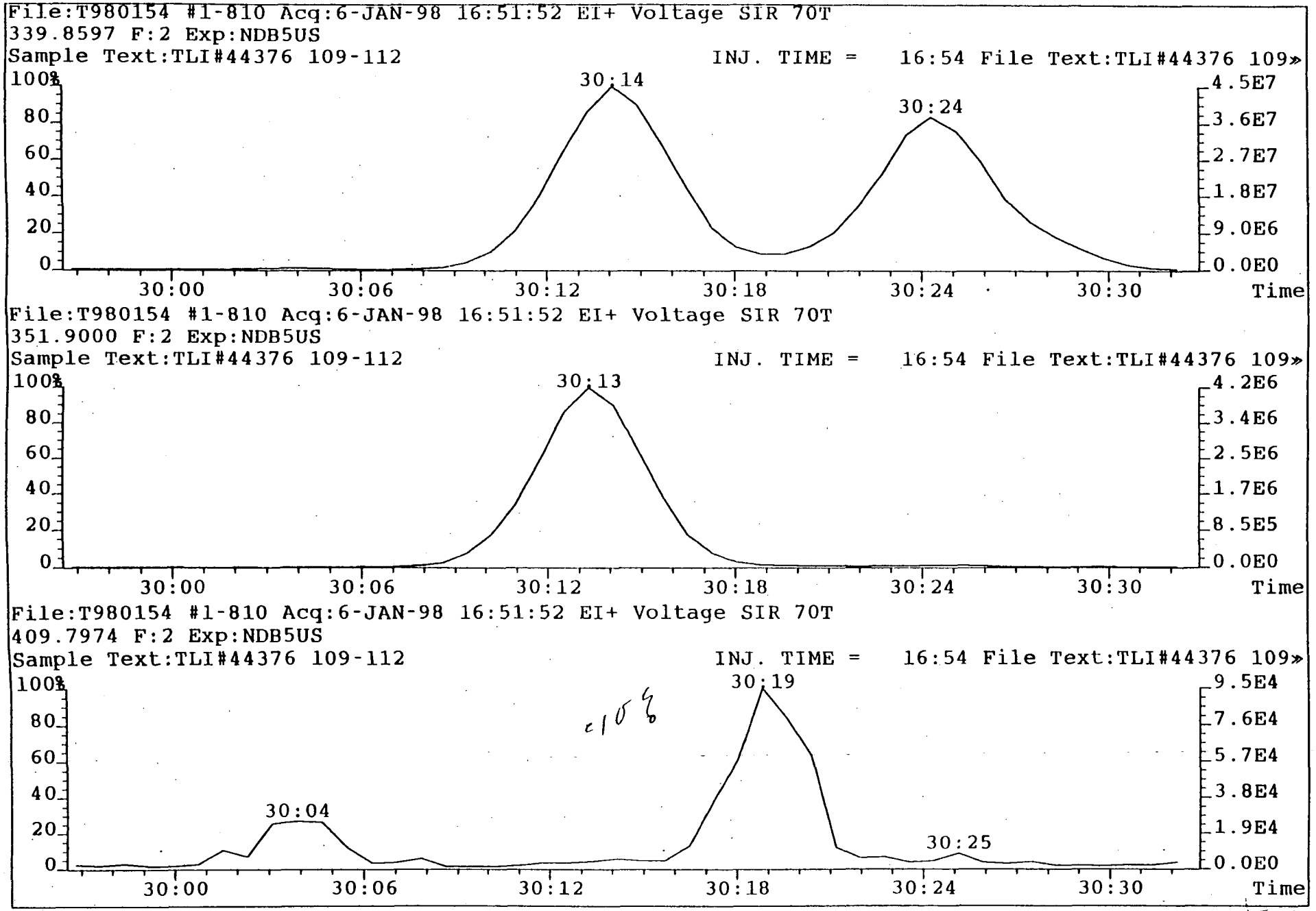
System file name	NOBBUS
Data file name	A:T980148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm

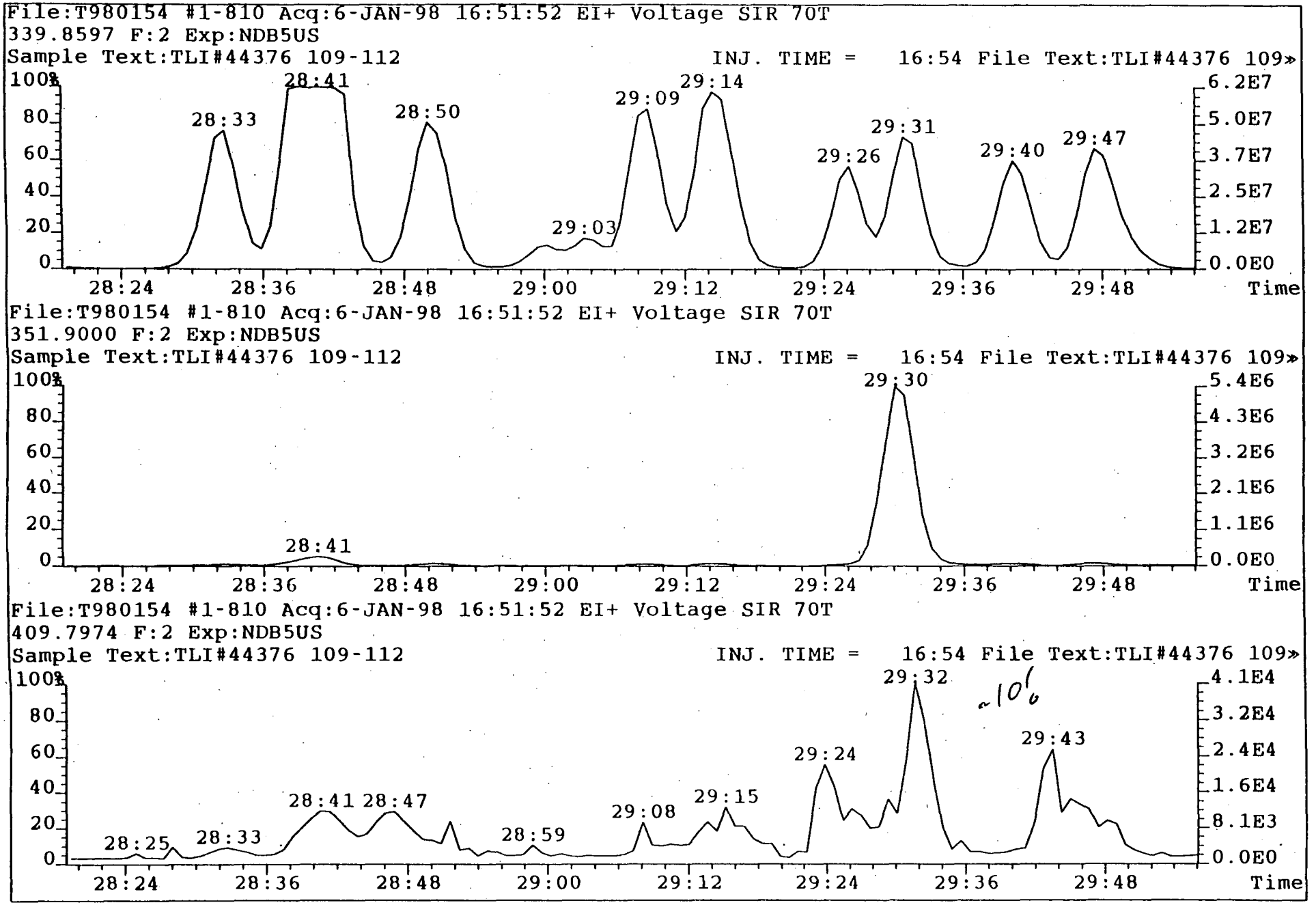

File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A3.49E7
A2.13E7
A5.81E6
100%
80
60
40
20
0
8.7E6
6.9E6
5.2E6
3.5E6
1.7E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A4.47E7
A2.72E7
A7.35E6
1.1E7
8.9E6
6.7E6
4.5E6
2.2E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
26:10
26:21
3.9E6
3.1E6
2.3E6
1.6E6
7.8E5
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time


File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
30:41
30:51
31:09
3.6E6
2.9E6
2.2E6
1.5E6
7.3E5
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
31:08
30:42
30:49
30:53
31:14
3.0E4
2.4E4
1.8E4
1.2E4
6.0E3
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
30:51
30:39
31:11
31:21
1.5E5
1.2E5
9.1E4
6.0E4
3.0E4
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time

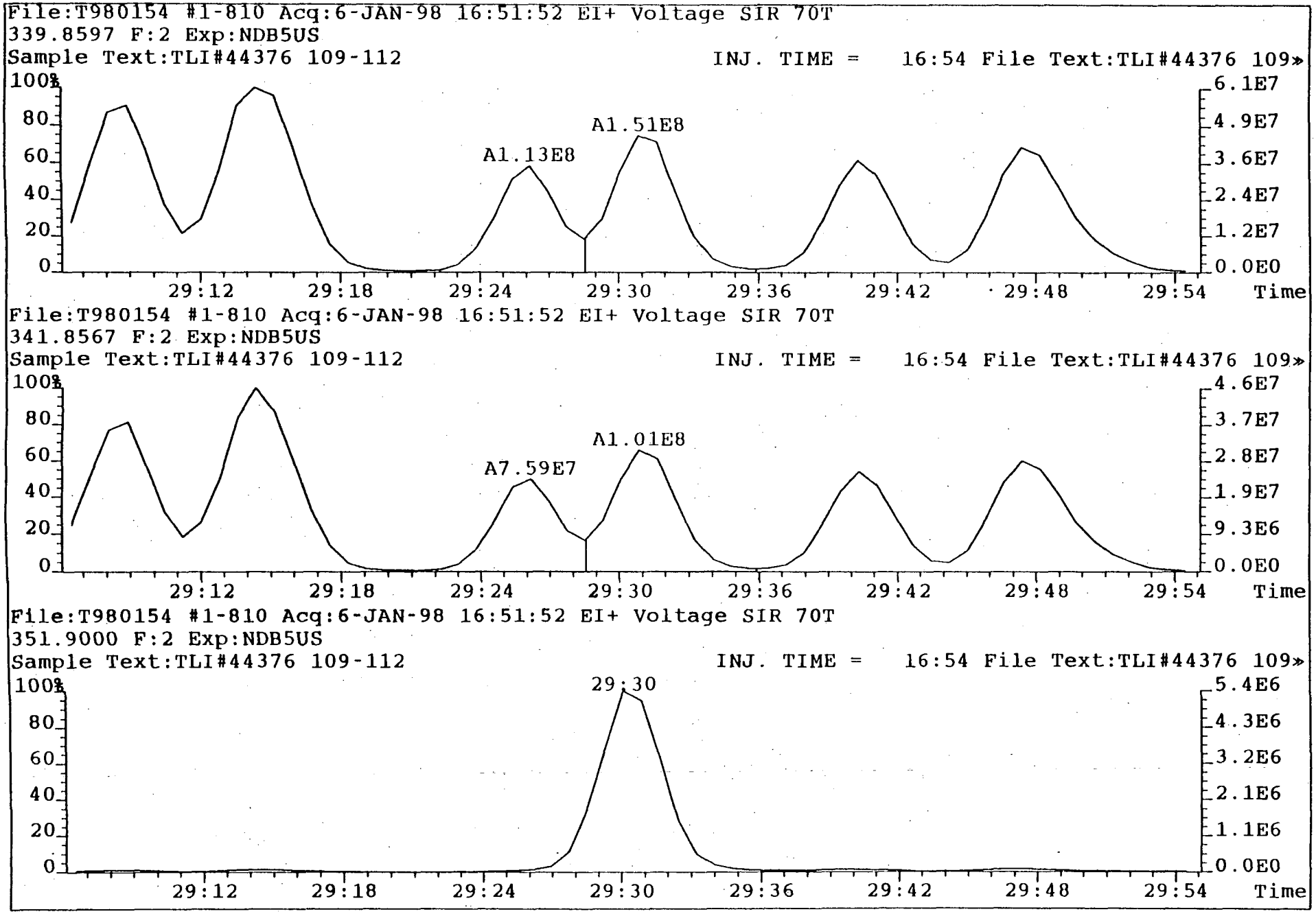

File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
30:14
30:24
100%
80
60
40
20
0
4.5E7
3.6E7
2.7E7
1.8E7
9.0E6
0.0E0
30:00
30:06
30:12
30:18
30:24
30:30
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
30:13
4.2E6
3.4E6
2.5E6
1.7E6
8.5E5
0.0E0
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
30:19
30:04
30:25
9.5E4
7.6E4
5.7E4
3.8E4
1.9E4

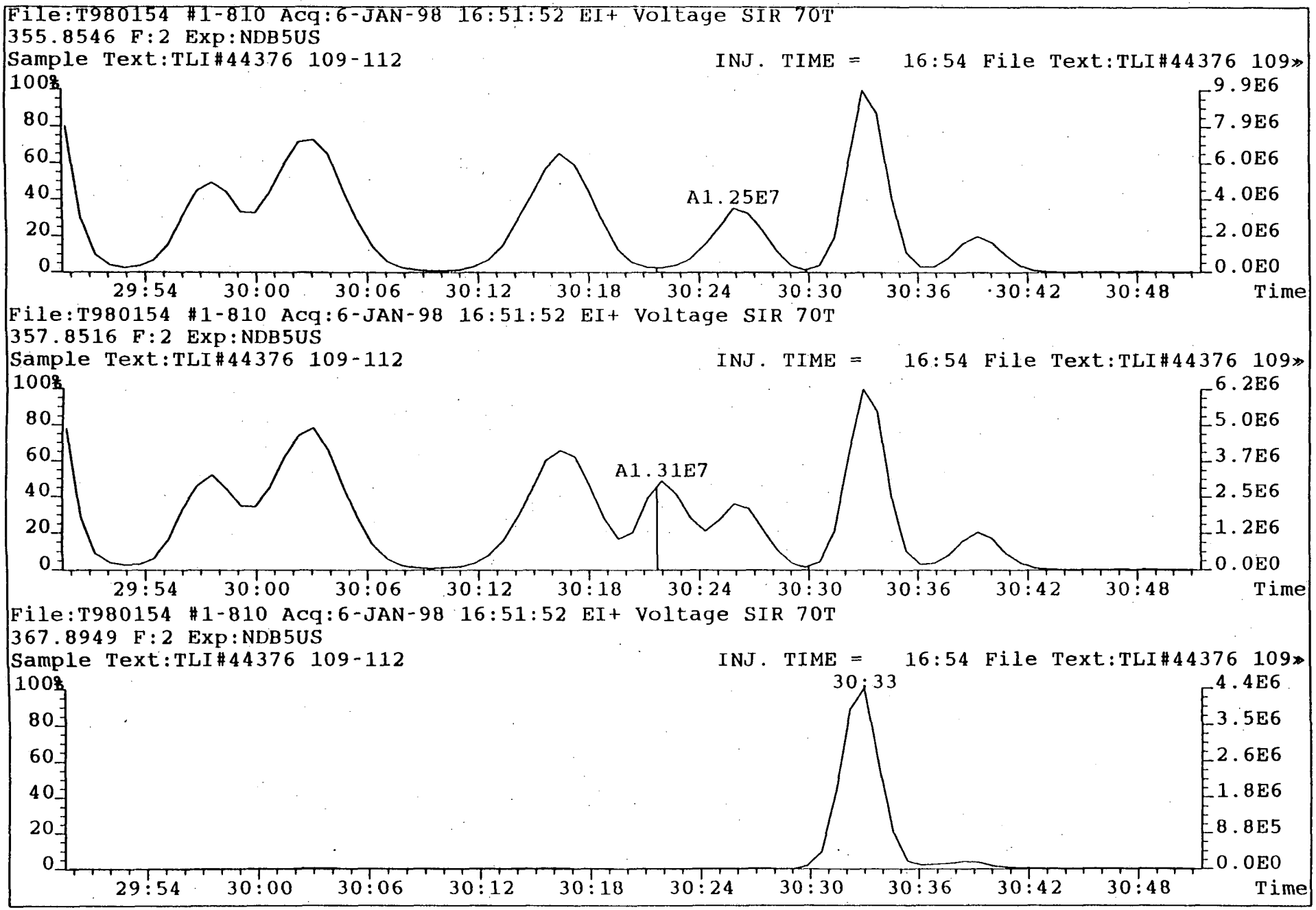
~10%

1/16

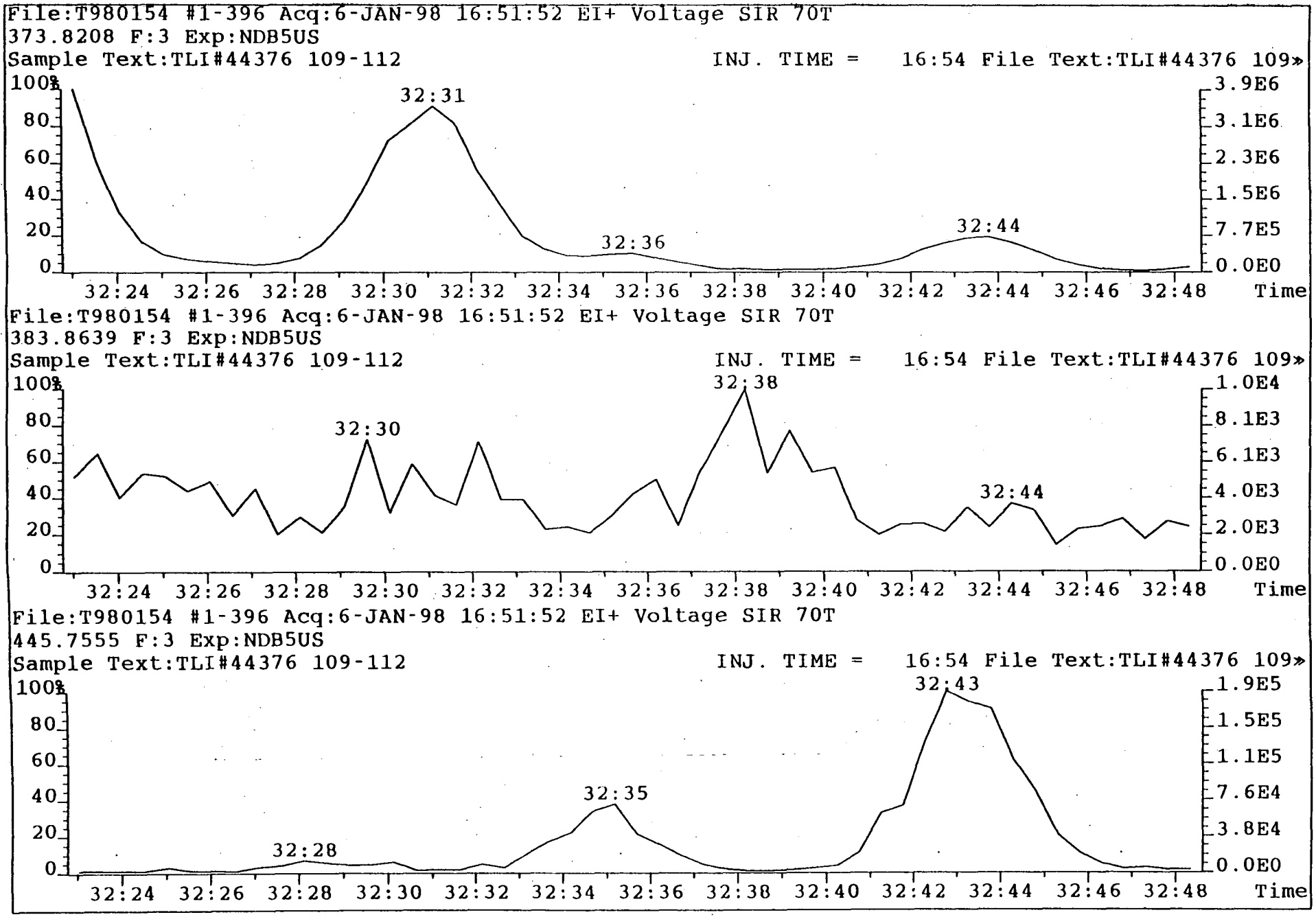

File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
28:33
28:41
28:50
29:03
29:09
29:14
29:26
29:31
29:40
29:47
6.2E7
5.0E7
3.7E7
2.5E7
1.2E7
0.0E0
28:24
28:36
28:48
29:00
29:12
29:24
29:36
29:48
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
28:41
29:30
5.4E6
4.3E6
3.2E6
2.1E6
1.1E6
0.0E0
28:24
28:36
28:48
29:00
29:12
29:24
29:36
29:48
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
28:25
28:33
28:41
28:47
28:59
29:08
29:15
29:24
29:32
~10^6
29:43
4.1E4
3.2E4
2.4E4
1.6E4
8.1E3
0.0E0
28:24
28:36
28:48
29:00
29:12
29:24
29:36
29:48
Time

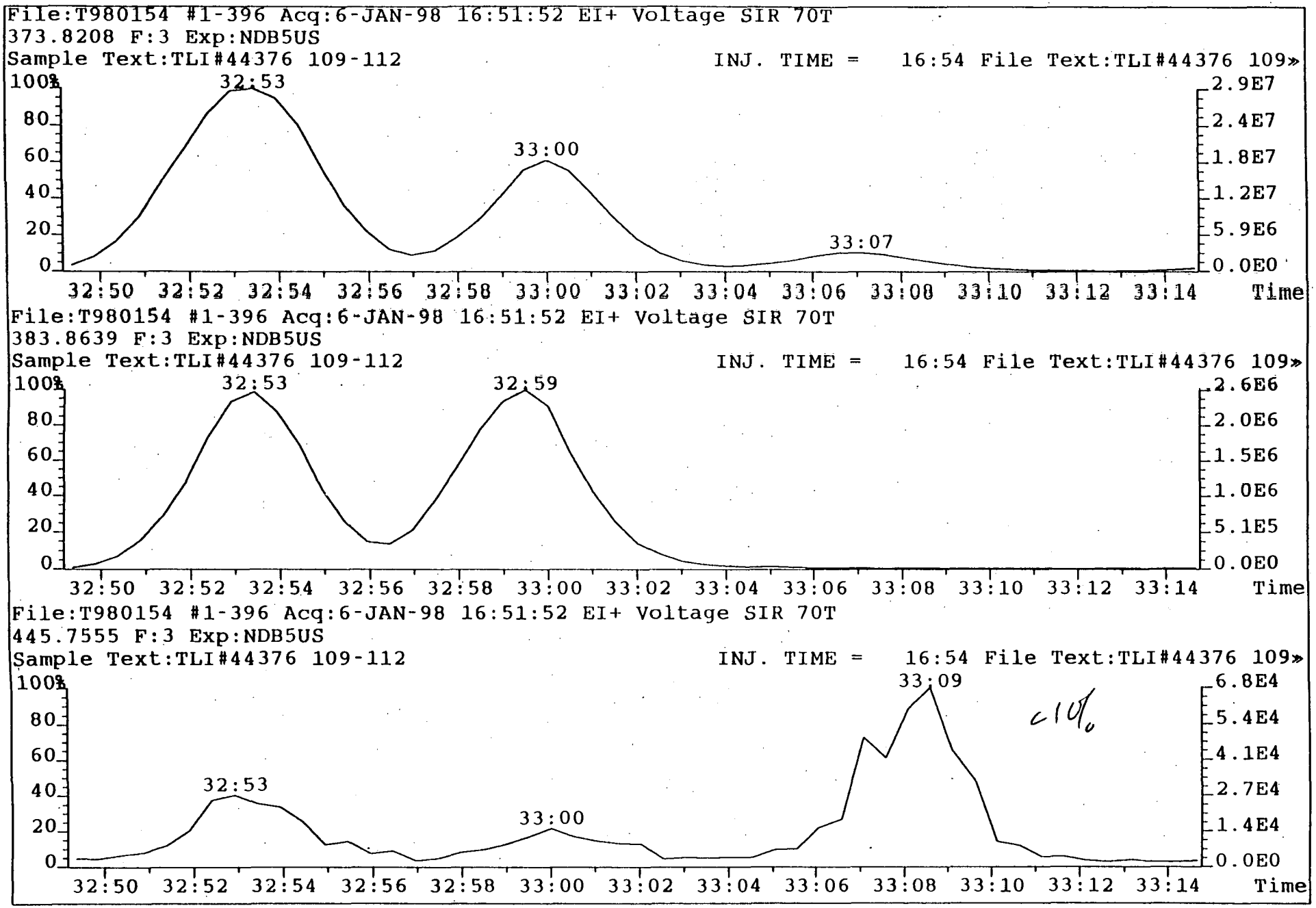
555
1/10/98


File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A1.13E8
A1.51E8
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
341.8567 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A7.59E7
A1.01E8
Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
29:30
Time


File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
355.8546 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
9.9E6
7.9E6
6.0E6
4.0E6
2.0E6
0.0E0
A1.25E7
29:54 30:00 30:06 30:12 30:18 30:24 30:30 30:36 30:42 30:48 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
357.8516 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
6.2E6
5.0E6
3.7E6
2.5E6
1.2E6
0.0E0
A1.31E7
29:54 30:00 30:06 30:12 30:18 30:24 30:30 30:36 30:42 30:48 Time
File:T980154 #1-810 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
367.8949 F:2 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
4.4E6
3.5E6
2.6E6
1.8E6
8.8E5
0.0E0
30:33
29:54 30:00 30:06 30:12 30:18 30:24 30:30 30:36 30:42 30:48 Time

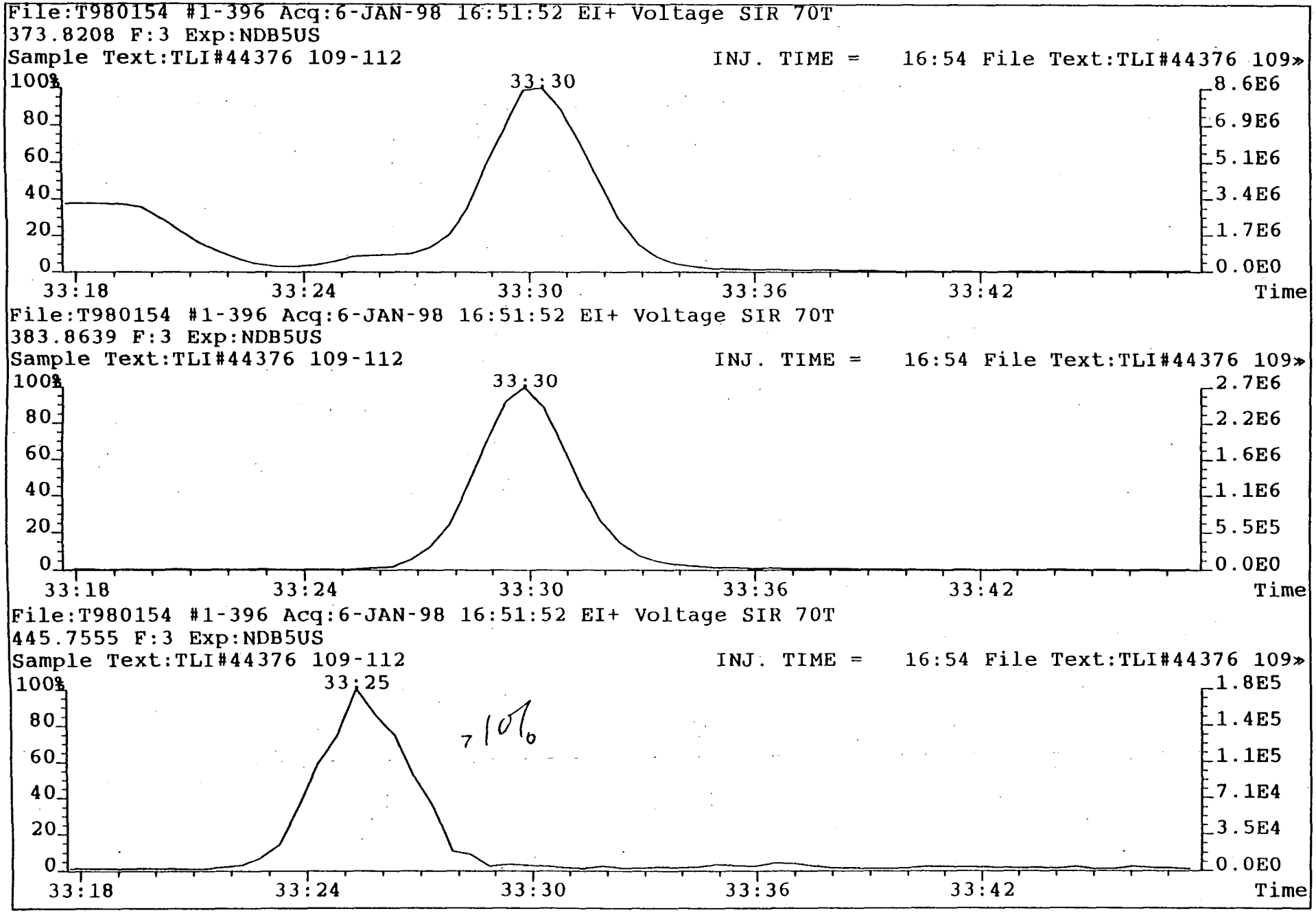
SSS
1/16/98


File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
32:31
32:36
32:44
3.9E6
3.1E6
2.3E6
1.5E6
7.7E5
0.0E0
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 Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
32:30
32:38
32:44
1.0E4
8.1E3
6.1E3
4.0E3
2.0E3
0.0E0
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 Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
100%
80
60
40
20
0
32:28
32:35
32:43
1.9E5
1.5E5
1.1E5
7.6E4
3.8E4
0.0E0
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 Time

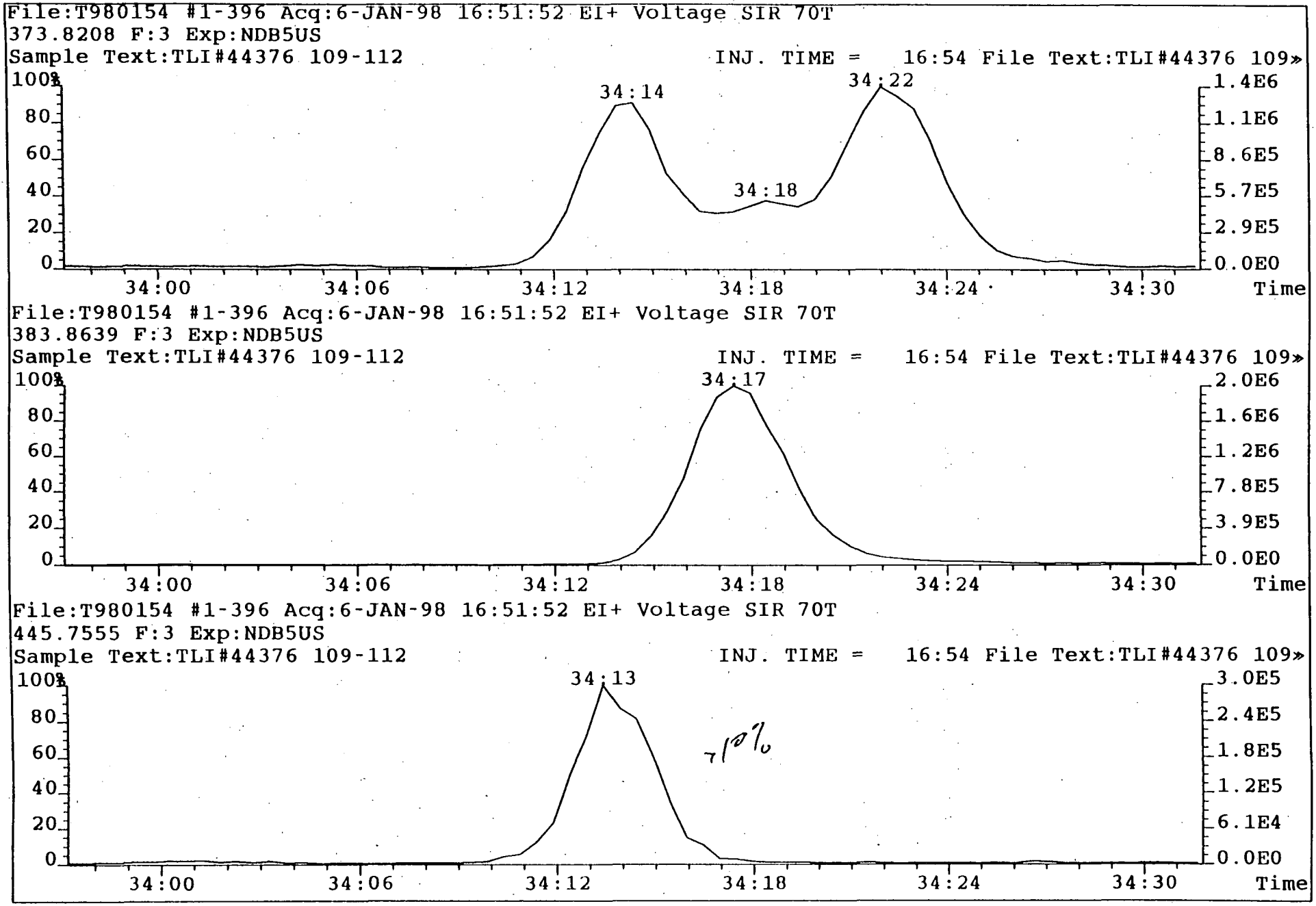

File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
32:53
33:00
33:07
2.9E7
2.4E7
1.8E7
1.2E7
5.9E6
0.0E0
32:50 32:52 32:54 32:56 32:58 33:00 33:02 33:04 33:06 33:08 33:10 33:12 33:14 Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
32:53
32:59
2.6E6
2.0E6
1.5E6
1.0E6
5.1E5
0.0E0
32:50 32:52 32:54 32:56 32:58 33:00 33:02 33:04 33:06 33:08 33:10 33:12 33:14 Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
33:09
32:53
33:00
6.8E4
5.4E4
4.1E4
2.7E4
1.4E4
0.0E0
32:50 32:52 32:54 32:56 32:58 33:00 33:02 33:04 33:06 33:08 33:10 33:12 33:14 Time

c1%

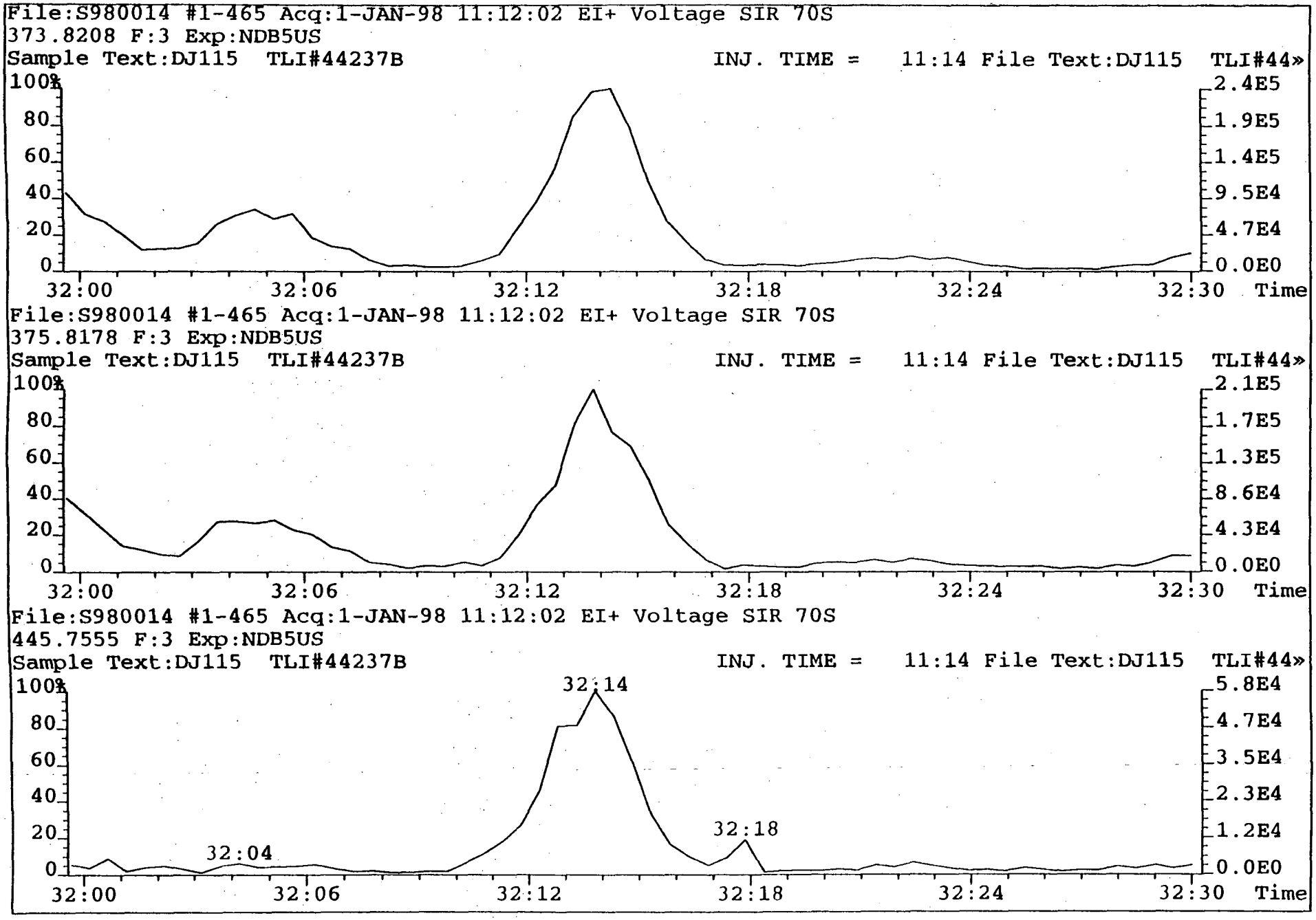
EGS
1/14/98

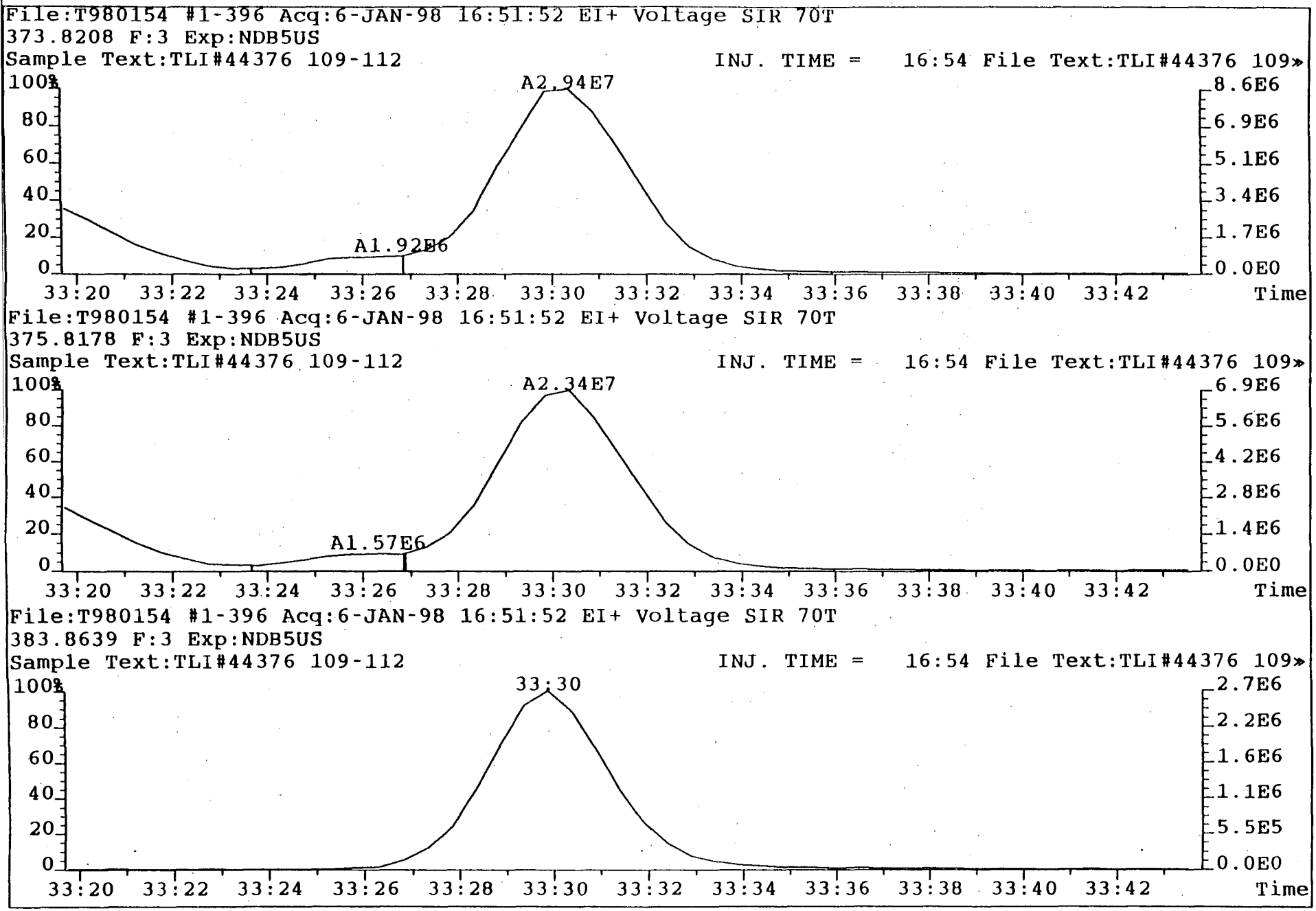

File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
33:30
100%
80
60
40
20
0
8.6E6
6.9E6
5.1E6
3.4E6
1.7E6
0.0E0
33:18
33:24
33:30
33:36
33:42
Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
33:30
2.7E6
2.2E6
1.6E6
1.1E6
5.5E5
0.0E0
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
33:25
7 10%
1.8E5
1.4E5
1.1E5
7.1E4
3.5E4

BSS
11/10/

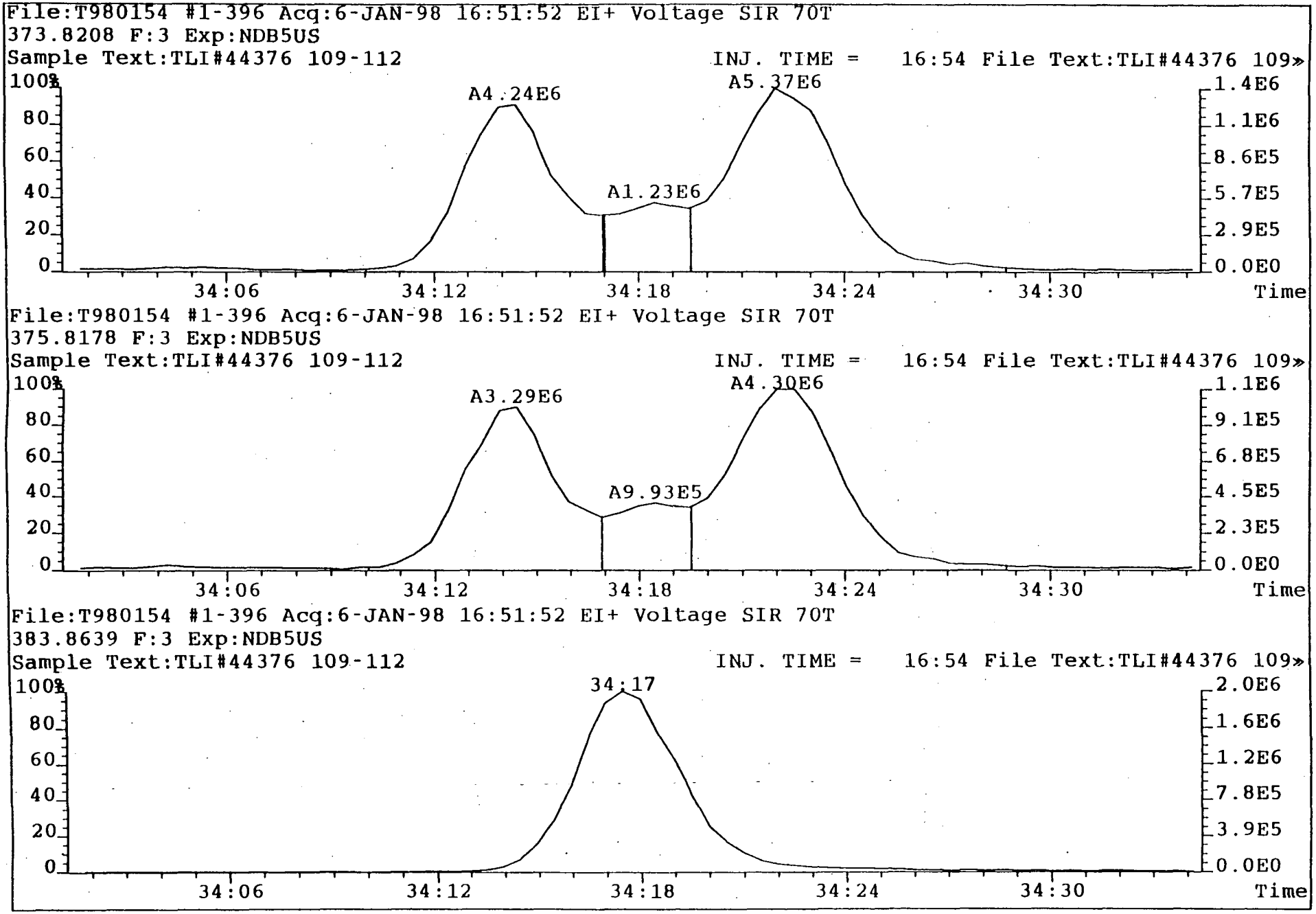

File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
34:14
34:22
34:18
1.4E6
1.1E6
8.6E5
5.7E5
2.9E5
0.0E0
100%
80
60
40
20
0
34:00
34:06
34:12
34:18
34:24
34:30
Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
34:17
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
34:13
3.0E5
2.4E5
1.8E5
1.2E5
6.1E4
0.0E0
71%

1/10/98


File:S980014 #1-465 Acq:1-JAN-98 11:12:02 EI+ Voltage SIR 70S
373.8208 F:3 Exp:NDB5US
Sample Text:DJ115 TLI#44237B
INJ. TIME = 11:14 File Text:DJ115 TLI#44»
100%
80
60
40
20
0
2.4E5
1.9E5
1.4E5
9.5E4
4.7E4
0.0E0
32:00
32:06
32:12
32:18
32:24
32:30
Time
File:S980014 #1-465 Acq:1-JAN-98 11:12:02 EI+ Voltage SIR 70S
375.8178 F:3 Exp:NDB5US
Sample Text:DJ115 TLI#44237B
INJ. TIME = 11:14 File Text:DJ115 TLI#44»
100%
80
60
40
20
0
2.1E5
1.7E5
1.3E5
8.6E4
4.3E4
0.0E0
32:00
32:06
32:12
32:18
32:24
32:30
Time
File:S980014 #1-465 Acq:1-JAN-98 11:12:02 EI+ Voltage SIR 70S
445.7555 F:3 Exp:NDB5US
Sample Text:DJ115 TLI#44237B
INJ. TIME = 11:14 File Text:DJ115 TLI#44»
100%
80
60
40
20
0
32:14
32:04
32:18
5.8E4
4.7E4
3.5E4
2.3E4
1.2E4
0.0E0
32:00
32:06
32:12
32:18
32:24
32:30
Time


File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A2.94E7
A1.92E6
100%
80
60
40
20
0
8.6E6
6.9E6
5.1E6
3.4E6
1.7E6
0.0E0
33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42
Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A2.34E7
A1.57E6
100%
80
60
40
20
0
6.9E6
5.6E6
4.2E6
2.8E6
1.4E6
0.0E0
33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42
Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
33:30
100%
80
60
40
20
0
2.7E6
2.2E6
1.6E6
1.1E6
5.5E5
0.0E0
33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42
Time

1/10/04


File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A4.24E6
A5.37E6
A1.23E6
100%
80
60
40
20
0
1.4E6
1.1E6
8.6E5
5.7E5
2.9E5
0.0E0
34:06
34:12
34:18
34:24
34:30
Time
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
A3.29E6
A4.30E6
A9.93E5
1.1E6
9.1E5
6.8E5
4.5E5
2.3E5
0.0E0
File:T980154 #1-396 Acq:6-JAN-98 16:51:52 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 109-112
INJ. TIME = 16:54 File Text:TLI#44376 109»
34:17
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0

Eastern Research Group

TLI Project: 44376 Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 109-112 Analysis File: X9800[redacted]

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-2A-D	Date Extracted:	12/29/97	ICal:	XF24087
		Date Analyzed:	01/07/98	ConCal:	X980080
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	26.2			0.78	21:29	E__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.3	83.4	40%-130%	0.80	21:28	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	20:28	___

Data Reviewer: _____ 01/11/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial ....Date...

Data Review By: GP 1/12/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside
atio limits has been recalculated according to method requirements.

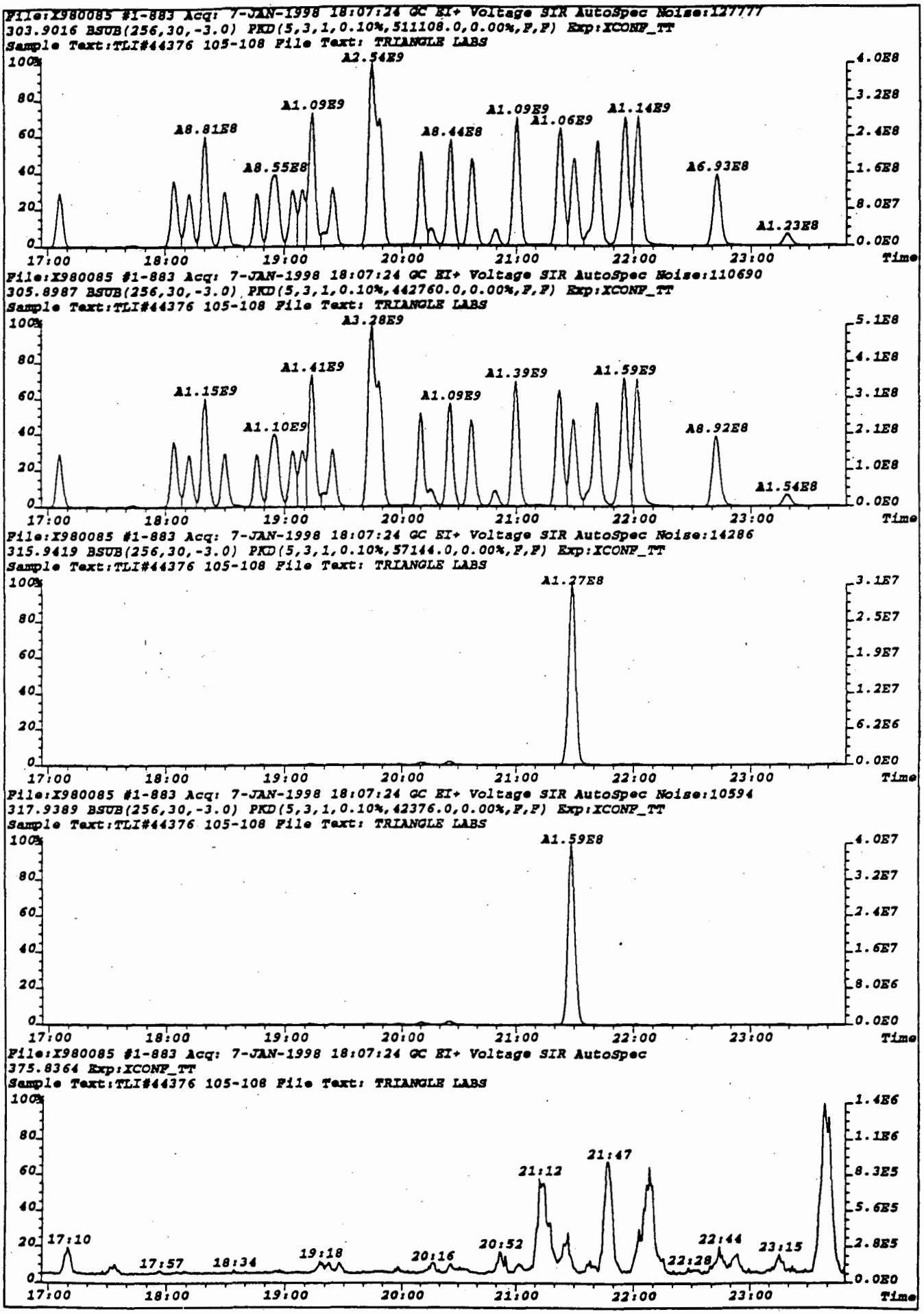
Page No. 1 Listing of X980085B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.790-1.095			
304-306	DC	NL		0:00	RO	1.15	391.84			0.000			
				17:06		0.78	94,061.40	41,144.90	52,916.50	0.797			
				17:22		0.76	1,238.83	534.32	704.51	0.809			
				17:36	RO	0.58	1,710.00	743.90	1,293.41	0.820			
				17:44		0.80	3,613.84	1,605.07	2,008.77	0.826			
				18:04		0.77	124,354.10	54,236.70	70,117.40	0.842			
				18:12		0.79	105,053.40	46,282.70	58,770.70	0.848			
				18:20		0.77	202,710.60	88,084.60	114,626.00	0.854			E
				18:30		0.78	102,563.70	44,907.00	57,656.70	0.862			
				18:46		0.78	90,350.50	39,464.60	50,885.90	0.874			
				18:55		0.77	195,948.90	85,510.90	110,438.00	0.881			E
				19:04		0.77	101,077.00	43,935.80	57,141.20	0.888			
				19:09		0.77	102,093.80	44,502.40	57,591.40	0.892			
				19:14		0.77	250,452.00	109,318.00	141,134.00	0.896			E
				19:24		0.77	123,180.30	53,585.80	69,594.50	0.904			
				19:45		0.78	582,450.00	254,315.00	328,135.00	0.920			E
				20:03		0.80	971.26	432.41	538.85	0.934			
				20:10		0.66	184,628.10	73,606.10	111,022.00	0.939			E
				20:26		0.78	193,233.40	84,445.40	108,788.00	0.952			E
				20:37		0.78	170,614.60	74,879.00	95,735.50	0.960			E
				20:49		0.79	28,984.70	12,804.40	16,180.30	0.970			
				21:00		0.78	248,089.00	108,825.00	139,264.00	0.978			E
				21:13		0.84	4,255.09	1,948.28	2,306.81	0.988			
				21:22		0.78	241,364.00	105,566.00	135,798.00	0.995			E
				21:29		0.78	181,006.00	79,438.00	101,568.00	1.001	2378-TCDF	AN	E
				21:42		0.78	231,365.00	101,329.00	130,036.00	1.011			E
				21:55		0.77	281,883.00	122,884.00	158,999.00	1.021			E
				22:02		0.78	260,098.00	114,219.00	145,879.00	1.026			E
				22:42		0.78	158,536.80	69,303.30	89,233.50	1.057			E
				23:18		0.80	27,650.90	12,297.70	15,353.20	1.085			
	DC	WH		23:42		0.72	1,053.22			1.104			
304-306			29	Peaks			4,293,538.22						
13C12-TCDF				0.65-0.89						0.953-1.047			
316-318	DC	NL		0:00	RO	1.35	37.51			0.000			
	DC	WL		18:02	RO	7.44	6.74			0.840			
	DC	WL		18:48		0.86	76.33			0.876			
	DC	WL		19:12	RO	0.95	133.09			0.894			
	DC	WL		19:43		0.72	96.67			0.918			
	DC	WL		19:59	RO	0.58	78.22			0.931			
	DC	WL		20:11		0.83	394.33			0.940			
	DC	WL		20:25		0.85	503.94			0.951			
				21:28		0.80	28,533.30	12,663.10	15,870.20	1.000	13C12-2378-TCDF	ISO	

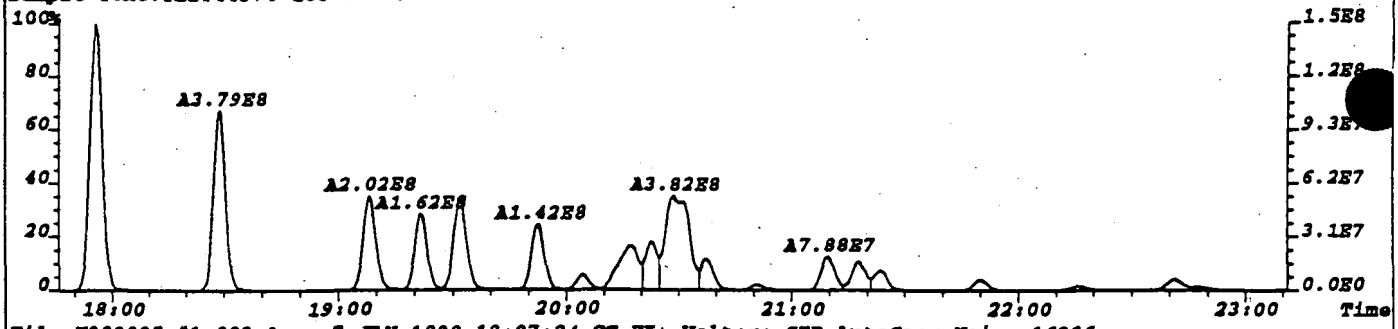
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				21:51	RO	1.15	67.84	44.22	38.33	1.018			
				22:01	RO	1.03	106.77	62.05	60.32	1.026			
	DC	WH		23:17	RO	0.28	65.35			1.085			
	DC	WH		23:43	RO	4.25	16.73			1.105			
316-318		3	Peaks				28,707.91						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.901-1.099			
332-334	DC	NL		0:00	RO	1.52	26.64			0.000			
				19:07		0.73	125.15	52.93	72.22	0.946			
				20:12		0.78	21,002.45	9,190.25	11,812.20	1.000	13C12-2378-TCDD	IS1	
				20:28		0.81	24,576.20	10,977.20	13,599.00	1.013	13C12-1234-TCDD	RS1	
				21:09	RO	0.95	282.86	152.02	159.81	1.047			
				21:37	RO	2.08	30.25	35.47	17.09	1.070			
				21:54	RO	3.34	13.56	25.61	7.66	1.084			
				22:01	RO	1.60	35.97	32.49	20.32	1.090			
				22:10	RO	1.21	9.40	6.41	5.31	1.097			
	DC	WH		22:14	RO	2.54	6.60			1.101			
	DC	WH		22:29	RO	2.26	36.37			1.113			
	DC	WH		22:34	RO	1.10	11.72			1.117			
332-334		8	Peaks				46,075.84						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

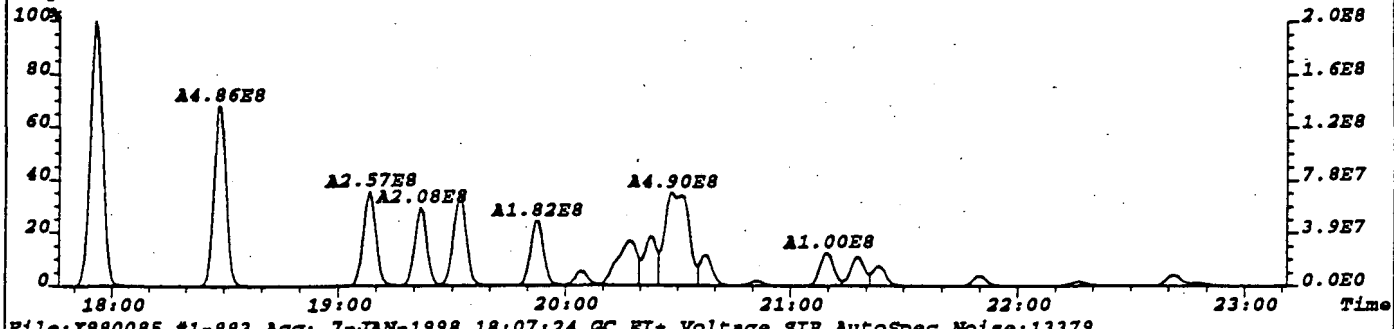
*** End of Report ***


File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:127777
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,511108.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A2.54E9
A1.09E9
A8.81E8
A8.55E8
A8.44E8
A1.09E9
A1.06E9
A1.14E9
A6.93E8
A1.23E8
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:110690
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,442760.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A3.28E9
A1.41E9
A1.15E9
A1.10E9
A1.09E9
A1.39E9
A1.59E9
A8.92E8
A1.54E8
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:14286
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,57144.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.27E8
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:10594
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,42376.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
A1.59E8
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:10
17:57
18:34
19:18
20:16
20:52
21:12
21:47
22:28
22:44
23:15
Time

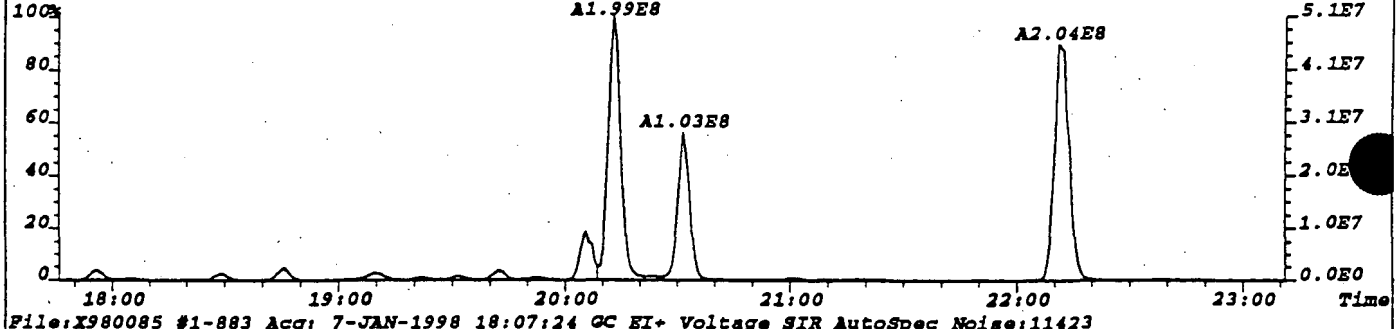
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:9764
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,39056.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



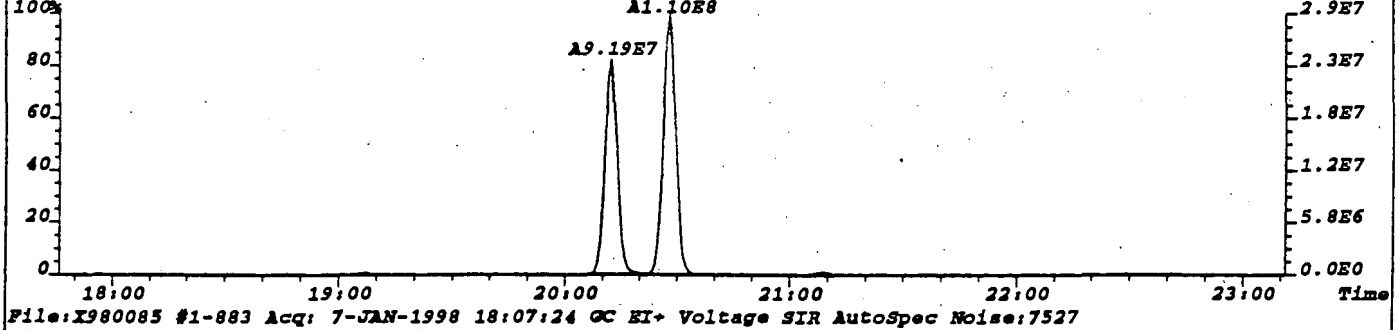
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:16286
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,65144.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



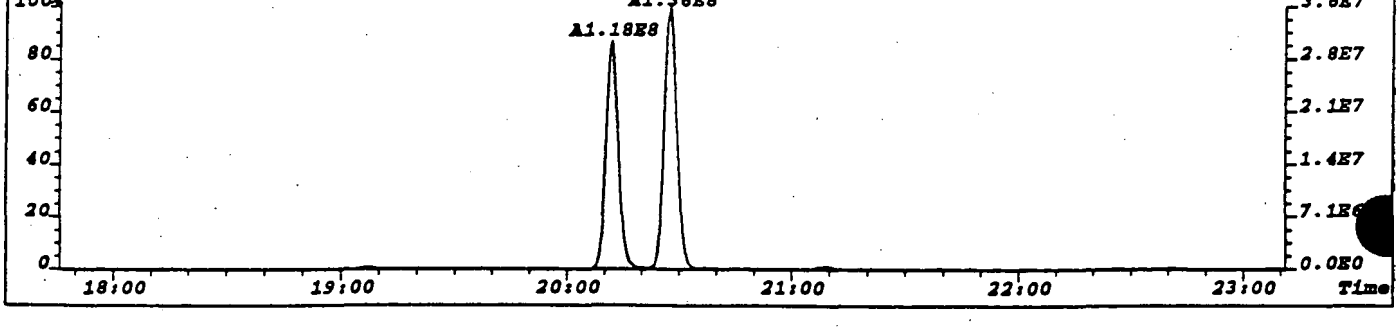
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:13379
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,53516.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS

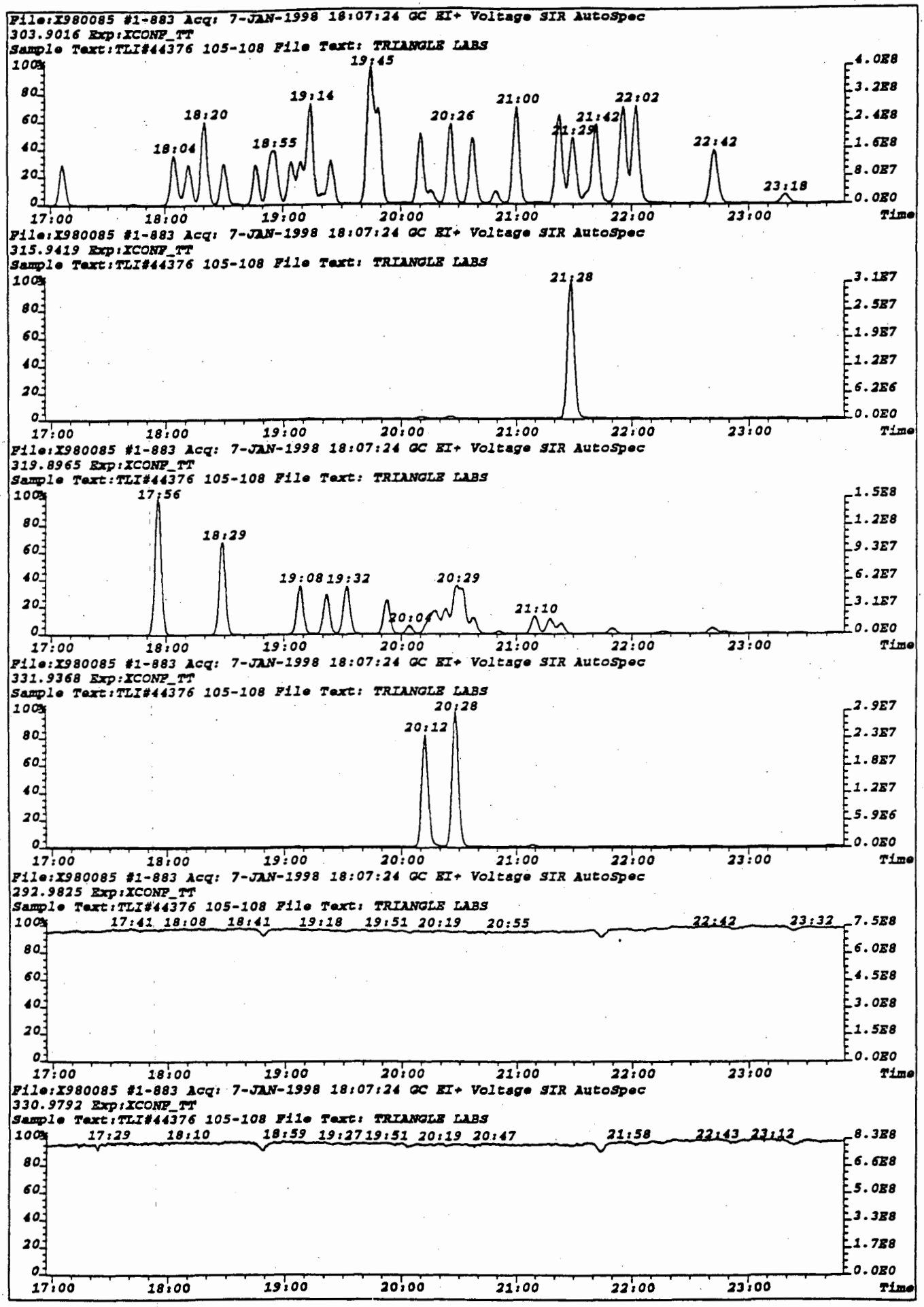


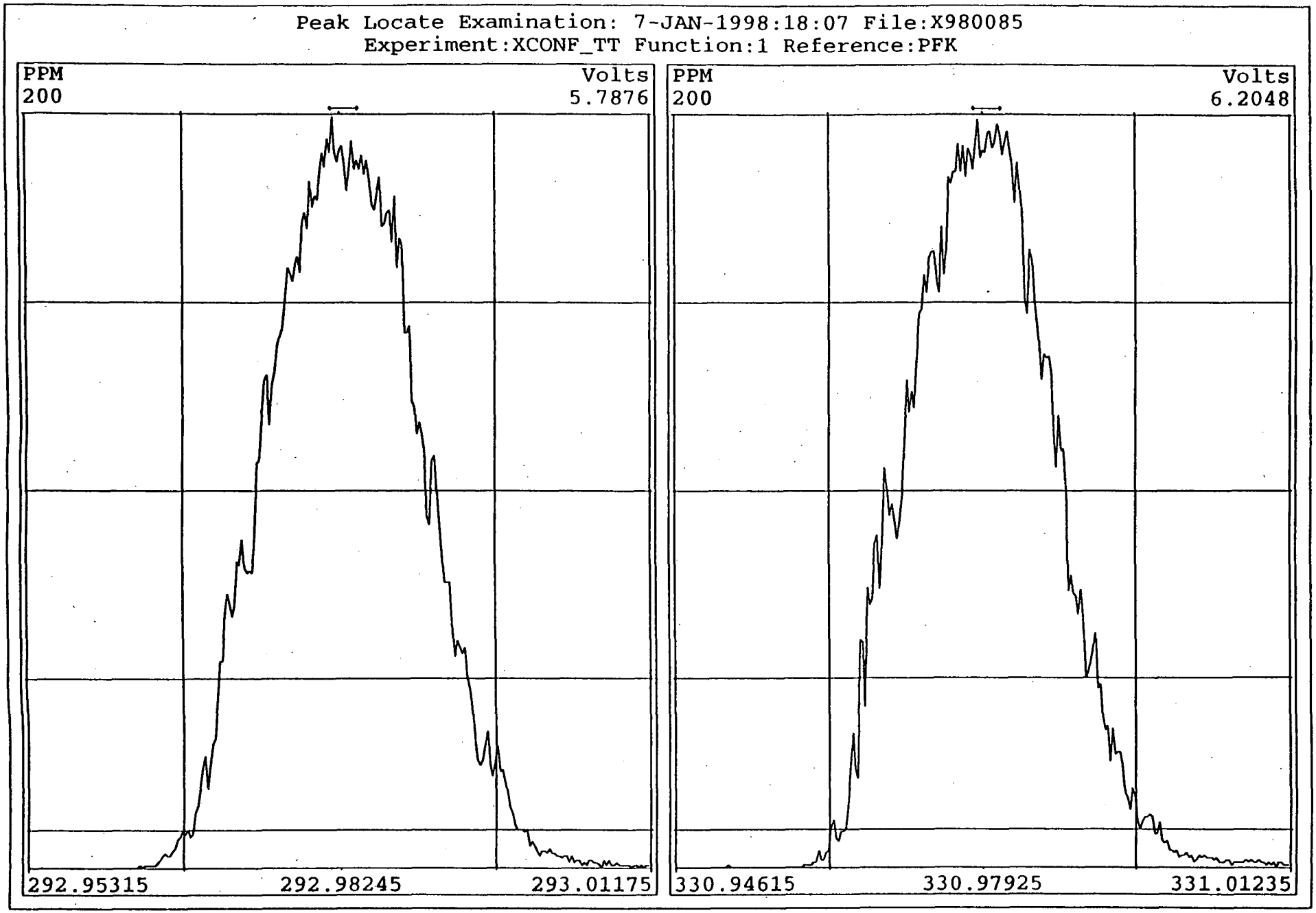
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:11423
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,45692.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS



File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec Noise:7527
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,30108.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS




File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
18:04
18:20
18:55
19:14
19:45
20:26
21:00
21:29
21:42
22:02
22:42
23:18
Time
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
21:28
Time
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:56
18:29
19:08
19:32
20:04
20:29
21:10
Time
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
20:12
20:28
Time
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:41
18:08
18:41
19:18
19:51
20:19
20:55
22:42
23:32
Time
File:X980085 #1-883 Acq: 7-JAN-1998 18:07:24 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI#44376 105-108 File Text: TRIANGLE LABS
17:29
18:10
18:59
19:27
19:51
20:19
20:47
21:58
22:43
23:12
Time


Peak Locate Examination: 7-JAN-1998:18:07 File:X980085
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
5.7876
292.95315
292.98245
293.01175
PPM
200
Volts
6.2048
330.94615
330.97925
331.01235

Eastern Research Group

TLI Project: **44376**
Client Sample: **113-116**

Method 23 PCDD/PCDF Analysis (a)
Analysis File: **T980155**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-3A-3D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	1.5			0.79	26:23	___
1,2,3,7,8-PeCDD	7.6			1.57	30:34	___
1,2,3,4,7,8-HxCDD	2.4			1.31	33:38	Q__
1,2,3,6,7,8-HxCDD	3.3			1.18	33:43	___
1,2,3,7,8,9-HxCDD	5.0			1.22	34:02	QPR
1,2,3,4,6,7,8-HpCDD	2.5			1.02	37:06	___
1,2,3,4,6,7,8,9-OCDD	1.3			0.81	40:57	___
2,3,7,8-TCDF	EMPC		~~72~~.7 > 4			SE_
1,2,3,7,8-PeCDF	37.5		OK 1/15/98	1.49	29:32	___
2,3,4,7,8-PeCDF	50.9			1.48	30:15	E__
1,2,3,4,7,8-HxCDF	35.3			1.26	32:54	___
1,2,3,6,7,8-HxCDF	16.4			1.25	33:02	___
2,3,4,6,7,8-HxCDF	9.5			1.26	33:31	___
1,2,3,7,8,9-HxCDF	0.46			1.30	34:18	PR_
1,2,3,4,6,7,8-HpCDF	8.2			1.04	36:01	___
1,2,3,4,7,8,9-HpCDF	0.76			1.05	37:39	___
1,2,3,4,6,7,8,9-OCDF	0.73			0.84	41:10	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	99.1	13			E__
Total PeCDD	193	10		197	E__
Total HxCDD	75.8	7			Q__
Total HpCDD	5.4	2			___
Total TCDF	~~554~~ > 4	16		~~627~~ > 4	SQE
Total PeCDF	~~456~~ > 20	18		~~621~~ > 20	SE_
Total HxCDF	178	12		181 OK 1/15/98	E__
Total HpCDF	10.3	3		12.9	X__

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:26 01/15/98

TLI Project: 44376
Client Sample: 113-116

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980155

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.3	57.1	40%-130%	0.75	25:41	Q___
$^{13}C_{12}$-2,3,7,8-TCDD	3.0	75.7	40%-130%	0.80	26:21	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.0	74.1	40%-130%	1.51	29:31	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.6	90.5	40%-130%	1.53	30:33	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.0	75.5	40%-130%	0.51	33:00	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.5	62.8	40%-130%	1.16	33:42	Q___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.2	81.2	25%-130%	0.45	36:00	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.3	109	25%-130%	1.04	37:05	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.1	114	25%-130%	0.92	40:57	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.5	88.5	70%-140%		26:23	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.9	97.4	70%-140%	1.53	30:14	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.9	96.6	70%-140%	0.52	32:54	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	5.7	142	70%-140%	1.17	33:37	Q___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.9	96.9	70%-140%	0.44	37:37	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.3	83.2	40%-130%	0.51	34:18	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.0	76.1	40%-130%	0.52	33:31	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	26:10	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.15	34:02	___

Data Reviewer: GSS 01/15/98

X237_PSR v2.01. LARS 6.

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:26 01/15/98

Initial ....Date...

Data Review By: [illegible] 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside
ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980155B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.878-1.073			
304-306	DC	NL		0:00	RO	1.59	3.93			0.000			
				22:40		0.80	12,709.64	5,656.21	7,053.43	0.883			QE
				23:09		0.80	14,741.61	6,555.04	8,186.57	0.901			QE
				23:22		0.79	14,866.45	6,553.09	8,313.36	0.910			QE
				23:44		0.81	72,910.60	32,562.30	40,348.30	0.924			QE
				24:01		0.81	43,563.90	19,456.70	24,107.20	0.935			QE
				24:25		0.80	51,271.00	22,787.90	28,483.10	0.951			QE
				24:41		0.76	43,809.10	18,960.80	24,848.30	0.961			QE
				24:54		0.80	62,577.30	27,817.00	34,760.30	0.970			QE
				25:06		0.81	38,767.80	17,393.40	21,374.40	0.977			QE
				25:18		0.81	24,794.20	11,079.80	13,714.40	0.985			QE
				25:31		0.80	24,099.90	10,716.60	13,383.30	0.994			QE
				25:43	RO	0.93	61,949.12	32,501.80	34,999.50	1.001	2378-TCDF	AN	SE
				26:07		0.81	33,803.30	15,110.30	18,693.00	1.017			QE
				26:18		0.81	26,195.80	11,748.90	14,446.90	1.024			QE
				26:33		0.30	4,707.94	2,087.46	2,620.48	1.034			Q
				26:50		0.66	281.46	111.59	169.87	1.045			Q
				27:23		0.77	3,370.51	1,462.30	1,908.21	1.066			Q
	DC	WH		27:36		0.73	849.81			1.075			
304-306			17	Peaks			534,419.63						
13C12-TCDF						0.65-0.89				0.961-1.039			
316-318	DC	NL		0:00	RO	1.17	4.04			0.000			
	DC	WL		22:41	RO	2.60	5.47			0.883			
	DC	WL		23:09	RO	5.82	5.38			0.901			
	DC	WL		23:31	RO	1.26	15.24			0.916			
	DC	WL		23:43	RO	2.70	30.90			0.923			
	DC	WL		24:04	RO	1.46	44.57			0.937			
	DC	WL		24:26	RO	2.13	29.10			0.951			
				24:41	RO	1.28	58.64	42.38	33.13	0.961			
				24:54	RO	2.24	34.87	44.19	19.70	0.970			
				25:30	RO	1.17	40.21	26.62	22.72	0.993			
				25:41		0.75	2,488.43	1,063.52	1,424.91	1.000	13C12-2378-TCDF	ISO	Q
				26:06	RO	1.56	30.55	27.01	17.26	1.016			
				26:34	RO	1.14	6.96	4.48	3.93	1.034			
	DC	WH		26:52		0.87	8.68			1.046			
	DC	WH		27:05	RO	1.08	10.87			1.055			
316-318			6	Peaks			2,659.66						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.903-1.045			
320-322	DC	NL		0:00	RO	1.03	2.58			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				23:55		0.78	20,501.91	8,966.31	11,535.60	0.908			E
				24:18		0.78	12,997.09	5,710.40	7,286.69	0.922			E
				24:35		0.78	5,418.68	2,378.32	3,040.36	0.933			
				25:14		0.78	14,004.00	6,149.65	7,854.35	0.958			E
				25:30		0.78	9,898.98	4,345.89	5,553.09	0.968			E
				25:52		0.79	5,369.21	2,367.98	3,001.23	0.982			
	M			26:10		0.79	5,210.00	2,300.00	2,910.00	0.993			
	M			26:16		0.78	8,720.00	3,830.00	4,890.00	0.997			E
	AN			26:23		0.79	1,407.00	620.00	787.00	1.001	2378-TCDD	AN	
				26:32		0.76	2,268.43	983.17	1,285.26	1.007			
				26:41		0.78	2,572.81	1,127.37	1,445.44	1.013			
				26:54		0.78	787.36	345.67	441.69	1.021			
				27:20		0.75	852.01	366.26	485.75	1.037			
320-322			13	Peaks			90,007.48						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			1.94			0.000			
	DC	WL		23:55			116.60			0.908			
	DC	WL		24:10			240.99			0.917			
	DC	WL		24:17			186.98			0.922			
				24:27			10.24	10.24		0.928			
				24:35			25.88	25.88		0.933			
				25:01			2,106.43	2,106.43		0.949			
				25:13			77.46	77.46		0.957			
				25:28			59.19	59.19		0.966			
				25:45			28.65	28.65		0.977			
				25:52			42.16	42.16		0.982			
				26:10			31.86	31.86		0.993			
				26:23			2,373.10	2,373.10		1.001	37Cl-TCDD	SUR1	
				26:31			54.01	54.01		1.006			
				26:44			3,573.81	3,573.81		1.015			
	DC	SN		27:02			1.39			1.026			
				27:20			7.01	7.01		1.037			
				27:33			9.29	9.29		1.046			
				27:45			15.04	15.04		1.053			
328			14	Peaks			8,414.13						
13C12-TCDD						0.65-0.89				0.924-1.076			
332-334	DC	NL		0:00	RO	2.06	4.18			0.000			
	DC	WL		24:09	RO	1.20	2.30			0.917			
	DC	SN		24:25	RO	4.67	3.26			0.927			
	DC	SN		24:50	RO	0.55	3.40			0.942			
	DC	SN		25:05	RO	0.42	4.11			0.952			
				25:15	RO	1.10	20.48	12.75	11.67	0.958			
				25:47		0.82	7.72	3.47	4.25	0.978			
				26:10		0.80	2,821.01	1,249.47	1,571.54	0.993	13C12-1234-TCDD	RS1	
				26:21		0.80	2,666.46	1,182.78	1,483.68	1.000	13C12-2378-TCDD	IS1	
				26:40		0.80	46.96	20.82	26.14	1.012			
				26:52	RO	0.98	10.02	5.53	5.66	1.020			
	DC	SN		26:59	RO	0.96	3.27			1.024			
				27:40		0.70	7.36	3.03	4.33	1.050			
332-334			7	Peaks			5,580.01						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.931-1.063			
340-342	DC	NL		0:00		1.37	2.77			0.000			
				27:35	RO	1.23	47,862.35	29,092.80	23,566.30	0.935			SE
				27:51		1.50	1,050.24	630.73	419.51	0.944			
				28:03		1.44	324.60	191.38	133.22	0.950			
				28:12		1.60	1,127.86	694.11	433.75	0.955			
				28:19		1.37	475.67	275.37	200.30	0.959			
				28:34		1.48	28,409.50	16,967.80	11,441.70	0.968			E
				28:42	RO	1.09	69,064.53	41,980.40	38,418.50	0.972			SE
				28:52		1.47	32,990.00	19,629.80	13,360.20	0.978			E
				29:10		1.48	42,296.30	25,220.30	17,076.00	0.988			E
				29:15		1.44	42,325.90	24,981.00	17,344.90	0.991			E
				29:27		1.48	20,364.50	12,166.00	8,198.50	0.998			
				29:32		1.49	26,630.80	15,942.90	10,687.90	1.001	12378-PeCDF	AN	
				29:41		1.48	22,386.99	13,353.10	9,033.89	1.006			
				29:49		1.49	29,456.90	17,620.60	11,836.30	1.010			E
				30:05		1.71	437.42	276.16	161.26	1.019			
				30:15		1.48	36,096.00	21,524.90	14,571.10	1.025	23478-PeCDF	AN	E
				30:24		1.50	33,304.40	19,972.40	13,332.00	1.030			E
				30:42		1.49	1,962.78	1,175.00	787.78	1.040			Q
				30:52		1.50	1,025.04	614.23	410.81	1.046			
				31:09		1.46	2,685.26	1,593.33	1,091.93	1.055			
340-342			20	Peaks			440,277.04						
13C12-PeCDF						1.32-1.78				0.864-1.136			
352-354	DC	NL		0:00		1.34	1.31			0.000			
				27:35	RO	2.70	32.21	34.08	12.63	0.935			
	DC	SN		27:45	RO	3.33	1.56			0.940			
	DC	SN		27:58	RO	3.03	2.24			0.947			
				28:41	RO	1.99	148.38	116.08	58.19	0.972			
				28:52	RO	1.24	45.31	27.54	22.18	0.978			
				29:10	RO	2.20	22.77	19.61	8.93	0.988			
				29:15	RO	2.37	27.92	25.90	10.95	0.991			
				29:31		1.51	2,677.40	1,612.68	1,064.72	1.000	13C12-PeCDF 123	IS2	
				29:48	RO	1.92	50.72	38.21	19.89	1.010			
				30:14		1.53	2,589.49	1,567.40	1,022.09	1.024	13C12-PeCDF 234	SUR2	
				30:24	RO	2.10	32.59	26.90	12.78	1.030			
	DC	SN		30:35	RO	0.52	1.94			1.036			
				31:08	RO	1.09	9.57	5.82	5.35	1.055			
	DC	SN		31:20	RO	1.28	2.65			1.062			
	DC	SN		31:26	RO	3.20	2.04			1.065			
352-354			10	Peaks			5,636.36						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.939-1.022			
356-358	DC	NL		0:00	RO	1.11	1.55			0.000			
				28:48		1.39	42,912.10	24,985.00	17,927.10	0.943			E
				29:15		1.53	3,359.02	2,031.35	1,327.67	0.957			
				29:29		1.55	22,841.13	13,866.70	8,974.43	0.965			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:37		1.54	5,488.99	3,331.46	2,157.53	0.969			
				29:48		1.55	15,780.11	9,589.23	6,190.88	0.975			
				30:03		1.56	9,721.75	5,928.97	3,792.78	0.984			
				30:17		1.56	5,443.56	3,320.81	2,122.75	0.991			
	A			30:26	RO	0.93	2,336.13	1,420.00	1,520.00	0.996			
				30:34		1.57	4,447.93	2,718.04	1,729.89	1.001	12378-PeCDD	AN	
				30:40		1.55	1,078.77	655.40	423.37	1.004			Q
				31:00		1.58	2,198.25	1,346.83	851.42	1.015			
356-358			11	Peaks			115,607.74						
13C12-PeCDD					1.32-1.78					0.869-1.131			
368-370	DC	NL		0:00	RO	1.25	1.15			0.000			
				28:48	RO	3.14	28.87	35.54	11.32	0.943			
	DC	SN		29:10	RO	1.96	6.15			0.955			
				29:16	RO	1.11	5.38	3.27	2.95	0.958			
				29:29	RO	2.23	22.11	19.30	8.67	0.965			
				29:38	RO	1.99	7.47	5.82	2.93	0.970			
				29:49		1.63	12.79	7.92	4.87	0.976			
	DC	SN		30:04	RO	6.07	4.16			0.984			
				30:16	RO	1.84	8.95	6.46	3.51	0.991			
	DC	SN		30:25	RO	2.34	3.85			0.996			
				30:33		1.53	1,813.26	1,097.13	716.13	1.000	13C12-PeCDD 123	IS3	
	DC	SN		31:35		1.54	2.13			1.034			
368-370			7	Peaks			1,898.83						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF					1.05-1.43					0.964-1.049			
374-376	DC	NL		0:00		1.31	107.70			0.000			
	DC	WL		31:46	RO	1.72	65.86			0.963			
				31:57		1.26	16,599.49	9,241.05	7,358.44	0.968			
				32:05		1.22	41,725.90	22,942.80	18,783.10	0.972			E
				32:15		1.25	3,213.44	1,782.94	1,430.50	0.977			
				32:23		1.25	4,264.18	2,369.63	1,894.55	0.981			
				32:32		1.23	2,577.15	1,420.48	1,156.67	0.986			
	X		X	32:44	RO	1.20	449.32	245.46	203.86	0.992			
				32:54		1.26	23,714.00	13,211.90	10,502.10	0.997	123478-HxCDF	AN	
				33:02		1.25	12,368.42	6,867.68	5,500.74	1.001	123678-HxCDF	AN	
				33:08		1.23	2,302.81	1,272.27	1,030.54	1.004			
				33:20		1.26	3,718.12	2,072.60	1,645.52	1.010			
	AX		X	33:26	RO	1.26	571.00	318.00	253.00	1.013			
	M			33:31		1.26	5,740.00	3,200.00	2,540.00	1.016	234678-HxCDF	AN	
	MX		X	34:15	RO	1.27	1,023.00	573.00	450.00	1.038			
	AN			34:18		1.30	260.00	147.00	113.00	1.039	123789-HxCDF	AN	PR
	M			34:24		1.28	1,109.00	623.00	486.00	1.042			
	DC	WH		34:48		1.24	194.90			1.055			
374-376			15	Peaks			119,635.83						
13C12-HxCDF					0.43-0.59					0.879-1.121			
384-386	DC	NL		0:00	RO	1.27	4.74			0.000			
				31:57	RO	1.06	14.18	9.98	9.39	0.968			
				32:05	RO	1.17	34.84	26.93	23.07	0.972			

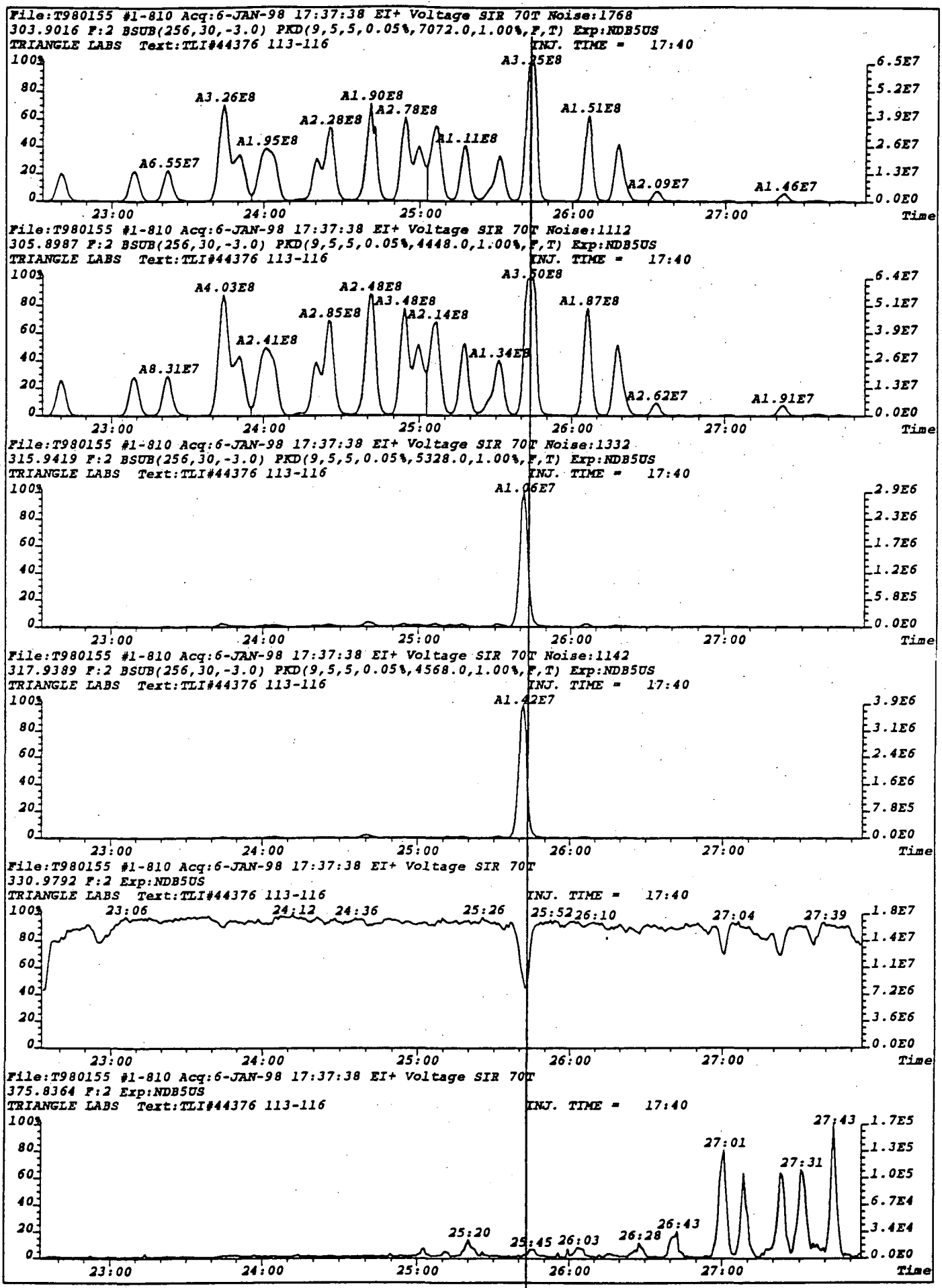
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:54		0.52	2,069.77	712.41	1,357.36	0.997	13C12-HxCDF 478	SUR3	
				33:00		0.51	2,327.49	785.85	1,541.64	1.000	13C12-HxCDF 678	IS4	
				33:31		0.52	2,239.95	766.70	1,473.25	1.016	13C12-HxCDF 234	ALT2	
	DC	SN	33:51	RO	0.91	3.40			1.026				
	DC	SN	34:00	RO	1.49	1.81			1.030				
			34:18		0.51	1,937.10	654.64	1,282.46	1.039	13C12-HxCDF 789		ALT1	
			34:31	RO	0.77	8.46	4.31	5.60	1.046				
			34:35	RO	1.55	4.67	4.79	3.09	1.048				
	DC	SN	34:43		0.48	5.12			1.052				
	DC	SN	34:52	RO	1.43	1.12			1.057				
384-386		8	Peaks			8,636.46							
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD					1.05-1.43				0.958-1.015				
390-392	DC	NL	0:00	RO	0.94	9.07			0.000				
			32:26		1.21	4,101.94	2,246.55	1,855.39	0.962				Q
			32:52		1.22	10,164.26	5,582.91	4,581.35	0.975				Q
			33:06		1.22	6,416.78	3,525.36	2,891.42	0.982				Q
			33:17		1.23	661.45	364.70	296.75	0.988				Q
			33:38		1.31	733.20	415.14	318.06	0.998	123478-HxCDD		AN	Q
			33:43		1.18	1,142.21	619.19	523.02	1.000	123678-HxCDD		AN	
			34:02		1.22	1,714.13	943.32	770.81	1.010	123789-HxCDD		AN	QPR
390-392		7	Peaks			24,933.97							
13C12-HxCDD					1.05-1.43				0.970-1.030				
402-404	DC	NL	0:00	RO	1.73	4.08			0.000				
	DC	WL	32:24	RO	0.81	2.04			0.961				
	DC	SN	32:47		1.10	3.02			0.973				
	DC	SN	32:53	RO	0.54	3.88			0.976				
			33:06	RO	1.53	15.34	10.48	6.85	0.982				
	DC	SN	33:15	RO	2.02	4.66			0.987				
			33:37		1.17	1,576.14	849.68	726.46	0.998	13C12-HxCDD 478		SUR4	Q
			33:42		1.16	1,369.08	734.42	634.66	1.000	13C12-HxCDD 678		IS5	Q
			33:53		1.10	9.86	5.16	4.70	1.005				
			34:02		1.15	2,183.96	1,168.20	1,015.76	1.010	13C12-HxCDD 789		RS2	
	DC	SN	34:24	RO	3.75	3.18			1.021				
402-404		5	Peaks			5,154.38							
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF					0.88-1.20				0.998-1.053				
408-410	DC	NL	0:00		1.13	5.47			0.000				
			36:01		1.04	4,796.03	2,439.74	2,356.29	1.000	1234678-HpCDF		AN	
X		X	36:18	RO	1.04	1,309.23	667.28	641.95	1.008				
			36:27		1.04	688.36	350.51	337.85	1.013				
D	D	NH	36:42	RO	1.64	7.10			1.019				
D	D	NH	37:05		0.89	9.37			1.030				
D	D	NH	37:21	RO	1.27	12.30			1.038				
			37:39		1.05	338.12	172.97	165.15	1.046	1234789-HpCDF		AN	
	DC	WH	38:13	RO	1.44	19.91			1.062				
408-410		4	Peaks			7,131.74							

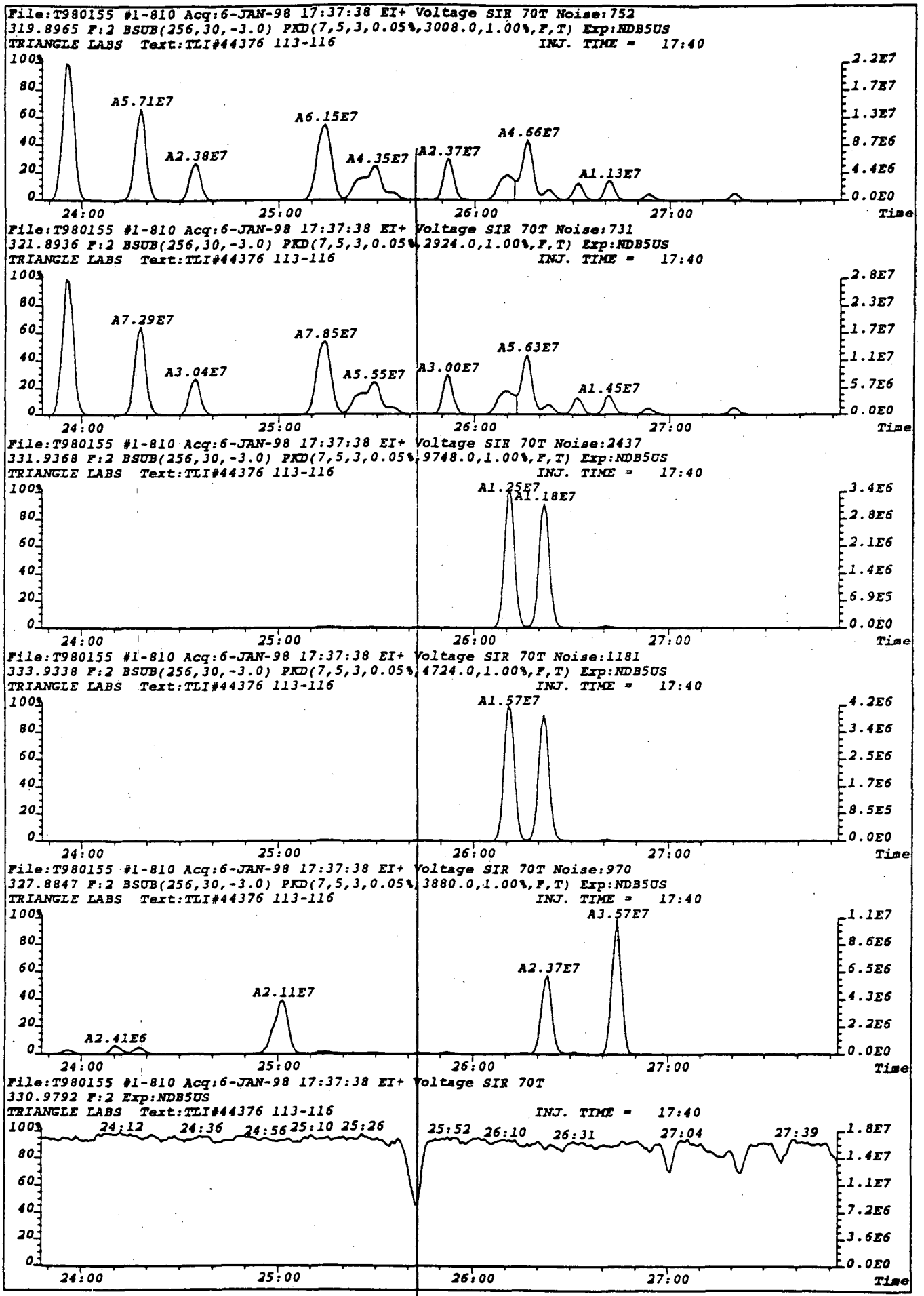
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	0.88	1.94			0.000			
				36:00		0.45	1,580.58	487.08	1,093.50	1.000	13C12-HpCDF 678	IS6	
	DC	SN		37:08		0.45	1.46			1.031			
				37:37		0.44	1,194.97	362.89	832.08	1.045	13C12-HpCDF 789	SUR5	
	DC	SN		38:01	RO	0.31	4.22			1.056			
418-420			2	Peaks			2,775.55						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.976-1.006			
424-426	DC	NL		0:00	RO	1.77	0.98			0.000			
				36:18		1.03	1,285.41	653.73	631.68	0.979			
				37:06		1.02	1,120.63	566.54	554.09	1.000	1234678-HpCDD		AN
	DC	WH		37:28	RO	3.21	2.43			1.010			
	DC	WH		37:38	RO	2.28	2.28			1.015			
424-426			2	Peaks			2,406.04						
13C12-HpCDD				0.88-1.20						0.973-1.027			
436-438	DC	NL		0:00	RO	1.40	2.12			0.000			
				36:18		1.07	12.58	6.50	6.08	0.979			
				37:05		1.04	1,713.98	873.72	840.26	1.000	13C12-HpCDD 678	IS7	
436-438			2	Peaks			1,726.56						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.902-1.098			
442-444	DC	NL		0:00		0.91	0.88			0.000			
	DC	WL		35:38	RO	1.64	1.15			0.870			
	DC	WL		36:15		0.77	12.21			0.885			
	DC	SN		37:16	RO	1.03	1.46			0.910			
	DC	SN		37:27	RO	1.46	0.53			0.915			
	DC	SN		37:34		0.98	0.93			0.917			
	DC	SN		37:44	RO	0.73	0.98			0.921			
	DC	SN		37:51	RO	2.48	0.76			0.924			
	DC	SN		38:15	RO	0.15	0.42			0.934			
	DC	SN		38:22	RO	5.00	0.11			0.937			
	DC	SN		38:55		0.97	1.44			0.950			
				39:06		1.01	17.88	8.99	8.89	0.955			
	DC	SN		39:34	RO	1.12	1.23			0.966			
	DC	SN		39:49	RO	2.29	0.32			0.972			
	DC	SN		40:09		0.80	1.62			0.980			
	DC	SN		40:31	RO	0.57	1.02			0.989			
	DC	SN		40:35	RO	0.58	0.79			0.991			
	DC	SN		40:49	RO	0.40	1.06			0.997			
	DC	SN		40:54	RO	0.33	0.76			0.999			
				41:10		0.84	322.30	147.61	174.69	1.005	OCDF		AN
				41:27		0.86	32.07	14.87	17.20	1.012			
	DC	SN		41:50		0.80	2.68			1.022			
442-444			3	Peaks			372.25						

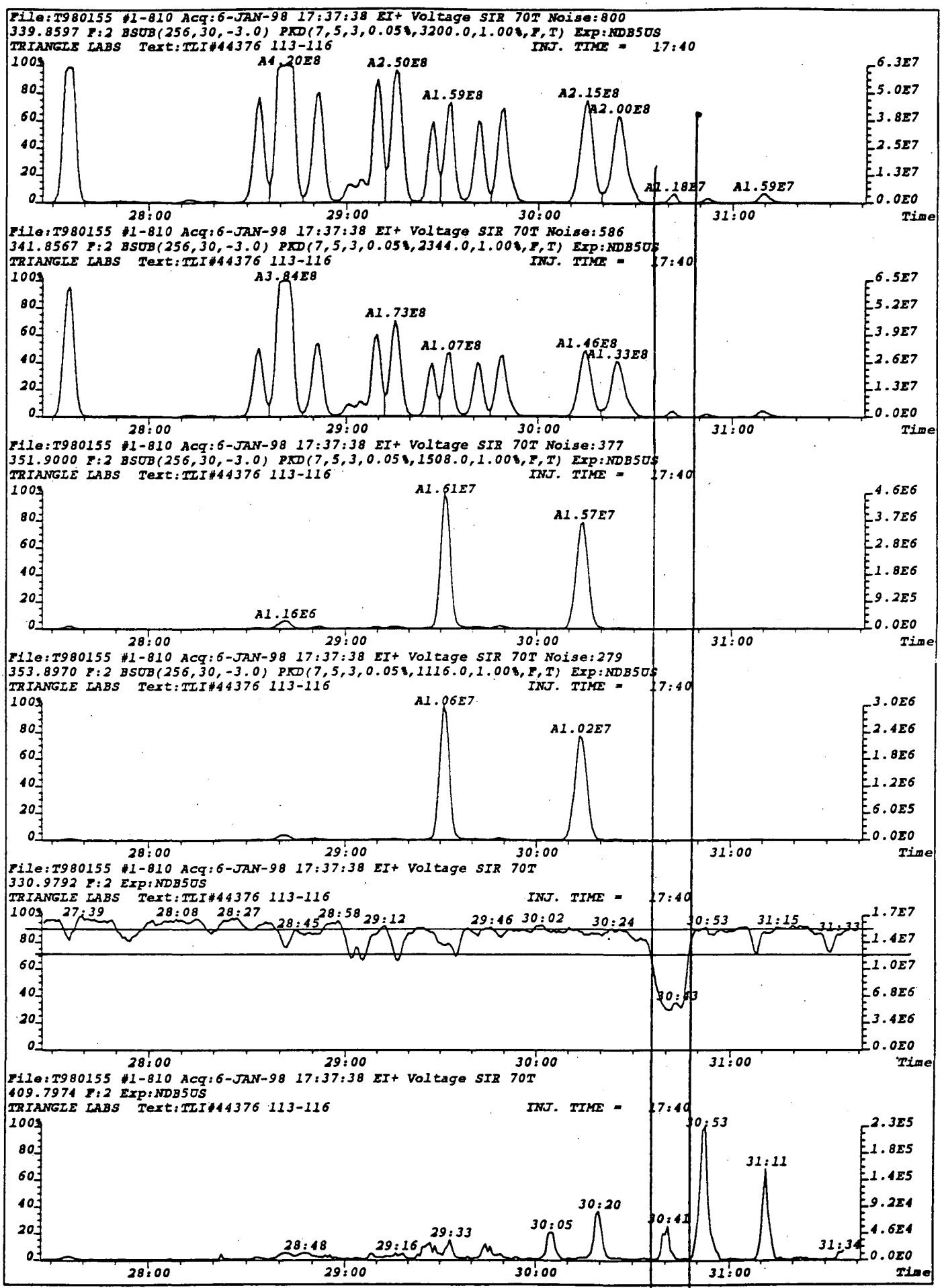
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags
OCDD						0.76-1.02				0.902-1.098			
458-460	DC	NL		0:00	RO	1.42	0.23			0.000			
				40:57		0.81	445.68	199.35	246.33	1.000	OCDD		AN
	DC	SN		41:17	RO	1.11	3.42			1.008			
458-460		1	Peak				445.68						
13C12-OCDD						0.76-1.02				0.998-1.006			
470-472	DC	NL		0:00		1.00	0.26			0.000			
				40:57		0.92	2,441.31	1,168.53	1,272.78	1.000	13C12-OCDD		IS8
	DC	WH		41:29	RO	0.61	3.80			1.013			
470-472		1	Peak				2,441.31						

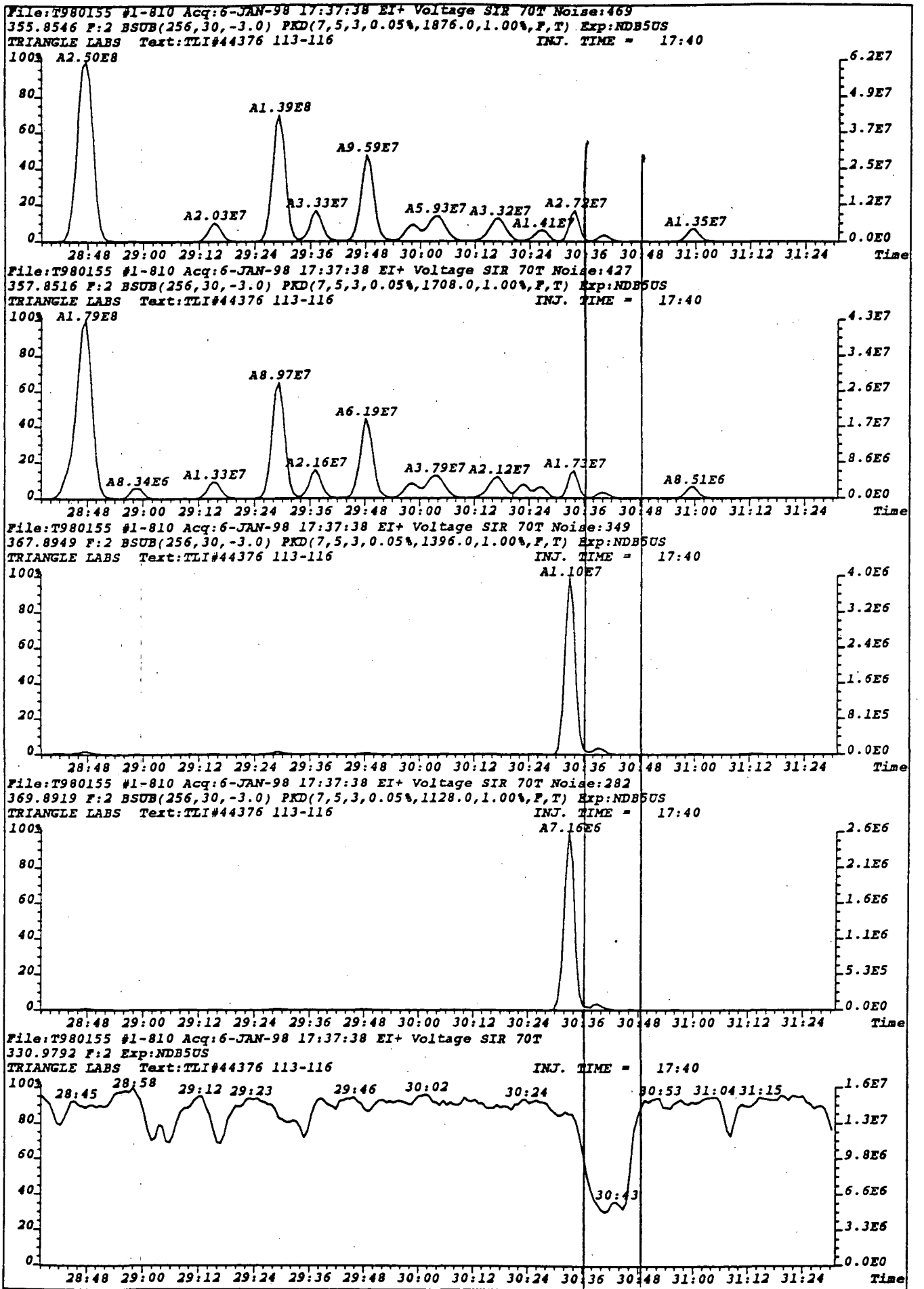
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

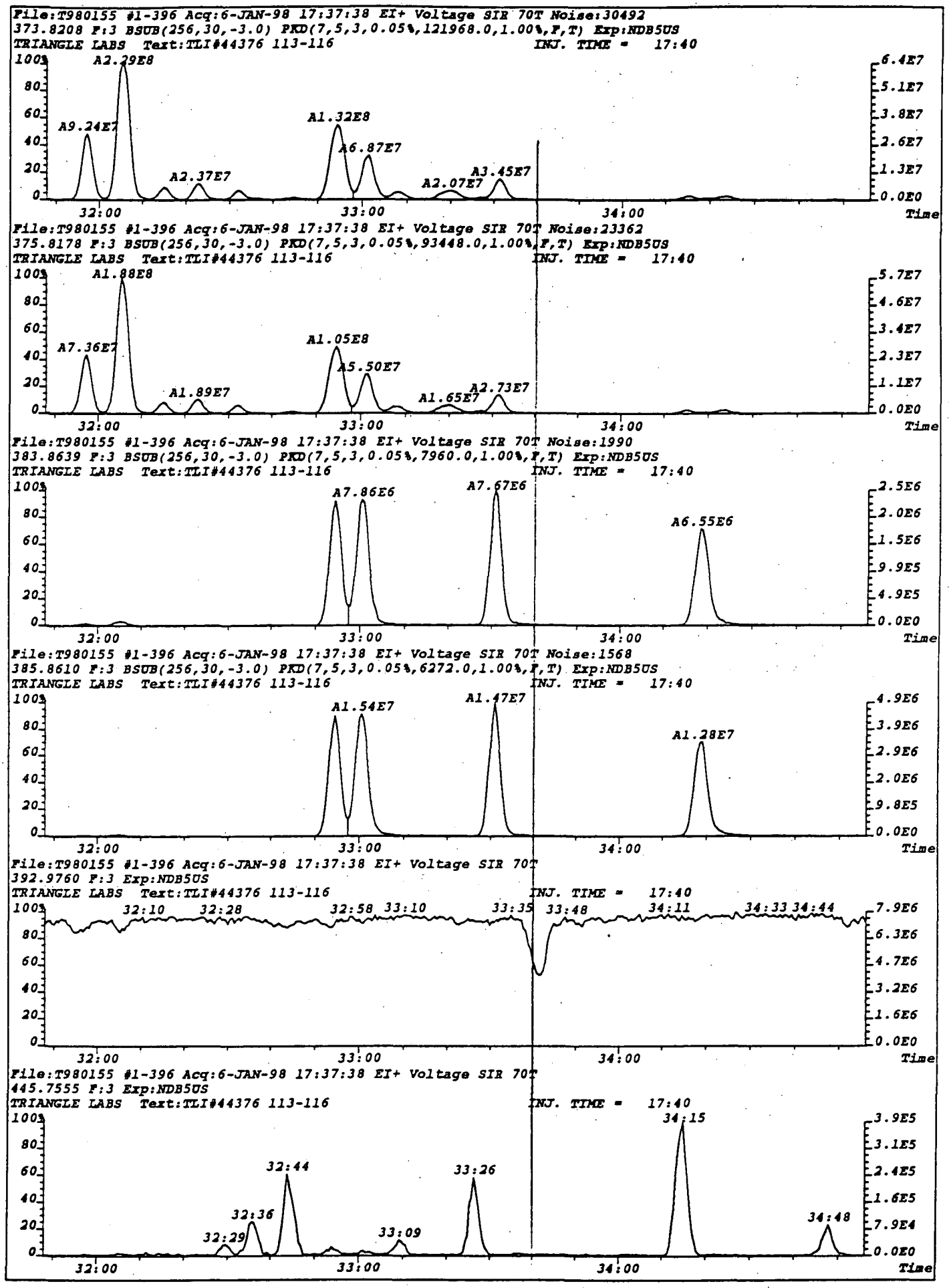
*** End of Report ***

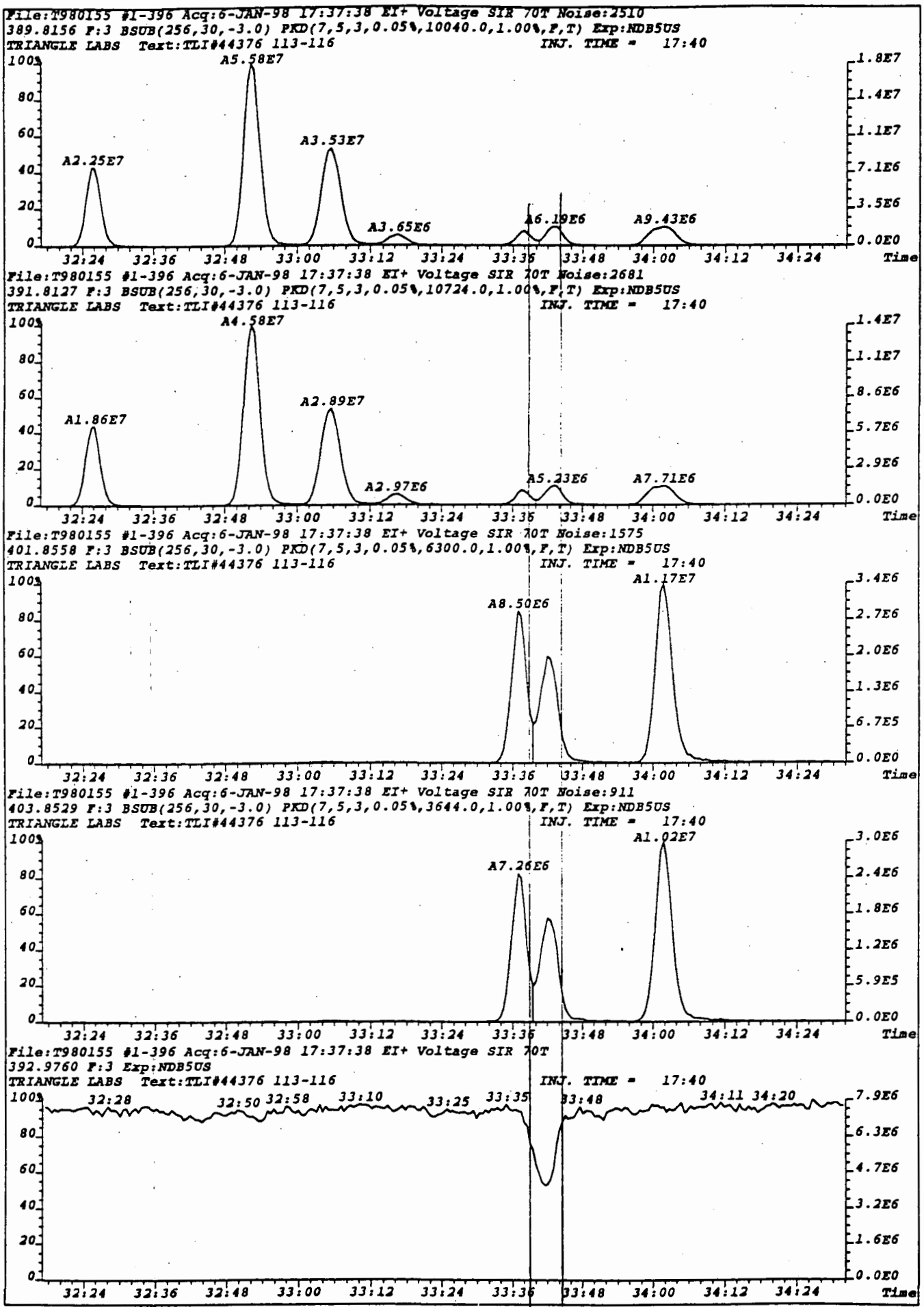

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1768
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,7072.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A6.55E7
A3.26E8
A1.95E8
A2.28E8
A1.90E8
A2.78E8
A1.11E8
A3.25E8
A1.51E8
A2.09E7
A1.46E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1112
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A8.31E7
A4.03E8
A2.41E8
A2.85E8
A2.48E8
A3.48E8
A2.14E8
A1.34E8
A3.50E8
A1.87E8
A2.62E7
A1.91E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1332
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,5328.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.06E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1142
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.42E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
23:06
24:12
24:36
25:26
25:52
26:10
27:04
27:39
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
25:20
25:45
26:03
26:28
26:43
27:01
27:31
27:43
Time

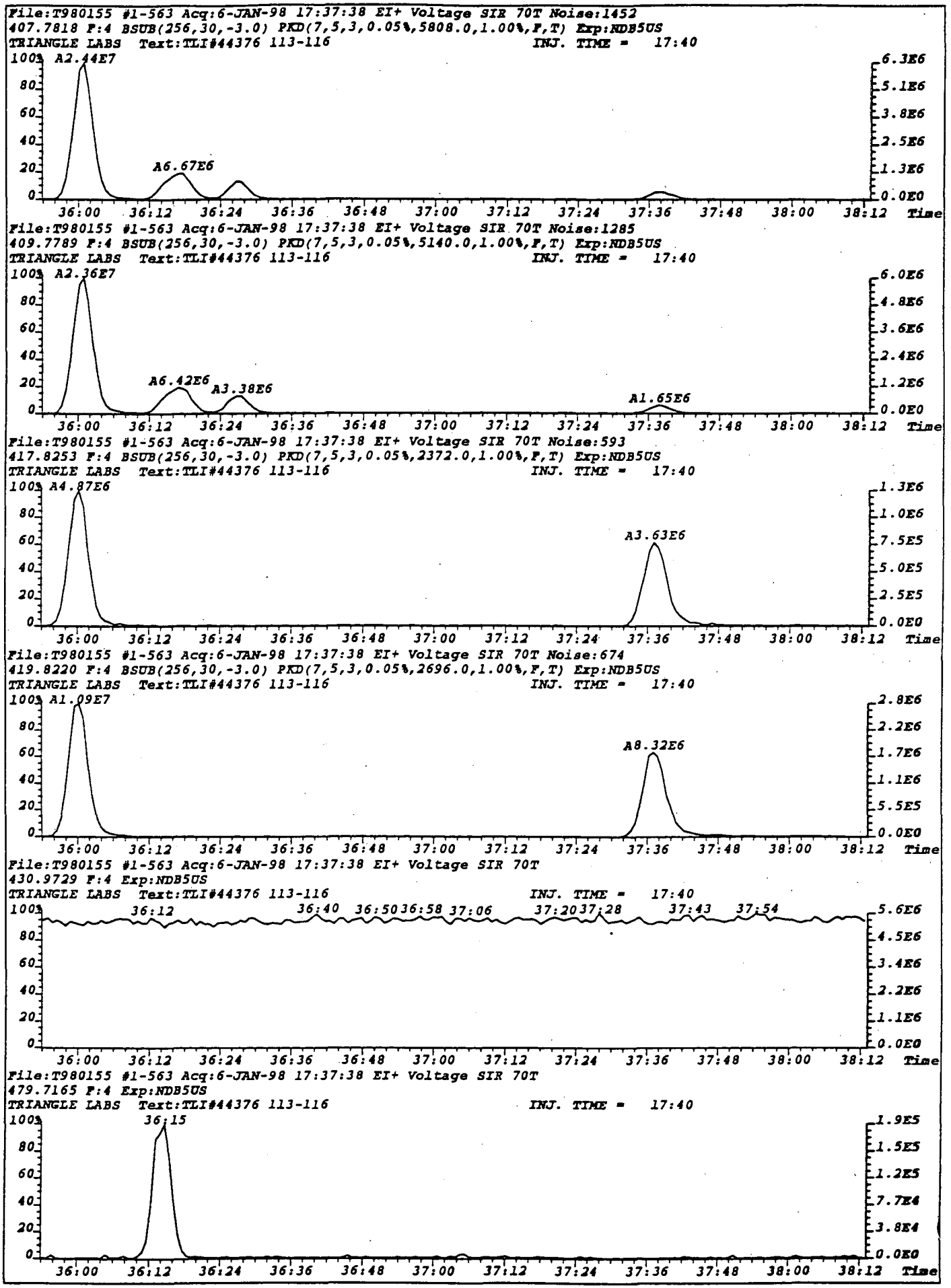

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:752
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3008.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A5.71E7
A2.38E7
A6.15E7
A4.35E7
A2.37E7
A4.66E7
A1.13E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:731
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2924.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A7.29E7
A3.04E7
A7.85E7
A5.55E7
A3.00E7
A5.63E7
A1.45E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:2437
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9748.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.25E7
A1.18E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1181
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4724.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.57E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:970
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3880.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A3.57E7
A2.37E7
A2.11E7
A2.41E6
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
24:12 24:36 24:56 25:10 25:26
25:52 26:10 26:31 27:04 27:39
Time

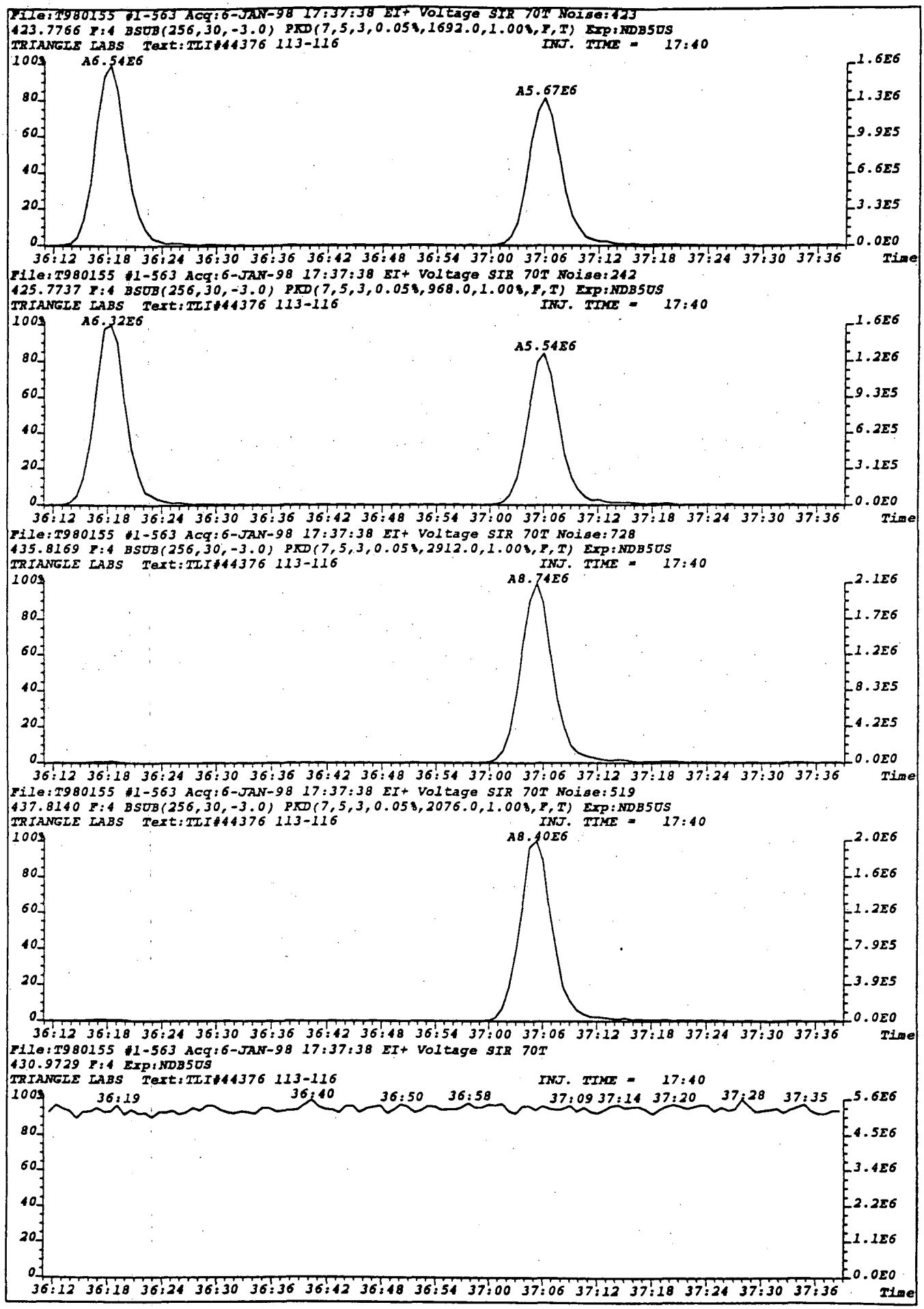

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:800
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A4.20E8
A2.50E8
A1.59E8
A2.15E8
A2.00E8
A1.18E7
A1.59E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:586
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2344.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A3.84E8
A1.73E8
A1.07E8
A1.46E8
A1.33E8
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:377
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1508.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A1.61E7
A1.57E7
A1.16E6
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:279
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A1.06E7
A1.02E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
27:39
28:08
28:27
28:45
28:58
29:12
29:46
30:02
30:24
30:53
31:15
31:33
30:33
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
30:53
31:11
30:20
30:05
30:41
29:33
28:48
29:16
31:34
28:00
29:00
30:00
31:00
Time

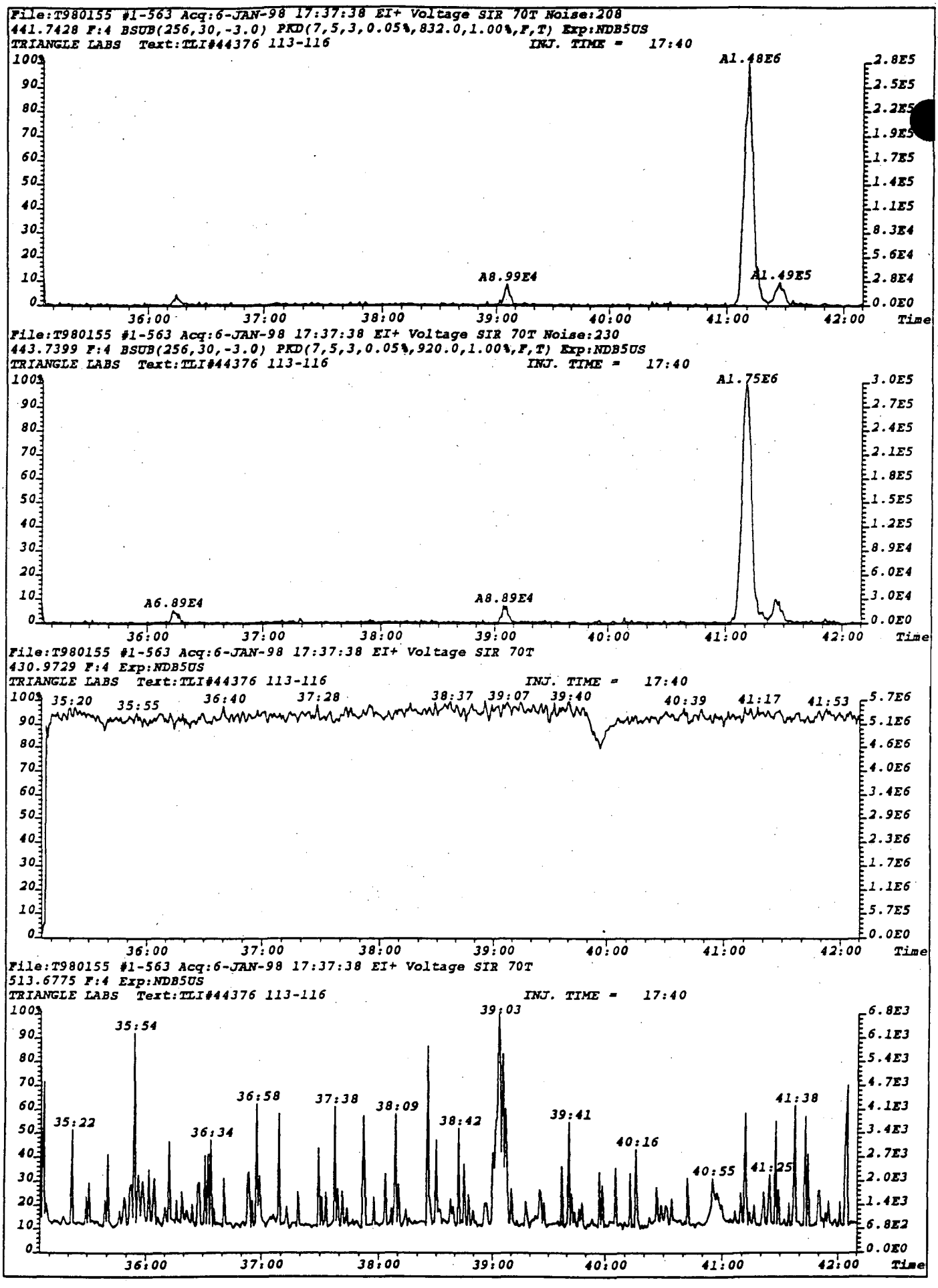

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:469
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1876.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A2.50E8
A1.39E8
A9.59E7
A2.03E7
A3.33E7
A5.93E7
A3.32E7
A1.41E7
A2.72E7
A1.35E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:427
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.79E8
A8.97E7
A6.19E7
A8.34E6
A1.33E7
A2.16E7
A3.79E7
A2.12E7
A1.73E7
A8.51E6
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:349
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1396.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.10E7
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:282
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1128.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A7.16E6
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
28:45
28:58
29:12
29:23
29:46
30:02
30:24
30:43
30:53
31:04
31:15
Time

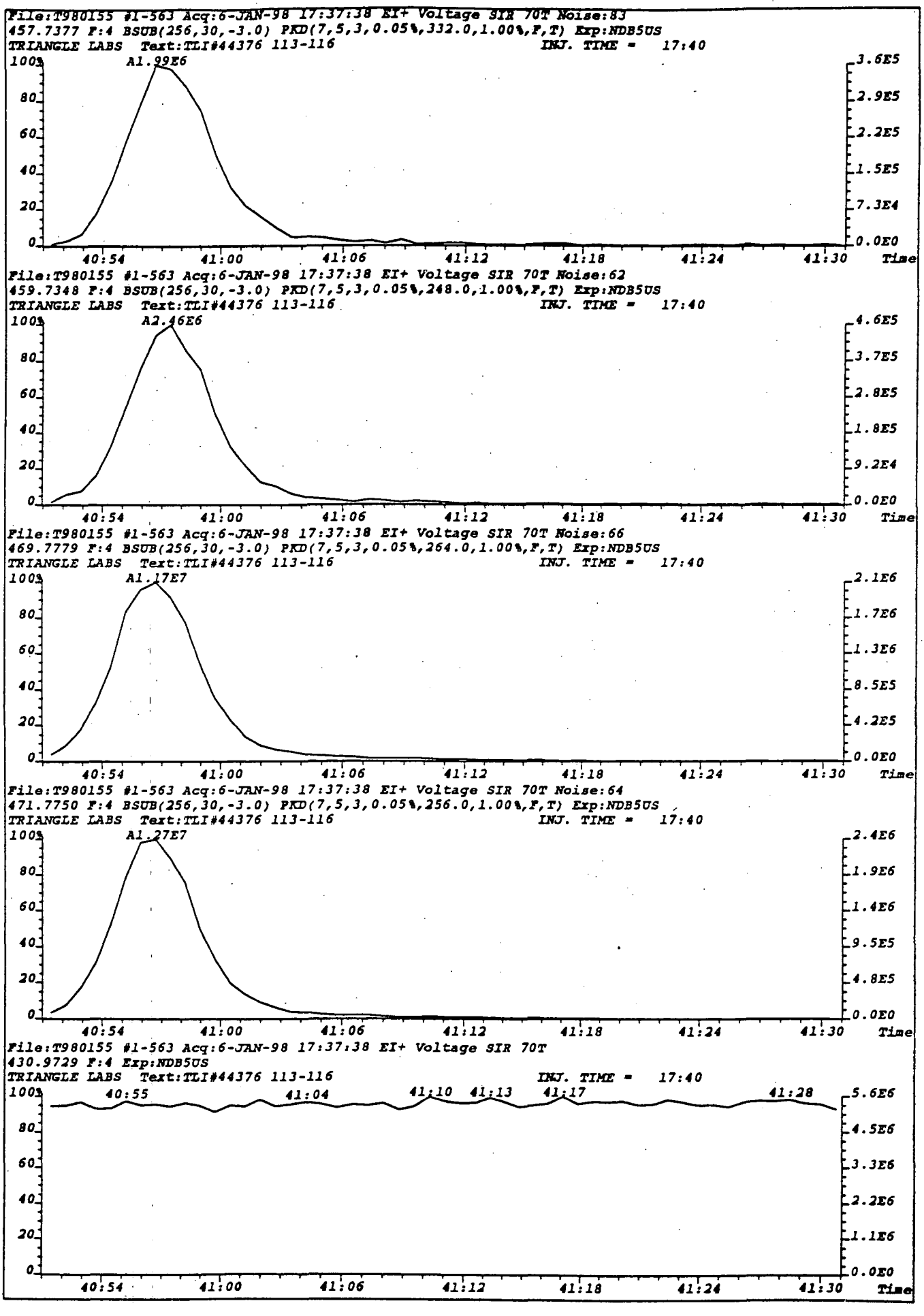

File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:30492
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,121968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A2.29E8
A9.24E7
A1.32E8
A6.87E7
A2.37E7
A2.07E7
A3.45E7
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:23362
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,93448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.88E8
A7.36E7
A1.05E8
A5.50E7
A1.89E7
A1.65E7
A2.73E7
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1990
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7960.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A7.86E6
A7.67E6
A6.55E6
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1568
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6272.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.54E7
A1.47E7
A1.28E7
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
32:29
32:36
32:44
33:09
33:26
34:15
34:48
32:00
33:00
34:00
Time

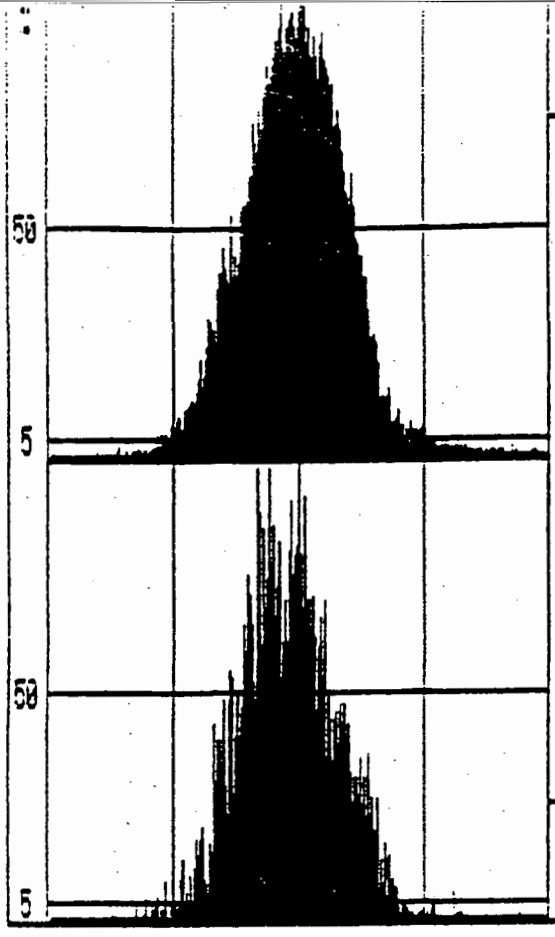

File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:2510
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10040.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A5.58E7
A2.25E7
A3.53E7
A3.65E6
A6.19E6
A9.43E6
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:2681
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10724.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A4.58E7
A1.86E7
A2.89E7
A2.97E6
A5.23E6
A7.71E6
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1575
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6300.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.17E7
A8.50E6
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:911
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3644.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.02E7
A7.26E6
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24 Time


File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1452
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5808.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A2.44E7
A6.67E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:1285
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5140.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A2.36E7
A6.42E6
A3.38E6
A1.65E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:593
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2372.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A4.87E6
A3.63E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:674
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2696.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A1.09E7
A8.32E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
36:15
Time


File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:423
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A6.54E6
A5.67E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:242
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A6.32E6
A5.54E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:728
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2912.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A8.74E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:519
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2076.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
A8.40E6
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116 INJ. TIME = 17:40
Time


File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:208
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,832.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.48E6
A8.99E4
A1.49E5
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:230
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,920.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.75E6
A6.89E4
A8.89E4
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
35:20
35:55
36:40
37:28
38:37
39:07
39:40
40:39
41:17
41:53
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
35:22
35:54
36:34
36:58
37:38
38:09
38:42
39:03
39:41
40:16
40:55
41:25
41:38
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time


File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:83
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,332.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.99E6
3.6E5
2.9E5
2.2E5
1.5E5
7.3E4
0.0E0
40:54
41:00
41:06
41:12
41:18
41:24
41:30
Time
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:62
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,248.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A2.46E6
4.6E5
3.7E5
2.8E5
1.8E5
9.2E4
0.0E0
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:66
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.17E7
2.1E6
1.7E6
1.3E6
8.5E5
4.2E5
0.0E0
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T Noise:64
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,256.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
A1.27E7
2.4E6
1.9E6
1.4E6
9.5E5
4.8E5
0.0E0
File:T980155 #1-563 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 113-116
INJ. TIME = 17:40
40:55
41:04
41:10
41:13
41:17
41:28
5.6E6
4.5E6
3.3E6
2.2E6
1.1E6
0.0E0

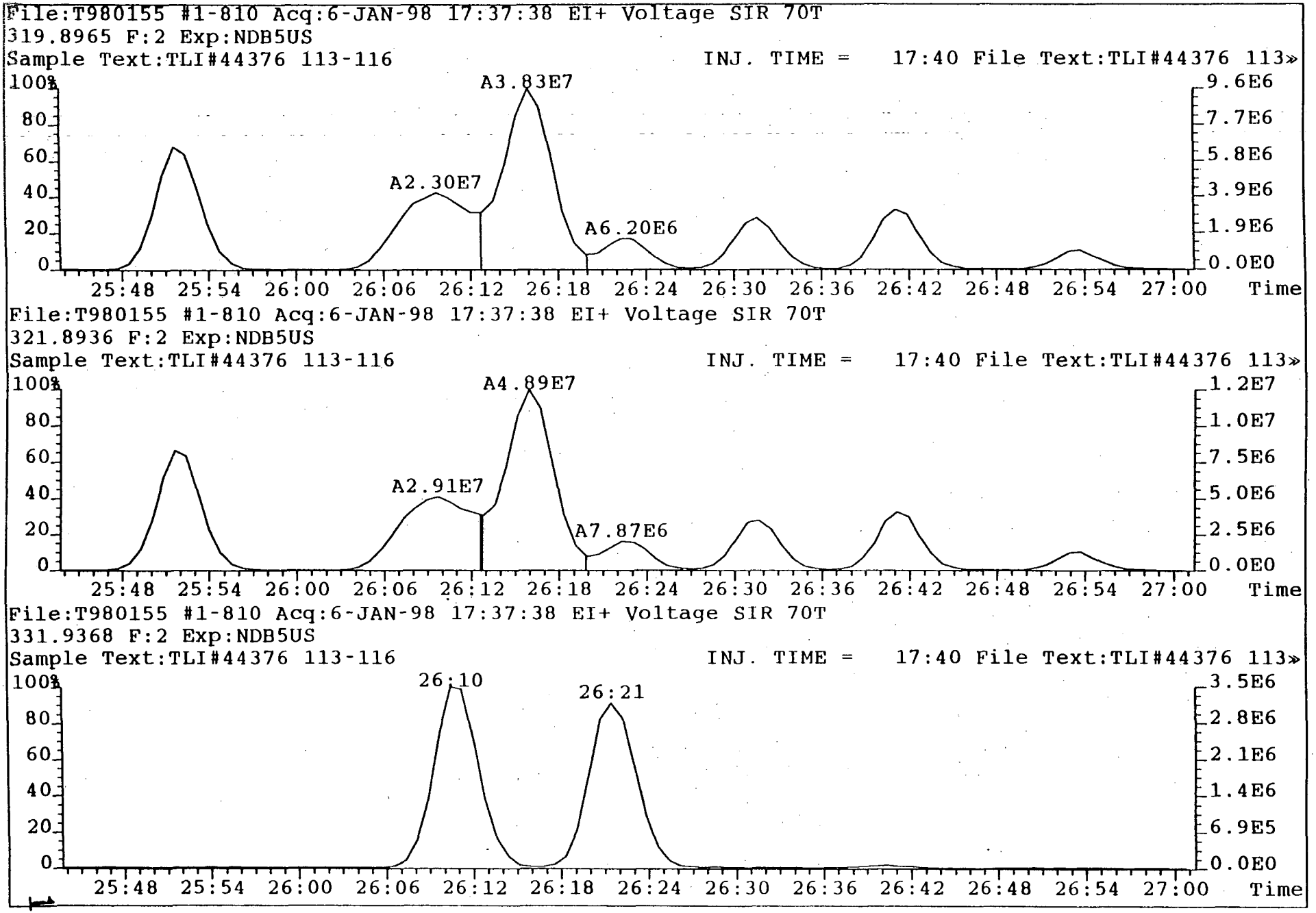


Channel I 330.3792 Peak top
Height 3.59 volts Span 200 ppm

System file name	NOBBUS
Data file name	A:TS80148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

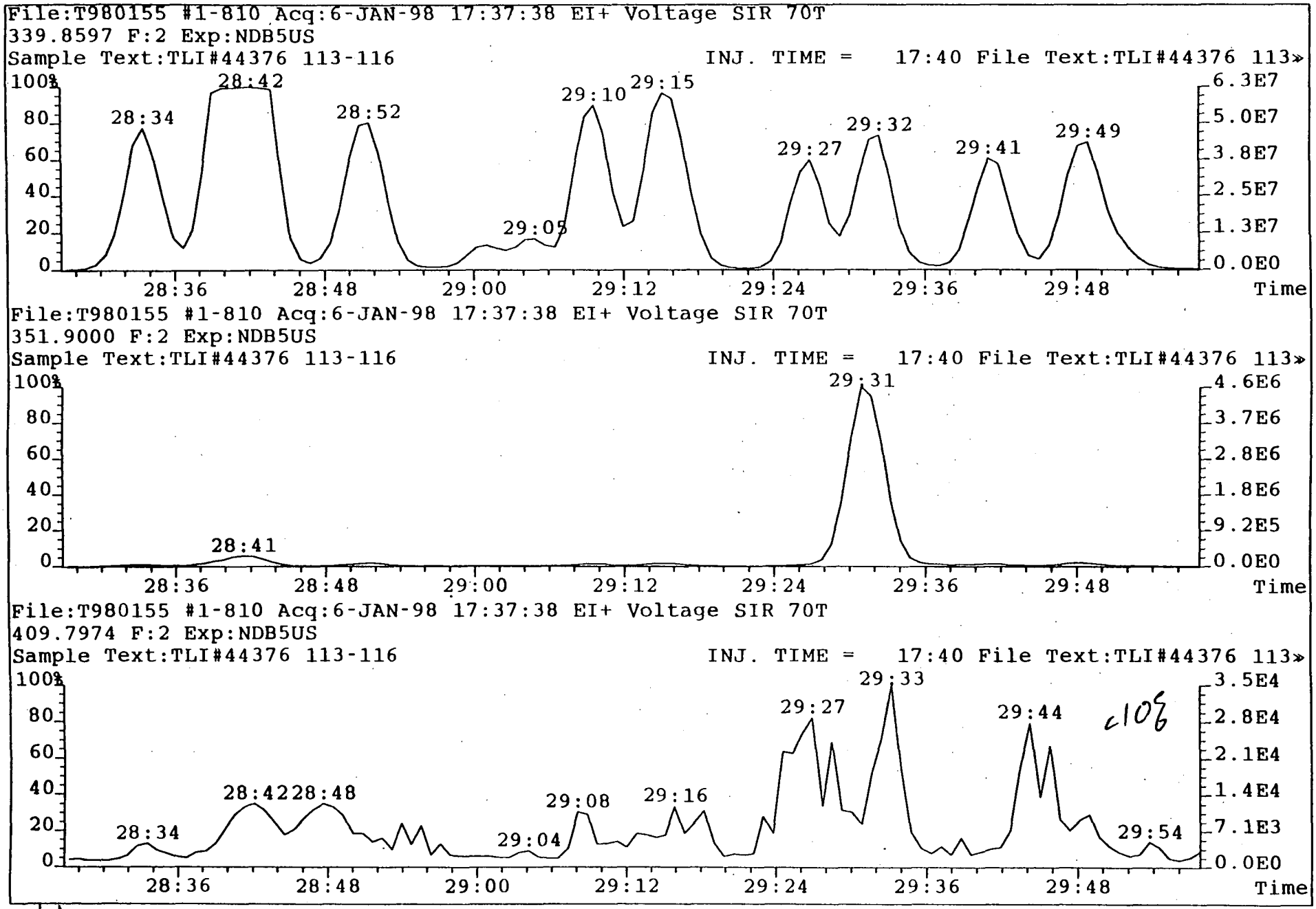
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	329	Q	356		
I	331	R	358		

Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm

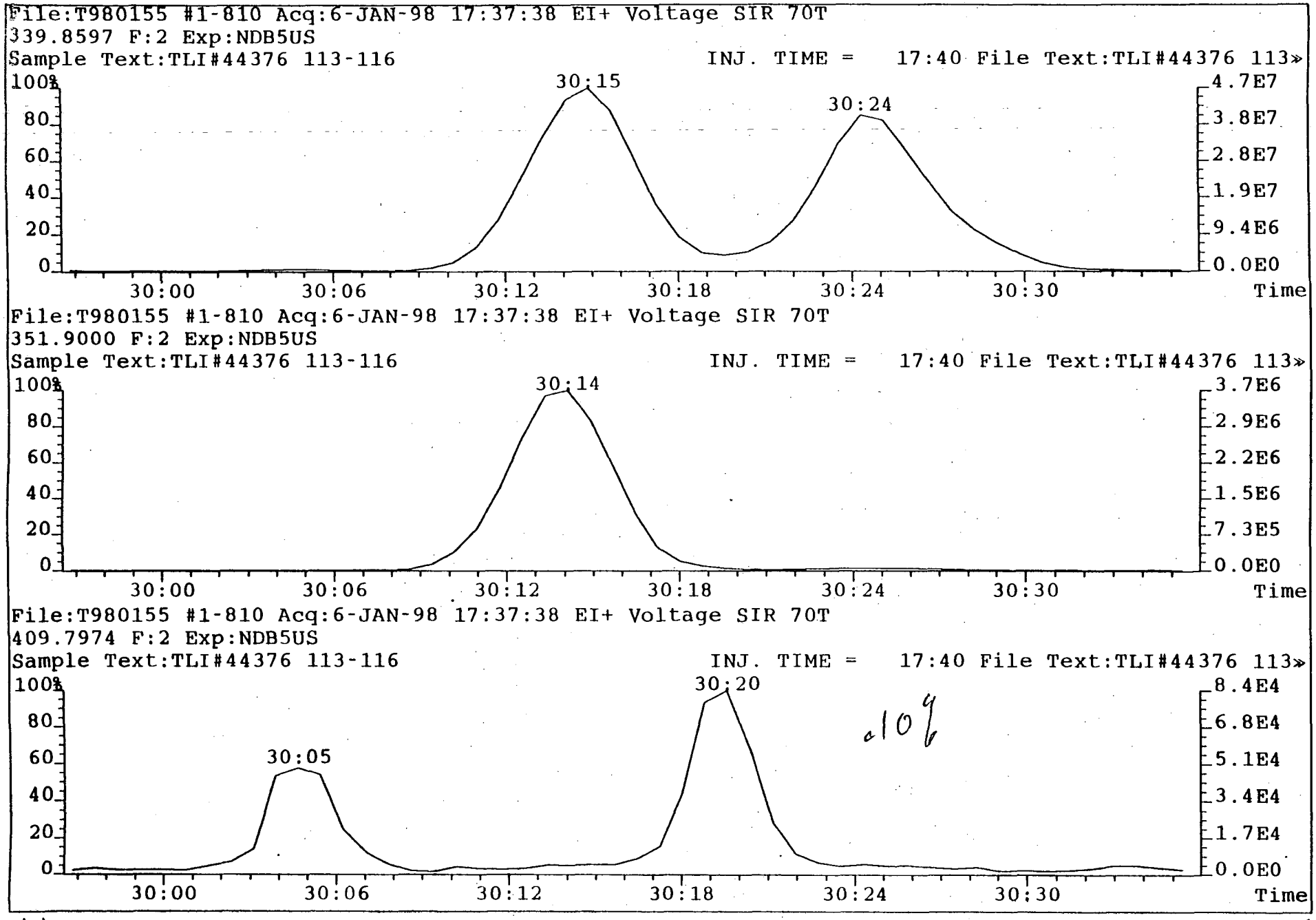

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
A3.83E7
A2.30E7
A6.20E6
9.6E6
7.7E6
5.8E6
3.9E6
1.9E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00 Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
A4.89E7
A2.91E7
A7.87E6
1.2E7
1.0E7
7.5E6
5.0E6
2.5E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00 Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
26:10
26:21
3.5E6
2.8E6
2.1E6
1.4E6
6.9E5
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00 Time

T-17

1/16/98

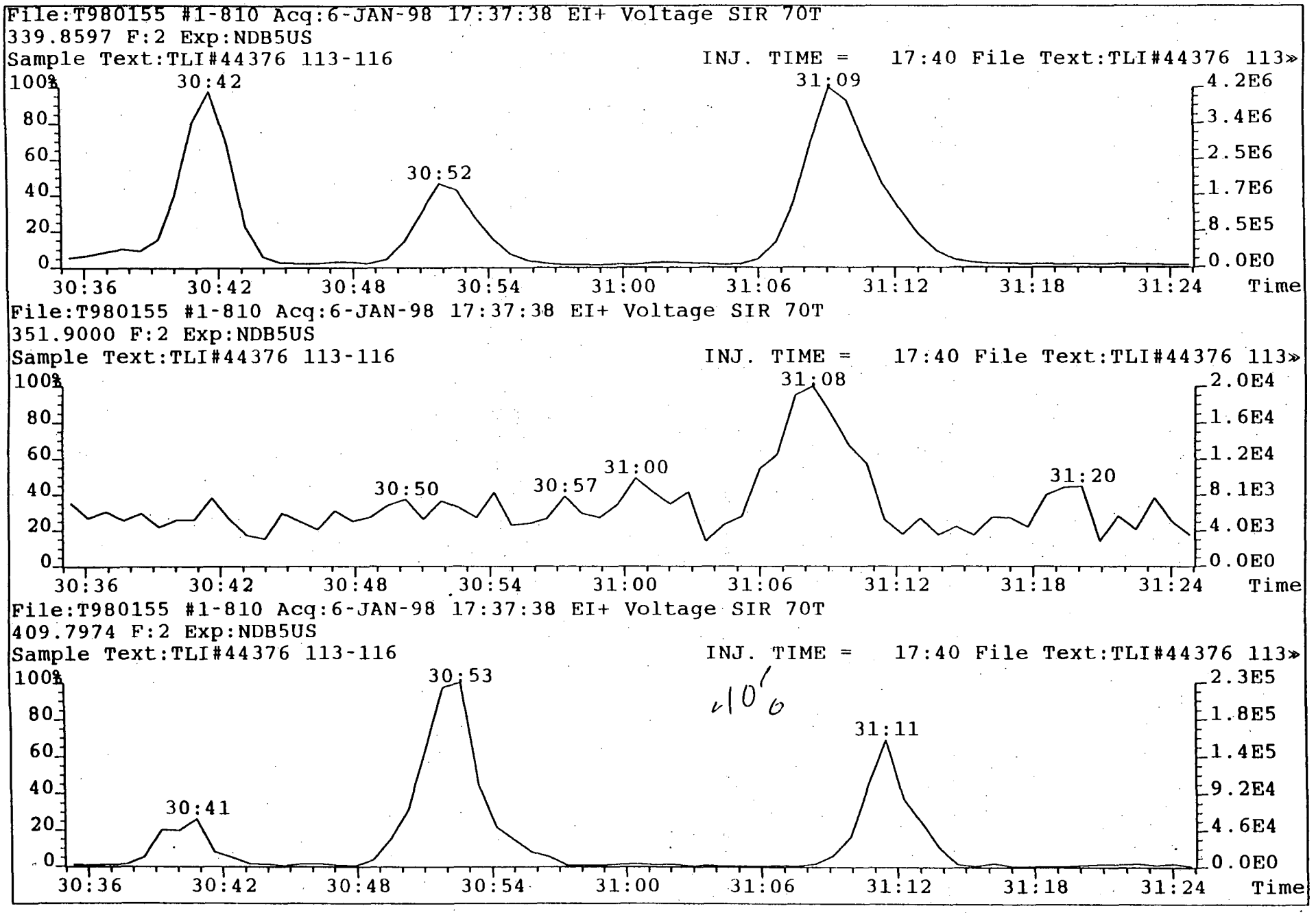

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
28:34
28:42
28:52
29:05
29:10
29:15
29:27
29:32
29:41
29:49
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
28:41
29:31
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
28:34
28:42
28:48
29:04
29:08
29:16
29:27
29:33
29:44
29:54
Time

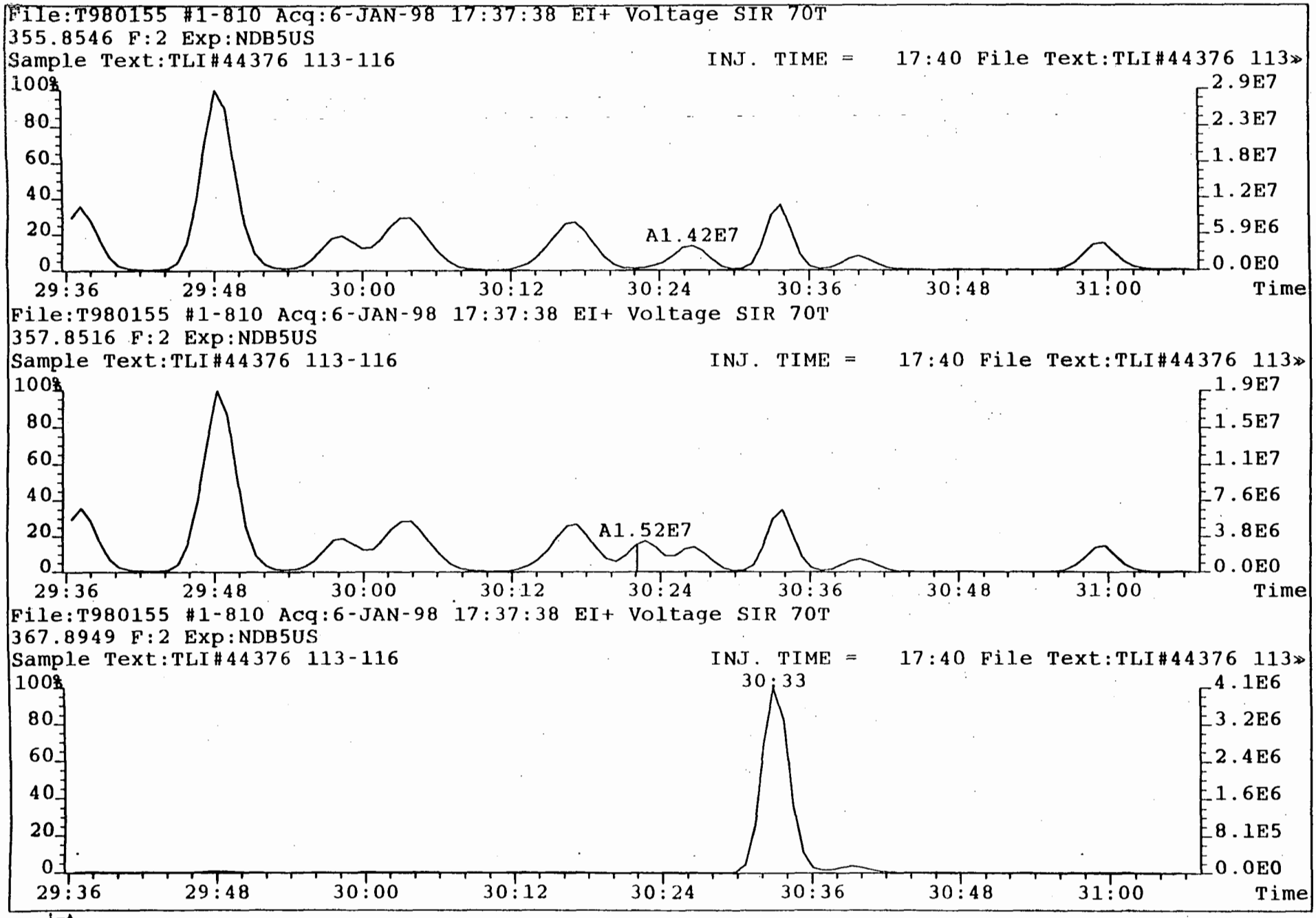
172


File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:15
30:24
4.7E7
3.8E7
2.8E7
1.9E7
9.4E6
0.0E0
30:00
30:06
30:12
30:18
30:24
30:30
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:14
3.7E6
2.9E6
2.2E6
1.5E6
7.3E5
0.0E0
30:00
30:06
30:12
30:18
30:24
30:30
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:20
30:05
≈10%
8.4E4
6.8E4
5.1E4
3.4E4
1.7E4
0.0E0
30:00
30:06
30:12
30:18
30:24
30:30
Time

173

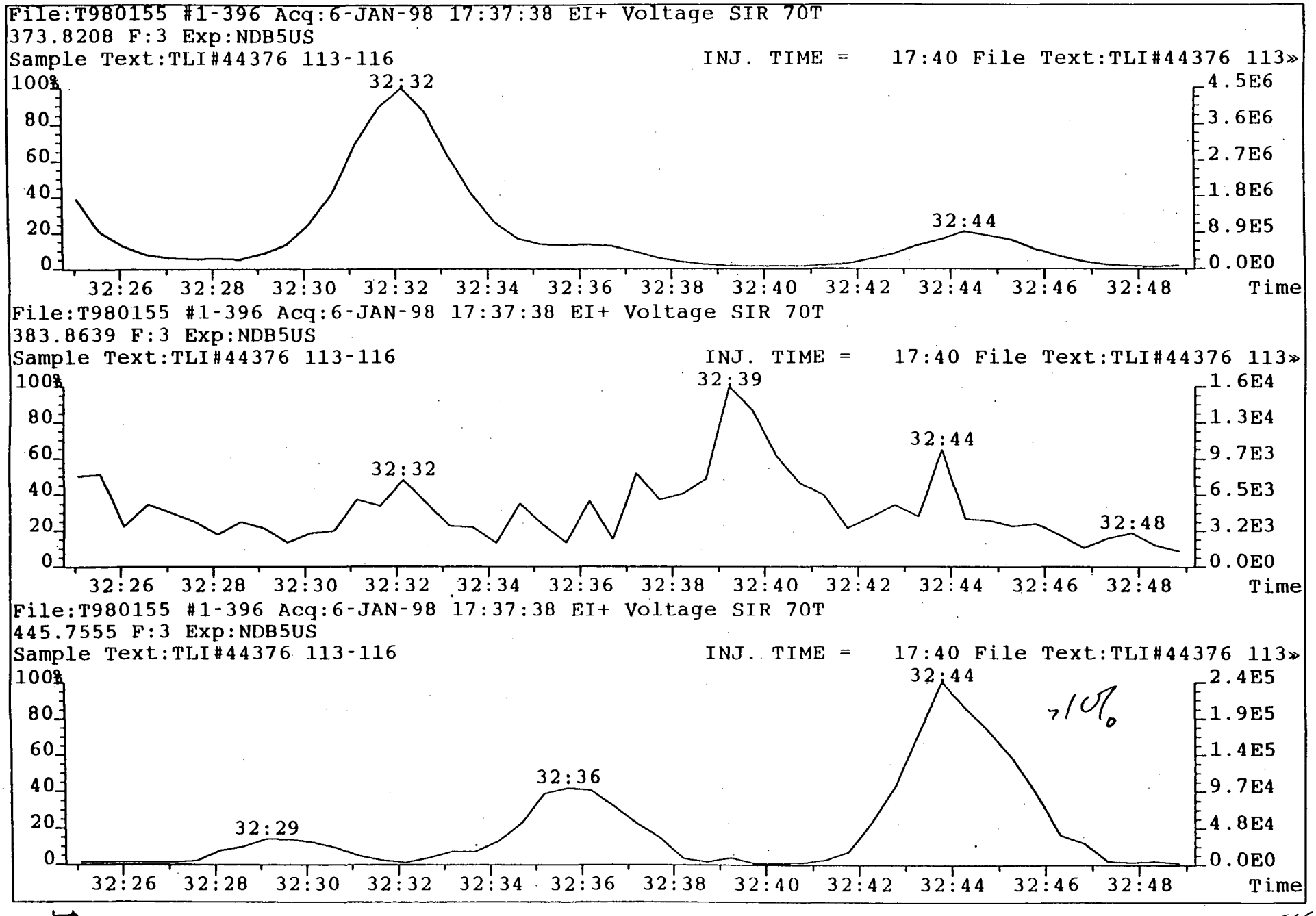
11/19/98

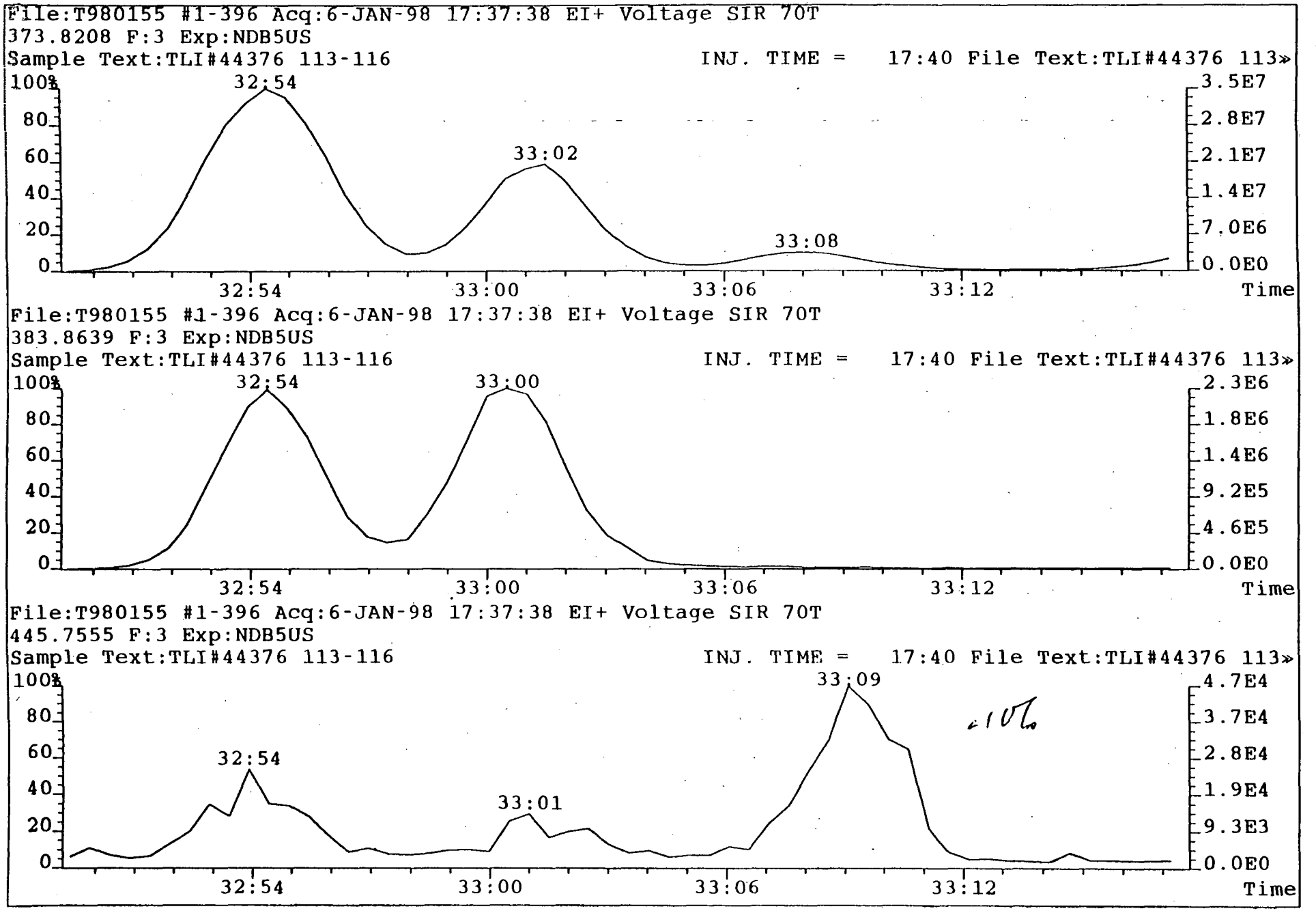

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:42
30:52
31:09
4.2E6
3.4E6
2.5E6
1.7E6
8.5E5
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
31:08
30:50
30:57
31:00
31:20
2.0E4
1.6E4
1.2E4
8.1E3
4.0E3
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:53
31:11
30:41
2.3E5
1.8E5
1.4E5
9.2E4
4.6E4
0.0E0
30:36 30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 Time

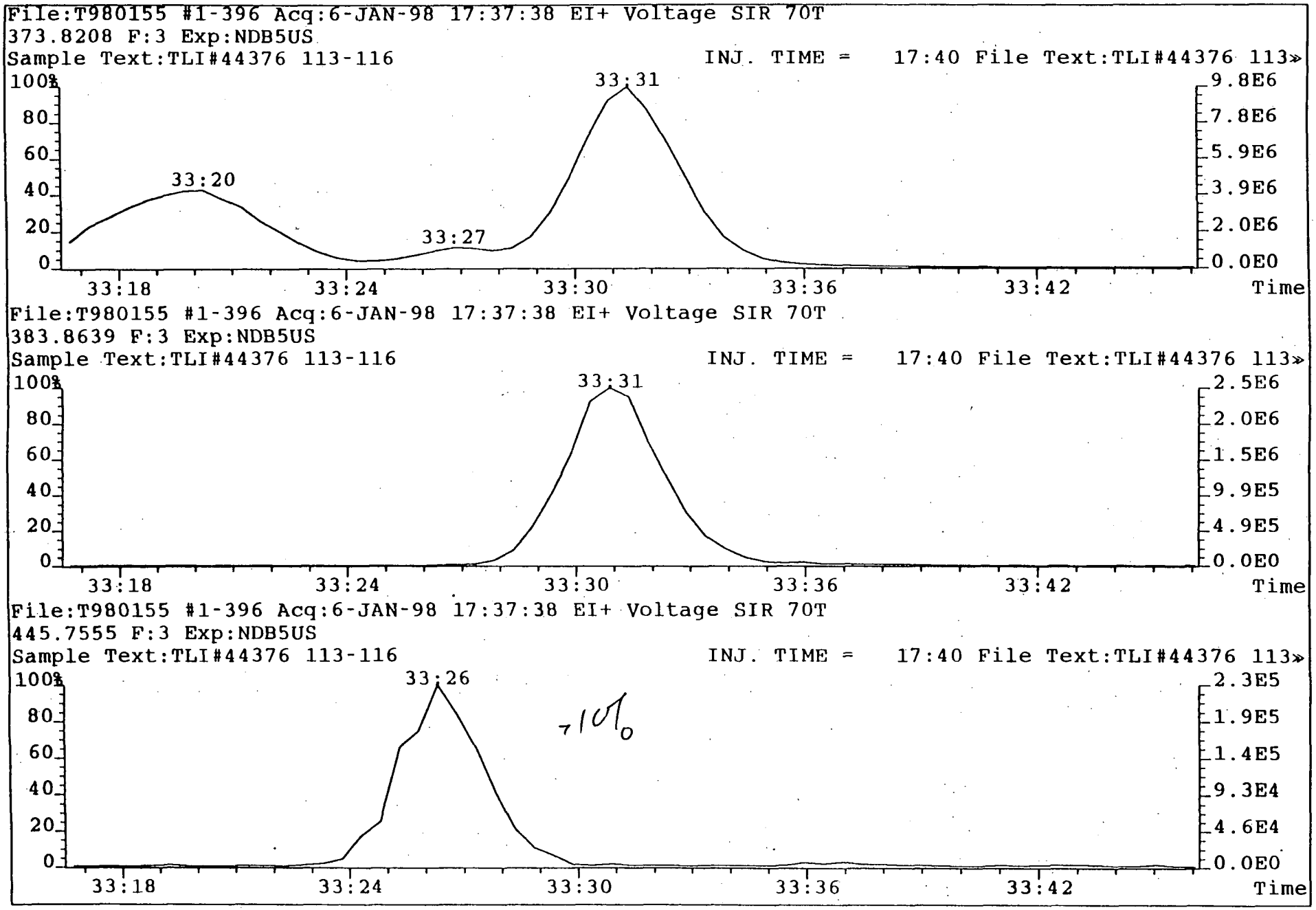

File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
355.8546 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
100%
80
60
40
20
0
2.9E7
2.3E7
1.8E7
1.2E7
5.9E6
0.0E0
A1.42E7
29:36
29:48
30:00
30:12
30:24
30:36
30:48
31:00
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
357.8516 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
100%
80
60
40
20
0
1.9E7
1.5E7
1.1E7
7.6E6
3.8E6
0.0E0
A1.52E7
29:36
29:48
30:00
30:12
30:24
30:36
30:48
31:00
Time
File:T980155 #1-810 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
367.8949 F:2 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
30:33
100%
80
60
40
20
0
4.1E6
3.2E6
2.4E6
1.6E6
8.1E5
0.0E0
29:36
29:48
30:00
30:12
30:24
30:36
30:48
31:00
Time

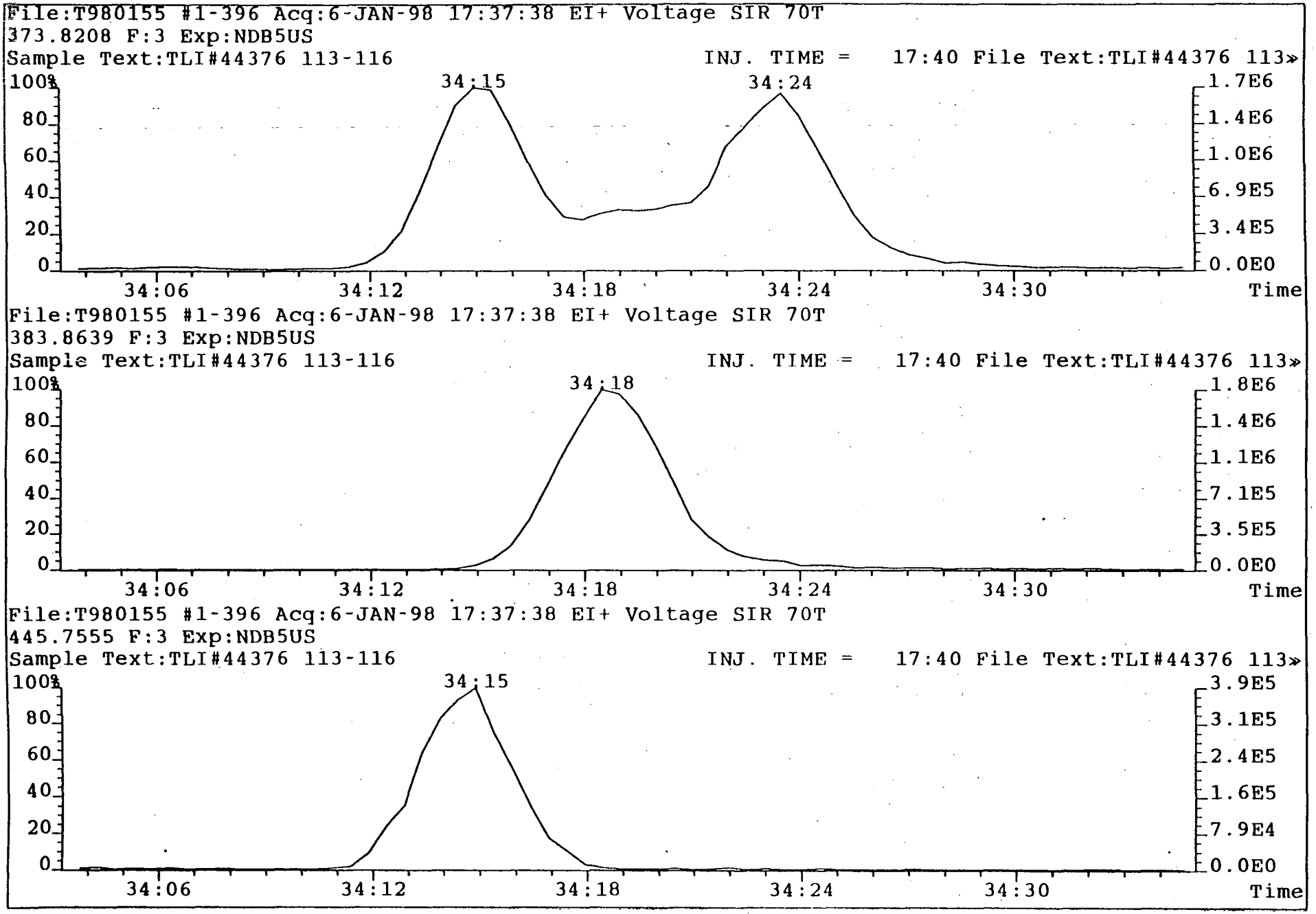
175

OK
1/10/98


File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
32:32
32:44
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
32:39
32:32
32:44
32:48
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
32:44
32:36
32:29
Time

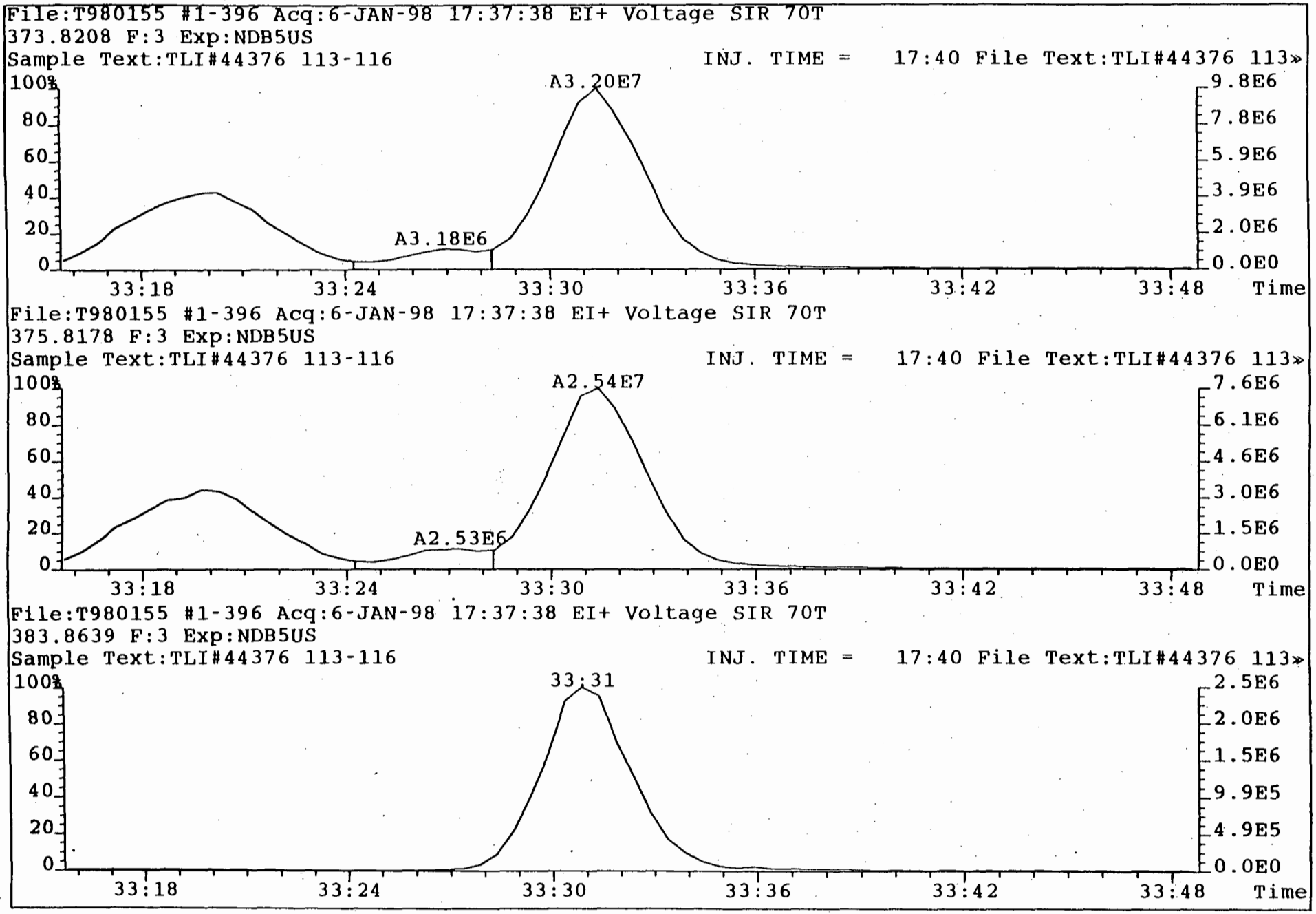

File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
32:54
33:02
33:08
100%
80
60
40
20
0
3.5E7
2.8E7
2.1E7
1.4E7
7.0E6
0.0E0
32:54
33:00
33:06
33:12
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
32:54
33:00
2.3E6
1.8E6
1.4E6
9.2E5
4.6E5
0.0E0
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
33:09
32:54
33:01
4.7E4
3.7E4
2.8E4
1.9E4
9.3E3
0.0E0

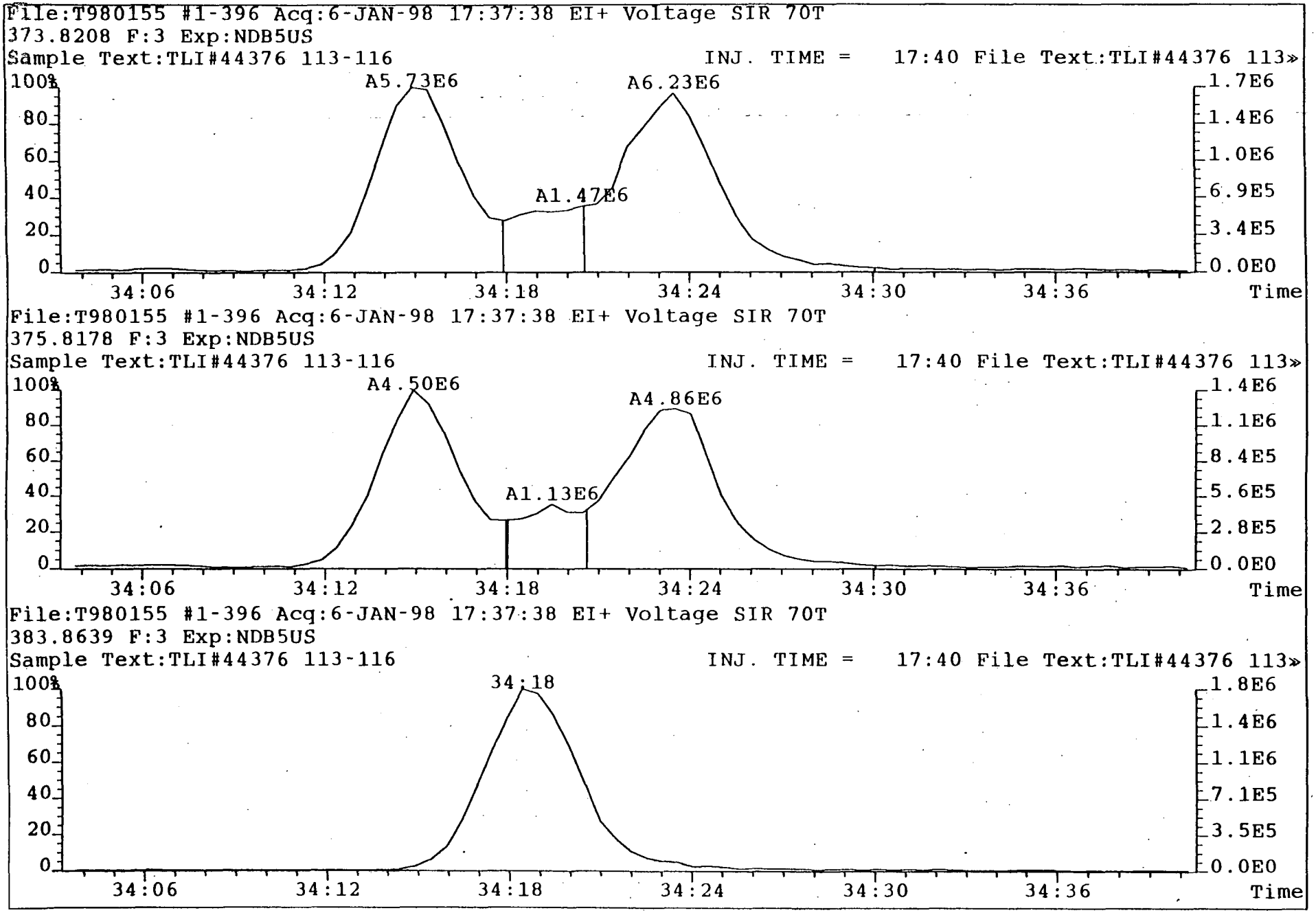

File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
33:31
33:20
33:27
100%
80
60
40
20
0
9.8E6
7.8E6
5.9E6
3.9E6
2.0E6
0.0E0
33:18
33:24
33:30
33:36
33:42
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
33:31
2.5E6
2.0E6
1.5E6
9.9E5
4.9E5
0.0E0
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
33:26
~10%
2.3E5
1.9E5
1.4E5
9.3E4
4.6E4


File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
34:15
34:24
100%
80
60
40
20
0
1.7E6
1.4E6
1.0E6
6.9E5
3.4E5
0.0E0
34:06
34:12
34:18
34:24
34:30
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
34:18
1.8E6
1.4E6
1.1E6
7.1E5
3.5E5
0.0E0
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
34:15
3.9E5
3.1E5
2.4E5
1.6E5
7.9E4
0.0E0

T19

6th
1/1/98


File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
A3.20E7
A3.18E6
100%
80
60
40
20
0
9.8E6
7.8E6
5.9E6
3.9E6
2.0E6
0.0E0
33:18
33:24
33:30
33:36
33:42
33:48
Time
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
A2.54E7
A2.53E6
7.6E6
6.1E6
4.6E6
3.0E6
1.5E6
0.0E0
File:T980155 #1-396 Acq:6-JAN-98 17:37:38 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 113-116
INJ. TIME = 17:40 File Text:TLI#44376 113»
33:31
2.5E6
2.0E6
1.5E6
9.9E5
4.9E5
0.0E0



151

6-5-5
1/14/98

Eastern Research Group

TLI Project: **44376** Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: **113-116** Analysis File: **X980086**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPC2NF04**
TLI ID:	**194-59-3A-3D**	Date Extracted:	**12/29/97**	ICal:	**XF24087**
		Date Analyzed:	**01/07/98**	ConCal:	**X980080**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**X980083**	% Lipid:	**n/a**
GC Column:	**DB-225**	Analyst:	**KAS**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	28.4			0.77	21:31	E__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.7	92.8	40%-130%	0.80	21:30	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	20:29	___

Data Reviewer: 699 01/11/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial ....Date...

Data Review By: SM 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside
atio limits has been recalculated according to method requirements.

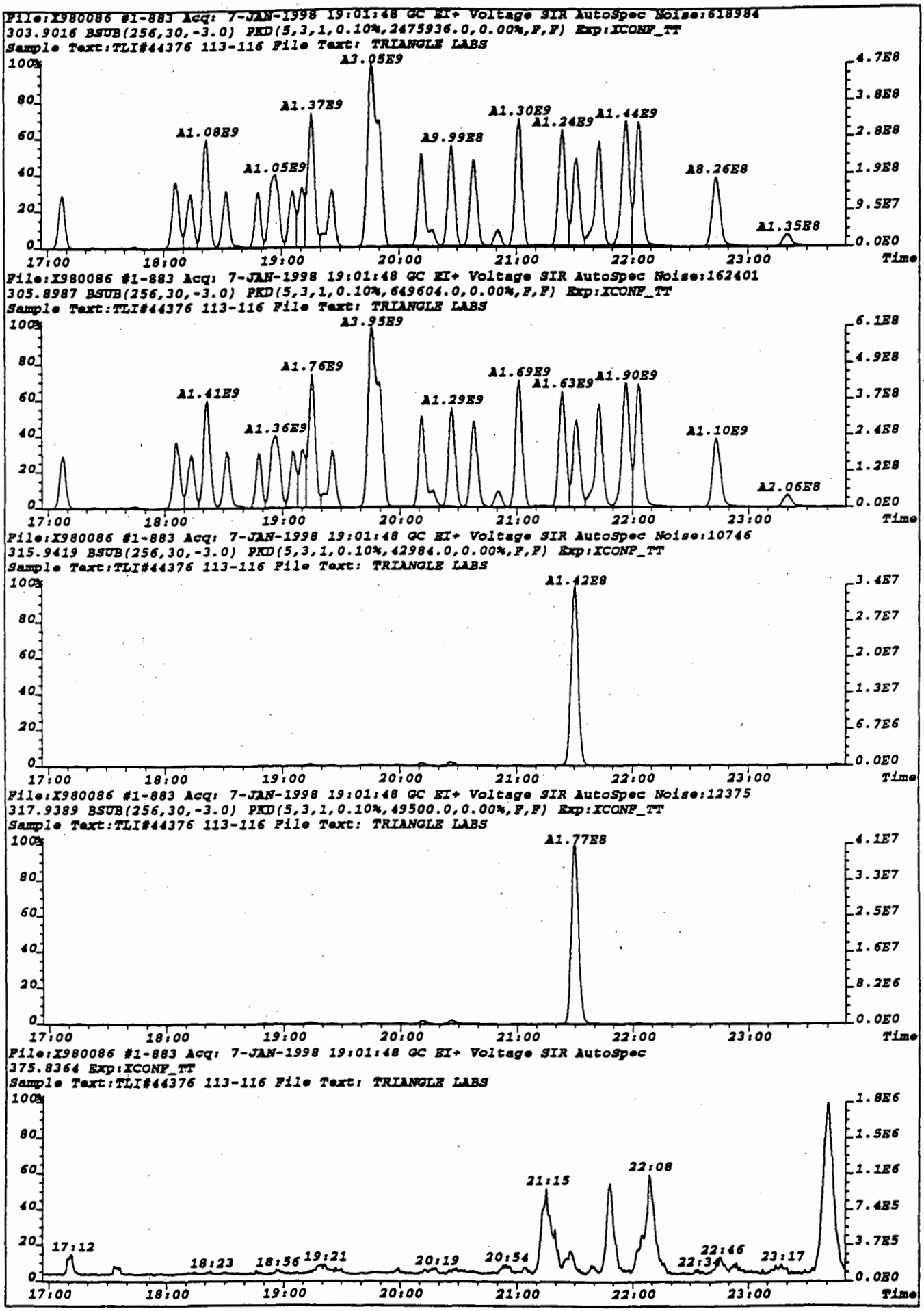
Page No. 1 Listing of X980086B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

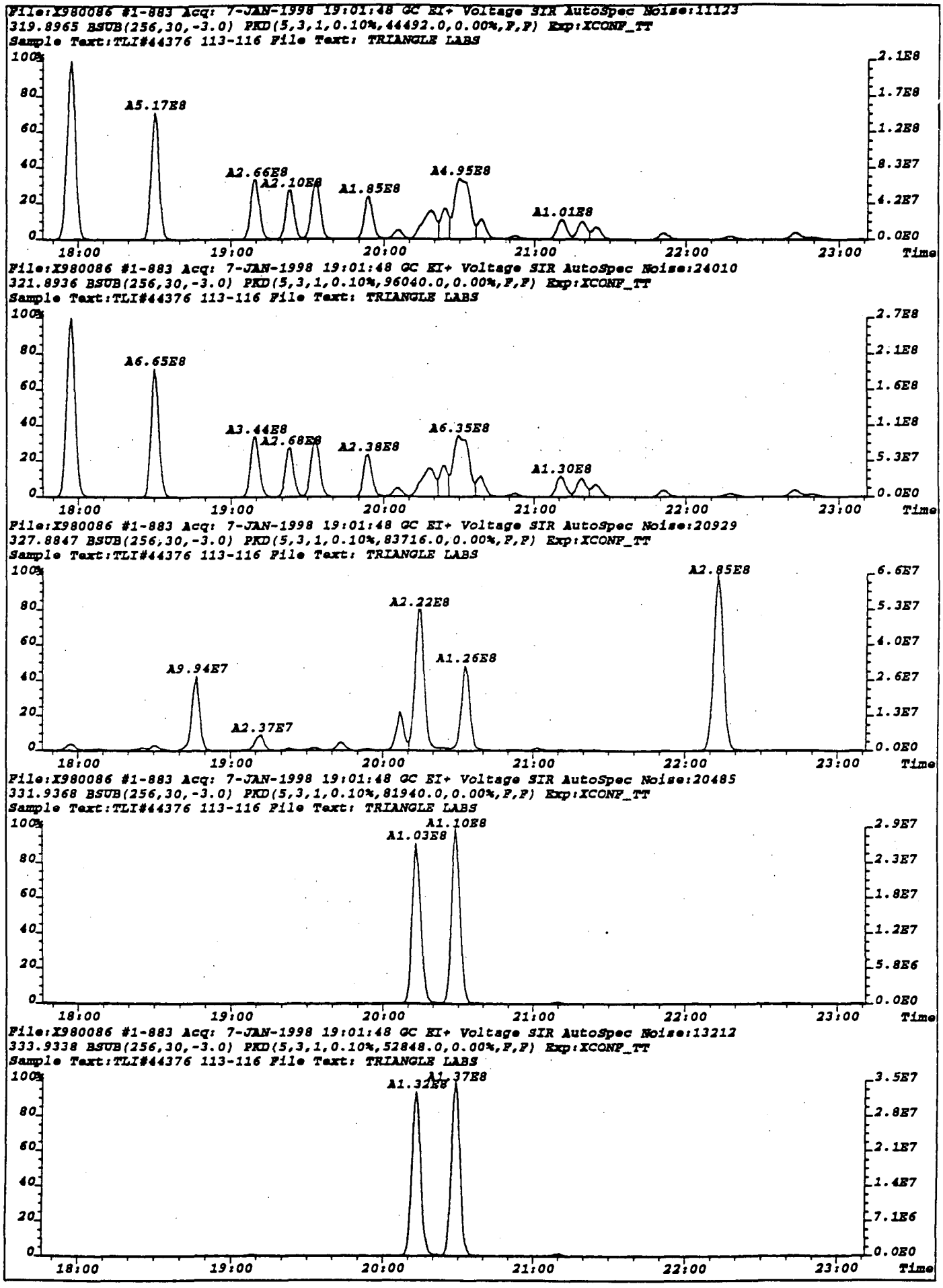
Compound/ M_Z....	QC	Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF					0.65-0.89						0.790-1.095			
304-306	DC	NL			0:00	RO	3.81	574.90			0.000			
					17:07		0.77	116,025.40	50,642.20	65,383.20	0.796			
					17:45	RO	0.35	2,494.02	1,084.97	3,108.52	0.826			
					18:06		0.75	161,420.90	69,328.50	92,092.40	0.842			E
					18:14		0.76	129,175.10	55,879.00	73,296.10	0.848			
					18:22		0.77	249,481.00	108,351.00	141,130.00	0.854			E
					18:32		0.76	129,230.30	55,900.30	73,330.00	0.862			
					18:48		0.77	110,073.20	47,989.90	62,083.30	0.874			
					18:56		0.77	240,976.00	105,194.00	135,782.00	0.881			E
					19:05		0.76	120,913.50	52,364.50	68,549.00	0.888			
					19:11		0.78	125,140.90	54,653.80	70,487.10	0.892			
					19:15		0.78	312,161.00	136,615.00	175,546.00	0.895			E
					19:25		0.77	148,805.30	64,840.90	83,964.40	0.903			
					19:46		0.77	700,501.00	305,391.00	395,110.00	0.919			E
					20:11		0.78	239,059.00	104,430.00	134,629.00	0.939			E
					20:27		0.78	228,416.70	99,850.70	128,566.00	0.951			E
					20:38		0.78	207,795.60	90,813.60	116,982.00	0.960			E
					20:51		0.77	35,661.20	15,535.50	20,125.70	0.970			
					21:01		0.77	298,266.00	129,730.00	168,536.00	0.978			E
					21:24		0.76	286,423.00	123,826.00	162,597.00	0.995			E
					21:31		0.77	218,794.00	95,023.00	123,771.00	1.001	2378-TCDF	AN	E
					21:43		0.75	272,057.00	117,013.00	155,044.00	1.010			E
					21:56		0.76	334,338.00	144,169.00	190,169.00	1.020			E
					22:03		0.74	309,011.00	131,867.00	177,144.00	1.026			E
					22:43		0.75	192,220.50	82,635.50	109,585.00	1.057			E
					23:20		0.65	34,072.80	13,468.80	20,604.00	1.085			
304-306			25	Peaks				5,202,512.42						
13C12-TCDF					0.65-0.89						0.953-1.047			
316-318	DC	NL			0:00		0.87	46.24			0.000			
	DC	WL			17:15	RO	0.63	95.19			0.802			
	DC	WL			17:44	RO	0.60	23.98			0.825			
	DC	WL			18:49		0.85	104.29			0.875			
	DC	WL			19:14	RO	1.04	215.23			0.895			
	DC	WL			19:45		0.71	59.04			0.919			
	DC	WL			19:58	RO	0.98	139.44			0.929			
	DC	WL			20:11		0.79	535.38			0.939			
	DC	WL			20:25		0.71	601.12			0.950			
					21:30		0.80	31,912.10	14,224.70	17,687.40	1.000	13C12-2378-TCDF	ISO	
					21:41		0.73	117.24	49.40	67.84	1.009			
					22:03	RO	1.41	88.46	70.27	49.98	1.026			
					22:16	RO	0.35	37.40	16.27	47.12	1.036			
					22:23	RO	0.62	54.02	23.50	38.16	1.041			

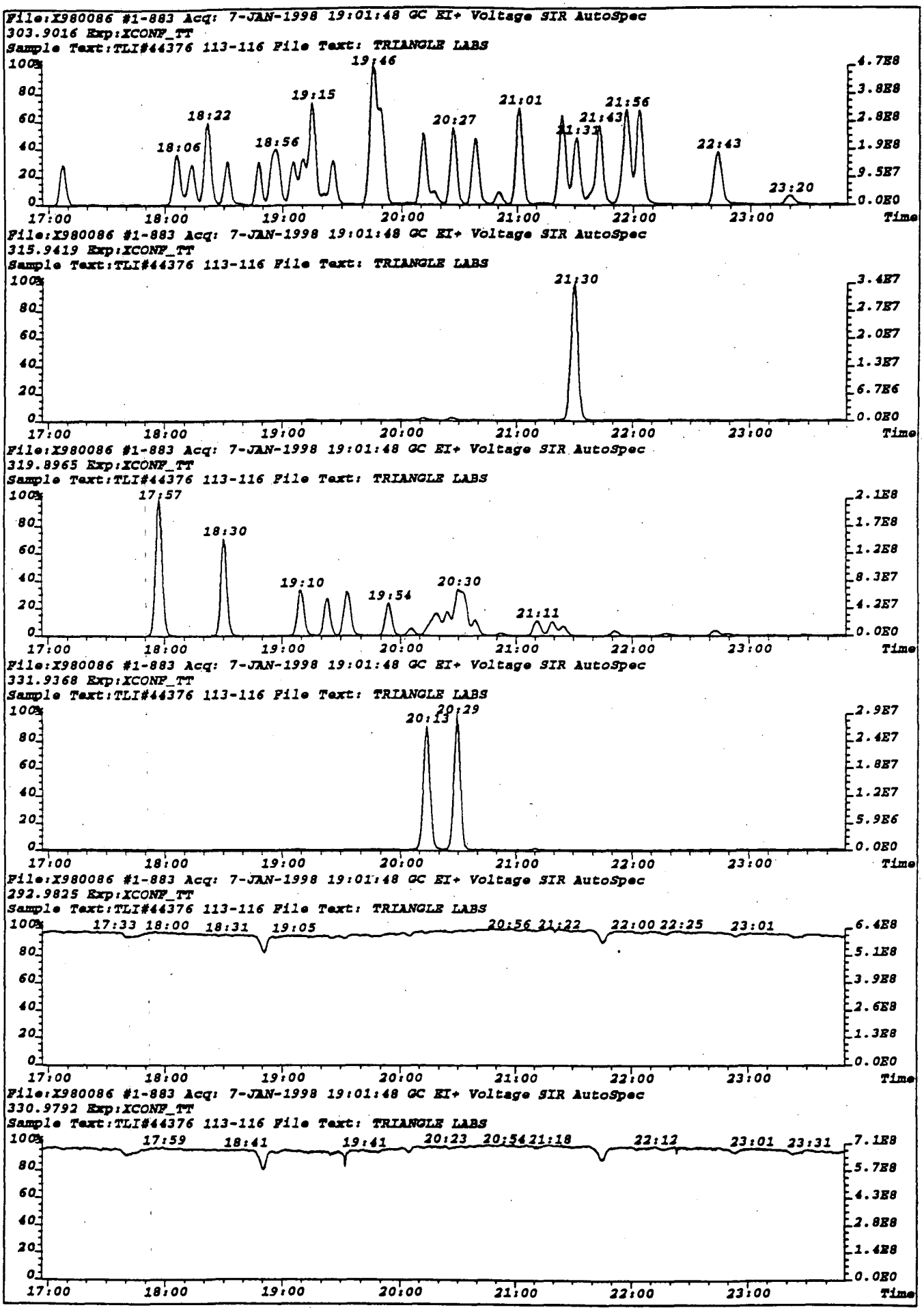
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WH		23:17	RO	0.97	164.47			1.083			
	DC	WH		23:45	RO	2.58	81.84			1.105			
316-318			5 Peaks				32,209.22						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.901-1.099			
332-334	DC	NL		0:00	RO	1.55	46.76			0.000			
				19:08	RO	0.97	112.98	61.88	63.83	0.946			
				20:13		0.78	23,545.00	10,341.80	13,203.20	1.000	13C12-2378-TCDD	IS1	
				20:29		0.80	24,697.60	11,005.90	13,691.70	1.013	13C12-1234-TCDD	RS1	
				21:10		0.73	308.78	130.24	178.54	1.047			
	DC	WH		22:40	RO	0.16	33.61			1.121			
332-334			4 Peaks				48,664.36						

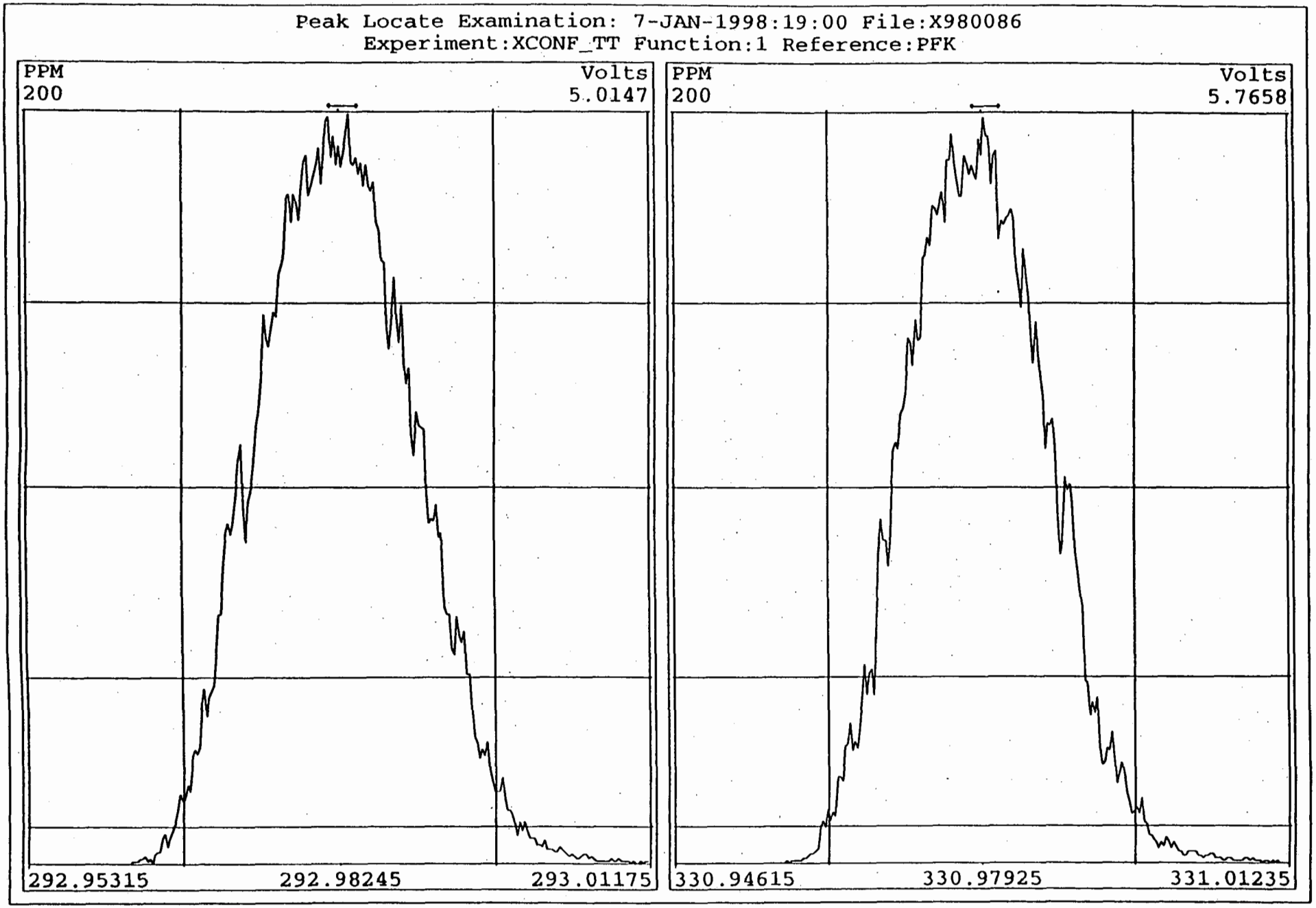
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***


File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:618984
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2475936.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A3.05E9
A1.37E9
A1.08E9
A1.05E9
A9.99E8
A1.30E9
A1.24E9
A1.44E9
A8.26E8
A1.35E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:162401
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,649604.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A3.95E9
A1.76E9
A1.41E9
A1.36E9
A1.29E9
A1.69E9
A1.63E9
A1.90E9
A1.10E9
A2.06E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:10746
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,42984.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A1.42E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:12375
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,49500.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A1.77E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
17:12
18:23
18:56
19:21
20:19
20:54
21:15
22:08
22:46
22:3
23:17
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time


File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:11123
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,44492.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A5.17E8
A2.66E8
A2.10E8
A1.85E8
A4.95E8
A1.01E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:24010
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,96040.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A6.65E8
A3.44E8
A2.68E8
A2.38E8
A6.35E8
A1.30E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:20929
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,83716.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A2.85E8
A2.22E8
A1.26E8
A9.94E7
A2.37E7
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:20485
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,81940.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A1.10E8
A1.03E8
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec Noise:13212
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,52848.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
A1.37E8
A1.32E8
Time


File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
18:06
18:22
18:56
19:15
19:46
20:27
21:01
21:31
21:43
21:56
22:43
23:20
Time
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
21:30
Time
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
17:57
18:30
19:10
19:54
20:30
21:11
Time
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
20:13
20:29
Time
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
17:33 18:00 18:31 19:05
20:56 21:22 22:00 22:25 23:01
Time
File:X980086 #1-883 Acq: 7-JAN-1998 19:01:48 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI#44376 113-116 File Text: TRIANGLE LABS
17:59 18:41 19:41 20:23 20:54 21:18 22:12 23:01 23:31
Time


Peak Locate Examination: 7-JAN-1998:19:00 File:X980086
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
5.0147
292.95315
292.98245
293.01175
PPM
200
Volts
5.7658
330.94615
330.97925
331.01235

Eastern Research Group

TLI Project: **44376** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **121-124/219** Analysis File: **T980157**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-5A-D/**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	2.5			0.79	26:22	___
1,2,3,7,8-PeCDD	14.3			1.56	30:31	___
1,2,3,4,7,8-HxCDD	17.0			1.21	33:37	Q__
1,2,3,6,7,8-HxCDD	31.2			1.22	33:43	___
1,2,3,7,8,9-HxCDD	55.3			1.22	34:01	QPR
1,2,3,4,6,7,8-HpCDD	98.8			1.01	37:05	E__
1,2,3,4,6,7,8,9-OCDD	79.8			0.81	40:56	___
2,3,7,8-TCDF	EMPC		~~132~~ >4			SE_
1,2,3,7,8-PeCDF	EMPC		~~67.5~~ >20			SE_
2,3,4,7,8-PeCDF	EMPC		~~97.5~~ >20			QSE
2,3,4,7,8-HxCDF	~~127~~ >20			1.07	32:56	QSE
1,2,3,6,7,8-HxCDF	~~79.2~~ >20			1.09	33:02	SE_
2,3,4,6,7,8-HxCDF	~~107~~ >20			1.11	33:32	SE_
1,2,3,7,8,9-HxCDF	7.2			1.23	34:18	PR_
1,2,3,4,6,7,8-HpCDF	~~152~~ >20			1.02	36:02	SE_
1,2,3,4,7,8,9-HpCDF	39.9			1.04	37:37	Q
1,2,3,4,6,7,8,9-OCDF	52.4			0.91	41:10	___

OK 1/15/98

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	~~359~~ >4	12			SE_
Total PeCDD	~~190~~ >20	8		~~382~~ >20	SQE
Total HxCDD	~~452~~ >20	7			SQE
Total HpCDD	OK 1/15/98 ~~196~~ 196	2			E__
Total TCDF	~~376~~ >4	8		~~1240~~ >4	SQE
Total PeCDF	~~50.6~~ >20	6		~~1170~~ >20	SQE
Total HxCDF	~~671~~ >20	12		~~680~~ >20	SQE
Total HpCDF	~~299~~ >20	4			SEQ

OK 1/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:27 01/15/98

Eastern Research Group

TLI Project: 44376 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 121-124/219 — Analysis File: T980157

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	1.8	45.0	40%-130%	0.86	25:43	Q
$^{13}C_{12}$-2,3,7,8-TCDD	2.5	62.2	40%-130%	0.79	26:21	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.7	67.0	40%-130%	1.51	29:31	Q
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.5	86.7	40%-130%	1.48	30:31	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.9	71.9	40%-130%	0.56	33:00	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.8	69.3	40%-130%	1.15	33:42	Q
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.0	74.2	25%-130%	0.48	36:00	Q
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.5	112	25%-130%	1.05	37:05	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.5	119	25%-130%	0.90	40:55	

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.9	96.3	70%-140%		26:22	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.1	103	70%-140%	1.47	30:12	Q
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.4	84.2	70%-140%	0.59	32:54	Q
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	5.2	129	70%-140%	1.15	33:37	Q
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	5.1	127	70%-140%	0.46	37:37	Q

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.4	85.3	40%-130%	0.51	34:18	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.9	71.4	40%-130%	0.57	33:30	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	26:10	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.17	34:01	

Data Reviewer: 6YY 01/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:27 01/15/98

Initial ....Date...

Data Review By: GSK 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside
ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980157B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.878-1.073			
304-306	DC	NL		0:00	RO	3.18	4.92			0.000			
				22:40		0.89	64,446.00	30,343.60	34,102.40	0.881			QSE
				23:09		0.88	62,432.60	29,149.20	33,283.40	0.900			QSE
				23:22	RO	0.90	63,674.33	32,328.20	35,974.20	0.909			QSE
				24:24	RO	0.96	128,050.83	69,425.00	72,345.10	0.949			QSE
				24:53	RO	0.52	89,158.58	38,786.50	75,119.40	0.968			QSE
				25:18	RO	0.93	60,897.20	31,838.30	34,405.20	0.984			QSE
				25:32		0.89	82,871.60	39,074.20	43,797.40	0.993			QSE
				25:43	RO	0.96	83,948.45	45,455.60	47,428.50	1.000	2378-TCDF	AN	SE
				26:06	RO	0.95	62,754.47	33,589.40	35,454.50	1.015			QSE
				26:18	RO	0.91	65,217.24	33,403.80	36,845.90	1.023			QSE
				26:33		0.80	17,205.51	7,634.63	9,570.88	1.032			QE
				26:50		0.89	302.89	142.42	160.47	1.043			Q
				27:01		0.80	1,396.99	840.75	1,056.24	1.051			Q
				27:22		0.80	9,510.60	4,237.30	5,273.30	1.064			QE
				27:35		0.81	1,432.01	639.40	792.61	1.073			Q
304-306			15	Peaks			793,799.30						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00	RO	2.29	10.48			0.000			
	DC	WL		22:40	RO	1.83	39.91			0.881			
	DC	WL		23:09	RO	3.09	40.34			0.900			
	DC	WL		23:22	RO	2.29	35.22			0.909			
	DC	WL		23:32	RO	1.40	65.86			0.915			
	DC	WL		23:45	RO	2.74	140.41			0.924			
	DC	WL		24:05	RO	1.62	162.45			0.936			
	DC	WL		24:26	RO	1.46	182.29			0.950			
	DC	WL		24:42	RO	2.52	89.79			0.960			
				24:55	RO	2.54	116.17	166.70	65.63	0.969			
				25:08	RO	2.07	116.63	136.62	65.89	0.977			
				25:17	RO	1.68	67.91	64.30	38.37	0.983			
				25:31	RO	1.27	126.34	90.73	71.38	0.992			
				25:43		0.86	1,862.09	862.57	999.52	1.000	13C12-2378-TCDF	ISO	Q
				26:07	RO	2.32	56.53	74.25	31.94	1.016			
				26:18	RO	1.22	135.79	93.23	76.72	1.023			
	DC	WH		27:43	RO	1.08	18.12			1.078			
316-318			7	Peaks			2,481.46						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.903-1.045			
320-322	DC	NL		0:00	RO	1.18	18.18			0.000			
				23:56		0.89	64,933.80	30,653.60	34,280.20	0.908			SE

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				24:18		0.80	47,501.70	21,073.60	26,428.10	0.922			E
				24:35		0.77	17,252.01	7,523.17	9,728.84	0.933			E
				25:14		0.77	38,260.00	16,663.80	21,596.20	0.958			E
				25:30		0.78	25,113.80	10,990.20	14,123.60	0.968			E
				25:52		0.78	13,685.36	6,017.66	7,667.70	0.982			E
	M			26:16		0.79	35,000.00	15,500.00	19,500.00	0.997			E
	AN			26:22		0.79	1,761.00	779.00	982.00	1.001	2378-TCDD	AN	
				26:32		0.77	4,890.16	2,125.31	2,764.85	1.007			
				26:41		0.77	3,526.83	1,536.40	1,990.43	1.013			
				26:53		0.78	1,293.12	568.04	725.08	1.020			
				27:20		0.77	1,365.92	595.00	770.92	1.037			
320-322		12	Peaks				254,583.70						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			1.48			0.000			
	DC	WL		23:56			422.38			0.908			
	DC	WL		24:10			712.60			0.917			
	DC	WL		24:17			447.26			0.922			
				24:28			32.72	32.72		0.929			
				24:35			102.48	102.48		0.933			
				24:59			7,429.21	7,429.21		0.948			
				25:14			214.41	214.41		0.958			
				25:30			133.85	133.85		0.968			
				25:41			43.95	43.95		0.975			
				25:52			73.58	73.58		0.982			
				26:22			2,014.14	2,014.14		1.001	37Cl-TCDD	SUR1	
				26:31			41.13	41.13		1.006			
				26:44			12,866.80	12,866.80		1.015			
328		10	Peaks				22,952.27						
13C12-TCDD						0.65-0.89				0.924-1.076			
332-334	DC	NL		0:00	RO	1.87	5.84			0.000			
	DC	WL		24:19		0.86	17.72			0.923			
				24:27		0.66	12.34	4.91	7.43	0.928			
	DC	SN		24:34		0.69	3.54			0.932			
				24:42		0.88	13.30	6.21	7.09	0.937			
				25:15	RO	0.42	16.53	7.19	17.20	0.958			
				25:34	RO	0.99	51.19	28.69	28.92	0.970			
				25:46	RO	1.52	20.62	17.73	11.65	0.978			
				26:10		0.80	2,678.04	1,194.31	1,483.73	0.993	13C12-1234-TCDD	RS1	
				26:21		0.79	2,078.71	915.75	1,162.96	1.000	13C12-2378-TCDD	IS1	
				26:40		0.65	50.16	19.83	30.33	1.012			
				27:08	RO	1.97	8.48	9.45	4.79	1.030			
				27:16	RO	0.34	6.60	2.87	8.36	1.035			
				27:33	RO	0.94	8.57	4.55	4.84	1.046			
332-334		11	Peaks				4,944.54						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.931-1.063			
340-342	DC	NL		0:00	RO	0.77	3.77			0.000			
				27:34	RO	1.10	60,840.53	36,981.50	33,574.30	0.934			QSE

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				27:50	RO	1.29	1,078.35	655.47	507.73	0.943			Q
				28:01		1.37	553.91	320.05	233.86	0.949			Q
				28:11		1.50	1,518.99	911.79	607.20	0.955			Q
				28:18		1.64	770.10	478.43	291.67	0.959			Q
				28:33	RO	1.25	45,396.91	27,594.20	22,031.40	0.967			QSE
				28:41	RO	1.05	80,509.42	48,937.10	46,657.10	0.972			QSE
				28:51	RO	1.20	49,418.34	30,038.60	25,036.60	0.977			QSE
				29:10	RO	1.19	78,182.34	47,522.60	39,990.50	0.988			QSE
				29:15	RO	1.11	59,155.72	35,957.40	32,540.30	0.991			QSE
				29:26	RO	1.26	40,462.74	24,595.00	19,472.10	0.997			QSE
				29:32	RO	1.30	41,090.54	24,976.60	19,192.90	1.001	12378-PeCDF	AN	SE
				29:40	RO	1.26	42,890.51	26,070.70	20,769.60	1.005			QSE
				29:49	RO	1.22	54,284.24	32,996.30	27,062.60	1.010			QSE
				30:13	RO	1.12	59,293.75	36,041.30	32,132.30	1.024	23478-PeCDF	AN	QSE
				30:20	RO	1.16	67,671.41	41,133.60	35,539.70	1.028			QSE
				30:39		1.50	14,588.02	8,747.06	5,840.96	1.038			Q
				30:51		1.71	871.14	549.54	321.60	1.045			Q
				31:08		1.49	12,456.17	7,453.74	5,002.43	1.055			Q
340-342			19 Peaks				711,033.13						
13C12-PeCDF				1.32-1.78						0.864-1.136			
352-354	DC	NL		0:00	RO	1.18	4.71			0.000			
				27:35	RO	2.65	71.83	74.62	28.17	0.935			
				27:44	RO	1.07	26.93	16.37	15.36	0.940			
				28:22	RO	0.60	27.97	17.00	28.12	0.961			
				28:33		1.67	66.33	41.77	25.06	0.967			
				28:41	RO	2.49	163.48	159.88	64.11	0.972			
				28:51		1.51	115.14	69.25	45.89	0.977			
				29:10	RO	3.09	53.17	64.38	20.85	0.988			
				29:15	RO	2.69	70.56	74.47	27.67	0.991			
				29:31		1.51	2,295.93	1,381.31	914.62	1.000	13C12-PeCDF 123	IS2	Q
				29:40	RO	2.10	47.33	38.91	18.56	1.005			
				29:48	RO	2.15	149.07	125.82	58.46	1.010			
				30:12		1.47	2,347.72	1,396.47	951.25	1.023	13C12-PeCDF 234	SUR2	Q
				30:21	RO	1.80	140.02	99.10	54.91	1.028			
				30:46		1.39	13.60	7.91	5.69	1.042			
				31:08	RO	1.91	39.93	29.84	15.66	1.055			
				31:25	RO	0.89	15.99	9.72	10.96	1.064			
352-354			16 Peaks				5,645.50						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.939-1.022			
356-358	DC	NL		0:00	RO	1.15	5.26			0.000			
				28:47	RO	1.06	53,890.55	32,757.00	30,909.70	0.943			SE
				29:14		1.55	5,970.75	3,624.86	2,345.89	0.958			
				29:29	RO	1.26	42,323.58	25,726.10	20,378.10	0.966			QSE
				29:36		1.52	6,785.95	4,095.69	2,690.26	0.970			Q
				29:47		1.49	35,507.10	21,251.90	14,255.20	0.976			E
				30:02		1.54	18,424.99	11,158.90	7,266.09	0.984			
				30:14		1.55	15,174.91	9,212.68	5,962.23	0.991			
				30:22	RO	0.63	5,941.04	3,611.22	5,738.32	0.995			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:31		1.56	7,610.11	4,633.94	2,976.17	1.000	12378-PeCDD	AN	
				30:38		1.53	5,623.71	3,400.65	2,223.06	1.004			
				30:58		1.55	6,185.57	3,757.35	2,428.22	1.015			
356-358			11	Peaks			203,438.26						
13C12-PeCDD					1.32-1.78					0.869-1.131			
368-370	DC	NL		0:00	RO	0.27	1.65			0.000			
				28:47	RO	1.85	92.34	66.89	36.21	0.943			
				29:09		1.63	17.98	11.14	6.84	0.955			
				29:15		1.36	18.82	10.84	7.98	0.958			
				29:29	RO	2.08	46.28	37.80	18.15	0.966			
				29:41	RO	2.21	8.03	6.97	3.15	0.973			
				29:47	RO	1.86	29.76	21.69	11.67	0.976			
				30:03	RO	1.94	48.91	37.26	19.18	0.985			
				30:14		1.58	32.34	19.81	12.53	0.991			
				30:20		1.39	25.04	14.56	10.48	0.994			
				30:31		1.48	1,648.36	984.30	664.06	1.000	13C12-PeCDD 123	IS3	
				30:38		1.43	167.64	98.59	69.05	1.004			
	DC	SN		30:53		1.44	5.73			1.012			
				30:58	RO	1.25	19.13	11.63	9.27	1.015			
				31:10	RO	3.24	13.87	17.64	5.44	1.021			
				31:25	RO	0.64	7.09	4.31	6.72	1.029			
				31:33	RO	0.39	5.40	3.28	8.49	1.034			
368-370			15	Peaks			2,180.99						

---------- Above: PeCDD / HxCDF Follows ----------

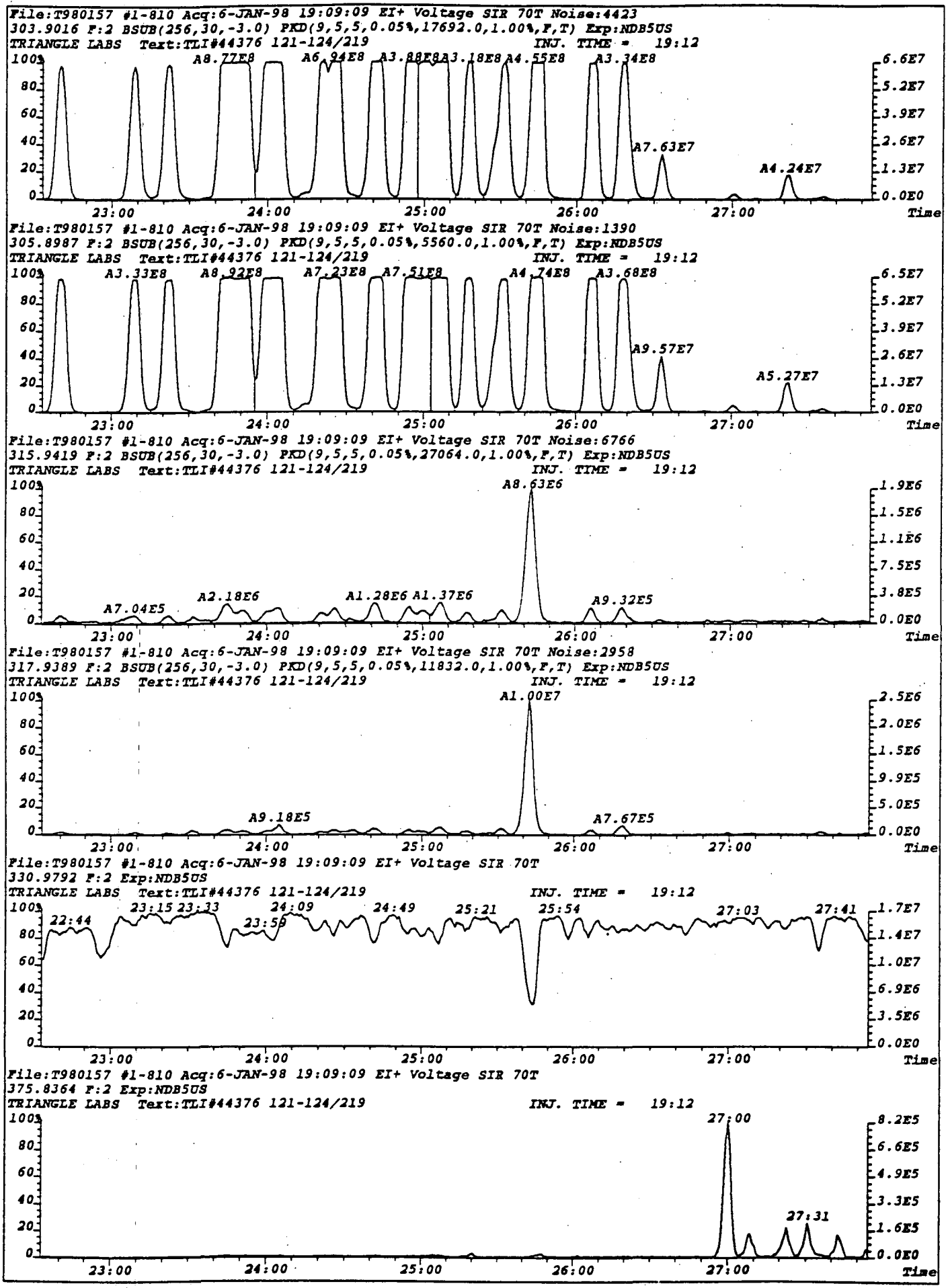
HxCDF					1.05-1.43					0.964-1.049			
374-376	DC	NL		0:00		1.22	269.51			0.000			
				31:57		1.16	46,841.30	25,110.00	21,731.30	0.968			SE
				32:07		1.07	71,794.40	37,041.60	34,752.80	0.973			SE
				32:14		1.26	10,427.19	5,819.79	4,607.40	0.977			
				32:23		1.25	17,082.98	9,493.19	7,589.79	0.981			
				32:32		1.27	8,409.61	4,701.37	3,708.24	0.986			
	X		X	32:44	RO	1.27	641.58	359.36	282.22	0.992			
				32:56		1.07	77,283.50	39,984.30	37,299.20	0.998	123478-HxCDF	AN	QSE
				33:02		1.09	54,328.10	28,377.30	25,950.80	1.001	123678-HxCDF	AN	SE
				33:08		1.26	12,573.09	7,015.76	5,557.33	1.004			
				33:19		1.26	25,383.70	14,156.50	11,227.20	1.010			E
	AX		X	33:26	RO	1.24	2,620.00	1,450.00	1,170.00	1.013			
	M			33:32		1.11	58,800.00	30,900.00	27,900.00	1.016	234678-HxCDF	AN	SE
	AX		X	34:15	RO	1.26	2,011.00	1,120.00	891.00	1.038			
	AN			34:18		1.23	3,730.00	2,060.00	1,670.00	1.039	123789-HxCDF	AN	PR
	M			34:23		1.27	14,890.00	8,320.00	6,570.00	1.042			
	DC	WH		34:47		1.25	913.88			1.054			
374-376			15	Peaks			406,816.45						
13C12-HxCDF					0.43-0.59					0.879-1.121			
384-386	DC	NL		0:00	RO	1.44	12.70			0.000			
				31:57	RO	2.44	18.30	29.59	12.12	0.968			
				32:06	RO	3.16	40.26	84.23	26.66	0.973			
				32:40	RO	2.71	9.60	17.23	6.36	0.990			

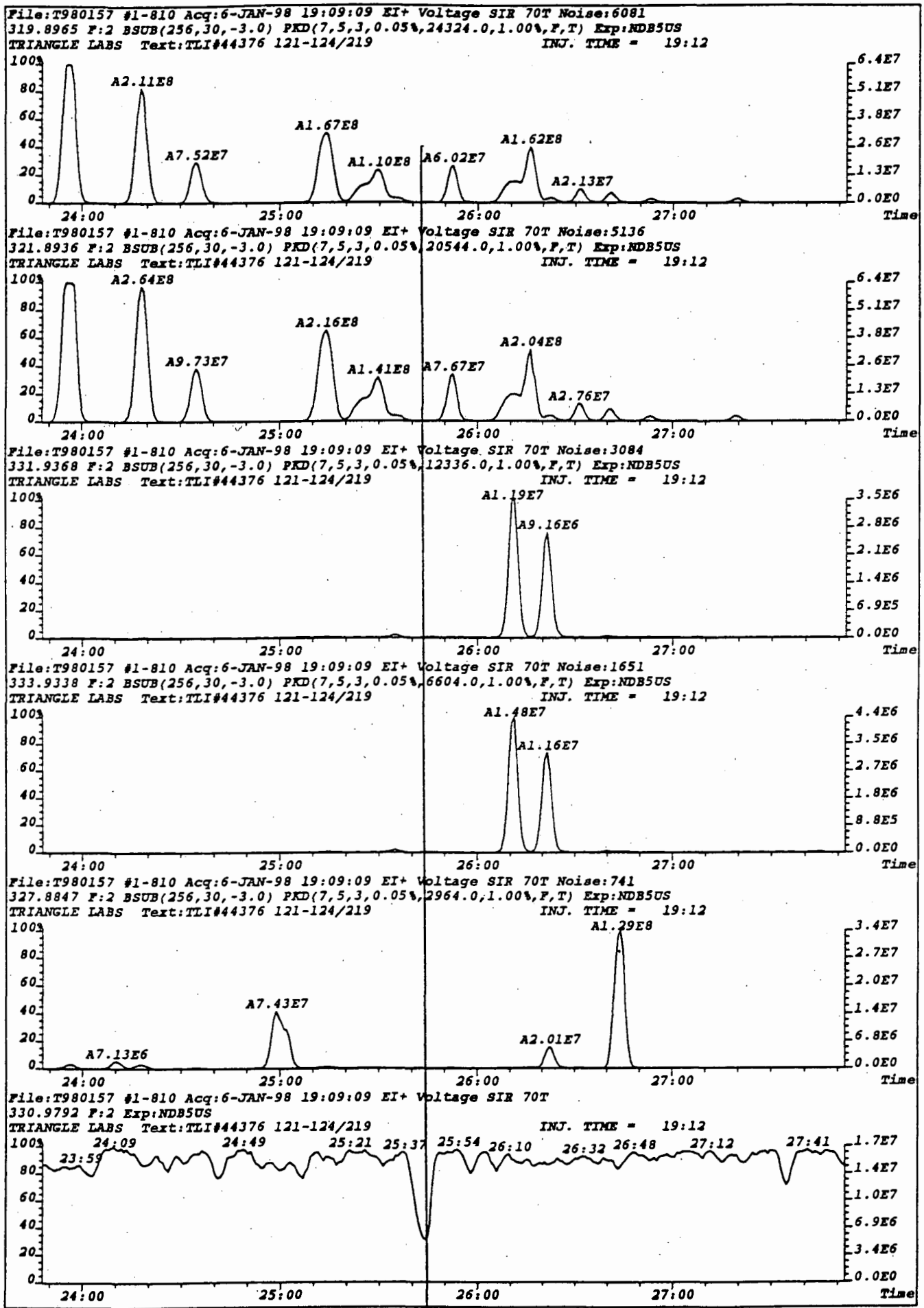
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:54		0.59	1,639.47	607.70	1,031.77	0.997	13C12-HxCDF 478	SUR3	
				33:00		0.56	2,114.29	760.49	1,353.80	1.000	13C12-HxCDF 678	IS4	
				33:30		0.57	2,001.34	728.47	1,272.87	1.015	13C12-HxCDF 234	ALT2	
				33:51	RO	4.15	13.02	35.76	8.62	1.026			
				33:59	RO	2.58	12.68	21.68	8.40	1.030			
				34:18		0.51	1,893.09	642.15	1,250.94	1.039	13C12-HxCDF 789	ALT1	
384-386			9	Peaks			7,742.05						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.015			
390-392	DC	NL		0:00	RO	0.99	42.99			0.000			
				32:25		1.21	19,116.21	10,483.60	8,632.61	0.962			QE
				32:52		1.08	53,726.70	27,945.10	25,781.60	0.975			QSE
				33:05		1.20	41,368.20	22,559.80	18,808.40	0.982			QE
				33:16		1.21	6,335.02	3,463.17	2,871.85	0.987			Q
				33:37		1.21	5,413.55	2,959.82	2,453.73	0.998	123478-HxCDD	AN	Q
				33:43		1.22	11,231.51	6,167.28	5,064.23	1.000	123678-HxCDD	AN	
				34:01		1.22	19,740.06	10,842.20	8,897.86	1.009	123789-HxCDD	AN	QPRE
390-392			7	Peaks			156,931.25						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00		1.42	14.77			0.000			
				32:54	RO	1.64	20.70	15.15	9.24	0.976			
				33:04	RO	1.66	35.39	26.29	15.80	0.981			
				33:17	RO	2.33	18.77	19.54	8.38	0.988			
				33:25		1.21	15.37	8.40	6.97	0.992			
				33:37		1.15	1,510.38	808.70	701.68	0.998	13C12-HxCDD 478	SUR4	Q
				33:42		1.15	1,440.65	771.72	668.93	1.000	13C12-HxCDD 678	IS5	Q
				34:01		1.17	2,081.64	1,123.15	958.49	1.009	13C12-HxCDD 789	RS2	
	DC	SN		34:11	RO	1.96	5.20			1.014			
402-404			7	Peaks			5,122.90						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.998-1.053			
408-410	DC	NL		0:00	RO	1.22	27.23			0.000			
				36:02		1.02	77,066.10	38,893.80	38,172.30	1.001	1234678-HpCDF	AN	SE
				36:18		1.04	25,034.40	12,788.70	12,245.70	1.008			E
				36:27		1.06	22,919.70	11,776.60	11,143.10	1.013			E
D	D	NH		36:56		1.19	74.52			1.026			
				37:37		1.04	15,408.25	7,865.70	7,542.55	1.045	1234789-HpCDF	AN	
408-410			4	Peaks			140,428.45						
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	1.66	10.12			0.000			
M				36:00		0.48	1,377.00	449.00	928.00	1.000	13C12-HpCDF 678	IS6	
				36:09	RO	1.40	18.62	18.11	12.93	1.004			
				36:25	RO	2.20	10.60	16.19	7.36	1.012			
				36:33	RO	1.43	12.38	12.34	8.60	1.015			
				37:37		0.46	1,359.65	425.90	933.75	1.045	13C12-HpCDF 789	SUR5	
418-420			5	Peaks			2,778.25						

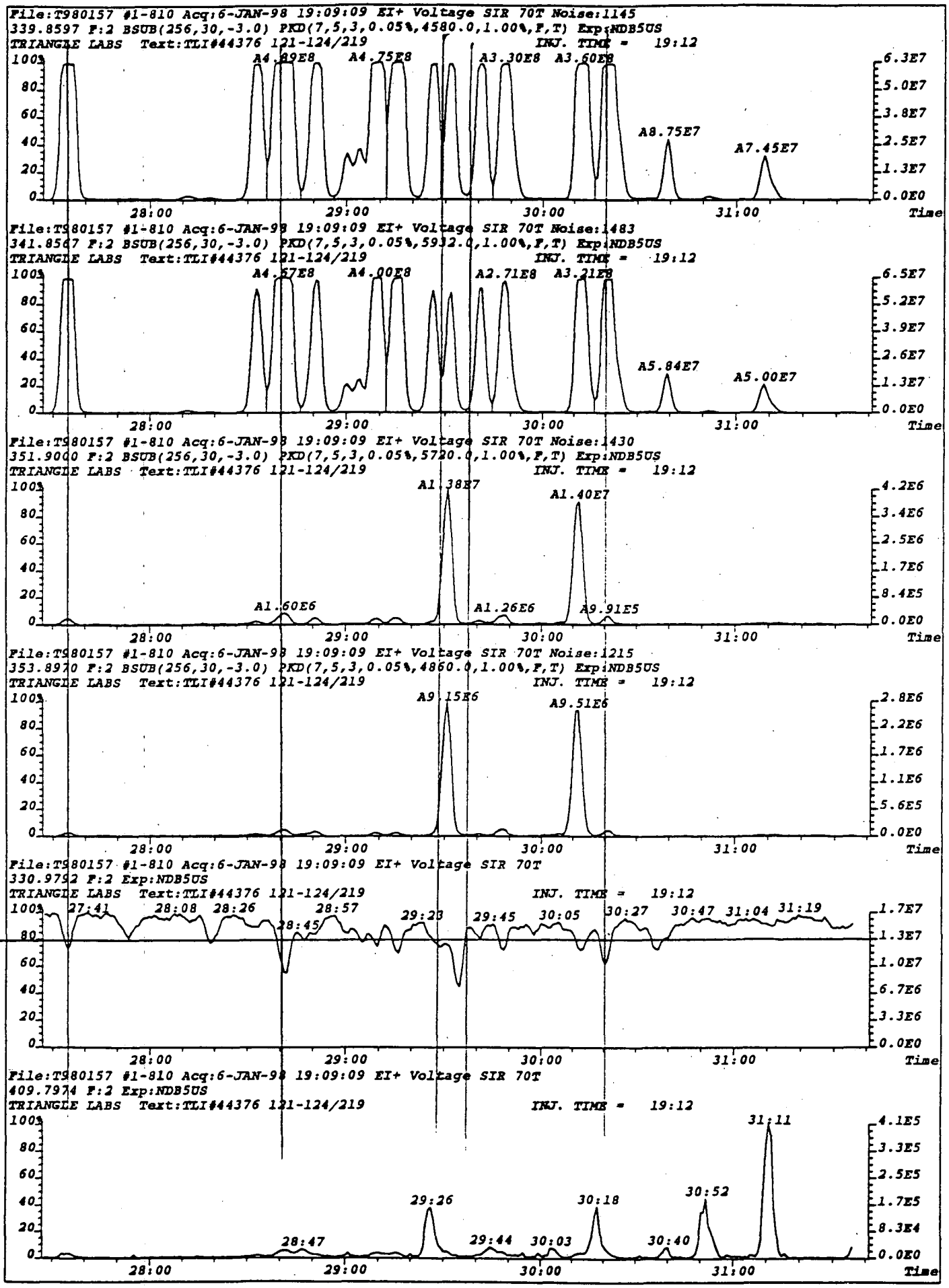
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.976-1.006			
424-426	DC	NL		0:00	RO	1.42	9.73			0.000			
				36:18		1.02	42,282.40	21,324.10	20,958.30	0.979			E
				37:05		1.01	43,210.20	21,693.60	21,516.60	1.000	1234678-HpCDD	AN	E
424-426			2 Peaks				85,492.60						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00	RO	1.46	4.20			0.000			
				36:16	RO	1.43	39.00	27.32	19.12	0.978			
				36:30	RO	1.98	24.13	23.46	11.83	0.984			
	DC	SN		36:46	RO	1.60	2.75			0.991			
				37:05		1.05	1,689.52	867.10	822.42	1.000	13C12-HpCDD 678	IS7	
				37:17	RO	2.00	34.09	33.35	16.71	1.005			
				37:26	RO	2.21	31.86	34.57	15.62	1.009			
436-438			5 Peaks				1,818.60						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00	RO	1.95	1.81			0.000			
	DC	WL		36:14	RO	1.38	26.72			0.886			
				39:05		0.90	29.56	13.99	15.57	0.955			
				41:10		0.91	22,899.80	10,882.00	12,017.80	1.006	OCDF	AN	
442-444			2 Peaks				22,929.36						
OCDD						0.76-1.02				0.902-1.098			
458-460	DC	NL		0:00	RO	0.62	1.61			0.000			
				40:56		0.81	26,985.20	12,096.80	14,888.40	1.000	OCDD	AN	
458-460			1 Peak				26,985.20						
13C12-OCDD						0.76-1.02				0.998-1.006			
470-472	DC	NL		0:00	RO	1.69	2.14			0.000			
				40:55		0.90	2,429.33	1,152.03	1,277.30	1.000	13C12-OCDD	IS8	
470-472			1 Peak				2,429.33						

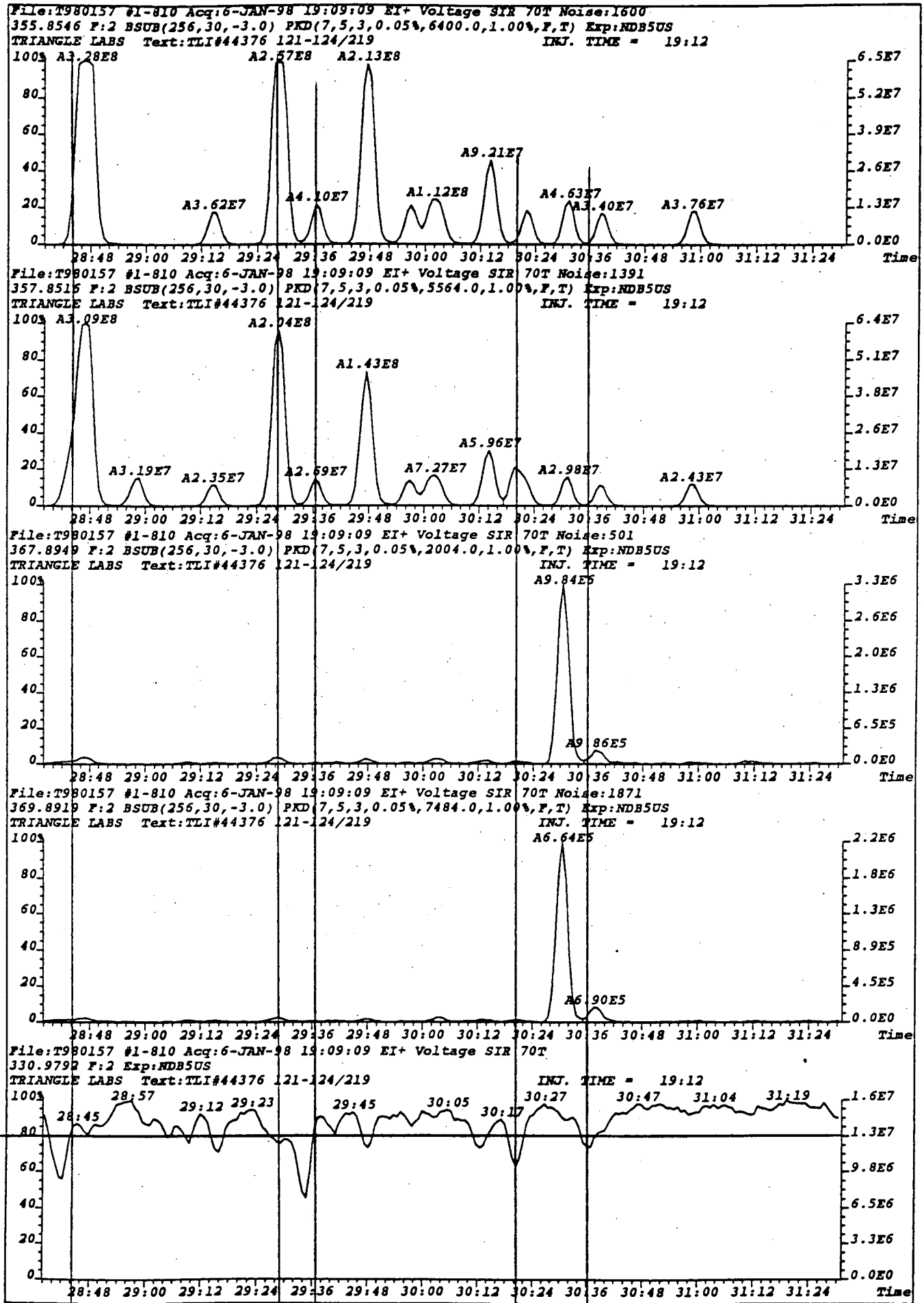
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

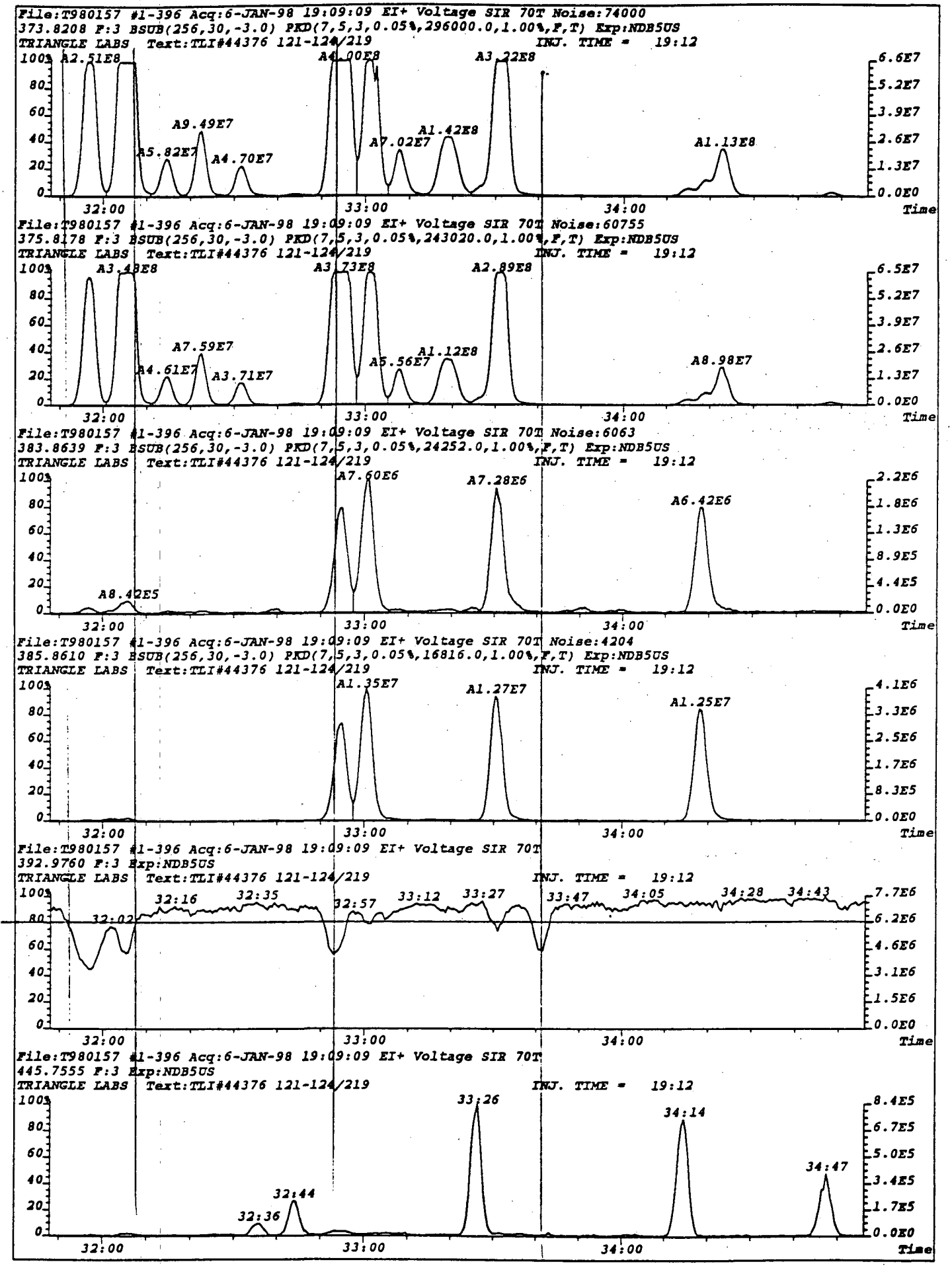
*** End of Report ***

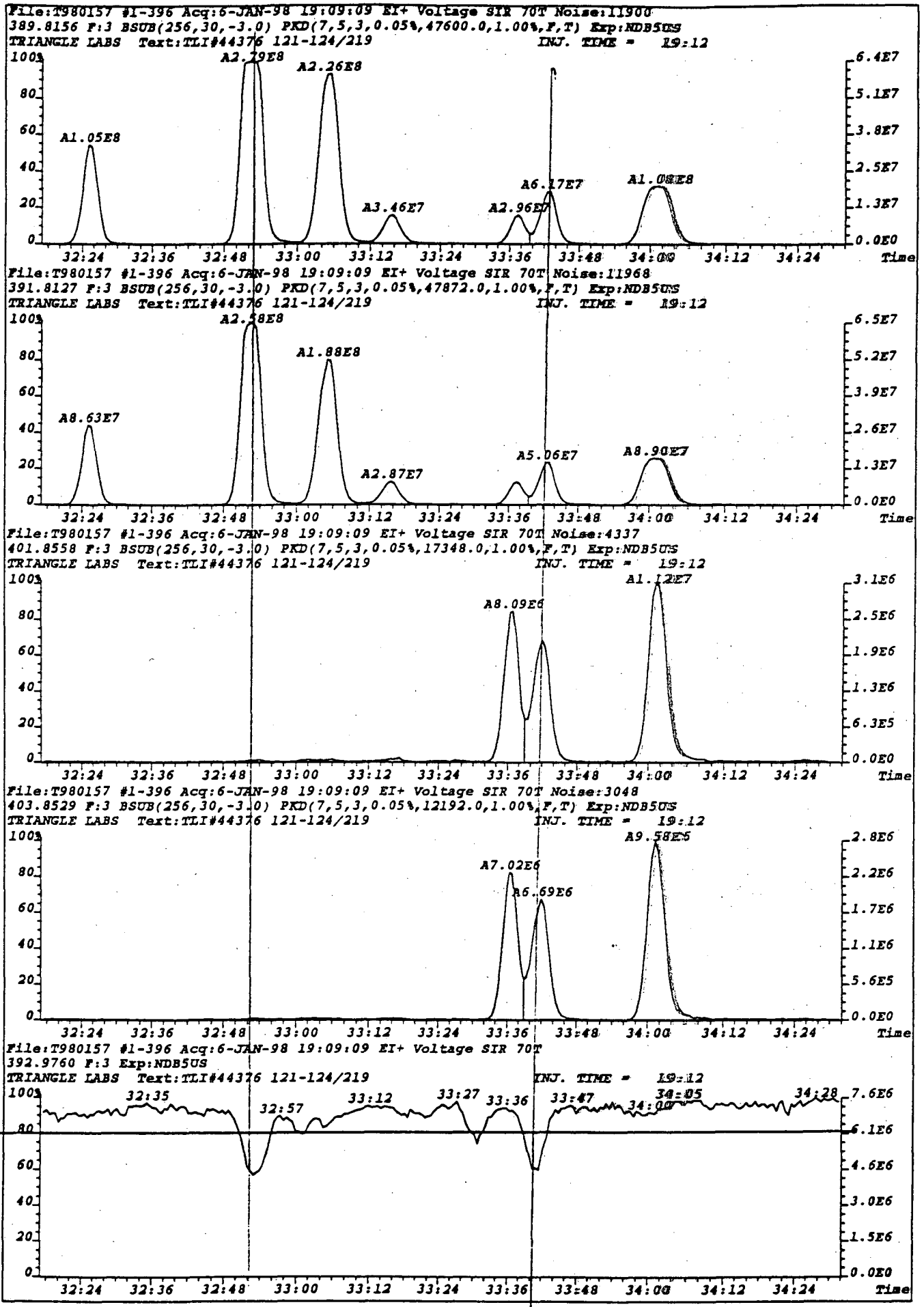

File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:4423
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,17692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.77E8 A6.94E8 A3.88E8 A3.18E8 A4.55E8 A3.34E8 A7.63E7 A4.24E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1390
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,5560.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A3.33E8 A8.92E8 A7.23E8 A7.51E8 A4.74E8 A3.68E8 A9.57E7 A5.27E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:6766
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,27064.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.63E6 A7.04E5 A2.18E6 A1.28E6 A1.37E6 A9.32E5
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:2958
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,11832.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.00E7 A9.18E5 A7.67E5
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
22:44 23:15 23:33 23:58 24:09 24:49 25:21 25:54 27:03 27:41
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
27:00 27:31
23:00 24:00 25:00 26:00 27:00 Time

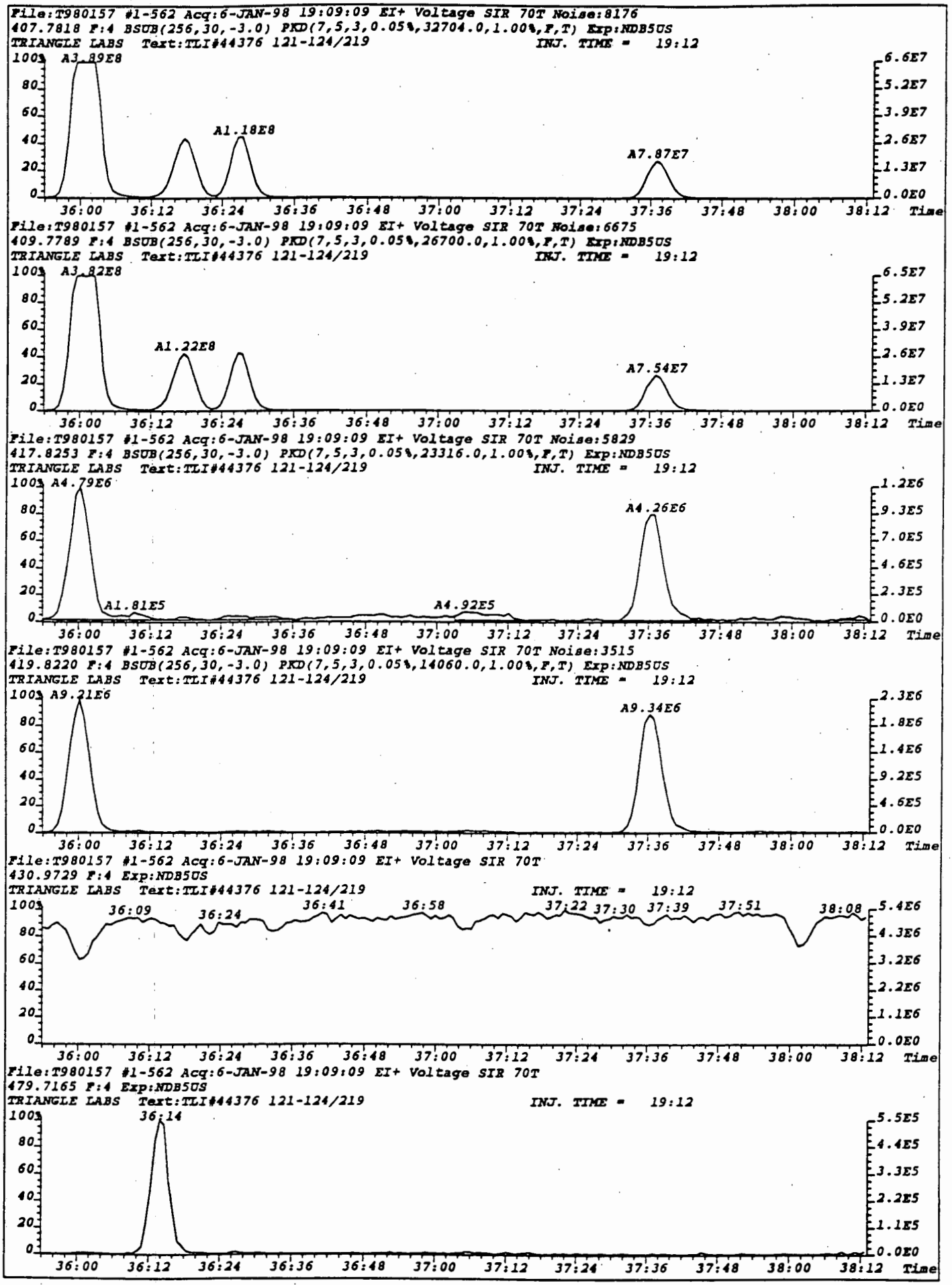

File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:6081
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,24324.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A2.11E8
A7.52E7
A1.67E8
A1.10E8
A6.02E7
A1.62E8
A2.13E7
24:00
25:00
26:00
27:00
Time
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:5136
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,20544.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A2.64E8
A9.73E7
A2.16E8
A1.41E8
A7.67E7
A2.04E8
A2.76E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:3084
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12336.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.19E7
A9.16E6
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1651
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6604.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.48E7
A1.16E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:741
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2964.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.29E8
A7.43E7
A7.13E6
A2.01E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
23:59
24:09
24:49
25:21
25:37
25:54
26:10
26:32
26:48
27:12
27:41

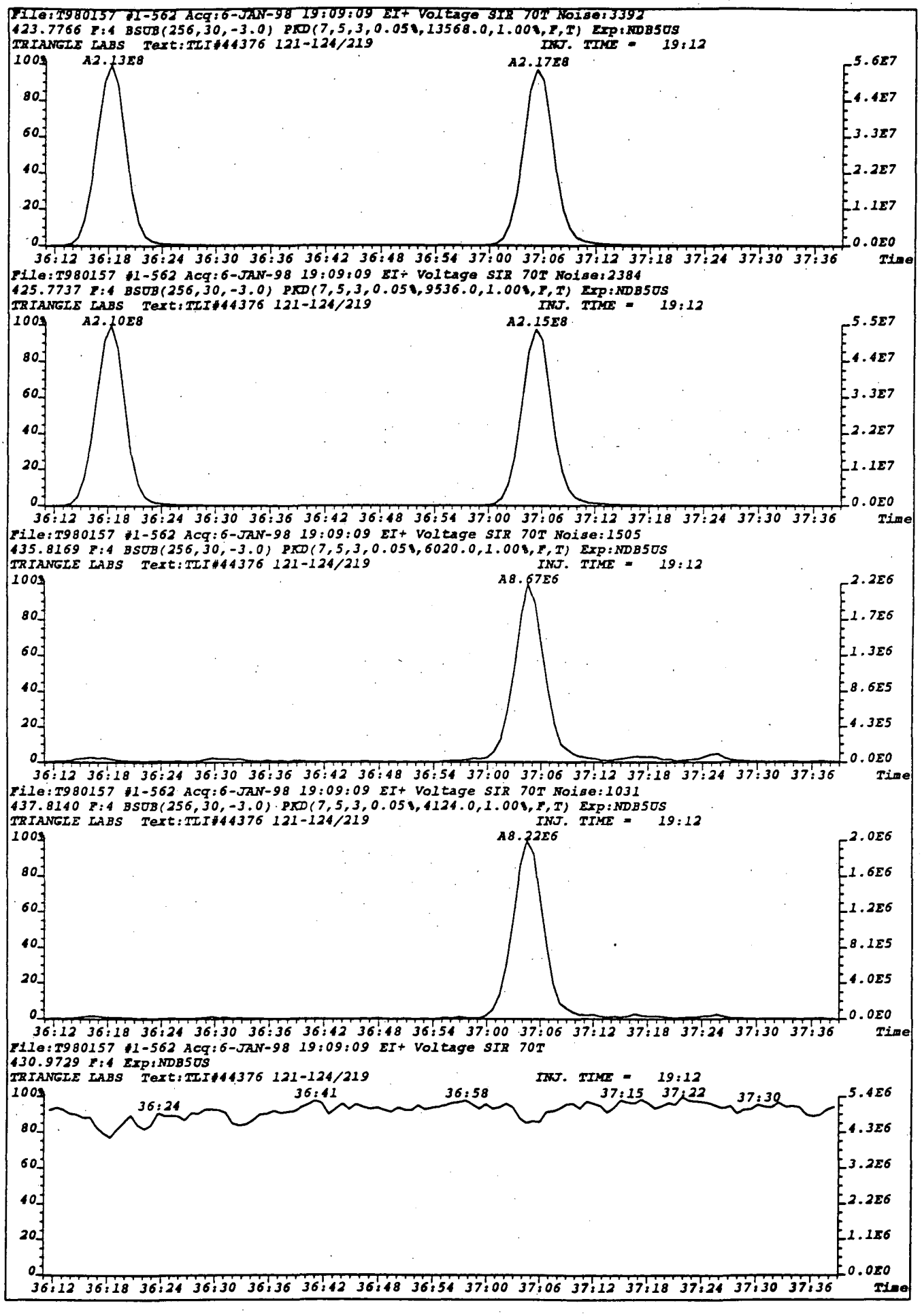

File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1145
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4580.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A4.89E8
A4.75E8
A3.30E8
A3.60E8
A8.75E7
A7.45E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1483
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5932.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A4.57E8
A4.00E8
A2.71E8
A3.21E8
A5.84E7
A5.00E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1430
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5720.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A1.38E7
A1.40E7
A1.60E6
A1.26E6
A9.91E5
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1215
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A9.15E6
A9.51E6
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
27:41
28:08
28:26
28:57
28:45
29:23
29:45
30:05
30:27
30:47
31:04
31:19
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
31:11
29:26
30:18
30:52
28:47
29:44
30:03
30:40
28:00
29:00
30:00
31:00
Time

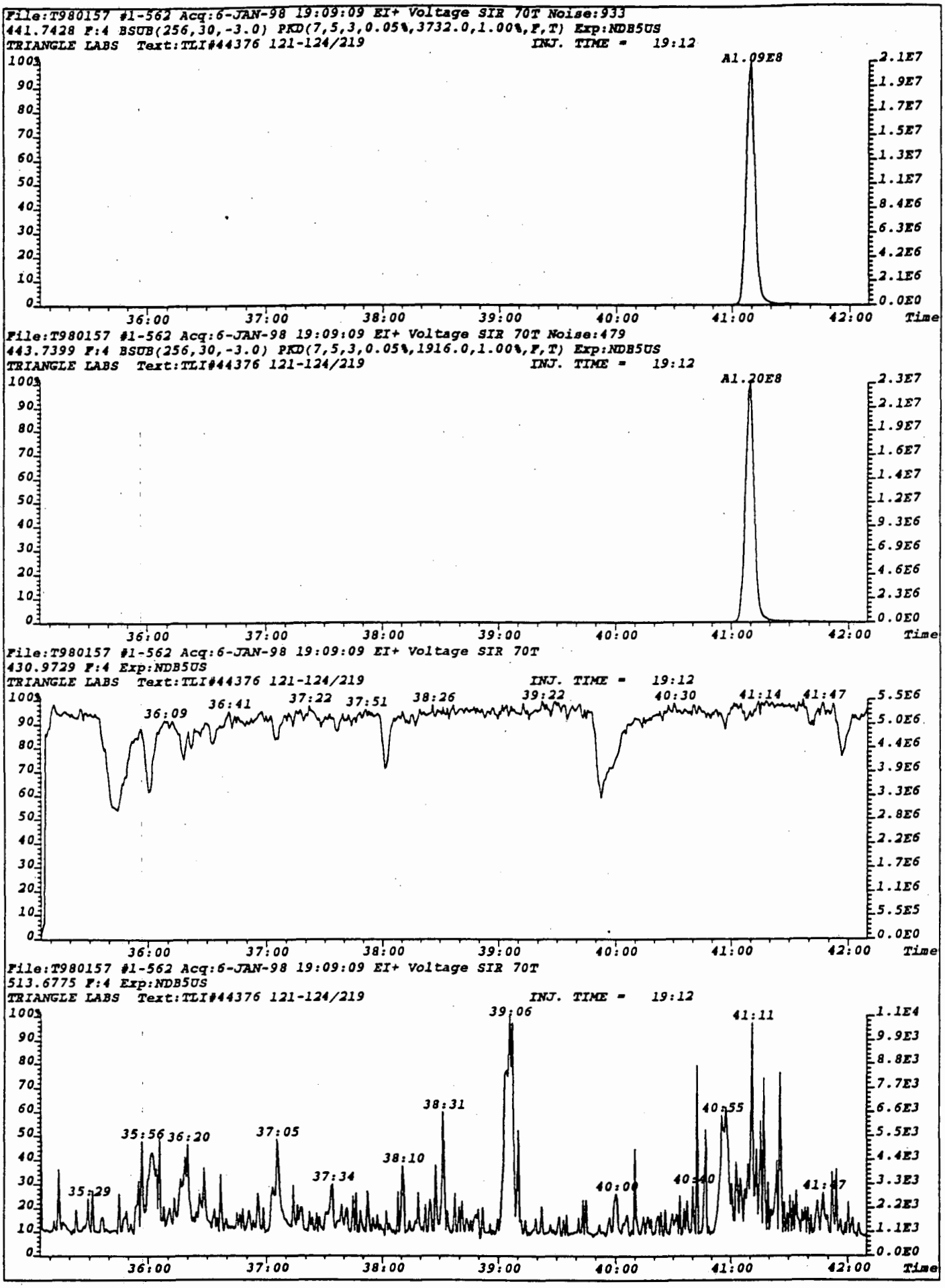

File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1600
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6400.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A3.28E8
A2.57E8
A2.13E8
A9.21E7
A3.62E7
A4.10E7
A1.12E8
A4.63E7
A3.40E7
A3.76E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1391
357.8515 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5564.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A3.09E8
A2.04E8
A1.43E8
A5.96E7
A3.19E7
A2.35E7
A2.69E7
A7.27E7
A2.98E7
A2.43E7
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:501
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2004.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A9.84E5
A9.86E5
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1871
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7484.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A6.64E5
A6.90E5
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
28:45
28:57
29:12
29:23
29:45
30:05
30:17
30:27
30:47
31:04
31:19
28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24
Time


File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:74000
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,296000.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A2.51E8
A9.49E7
A5.82E7
A4.70E7
A7.02E7
A1.42E8
A1.13E8
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:60755
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,243020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A3.48E8
A7.59E7
A4.61E7
A3.71E7
A5.56E7
A1.12E8
A8.98E7
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:6063
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,24252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A7.60E6
A7.28E6
A6.42E6
A8.42E5
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:4204
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,16816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.35E7
A1.27E7
A1.25E7
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
32:16
32:35
32:57
33:12
33:27
33:47
34:05
34:28
34:43
32:02
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
33:26
34:14
34:47
32:44
32:36
32:00
33:00
34:00
Time

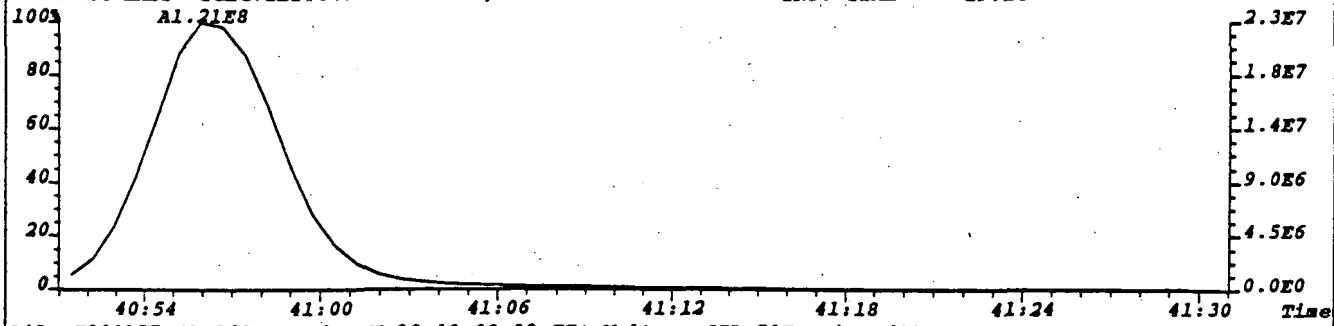

File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:11900
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,47600.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A1.05E8
A2.79E8
A2.26E8
A3.46E7
A2.96E7
A6.17E7
A1.08E8
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:11968
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,47872.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.63E7
A2.58E8
A1.88E8
A2.87E7
A5.06E7
A8.90E7
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:4337
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,17348.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.09E6
A1.12E7
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:3048
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A7.02E6
A6.69E6
A9.58E5
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
32:35
32:57
33:12
33:27
33:36
33:47
34:05
34:28
32:24
32:36
32:48
33:00
33:12
33:24
33:36
33:48
34:00
34:12
34:24
Time


File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:8176
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,32704.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A3.89E8
A1.18E8
A7.87E7
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:6675
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,26700.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A3.82E8
A1.22E8
A7.54E7
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:5829
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,23316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A4.79E6
A1.81E5
A4.92E5
A4.26E6
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:3515
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,14060.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A9.21E6
A9.34E6
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
36:09
36:24
36:41
36:58
37:22
37:30
37:39
37:51
38:08
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
36:14
36:00 36:12 36:24 36:36 36:48 37:00 37:12 37:24 37:36 37:48 38:00 38:12 Time

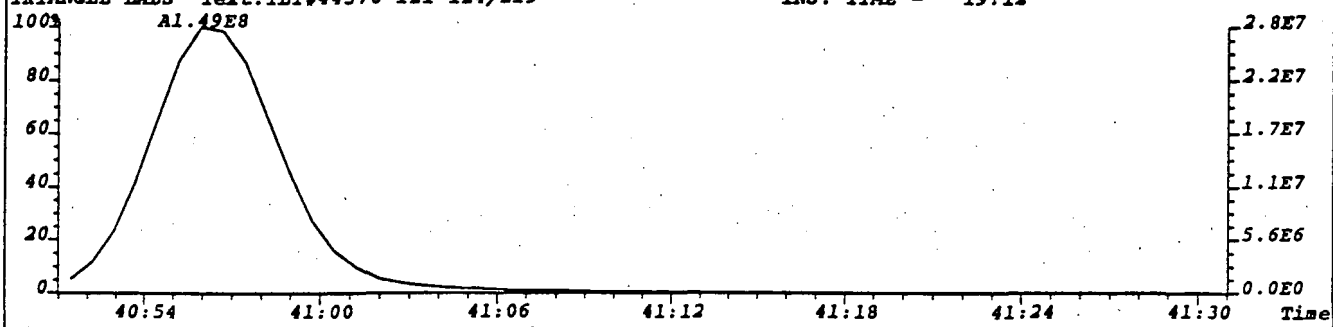

File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:3392
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,13568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A2.13E8
A2.17E8
5.6E7
4.4E7
3.3E7
2.2E7
1.1E7
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:2384
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A2.10E8
A2.15E8
5.5E7
4.4E7
3.3E7
2.2E7
1.1E7
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1505
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.67E6
2.2E6
1.7E6
1.3E6
8.6E5
4.3E5
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:1031
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4124.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
A8.22E6
2.0E6
1.6E6
1.2E6
8.1E5
4.0E5
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12
36:24
36:41
36:58
37:15
37:22
37:30
5.4E6
4.3E6
3.2E6
2.2E6
1.1E6
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time


File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:933
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3732.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A1.09E8
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:479
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1916.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
A1.20E8
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
36:09
36:41
37:22
37:51
38:26
39:22
40:30
41:14
41:47
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219
INJ. TIME = 19:12
35:29
35:56
36:20
37:05
37:34
38:10
38:31
39:06
40:00
40:40
40:55
41:11
41:47
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

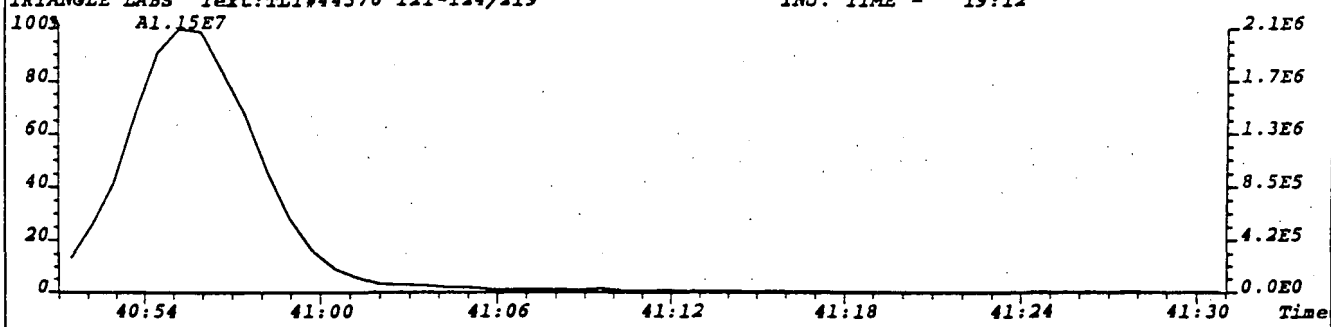
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:382
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1528.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12



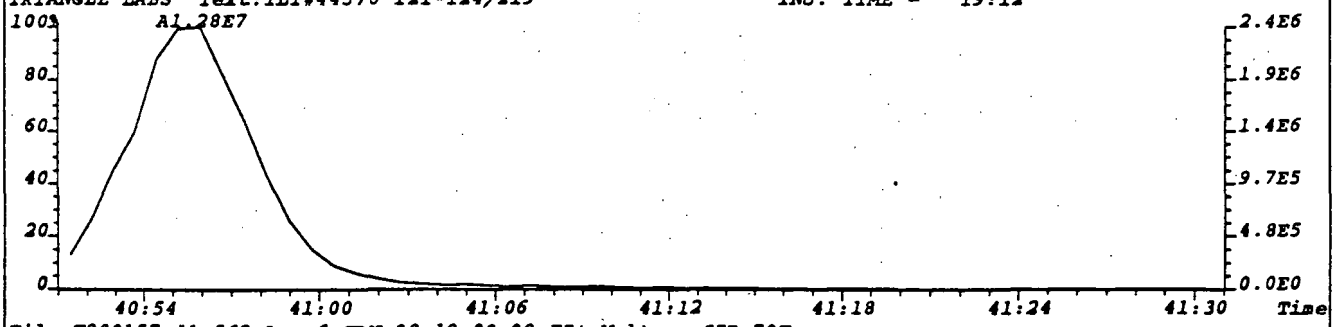
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:611
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2444.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12



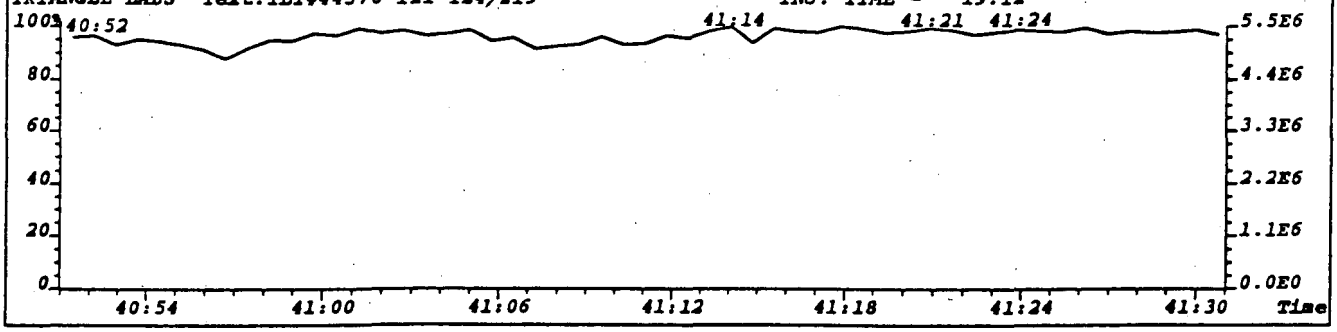
File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:954
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3816.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12

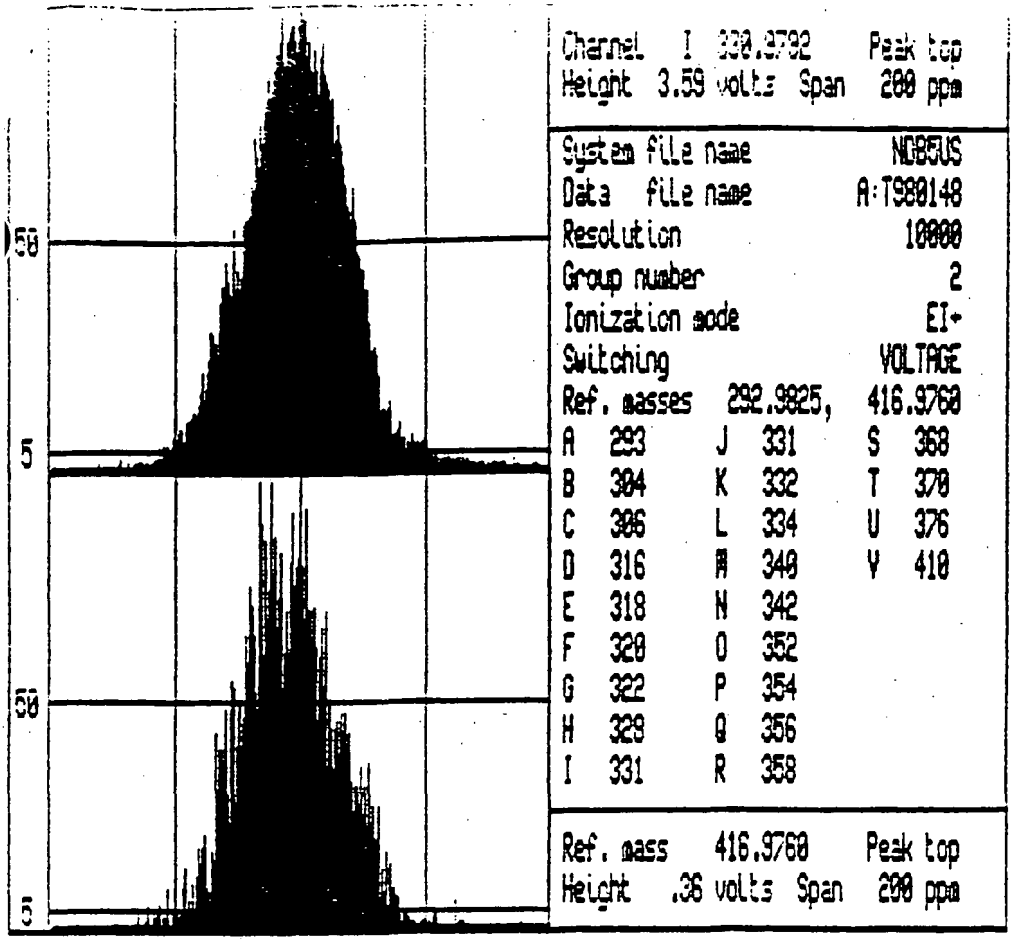


File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T Noise:565
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2260.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12



File:T980157 #1-562 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 121-124/219 INJ. TIME = 19:12



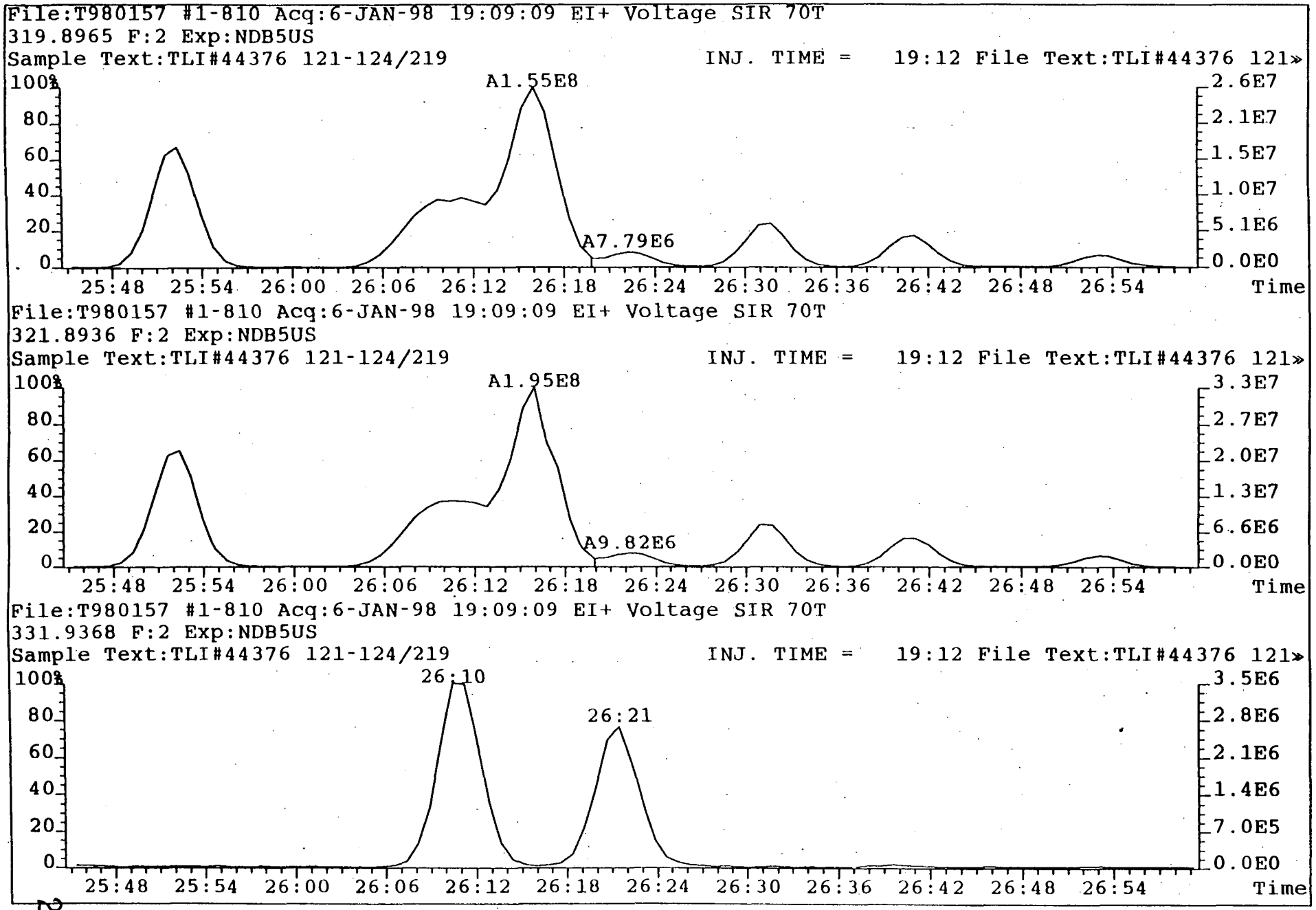


Channel I 330.9782 Peak top
Height 3.59 volts Span 200 ppm

System file name NOBBUS
Data file name A:T980148
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 416.9760

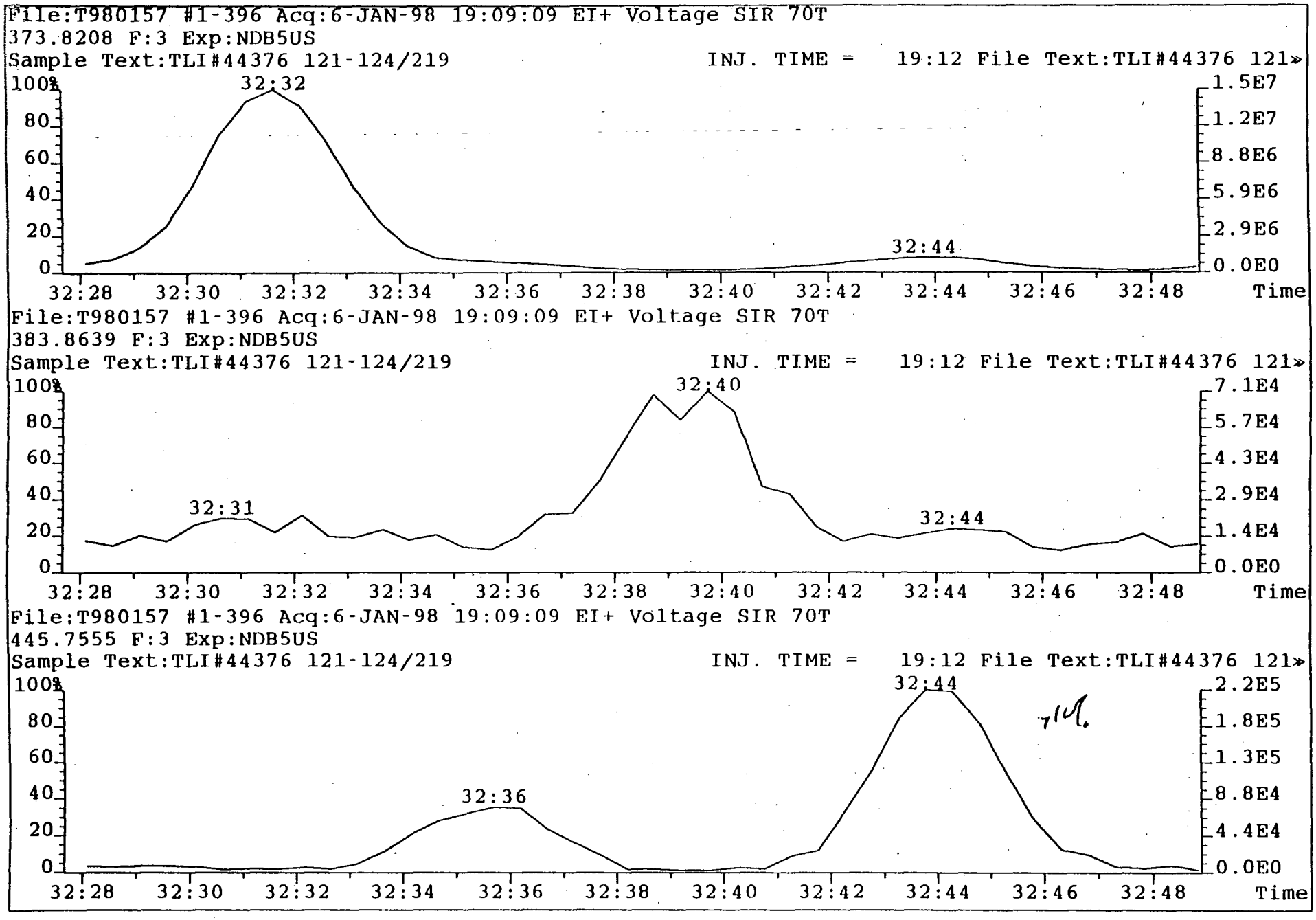
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	329	Q	356		
I	331	R	358		

Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm

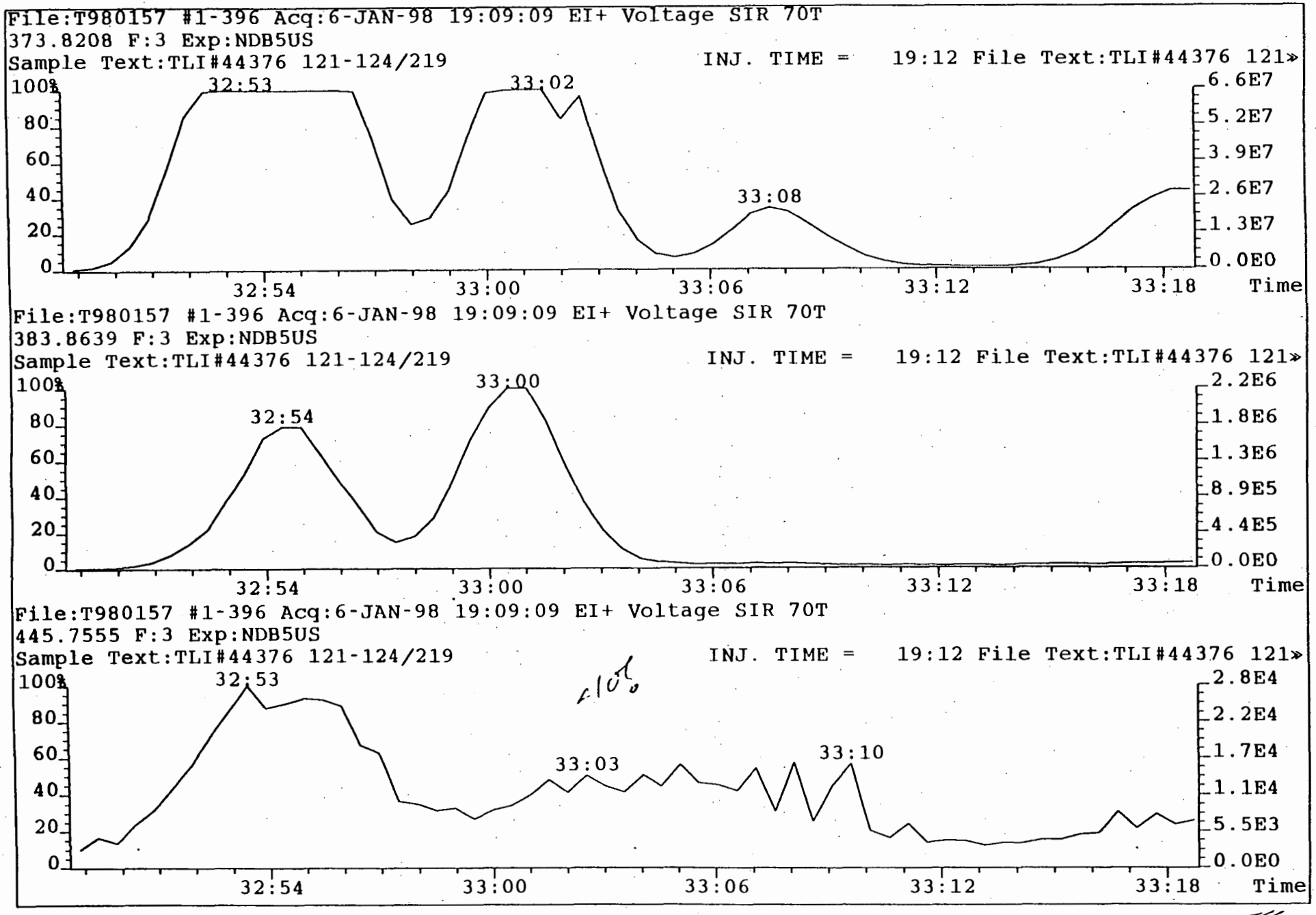

File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A1.55E8
A7.79E6
100%
80
60
40
20
0
2.6E7
2.1E7
1.5E7
1.0E7
5.1E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A1.95E8
A9.82E6
3.3E7
2.7E7
2.0E7
1.3E7
6.6E6
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time
File:T980157 #1-810 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
26:10
26:21
3.5E6
2.8E6
2.1E6
1.4E6
7.0E5
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time

8 of 12

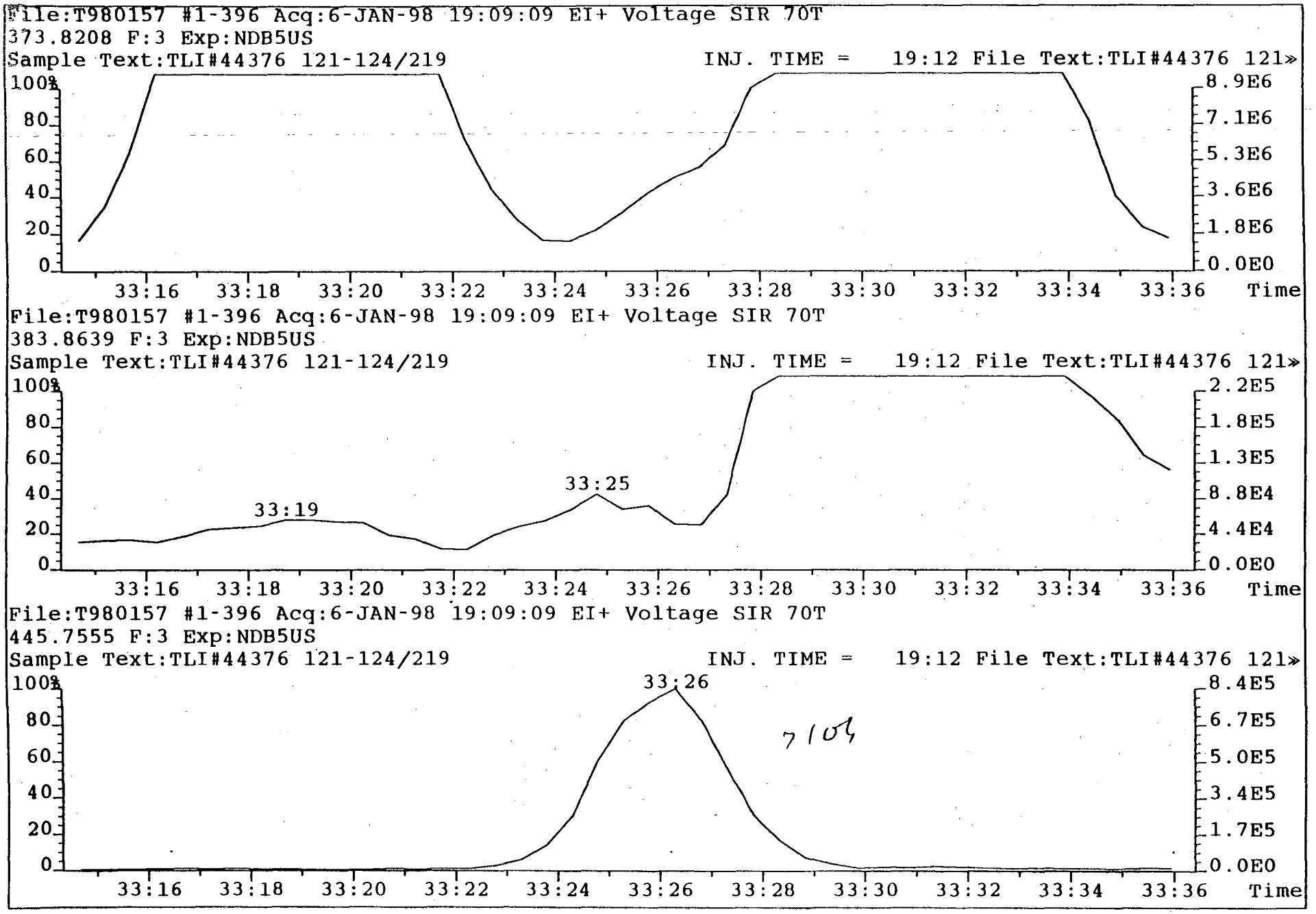
1/19/99


File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:32
32:44
1.5E7
1.2E7
8.8E6
5.9E6
2.9E6
0.0E0
32:28 32:30 32:32 32:34 32:36 32:38 32:40 32:42 32:44 32:46 32:48 Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:40
32:31
32:44
7.1E4
5.7E4
4.3E4
2.9E4
1.4E4
0.0E0
32:28 32:30 32:32 32:34 32:36 32:38 32:40 32:42 32:44 32:46 32:48 Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:44
32:36
2.2E5
1.8E5
1.3E5
8.8E4
4.4E4
0.0E0
32:28 32:30 32:32 32:34 32:36 32:38 32:40 32:42 32:44 32:46 32:48 Time

602


File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:53
33:02
33:08
6.6E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
32:54
33:00
33:06
33:12
33:18
Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:54
33:00
2.2E6
1.8E6
1.3E6
8.9E5
4.4E5
0.0E0
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
32:53
33:03
33:10
2.8E4
2.2E4
1.7E4
1.1E4
5.5E3
0.0E0

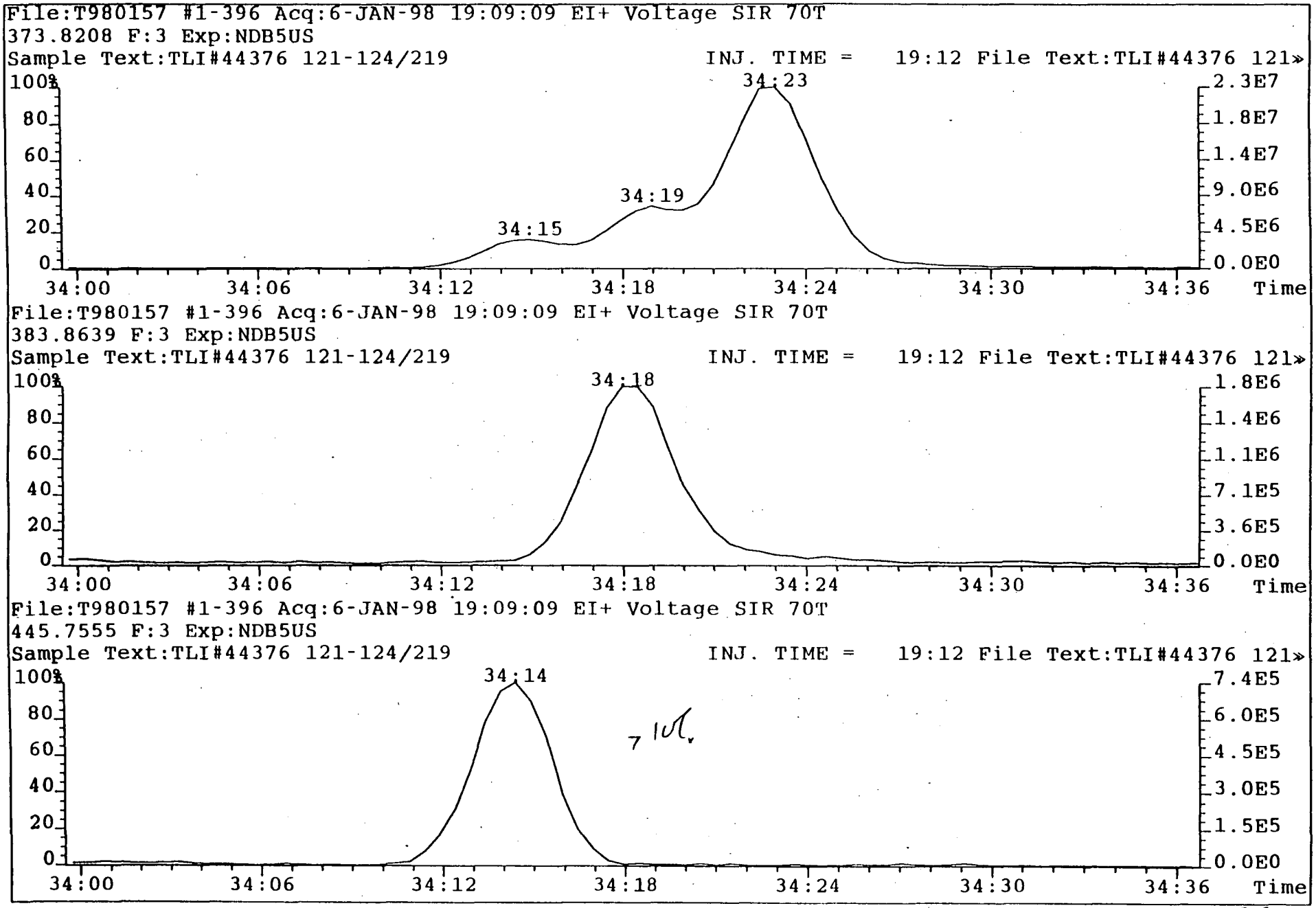
210



7 10%

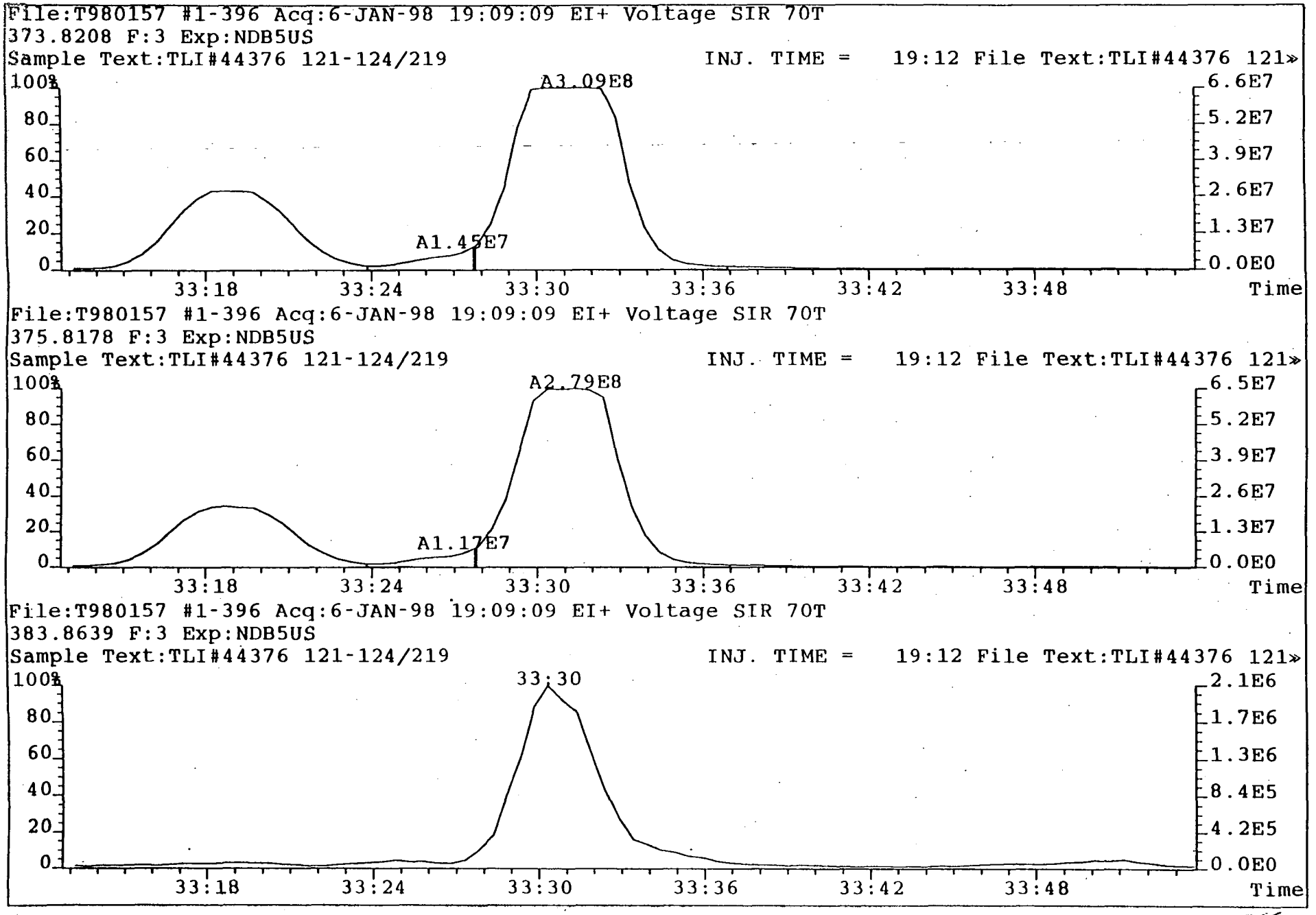
211

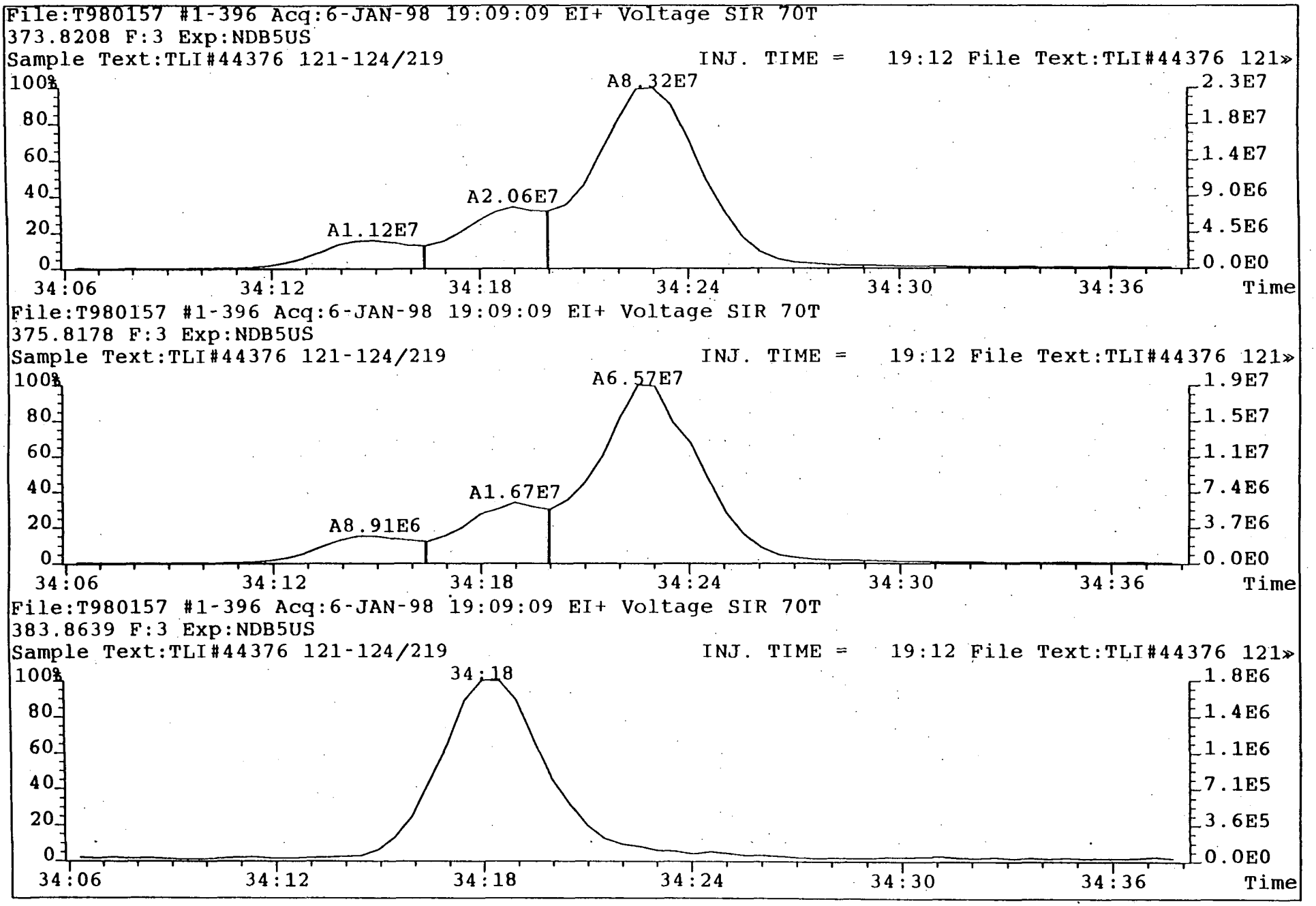
555
1/10/98

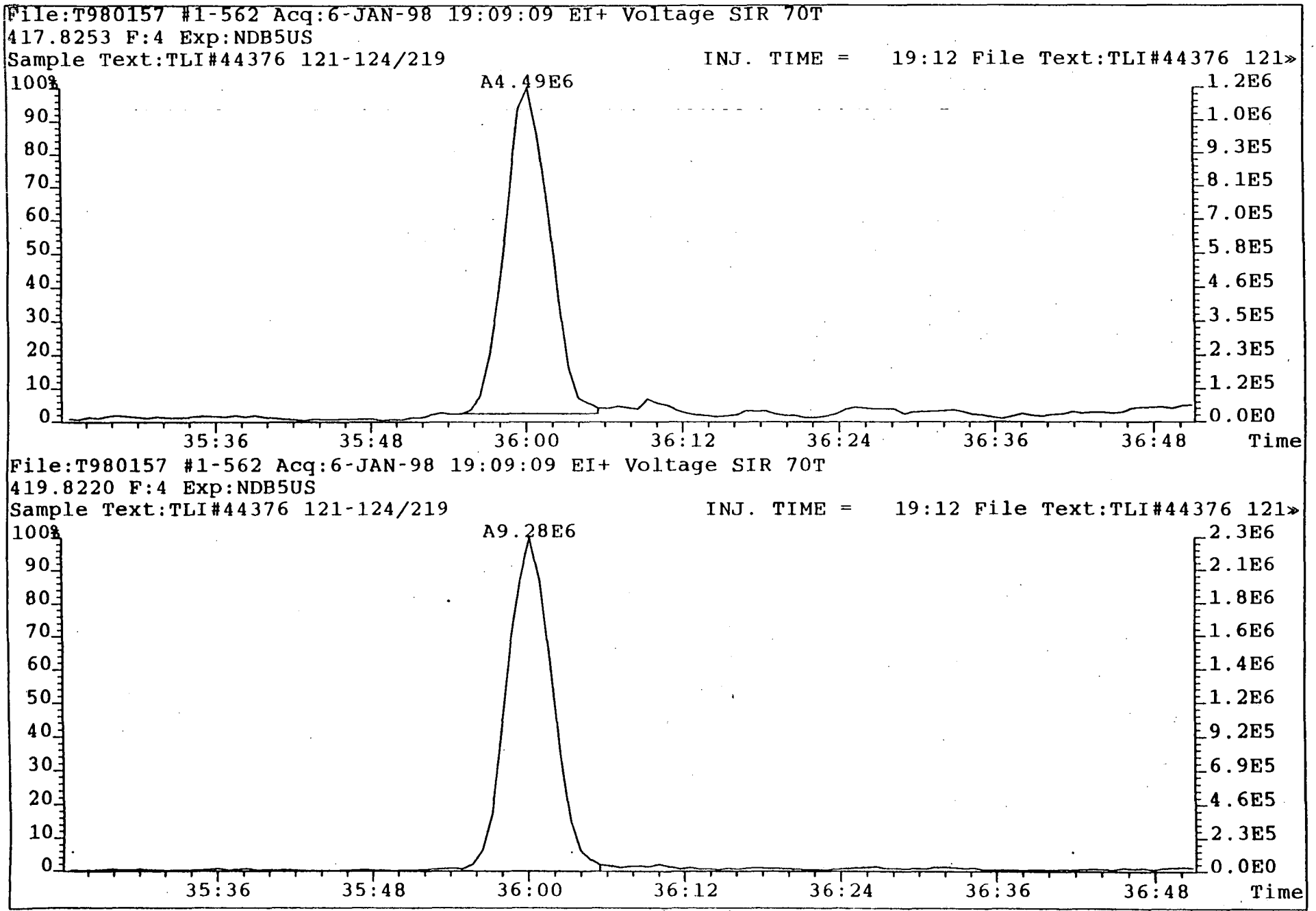


212

GSS 1/19/98


File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A3.09E8
A1.45E7
100%
80
60
40
20
0
6.6E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
33:18
33:24
33:30
33:36
33:42
33:48
Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A2.79E8
A1.17E7
6.5E7
Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
33:30
2.1E6
1.7E6
1.3E6
8.4E5
4.2E5
Time


File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A8.32E7
A2.06E7
A1.12E7
100%
80
60
40
20
0
2.3E7
1.8E7
1.4E7
9.0E6
4.5E6
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
A6.57E7
A1.67E7
A8.91E6
1.9E7
1.5E7
1.1E7
7.4E6
3.7E6
0.0E0
File:T980157 #1-396 Acq:6-JAN-98 19:09:09 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 121-124/219
INJ. TIME = 19:12 File Text:TLI#44376 121»
34:18
1.8E6
1.4E6
1.1E6
7.1E5
3.6E5
0.0E0



212

OES 11/4/98

Eastern Research Group

TLI Project: 44376 Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 121-124/219 Analysis File: X98008?

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-5A-D/	Date Extracted:	12/29/97	ICal:	XF24087
		Date Analyzed:	01/07/98	ConCal:	X980080
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	85.0			0.76	21:32	E__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.2	78.8	40%-130%	0.83	21:31	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	20:30	___

Data Reviewer: 6 SS 01/11/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:35 01/11/98

Initial ....Date...

Data Review By: GSS 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

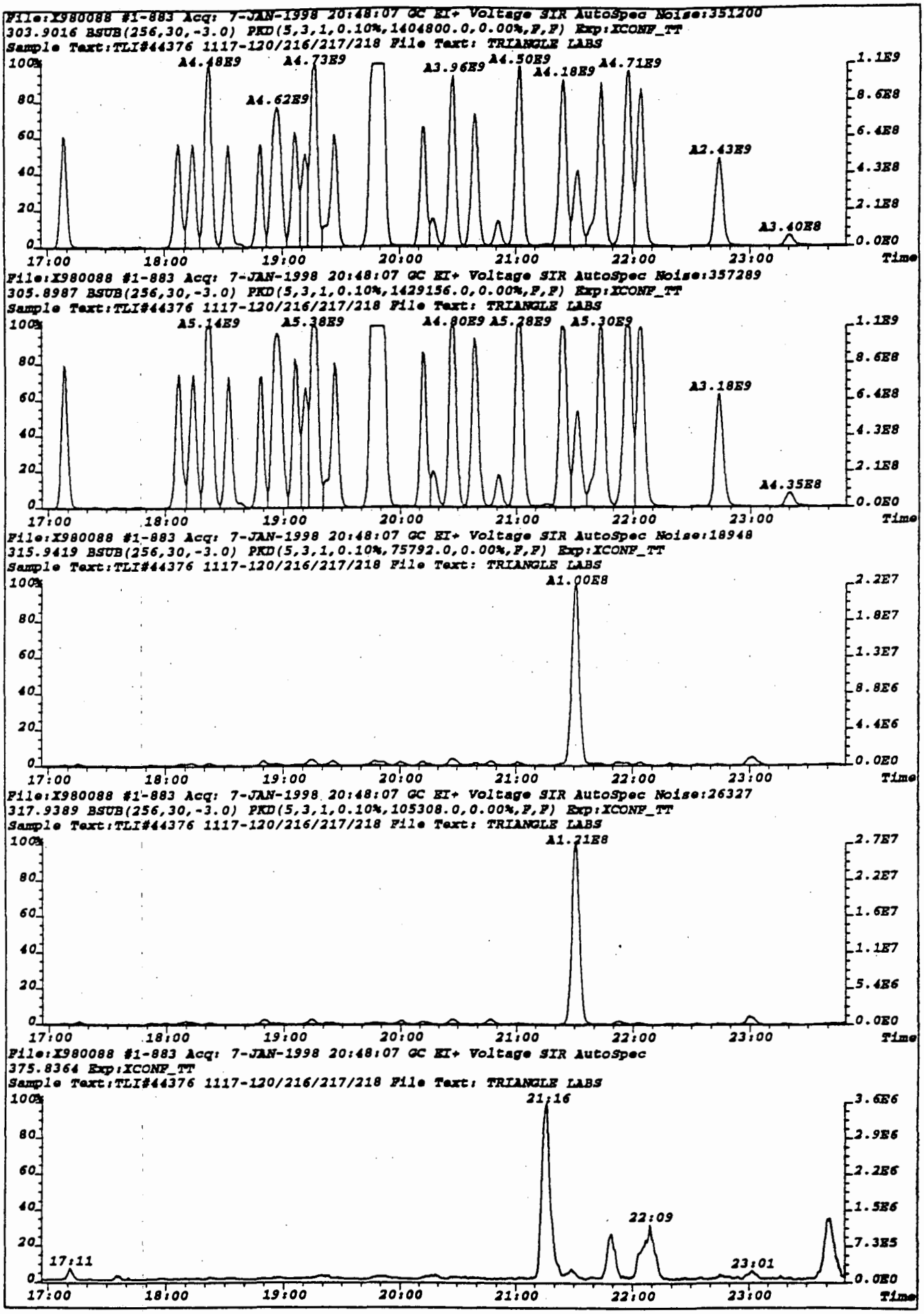
Page No. 1 Listing of X980088B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

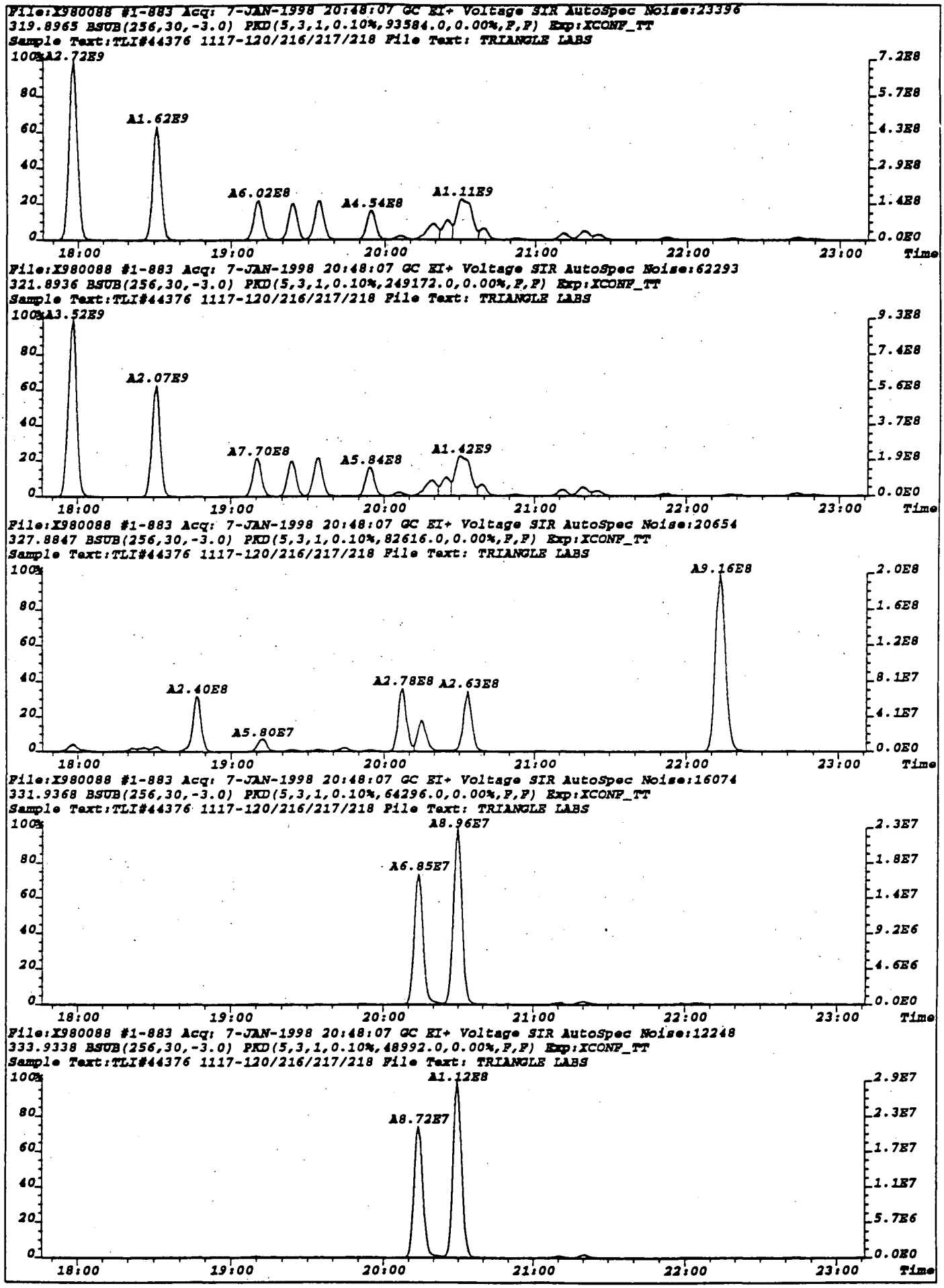
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.790-1.095			
304-306	DC	NL		0:00	RO	0.98	1,264.81			0.000			
	DC	WL		16:55	RO	0.58	1,442.66			0.786			
				17:08		0.77	538,326.00	235,041.00	303,285.00	0.796			E
				17:24	RO	0.51	2,969.16	1,291.67	2,513.94	0.809			
				17:34		0.81	5,030.93	2,248.19	2,782.74	0.816			
				17:39	RO	0.61	2,801.15	1,218.58	2,009.65	0.820			
				17:46		0.76	8,928.58	3,859.73	5,068.85	0.826			
				18:07		0.77	539,425.00	234,885.00	304,540.00	0.842			E
				18:15		0.77	549,123.00	238,477.00	310,646.00	0.848			E
				18:23		0.87	962,315.00	448,447.00	513,868.00	0.854			E
				18:32		0.77	518,081.00	225,706.00	292,375.00	0.861			E
				18:49		0.77	472,267.00	205,263.00	267,004.00	0.875			E
				18:57		0.78	1,054,476.00	461,759.00	592,717.00	0.881			E
				19:06		0.76	599,259.00	259,708.00	339,551.00	0.888			E
				19:11		0.77	396,659.00	172,195.00	224,464.00	0.892			E
				19:16		0.88	1,011,366.00	472,870.00	538,496.00	0.895			E
				19:26		0.77	661,386.00	288,092.00	373,294.00	0.903			E
				19:46	RO	0.94	1,786,390.20	951,853.00	1,009,260.00	0.919			E
				20:12		0.77	616,109.00	267,469.00	348,640.00	0.939			E
				20:17		0.78	136,404.20	59,805.60	76,598.60	0.943			E
				20:27		0.82	876,474.00	395,983.00	480,491.00	0.950			E
				20:39		0.77	711,413.00	308,573.00	402,840.00	0.960			E
				20:51		0.76	126,062.50	54,553.20	71,509.30	0.969			E
				21:01		0.85	977,617.00	449,765.00	527,852.00	0.977			E
				21:16	RO	0.33	6,553.07	2,850.77	8,637.61	0.988			
				21:24		0.81	932,170.00	417,617.00	514,553.00	0.995			E
				21:32		0.76	455,027.00	196,847.00	258,180.00	1.001	2378-TCDF	AN	E
				21:44		0.80	953,659.00	423,215.00	530,444.00	1.010			E
				21:58		0.84	1,033,853.00	470,899.00	562,954.00	1.021			E
				22:04		0.80	882,185.00	391,964.00	490,221.00	1.026			E
				22:32	RO	0.64	1,755.79	763.82	1,199.30	1.047			
				22:44		0.76	560,577.00	242,886.00	317,691.00	1.057			E
				23:20		0.78	77,508.90	33,988.80	43,520.10	1.084			
	DC	WH		23:44	RO	0.57	1,986.22			1.103			
304-306			31	Peaks			17,456,171.48						
13C12-TCDF				0.65-0.89						0.953-1.047			
316-318	DC	NL		0:00		0.72	90.55			0.000			
	DC	WL		17:15		0.84	210.64			0.802			
	DC	WL		17:52	RO	0.53	89.53			0.830			
	DC	WL		18:22	RO	1.36	146.40			0.854			
	DC	WL		18:50		0.86	499.86			0.875			
	DC	WL		18:56	RO	1.25	158.54			0.880			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC		WL	19:15	RO	1.28	491.03			0.895			
	DC		WL	19:47	RO	2.30	242.79			0.919			
	DC		WL	20:00	RO	1.03	309.40			0.930			
	DC		WL	20:13	RO	1.08	374.00			0.940			
	DC		WL	20:27	RO	1.16	658.60			0.950			
				20:39	RO	4.22	57.97	138.09	32.75	0.960			
				20:47	RO	0.60	470.34	204.61	340.83	0.966			
				21:00		0.78	280.44	123.33	157.11	0.976			
				21:31		0.83	22,142.30	10,011.00	12,131.30	1.000	13C12-2378-TCDF	ISO	
				21:42	RO	1.88	93.46	99.21	52.80	1.009			
				21:52	RO	1.06	540.13	322.66	305.16	1.016			
				22:03	RO	1.33	257.55	194.07	145.51	1.025			
				22:19	RO	1.11	122.71	77.14	69.33	1.037			
				22:23	RO	0.96	64.09	34.80	36.21	1.040			
	DC		WH	23:01	RO	0.95	1,085.54			1.070			
	DC		WH	23:42		0.76	81.15			1.101			
316-318			9	Peaks			24,028.99						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.901-1.099			
332-334	DC		NL	0:00	RO	1.31	43.37			0.000			
				19:52	RO	1.62	63.74	58.21	36.01	0.982			
				20:14		0.79	15,575.45	6,851.81	8,723.64	1.000	13C12-2378-TCDD	IS1	
				20:30		0.80	20,190.79	8,963.69	11,227.10	1.013	13C12-1234-TCDD	RS1	
				21:12		0.77	231.56	100.74	130.82	1.048			
				21:21		0.84	415.61	189.63	225.98	1.055			
				22:04	RO	2.35	55.47	73.64	31.34	1.091			
	DC		WH	23:14		0.84	213.56			1.148			
332-334			6	Peaks			36,532.62						

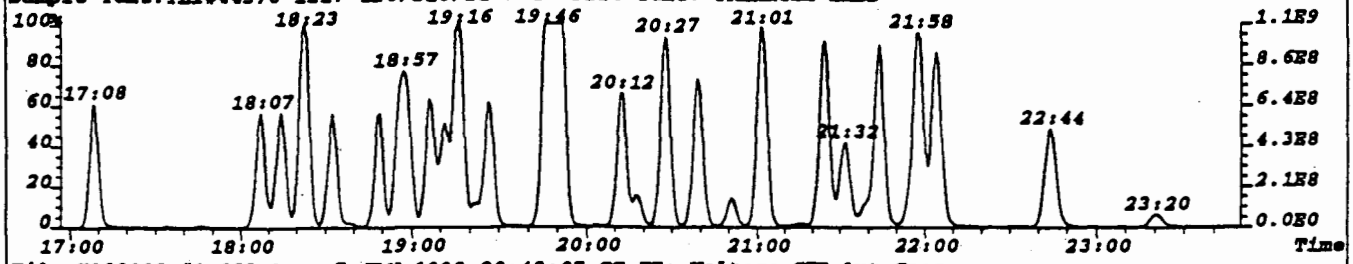
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

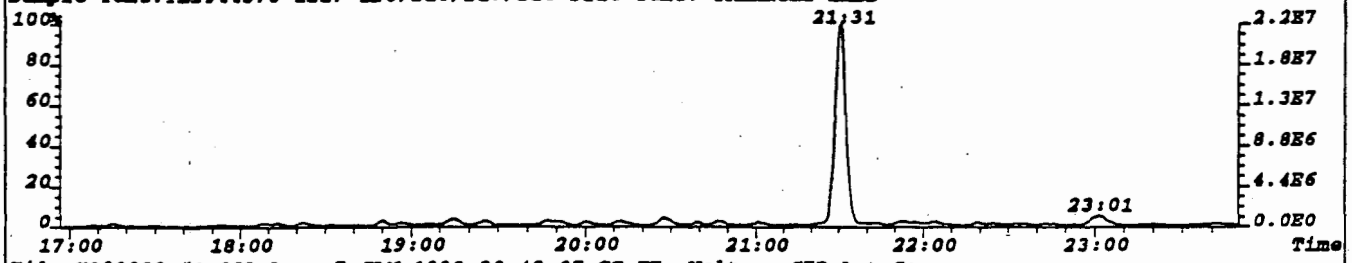

File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:351200
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1404800.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A4.48E9
A4.73E9
A4.62E9
A3.96E9
A4.50E9
A4.18E9
A4.71E9
A2.43E9
A3.40E8
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:357289
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1429156.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A5.14E9
A5.38E9
A4.80E9
A5.28E9
A5.30E9
A3.18E9
A4.35E8
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:18948
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,75792.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A1.00E8
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:26327
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,105308.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A1.21E8
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
21:16
22:09
17:11
23:01
Time


File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:23396
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,93584.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A2.72E9
A1.62E9
A6.02E8
A4.54E8
A1.11E9
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:62293
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,249172.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A3.52E9
A2.07E9
A7.70E8
A5.84E8
A1.42E9
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:20654
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,82616.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A9.16E8
A2.40E8
A5.80E7
A2.78E8
A2.63E8
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:16074
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,64296.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A8.96E7
A6.85E7
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec Noise:12248
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,48992.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
A1.12E8
A8.72E7
18:00
19:00
20:00
21:00
22:00
23:00
Time

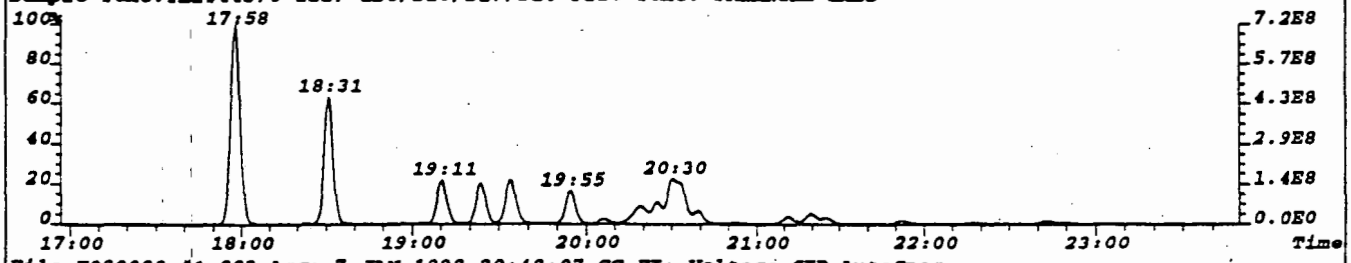
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



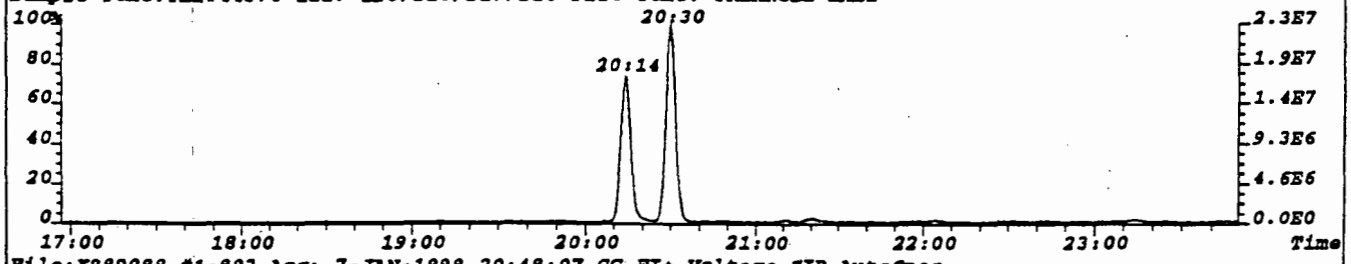
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



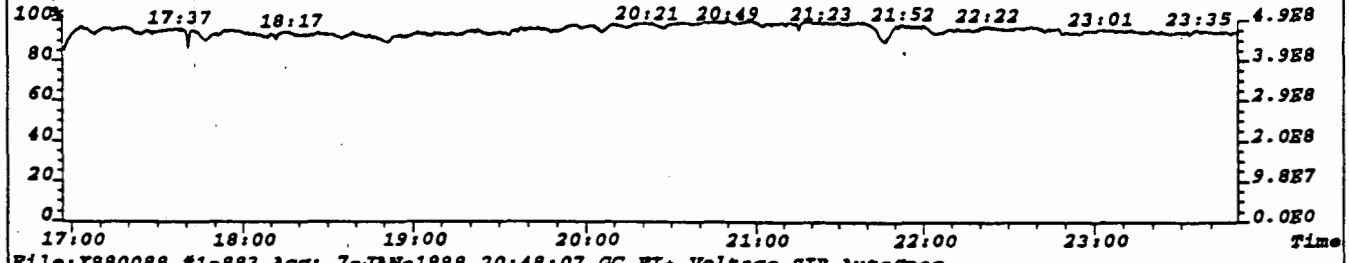
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



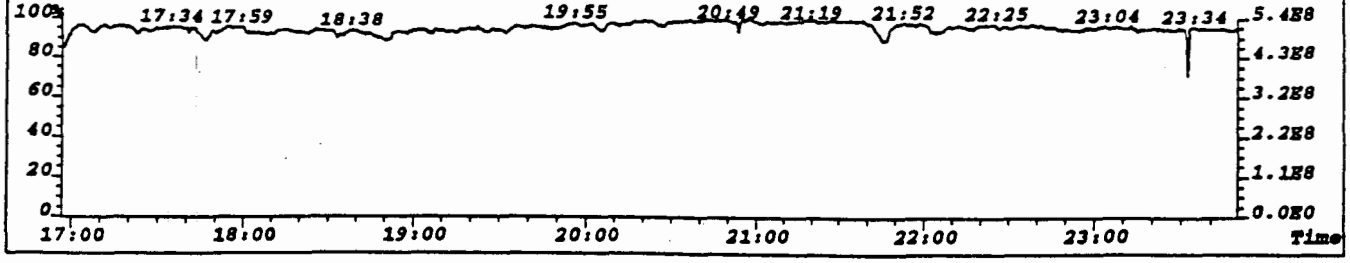
File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



File:X980088 #1-883 Acq: 7-JAN-1998 20:48:07 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



Eastern Research Group

TLI Project: 44376 CDI 1 Method 23 PCDD/PCDF Analysis (a)
Client Sample: 117-120/216/217/218 Analysis File: T98015

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPX23704
TLI ID:	194-59-4A-D/	Date Extracted:	12/29/97	ICal:	TF5D177
		Date Analyzed:	01/06/98	ConCal:	T980148
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T980152	% Lipid:	n/a
GC Column:	DB-5	Analyst:	BR	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	2.0			0.79	26:23	___
1,2,3,7,8-PeCDD	16.4			1.54	30:32	___
1,2,3,4,7,8-HxCDD	18.8			1.21	33:38	___
1,2,3,6,7,8-HxCDD	40.2			1.22	33:43	E__
1,2,3,7,8,9-HxCDD	65.1			1.22	34:02	PRE
1,2,3,4,6,7,8-HpCDD	~~131~~ 720			1.00	37:07	SE_
1,2,3,4,6,7,8,9-OCDD	108			0.81	40:58	E__
2,3,7,8-TCDF	EMPC		~~103~~ >4			SE_
1,2,3,7,8-PeCDF	44.3			1.46	29:32	E__
2,3,4,7,8-PeCDF	EMPC		~~80.1~~ >20			QSE
1,2,3,4,7,8-HxCDF	~~96.8~~ >20			1.09	32:56	QSE
1,2,3,6,7,8-HxCDF	~~59.2~~ >20			1.14	33:02	SE_
2,3,4,6,7,8-HxCDF	~~82.3~~ >20			1.13	33:31	SE_
1,2,3,7,8,9-HxCDF	5.0			1.25	34:18	PR_
1,2,3,4,6,7,8-HpCDF	126 >20			1.02	36:02	SE_
1,2,3,4,7,8,9-HpCDF	31.6			1.04	37:38	Q
1,2,3,4,6,7,8,9-OCDF	49.6			0.90	41:11	___

GGS 1/15/98

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	~~307~~ >4	11		~~375~~ >4	SE_
Total PeCDD	~~147~~ >20	8		~~384~~ >20.	SQE
Total HxCDD	~~470~~ >20	7			SQE
Total HpCDD	~~249~~ >20	2			SE_
Total TCDF	~~343~~ >4	9		~~1370~~ >4	SQE
Total PeCDF	~~388~~ >20	10		~~925~~ >20	SQE
Total HxCDF	~~498~~ >20	13		~~505~~ >20	SQE
Total HpCDF	~~237~~ >20	4			SEQ

GGS 1/15/98

X237_PSR v2.01. LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:27 01/15/98

222

Eastern Research Group

TLI Project: 44376 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: 117-120/216/217/218 — Analysis File: T980156

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.1	52.7	40%-130%	0.82	25:44	Q
$^{13}C_{12}$-2,3,7,8-TCDD	3.2	79.6	40%-130%	0.80	26:22	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.9	72.7	40%-130%	1.48	29:32	Q
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4.2	106	40%-130%	1.50	30:31	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.5	86.7	40%-130%	0.55	33:01	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.6	89.7	40%-130%	1.17	33:43	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.4	85.4	25%-130%	0.51	36:01	Q
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.8	119	25%-130%	1.02	37:05	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	10.7	134	25%-130%	0.95	40:57	

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.6	90.8	70%-140%		26:23	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.6	115	70%-140%	1.50	30:12	Q
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.3	83.4	70%-140%	0.56	32:55	Q
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4.6	116	70%-140%	1.19	33:37	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	5.0	126	70%-140%	0.43	37:38	Q

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.8	95.8	40%-130%	0.51	34:18	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.3	82.6	40%-130%	0.55	33:31	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	26:12	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.20	34:02	

Data Reviewer: 6 9 9 01/15/98

X237_PSR v2.01. LARS 6.10.08o

Triangle Laboratories, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:27 01/15/98

Initial ....Date...

Data Review By: GHH 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980156B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.878-1.073			
304-306	DC	NL		0:00	RO	3.28	3.86			0.000			
				22:42		0.83	49,520.60	22,408.00	27,112.60	0.882			QE
				23:10		0.85	54,596.10	25,158.60	29,437.50	0.900			QSE
				23:23	RO	0.90	62,148.42	31,619.20	35,112.10	0.909			QSE
				23:44	RO	0.96	150,062.90	81,485.70	84,781.30	0.922			QSE
				24:04	RO	0.95	104,594.96	55,982.70	59,093.20	0.935			QSE
				24:26	RO	0.94	121,220.93	64,483.50	68,486.40	0.949			QSE
				24:41	RO	0.95	80,932.72	43,469.30	45,724.70	0.959			QSE
				24:54	RO	0.51	85,031.49	36,991.10	73,229.00	0.968			QSE
				25:19	RO	0.90	58,224.86	29,710.40	32,895.40	0.984			QSE
				25:33		0.85	73,458.70	33,667.70	39,791.00	0.993			QSE
				25:45	RO	0.96	80,418.53	43,424.50	45,434.20	1.001	2378-TCDF	AN	SE
				26:07	RO	0.94	59,133.40	31,521.30	33,408.70	1.015			QSE
				26:19		0.88	61,190.30	28,693.60	32,496.70	1.023			QSE
				26:34		0.80	17,367.19	7,705.84	9,661.35	1.032			QE
				26:51		0.81	376.55	168.08	208.47	1.043			Q
				27:01		0.79	2,601.44	1,152.14	1,449.30	1.050			Q
				27:23		0.80	8,715.21	3,883.40	4,831.81	1.064			QE
				27:36		0.80	1,214.24	538.10	676.14	1.073			Q
304-306			18	Peaks			1,070,808.54						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00	RO	2.78	7.04			0.000			
	DC	WL		22:42	RO	2.20	25.61			0.882			
	DC	WL		23:09	RO	3.76	31.38			0.900			
	DC	WL		23:23	RO	3.28	29.49			0.909			
	DC	WL		23:32	RO	1.84	74.13			0.915			
	DC	WL		23:46	RO	3.07	98.06			0.924			
	DC	WL		24:05	RO	1.47	165.48			0.936			
	DC	WL		24:27	RO	1.66	119.60			0.950			
	DC	WL		24:42	RO	2.21	80.73			0.960			
				25:08	RO	1.94	111.67	122.48	63.09	0.977			
				25:19	RO	1.17	84.48	55.94	47.73	0.984			
				25:32	RO	1.14	116.94	75.12	66.07	0.992			
				25:44		0.82	2,287.74	1,029.48	1,258.26	1.000	13C12-2378-TCDF	ISO	Q
				26:07	RO	1.87	62.23	65.60	35.16	1.015			
				26:19	RO	1.36	73.97	56.72	41.79	1.023			
	DC	WH		27:43	RO	1.17	21.89			1.077			
316-318			6	Peaks			2,737.03						

---------- Above: TCDF / TCDD Follows ----------

Compound/ M_Z....	QC	Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDD					0.65-0.89						0.903-1.045			
320-322	DC	NL			0:00	RO	2.92	8.11			0.000			
					23:57	RO	0.92	65,379.38	33,869.60	36,937.50	0.908			SE
					24:19		0.87	59,733.30	27,747.10	31,986.20	0.922			SE
					24:35		0.78	31,221.50	13,664.70	17,556.80	0.932			E
					25:15		0.79	59,581.60	26,202.80	33,378.80	0.958			E
					25:31		0.78	41,619.50	18,188.90	23,430.60	0.968			E
					25:53		0.78	24,108.90	10,533.50	13,575.40	0.982			E
	M				26:17		0.78	56,700.00	24,900.00	31,800.00	0.997			E
	AN				26:23		0.79	1,916.00	846.00	1,070.00	1.001	2378-TCDD	AN	
					26:32		0.79	8,622.92	3,816.42	4,806.50	1.006			E
					26:42		0.78	4,560.43	2,002.60	2,557.83	1.013			
					26:54		0.79	1,903.92	842.47	1,061.45	1.020			
					27:20		0.79	1,939.35	858.00	1,081.35	1.037			
320-322			12	Peaks				357,286.80						
37Cl-TCDD											0.924-1.076			
328	DC	NL			0:00			1.55			0.000			
	DC	WL			23:58			525.62			0.909			
	DC	WL			24:11			161.64			0.917			
	DC	WL			24:19			429.36			0.922			
					24:35			195.74	195.74		0.932			
					25:00			7,167.71	7,167.71		0.948			
					25:15			328.84	328.84		0.958			
					25:30			214.57	214.57		0.967			
					25:43			41.79	41.79		0.975			
					25:53			129.91	129.91		0.982			
					26:10			111.22	111.22		0.992			
					26:23			2,552.42	2,552.42		1.001	37Cl-TCDD	SUR1	
					26:32			67.58	67.58		1.006			
					26:44			13,542.30	13,542.30		1.014			
328			10	Peaks				24,352.08						
13C12-TCDD					0.65-0.89						0.924-1.076			
332-334	DC	NL			0:00	RO	2.36	4.57			0.000			
	DC	WL			23:57	RO	1.06	21.19			0.908			
	DC	WL			24:21	RO	1.80	11.13			0.924			
					24:25	RO	1.19	10.35	6.96	5.85	0.926			
					24:36	RO	1.02	5.93	3.41	3.35	0.933			
					24:42	RO	1.21	11.36	7.75	6.42	0.937			
					25:15		0.66	31.96	12.75	19.21	0.958			
					25:47	RO	1.24	15.35	10.72	8.67	0.978			
					25:52	RO	1.35	10.07	7.69	5.69	0.981			
					26:12		0.80	2,810.89	1,252.91	1,557.98	0.994	13C12-1234-TCDD	RS1	
					26:22		0.80	2,793.68	1,241.17	1,552.51	1.000	13C12-2378-TCDD	IS1	
					26:40		0.68	61.57	24.86	36.71	1.011			
332-334			9	Peaks				5,751.16						
---------- Above: TCDD / PeCDF Follows ----------														
PeCDF					1.32-1.78						0.931-1.063			
340-342	DC	NL			0:00	RO	0.60	2.99			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				27:35	RO	1.12	55,413.47	33,682.70	30,155.70	0.934			QSE
				28:02		1.49	155.31	92.96	62.35	0.949			Q
				28:13		1.51	660.35	397.30	263.05	0.955			Q
				28:19	RO	1.22	233.25	141.78	116.24	0.959			Q
				28:34		1.42	39,375.20	23,104.40	16,270.80	0.967			QE
				28:43	RO	1.06	73,995.57	44,977.70	42,337.40	0.972			QSE
				28:52		1.33	46,011.30	26,288.10	19,723.20	0.977			QSE
				29:10	RO	1.18	72,330.17	43,965.40	37,300.30	0.988			QSE
				29:15	RO	1.13	53,938.09	32,785.90	28,987.30	0.990			QSE
				29:27		1.37	38,283.70	22,154.60	16,129.10	0.997			QSE
				29:32		1.46	30,715.40	18,253.00	12,462.40	1.000	12378-PeCDF	AN	E
				29:41		1.41	37,862.00	22,121.20	15,740.80	1.005			QE
				29:49		1.35	50,751.20	29,192.10	21,559.10	1.010			QSE
				30:13	RO	1.14	55,766.20	33,897.10	29,724.10	1.023	23478-PeCDF	AN	QSE
				30:22	RO	1.17	60,649.53	36,865.40	31,522.10	1.028			QSE
				30:40		1.47	14,133.88	8,402.58	5,731.30	1.038			Q
				30:53	RO	1.14	349.78	212.61	186.43	1.046			Q
				31:09		1.46	10,758.26	6,383.54	4,374.72	1.055			Q
	DC	WH		31:36	RO	1.84	59.85			1.070			
340-342			18 Peaks				641,382.66						
13C12-PeCDF					1.32-1.78					0.864-1.136			
352-354	DC	NL		0:00	RO	2.07	1.48			0.000			
				27:35	RO	3.07	47.33	56.96	18.56	0.934			
				27:43	RO	2.39	10.58	9.93	4.15	0.938			
	DC	SN		28:18	RO	3.06	4.00			0.958			
				28:34	RO	3.56	16.40	22.88	6.43	0.967			
				28:41	RO	2.64	111.21	115.14	43.61	0.971			
				28:52	RO	1.17	97.90	59.51	50.92	0.977			
				29:10	RO	2.74	48.86	52.45	19.16	0.988			
				29:15	RO	2.45	52.53	50.41	20.60	0.990			
				29:32		1.48	2,616.29	1,563.18	1,053.11	1.000	13C12-PeCDF 123	IS2	Q
				29:49	RO	2.23	122.48	106.91	48.03	1.010			
	DC	SN		30:00	RO	5.21	2.45			1.016			
				30:12		1.50	2,982.82	1,788.54	1,194.28	1.023	13C12-PeCDF 234	SUR2	Q
				30:21	RO	2.28	95.98	85.69	37.64	1.028			
				30:39	RO	1.95	8.64	6.60	3.39	1.038			
				30:46		1.51	11.10	6.68	4.42	1.042			
	DC	SN		30:54	RO	2.76	1.48			1.046			
				31:13	RO	1.99	39.55	30.92	15.51	1.057			
				31:25	RO	2.97	8.03	9.37	3.15	1.064			
352-354			15 Peaks				6,269.70						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD					1.32-1.78					0.939-1.022			
356-358	DC	NL		0:00	RO	0.78	4.74			0.000			
				28:48	RO	1.05	61,435.59	37,343.20	35,473.90	0.944			SE
				29:15		1.56	9,538.62	5,811.47	3,727.15	0.958			
				29:29	RO	1.20	46,673.06	28,369.90	23,677.70	0.966			QSE
				29:37		1.56	9,574.73	5,831.93	3,742.80	0.971			
				29:48	RO	1.30	43,682.82	26,552.30	20,355.50	0.977			SE

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:58		1.54	12,463.21	7,563.02	4,900.19	0.982			
				30:03		1.56	16,824.40	10,245.50	6,578.90	0.985			
				30:15		1.54	22,269.95	13,517.20	8,752.75	0.991			
				30:23	RO	0.84	9,757.40	5,930.97	7,032.66	0.996			
				30:32		1.54	11,213.14	6,801.76	4,411.38	1.001	12378-PeCDD	AN	
				30:39		1.56	8,843.96	5,385.06	3,458.90	1.004			
				30:59		1.55	9,466.30	5,749.17	3,717.13	1.015			
356-358			12	Peaks			261,743.18						
13C12-PeCDD				1.32-1.78						0.869-1.131			
368-370	DC	NL		0:00		1.71	0.84			0.000			
				28:48	RO	2.02	97.82	77.60	38.36	0.944			
	DC	SN		28:59	RO	2.38	2.83			0.950			
				29:10		1.35	11.31	6.50	4.81	0.956			
				29:15	RO	1.26	14.51	8.82	7.01	0.958			
				29:29	RO	2.15	47.71	40.19	18.71	0.966			
				29:48	RO	2.33	34.04	31.13	13.35	0.977			
				30:03	RO	2.32	27.39	24.88	10.74	0.985			
				30:14	RO	2.10	26.01	21.37	10.20	0.991			
				30:22	RO	2.33	16.14	14.78	6.33	0.995			
				30:31		1.50	2,110.64	1,264.97	845.67	1.000	13C12-PeCDD 123	IS3	
				30:38		1.51	212.90	128.15	84.75	1.004			
				31:00	RO	1.85	21.11	15.30	8.28	1.016			
				31:32	RO	0.80	4.59	2.79	3.48	1.033			
368-370			12	Peaks			2,624.17						
---------- Above: PeCDD / HxCDF Follows ----------													
CDF				1.05-1.43						0.964-1.049			
4-376	DC	NL		0:00	RO	1.61	113.61			0.000			
				31:57		1.16	46,043.60	24,750.60	21,293.00	0.968			QSE
				32:07		1.08	65,589.40	34,007.80	31,581.60	0.973			QSE
				32:15		1.26	8,046.26	4,483.04	3,563.22	0.977			
				32:23		1.25	13,052.28	7,247.03	5,805.25	0.981			
				32:32		1.25	7,628.20	4,241.09	3,387.11	0.985			
				32:45		1.18	474.70	256.61	218.09	0.992			
				32:56		1.09	72,530.90	37,874.50	34,656.40	0.997	123478-HxCDF	AN	QSE
				33:02		1.14	49,859.60	26,594.80	23,264.80	1.001	123678-HxCDF	AN	SE
				33:08		1.26	11,269.71	6,290.46	4,979.25	1.004			
				33:19		1.25	20,321.45	11,278.60	9,042.85	1.009			
	AX		X	33:26	RO	1.22	2,970.00	1,630.00	1,340.00	1.013			
	M			33:31		1.13	55,700.00	29,500.00	26,200.00	1.015	234678-HxCDF	AN	SE
	MX		X	34:15	RO	1.24	2,080.00	1,150.00	930.00	1.037			
	AN			34:18		1.25	3,130.00	1,740.00	1,390.00	1.039	123789-HxCDF	AN	PR
	M			34:24		1.25	12,670.00	7,050.00	5,620.00	1.042			
	DC	WH		34:48		1.29	566.03			1.054			
374-376			15	Peaks			371,366.10						
13C12-HxCDF				0.43-0.59						0.879-1.121			
384-386	DC	NL		0:00	RO	1.78	8.11			0.000			
				31:57	RO	2.95	15.76	30.78	10.44	0.968			
				32:06	RO	3.46	30.67	70.19	20.31	0.972			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:39	RO	2.44	7.94	12.84	5.26	0.989			
				32:55		0.56	1,995.22	714.02	1,281.20	0.997	13C12-HxCDF 478	SUR3	
				33:01		0.55	2,596.73	918.19	1,678.54	1.000	13C12-HxCDF 678	IS4	
				33:31		0.55	2,361.41	833.76	1,527.65	1.015	13C12-HxCDF 234	ALT2	
				34:18		0.51	2,166.45	733.53	1,432.92	1.039	13C12-HxCDF 789	ALT1	
384-386			7 Peaks				9,174.18						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.015			
390-392	DC	NL		0:00		1.26	62.38			0.000			
				32:26		1.22	28,853.00	15,829.50	13,023.50	0.962			E
				32:52		1.06	62,553.40	32,149.80	30,403.60	0.975			QSE
				33:06		1.10	56,085.40	29,366.30	26,719.10	0.982			SE
				33:16		1.21	9,952.74	5,458.82	4,493.92	0.987			
				33:38		1.21	7,899.32	4,328.45	3,570.87	0.998	123478-HxCDD	AN	
				33:43		1.22	19,074.39	10,486.60	8,587.79	1.000	123678-HxCDD	AN	E
				34:02		1.22	30,655.00	16,852.70	13,802.30	1.009	123789-HxCDD	AN	PRE
390-392			7 Peaks				215,073.25						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	1.74	7.17			0.000			
				32:53		1.23	30.77	16.97	13.80	0.975			
				33:05		1.40	39.57	23.09	16.48	0.981			
				33:17	RO	2.56	11.89	13.61	5.31	0.987			
				33:24	RO	0.90	4.82	2.67	2.98	0.991			
				33:37		1.19	1,792.45	972.14	820.31	0.997	13C12-HxCDD 478	SUR4	
				33:43		1.17	1,899.79	1,025.47	874.32	1.000	13C12-HxCDD 678	IS5	
				34:02		1.20	2,121.26	1,155.46	965.80	1.009	13C12-HxCDD 789	RS2	
				34:12	RO	2.58	8.44	9.71	3.77	1.014			
	DC	SN		34:17	RO	1.76	4.79			1.017			
402-404			8 Peaks				5,908.99						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.998-1.053			
408-410	DC	NL		0:00		1.04	26.79			0.000			
				36:02		1.02	74,860.40	37,798.90	37,061.50	1.000	1234678-HpCDF	AN	SE
				36:18		1.03	20,983.10	10,656.60	10,326.50	1.008			E
				36:28		1.04	20,862.80	10,648.70	10,214.10	1.012			
				37:38		1.04	14,295.27	7,303.63	6,991.64	1.045	1234789-HpCDF	AN	
408-410			4 Peaks				131,001.57						
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	1.84	8.83			0.000			
				36:01		0.51	1,614.07	542.38	1,071.69	1.000	13C12-HpCDF 678	IS6	
				37:38		0.43	1,585.38	478.58	1,106.80	1.045	13C12-HpCDF 789	SUR5	
418-420			2 Peaks				3,199.45						
---------- Above: HpCDF / HpCDD Follows ----------													

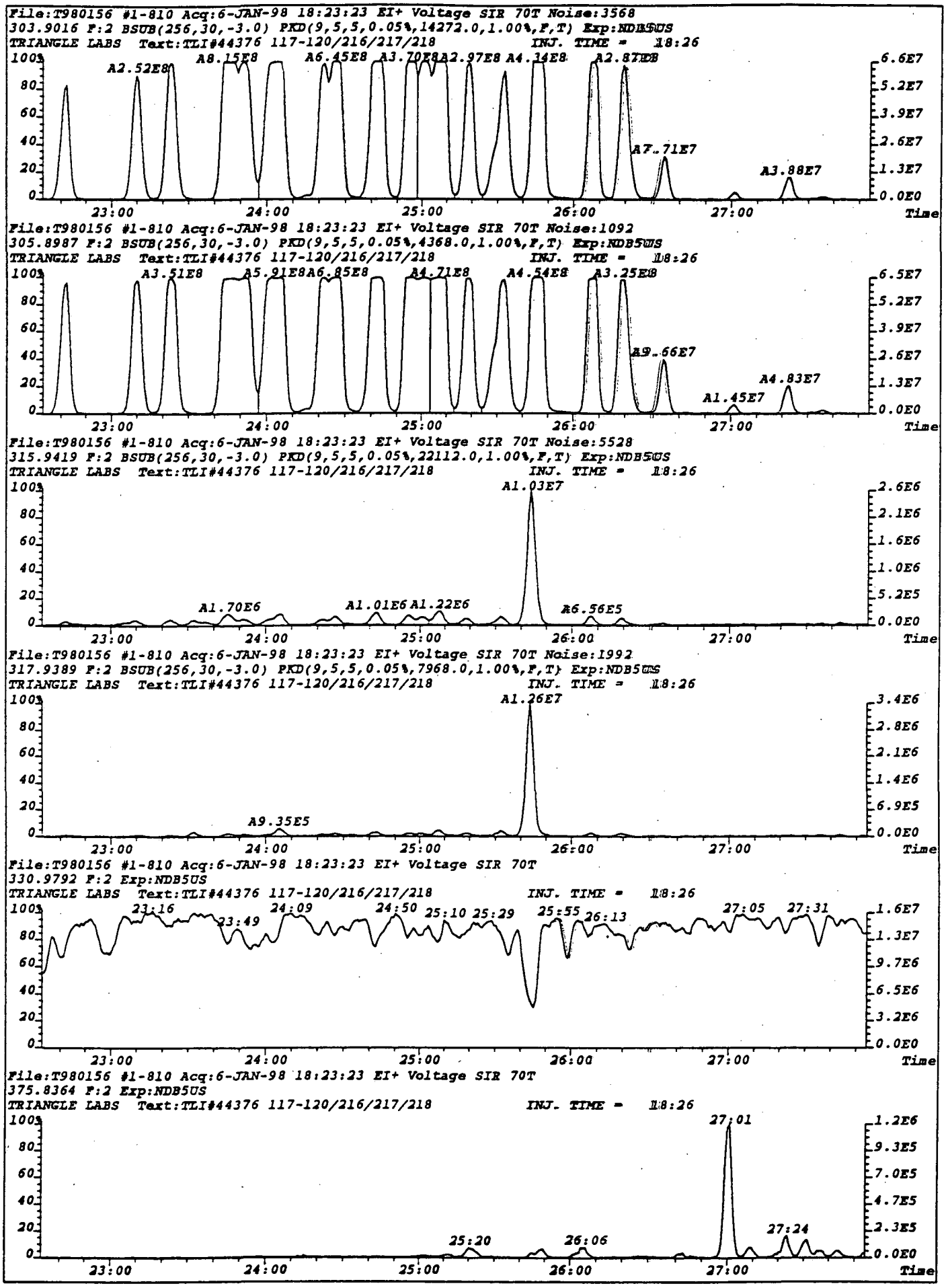
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID.	Flags.
HpCDD						0.88-1.20				0.976-1.006			
424-426	DC	NL		0:00	RO	1.24	14.71			0.000			
				36:19		1.00	55,916.60	28,001.00	27,915.60	0.979			SE
				37:07		1.00	61,693.40	30,901.20	30,792.20	1.001	1234678-HpCDD	AN	SE
424-426			2	Peaks			117,610.00						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00	RO	1.87	4.94			0.000			
				36:16	RO	1.95	27.99	26.75	13.72	0.978			
				36:32	RO	1.70	15.22	12.71	7.46	0.985			
				37:05		1.02	1,825.51	920.80	904.71	1.000	13C12-HpCDD 678	IS7	
				37:19	RO	1.64	33.58	27.01	16.46	1.006			
436-438			4	Peaks			1,902.30						

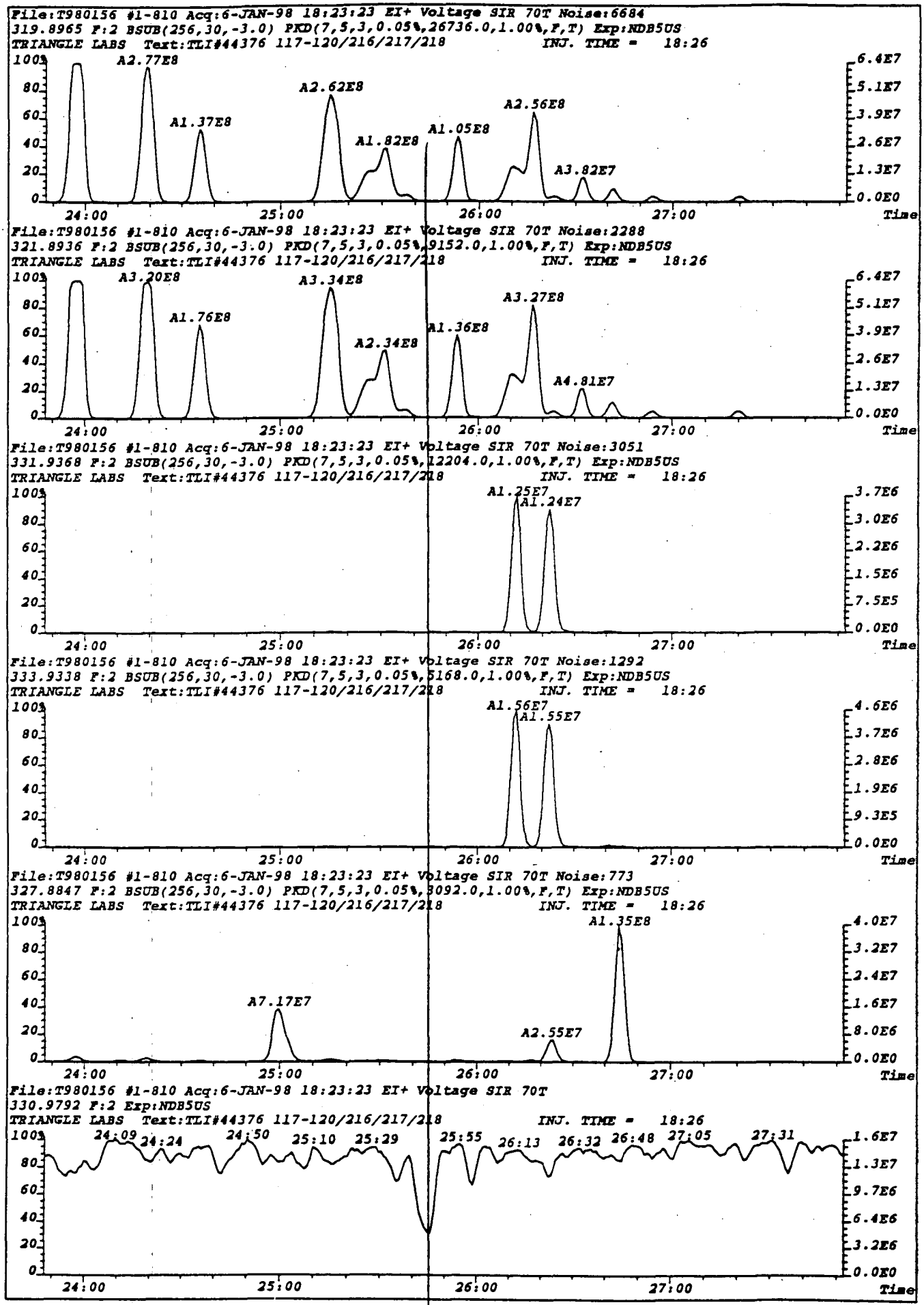
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------

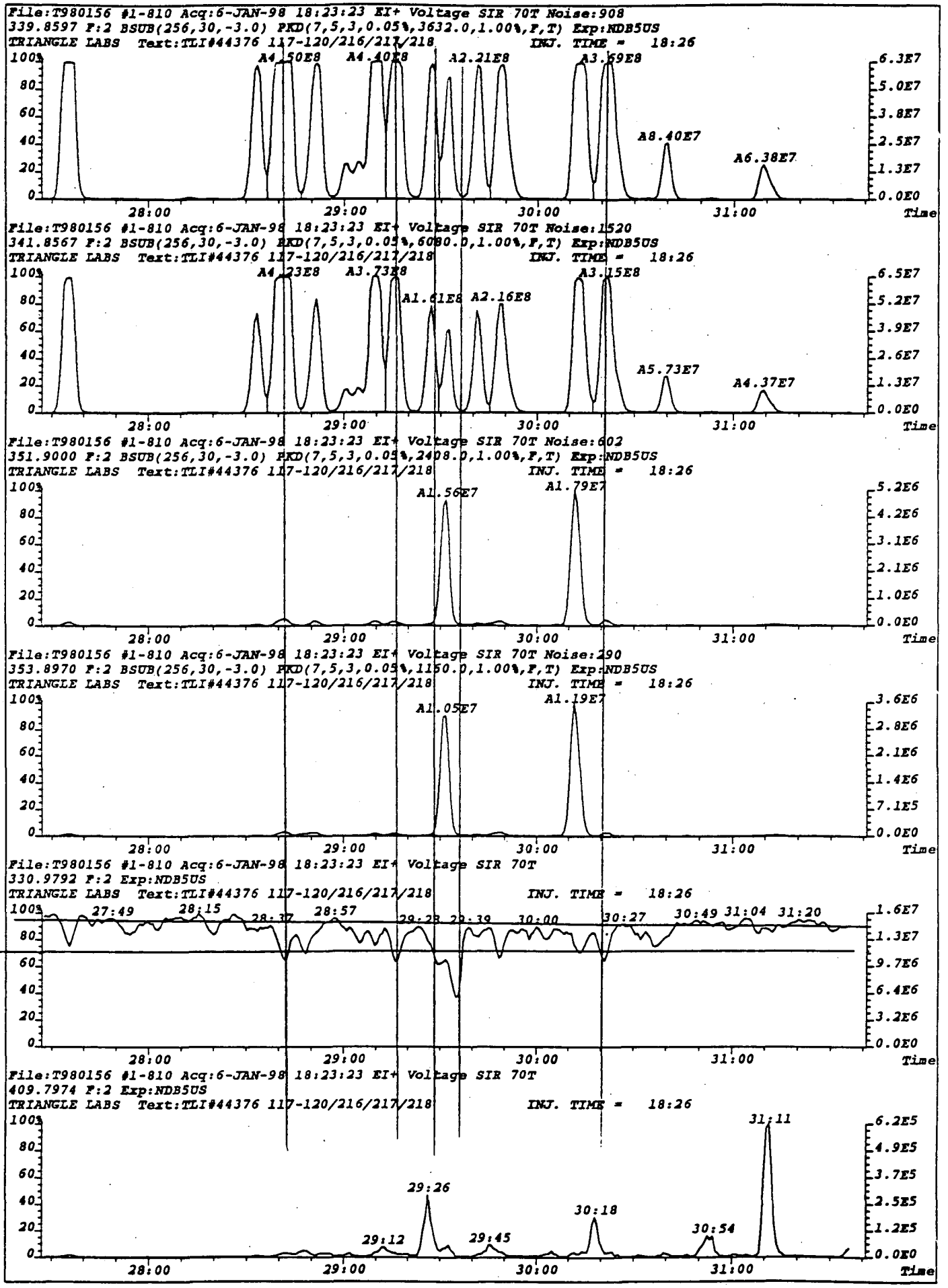
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00	RO	1.37	1.87			0.000			
				39:06	RO	0.73	41.83	19.70	26.82	0.955			
				41:11		0.90	24,908.70	11,813.90	13,094.80	1.006	OCDF	AN	
442-444			2	Peaks			24,950.53						
OCDD						0.76-1.02				0.902-1.098			
458-460	DC	NL		0:00	RO	0.54	0.98			0.000			
				40:58		0.81	41,736.70	18,575.70	23,061.00	1.000	OCDD	AN	E
458-460			1	Peak			41,736.70						
13C12-OCDD						0.76-1.02				0.998-1.006			
470-472	DC	NL		0:00	RO	1.83	1.76			0.000			
				40:57		0.95	2,788.49	1,355.47	1,433.02	1.000	13C12-OCDD	IS8	
	DC	WH		41:22		0.82	2.91			1.010			
470-472			1	Peak			2,788.49						

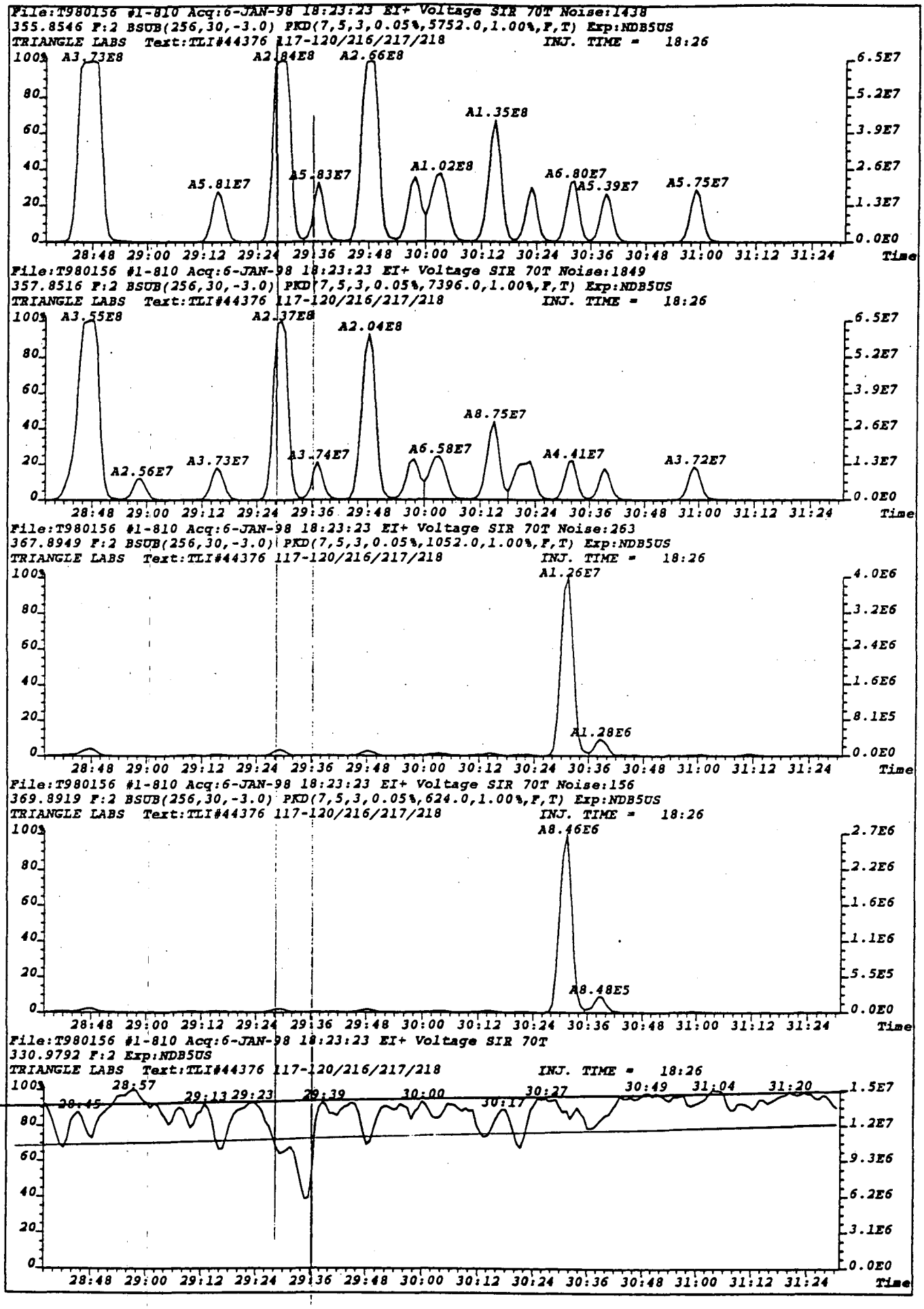
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

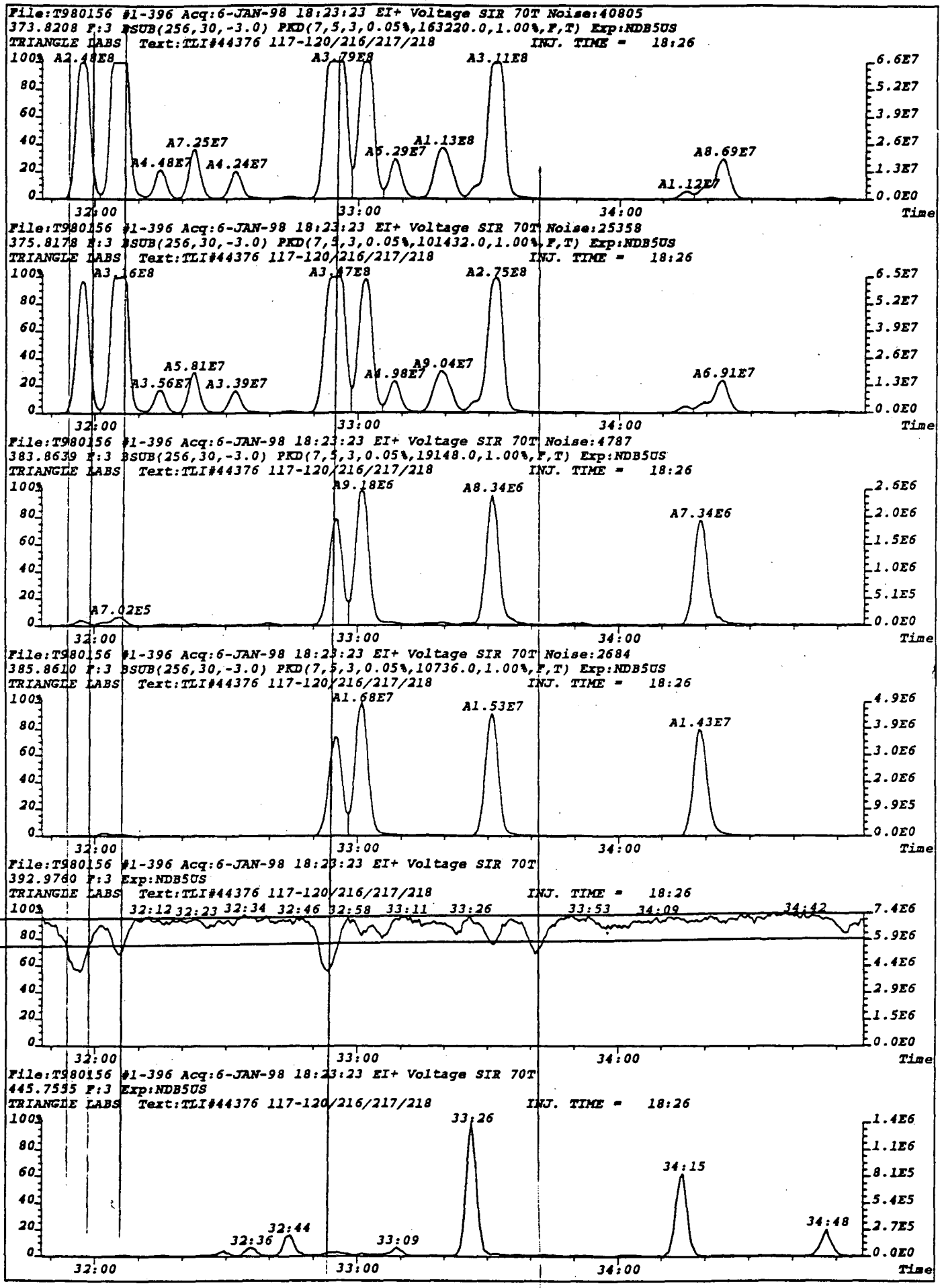
*** End of Report ***

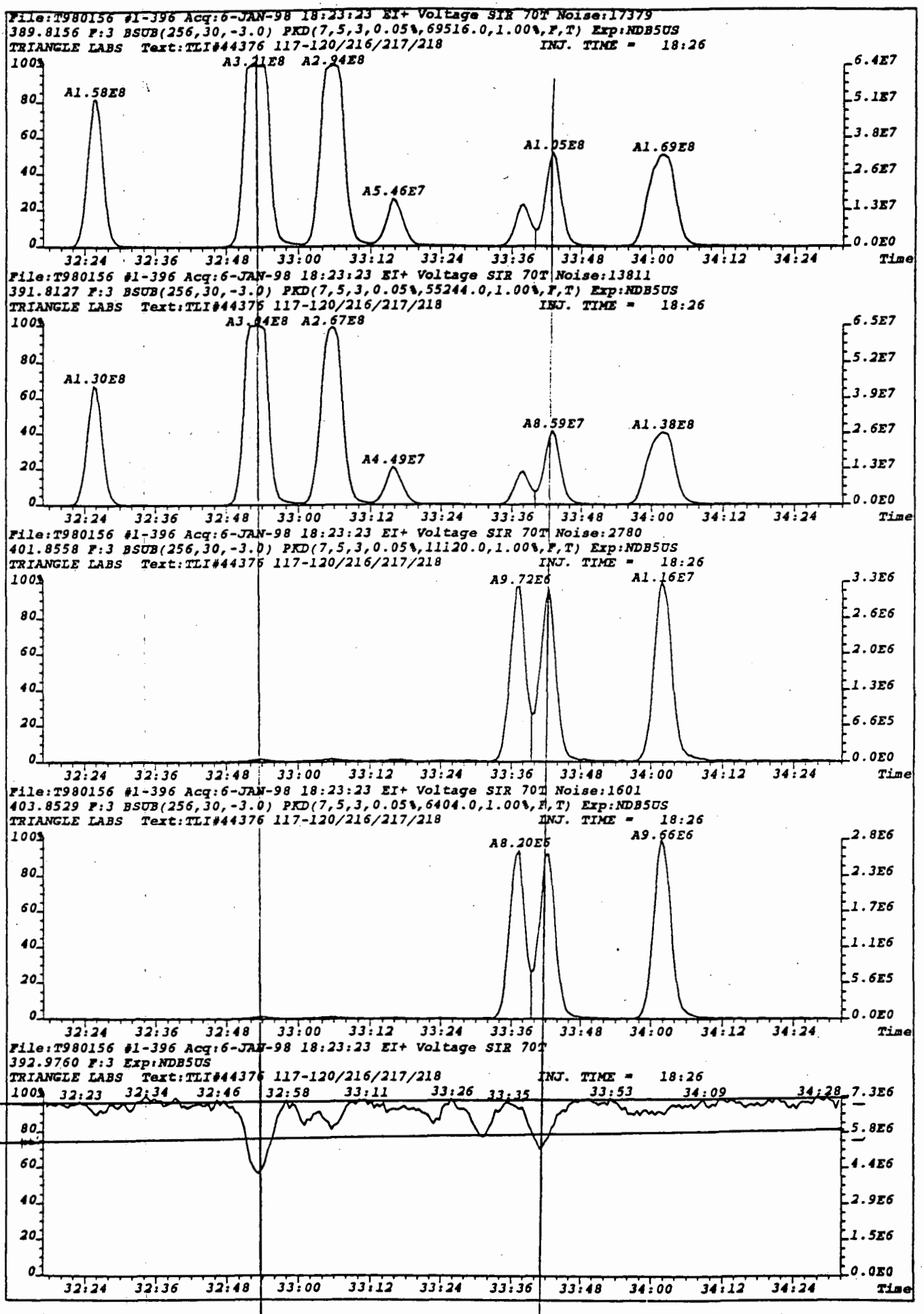

File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:3568
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,14272.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A2.52E8 A8.15E8 A6.45E8 A3.70E8 A2.97E8 A4.14E8 A2.87E8 A7.71E7 A3.88E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1092
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4368.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.51E8 A5.91E8 A6.85E8 A4.71E8 A4.54E8 A3.25E8 A9.66E7 A1.45E7 A4.83E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:5528
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,22112.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.03E7 A1.70E6 A1.01E6 A1.22E6 A6.56E5
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1992
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,7968.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.26E7 A9.35E5
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
23:16 23:49 24:09 24:50 25:10 25:29 25:55 26:13 27:05 27:31
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
27:01 25:20 26:06 27:24
Time

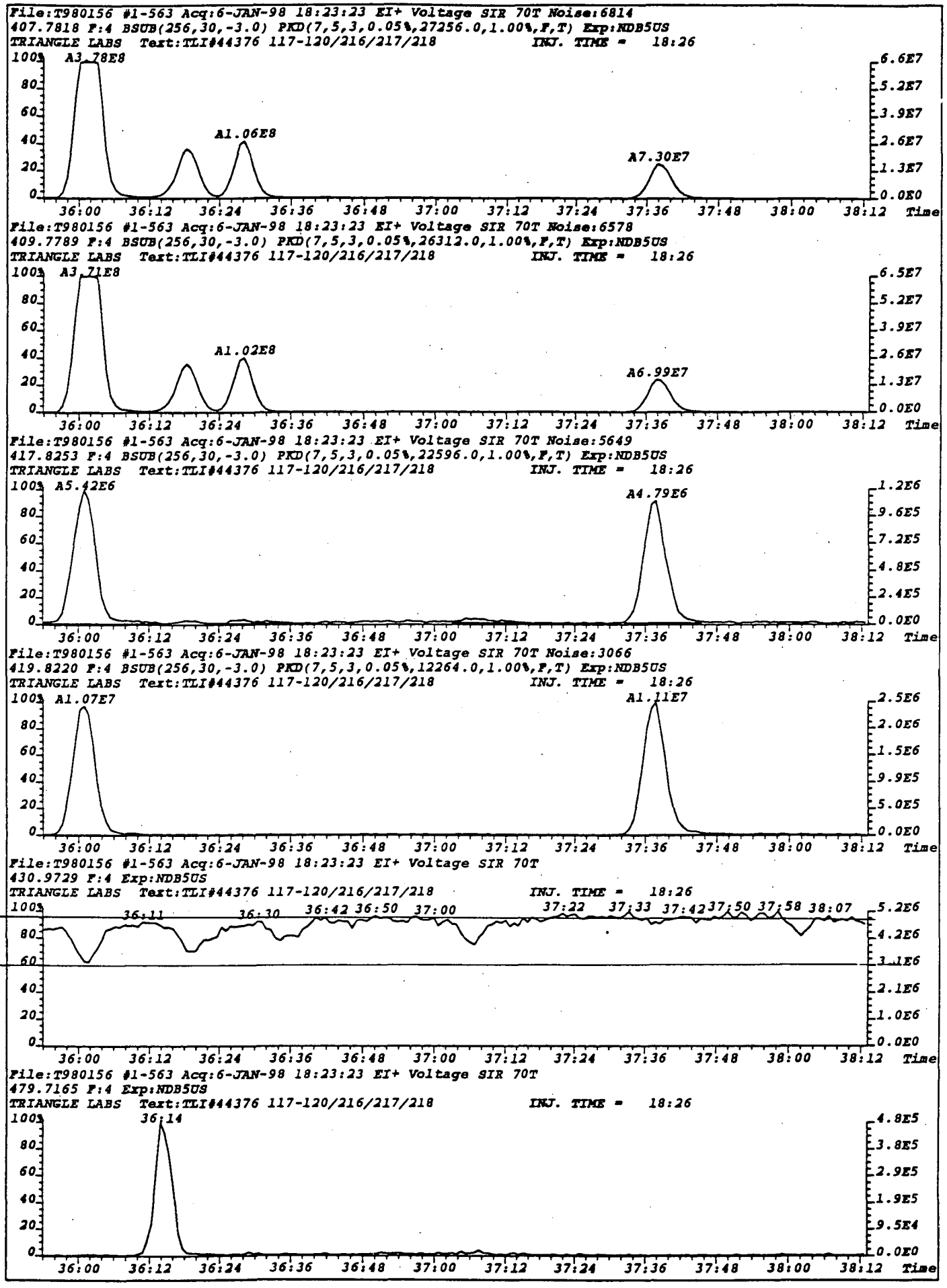

File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:6684
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,26736.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A2.77E8
A2.62E8
A1.37E8
A1.82E8
A1.05E8
A2.56E8
A3.82E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:2288
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9152.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.20E8
A3.34E8
A1.76E8
A2.34E8
A1.36E8
A3.27E8
A4.81E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:3051
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12204.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.25E7
A1.24E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1292
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5168.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.56E7
A1.55E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:773
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.35E8
A7.17E7
A2.55E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
24:09
24:24
24:50
25:10
25:29
25:55
26:13
26:32
26:48
27:05
27:31
24:00
25:00
26:00
27:00
Time

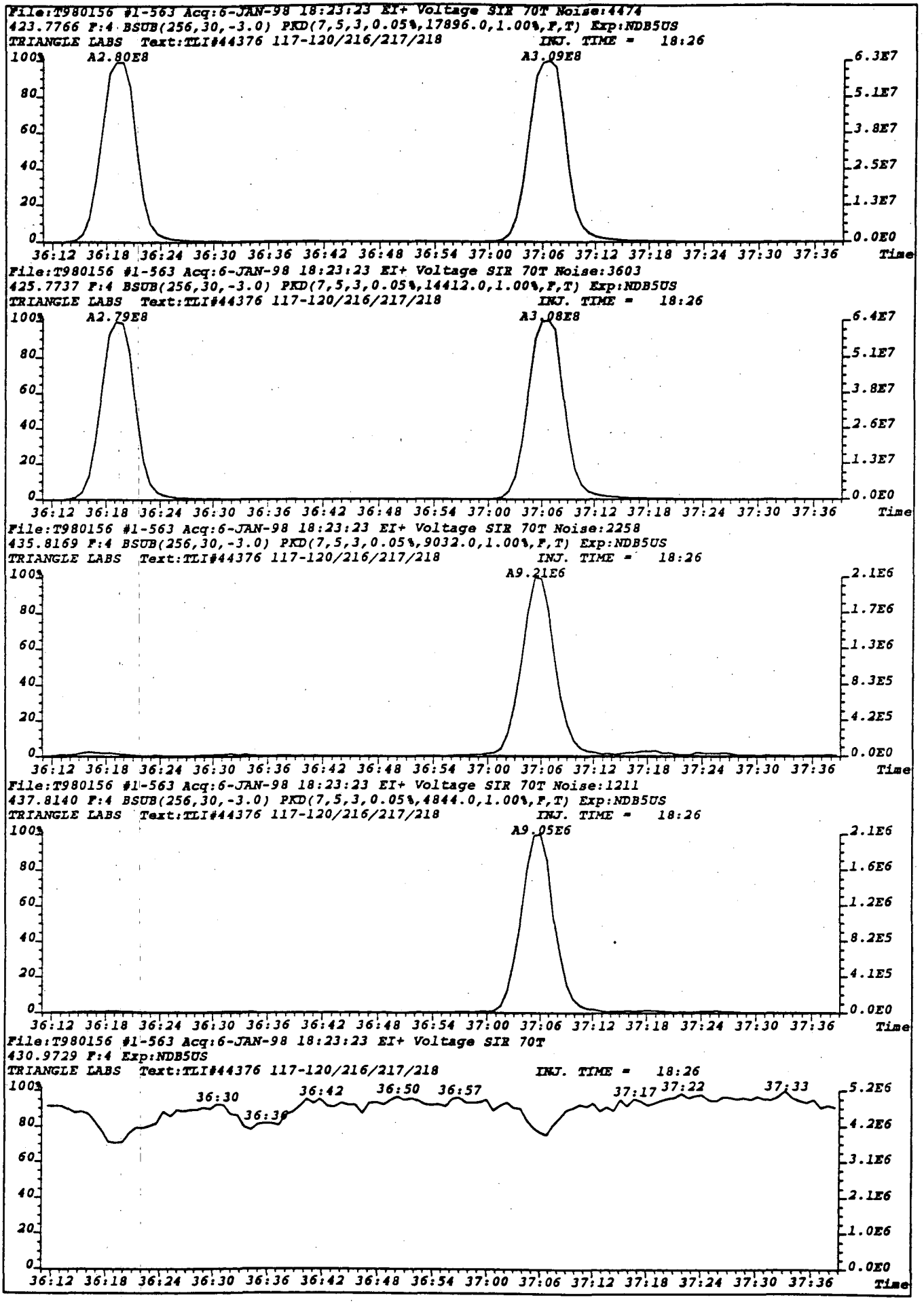

File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:908
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3632.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A4.50E8 A4.40E8 A2.21E8 A3.69E8 A8.40E7 A6.38E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1520
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6080.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A4.23E8 A3.73E8 A1.61E8 A2.16E8 A3.15E8 A5.73E7 A4.37E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:602
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2408.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.56E7 A1.79E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:290
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1150.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.05E7 A1.19E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
27:49 28:15 28:37 28:57 29:28 29:39 30:00 30:27 30:49 31:04 31:20
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
29:12 29:26 29:45 30:18 30:54 31:11
28:00 29:00 30:00 31:00 Time


File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1438
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5752.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.73E8
A2.84E8
A2.66E8
A1.35E8
A1.02E8
A5.81E7
A5.83E7
A6.80E7
A5.39E7
A5.75E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1849
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7396.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.55E8
A2.37E8
A2.04E8
A8.75E7
A2.56E7
A3.73E7
A3.74E7
A6.58E7
A4.41E7
A3.72E7
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:263
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1052.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.26E7
A1.28E6
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:156
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A8.46E6
A8.48E5
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
28:45
28:57
29:13
29:23
29:39
30:00
30:17
30:27
30:49
31:04
31:20
Time

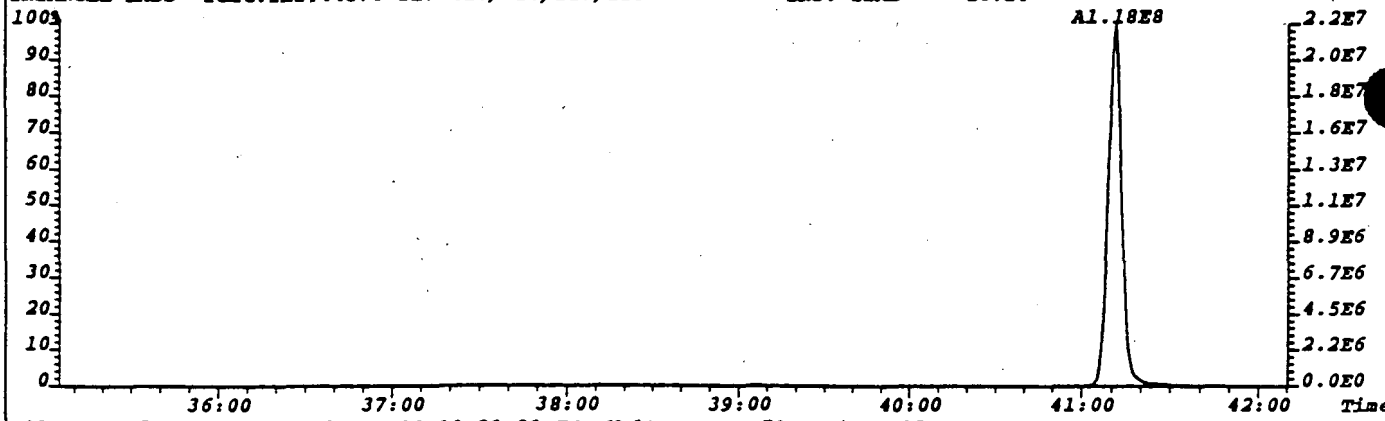

File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:40805
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,163220.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A2.48E8
A3.79E8
A3.11E8
A7.25E7
A4.48E7
A4.24E7
A5.29E7
A1.13E8
A8.69E7
A1.12E7
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:25358
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,101432.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.16E8
A3.47E8
A2.75E8
A5.81E7
A3.56E7
A3.39E7
A4.98E7
A9.04E7
A6.91E7
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:4787
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,19148.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A9.18E6
A8.34E6
A7.34E6
A7.02E5
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:2684
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10736.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.68E7
A1.53E7
A1.43E7
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
32:12 32:23 32:34 32:46 32:58 33:11 33:26 33:53 34:09 34:42
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
445.7535 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
33:26
34:15
32:44
32:36
33:09
34:48
32:00
33:00
34:00
Time


File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:17379
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,69516.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.58E8
A3.11E8
A2.94E8
A5.46E7
A1.05E8
A1.69E8
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:13811
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,55244.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.30E8
A3.04E8
A2.67E8
A4.49E7
A8.59E7
A1.38E8
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:2780
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,11120.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A9.72E6
A1.16E7
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1601
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6404.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A8.20E6
A9.66E6
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
Time

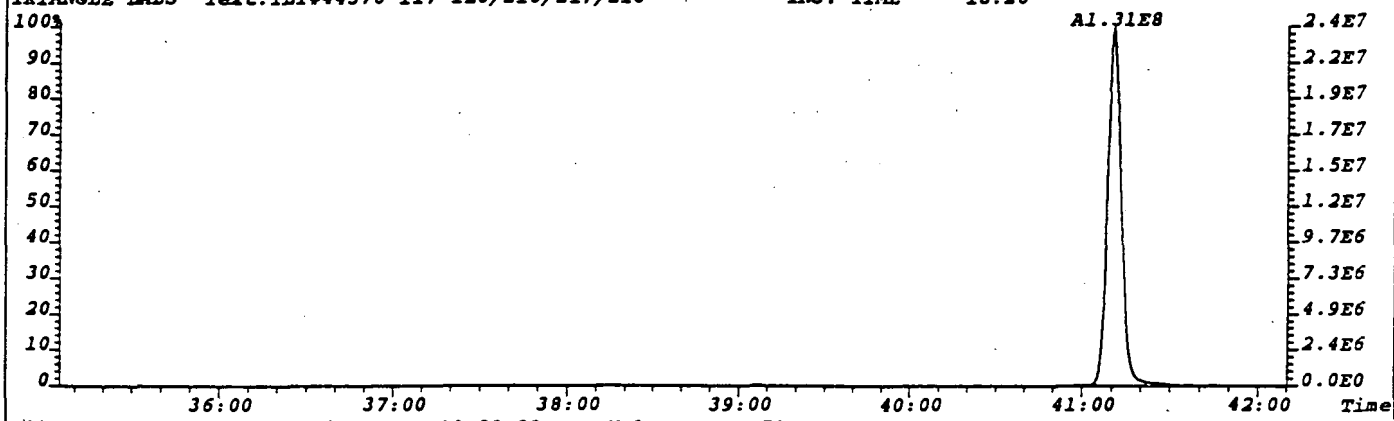

File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:6814
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,27256.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.78E8
A1.06E8
A7.30E7
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:6578
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,26312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A3.71E8
A1.02E8
A6.99E7
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:5649
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,22596.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A5.42E6
A4.79E6
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:3066
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A1.07E7
A1.11E7
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
36:14
Time


File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:4474
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,17896.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A2.80E8
A3.09E8
6.3E7
5.1E7
3.8E7
2.5E7
1.3E7
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:3603
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,14412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A2.79E8
A3.08E8
6.4E7
5.1E7
3.8E7
2.6E7
1.3E7
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:2258
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,9032.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A9.21E6
2.1E6
1.7E6
1.3E6
8.3E5
4.2E5
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:1211
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4844.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
A9.05E6
2.1E6
1.6E6
1.2E6
8.2E5
4.1E5
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26
36:30
36:36
36:42
36:50
36:57
37:17
37:22
37:33
5.2E6
4.2E6
3.1E6
2.1E6
1.0E6
0.0E0
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30 37:36 Time

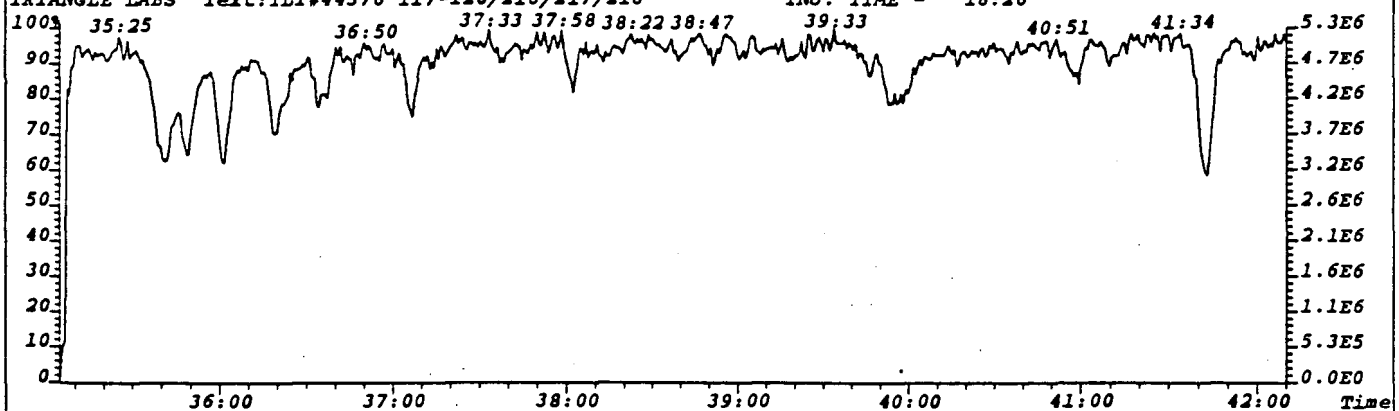
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:682
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2728.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



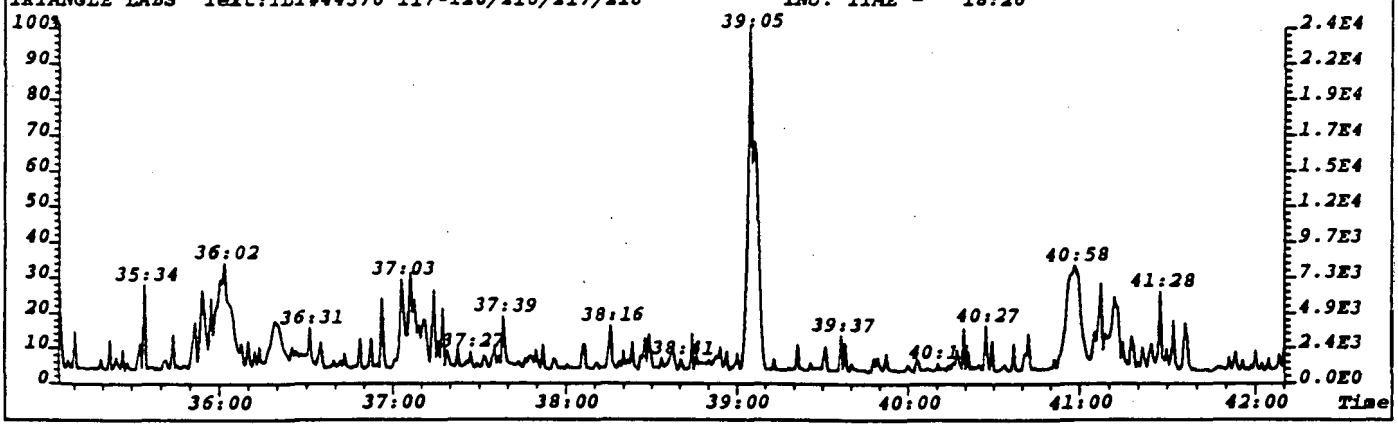
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:495
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



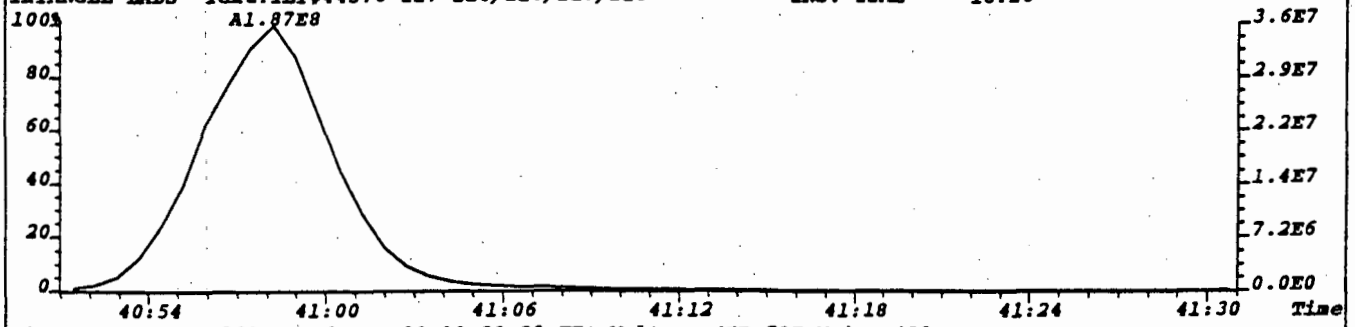
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



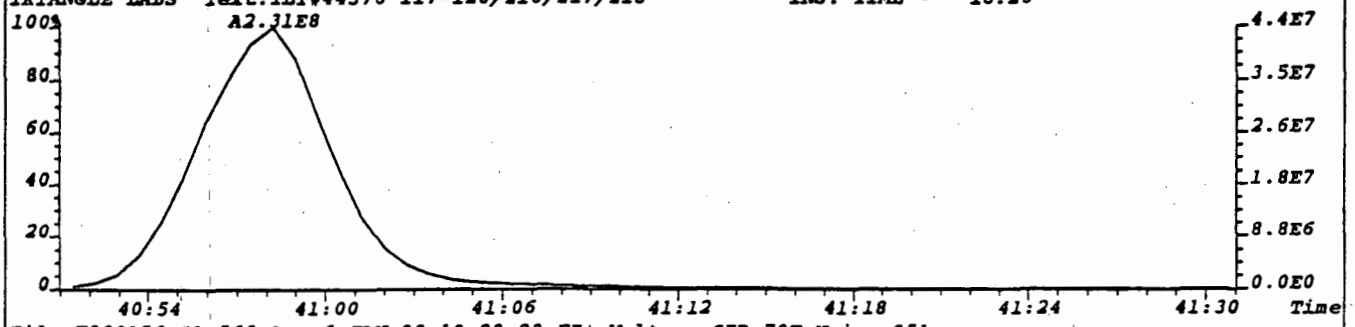
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



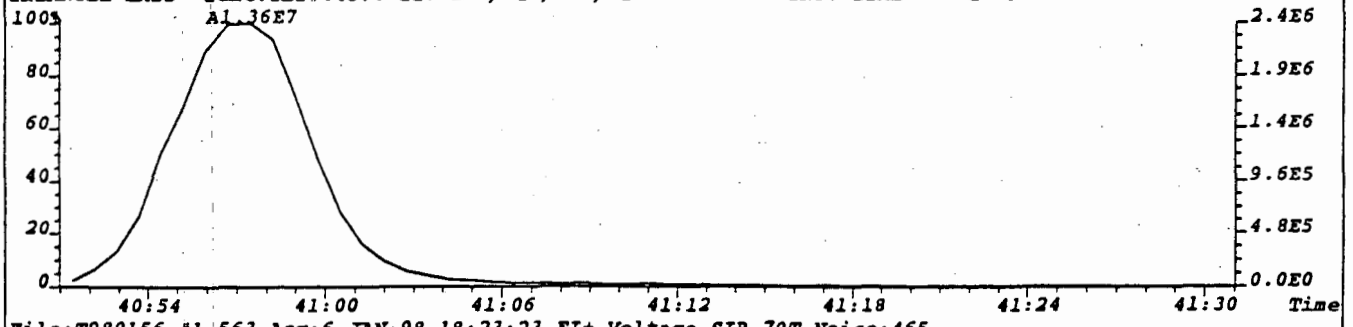
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:228
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,912.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



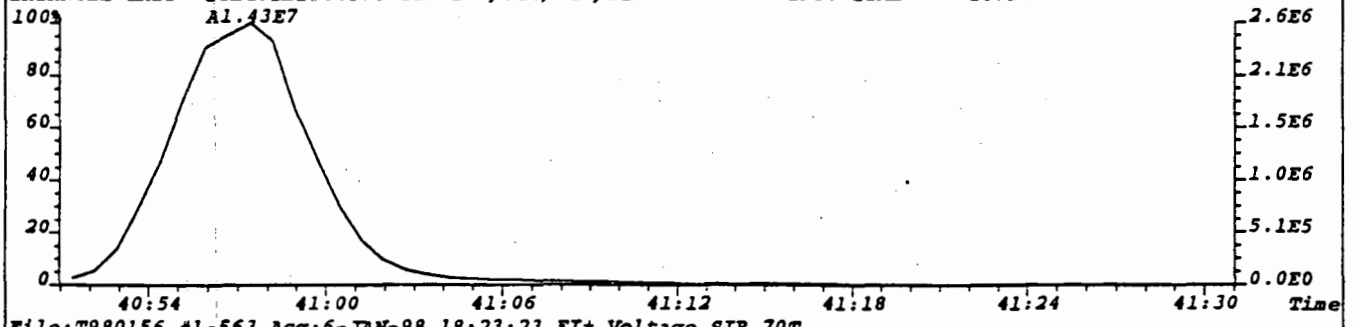
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:423
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1692.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



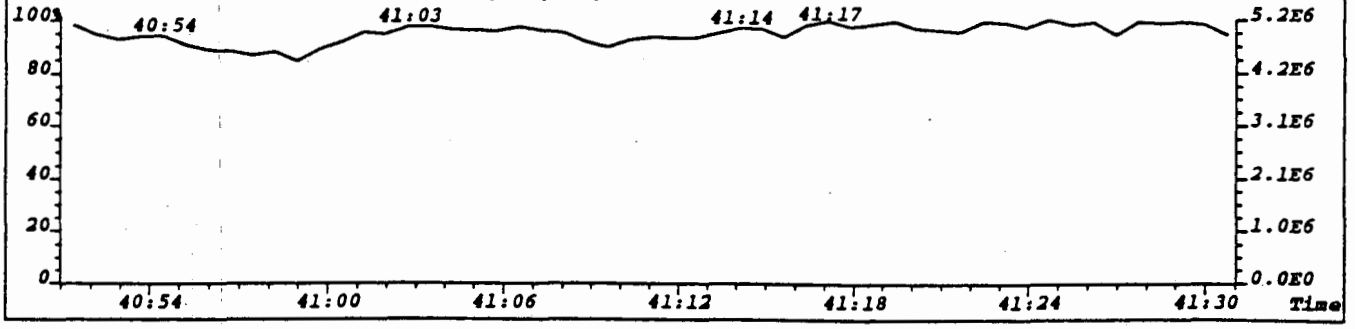
File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:851
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3404.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26

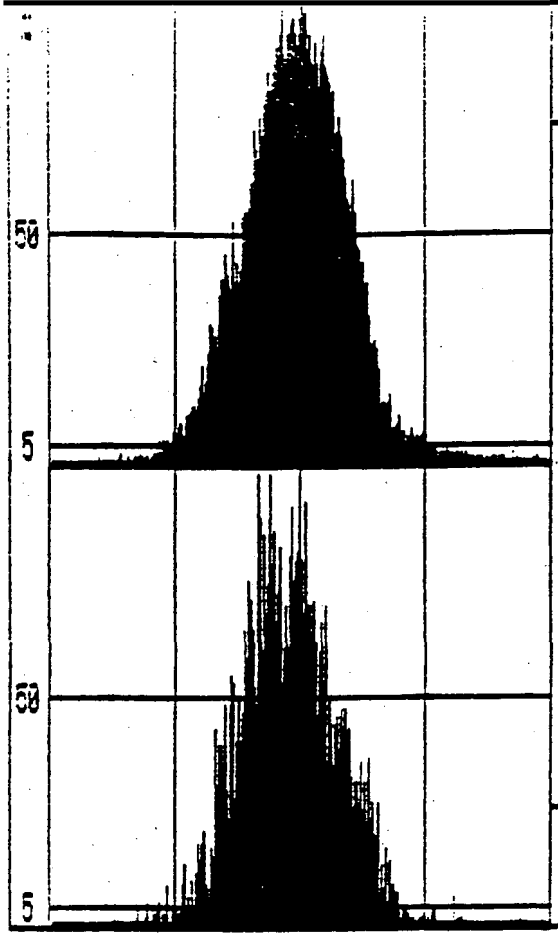


File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T Noise:465
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1860.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



File:T980156 #1-563 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26



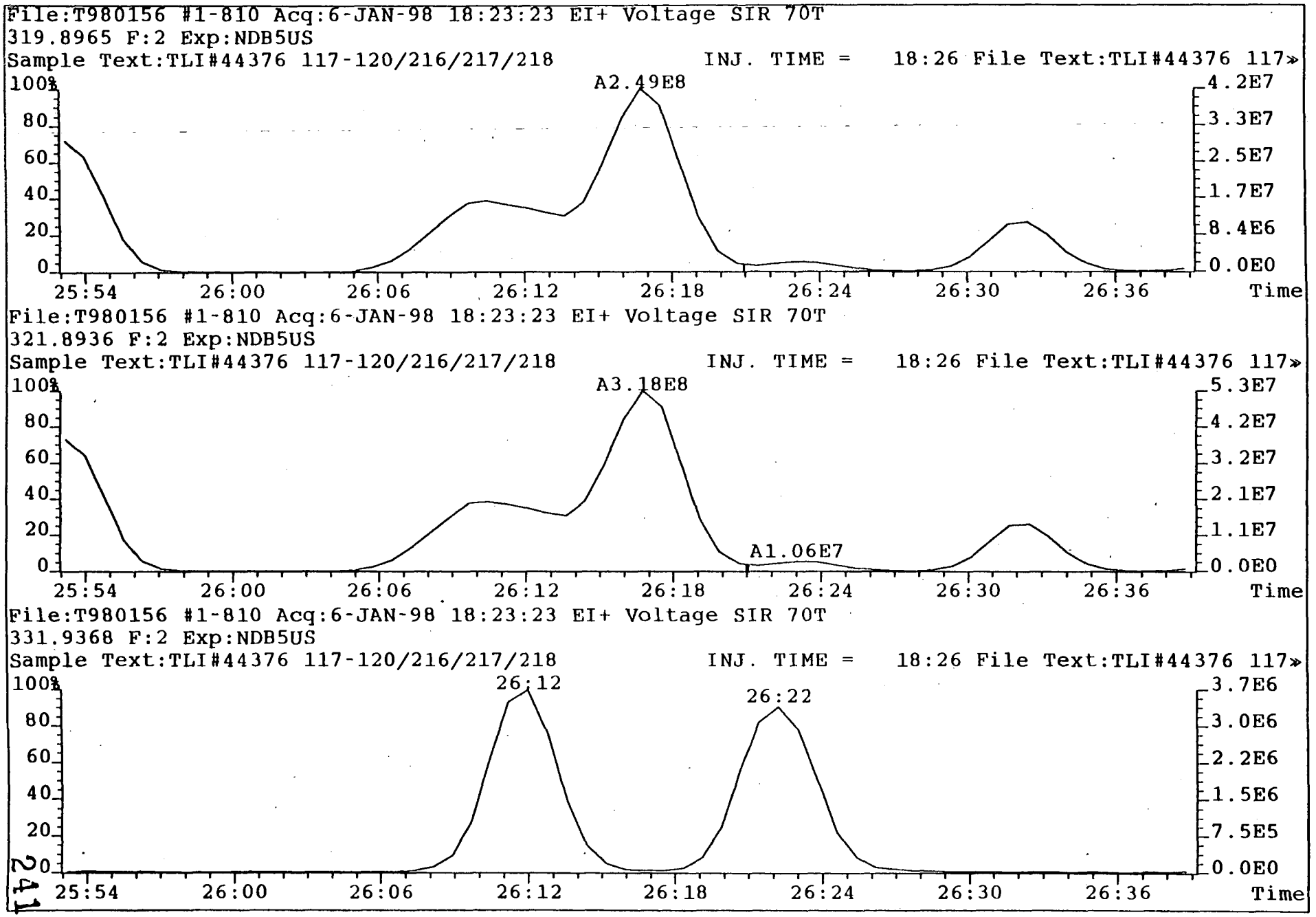


Channel I 330.9792 Peak top
Height 3.59 volts Span 200 ppm

System file name	NOBSUS
Data file name	A:T980148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

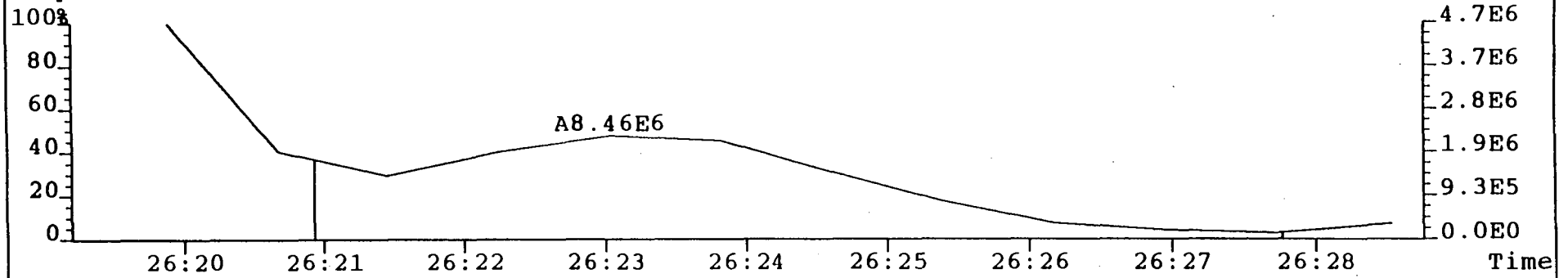
Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm



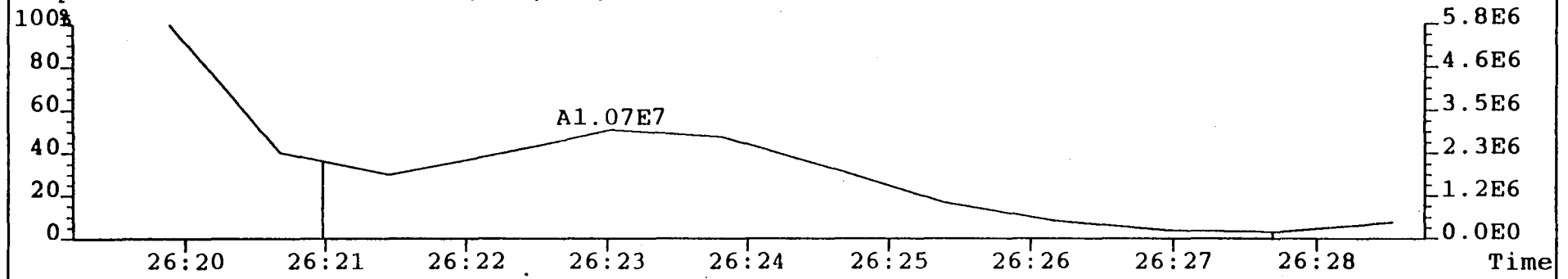
241

GES
1/10/98

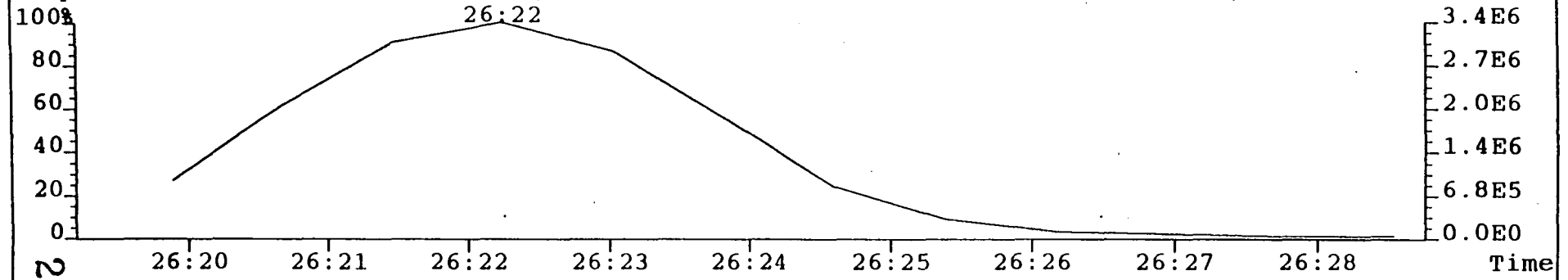
File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»

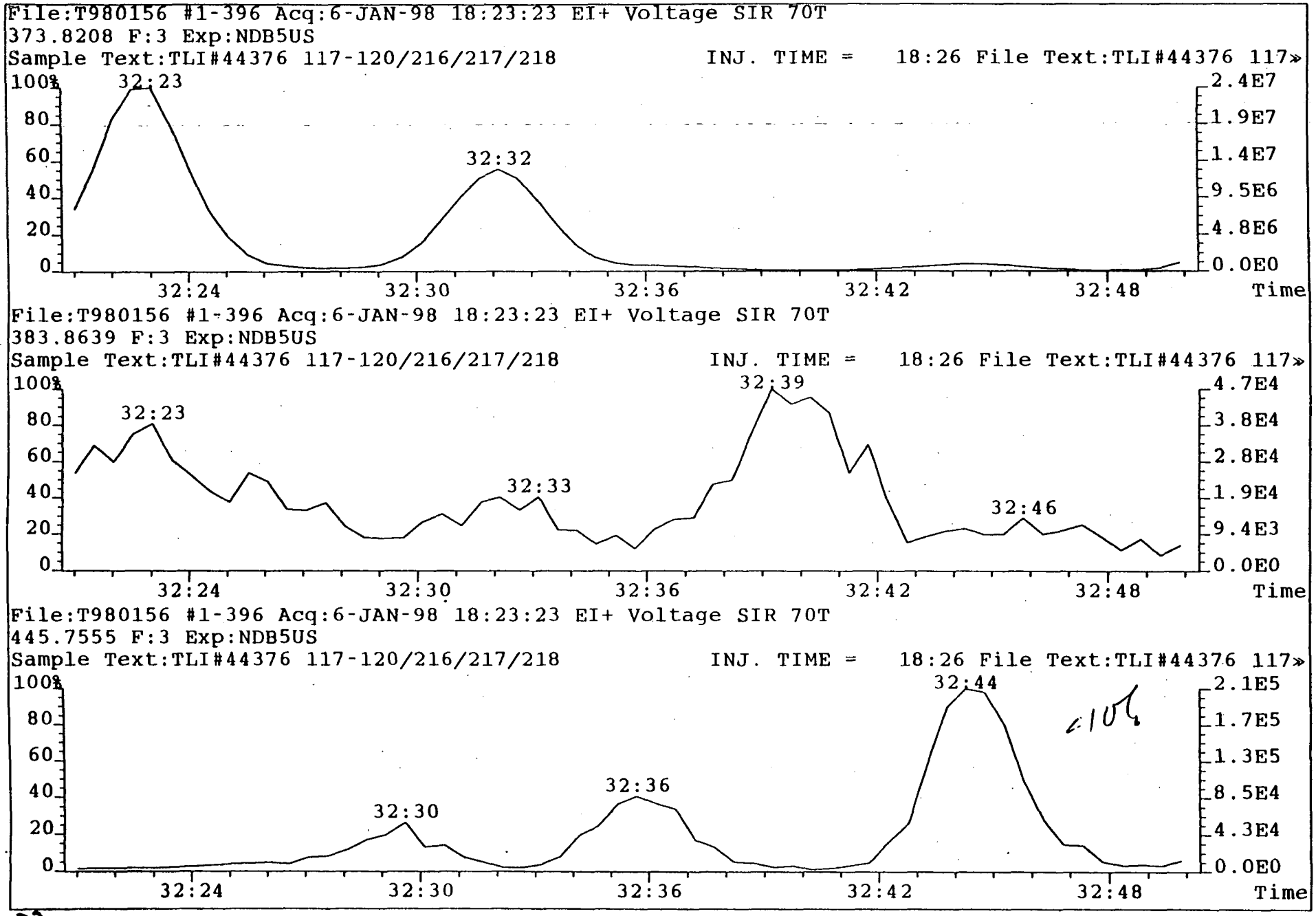


File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»

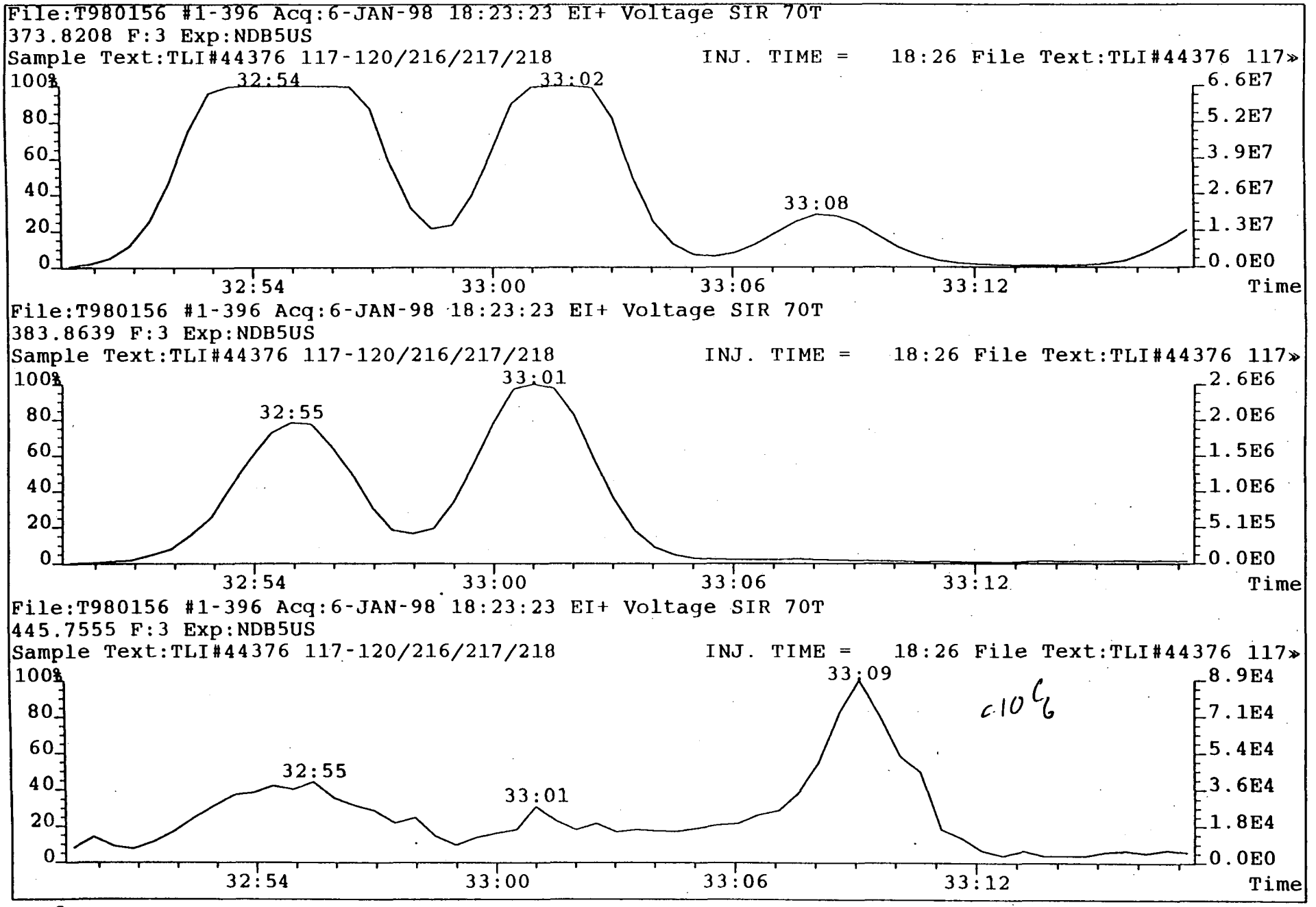


File:T980156 #1-810 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»



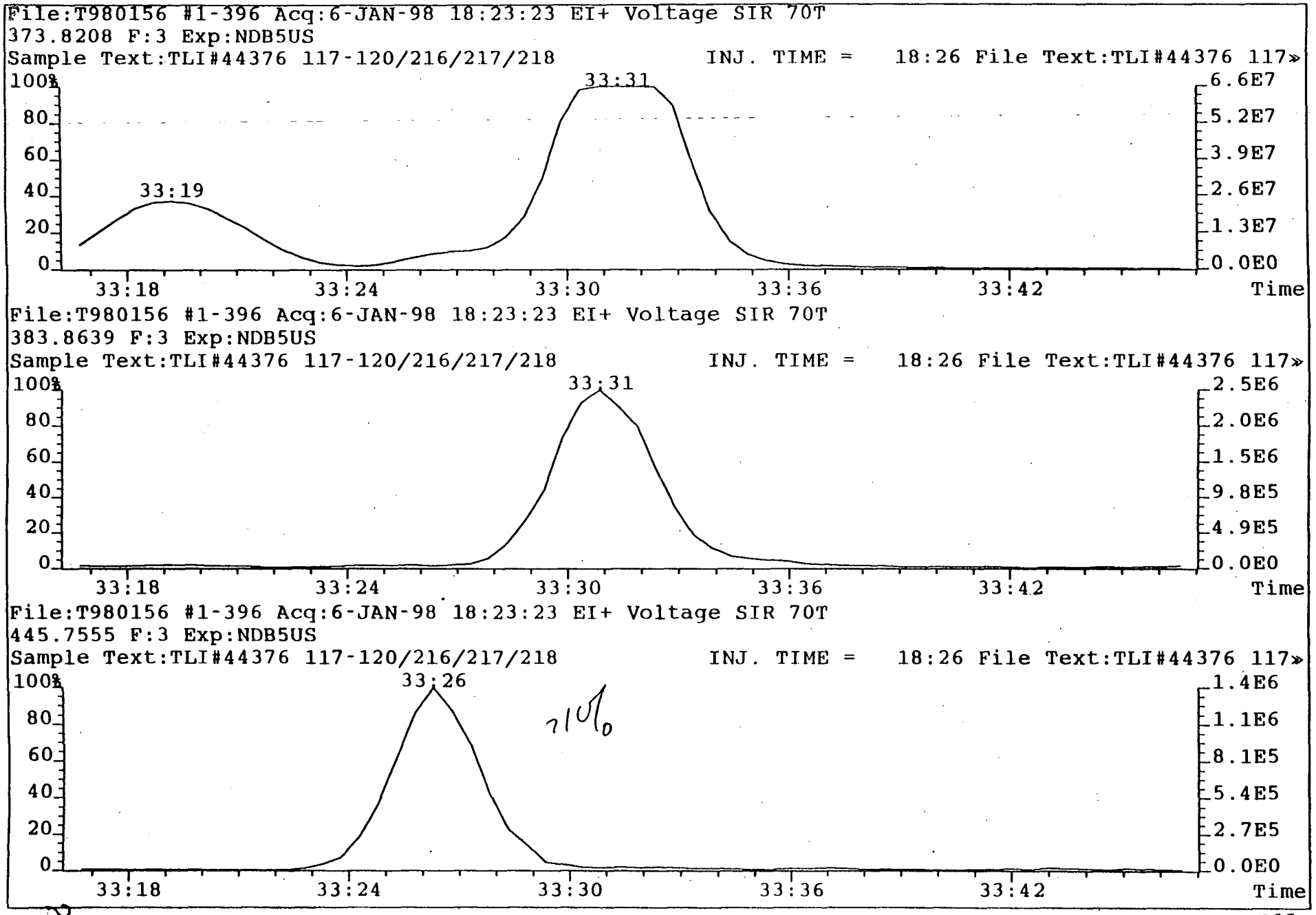

File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
32:23
32:32
2.4E7
1.9E7
1.4E7
9.5E6
4.8E6
0.0E0
32:24
32:30
32:36
32:42
32:48
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
32:23
32:33
32:39
32:46
4.7E4
3.8E4
2.8E4
1.9E4
9.4E3
0.0E0
32:24
32:30
32:36
32:42
32:48
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
32:30
32:36
32:44
2.1E5
1.7E5
1.3E5
8.5E4
4.3E4
0.0E0
32:24
32:30
32:36
32:42
32:48
Time

24.3



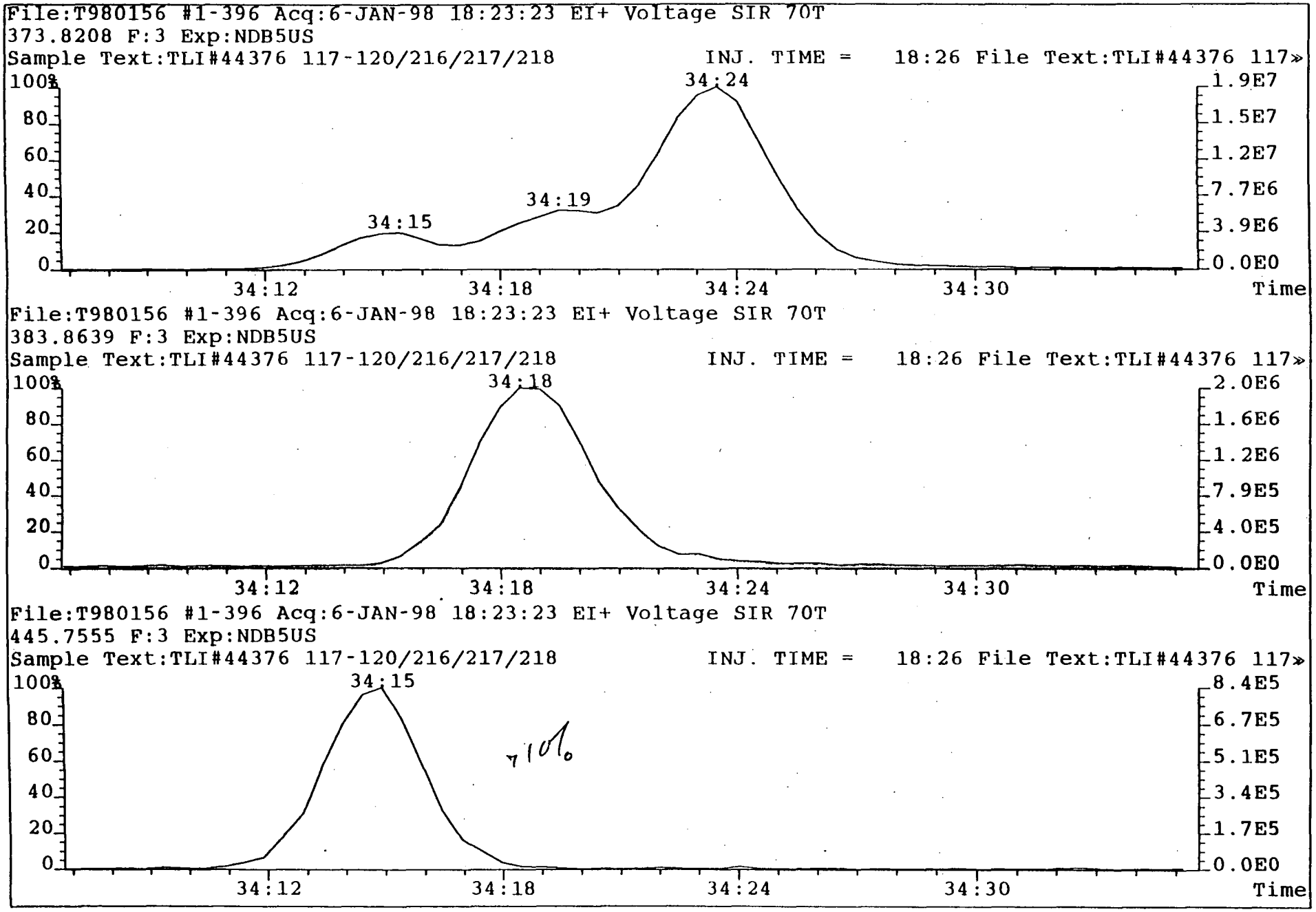
241

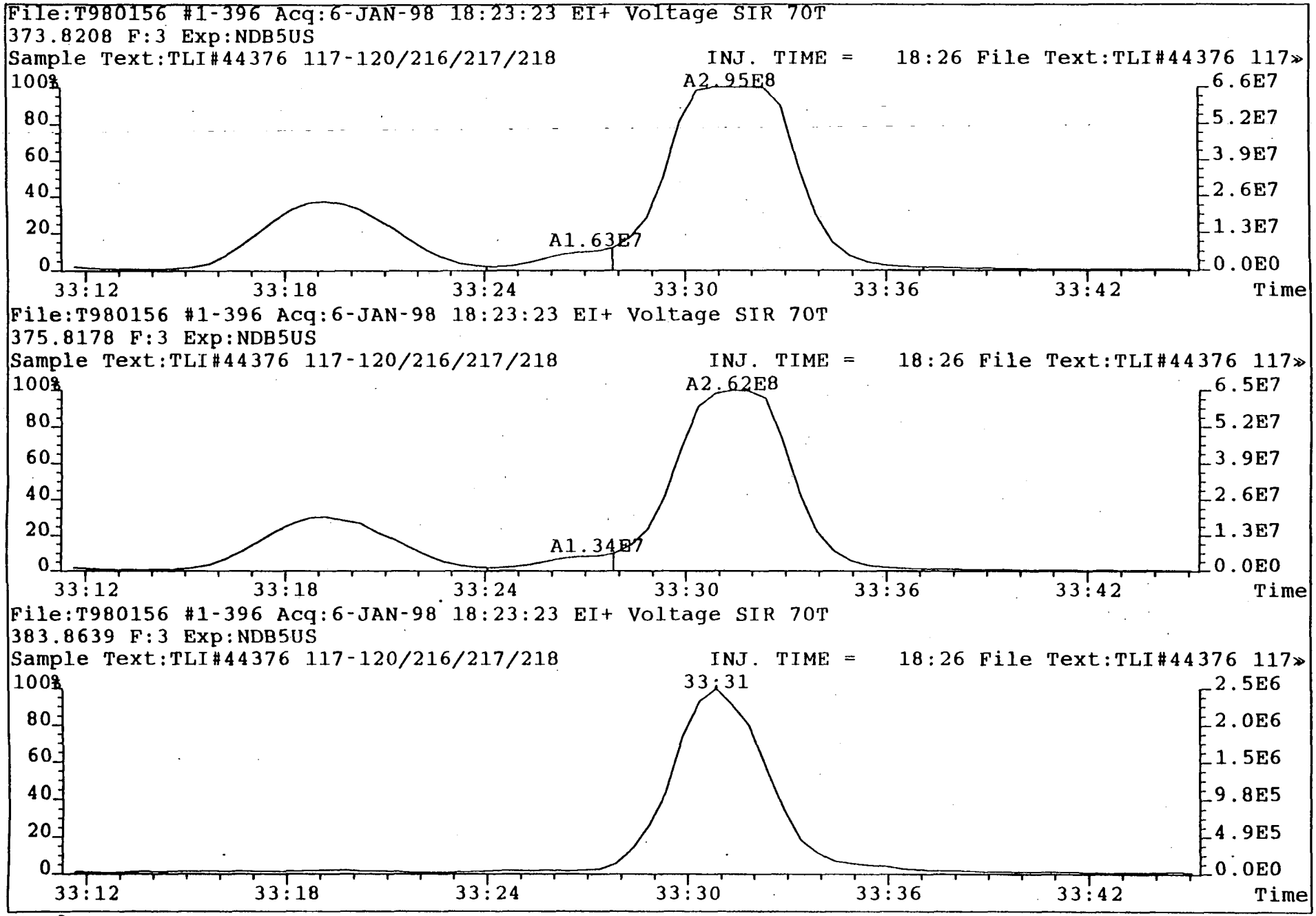
ESE 1/10/94



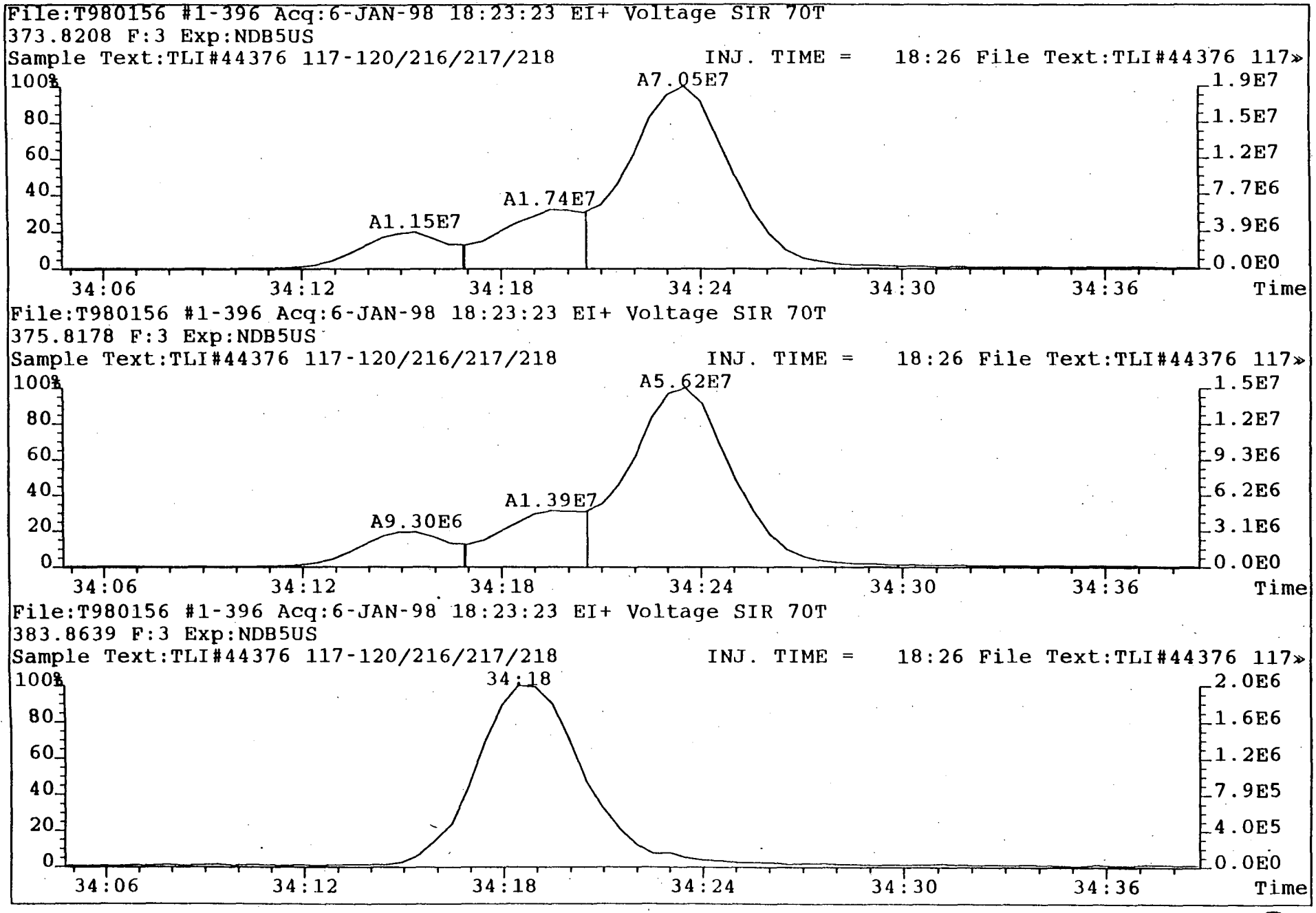
245

555
1/14/98


File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
34:24
34:15
34:19
1.9E7
1.5E7
1.2E7
7.7E6
3.9E6
0.0E0
34:12
34:18
34:24
34:30
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
34:18
2.0E6
1.6E6
1.2E6
7.9E5
4.0E5
0.0E0
34:12
34:18
34:24
34:30
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
34:15
~10%
8.4E5
6.7E5
5.1E5
3.4E5
1.7E5
0.0E0
34:12
34:18
34:24
34:30
Time


File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218
INJ. TIME = 18:26 File Text:TLI#44376 117»
A2.95E8
A1.63E7
100%
80
60
40
20
0
6.6E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
33:12
33:18
33:24
33:30
33:36
33:42
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218
INJ. TIME = 18:26 File Text:TLI#44376 117»
A2.62E8
A1.34E7
100%
80
60
40
20
0
6.5E7
5.2E7
3.9E7
2.6E7
1.3E7
0.0E0
33:12
33:18
33:24
33:30
33:36
33:42
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218
INJ. TIME = 18:26 File Text:TLI#44376 117»
33:31
100%
80
60
40
20
0
2.5E6
2.0E6
1.5E6
9.8E5
4.9E5
0.0E0
33:12
33:18
33:24
33:30
33:36
33:42
Time

241


File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
A7.05E7
A1.74E7
A1.15E7
1.9E7
1.5E7
1.2E7
7.7E6
3.9E6
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
A5.62E7
A1.39E7
A9.30E6
1.5E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time
File:T980156 #1-396 Acq:6-JAN-98 18:23:23 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 117-120/216/217/218 INJ. TIME = 18:26 File Text:TLI#44376 117»
100%
80
60
40
20
0
34:18
2.0E6
1.6E6
1.2E6
7.9E5
4.0E5
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time

Eastern Research Group

TLI Project: 44376 Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 117-120/216/217/218 Analysis File: X980087

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-4A-D/	Date Extracted:	12/29/97	ICal:	XF24087
		Date Analyzed:	01/07/98	ConCal:	X980080
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	KAS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	62.8			0.77	21:29	E__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	4.3	109	40%-130%	0.78	21:28	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.77	20:28	___

Data Reviewer: 654 01/11/98

C2NF_PSR v2.01, LARS 6.10.00

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:34 01/11/98

Initial ....Date...

Data Review By: [illegible] 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of X980087B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

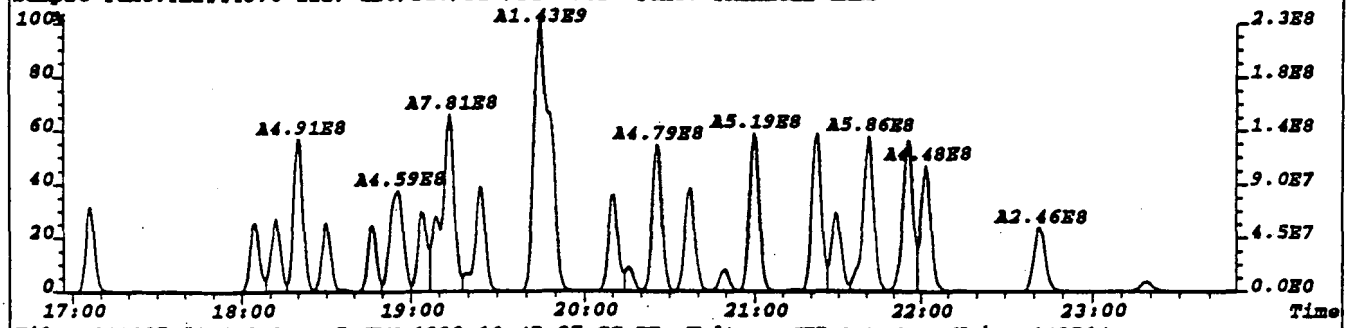
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89					0.790-1.095				
304-306	DC	NL		0:00	RO	0.93	508.75			0.000			
				17:06		0.79	58,378.10	25,732.40	32,645.70	0.797			E
				18:05		0.80	49,452.80	22,029.50	27,423.30	0.842			E
				18:12		0.75	54,172.70	23,299.30	30,873.40	0.848			E
				18:20		0.77	112,666.90	49,089.10	63,577.80	0.854			E
				18:30		0.78	49,086.50	21,530.70	27,555.80	0.862			E
				18:47		0.78	44,818.70	19,633.60	25,185.10	0.875			E
				18:56		0.78	104,940.60	45,905.60	59,035.00	0.882			E
				19:04		0.86	54,972.50	25,426.50	29,546.00	0.888			E
				19:13		0.75	182,254.40	78,126.40	104,128.00	0.895			E
				19:24		0.77	84,384.40	36,708.70	47,675.70	0.904			E
				19:44		0.78	327,099.00	142,902.00	184,197.00	0.919			E
				20:10		0.80	71,047.70	31,577.20	39,470.50	0.939			E
				20:16		0.67	16,253.08	6,501.92	9,751.16	0.944			
				20:25		0.78	109,634.70	47,882.40	61,752.30	0.951			E
				20:37		0.78	80,041.50	35,044.70	44,996.80	0.960			E
				20:49		0.77	15,492.79	6,742.94	8,749.85	0.970			
				21:00		0.77	118,805.00	51,860.70	66,944.30	0.978			E
				21:15		0.66	1,170.76	467.56	703.20	0.990			
				21:22		0.77	122,176.30	53,235.70	68,940.60	0.995			E
				21:29		0.77	63,186.20	27,570.70	35,615.50	1.001	2378-TCDF	AN	E
				21:41		0.78	133,985.30	58,567.50	75,417.80	1.010			E
				21:55		0.77	129,121.90	56,156.00	72,965.90	1.021			E
				22:02		0.78	102,469.40	44,833.70	57,635.70	1.026			E
				22:12		0.76	302.26	130.90	171.36	1.034			
				22:42		0.77	56,331.60	24,552.30	31,779.30	1.057			E
				23:19		0.82	8,455.17	3,798.51	4,656.66	1.086			
304-306			26	Peaks			2,150,700.26						
13C12-TCDF				0.65-0.89					0.953-1.047				
316-318	DC	NL		0:00	RO	1.15	29.22			0.000			
	DC	WL		18:50	RO	0.55	23.49			0.877			
	DC	WL		19:13	RO	1.11	80.82			0.895			
	DC	WL		19:44	RO	1.46	16.55			0.919			
	DC	WL		20:10		0.86	51.38			0.939			
	DC	WL		20:25		0.85	98.43			0.951			
				21:12	RO	0.62	24.16	10.51	16.97	0.988			
				21:20	RO	1.01	11.40	6.48	6.44	0.994			
				21:28		0.78	4,162.98	1,826.82	2,336.16	1.000	13C12-2378-TCDF	ISO	
				22:02	RO	1.19	19.31	13.00	10.91	1.026			
316-318			4	Peaks			4,217.85						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.901-1.099			
332-334		DC	NL	0:00	RO	2.04	25.82			0.000			
				20:13		0.80	3,060.07	1,355.85	1,704.22	1.000	13C12-2378-TCDD	IS1	
				20:28		0.77	2,750.06	1,199.67	1,550.39	1.012	13C12-1234-TCDD	RS1	
				21:08		0.77	37.53	16.38	21.15	1.045			
				21:17	RO	1.33	13.06	9.80	7.38	1.053			
				21:21	RO	1.55	24.07	21.14	13.60	1.056			
				21:25	RO	0.35	12.55	5.46	15.66	1.059			
				21:37	RO	3.58	8.64	17.49	4.88	1.069			
		DC	WH	22:39		0.80	8.51			1.120			
332-334			7	Peaks			5,905.98						

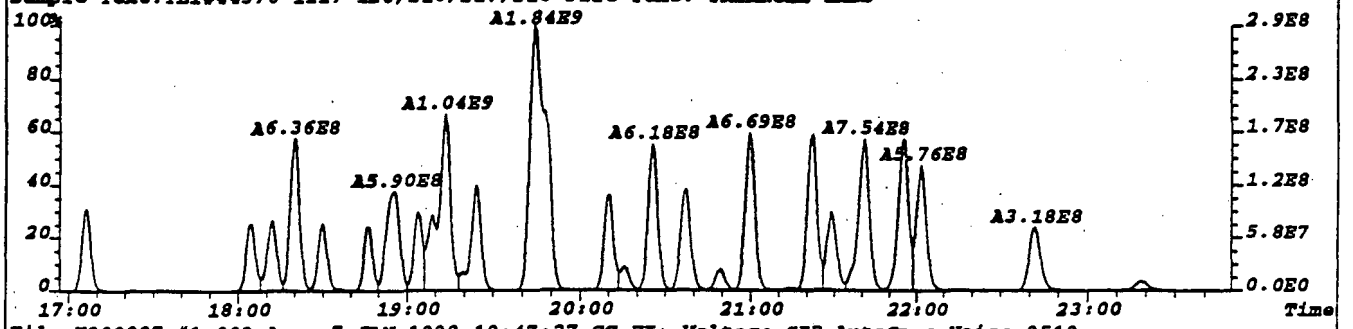
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

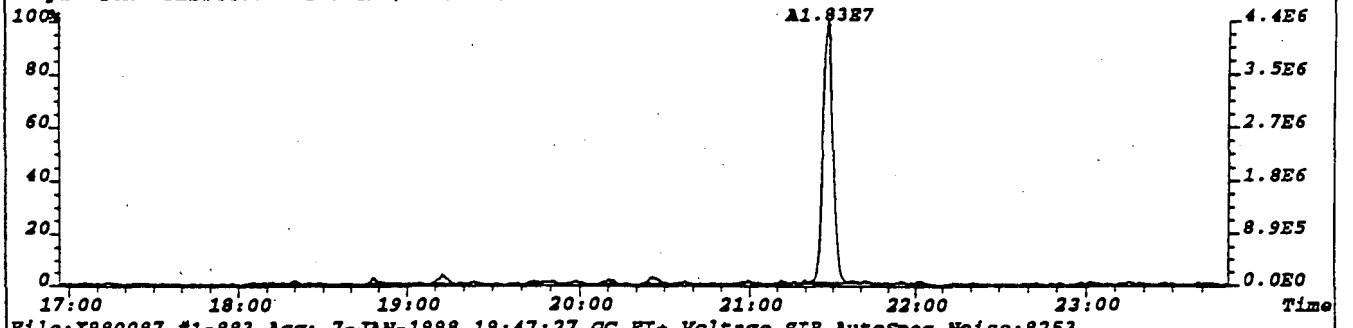
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:133646
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,534584.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



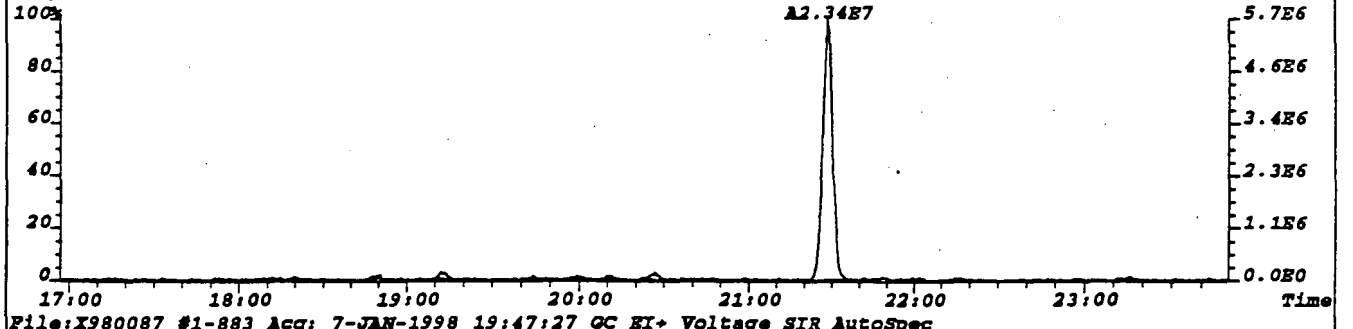
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:143714
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,574856.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



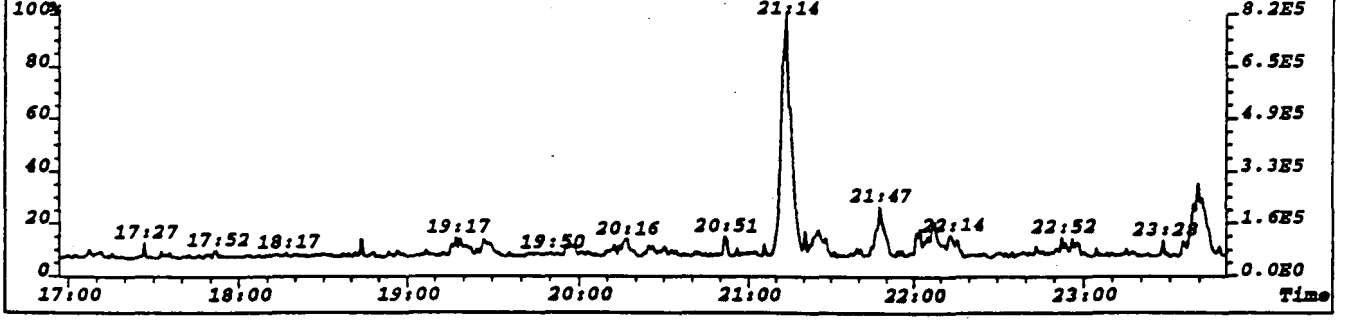
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:9519
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,38076.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



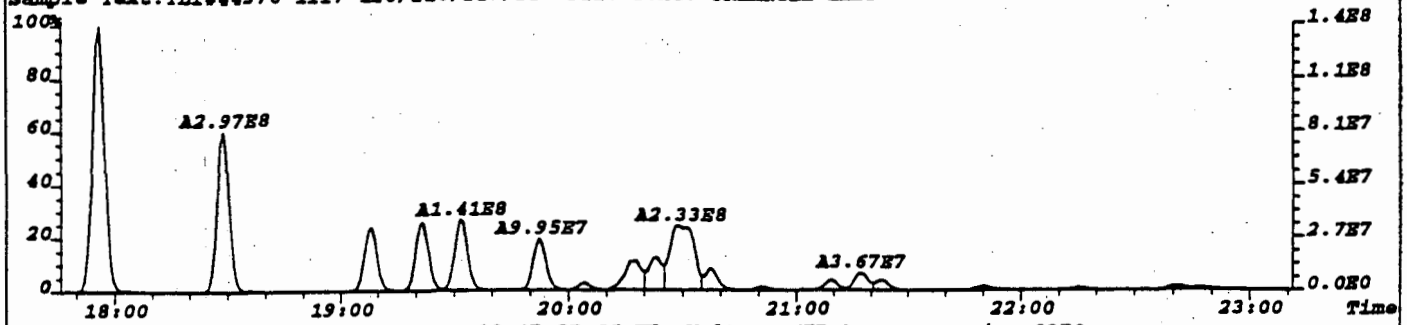
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:8253
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,33012.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



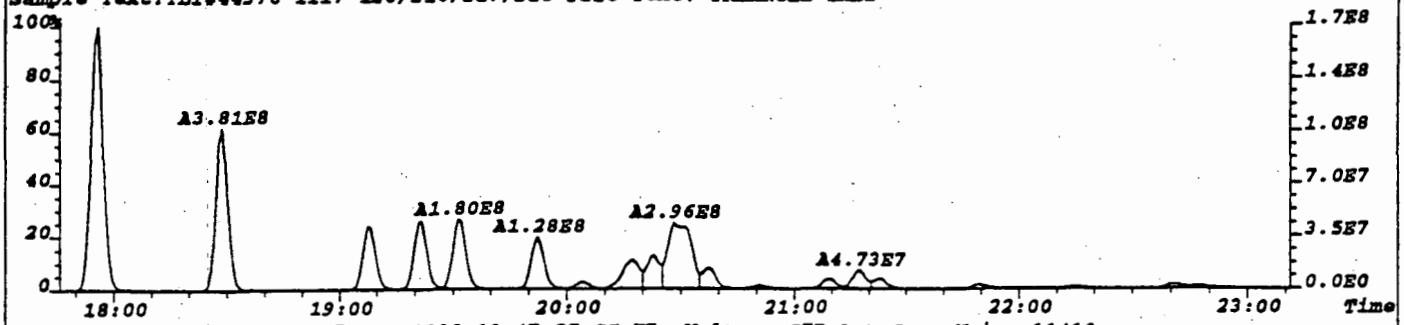
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



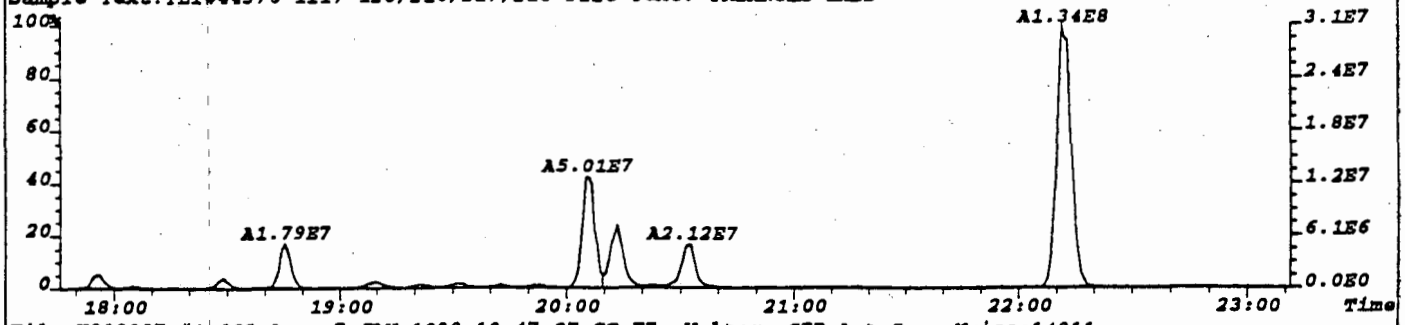
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:10077
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,40308.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



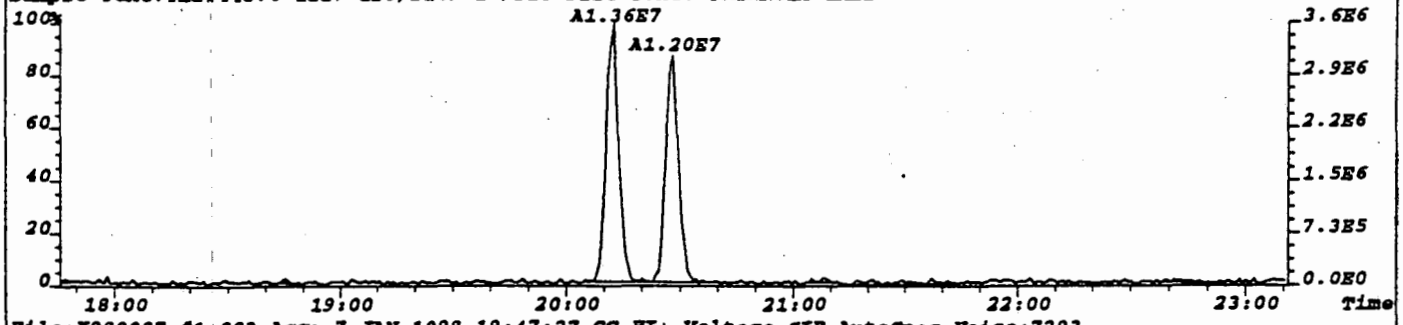
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:8370
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,33480.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



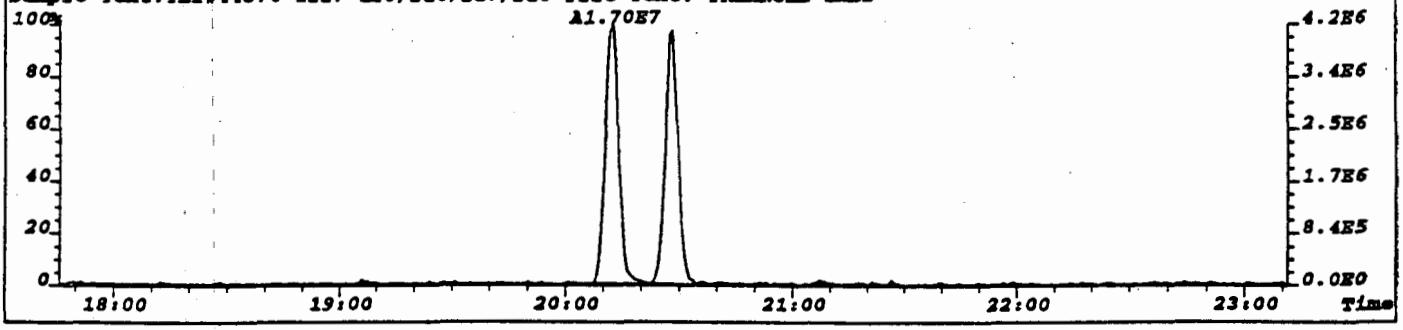
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:11419
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,45676.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS

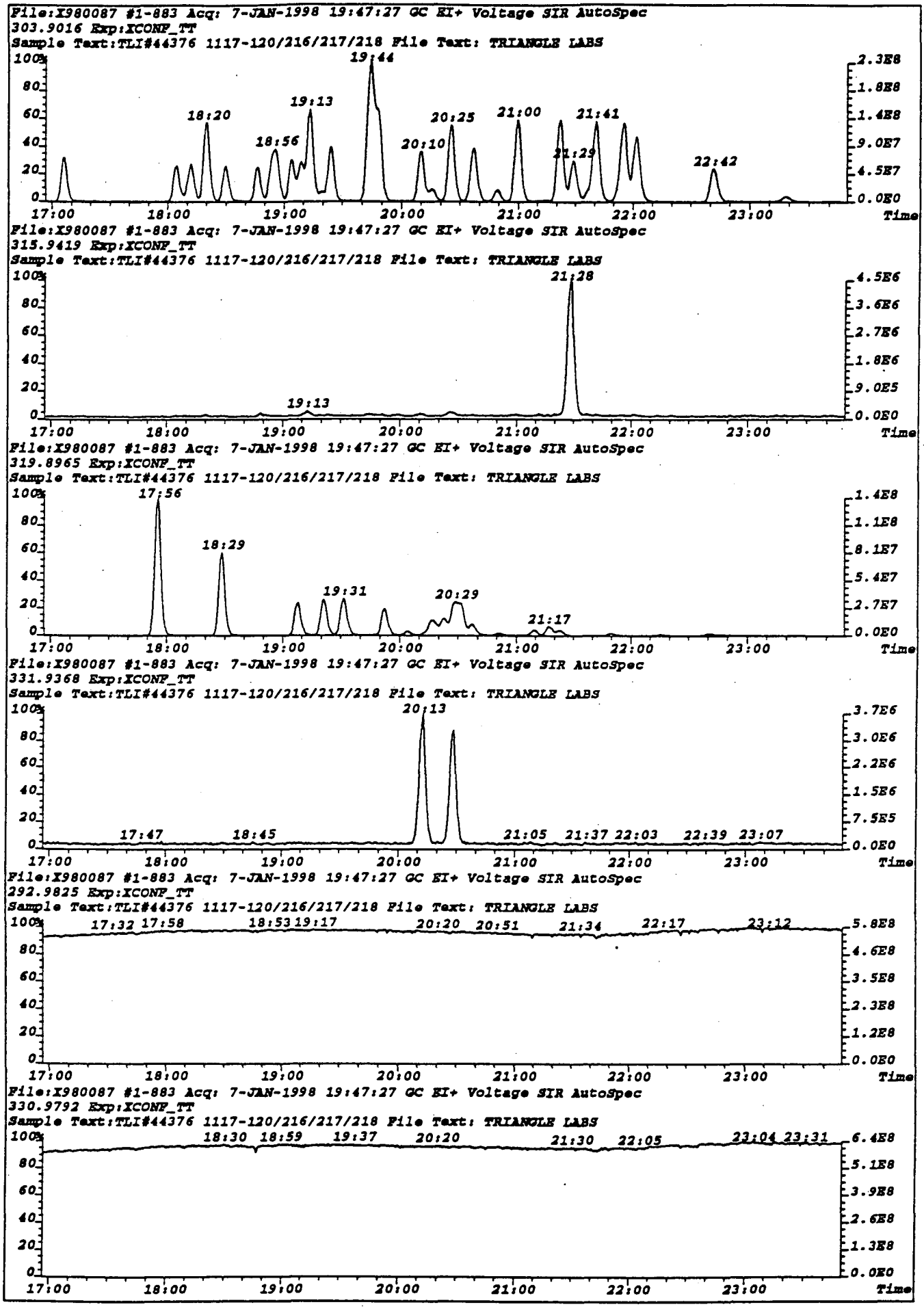


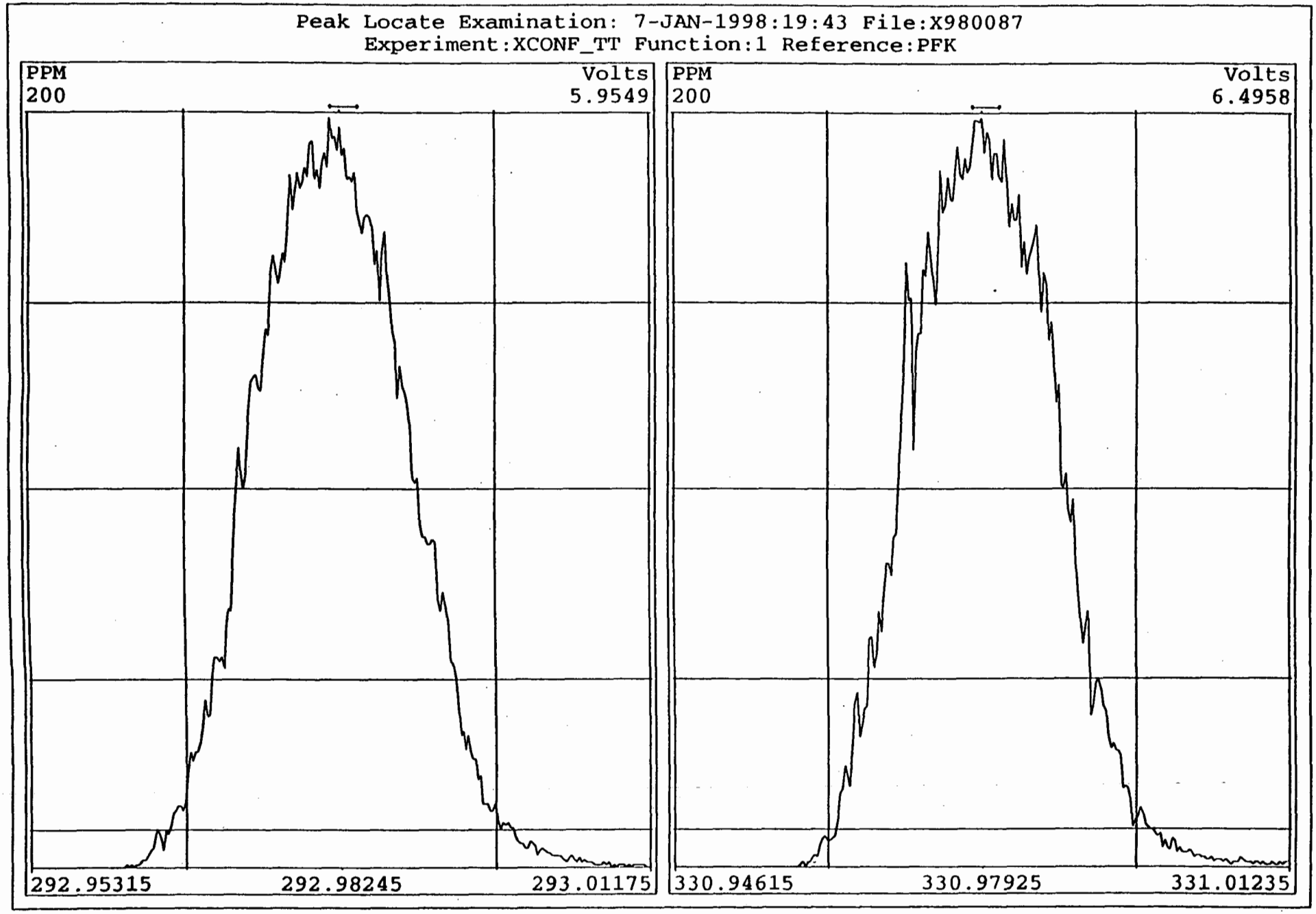
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:14911
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,59644.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS



File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec Noise:7293
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,29172.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS




File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
18:20
18:56
19:13
19:44
20:10
20:25
21:00
21:29
21:41
22:42
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
19:13
21:28
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
17:56
18:29
19:31
20:29
21:17
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
17:47
18:45
20:13
21:05
21:37
22:03
22:39
23:07
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
17:32
17:58
18:53
19:17
20:20
20:51
21:34
22:17
23:12
File:X980087 #1-883 Acq: 7-JAN-1998 19:47:27 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI#44376 1117-120/216/217/218 File Text: TRIANGLE LABS
18:30
18:59
19:37
20:20
21:30
22:05
23:04
23:31
Time


Peak Locate Examination: 7-JAN-1998:19:43 File:X980087
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
5.9549
292.95315
292.98245
293.01175
PPM
200
Volts
6.4958
330.94615
330.97925
331.01235

Eastern Research Group

TLI Project: **44376** (1) I 3 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **125-128** — Analysis File: **T98015**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-6A-6D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.86			0.75	26:20	___
1,2,3,7,8-PeCDD	6.3			1.54	30:31	___
1,2,3,4,7,8-HxCDD	6.0			1.21	33:37	___
1,2,3,6,7,8-HxCDD	12.0			1.20	33:42	___
1,2,3,7,8,9-HxCDD	18.8			1.22	34:00	PR_
1,2,3,4,6,7,8-HpCDD	40.3			1.02	37:05	E__
1,2,3,4,6,7,8,9-OCDD	34.5			0.82	40:56	___
2,3,7,8-TCDF	~~94.7~~ 74 BR 1/15/98			0.89	25:42	SE_
1,2,3,7,8-PeCDF	19.1			1.49	29:31	___
2,3,4,7,8-PeCDF	35.3			1.48	30:11	___
1,2,3,4,7,8-HxCDF	64.6			1.25	32:53	E__
1,2,3,6,7,8-HxCDF	27.0			1.26	33:00	___
2,3,4,6,7,8-HxCDF	34.4			1.27	33:30	___
1,2,3,7,8,9-HxCDF	1.5			1.32	34:18	PR_
1,2,3,4,6,7,8-HpCDF	77.6			1.04	36:00	E__
1,2,3,4,7,8,9-HpCDF	9.1			1.06	37:37	___
1,2,3,4,6,7,8,9-OCDF	17.4			0.91	41:09	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	280	12			E__
Total PeCDD	260	10		266	E__
Total HxCDD	210	7			E__
Total HpCDD	83.1	2			E__
Total TCDF	~~655~~ 74	16			SQE
Total PeCDF	~~438~~ 720	16			SE_
Total HxCDF	270	11		276	E__
Total HpCDF	116 BR 1/15/98	4			E__

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 14:30 01/15/98

256

Eastern Research Group

TLI Project: 44376
Client Sample: 125-128

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980158

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	1.7	41.3	40%-130%	0.77	25:40	Q___
$^{13}C_{12}$-2,3,7,8-TCDD	1.9	47.3	40%-130%	0.78	26:21	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.1	52.0	40%-130%	1.49	29:30	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.3	56.6	40%-130%	1.45	30:30	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.9	47.7	40%-130%	0.53	32:59	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.1	53.5	40%-130%	1.20	33:41	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.2	55.5	25%-130%	0.47	35:59	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.8	69.5	25%-130%	1.02	37:04	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.8	72.3	25%-130%	0.95	40:54	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.7	92.1	70%-140%		26:21	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.5	86.8	70%-140%	1.55	30:10	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.1	103	70%-140%	0.52	32:53	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4.3	107	70%-140%	1.20	33:36	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.0	99.5	70%-140%	0.45	37:36	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.0	49.9	40%-130%	0.51	34:18	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.8	45.8	40%-130%	0.53	33:30	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	26:10	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.19	34:01	___

Data Reviewer: _____ 01/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 14:30 01/15/98

Initial ....Date...

Data Review By: [signature] 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980158B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.878-1.073			
304-306	DC	NL		0:00	RO	0.99	8.97			0.000			
				22:39		0.81	14,642.18	6,532.63	8,109.55	0.882			QE
				23:08		0.83	13,402.35	6,092.42	7,309.93	0.901			QE
				23:21		0.80	15,740.63	7,016.94	8,723.69	0.910			QE
				23:43		0.81	56,290.40	25,123.00	31,167.40	0.924			QE
				24:02		0.81	35,494.50	15,871.40	19,623.10	0.936			QE
				24:24		0.81	37,309.10	16,651.00	20,658.10	0.951			QE
				24:40		0.80	34,036.90	15,086.40	18,950.50	0.961			QE
				24:53		0.81	40,230.00	18,020.40	22,209.60	0.969			QE
				25:05		0.82	27,401.00	12,347.40	15,053.60	0.977			QE
				25:17		0.80	13,597.35	6,030.46	7,566.89	0.985			QE
				25:30		0.80	14,126.05	6,299.90	7,826.15	0.994			QE
				25:42		0.89	55,981.50	26,393.30	29,588.20	1.001	2378-TCDF	AN	SE
				26:05		0.80	15,084.16	6,706.62	8,377.54	1.016			QE
				26:18		0.81	10,120.07	4,515.96	5,604.11	1.025			QE
				26:32		0.83	2,157.12	977.23	1,179.89	1.034			Q
				27:21		0.81	1,503.54	671.97	831.57	1.066			Q
	DC	WH		27:34	RO	0.90	498.52			1.074			
304-306			16	Peaks			387,116.85						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00	RO	1.04	8.11			0.000			
	DC	WL		23:04	RO	4.99	12.32			0.899			
	DC	WL		23:30	RO	1.94	15.66			0.916			
	DC	WL		24:04	RO	1.67	29.86			0.938			
				24:40	RO	2.99	12.46	21.04	7.04	0.961			
				25:40		0.77	1,725.18	749.07	976.11	1.000	13C12-2378-TCDF	ISO	Q
				26:05	RO	1.71	11.36	10.97	6.42	1.016			
				26:18	RO	1.84	11.06	11.49	6.25	1.025			
316-318			4	Peaks			1,760.06						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.903-1.045			
320-322	DC	NL		0:00	RO	1.27	5.06			0.000			
				23:55		0.82	50,108.60	22,619.10	27,489.50	0.908			E
				24:17		0.78	30,946.50	13,575.80	17,370.70	0.922			E
				24:34		0.77	9,492.08	4,138.55	5,353.53	0.932			E
				25:13		0.78	20,710.39	9,084.09	11,626.30	0.957			E
				25:29		0.78	11,734.90	5,145.53	6,589.37	0.967			E
				25:51		0.78	7,099.05	3,118.46	3,980.59	0.981			E
	M			26:15		0.79	18,390.00	8,090.00	10,300.00	0.996			E
	AN			26:20		0.75	470.00	201.00	269.00	0.999	2378-TCDD	AN	

Compound/ M_Z....	QC	Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
					26:31		0.77	1,881.20	818.34	1,062.86	1.006			
					26:40		0.78	984.24	430.61	553.63	1.012			
					26:53		0.74	356.28	150.95	205.33	1.020			
					27:19		0.79	334.48	147.91	186.57	1.037			
320-322				12	Peaks			152,507.72						
37Cl-TCDD											0.924-1.076			
328	DC	NL			0:00			1.50			0.000			
	DC	WL			23:55			278.18			0.908			
	DC	WL			24:09			274.45			0.917			
	DC	WL			24:17			274.32			0.922			
					24:34			55.51	55.51		0.932			
					25:01			2,462.00	2,462.00		0.949			
					25:12			107.11	107.11		0.956			
					25:28			63.34	63.34		0.966			
					25:41			9.27	9.27		0.975			
					25:51			37.08	37.08		0.981			
					26:21			1,480.87	1,480.87		1.000	37Cl-TCDD	SUR1	
					26:43			2,212.86	2,212.86		1.014			
					27:38			3.86	3.86		1.049			
328				9	Peaks			6,431.90						
13C12-TCDD							0.65-0.39				0.924-1.076			
332-334	DC	NL			0:00	RO	2.05	3.63			0.000			
	DC	WL			23:55	RO	1.88	5.81			0.908			
	DC	SN			24:34	RO	2.19	1.79			0.932			
					26:10		0.80	2,705.24	1,202.91	1,502.33	0.993	13C12-1234-TCDD	RS1	
					26:21		0.78	1,598.42	701.37	897.05	1.000	13C12-2378-TCDD	IS1	
					26:40	RO	0.58	25.70	11.18	19.40	1.012			
					27:02	RO	1.22	5.15	3.55	2.91	1.026			
332-334				4	Peaks			4,334.51						
---------- Above: TCDD / PeCDF Follows ----------														
PeCDF							1.32-1.78				0.931-1.063			
340-342	DC	NL			0:00	RO	1.10	5.10			0.000			
					27:34		1.49	25,017.40	14,964.60	10,052.80	0.934			E
					28:11		1.40	75.30	43.89	31.41	0.955			
					28:32		1.48	9,084.21	5,418.80	3,665.41	0.967			
					28:40		1.39	47,111.70	27,422.50	19,689.20	0.972			SE
					28:50		1.50	11,203.56	6,713.22	4,490.34	0.977			
					29:08		1.49	21,518.73	12,880.70	8,638.03	0.988			E
					29:14		1.50	19,497.95	11,693.80	7,804.15	0.991			E
					29:25		1.49	9,463.01	5,667.41	3,795.60	0.997			
					29:31		1.49	9,114.32	5,461.14	3,653.18	1.001	12378-PeCDF	AN	
					29:40		1.49	7,611.16	4,550.84	3,060.32	1.006			
					29:47		1.50	11,855.68	7,112.03	4,743.65	1.010			
					30:11		1.48	16,837.95	10,052.70	6,785.25	1.023	23478-PeCDF	AN	
					30:20		1.48	16,360.27	9,762.98	6,597.29	1.028			
					30:38		1.63	1,844.67	1,143.79	700.88	1.038			
					30:51		1.58	461.73	283.11	178.62	1.046			
					31:08		1.53	1,781.13	1,078.05	703.08	1.055			

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
340-342			16 Peaks				208,838.77						
13C12-PeCDF				1.32-1.78						0.864-1.136			
352-354	DC	NL		0:00	RO	0.95	3.82			0.000			
				27:33	RO	1.12	61.69	37.50	33.58	0.934			
				28:15	RO	0.38	17.01	10.34	27.30	0.958			
				28:23	RO	2.10	8.03	6.62	3.15	0.962			
				28:31	RO	2.67	9.92	10.37	3.89	0.967			
				28:40	RO	1.81	54.52	38.63	21.38	0.972			
				28:51	RO	0.95	22.80	13.86	14.63	0.978			
				29:01		1.62	6.99	4.32	2.67	0.984			
				29:07		1.70	24.04	15.14	8.90	0.987			
				29:14		1.37	22.82	13.20	9.62	0.991			
				29:30		1.49	1,799.53	1,076.70	722.83	1.000	13C12-PeCDF 123		IS2
				29:46		1.34	68.74	39.34	29.40	1.009			
				30:10		1.55	1,551.21	943.73	607.48	1.023	13C12-PeCDF 234		SUR2
				30:20	RO	2.11	13.52	11.20	5.30	1.028			
				31:03	RO	0.64	6.53	3.97	6.21	1.053			
352-354			14 Peaks				3,667.35						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.939-1.022			
356-358	DC	NL		0:00	RO	0.80	1.78			0.000			
				28:46		1.42	30,596.20	17,973.80	12,622.40	0.943			E
				29:14		1.52	2,306.30	1,392.65	913.65	0.958			
				29:28		1.56	22,474.44	13,708.00	8,766.44	0.966			E
				29:36		1.53	2,204.81	1,334.43	870.38	0.970			
				29:47		1.54	15,139.80	9,189.27	5,950.53	0.977			E
				30:02		1.56	5,499.29	3,352.07	2,147.22	0.985			
				30:13		1.55	7,484.96	4,547.26	2,937.70	0.991			
				30:20	RO	0.92	2,348.62	1,427.59	1,556.60	0.995			
				30:31		1.54	2,212.17	1,341.20	870.97	1.001	12378-PeCDD		AN
				30:38		1.52	1,690.59	1,019.22	671.37	1.004			
				30:58		1.56	1,611.89	983.03	628.86	1.015			
356-358			11 Peaks				93,569.07						
13C12-PeCDD				1.32-1.78						0.869-1.131			
368-370	DC	NL		0:00	RO	0.20	1.45			0.000			
				28:46	RO	3.00	19.56	23.03	7.67	0.943			
				29:28	RO	2.25	15.56	13.73	6.10	0.966			
				29:47	RO	2.34	9.82	9.00	3.85	0.977			
				30:30		1.45	1,086.71	643.53	443.18	1.000	13C12-PeCDD 123		IS3
				30:38	RO	1.17	100.91	61.34	52.56	1.004			
				31:00	RO	0.69	7.68	4.67	6.73	1.016			
	DC	SN		31:25	RO	0.97	1.65			1.030			
				31:31	RO	0.96	4.98	3.03	3.17	1.033			
368-370			7 Peaks				1,245.22						
---------- Above: PeCDD / HxCDF Follows ----------													

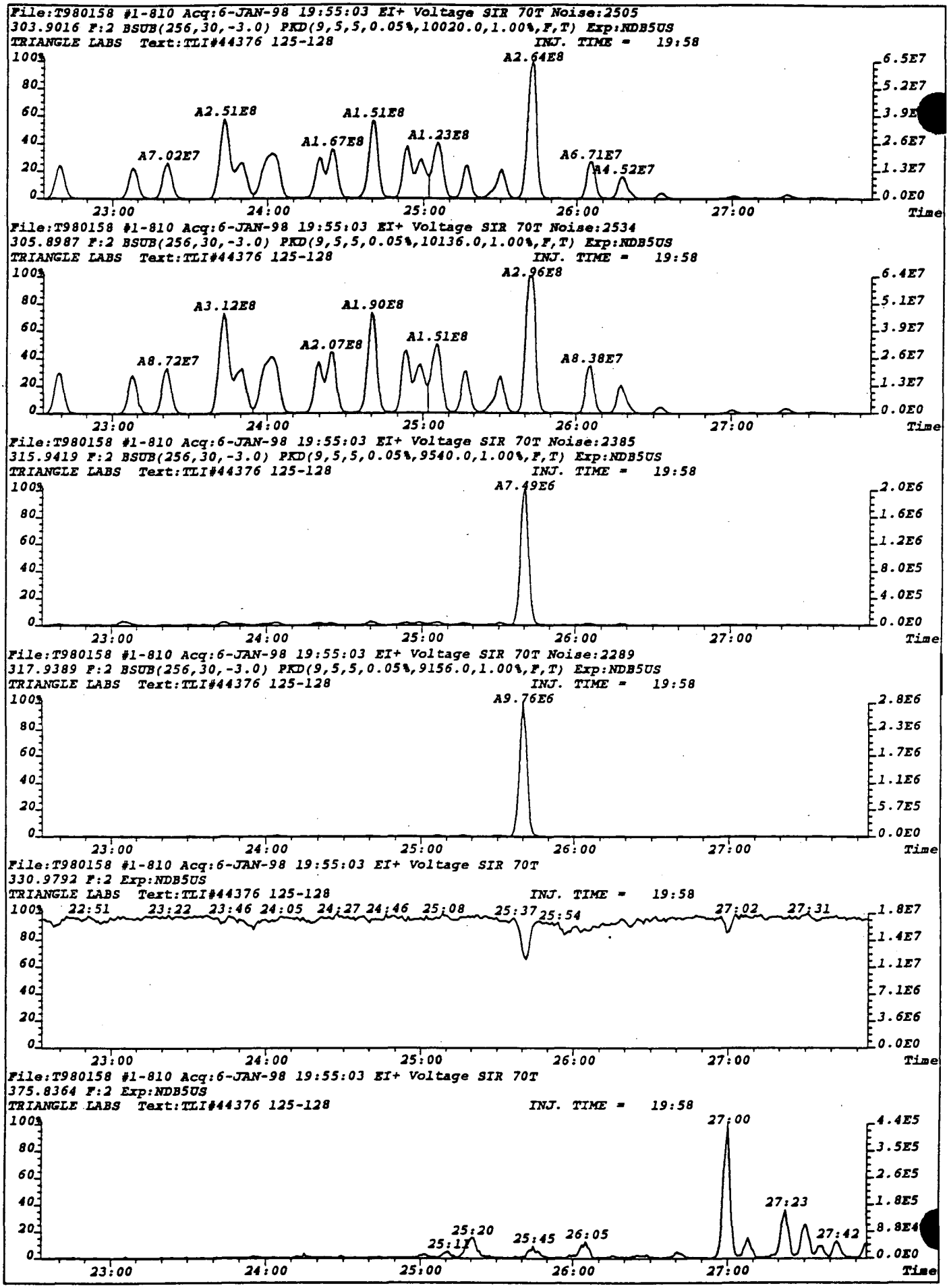
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
HxCDF				1.05-1.43						0.964-1.049			
374-376	DC	NL		0:00		1.10	25.39			0.000			
				31:56		1.25	13,817.86	7,687.10	6,130.76	0.968			
				32:04		1.26	28,940.30	16,117.70	12,822.60	0.972			E
				32:14		1.28	1,807.53	1,013.16	794.37	0.977			
				32:22		1.27	2,837.59	1,587.90	1,249.69	0.981			
	X		X	32:31	RO	1.28	1,688.05	948.63	739.42	0.986			
	X		X	32:44	RO	1.28	247.49	138.94	108.55	0.992			
				32:53		1.25	26,104.20	14,493.00	11,611.20	0.997	123478-HxCDF	AN	E
				33:00		1.26	12,264.65	6,835.32	5,429.33	1.001	123678-HxCDF	AN	
				33:07		1.27	2,343.51	1,309.14	1,034.37	1.004			
				33:18		1.26	3,905.04	2,174.84	1,730.20	1.010			
				33:30		1.27	12,572.83	7,022.16	5,550.67	1.016	234678-HxCDF	AN	
	MX		X	34:14	RO	1.24	539.00	298.00	241.00	1.038			
	AN			34:18		1.32	497.00	283.00	214.00	1.040	123789-HxCDF	AN	PR
	M			34:23		1.28	1,960.00	1,100.00	860.00	1.042			
	DC	WH		34:48		1.29	283.60			1.055			
374-376			14	Peaks			109,525.05						
13C12-HxCDF				0.43-0.59						0.879-1.121			
384-386	DC	NL		0:00	RO	1.12	7.99			0.000			
				32:04	RO	1.86	11.87	14.59	7.86	0.972			
				32:38	RO	2.11	6.27	8.74	4.15	0.989			
				32:53		0.52	1,329.13	456.95	872.18	0.997	13C12-HxCDF 478	SUR3	
				32:59		0.53	1,399.75	485.96	913.79	1.000	13C12-HxCDF 678	IS4	
				33:30		0.53	1,282.71	444.11	838.60	1.016	13C12-HxCDF 234	ALT2	
	DC	SN		33:39	RO	0.35	4.94			1.020			
				33:50	RO	2.16	5.03	7.18	3.33	1.026			
				34:18		0.51	1,105.75	374.73	731.02	1.040	13C12-HxCDF 789	ALT1	
384-386			7	Peaks			5,140.51						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.015			
390-392	DC	NL		0:00		1.37	14.67			0.000			
				32:25		1.21	5,062.94	2,769.65	2,293.29	0.962			
				32:51		1.22	27,814.10	15,273.80	12,540.30	0.975			E
				33:04		1.22	10,931.41	6,018.13	4,913.28	0.982			E
				33:15		1.23	2,155.89	1,187.98	967.91	0.987			
				33:37		1.21	1,474.51	807.87	666.64	0.998	123478-HxCDD	AN	
				33:42		1.20	3,332.99	1,817.39	1,515.60	1.000	123678-HxCDD	AN	
				34:00		1.22	5,167.78	2,841.90	2,325.88	1.009	123789-HxCDD	AN	PR
390-392			7	Peaks			55,939.62						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	0.47	6.56			0.000			
				33:36		1.20	964.47	525.15	439.32	0.998	13C12-HxCDD 478	SUR4	
				33:41		1.20	1,109.16	604.03	505.13	1.000	13C12-HxCDD 678	IS5	
				34:01		1.19	2,078.80	1,130.82	947.98	1.010	13C12-HxCDD 789	RS2	
402-404			3	Peaks			4,152.43						

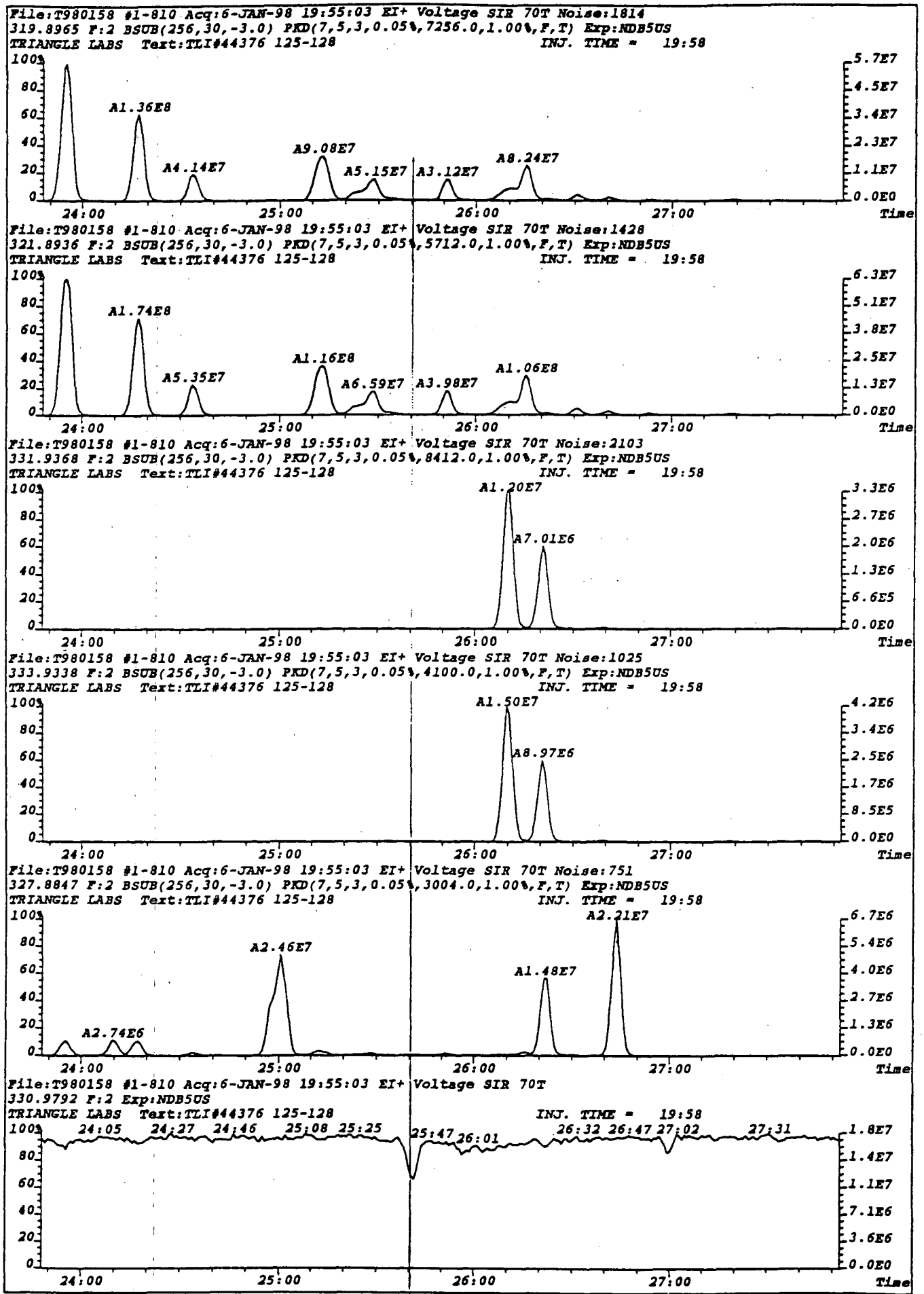
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.998-1.053			
408-410	DC	NL		0:00	RO	1.99	7.57			0.000			
				36:00		1.04	29,367.20	14,966.20	14,401.00	1.000	1234678-HpCDF	AN	E
				36:17		1.05	5,450.49	2,793.58	2,656.91	1.008			
				36:26		1.03	4,298.84	2,178.64	2,120.20	1.013			
				37:37		1.06	2,616.20	1,343.78	1,272.42	1.045	1234789-HpCDF	AN	
	DC	WH		38:13	RO	0.74	43.45			1.062			
408-410			4	Peaks			41,732.73						
13C12-HpCDF						0.37-0.51				0.944-1.111			
418-420	DC	NL		0:00	RO	1.01	4.59			0.000			
				35:59		0.47	1,027.56	327.56	700.00	1.000	13C12-HpCDF 678	IS6	
				37:36		0.45	797.30	246.14	551.16	1.045	13C12-HpCDF 789	SUR5	
418-420			2	Peaks			1,824.86						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.976-1.006			
424-426	DC	NL		0:00		0.98	6.52			0.000			
				36:18		1.01	11,544.15	5,791.95	5,752.20	0.979			E
				37:05		1.02	10,889.89	5,501.86	5,388.03	1.000	1234678-HpCDD	AN	E
	DC	WH		37:32	RO	1.43	12.06			1.013			
424-426			2	Peaks			22,434.04						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00	RO	0.64	3.73			0.000			
				37:04		1.02	1,043.27	526.10	517.17	1.000	13C12-HpCDD 678	IS7	
436-438			1	Peak			1,043.27						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00	RO	1.33	0.96			0.000			
	DC	WL		36:14		0.81	21.69			0.886			
				39:04		0.88	21.62	10.14	11.48	0.955			
	DC	SN		40:57	RO	2.19	3.95			1.001			
				41:09		0.91	4,613.50	2,195.16	2,418.34	1.006	OCDF	AN	
				41:25		1.01	110.98	55.83	55.15	1.013			
	DC	SN		41:53	RO	1.10	3.53			1.024			
442-444			3	Peaks			4,746.10						
OCDD						0.76-1.02				0.902-1.098			
458-460	DC	NL		0:00	RO	0.43	0.55			0.000			
				40:56		0.82	7,074.10	3,190.01	3,884.09	1.001	OCDD	AN	
458-460			1	Peak			7,074.10						
13C12-OCDD						0.76-1.02				0.998-1.006			
470-472	DC	NL		0:00	RO	1.10	1.81			0.000			
				40:54		0.95	1,472.26	717.36	754.90	1.000	13C12-OCDD	IS8	
	DC	WH		41:11	RO	0.33	4.74			1.007			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WH		41:25	RO	0.55	2.82			1.013			
470-472			1 Peak				1,472.26						

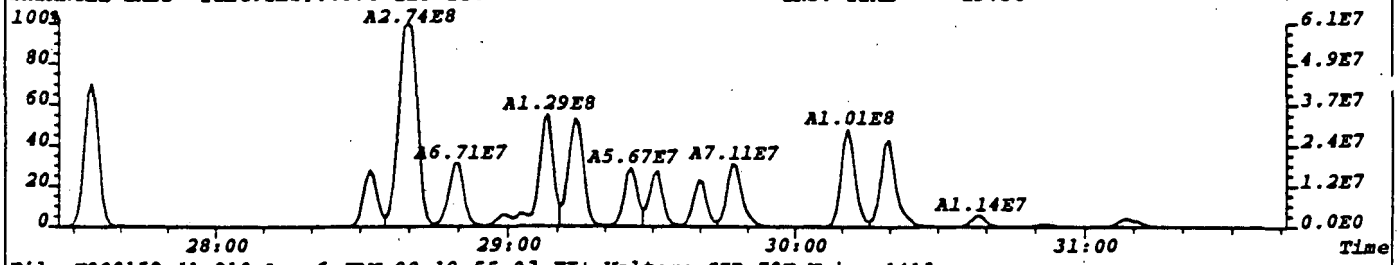
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

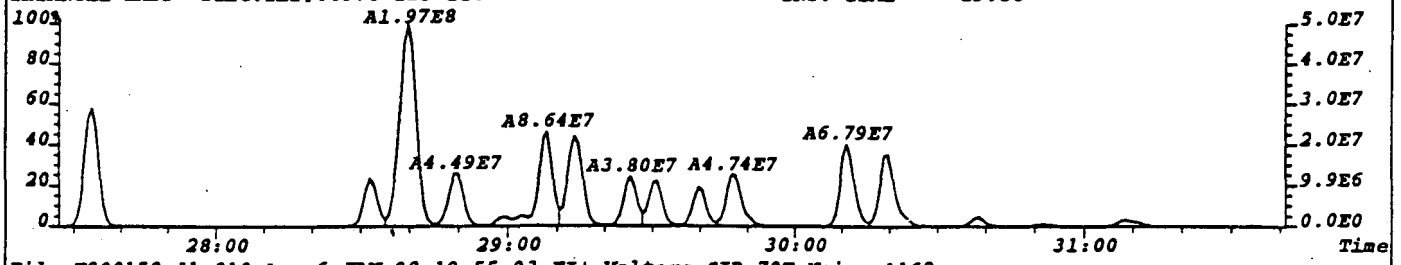

File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2505
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,10020.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A7.02E7
A2.51E8
A1.67E8
A1.51E8
A1.23E8
A2.64E8
A6.71E7
A4.52E7
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2534
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,10136.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A8.72E7
A3.12E8
A2.07E8
A1.90E8
A1.51E8
A2.96E8
A8.38E7
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2385
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,9540.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A7.49E6
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2289
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,9156.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A9.76E6
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
22:51
23:22
23:46
24:05
24:27
24:46
25:08
25:37
25:54
27:02
27:31
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
25:11
25:20
25:45
26:05
27:00
27:23
27:42
Time


File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1814
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7256.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.36E8
A4.14E7
A9.08E7
A5.15E7
A3.12E7
A8.24E7
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1428
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5712.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.74E8
A5.35E7
A1.16E8
A6.59E7
A3.98E7
A1.06E8
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2103
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.20E7
A7.01E6
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1025
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4100.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.50E7
A8.97E6
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:751
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3004.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A2.46E7
A2.74E6
A1.48E7
A2.21E7
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
24:05 24:27 24:46 25:08 25:25 25:47 26:01 26:32 26:47 27:02 27:31
24:00 25:00 26:00 27:00 Time

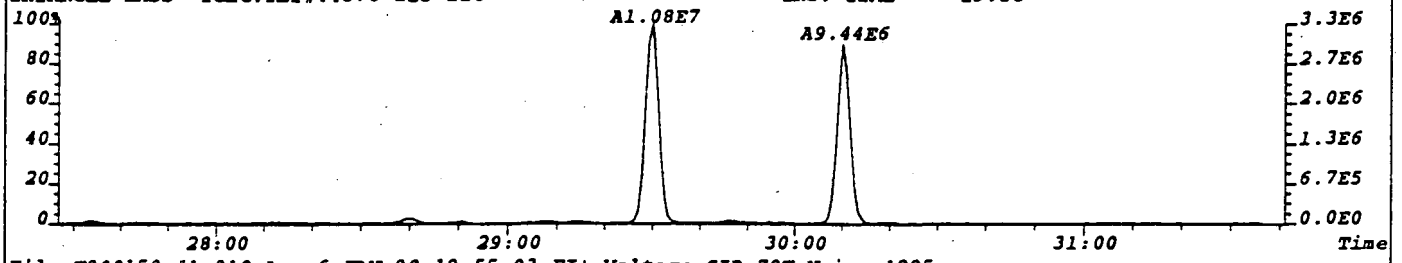
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1549
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



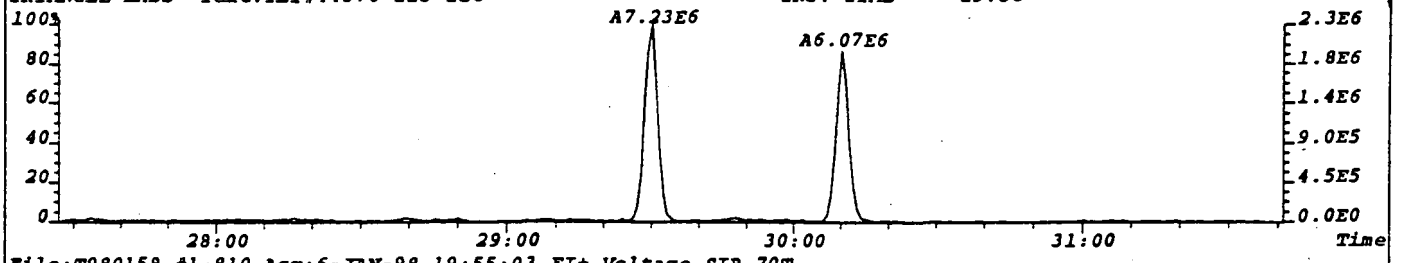
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1413
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5652.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



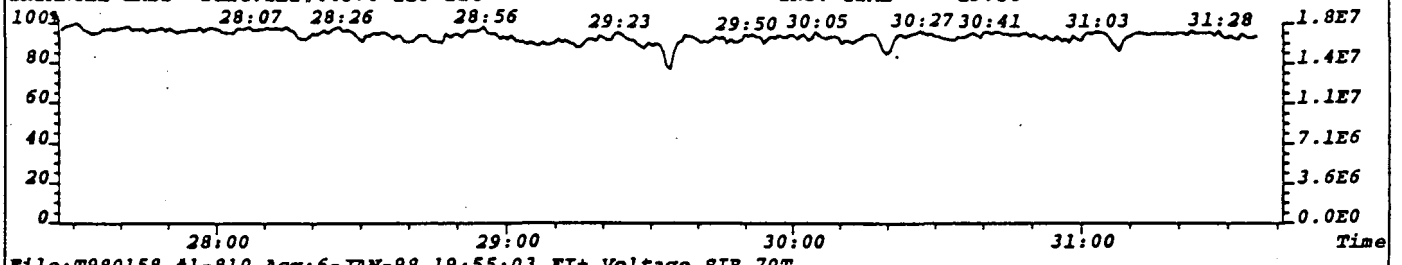
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1162
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4648.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



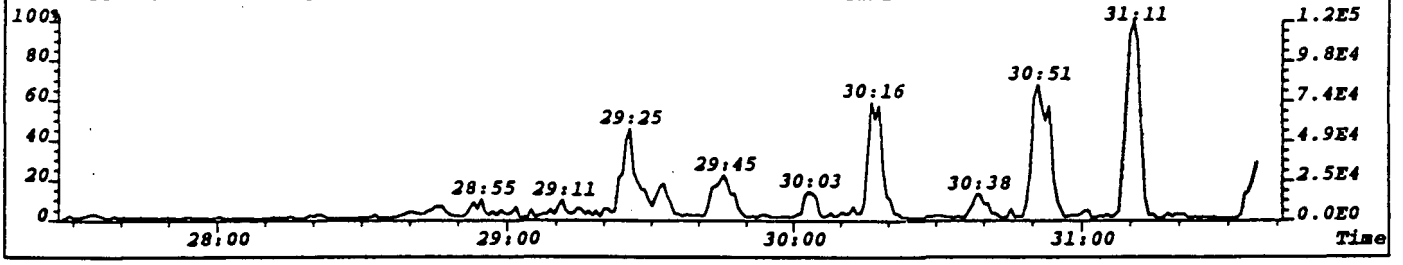
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1225
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4900.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

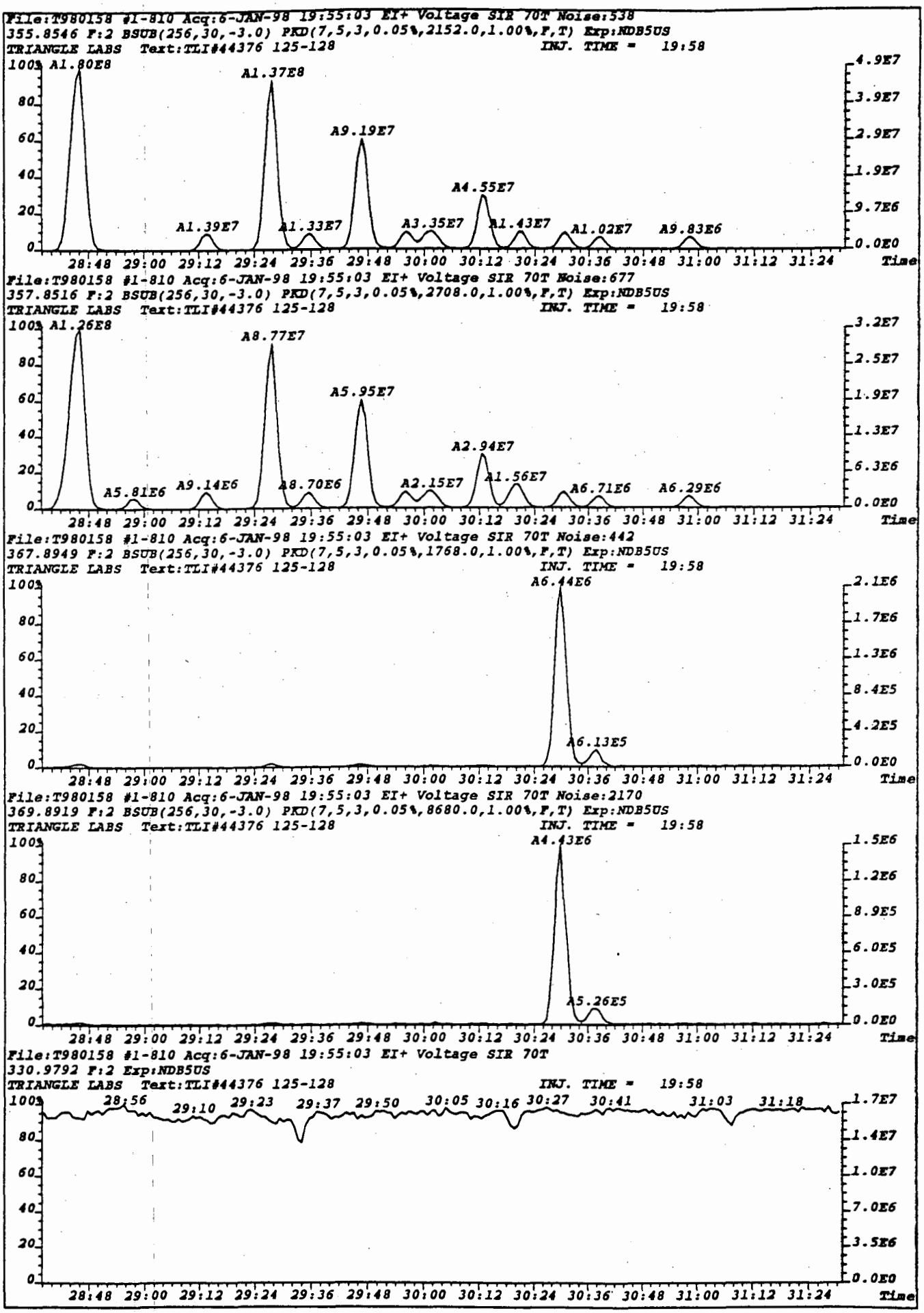


File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

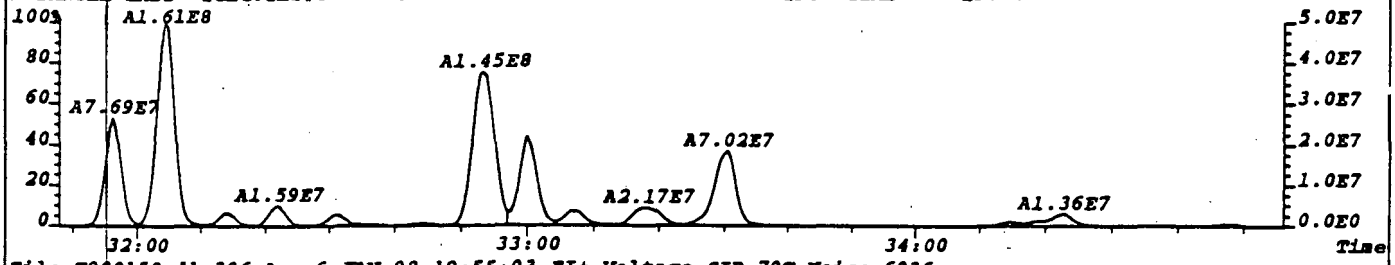


File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

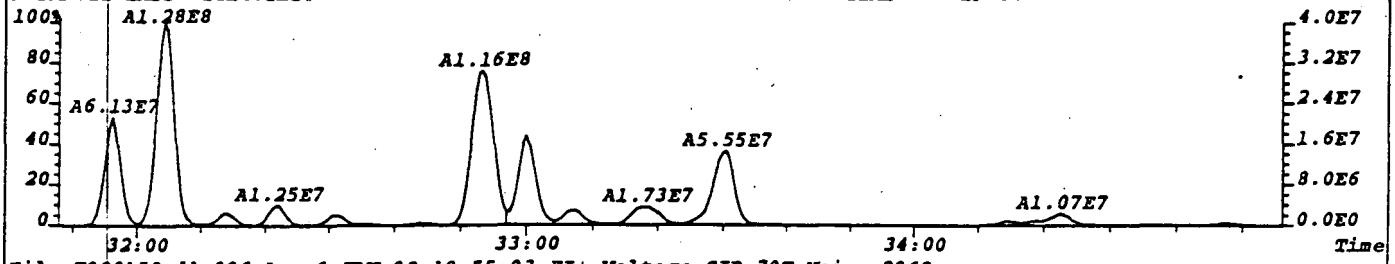



File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:538
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2152.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A1.80E8
A1.37E8
A9.19E7
A4.55E7
A1.39E7
A1.33E7
A3.35E7
A1.43E7
A1.02E7
A9.83E6
Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:677
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A1.26E8
A8.77E7
A5.95E7
A2.94E7
A5.81E6
A9.14E6
A8.70E6
A2.15E7
A1.56E7
A6.71E6
A6.29E6
Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:442
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A6.44E6
A6.13E5
Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2170
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8680.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A4.43E6
A5.26E5
Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
Time

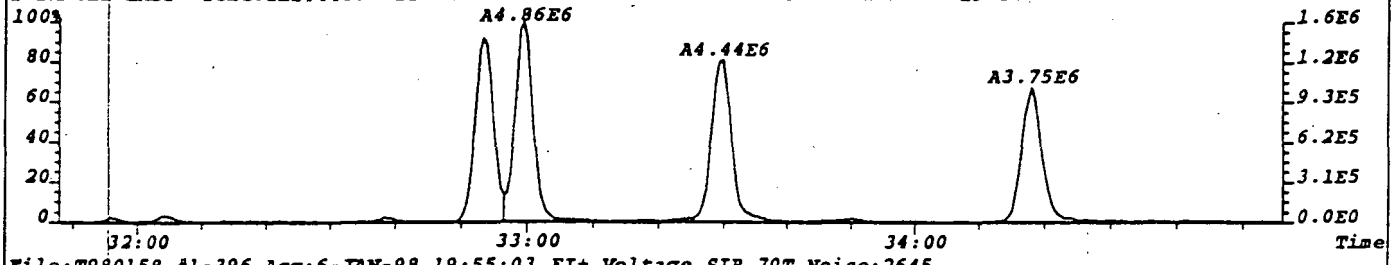
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:6659
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,26636.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



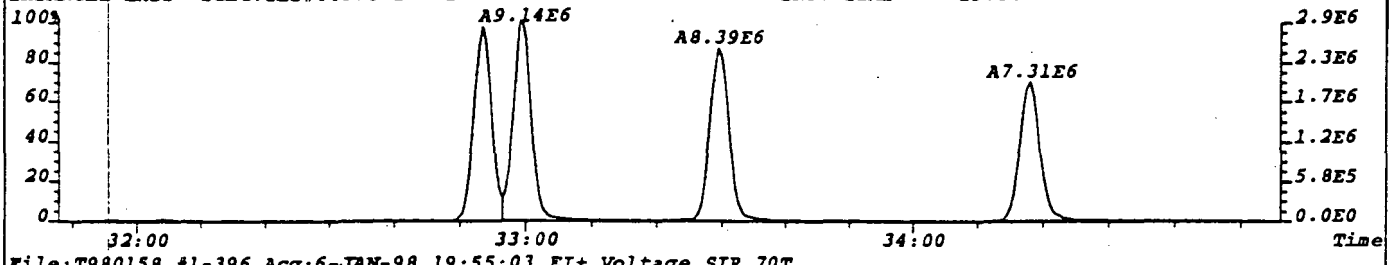
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:6036
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,24144.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



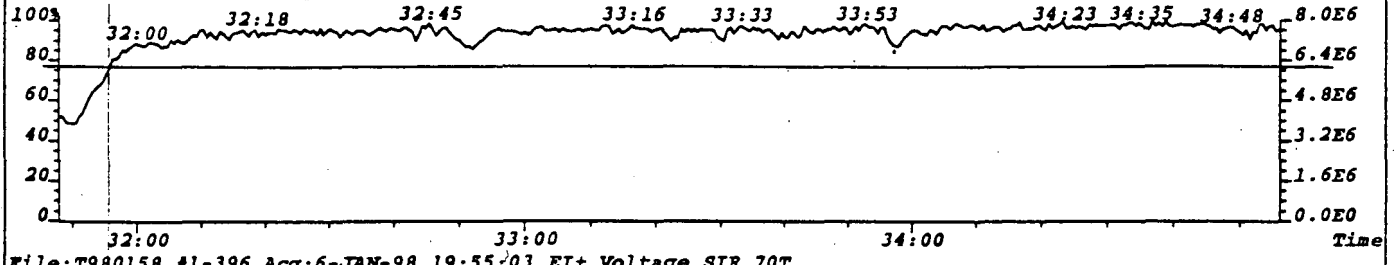
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2962
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,11848.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



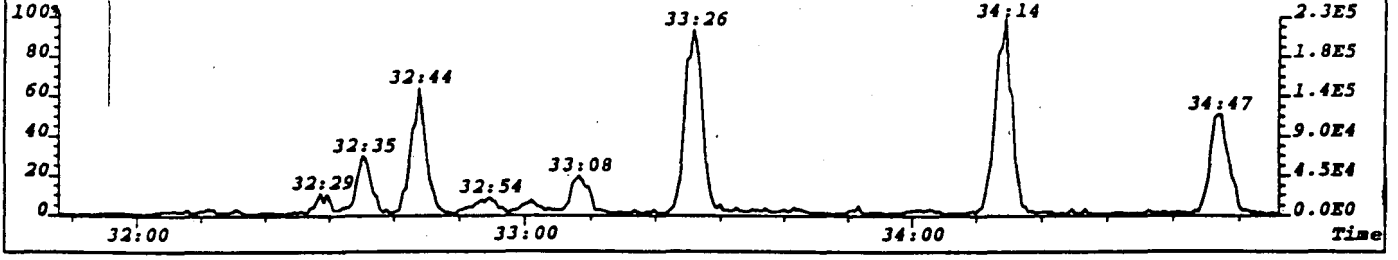
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:2645
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10580.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

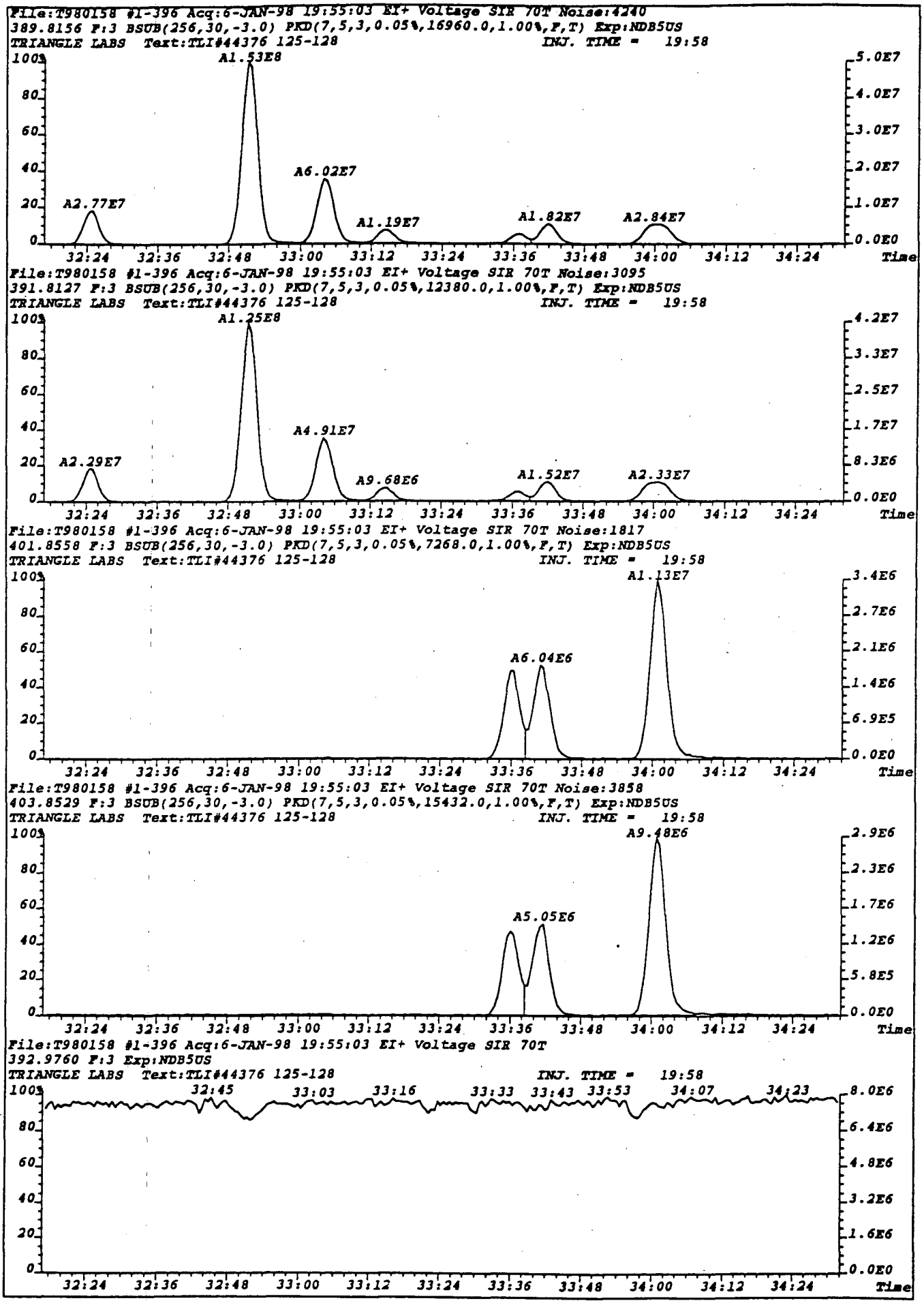


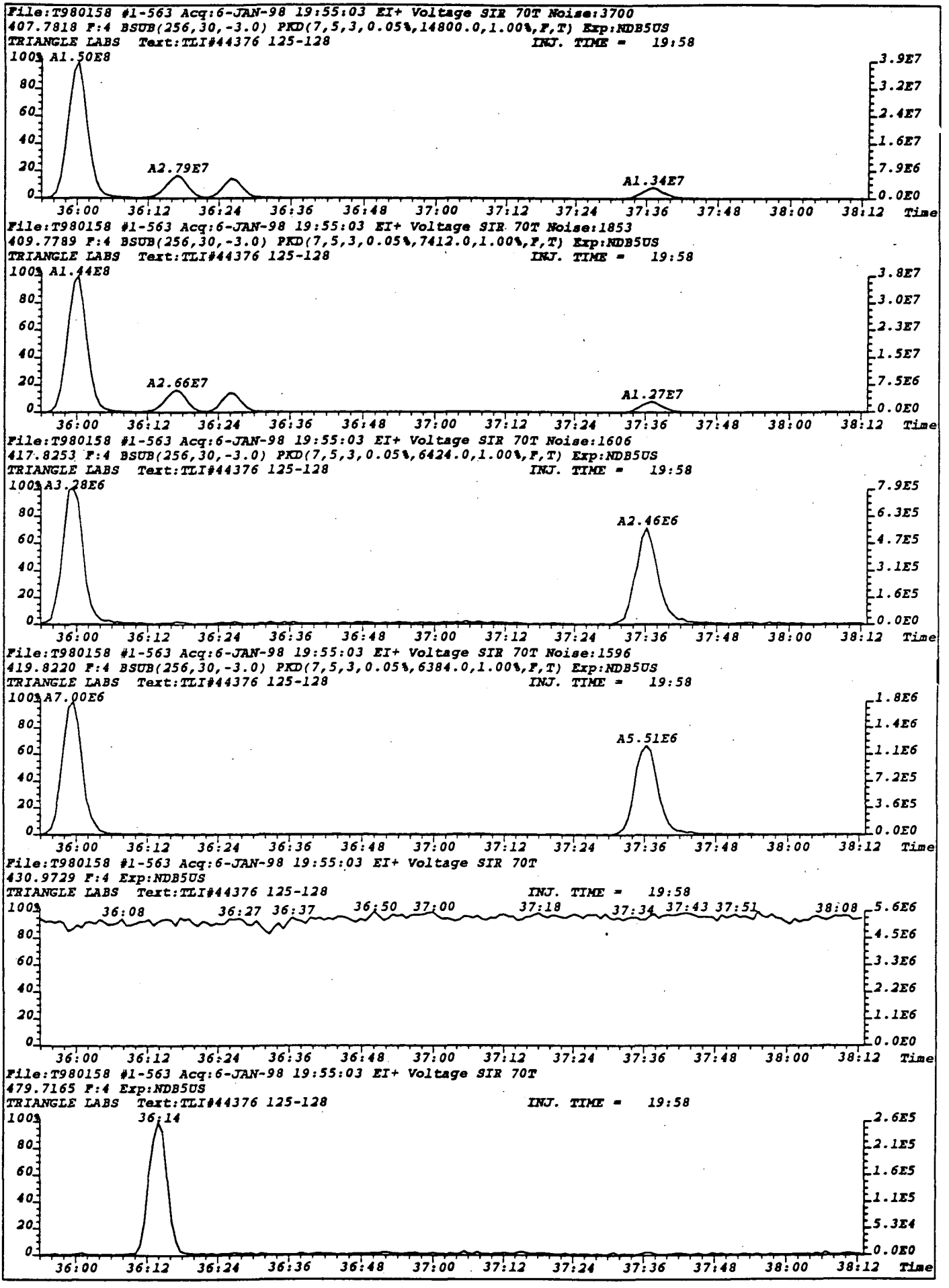
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

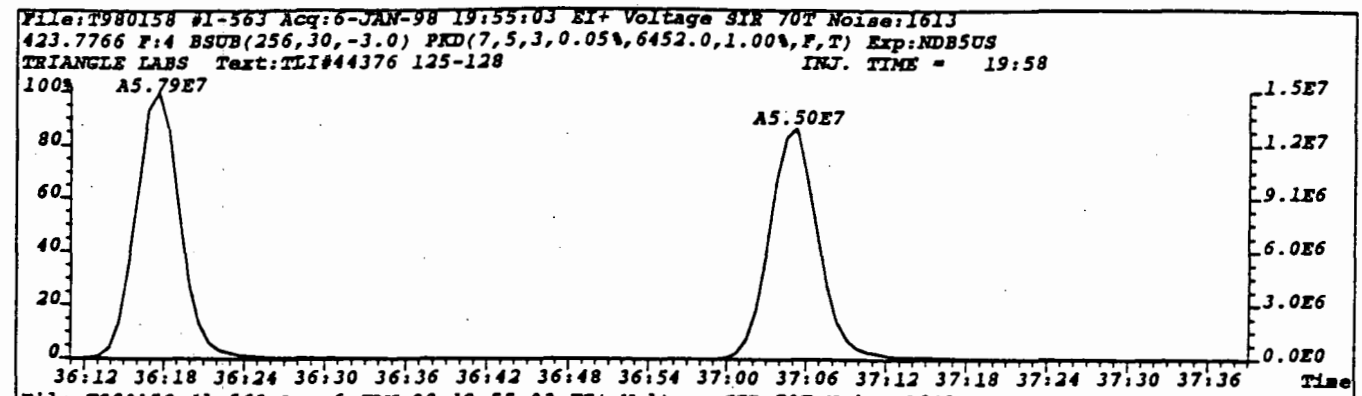


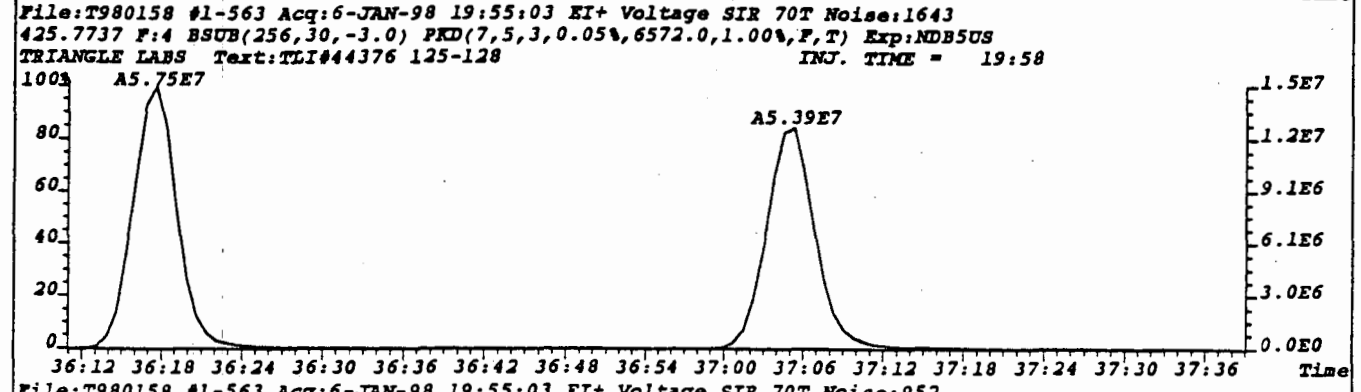
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
445.7553 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

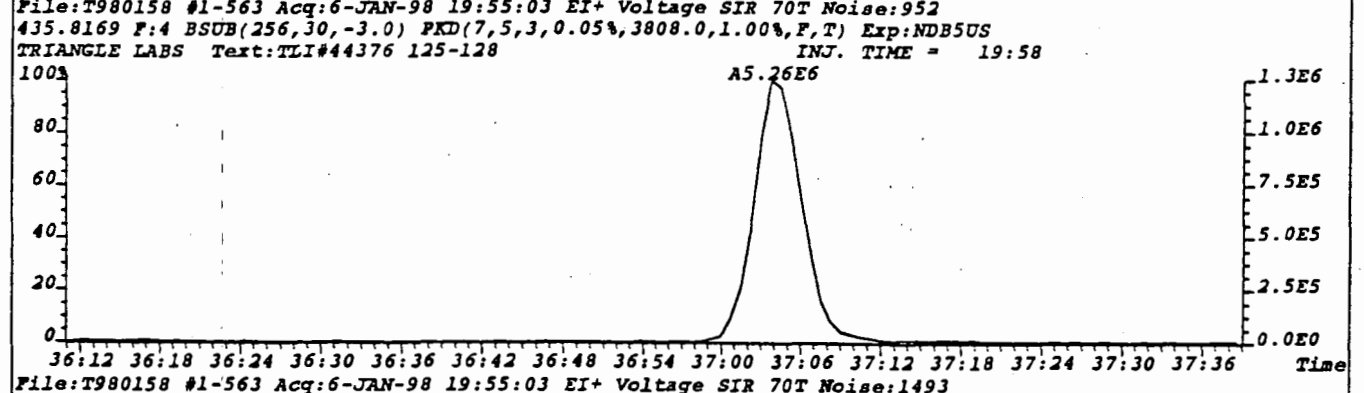


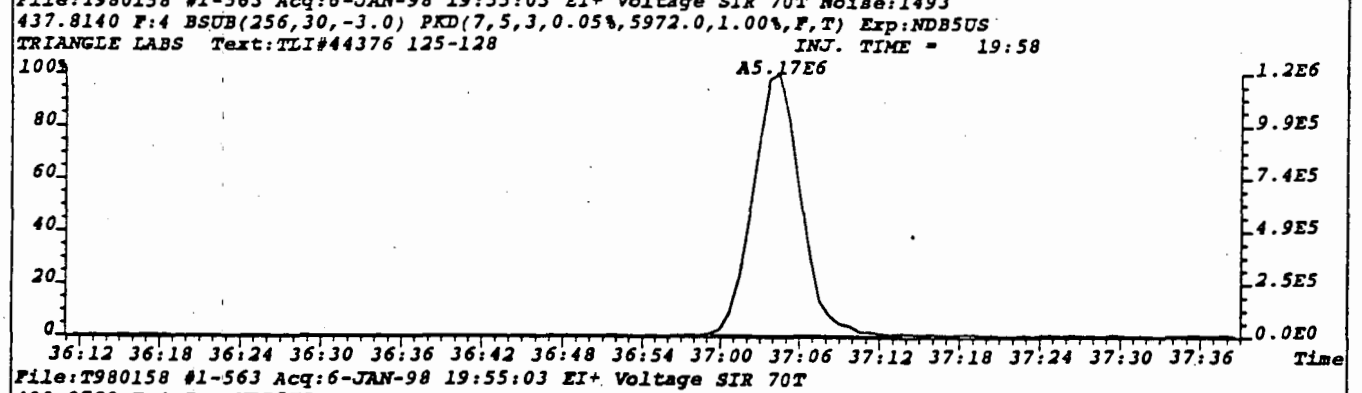

File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:4240
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,16960.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A1.53E8
A6.02E7
A2.77E7
A1.19E7
A1.82E7
A2.84E7
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:3095
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,12380.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A1.25E8
A4.91E7
A2.29E7
A9.68E6
A1.52E7
A2.33E7
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1817
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7268.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A1.13E7
A6.04E6
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:3858
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,15432.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A9.48E6
A5.05E6
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
Time

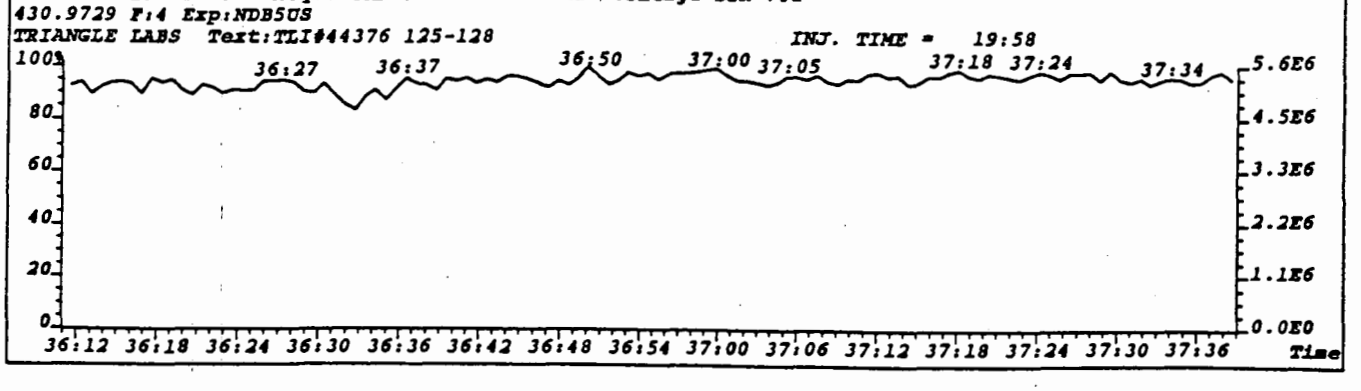

File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:3700
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,14800.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.50E8
A2.79E7
A1.34E7
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1853
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7412.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A1.44E8
A2.66E7
A1.27E7
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1606
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6424.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A3.28E6
A2.46E6
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1596
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6384.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
A7.00E6
A5.51E6
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
36:08 36:27 36:37 36:50 37:00 37:18 37:34 37:43 37:51 38:08
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58
36:14
Time

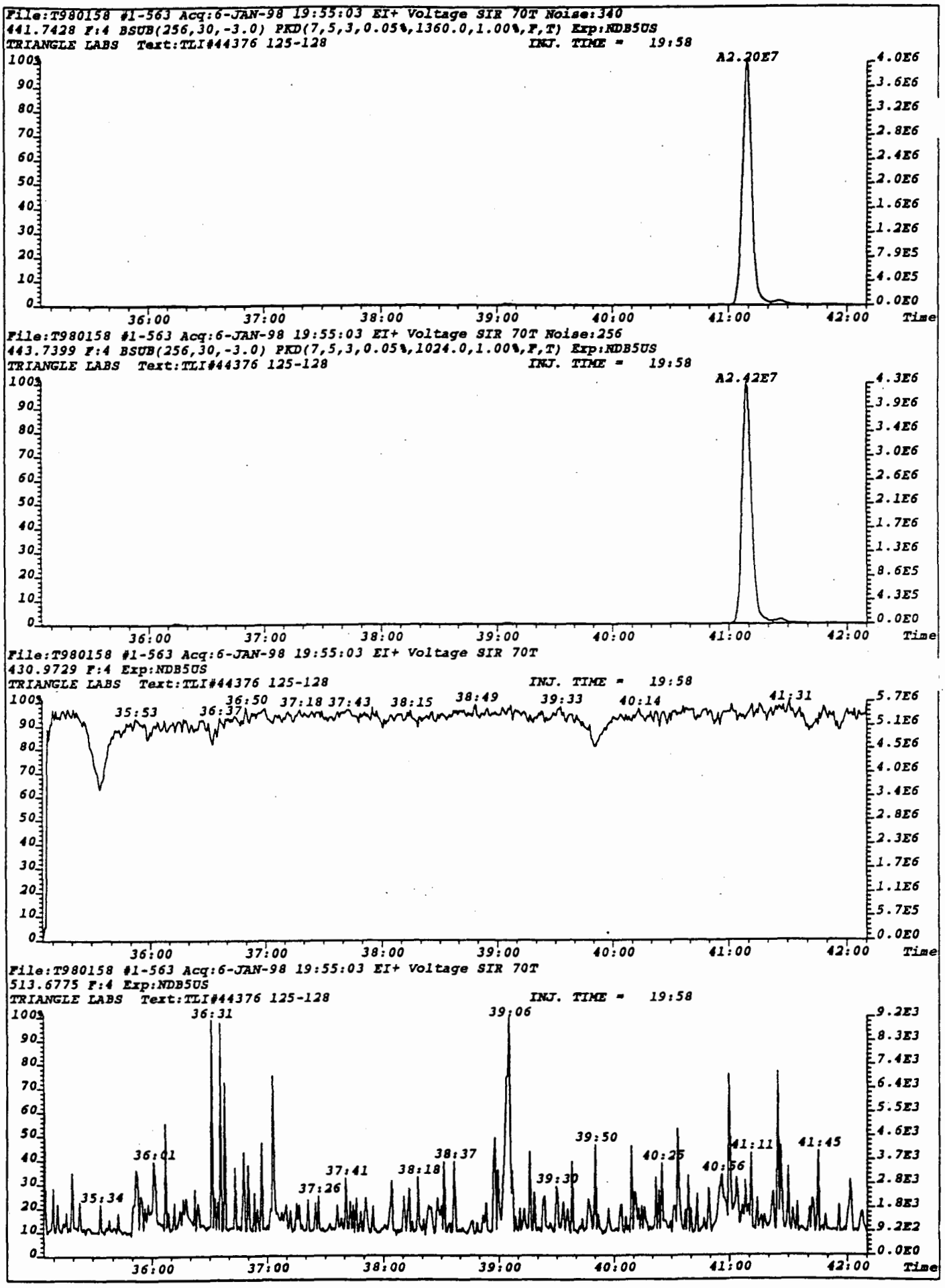

File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1613
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6452.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A5.79E7
A5.50E7
Time


File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1643
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A5.75E7
A5.39E7
Time

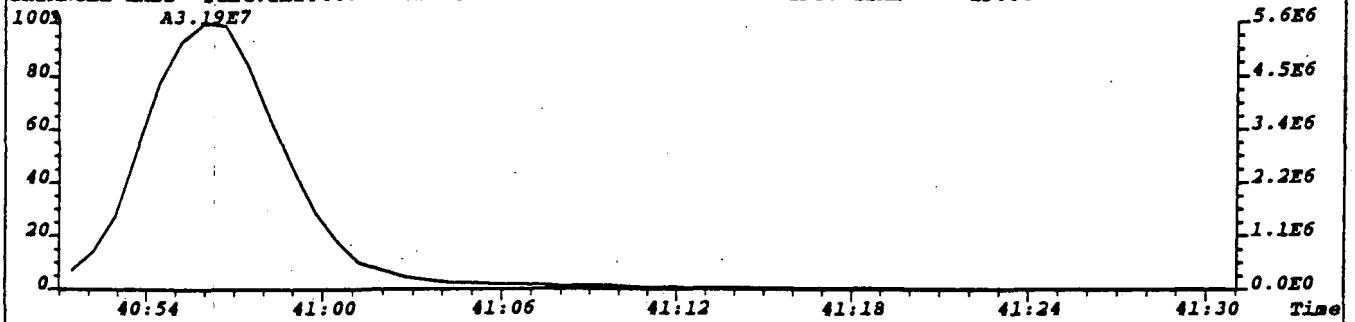

File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:952
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3808.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A5.26E6
Time


File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:1493
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5972.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A5.17E6
Time

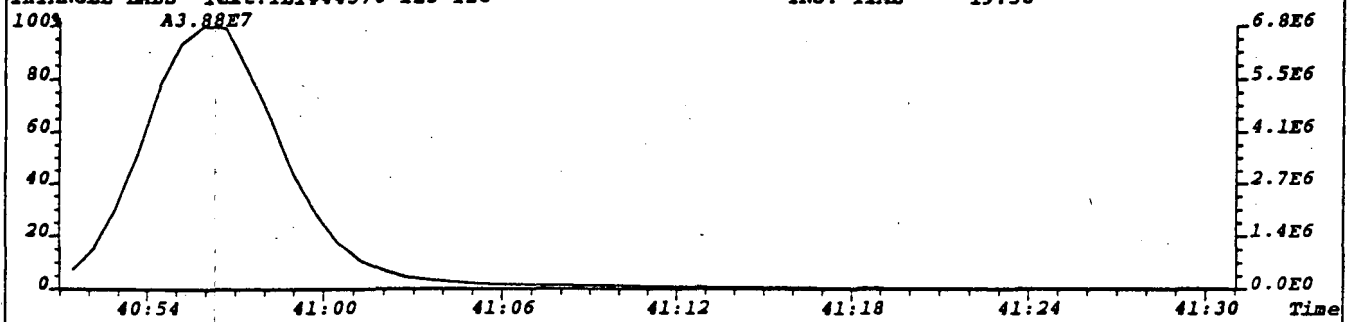

File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
Time


File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:340
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1360.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A2.20E7
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:256
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1024.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
A2.42E7
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
35:53
36:37
36:50
37:18
37:43
38:15
38:49
39:33
40:14
41:31
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128
INJ. TIME = 19:58
35:34
36:01
36:31
37:26
37:41
38:18
38:37
39:06
39:30
39:50
40:25
40:56
41:11
41:45
Time

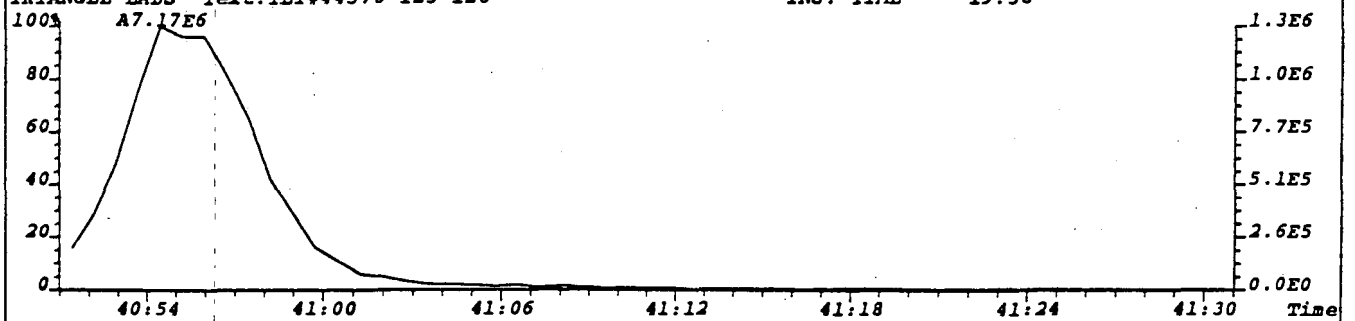
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:131
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,524.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



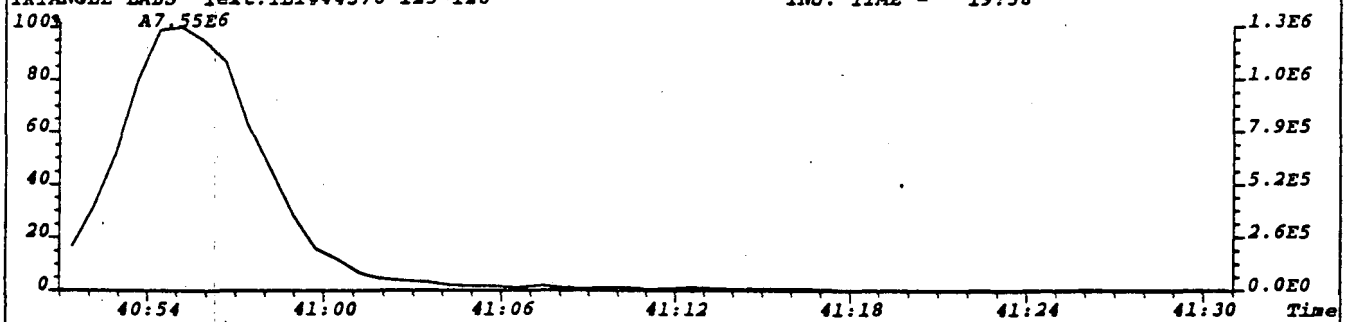
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:302
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1208.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



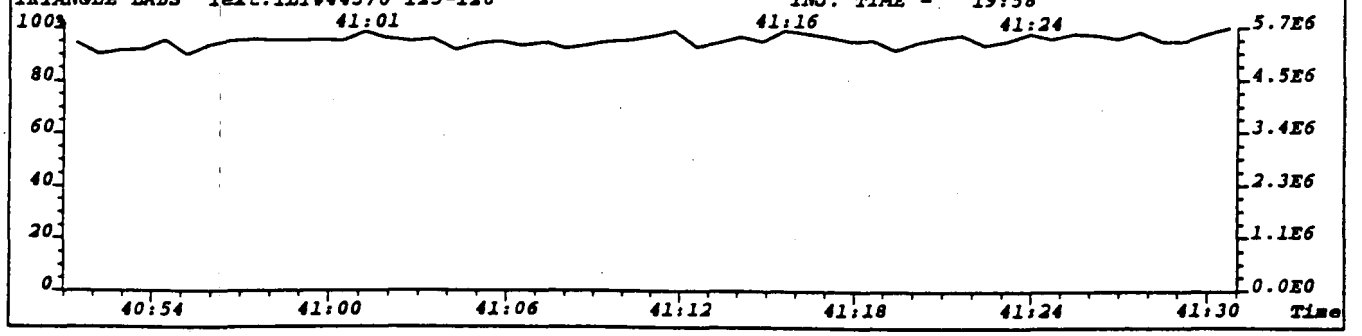
File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:531
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2124.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58

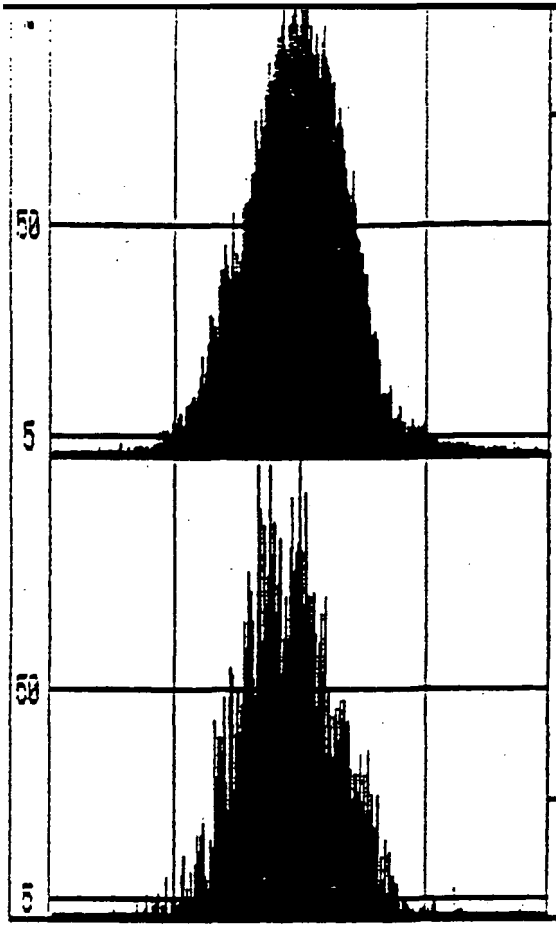


File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T Noise:482
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1928.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



File:T980158 #1-563 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 125-128 INJ. TIME = 19:58



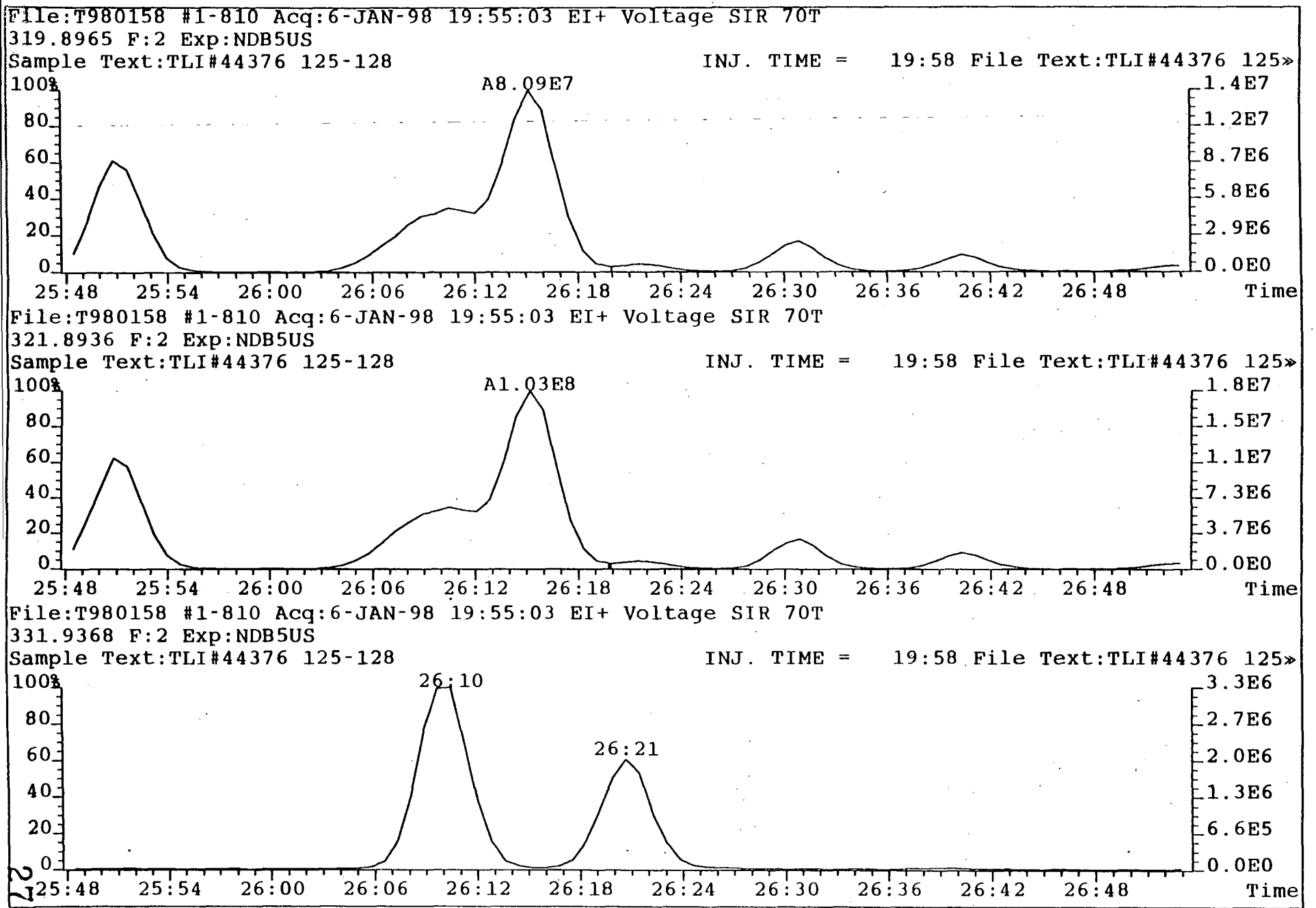


Channel I 330.9792 Peak top
Height 3.59 volts Span 200 ppm

System file name	NOBBUS
Data file name	A:T980148
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

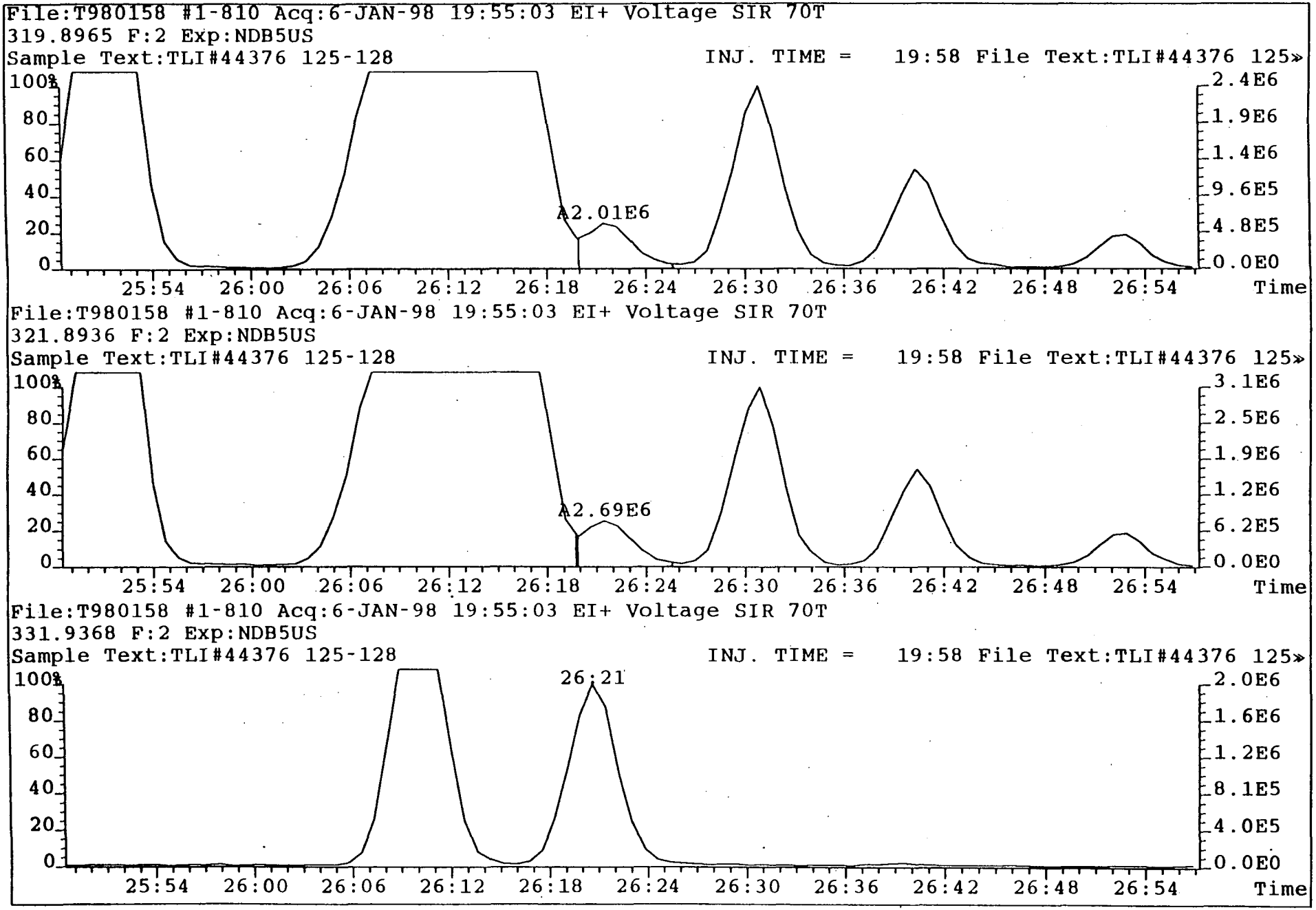
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	329	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

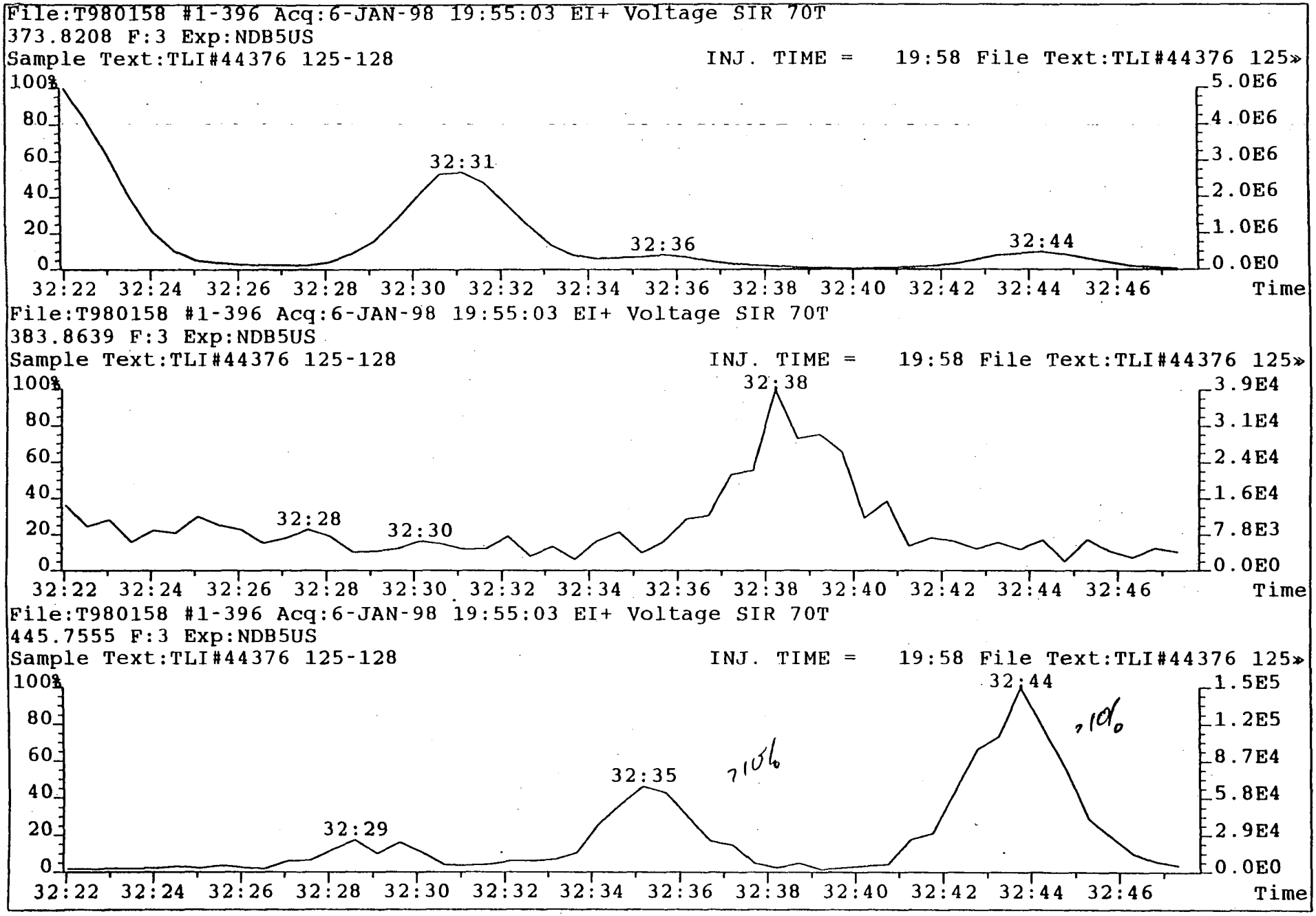
Ref. mass 416.9760 Peak top
Height .36 volts Span 200 ppm



225

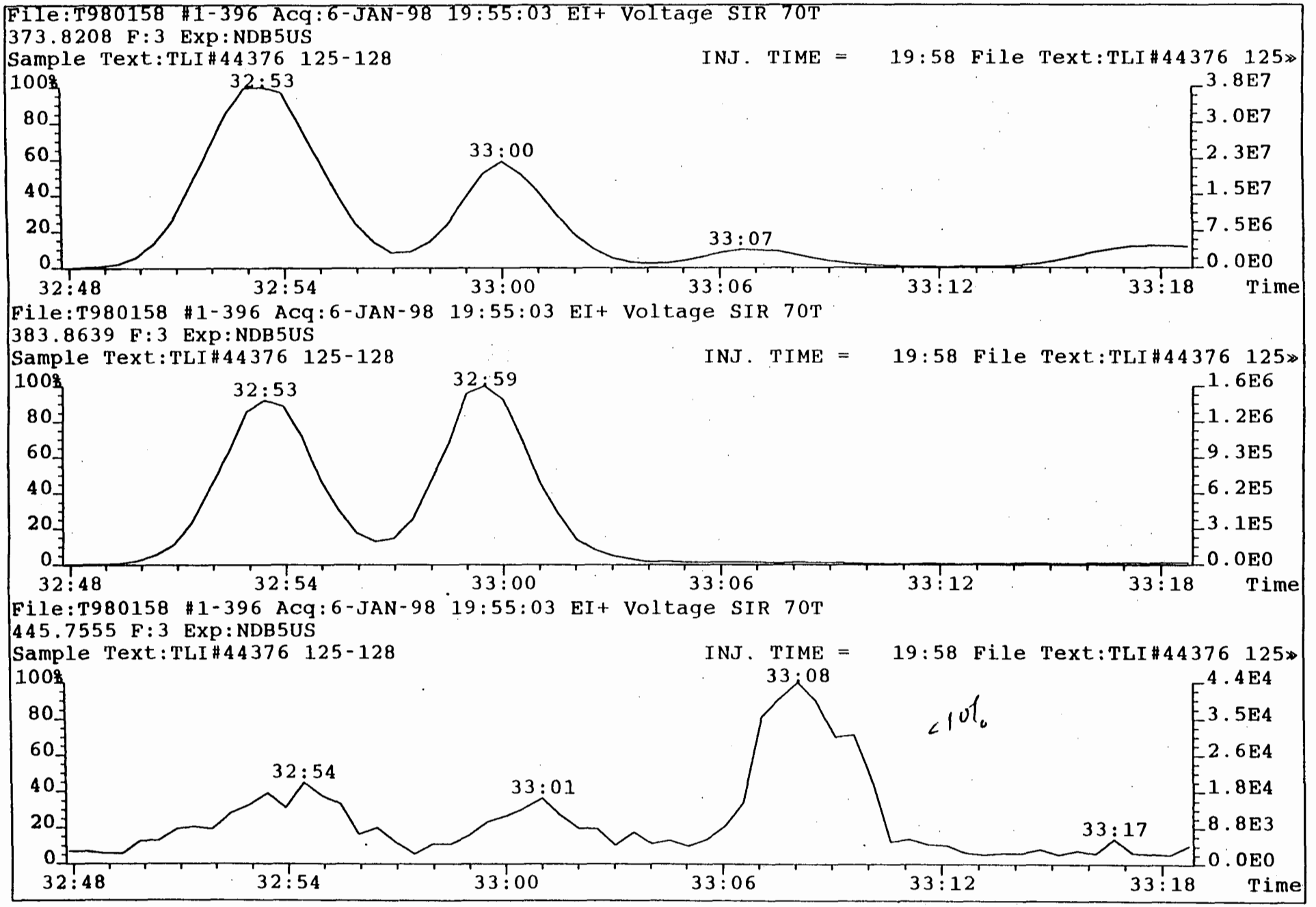
595
1/11/98


File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
A2.01E6
25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
A2.69E6
25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time
File:T980158 #1-810 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
26:21
25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 Time

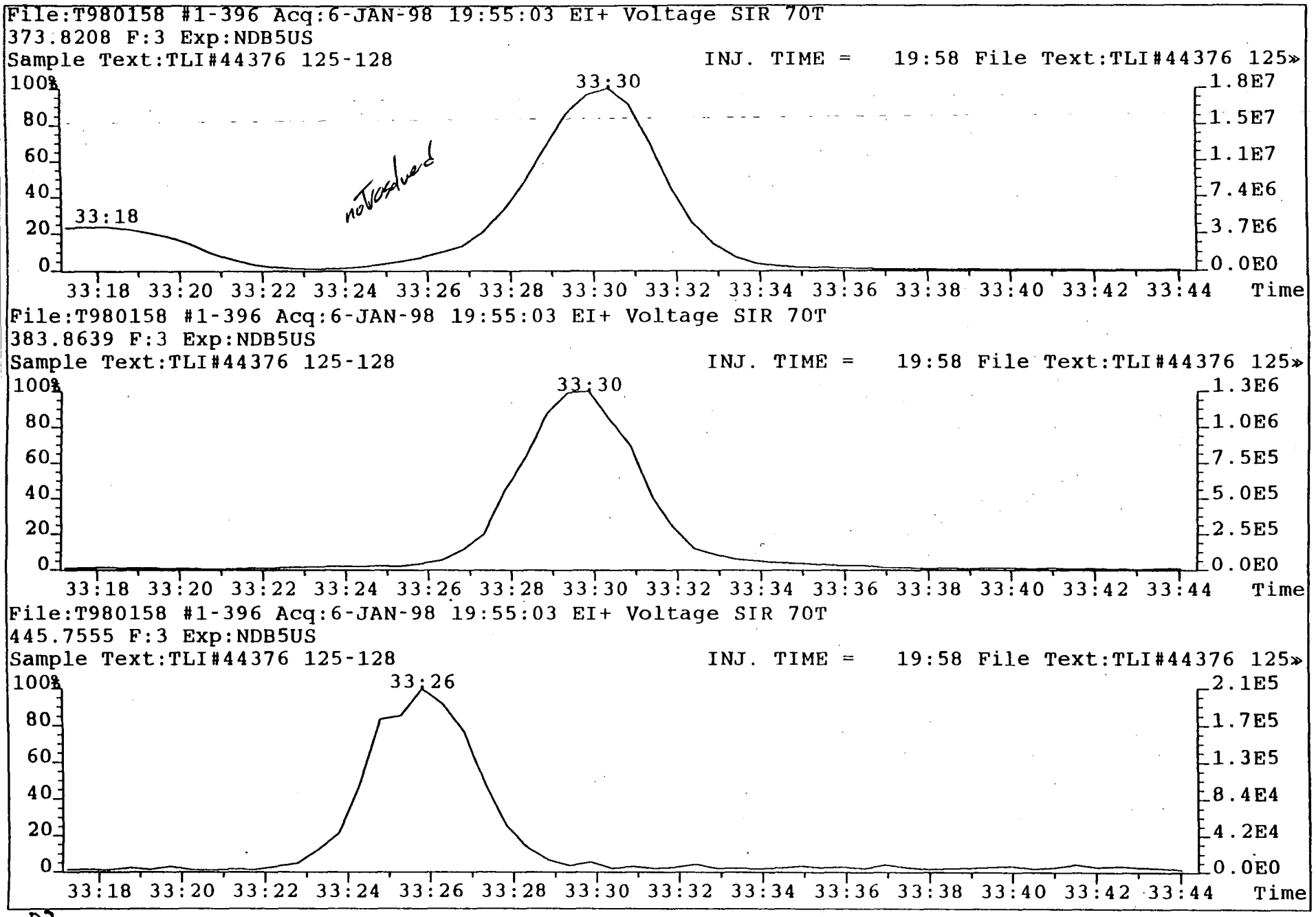


271

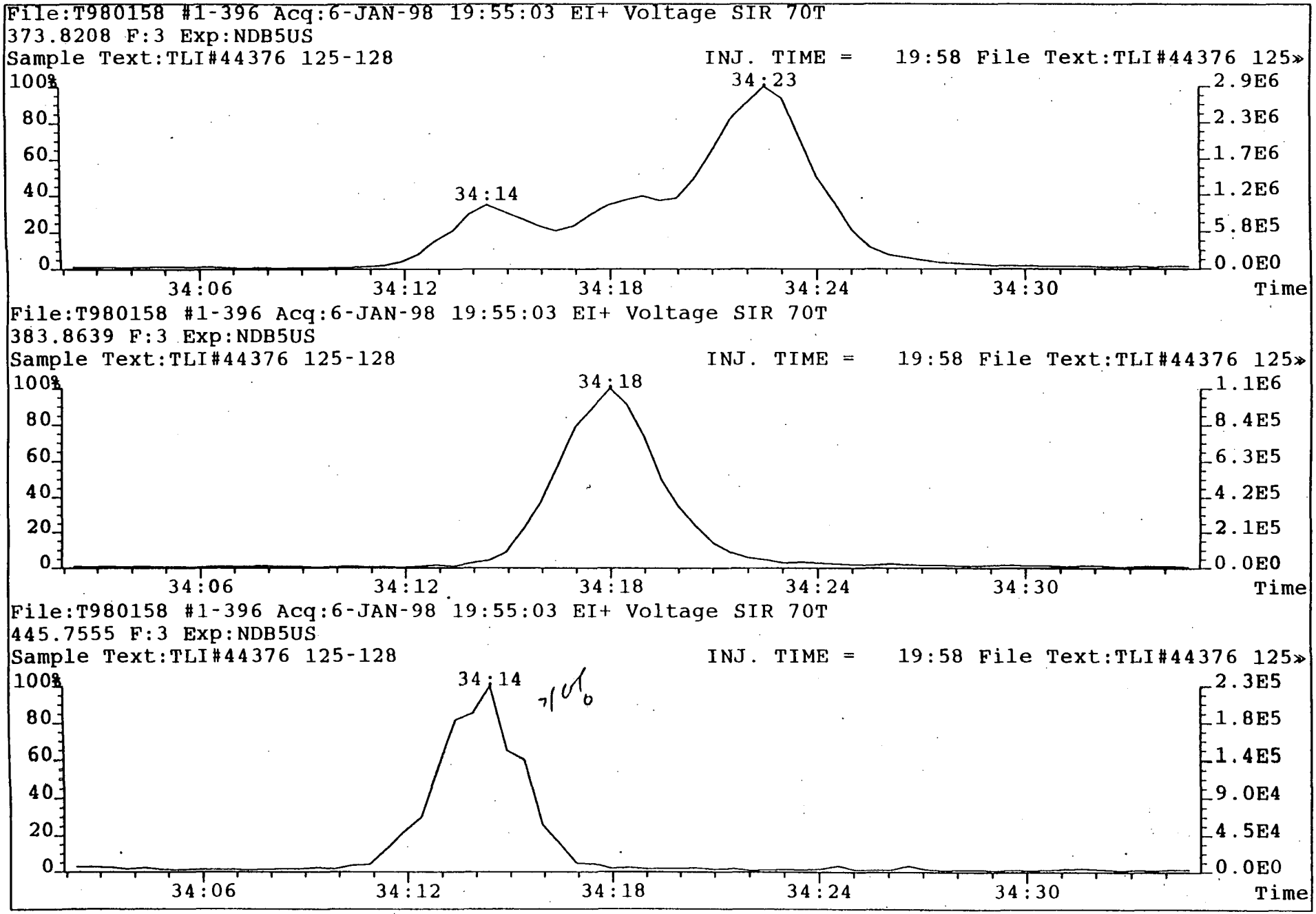
655
1/11/94


File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
32:53
33:00
33:07
3.8E7
3.0E7
2.3E7
1.5E7
7.5E6
0.0E0
32:48
32:54
33:00
33:06
33:12
33:18
Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
32:53
32:59
1.6E6
1.2E6
9.3E5
6.2E5
3.1E5
0.0E0
32:48
32:54
33:00
33:06
33:12
33:18
Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
33:08
32:54
33:01
33:17
4.4E4
3.5E4
2.6E4
1.8E4
8.8E3
0.0E0
32:48
32:54
33:00
33:06
33:12
33:18
Time

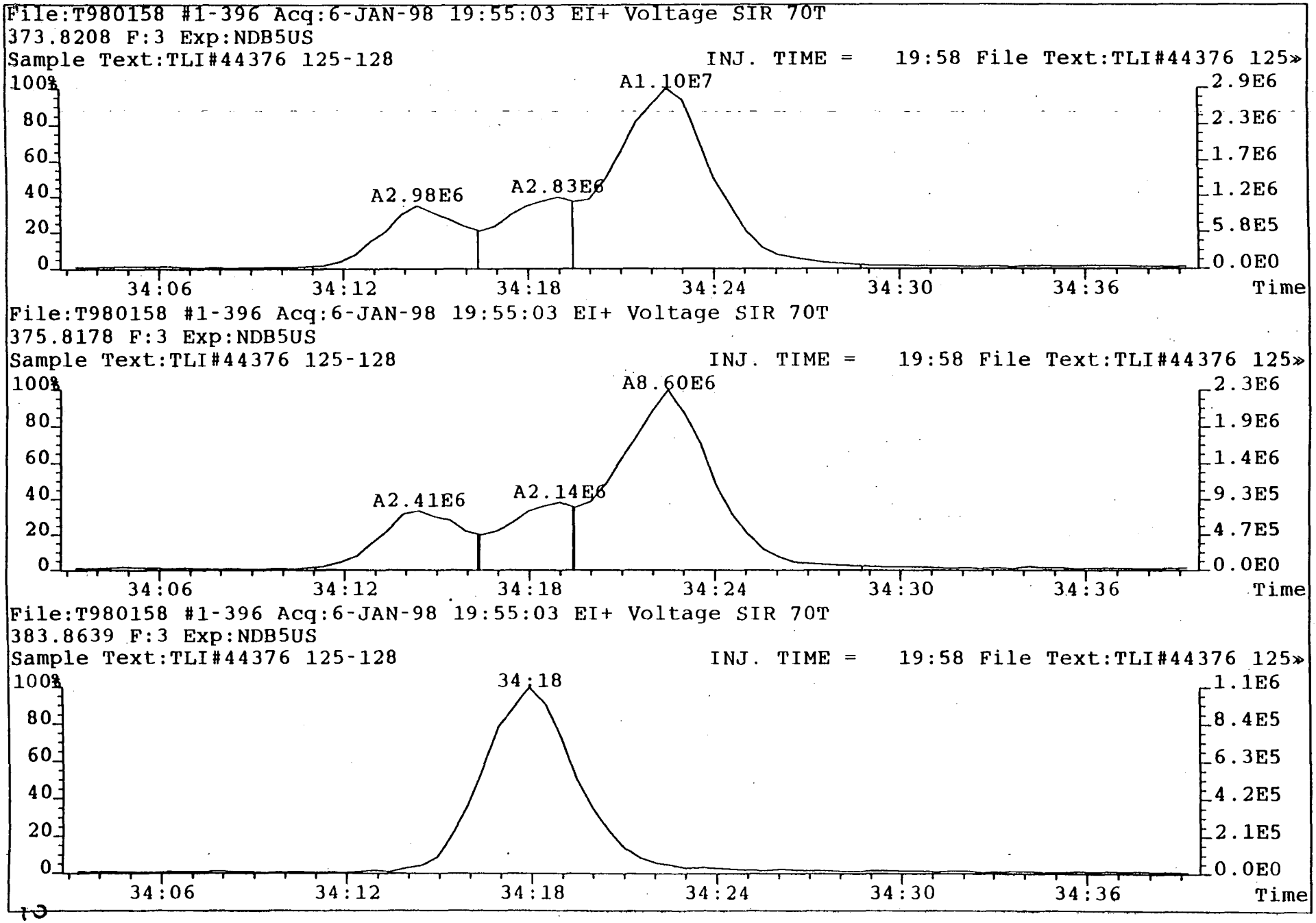
812


File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
33:30
33:18
not resolved
100%
80
60
40
20
0
1.8E7
1.5E7
1.1E7
7.4E6
3.7E6
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
33:30
1.3E6
1.0E6
7.5E5
5.0E5
2.5E5
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
33:26
2.1E5
1.7E5
1.3E5
8.4E4
4.2E4
0.0E0
33:18 33:20 33:22 33:24 33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 Time

GSS


File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
34:23
34:14
100%
80
60
40
20
0
2.9E6
2.3E6
1.7E6
1.2E6
5.8E5
0.0E0
34:06
34:12
34:18
34:24
34:30
Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
34:18
1.1E6
8.4E5
6.3E5
4.2E5
2.1E5
0.0E0
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
34:14
71%
2.3E5
1.8E5
1.4E5
9.0E4
4.5E4
0.0E0

C32


File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
A1.10E7
A2.98E6
A2.83E6
100%
80
60
40
20
0
2.9E6
2.3E6
1.7E6
1.2E6
5.8E5
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
A8.60E6
A2.41E6
A2.14E6
100%
80
60
40
20
0
2.3E6
1.9E6
1.4E6
9.3E5
4.7E5
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time
File:T980158 #1-396 Acq:6-JAN-98 19:55:03 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 125-128
INJ. TIME = 19:58 File Text:TLI#44376 125»
34:18
100%
80
60
40
20
0
1.1E6
8.4E5
6.3E5
4.2E5
2.1E5
0.0E0
34:06
34:12
34:18
34:24
34:30
34:36
Time

555

Eastern Research Group

TLI Project: **44376** CDF
Client Sample: **125-128**

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: **P980166**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPC2NF04**
TLI ID:	**194-59-6A-6D**	Date Extracted:	**12/29/97**	ICal:	**PF22206**
		Date Analyzed:	**01/10/98**	ConCal:	**P980164**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**X980083**	% Lipid:	**n/a**
GC Column:	**DB-225**	Analyst:	**WK**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	17.5			0.73	23:05	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.0	51.0	40%-130%	0.77	23:04	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.83	21:53	___

Data Reviewer: _____ 01/11/98

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:35 01/11/98

Initial ....Date...

Data Review By: [illegible] 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside
ratio limits has been recalculated according to method requirements.

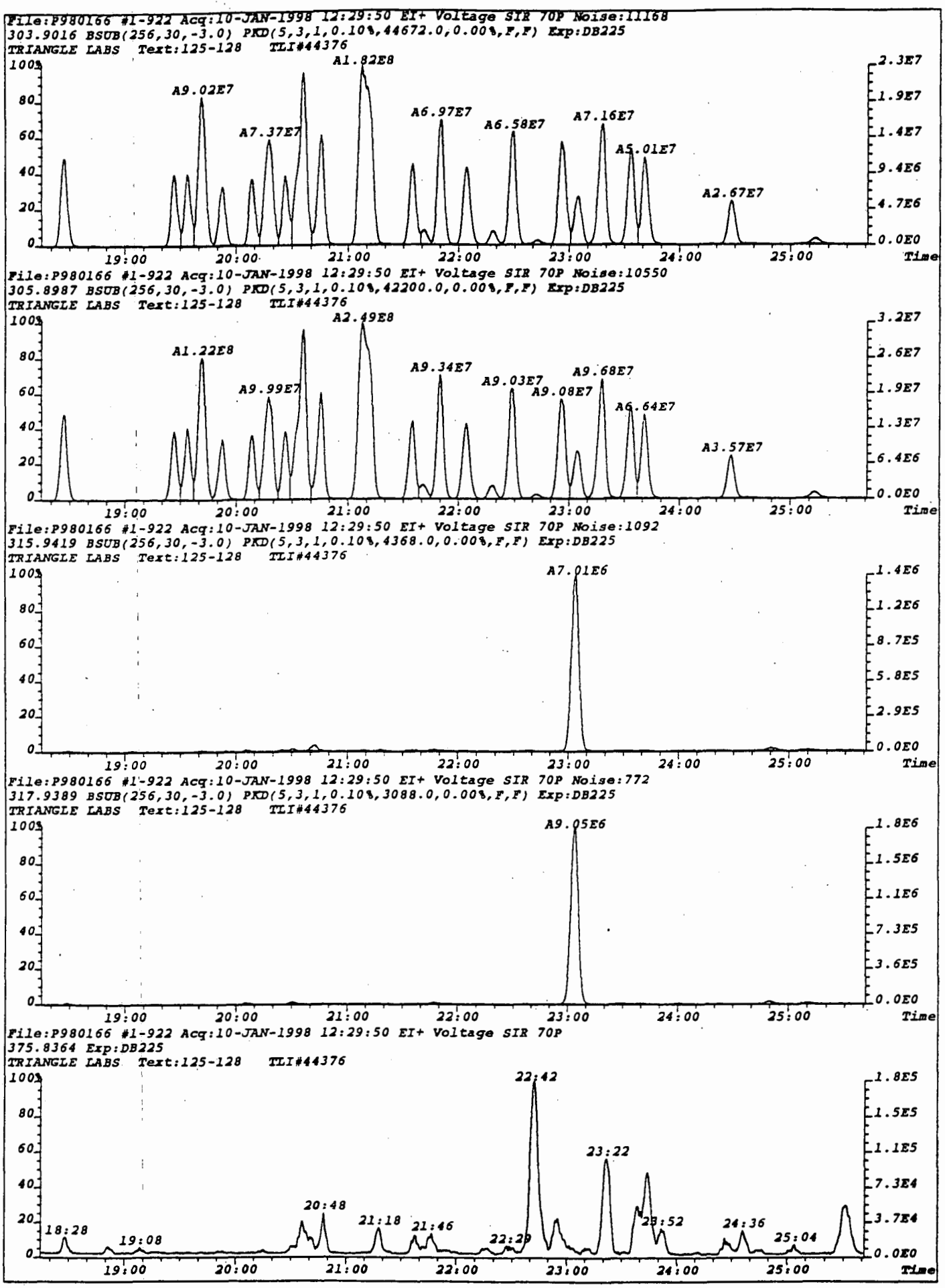
Page No. 1 Listing of P980166B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

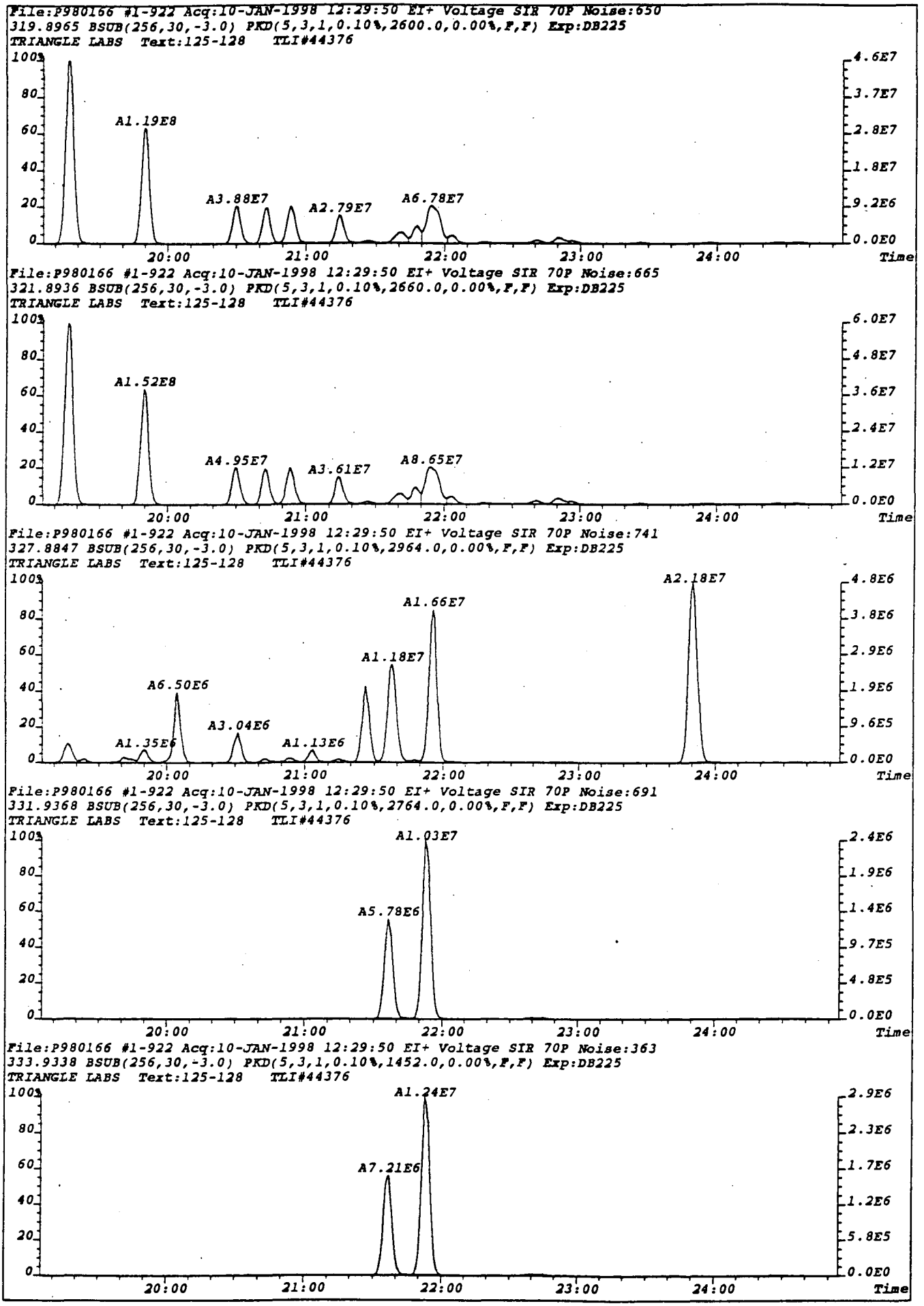
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.793-1.101			
304-306	DC	NL		0:00	RO	1.06	37.35			0.000			
				18:27		0.74	11,333.86	4,833.58	6,500.28	0.800			E
				18:43	RO	1.78	26.96	27.17	15.23	0.811			
				19:27		0.75	8,793.11	3,767.20	5,025.91	0.843			E
				19:34		0.74	8,991.47	3,833.80	5,157.67	0.848			E
				19:42		0.74	21,193.00	9,024.90	12,168.10	0.854			E
				19:53		0.72	7,603.15	3,183.68	4,419.47	0.862			
				20:08		0.74	8,106.24	3,452.17	4,654.07	0.873			
				20:18		0.74	17,360.81	7,374.85	9,985.96	0.880			E
				20:26		0.78	8,336.28	3,645.80	4,690.48	0.886			
				20:36		0.72	28,093.50	11,724.80	16,368.70	0.893			E
				20:45		0.75	13,897.04	5,964.00	7,933.04	0.900			E
				21:08		0.73	43,066.20	18,172.80	24,893.40	0.916			E
				21:35		0.77	10,052.03	4,356.83	5,695.20	0.936			E
				21:41		0.65	1,770.35	698.61	1,071.74	0.940			
				21:50		0.75	16,304.39	6,966.95	9,337.44	0.947			E
				22:04		0.74	11,043.51	4,708.93	6,334.58	0.957			E
				22:18		0.75	1,852.76	791.50	1,061.26	0.967			
				22:29		0.73	15,609.79	6,584.47	9,025.32	0.975			E
				22:43		0.74	613.30	260.66	352.64	0.985			
				22:56		0.73	15,668.57	6,592.85	9,075.72	0.994			E
				23:05		0.73	7,309.11	3,081.06	4,228.05	1.001	2378-TCDF	AN	
				23:18		0.74	16,832.63	7,155.62	9,677.01	1.010			E
				23:34		0.75	13,248.35	5,672.93	7,575.42	1.022			E
				23:41		0.76	11,650.49	5,014.18	6,636.31	1.027			E
				24:28		0.75	6,239.09	2,666.72	3,572.37	1.061			
				24:37		0.75	152.42	65.23	87.19	1.067			
				25:13		0.65	985.72	387.76	597.96	1.093			
304-306			27	Peaks			306,134.13						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	1.42	2.73			0.000			
	DC	WL		18:29	RO	0.63	7.01			0.801			
	DC	WL		20:05		0.83	9.85			0.871			
	DC	WL		20:30		0.67	16.18			0.889			
	DC	WL		20:42	RO	5.86	5.75			0.897			
	DC	WL		21:09	RO	2.92	1.82			0.917			
	DC	WL		21:37	RO	0.93	9.29			0.937			
	DC	WL		21:41	RO	1.58	0.85			0.940			
	DC	WL		21:47	RO	2.37	5.12			0.944			
				23:04		0.77	1,606.35	701.05	905.30	1.000	13C12-2378-TCDF	ISO	
	DC	SN		23:25	RO	0.44	2.28			1.015			
	DC	SN		23:33	RO	0.18	1.20			1.021			

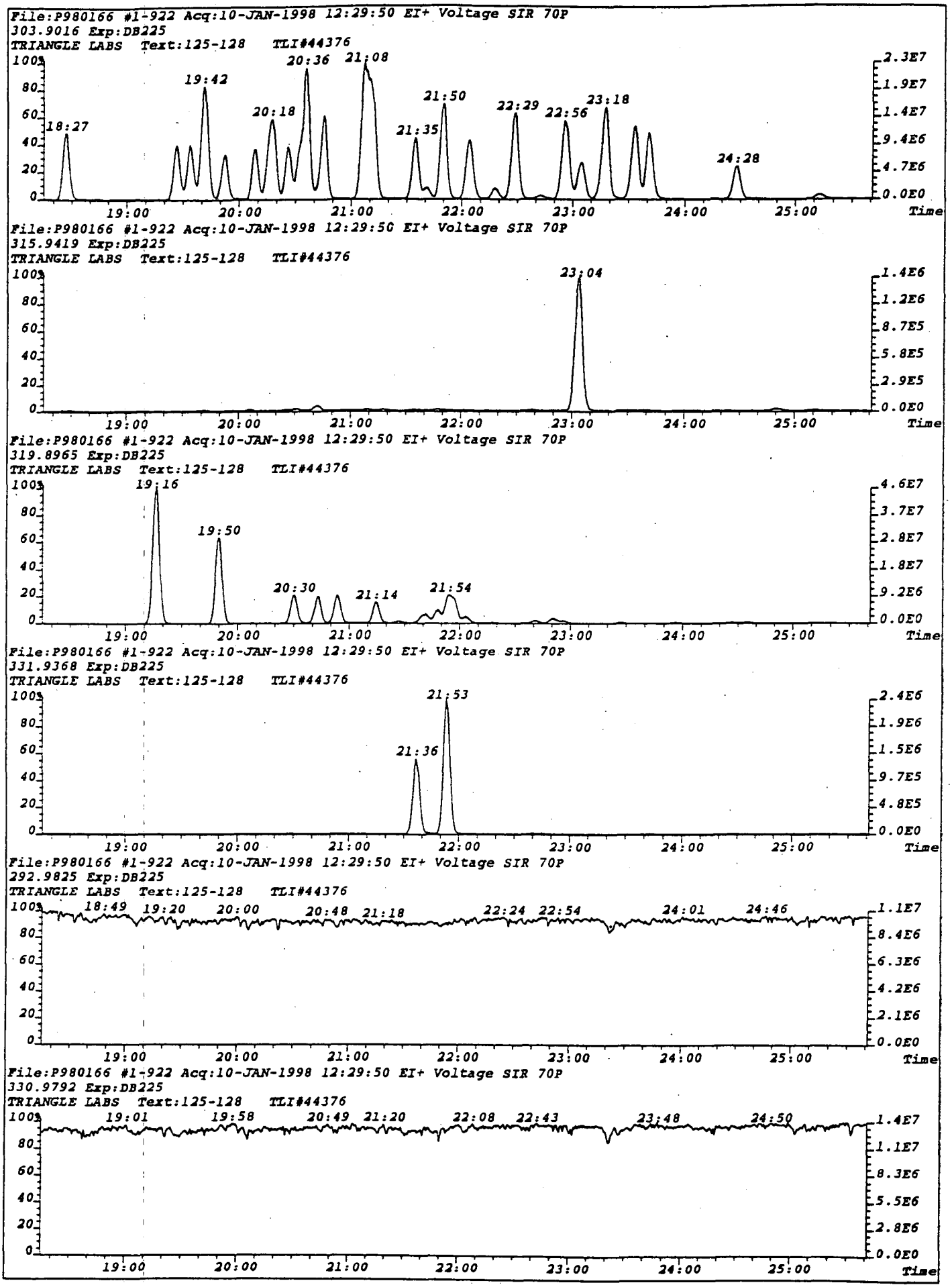
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				23:39	RO	0.62	6.39	2.78	4.45	1.025			
		DC	WH	24:50		0.88	28.54			1.077			
316-318			2 Peaks				1,612.74						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.907-1.093			
332-334		DC	NL	0:00	RO	1.89	1.29			0.000			
				20:29		0.88	6.21	2.90	3.31	0.948			
				21:36		0.80	1,299.29	578.02	721.27	1.000	13C12-2378-TCDD	IS1	
				21:53		0.83	2,271.47	1,030.20	1,241.27	1.013	13C12-1234-TCDD	RS1	
				22:40		0.72	15.70	6.58	9.12	1.049			
				22:44	RO	1.38	9.52	7.44	5.38	1.052			
		DC	WH	23:43		0.67	11.55			1.098			
		DC	WH	24:25	RO	0.55	9.17			1.130			
332-334			5 Peaks				3,602.19						

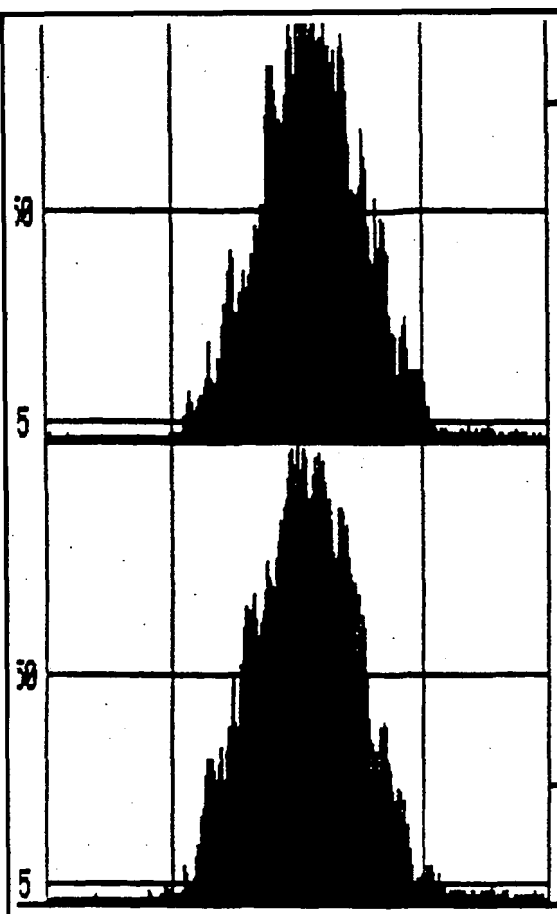
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***


File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:11168
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,44672.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A9.02E7
A7.37E7
A1.82E8
A6.97E7
A6.58E7
A7.16E7
A5.01E7
A2.67E7
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:10550
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,42200.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A1.22E8
A9.99E7
A2.49E8
A9.34E7
A9.03E7
A9.08E7
A9.68E7
A6.64E7
A3.57E7
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:1092
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4368.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A7.01E6
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:772
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3088.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A9.05E6
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
18:28
19:08
20:48
21:18
21:46
22:29
22:42
23:22
23:52
24:36
25:04
Time


File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:650
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2600.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A1.19E8
A3.88E7
A2.79E7
A6.78E7
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:665
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2660.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A1.52E8
A4.95E7
A3.61E7
A8.65E7
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:741
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2964.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A2.18E7
A1.66E7
A1.18E7
A6.50E6
A3.04E6
A1.35E6
A1.13E6
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:691
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2764.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A1.03E7
A5.78E6
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P Noise:363
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1452.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
A1.24E7
A7.21E6
20:00
21:00
22:00
23:00
24:00
Time


File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
18:27
19:42
20:18
20:36
21:08
21:35
21:50
22:29
22:56
23:18
24:28
Time
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
23:04
Time
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
19:16
19:50
20:30
21:14
21:54
Time
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
21:36
21:53
Time
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
18:49
19:20
20:00
20:48
21:18
22:24
22:54
24:01
24:46
Time
File:P980166 #1-922 Acq:10-JAN-1998 12:29:50 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:125-128 TLI#44376
19:01
19:58
20:49
21:20
22:08
22:43
23:48
24:50
Time



Ref. mass Calc.mass Peak top
Height 1.63 volts Span 200 ppm

System file name	D0225
Data file name	A:P980166
Resolution	10000
Group number	1
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 380.9761
A 292.9825	J 330.9792
B 303.9016	K 331.9368
C 305.8987	L 333.9338
D 315.9419	M 375.8364
E 317.9389	
F 319.8965	
G 321.8936	
H 327.8847	
I 330.9792	

Channel I 330.9792 Peak top
Height 1.99 volts Span 200 ppm

Eastern Research Group

TLI Project: **44376**
Client Sample: **129-132**

Method 23 PCDD/PCDF Analysis (a)
Analysis File: **T980159**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-7A-7D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/06/98**	ConCal:	**T980148**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980150**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**BR**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.04			0.68	26:21	
1,2,3,7,8-PeCDD	0.18			1.52	30:31	
1,2,3,4,7,8-HxCDD	0.17			1.20	33:36	
1,2,3,6,7,8-HxCDD	0.27			1.17	33:42	
1,2,3,7,8,9-HxCDD	0.41			1.22	34:00	PR
1,2,3,4,6,7,8-HpCDD	1.2			1.04	37:05	
1,2,3,4,6,7,8,9-OCDD	1.8			0.84	40:57	
2,3,7,8-TCDF	4.1			0.81	25:41	
1,2,3,7,8-PeCDF	0.91			1.46	29:29	
2,3,4,7,8-PeCDF	1.6			1.55	30:11	
1,2,3,4,7,8-HxCDF	3.5			1.25	32:53	
1,2,3,6,7,8-HxCDF	1.3			1.28	33:00	
2,3,4,6,7,8-HxCDF	1.7			1.28	33:30	
1,2,3,7,8,9-HxCDF	0.09			1.05	34:18	PRJ
1,2,3,4,6,7,8-HpCDF	4.8			1.13	36:00	
1,2,3,4,7,8,9-HpCDF	0.87			1.02	37:37	
1,2,3,4,6,7,8,9-OCDF	4.0			0.89	41:10	

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	4.5	11		4.5	
Total PeCDD	2.9	9		4.4	
Total HxCDD	4.2	7			
Total HpCDD	2.3	2			
Total TCDF	26.1	16		26.1	Q
Total PeCDF	21.4	15		21.6	
Total HxCDF	13.9	13		13.9	Q
Total HpCDF	8.1	4			

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: 44376
Client Sample: 129-132

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980159

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.7	66.7	40%-130%	0.74	25:39	
$^{13}C_{12}$-2,3,7,8-TCDD	2.7	67.7	40%-130%	0.79	26:20	
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.1	76.8	40%-130%	1.55	29:29	
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.6	90.6	40%-130%	1.44	30:30	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.0	75.8	40%-130%	0.51	32:59	
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.6	90.7	40%-130%	1.18	33:41	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.5	86.6	25%-130%	0.44	36:00	
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.5	112	25%-130%	1.05	37:05	
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	8.8	109	25%-130%	0.91	40:56	

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.3	82.6	70%-140%		26:21	
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.8	94.1	70%-140%	1.51	30:10	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.0	99.9	70%-140%	0.51	32:53	
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4.1	104	70%-140%	1.16	33:35	
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.3	107	70%-140%	0.44	37:37	

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.3	82.5	40%-130%	0.51	34:18	
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.0	76.1	40%-130%	0.52	33:30	

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:10	
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.16	34:01	

Data Reviewer: [signature] 01/15/98

X237_PSR v2.01, LARS 6.10

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:28 01/15/98

Initial ....Date...

Data Review By: [illegible] 1/15/98 Calculated Noise Area: 1.72

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980159B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.878-1.073			
304-306	DC	NL		0:00	RO	1.23	5.38			0.000			
				22:39		0.82	848.00	382.65	465.35	0.883			
				23:08		0.82	891.59	401.30	490.29	0.902			
				23:21		0.78	756.87	330.48	426.39	0.910			
				23:43		0.81	3,488.94	1,557.35	1,931.59	0.925			Q
				24:02		0.83	2,474.63	1,124.42	1,350.21	0.937			
				24:24		0.79	2,723.78	1,203.23	1,520.55	0.951			
				24:40		0.78	1,893.51	831.49	1,062.02	0.962			
				24:53		0.81	1,272.23	569.47	702.76	0.970			
				25:05		0.79	4,270.83	1,891.10	2,379.73	0.978			
				25:16		0.80	1,079.12	479.80	599.32	0.985			
				25:30		0.81	1,083.53	485.83	597.70	0.994			
				25:41		0.81	4,247.14	1,900.52	2,346.62	1.001	2378-TCDF	AN	
				26:05		0.80	1,071.35	476.86	594.49	1.017			
				26:18		0.78	865.21	378.65	486.56	1.025			
				26:32		0.74	179.09	76.13	102.96	1.034			
				26:49	RO	0.98	11.84	6.58	6.69	1.045			J
				26:58	RO	1.31	7.88	5.83	4.45	1.051			J
				27:20		0.82	117.05	52.69	64.36	1.066			
304-306			18	Peaks			27,282.59						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00	RO	1.42	2.64			0.000			
	DC	WL		22:41		0.85	8.02			0.884			
	DC	WL		24:04		0.75	15.77			0.938			
	DC	WL		24:13		0.81	4.99			0.944			
				25:07	RO	1.19	8.53	5.72	4.82	0.979			
				25:15		0.82	20.61	9.31	11.30	0.984			
				25:39		0.74	3,049.63	1,293.10	1,756.53	1.000	13C12-2378-TCDF	ISO	
				26:04		0.69	19.59	8.02	11.57	1.016			
	DC	WH		27:35		0.69	11.63			1.075			
316-318			4	Peaks			3,098.36						
---------- Above: TCDF / TCDD Follows ----------													
TCDD				0.65-0.89						0.903-1.045			
320-322	DC	NL		0:00	RO	0.57	2.60			0.000			
				23:54		0.79	1,443.87	639.37	804.50	0.908			
				24:16		0.80	883.23	391.55	491.68	0.922			
				24:34		0.71	107.46	44.46	63.00	0.933			
	DC	SN		24:55	RO	1.56	0.97			0.946			
				25:12		0.78	422.90	185.22	237.68	0.957			
				25:27		0.76	228.17	98.89	129.28	0.966			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:51		0.78	117.34	51.53	65.81	0.982			
M				26:14		0.78	434.00	190.00	244.00	0.996			
AN				26:21		0.68	37.50	15.20	22.30	1.001	2378-TCDD	AN	
AND	D		TE	26:21		0.68	38.90			1.001			
AND	D		TE	26:21		0.68	38.90			1.001			
				26:31		0.70	53.40	21.94	31.46	1.007			
				26:40		0.77	58.24	25.40	32.84	1.013			
				26:52	RO	0.98	17.06	9.44	9.64	1.020			
				27:18		0.84	21.27	9.74	11.53	1.037			
320-322			12 Peaks				3,824.44						
37Cl-TCDD									0.924-1.076				
328	DC	NL		0:00			1.31			0.000			
	DC	WL		23:55			8.41			0.908			
	DC	WL		24:10			4.73			0.918			
	DC	WL		24:17			6.86			0.922			
				24:27			7.68	7.68		0.928			
				24:35			2.17	2.17		0.934			
				25:01			465.56	465.56		0.950			
				25:13			6.64	6.64		0.958			
				25:40			11.53	11.53		0.975			
				25:52			2.85	2.85		0.982			
				26:03			6.52	6.52		0.989			
				26:13			3.71	3.71		0.996			
				26:21			2,077.92	2,077.92		1.001	37Cl-TCDD	SUR1	
				26:43			262.62	262.62		1.015			
				27:16			2.76	2.76		1.035			
	DC	SN		27:27			1.50			1.042			
				27:38			8.44	8.44		1.049			
				27:46			3.19	3.19		1.054			
328			13 Peaks				2,861.59						
13C12-TCDD						0.65-0.89			0.924-1.076				
332-334	DC	NL		0:00	RO	2.29	3.98			0.000			
				25:14		0.80	15.59	6.92	8.67	0.958			
	DC	SN		25:45	RO	3.00	2.27			0.978			
				26:10		0.81	2,960.05	1,322.69	1,637.36	0.994	13C12-1234-TCDD	RS1	
				26:20		0.79	2,499.88	1,101.30	1,398.58	1.000	13C12-2378-TCDD	IS1	
				26:40		0.78	42.05	18.45	23.60	1.013			
				26:54		0.74	10.67	4.54	6.13	1.022			
	DC	SN		27:08	RO	5.36	1.33			1.030			
	DC	SN		27:27	RO	1.04	2.14			1.042			
	DC	SN		27:45	RO	2.84	2.55			1.054			
332-334			5 Peaks				5,528.24						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78			0.931-1.063				
340-342	DC	NL		0:00		1.37	2.92			0.000			
				27:33		1.47	1,694.23	1,007.39	686.84	0.934			
				27:53	RO	1.80	47.12	33.35	18.48	0.946			J
				28:00	RO	1.82	31.31	22.34	12.28	0.950			J

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:10	RO	1.29	36.85	22.40	17.37	0.955			J
				28:18		1.39	39.92	23.19	16.73	0.960			J
				28:32		1.50	652.36	391.13	261.23	0.968			
				28:40		1.51	3,887.94	2,339.08	1,548.86	0.972			
				28:49		1.50	816.47	489.93	326.54	0.977			
	M			29:07		1.47	1,412.00	841.00	571.00	0.988			
	M			29:14		1.55	1,746.00	1,060.00	686.00	0.992			
	M			29:25		1.46	798.00	473.00	325.00	0.998			
	AN			29:29		1.46	700.00	416.00	284.00	1.000	12378-PeCDF	AN	
				29:40		1.50	612.60	367.64	244.96	1.006			
				29:47		1.52	962.81	581.41	381.40	1.010			
				30:11		1.55	1,224.82	744.88	479.94	1.024	23478-PeCDF	AN	
				30:19		1.51	1,550.48	931.60	618.88	1.028			
				30:38		1.37	258.53	149.56	108.97	1.039			
				30:52	RO	1.01	6.51	3.96	3.94	1.047			J
				31:08		1.37	147.16	85.11	62.05	1.056			
		DC	WH	31:35		1.32	4.82			1.071			
340-342			19	Peaks			16,625.11						
13C12-PeCDF						1.32-1.78				0.864-1.136			
352-354		DC	NL	0:00	RO	1.18	1.18			0.000			
		DC	SN	28:20	RO	0.72	2.27			0.961			
				28:37	RO	1.16	16.52	10.04	8.62	0.971			
				28:49		1.73	9.12	5.78	3.34	0.977			
		DC	SN	29:14	RO	7.46	3.62			0.992			
				29:29		1.55	2,910.19	1,767.86	1,142.33	1.000	13C12-PeCDF 123	IS2	
				29:46	RO	1.23	20.86	12.68	10.29	1.010			
				30:10		1.51	2,720.71	1,638.34	1,082.37	1.023	13C12-PeCDF 234	SUR2	
				31:08	RO	1.21	7.83	4.76	3.93	1.056			
2-354			6	Peaks			5,685.23						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD						1.32-1.78				0.939-1.022			
356-358		DC	NL	0:00		1.47	1.21			0.000			
				28:45	RO	1.16	892.93	542.76	469.03	0.943			
				28:57	RO	0.04	4.24	2.58	66.10	0.949			J
				29:14		1.32	64.97	37.00	27.97	0.958			
				29:27		1.53	579.55	350.82	228.73	0.966			
				29:35		1.51	102.20	61.50	40.70	0.970			
				29:46		1.54	403.56	244.74	158.82	0.976			
				30:01		1.50	195.82	117.37	78.45	0.984			
				30:13		1.53	165.83	100.34	65.49	0.991			
				30:20	RO	0.58	71.65	43.55	75.16	0.995			
				30:31		1.52	108.96	65.72	43.24	1.001	12378-PeCDD	AN	
				30:38		1.60	72.31	44.49	27.82	1.004			
				30:57		1.76	65.28	41.66	23.62	1.015			
356-358			12	Peaks			2,727.30						
13C12-PeCDD						1.32-1.78				0.869-1.131			
368-370		DC	NL	0:00		1.32	0.44			0.000			
				30:30		1.44	1,904.90	1,124.92	779.98	1.000	13C12-PeCDD 123	IS3	

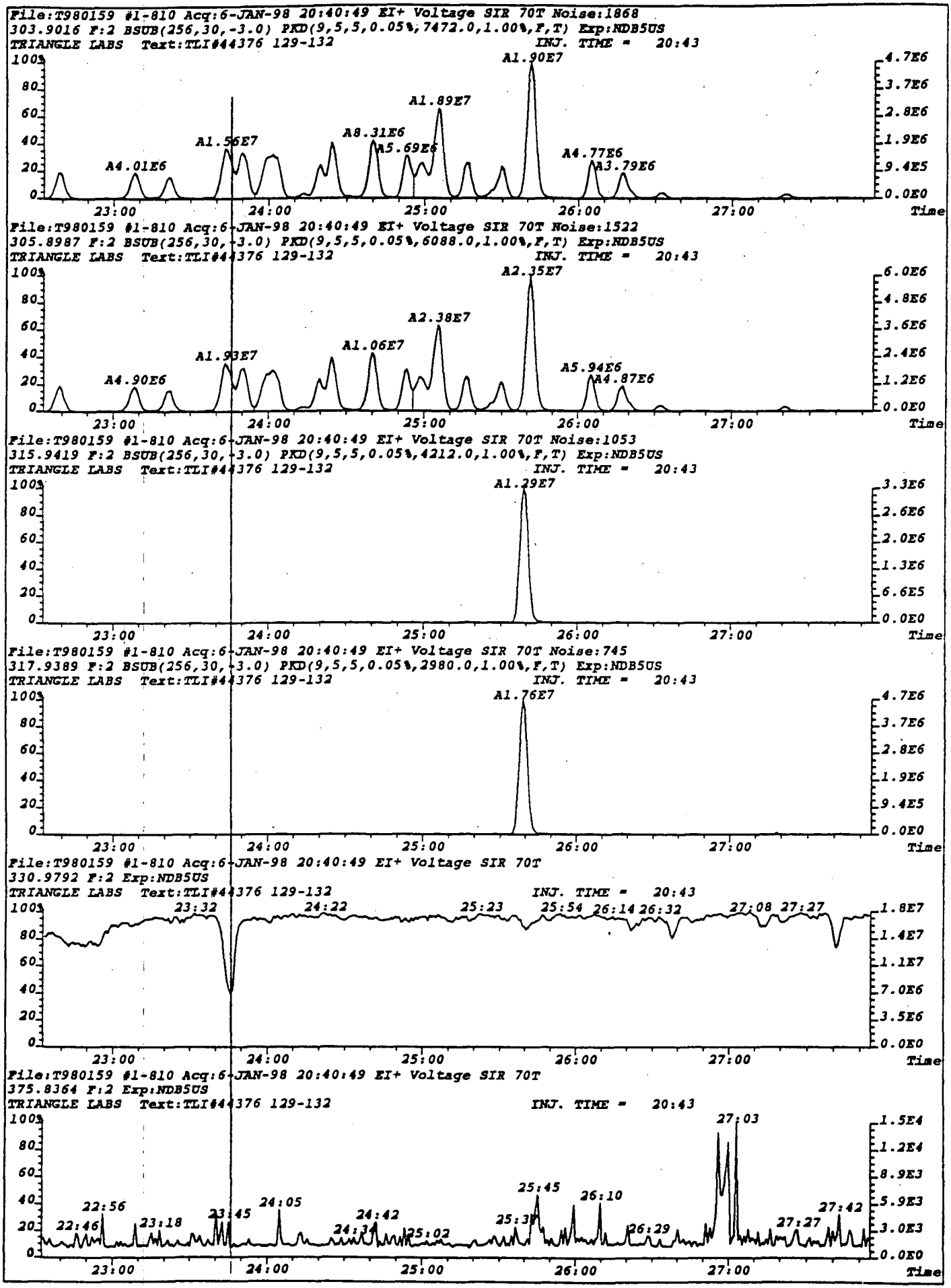
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				30:38		1.44	197.38	116.38	81.00	1.004			
	DC	SN		31:08	RO	1.86	3.16			1.021			
368-370			2	Peaks			2,102.28						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.964-1.049			
374-376	DC	NL		0:00	RO	2.05	15.64			0.000			
				31:56		1.28	827.01	464.77	362.24	0.968			
				32:04		1.25	2,526.81	1,403.61	1,123.20	0.972			
				32:14		1.35	158.69	91.20	67.49	0.977			
				32:22		1.25	294.32	163.23	131.09	0.981			
				32:31		1.35	169.30	97.13	72.17	0.986			
				32:42		1.30	21.48	12.14	9.34	0.991			J
				32:53		1.25	2,405.04	1,338.19	1,066.85	0.997	123478-HxCDF	AN	
				33:00		1.28	1,036.67	581.97	454.70	1.001	123678-HxCDF	AN	
				33:07		1.32	203.55	115.80	87.75	1.004			
				33:17		1.28	381.82	214.14	167.68	1.009			
				33:30		1.28	1,068.71	599.19	469.52	1.016	234678-HxCDF	AN	
	AX		X	34:14	RO	0.89	16.01	8.86	10.00	1.038			J
	AN			34:18		1.05	51.30	26.30	25.00	1.040	123789-HxCDF	AN	PRJ
	M			34:23		1.18	301.00	163.00	138.00	1.042			
374-376			14	Peaks			9,461.71						
13C12-HxCDF						0.43-0.59				0.879-1.121			
384-386	DC	NL		0:00	RO	0.69	6.69			0.000			
				32:53		0.51	2,212.34	744.50	1,467.84	0.997	13C12-HxCDF 478	SUR3	
				32:59		0.51	2,404.41	809.29	1,595.12	1.000	13C12-HxCDF 678	IS4	
	DC	SN		33:14	RO	0.28	2.99			1.008			
				33:30		0.52	2,301.46	784.58	1,516.88	1.016	13C12-HxCDF 234	ALT2	
				33:58	RO	0.86	6.69	3.81	4.43	1.030			
	DC	SN		34:04	RO	0.36	1.24			1.033			
	DC	SN		34:06	RO	0.35	1.92			1.034			
				34:18		0.51	1,975.42	665.00	1,310.42	1.040	13C12-HxCDF 789	ALT1	
				34:32		0.45	7.33	2.28	5.05	1.047			
384-386			6	Peaks			8,907.65						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.015			
390-392	DC	NL		0:00	RO	0.68	4.06			0.000			
	DC	SN		32:16	RO	0.40	2.69			0.958			
				32:25		1.20	215.13	117.33	97.80	0.962			
				32:51		1.21	928.63	508.66	419.97	0.975			
				33:05		1.22	446.31	245.57	200.74	0.982			
				33:14		1.18	48.42	26.23	22.19	0.987			J
	DC	SN		33:25	RO	0.97	1.28			0.992			
				33:36		1.20	75.43	41.16	34.27	0.998	123478-HxCDD	AN	
				33:42		1.17	134.74	72.63	62.11	1.000	123678-HxCDD	AN	
				34:00		1.22	208.77	114.71	94.06	1.009	123789-HxCDD	AN	PR
390-392			7	Peaks			2,057.43						

Compound/ Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL		0:00		1.36	2.95			0.000			
	DC	SN		32:51	RO	0.55	1.52			0.975			
				33:04	RO	0.69	7.66	4.24	6.17	0.982			
	DC	SN		33:12	RO	1.71	1.86			0.986			
	DC	SN		33:20	RO	0.17	0.67			0.990			
				33:35		1.16	1,710.49	918.99	791.50	0.997	13C12-HxCDD	478	SUR4
				33:41		1.18	2,032.61	1,102.35	930.26	1.000	13C12-HxCDD	678	IS5
				34:01		1.16	2,245.55	1,204.51	1,041.04	1.010	13C12-HxCDD	789	RS2
	DC	SN		34:17	RO	2:54	4.50			1.018			
	DC	SN		34:23	RO	0.83	3.70			1.021			
	DC	SN		34:27	RO	4.60	2.33			1.023			
402-404				4 Peaks			5,996.31						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.998-1.053			
408-410	DC	NL		0:00	RO	5.53	1.59			0.000			
				36:00		1.13	3,070.18	1,627.99	1,442.19	1.000	1234678-HpCDF		AN
				36:17		1.00	650.69	325.41	325.28	1.008			
				36:26		1.06	697.12	359.46	337.66	1.012			
D	D	NH		36:57	RO	0.66	6.20			1.026			
				37:37		1.02	422.23	213.66	208.57	1.045	1234789-HpCDF		AN
	DC	WH		38:00		0.94	2.52			1.056			
	DC	WH		38:07	RO	0.83	2.75			1.059			
408-410				4 Peaks			4,840.22						
13C12-HpCDF						0.37-0.51				0.944-1.111			
418-420	DC	NL		0:00	RO	1.02	2.97			0.000			
				36:00		0.44	1,732.75	526.98	1,205.77	1.000	13C12-HpCDF	678	IS6
				37:37		0.44	1,444.78	439.29	1,005.49	1.045	13C12-HpCDF	789	SUR5
				37:51	RO	0.31	10.60	3.24	10.40	1.051			
	DC	SN		38:13	RO	0.69	3.40			1.062			
418-420				3 Peaks			3,188.13						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.976-1.006			
424-426	DC	NL		0:00	RO	1.73	1.22			0.000			
	DC	WL		36:09	RO	0.59	15.14			0.975			
				36:18		1.05	541.07	276.94	264.13	0.979			
	DC	SN		36:36	RO	0.77	3.92			0.987			
	DC	SN		36:52	RO	0.42	0.77			0.994			
				37:05		1.04	550.40	280.83	269.57	1.000	1234678-HpCDD		AN
	DC	WH		37:26	RO	1.31	2.79			1.009			
	DC	WH		37:33	RO	1.34	2.37			1.013			
	DC	WH		37:40	RO	0.50	1.28			1.016			
424-426				2 Peaks			1,091.47						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00	RO	1.35	2.45			0.000			
				36:18	RO	1.22	4.43	2.64	2.17	0.979			

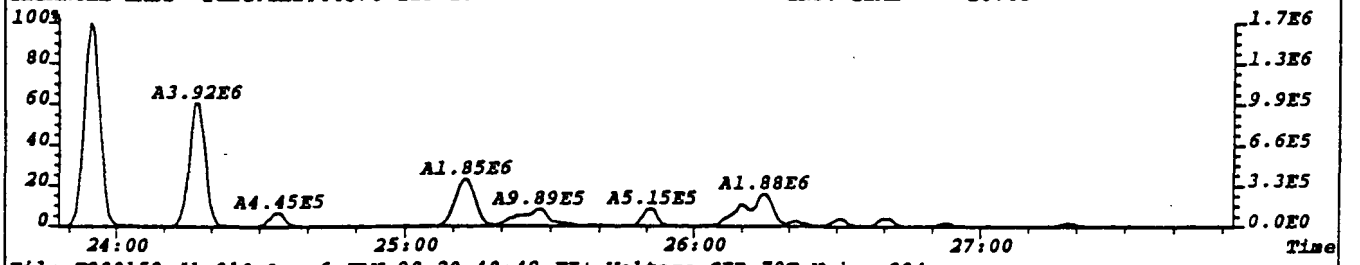
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				37:05		1.05	1,814.39	928.65	885.74	1.000	13C12-HpCDD	678	IS7
				37:22		1.20	5.59	3.05	2.54	1.008			
436-438			3 Peaks				1,824.41						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00	RO	1.95	1.21			0.000			
	DC	WL		35:34	RO	1.68	0.70			0.869			
	DC	WL		35:47	RO	1.21	1.61			0.874			
	DC	WL		35:57	RO	9.75	1.38			0.878			
	DC	SN		37:05	RO	2.75	2.89			0.906			
	DC	SN		37:20	RO	3.47	2.14			0.912			
	DC	SN		37:37		0.95	1.50			0.919			
	DC	SN		38:53	RO	1.88	0.98			0.950			
	DC	SN		38:58	RO	1.15	1.97			0.952			
	DC	SN		39:48		0.83	0.86			0.972			
	DC	SN		40:02	RO	4.22	0.95			0.978			
	DC	SN		40:08	RO	3.14	0.93			0.980			
	DC	SN		40:15	RO	0.70	1.59			0.983			
				41:10		0.89	1,752.67	826.32	926.35	1.006	OCDF		AN
				41:28	RO	1.38	13.17	9.61	6.97	1.013			
	DC	SN		41:49	RO	1.57	1.85			1.022			
442-444			2 Peaks				1,765.84						
OCDD						0.76-1.02				0.902-1.098			
458-460	DC	NL		0:00	RO	0.58	0.47			0.000			
				40:57		0.84	587.70	268.77	318.93	1.000	OCDD		AN
	DC	SN		41:17	RO	0.63	1.74			1.009			
	DC	SN		41:22	RO	1.19	2.65			1.011			
458-460			1 Peak				587.70						
13C12-OCDD						0.76-1.02				0.998-1.006			
470-472	DC	NL		0:00	RO	1.64	0.26			0.000			
				40:56		0.91	2,407.46	1,144.82	1,262.64	1.000	13C12-OCDD		IS8
470-472			1 Peak				2,407.46						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

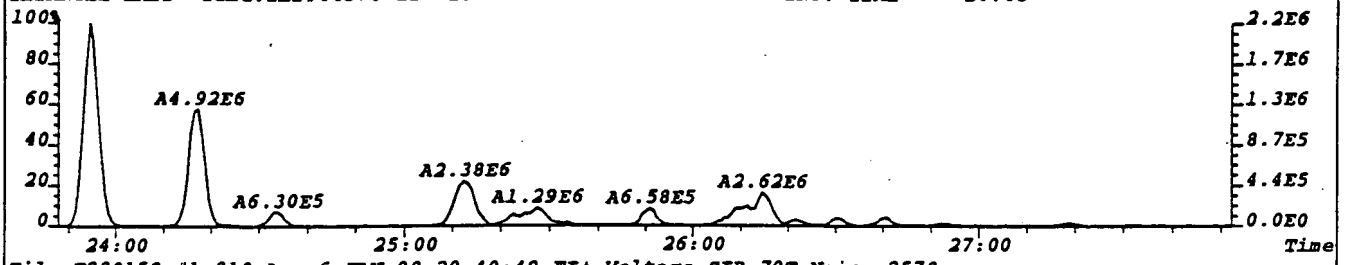
*** End of Report ***


File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1868
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,7472.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.90E7
A1.89E7
A1.56E7
A8.31E6
A5.69E6
A4.01E6
A4.77E6
A3.79E6
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1522
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,6088.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A2.35E7
A2.38E7
A1.93E7
A1.06E7
A4.90E6
A5.94E6
A4.87E6
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1053
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.29E7
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:745
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,2980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.76E7
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
23:32
24:22
25:23
25:54
26:14
26:32
27:08
27:27
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
27:03
22:56
22:46
23:18
23:45
24:05
24:42
24:34
25:02
25:45
25:31
26:10
26:29
27:27
27:42
Time

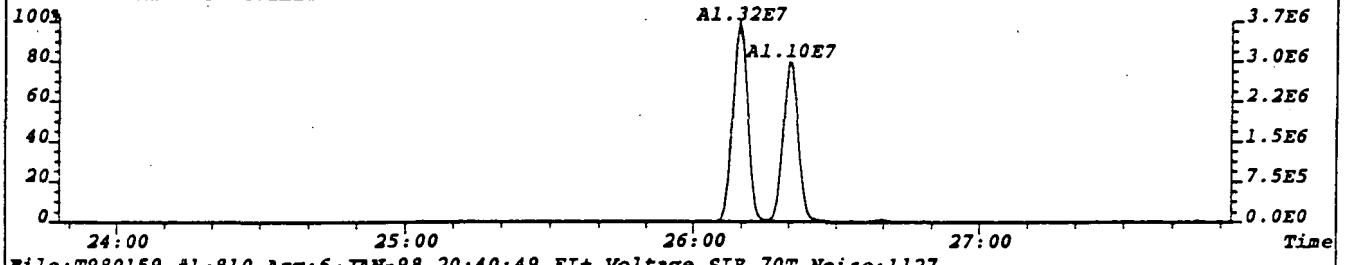
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:565
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2260.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



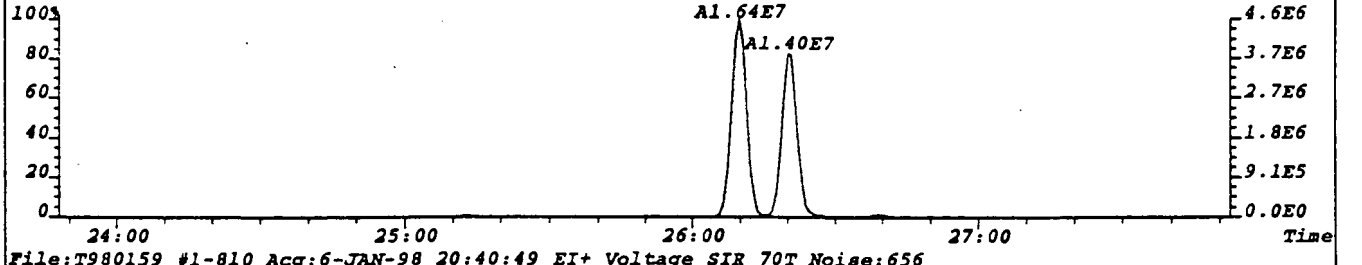
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:994
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3976.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



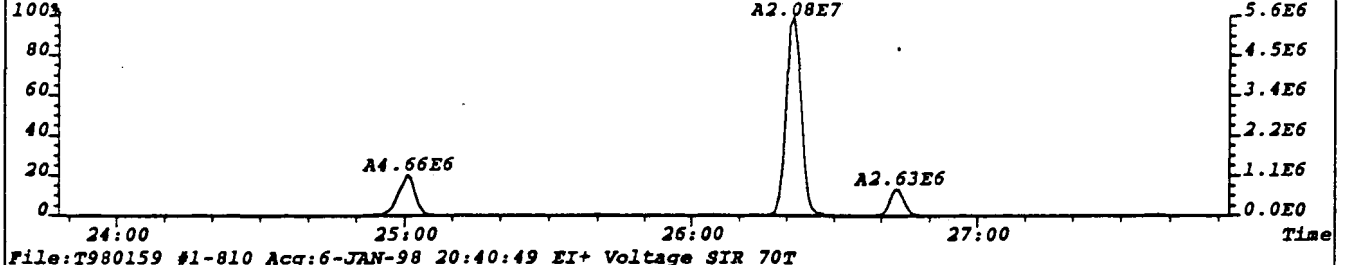
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:2578
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,10312.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



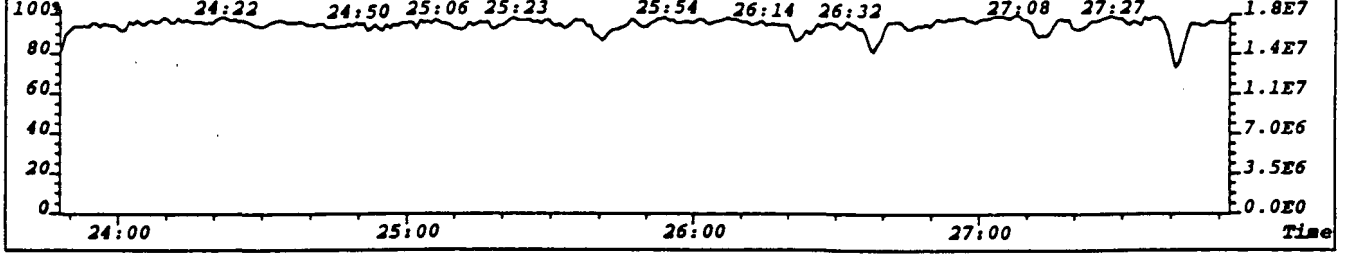
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1127
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4508.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

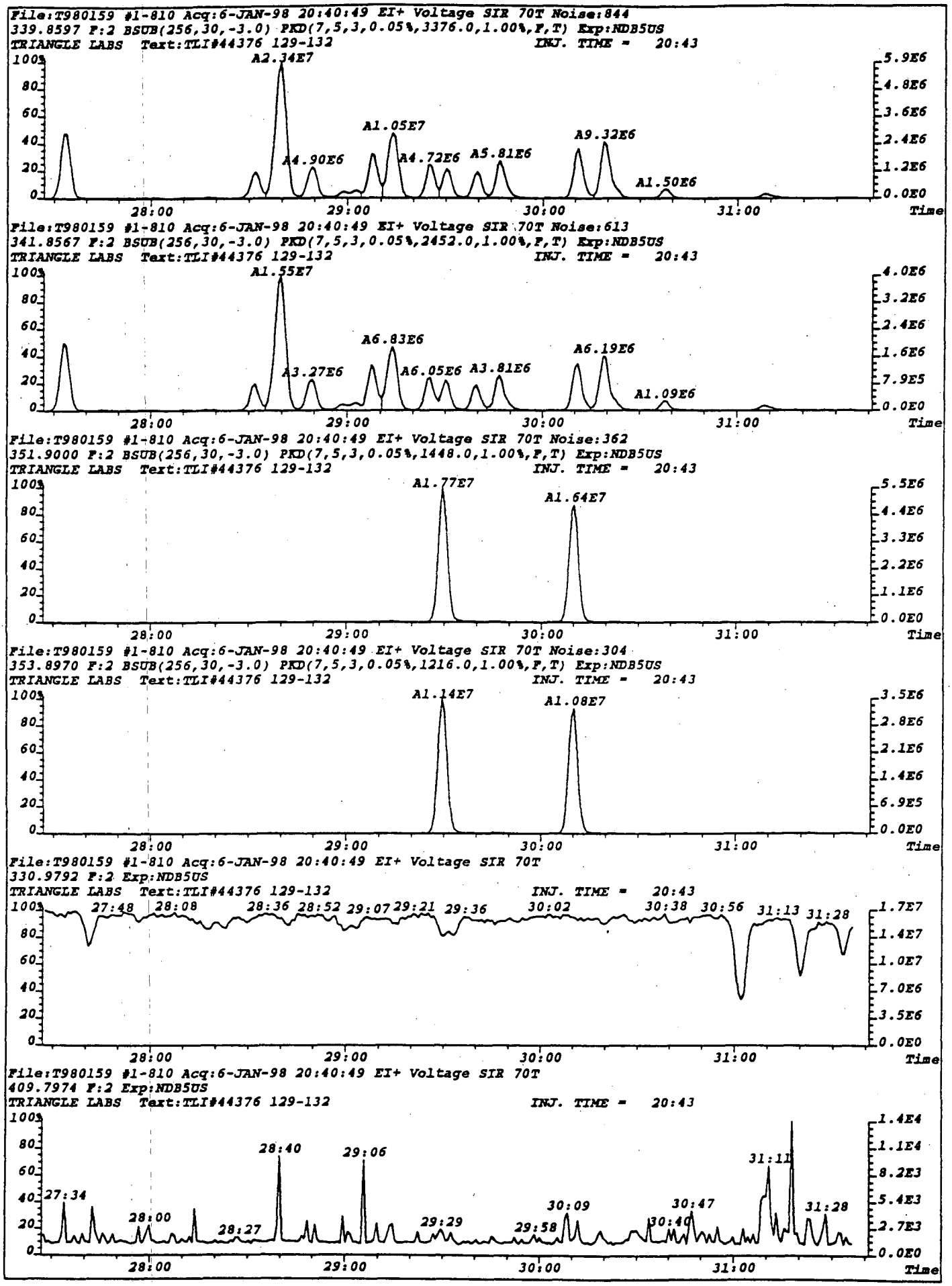


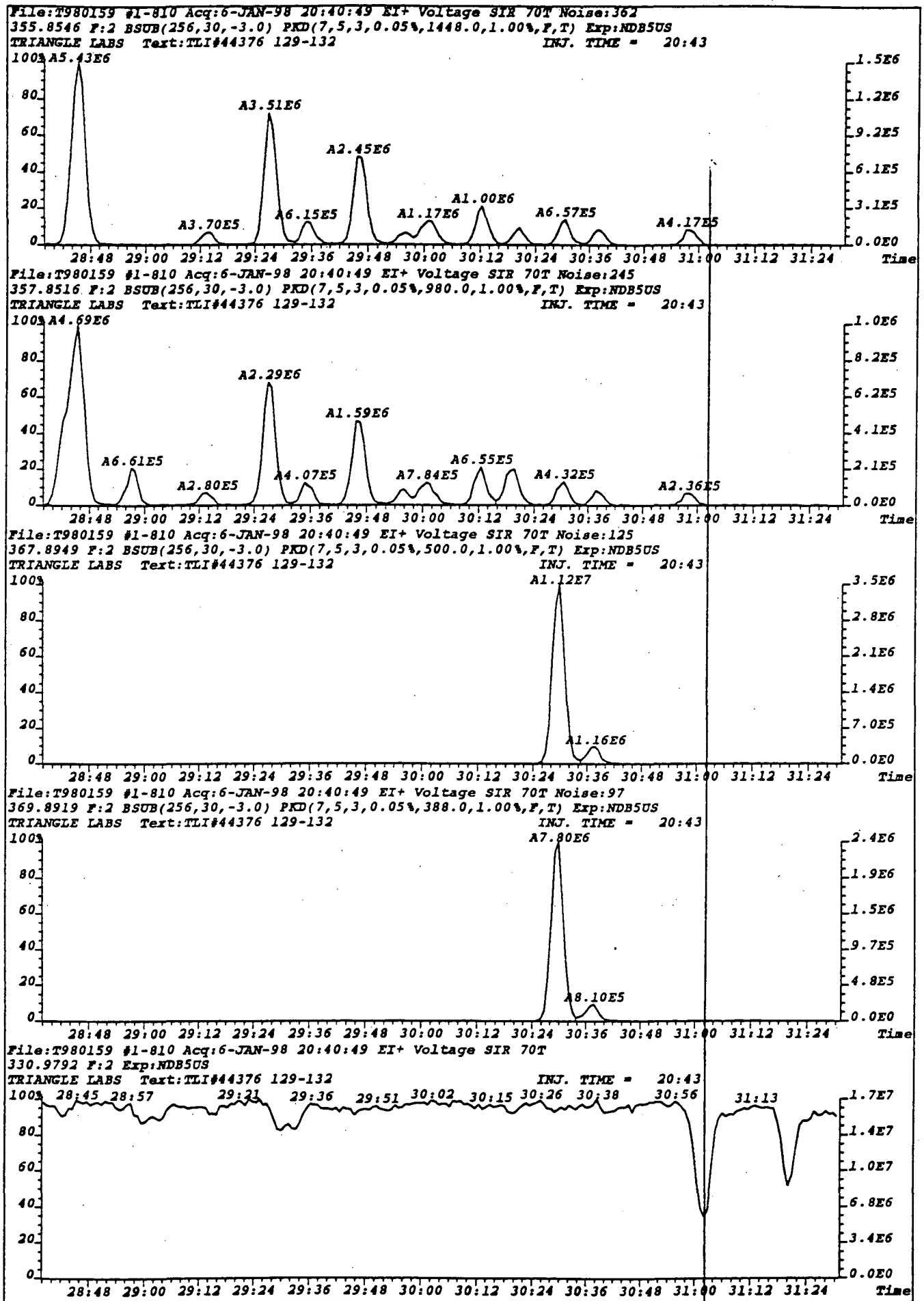
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:656
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2624.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

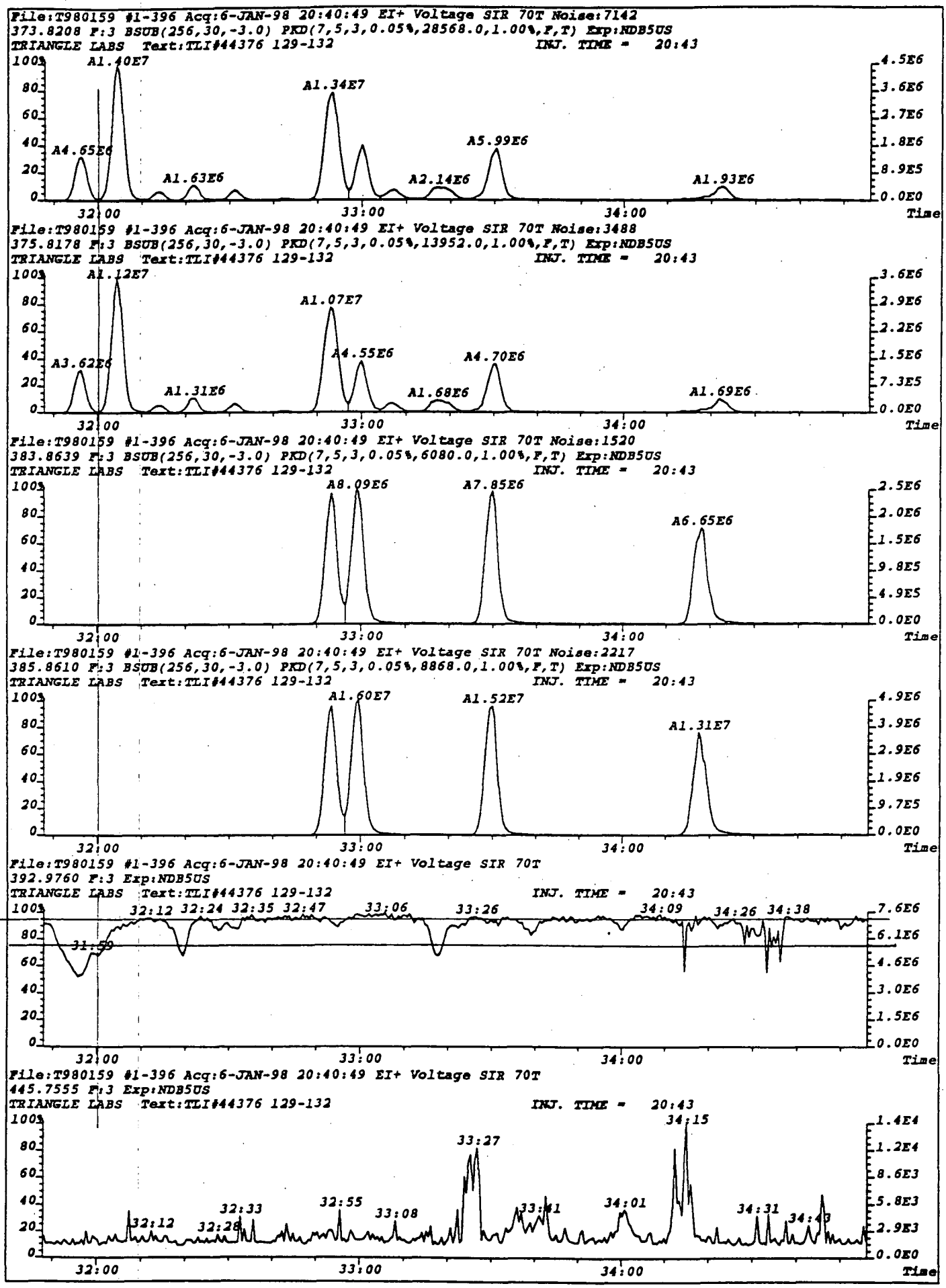


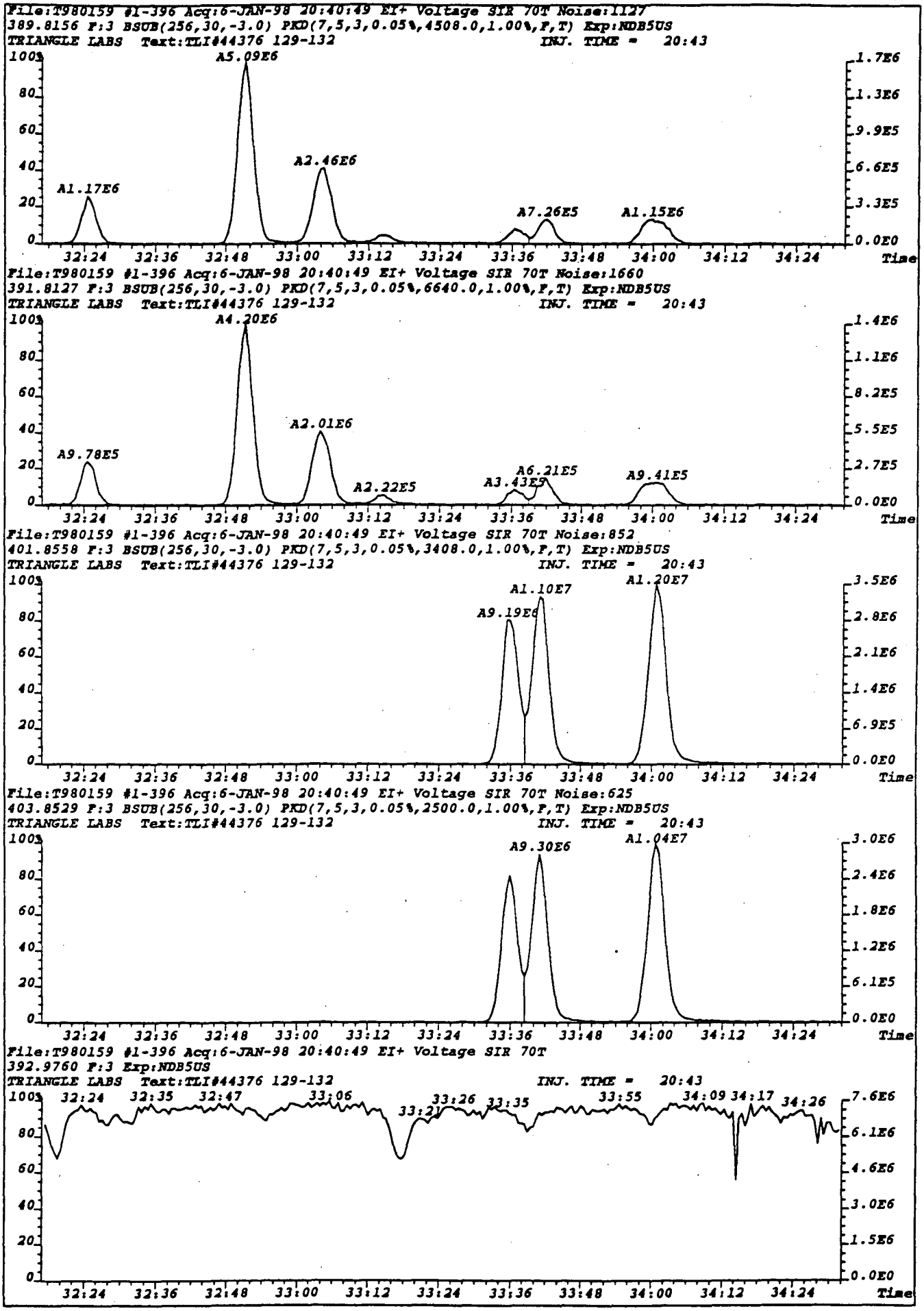
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



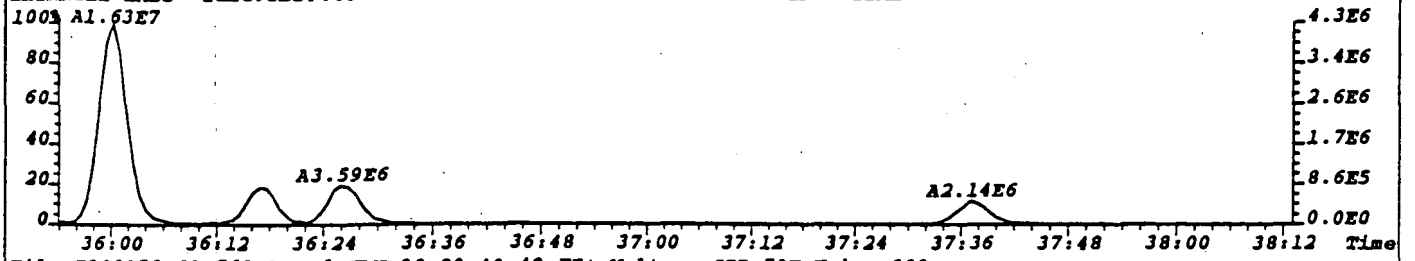

File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:844
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3376.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A2.34E7
A1.05E7
A9.32E6
A4.90E6
A4.72E6
A5.81E6
A1.50E6
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:613
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2452.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.55E7
A6.83E6
A6.19E6
A3.27E6
A6.05E6
A3.81E6
A1.09E6
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:362
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.77E7
A1.64E7
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:304
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1216.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.14E7
A1.08E7
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
27:48
28:08
28:36
28:52
29:07
29:21
29:36
30:02
30:38
30:56
31:13
31:28
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
27:34
28:00
28:27
28:40
29:06
29:29
29:58
30:09
30:40
30:47
31:11
31:28
Time


File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:362
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A5.43E6
A3.51E6
A2.45E6
A1.00E6
A3.70E5
A6.15E5
A1.17E6
A6.57E5
A4.17E5
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:245
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A4.69E6
A2.29E6
A1.59E6
A6.61E5
A2.80E5
A4.07E5
A7.84E5
A6.55E5
A4.32E5
A2.36E5
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:125
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.12E7
A1.16E6
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:97
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,388.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A7.80E6
A8.10E5
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
28:45 28:57 29:21 29:36 29:51 30:02 30:15 30:26 30:38 30:56 31:13
28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24
Time

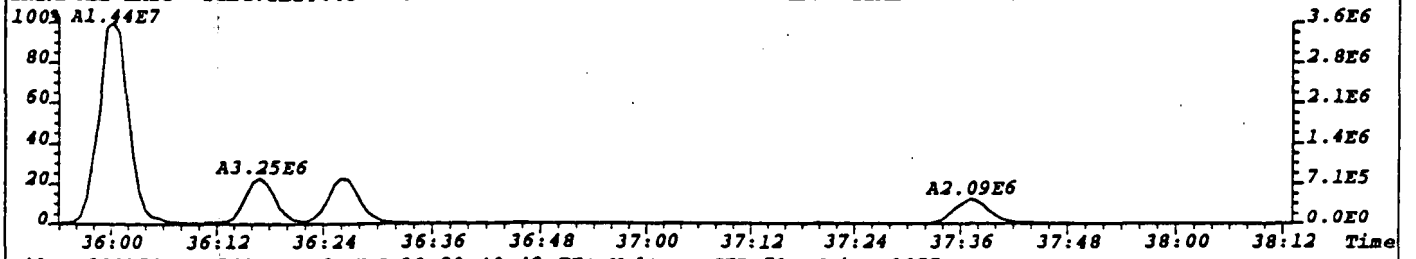

File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:7142
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,28568.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A1.40E7
A1.34E7
A4.65E6
A1.63E6
A5.99E6
A2.14E6
A1.93E6
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:3488
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,13952.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A1.12E7
A1.07E7
A3.62E6
A4.55E6
A4.70E6
A1.31E6
A1.68E6
A1.69E6
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1520
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6080.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A8.09E6
A7.85E6
A6.65E6
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:2217
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8868.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A1.60E7
A1.52E7
A1.31E7
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
32:12 32:24 32:35 32:47 33:06 33:26 34:09 34:26 34:38
31:59
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
34:15
33:27
32:33
32:55
32:12
32:28
33:08
33:41
34:01
34:31
34:43
32:00
33:00
34:00
Time


File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1127
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4508.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A5.09E6
A2.46E6
A1.17E6
A7.26E5
A1.15E6
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1660
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6640.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A4.20E6
A2.01E6
A9.78E5
A2.22E5
A3.43E5
A6.21E5
A9.41E5
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:852
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3408.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A1.10E7
A1.20E7
A9.19E6
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:625
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
A9.30E6
A1.04E7
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132
INJ. TIME = 20:43
32:24 32:35 32:47 33:06 33:21 33:26 33:35 33:55 34:09 34:17 34:26
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24
Time

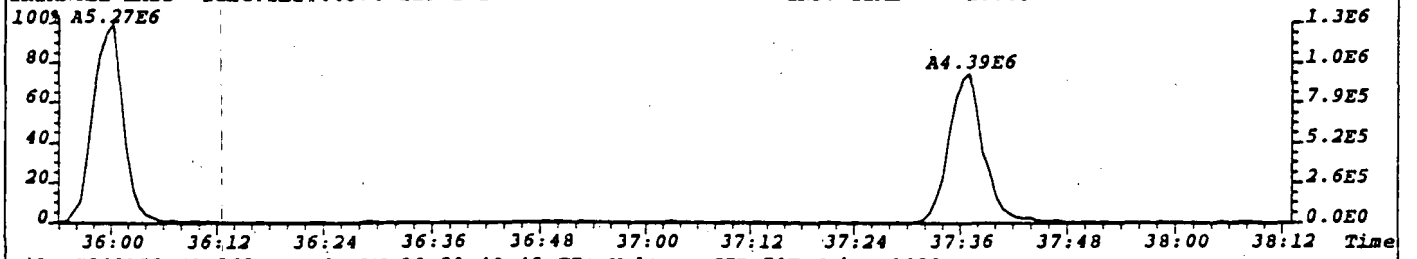
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:2155
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8620.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



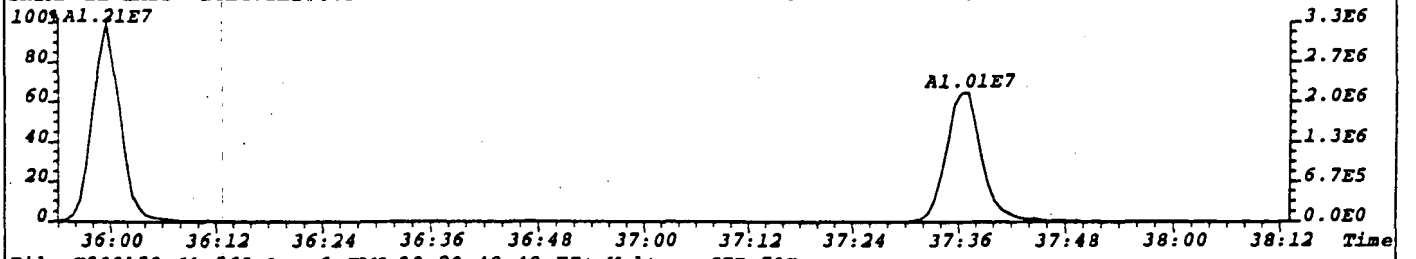
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:389
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



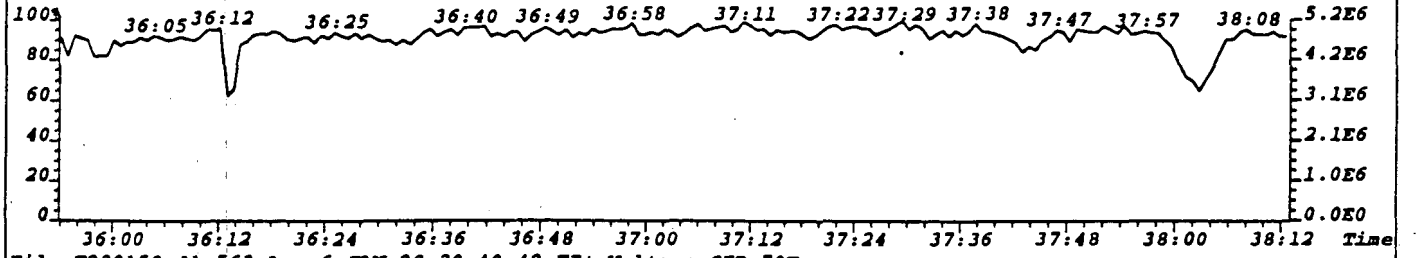
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1057
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



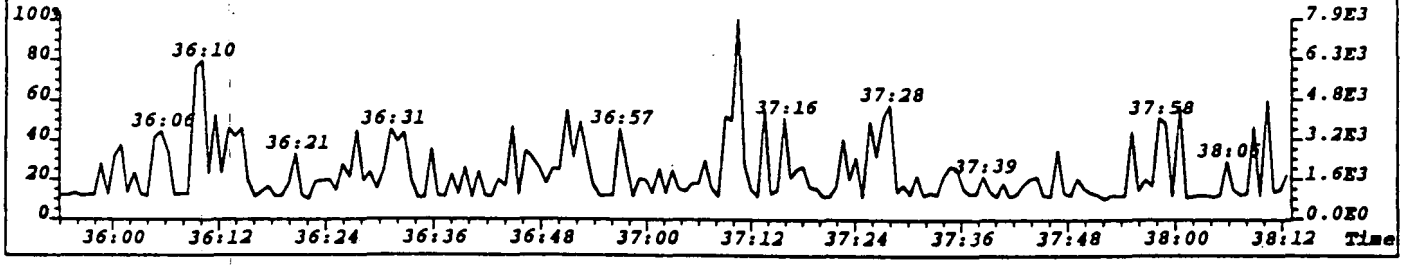
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:1029
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

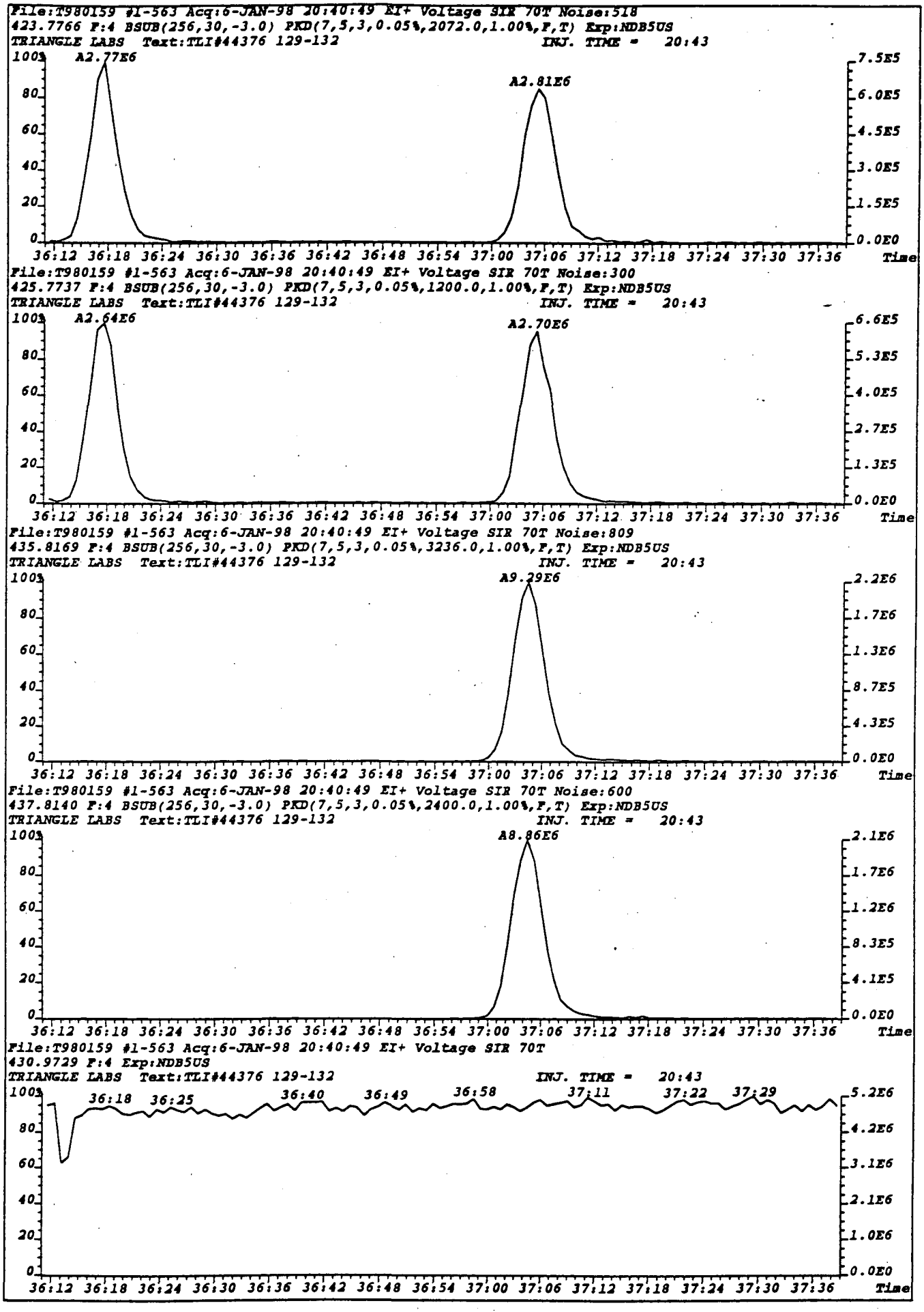


File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

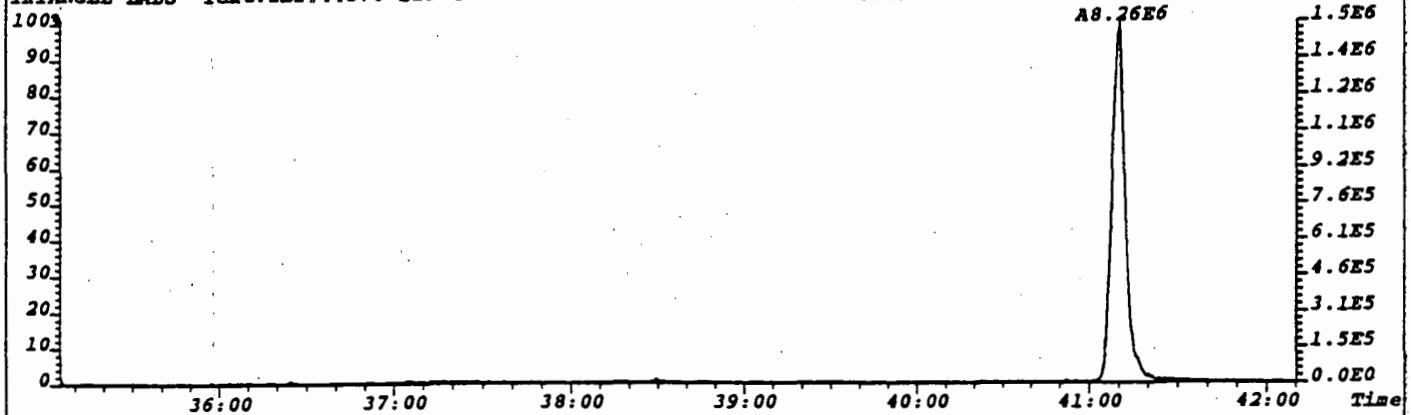


File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

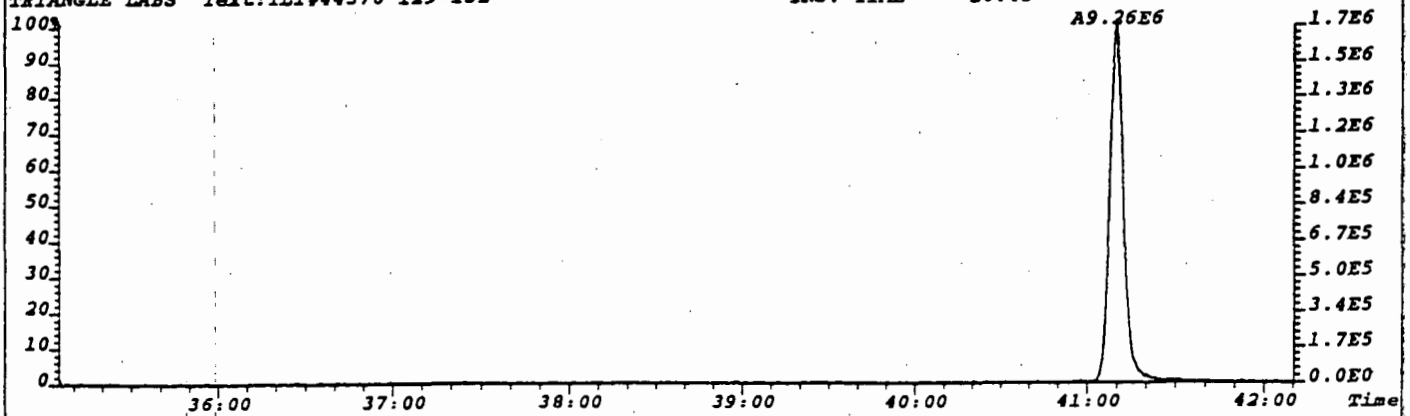



File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:518
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2072.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A2.77E6
A2.81E6
Time
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:300
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A2.64E6
A2.70E6
Time
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:809
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3236.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A9.29E6
Time
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:600
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2400.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
A8.86E6
Time
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43
Time

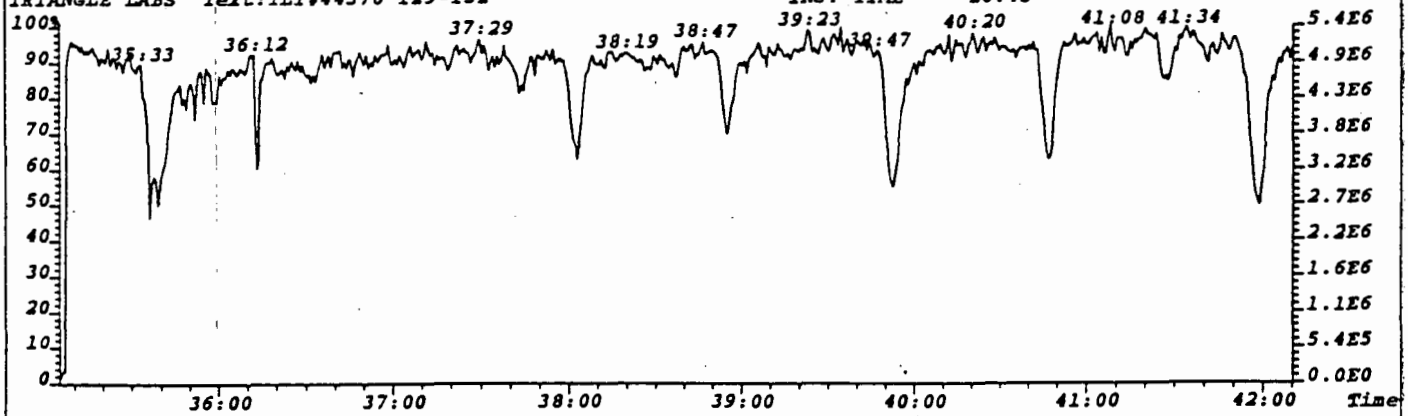
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:627
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2508.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



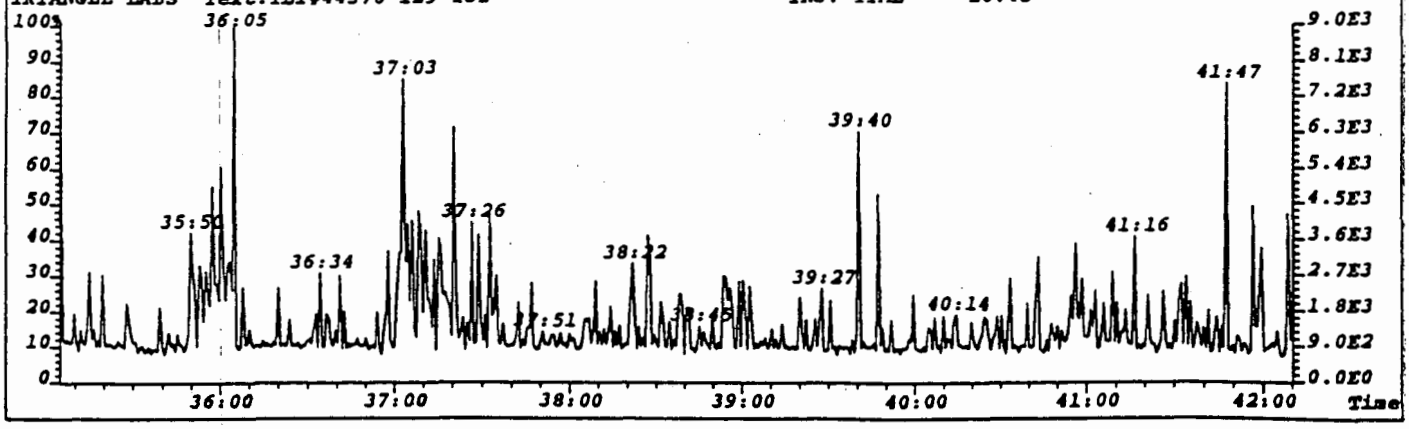
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:319
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1276.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



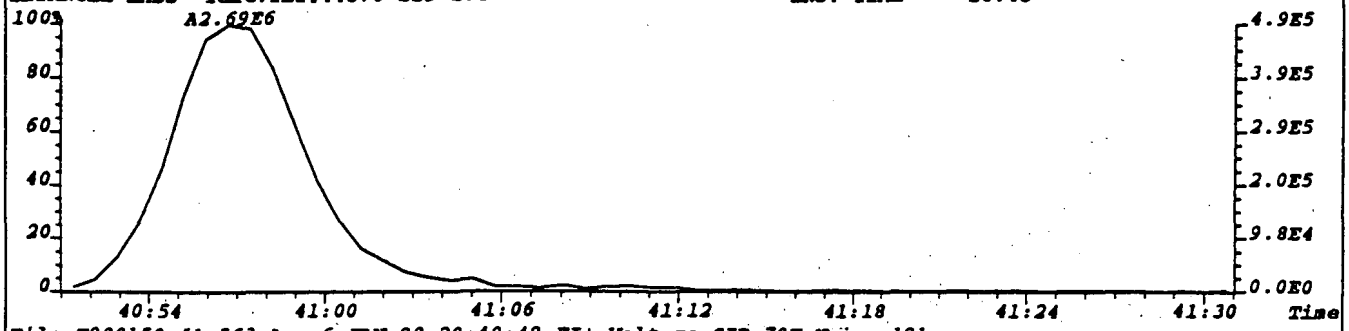
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



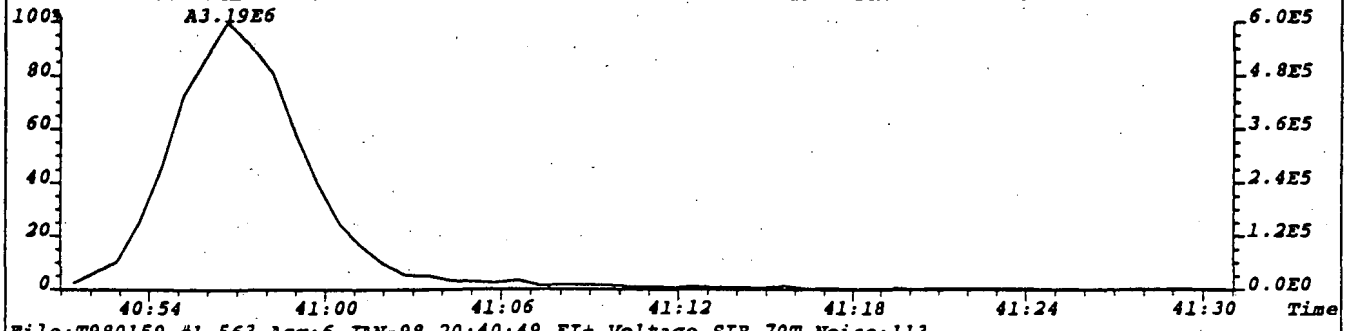
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



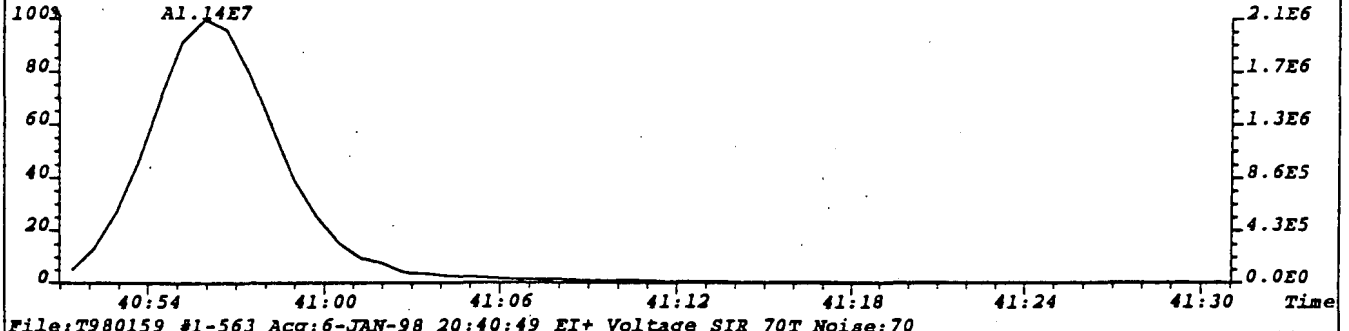
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:110
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,440.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



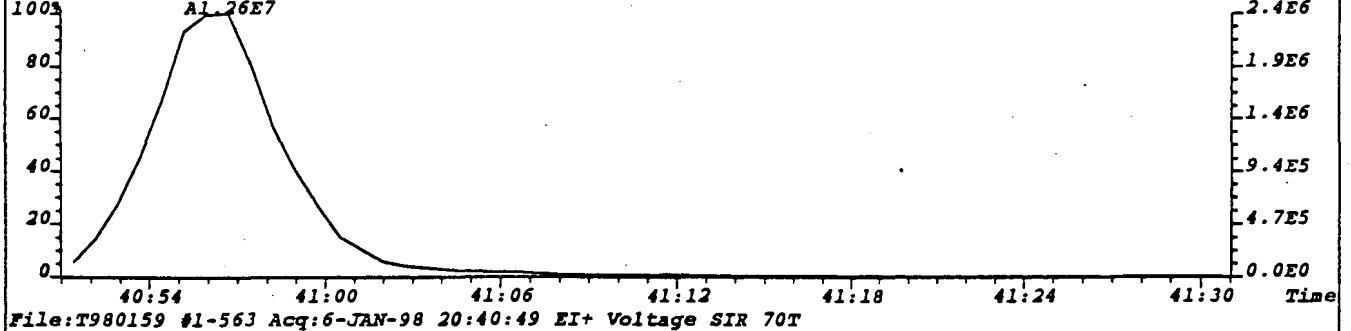
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:191
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,764.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43



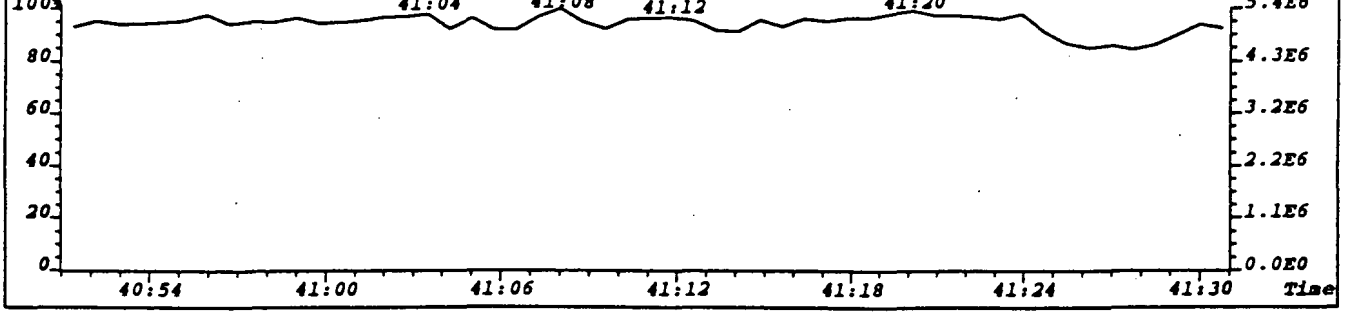
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:113
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,452.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

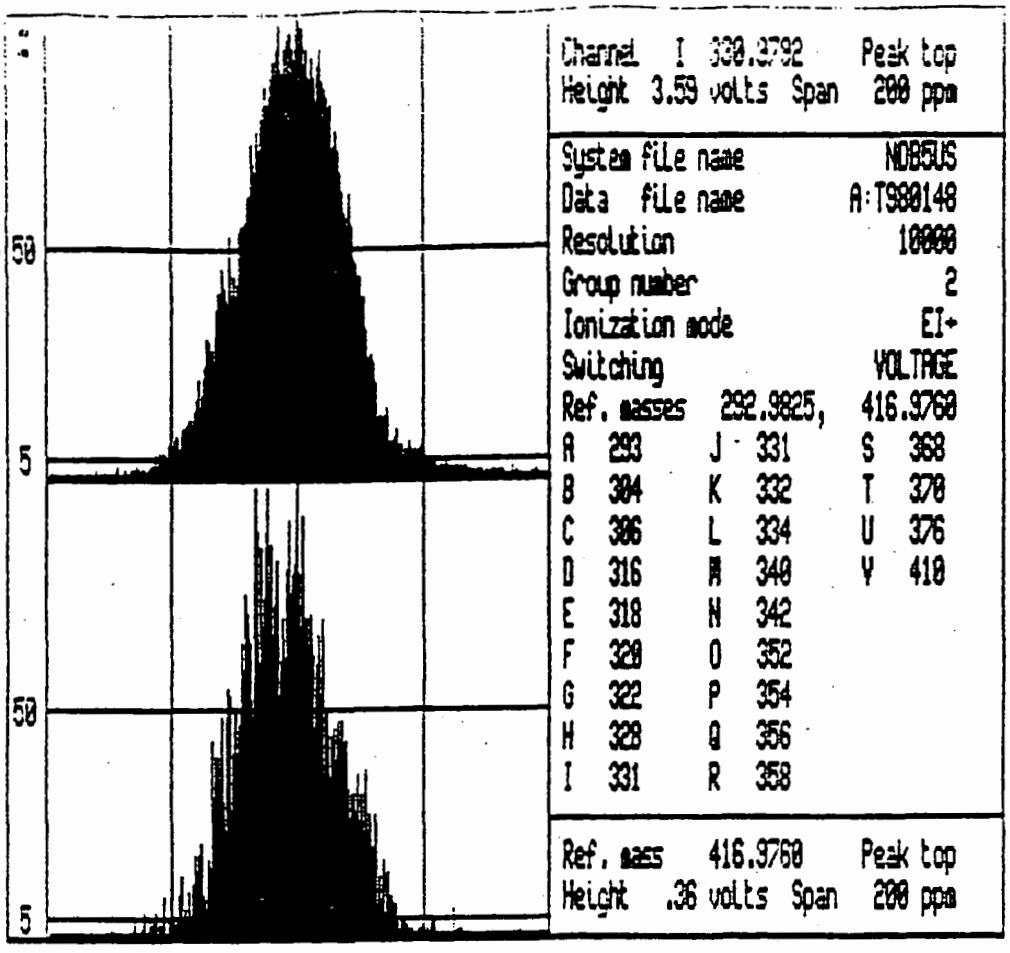


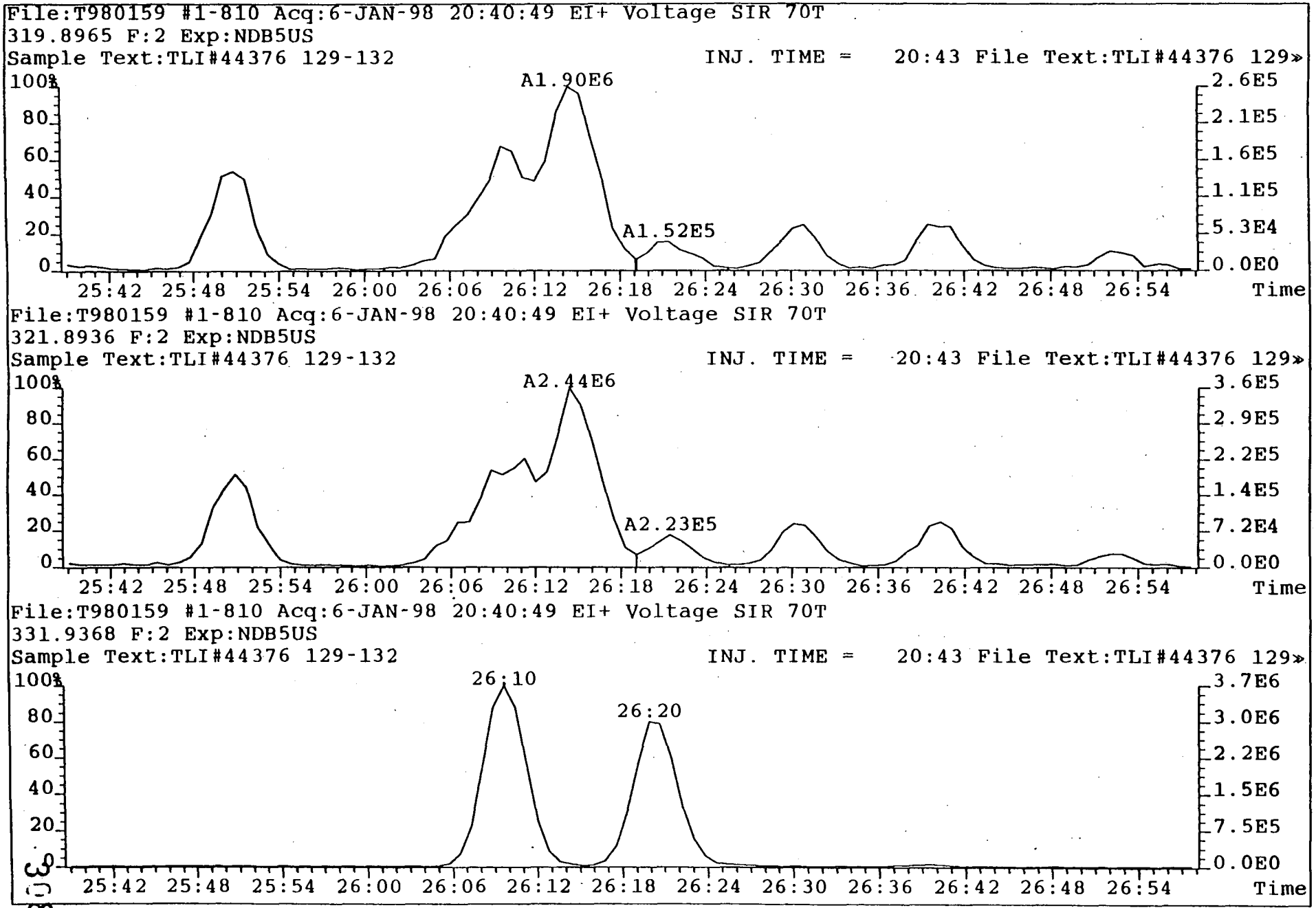
File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T Noise:70
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,280.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

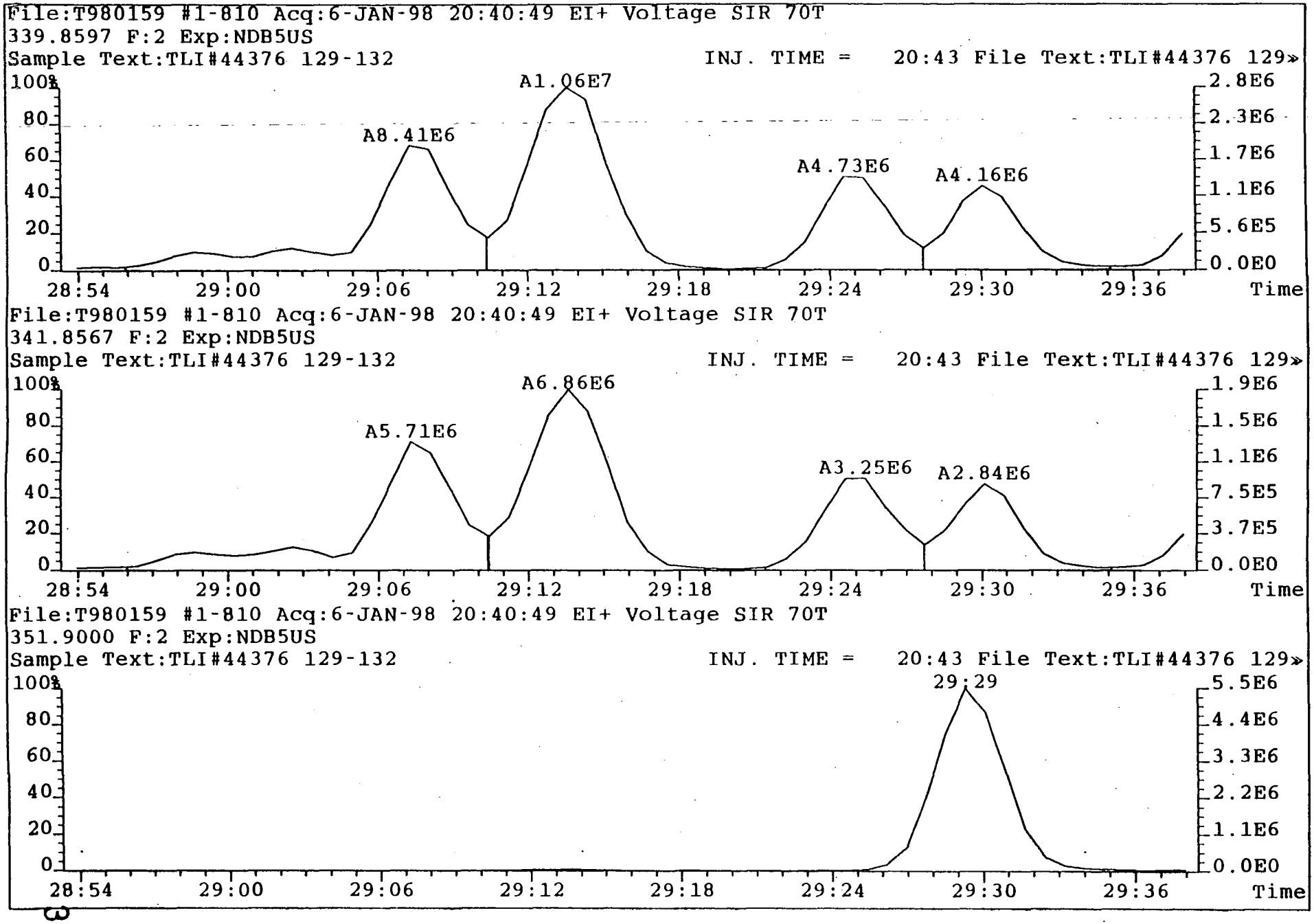


File:T980159 #1-563 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 129-132 INJ. TIME = 20:43

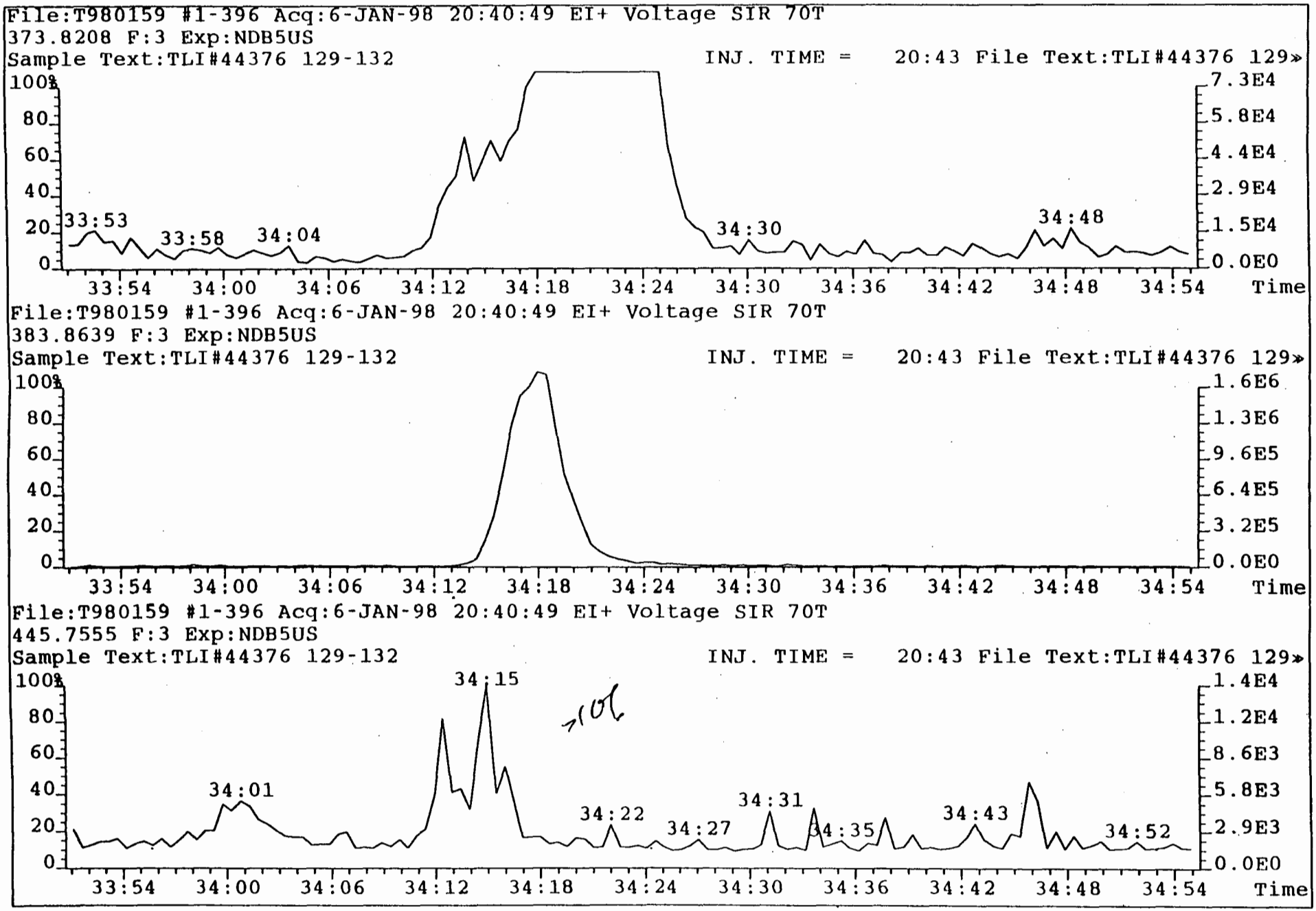



50
5
50
5
Channel I 330.3792 Peak top
Height 3.59 volts Span 200 ppm
System file name NOBSUS
Data file name A:T980148
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 416.3760
A 293 J 331 S 368
B 304 K 332 T 370
C 306 L 334 U 376
D 316 M 340 V 410
E 318 N 342
F 320 O 352
G 322 P 354
H 328 Q 356
I 331 R 358
Ref. mass 416.3760 Peak top
Height .36 volts Span 200 ppm

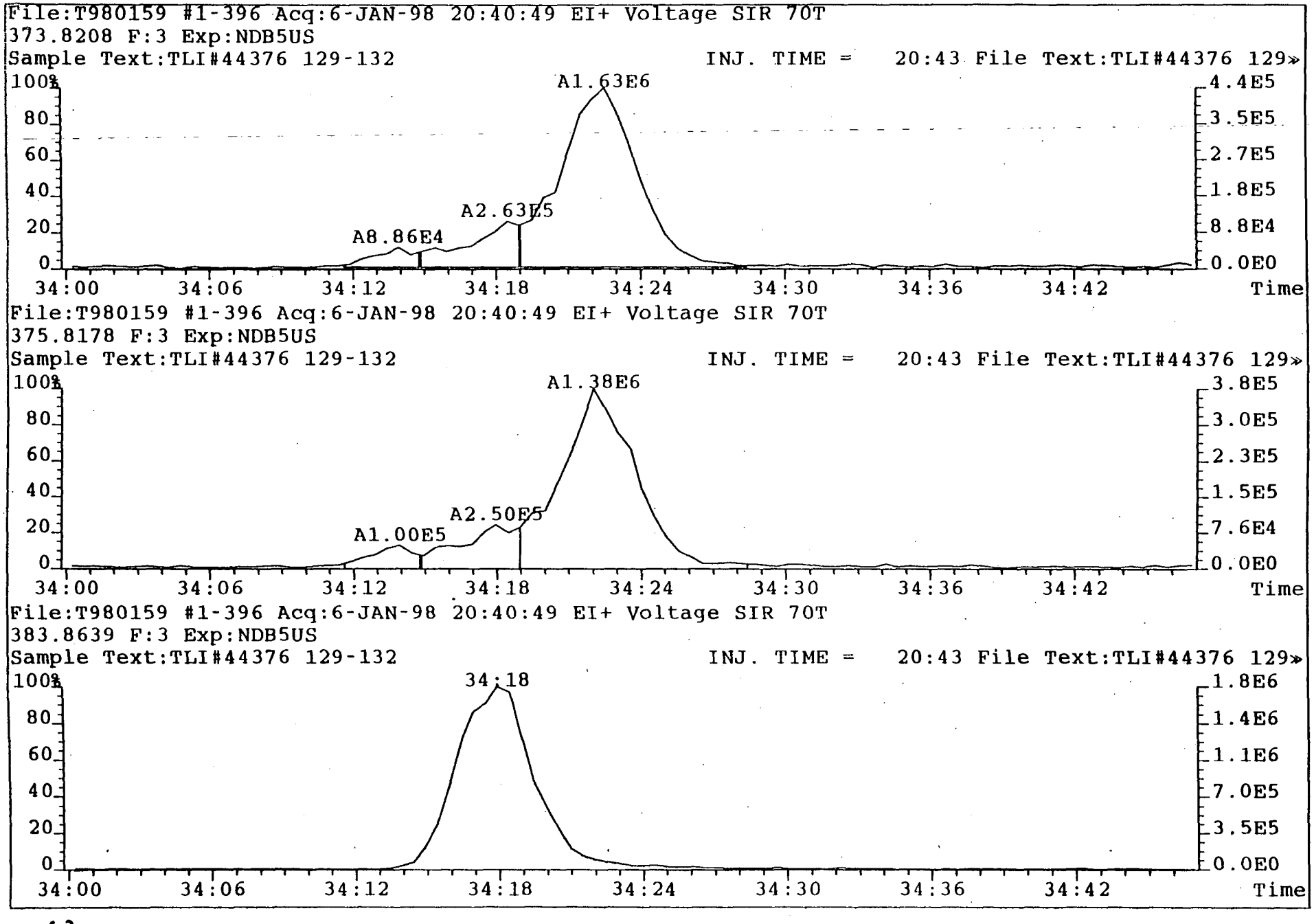

File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
A1.90E6
A1.52E5
100%
80
60
40
20
0
2.6E5
2.1E5
1.6E5
1.1E5
5.3E4
0.0E0
25:42 25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
A2.44E6
A2.23E5
100%
80
60
40
20
0
3.6E5
2.9E5
2.2E5
1.4E5
7.2E4
0.0E0
25:42 25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
26:10
26:20
100%
80
60
40
20
0
3.7E6
3.0E6
2.2E6
1.5E6
7.5E5
0.0E0
25:42 25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54
Time


File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
A1.06E7
A8.41E6
A4.73E6
A4.16E6
100%
80
60
40
20
0
2.8E6
2.3E6
1.7E6
1.1E6
5.6E5
0.0E0
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
341.8567 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
A6.86E6
A5.71E6
A3.25E6
A2.84E6
100%
80
60
40
20
0
1.9E6
1.5E6
1.1E6
7.5E5
3.7E5
0.0E0
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
29:29
100%
80
60
40
20
0
5.5E6
4.4E6
3.3E6
2.2E6
1.1E6
0.0E0
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time

GSS
1/11/98

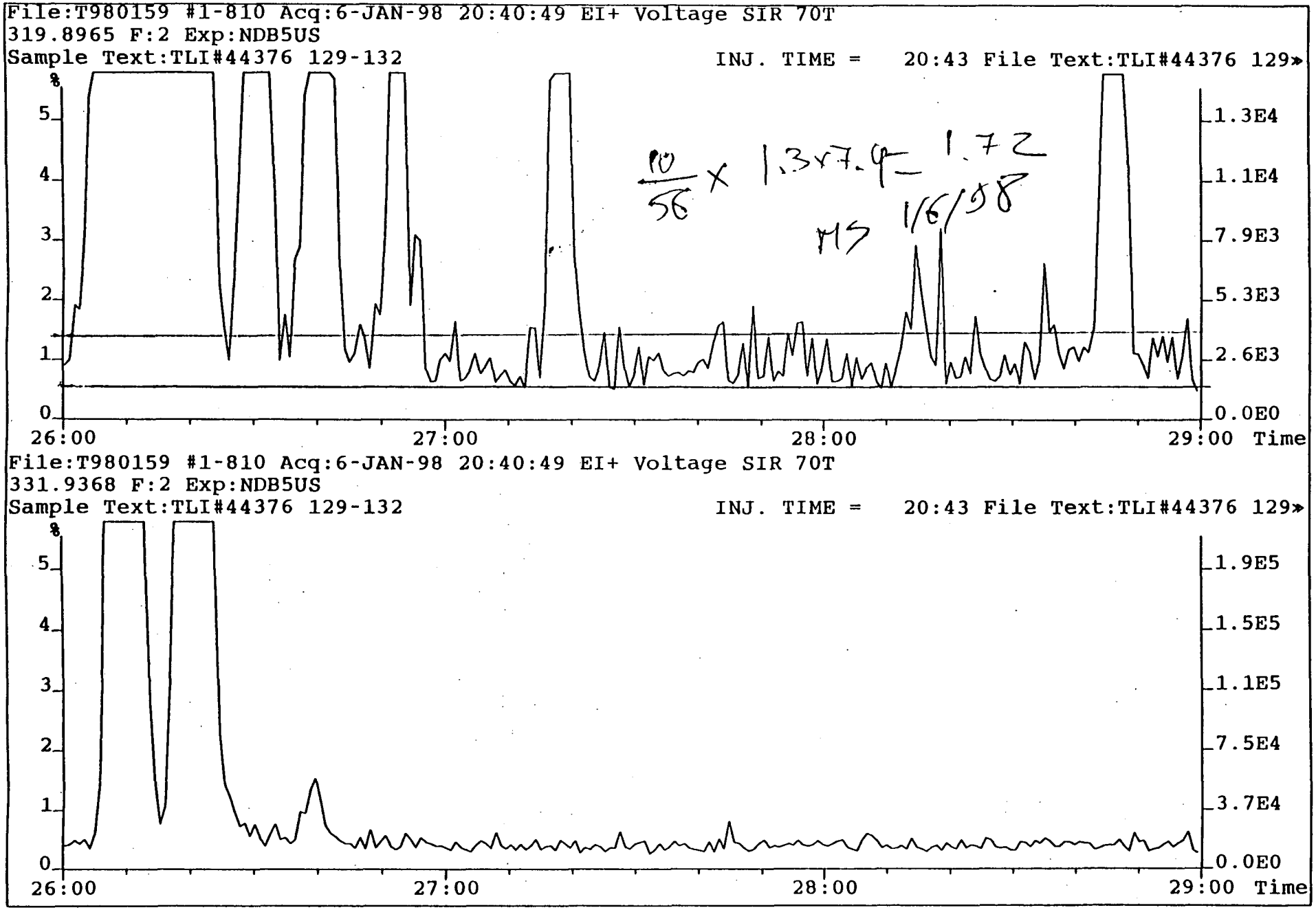

File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
33:53
33:58
34:04
34:30
34:48
Time
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
Time
File:T980159 #1-396 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
34:15
34:01
34:22
34:27
34:31
34:35
34:43
34:52
Time

310



311

6SS
1/11/98


File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
%
5
4
3
2
1
0
1.3E4
1.1E4
7.9E3
5.3E3
2.6E3
0.0E0
26:00
27:00
28:00
29:00 Time
10/56 x 1.3x7.9 = 1.72
MS 1/6/98
File:T980159 #1-810 Acq:6-JAN-98 20:40:49 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 129-132
INJ. TIME = 20:43 File Text:TLI#44376 129»
%
5
4
3
2
1
0
1.9E5
1.5E5
1.1E5
7.5E4
3.7E4
0.0E0
26:00
27:00
28:00
29:00 Time

Eastern Research Group

TLI Project: 44376 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 129-132 — Analysis File: P980167

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-7A-7D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/10/98	ConCal:	P980164
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	WK	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.83			0.75	23:04	—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.0	74.3	40%-130%	0.78	23:03	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	21:53	—

Data Reviewer: 659 01/11/98

C2NF_PSR v2.01, LARS 6.10.00

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:35 01/11/98

Initial ....Date...

Data Review By: GH 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

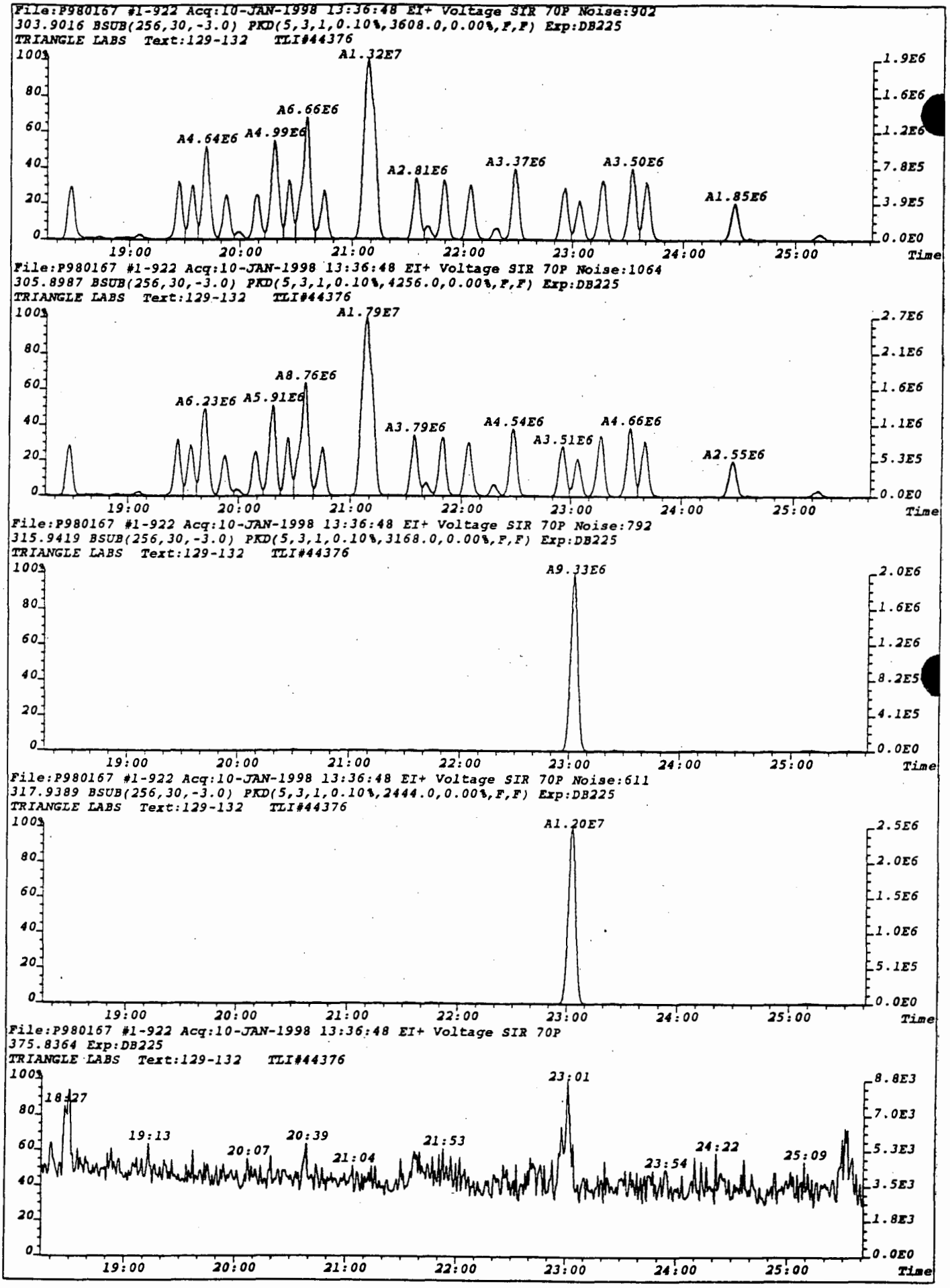
Page No. 1 Listing of P980167B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.793-1.101			
304-306	DC	NL		0:00		0.85	3.93			0.000			
	DC	WL		18:13	RO	0.64	10.48			0.790			
				18:27		0.82	572.17	258.25	313.92	0.800			
				18:39		0.75	11.34	4.87	6.47	0.809			
				18:43	RO	1.46	12.85	10.59	7.26	0.812			
				18:55	RO	1.03	11.35	6.62	6.41	0.821			
				19:05	RO	1.10	41.47	25.75	23.43	0.828			
				19:27		0.73	587.52	247.72	339.80	0.844			
				19:34		0.74	556.15	237.12	319.03	0.849			
				19:42		0.75	1,086.41	463.88	622.53	0.855			
				19:53		0.75	458.67	197.25	261.42	0.863			
				19:59		0.84	66.82	30.50	36.32	0.867			
				20:09		0.73	499.99	211.15	288.84	0.874			
				20:18		0.84	1,089.96	498.89	591.07	0.881			
				20:26		0.74	561.87	239.28	322.59	0.886			
				20:35		0.76	1,541.69	665.57	876.12	0.893			
				20:45		0.70	532.91	218.95	313.96	0.900			
				21:08		0.74	3,113.05	1,323.90	1,789.15	0.917			
				21:24	RO	0.38	4.90	2.13	5.64	0.928			J
				21:34		0.74	659.89	280.51	379.38	0.936			
				21:41		0.74	131.46	55.93	75.53	0.941			
				21:49		0.73	652.64	275.74	376.90	0.946			
				22:03		0.74	652.50	277.25	375.25	0.957			
				22:19		0.77	133.93	58.15	75.78	0.968			
				22:28		0.74	790.80	336.87	453.93	0.975			
				22:56		0.74	610.31	259.30	351.01	0.995			
				23:04		0.75	457.56	196.23	261.33	1.001	2378-TCDF	AN	
				23:16		0.73	695.61	292.53	403.08	1.009			
				23:32		0.75	815.82	350.24	465.58	1.021			
				23:40		0.75	649.00	278.94	370.06	1.027			
				23:53	RO	0.92	2.69	1.40	1.52	1.036			J
				24:27		0.73	439.64	185.13	254.51	1.061			
				24:35		0.65	11.58	4.56	7.02	1.067			
				25:12		0.69	83.30	33.98	49.32	1.093			
	DC	WH		25:38	RO	0.49	3.72			1.112			
304-306			32	Peaks			17,535.85						
13C12-TCDF				0.65-0.89						0.957-1.043			
316-318	DC	NL		0:00	RO	1.30	2.16			0.000			
	DC	WL		19:17	RO	0.31	3.20			0.837			
	DC	WL		20:06		0.85	4.87			0.872			
	DC	WL		20:41	RO	2.16	0.57			0.897			
	DC	WL		20:44		0.79	1.45			0.899			

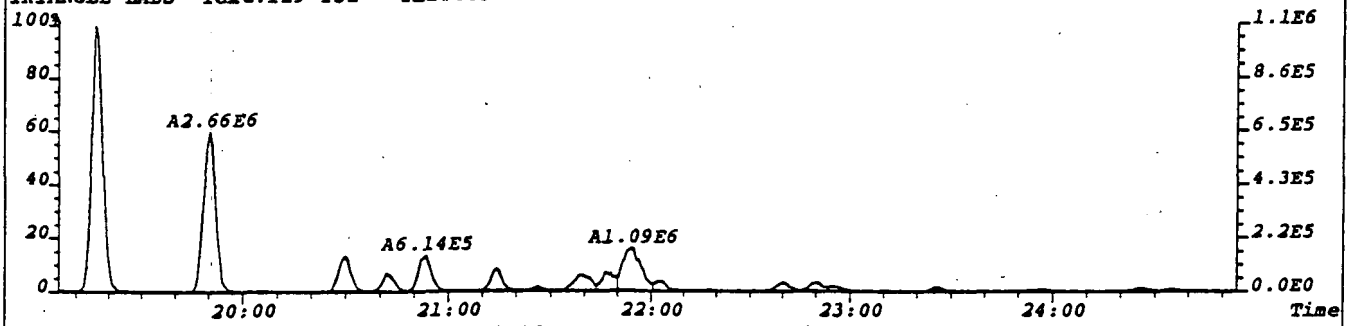
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC		WL	21:17	RO	1.30	3.17			0.923			
	DC		WL	21:33	RO	0.49	9.19			0.935			
	DC		WL	21:46		0.68	8.19			0.944			
	DC		WL	21:51	RO	0.34	0.92			0.948			
	DC		WL	21:54	RO	1.17	1.13			0.950			
				22:14	RO	0.62	3.29	1.43	2.29	0.965			
				23:03		0.78	2,129.71	932.51	1,197.20	1.000	13C12-2378-TCDF	IS0	
				23:25	RO	1.08	7.20	4.39	4.07	1.016			
				23:41	RO	1.02	5.17	2.99	2.92	1.027			
	DC		WH	24:07	RO	1.12	3.22			1.046			
	DC		WH	25:11		0.82	18.56			1.093			
	DC		WH	25:30	RO	13.46	0.46			1.106			
316-318			4 Peaks				2,145.37						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.907-1.093			
332-334	DC		NL	0:00	RO	1.91	1.33			0.000			
				20:28	RO	0.57	5.95	2.59	4.53	0.948			
				21:36		0.80	1,601.64	711.99	889.65	1.000	13C12-2378-TCDD	IS1	
				21:53		0.81	2,064.80	925.16	1,139.64	1.013	13C12-1234-TCDD	RS1	
				22:40		0.78	19.30	8.48	10.82	1.049			
	DC		SN	23:16	RO	0.45	2.69			1.077			
	DC		WH	23:49	RO	1.03	1.73			1.103			
	DC		WH	24:15	RO	2.69	1.59			1.123			
	DC		WH	24:26	RO	0.52	10.99			1.131			
332-334			4 Peaks				3,691.69						

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

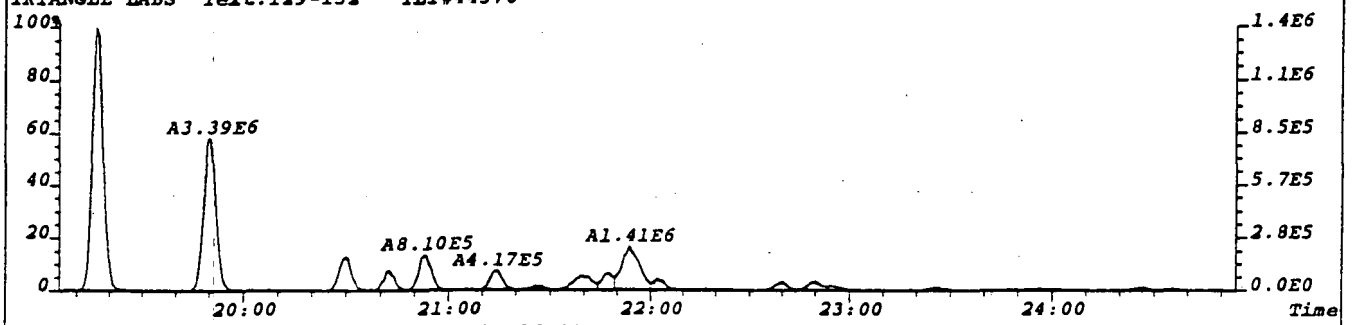
*** End of Report ***


File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:902
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3608.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
A1.32E7
A6.66E6
A4.64E6
A4.99E6
A2.81E6
A3.37E6
A3.50E6
A1.85E6
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:1064
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4256.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
A1.79E7
A8.76E6
A6.23E6
A5.91E6
A3.79E6
A4.54E6
A3.51E6
A4.66E6
A2.55E6
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:792
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3168.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
A9.33E6
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:611
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2444.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
A1.20E7
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
18:27
19:13
20:07
20:39
21:04
21:53
23:01
23:54
24:22
25:09
Time

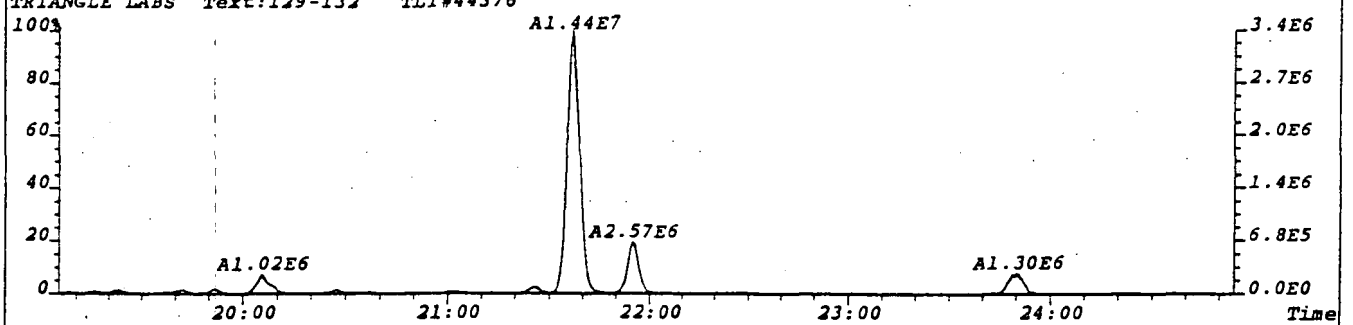
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:531
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2124.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376



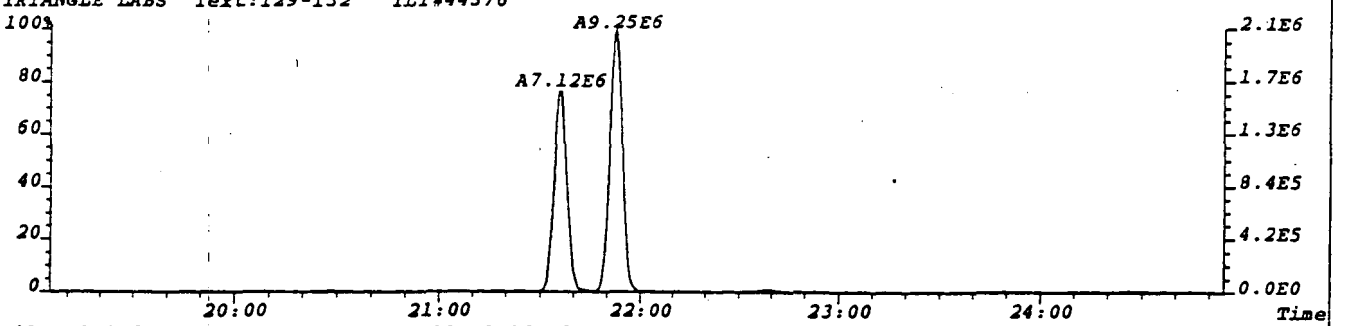
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:786
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3144.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376



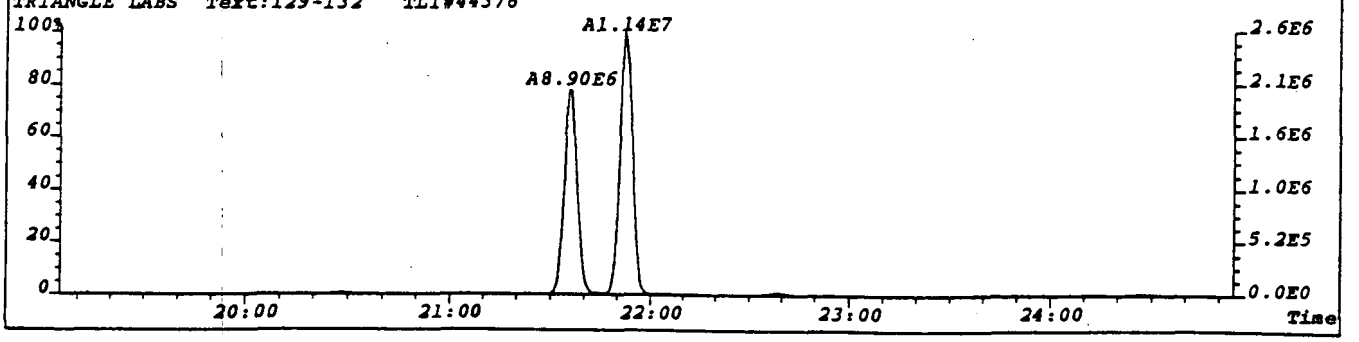
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:398
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1592.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376

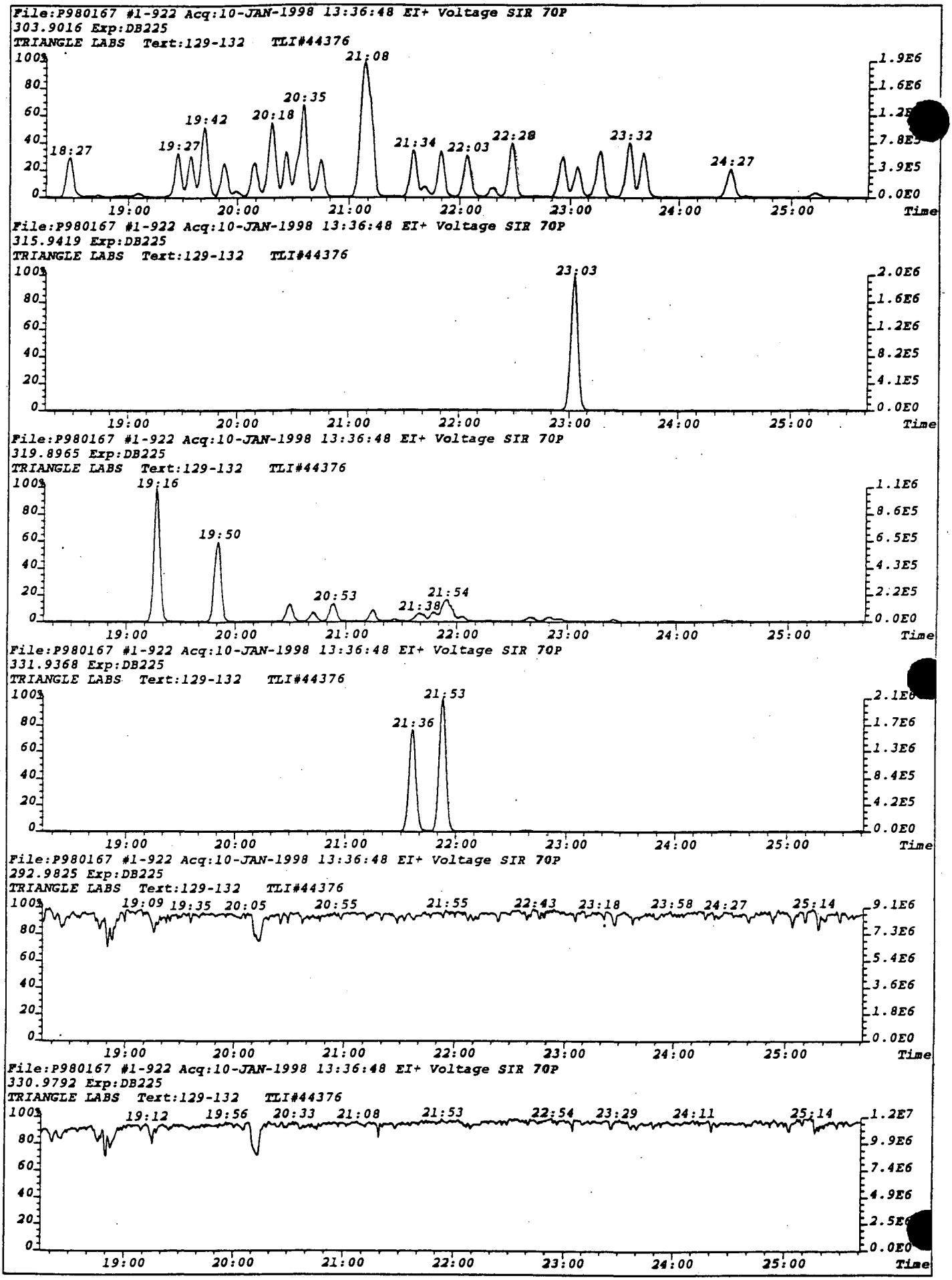


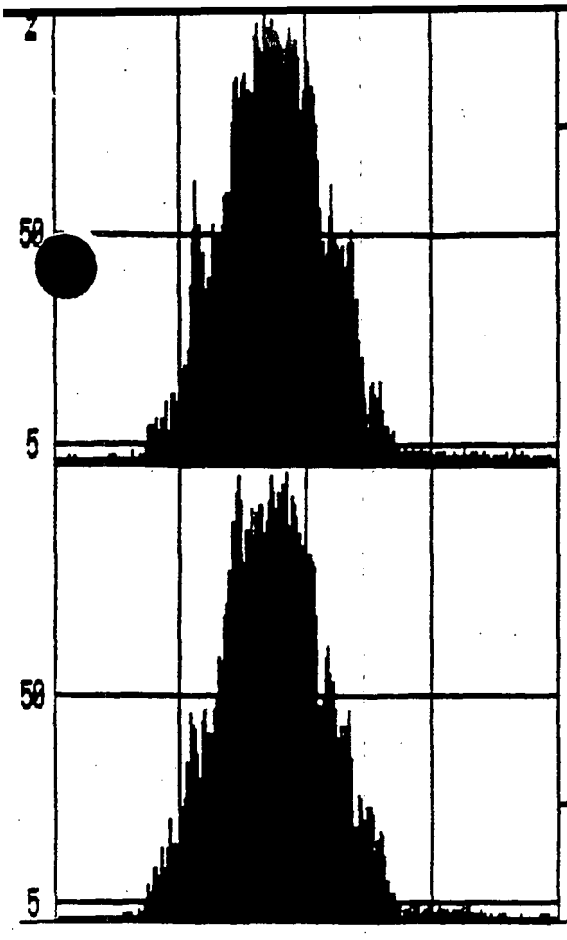
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:714
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2856.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376



File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P Noise:377
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1508.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376




File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
18:27
19:27
19:42
20:18
20:35
21:08
21:34
22:03
22:28
23:32
24:27
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
23:03
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
19:16
19:50
20:53
21:38
21:54
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
21:36
21:53
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
19:09
19:35
20:05
20:55
21:55
22:43
23:18
23:58
24:27
25:14
File:P980167 #1-922 Acq:10-JAN-1998 13:36:48 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:129-132 TLI#44376
19:12
19:56
20:33
21:08
21:53
22:54
23:29
24:11
25:14
Time



Ref. mass	292.9825	Peak top	
Height	1.48 volts	Span	200 ppm

System file name	DB225
Data file name	A:P980167
Resolution	10000
Group number	1
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 380.9761

A	292.9825	J	330.9792
B	303.9016	K	331.9368
C	305.8987	L	333.9338
D	315.9419	M	375.8364
E	317.9389		
F	319.8965		
G	321.8936		
H	327.8847		
I	330.9792		

Channel	I 330.9792	Peak top	
Height	1.92 volts	Span	200 ppm

Eastern Research Group

TLI Project: 44376
Client Sample: 133-136

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980163

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPX23704
TLI ID:	194-59-8A-8D	Date Extracted:	12/29/97	ICal:	TF5D177
		Date Analyzed:	01/07/98	ConCal:	T980160
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T980152	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CRV	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.02			0.84	26:21	___
1,2,3,7,8-PeCDD	0.05			1.40	30:30	J__
1,2,3,4,7,8-HxCDD	0.02			1.19	33:36	J__
1,2,3,6,7,8-HxCDD	0.04			1.21	33:41	J__
1,2,3,7,8,9-HxCDD	0.06			1.08	34:00	PRJ
1,2,3,4,6,7,8-HpCDD	0.16			1.00	37:05	___
1,2,3,4,6,7,8,9-OCDD	0.27			0.76	40:57	B__
2,3,7,8-TCDF	2.9			0.81	25:41	___
1,2,3,7,8-PeCDF	0.29			1.48	29:29	___
2,3,4,7,8-PeCDF	0.40			1.43	30:11	___
1,2,3,4,7,8-HxCDF	0.54			1.30	32:53	___
1,2,3,6,7,8-HxCDF	0.21			1.26	32:59	___
2,3,4,6,7,8-HxCDF	0.23			1.30	33:30	___
1,2,3,7,8,9-HxCDF	0.01			1.16	34:18	PRJ
1,2,3,4,6,7,8-HpCDF	0.68			1.04	36:00	___
1,2,3,4,7,8,9-HpCDF	0.11			1.07	37:36	___
1,2,3,4,6,7,8,9-OCDF	1.2			0.85	41:10	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	4.4	10		4.4	___
Total PeCDD	0.83	7		1.5	___
Total HxCDD	0.72	6		0.74	___
Total HpCDD	0.32	2			___
Total TCDF	24.0	16		24.0	Q__
Total PeCDF	7.3	16		7.3	___
Total HxCDF	2.3	13		2.3	___
Total HpCDF	1.1	4			___

X237_PSR v2.01. LARS 6.10

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:28 01/15/98

Eastern Research Group

TLI Project: **44376**
Client Sample: **133-136**

Method 23 PCDD/PCDF Analysis (a)
Analysis File: **T980163**

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	72.2	40%-130%	0.75	25:39	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.9	73.4	40%-130%	0.80	26:20	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.3	81.6	40%-130%	1.41	29:29	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.6	90.0	40%-130%	1.46	30:30	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.1	77.1	40%-130%	0.51	32:59	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.8	95.5	40%-130%	1.20	33:41	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.4	84.2	25%-130%	0.44	35:59	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.4	110	25%-130%	1.02	37:04	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.0	112	25%-130%	0.90	40:56	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	86.1	70%-140%		26:21	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.8	94.5	70%-140%	1.45	30:09	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.9	97.5	70%-140%	0.51	32:53	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.8	95.8	70%-140%	1.23	33:36	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.6	114	70%-140%	0.43	37:36	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.3	82.1	40%-130%	0.52	34:17	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.0	76.0	40%-130%	0.51	33:29	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.79	26:09	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	34:01	—

Data Reviewer: _____ 01/15/98

Triangle Laboratories, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial ....Date...

Data Review By: [illegible] 1/15/97 Calculated Noise Area: 1.20

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980163B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.876-1.072			
304-306	DC	NL		0:00	RO	1.32	3.13			0.000			
				22:39		0.81	1,246.28	557.54	688.74	0.883			
				23:08		0.79	1,150.27	506.64	643.63	0.902			
				23:22		0.79	861.92	381.63	480.29	0.911			
				23:52		0.81	3,070.26	1,372.73	1,697.53	0.930			Q
				24:02		0.81	3,016.27	1,348.88	1,667.39	0.937			
				24:24		0.81	2,987.14	1,335.89	1,651.25	0.951			
				24:39		0.79	1,837.91	813.18	1,024.73	0.961			
				24:53		0.82	1,053.71	473.25	580.46	0.970			
				25:05		0.81	4,812.22	2,157.71	2,654.51	0.978			
				25:15		0.84	1,042.55	474.90	567.65	0.984			
				25:30		0.81	1,063.94	475.50	588.44	0.994			
				25:41		0.81	3,315.12	1,485.24	1,829.88	1.001	2378-TCDF	AN	
				26:05		0.83	735.27	333.32	401.95	1.017			
				26:17		0.82	605.09	272.83	332.26	1.025			
				26:32		0.81	153.18	68.62	84.56	1.034			
				26:58	RO	0.55	8.41	3.66	6.67	1.051			J
				27:20		0.77	76.08	33.08	43.00	1.066			
	DC	WH		27:34		0.77	19.12			1.075			
304-306			17	Peaks			27,035.62						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00	RO	0.93	2.83			0.000			
	DC	WL		23:35		0.85	9.48			0.919			
				24:56	RO	1.33	5.93	4.44	3.35	0.972			
				25:15	RO	1.08	17.03	10.41	9.62	0.984			
				25:39		0.75	3,293.11	1,408.22	1,884.89	1.000	13C12-2378-TCDF	IS0	
				26:03		0.85	20.70	9.52	11.18	1.016			
				26:15		0.80	13.36	5.92	7.44	1.023			
	DC	WH		27:09	RO	0.95	6.83			1.058			
316-318			5	Peaks			3,350.13						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.901-1.043			
320-322	DC	NL		0:00	RO	0.43	1.49			0.000			
				23:54		0.78	1,749.47	768.13	981.34	0.908			
				24:16		0.78	1,019.23	446.67	572.56	0.922			
				24:32		0.74	110.68	47.23	63.45	0.932			
				25:12		0.83	403.00	183.05	219.95	0.957			
				25:27		0.76	207.59	89.63	117.96	0.966			
				25:50		0.68	98.36	39.92	58.44	0.981			
	M			26:14		0.76	375.00	162.00	213.00	0.996			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
AN				26:21		0.84	21.03	9.63	11.40	1.001	2378-TCDD	AN	
				26:30		0.74	39.69	16.89	22.80	1.006			
				26:40		0.73	41.65	17.55	24.10	1.013			
				26:51	RO	1.04	13.54	7.99	7.65	1.020			J
				27:19	RO	0.99	11.22	6.26	6.34	1.037			J
320-322			12	Peaks			4,090.46						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			0.75			0.000			
	DC	WL		23:55			9.51			0.908			
	DC	WL		24:16			8.40			0.922			
				24:27			6.56	6.56		0.928			
	DC	SN		24:35			1.30			0.934			
				24:59			100.06	100.06		0.949			
				25:40			9.01	9.01		0.975			
				25:49			3.10	3.10		0.980			
				26:08			2.58	2.58		0.992			
				26:21			2,342.42	2,342.42		1.001	37Cl-TCDD	SUR1	
				26:43			167.92	167.92		1.015			
				27:16			2.22	2.22		1.035			
328			8	Peaks			2,633.87						
13C12-TCDD						0.65-0.89				0.924-1.076			
332-334	DC	NL		0:00	RO	2.93	4.81			0.000			
				26:09		0.79	2,953.38	1,302.07	1,651.31	0.993	13C12-1234-TCDD	RS1	
				26:20		0.80	2,703.88	1,200.09	1,503.79	1.000	13C12-2378-TCDD	IS1	
				26:40	RO	0.54	28.94	12.59	23.51	1.013			
332-334			3	Peaks			5,686.20						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.928-1.061			
340-342	DC	NL		0:00	RO	1.04	1.73			0.000			
				27:33		1.48	825.05	492.96	332.09	0.934			
				27:44	RO	1.17	14.63	8.89	7.57	0.941			J
				27:49	RO	2.72	10.97	11.71	4.30	0.943			J
				28:00		1.41	23.14	13.55	9.59	0.950			J
				28:11	RO	1.12	19.05	11.58	10.32	0.956			J
				28:19		1.60	17.22	10.59	6.63	0.960			J
				28:31		1.61	262.93	162.17	100.76	0.967			
				28:40		1.46	1,488.46	882.70	605.76	0.972			
				28:49		1.49	312.23	186.92	125.31	0.977			
M				29:07		1.48	442.00	264.00	178.00	0.988			
				29:13		1.45	687.41	406.55	280.86	0.991			
M				29:25		1.46	295.00	175.00	120.00	0.998			
AN				29:29		1.48	239.70	143.00	96.70	1.000	12378-PeCDF	AN	
				29:39		1.49	201.95	120.99	80.96	1.006			
				29:47		1.47	315.55	188.01	127.54	1.010			
	DC	SN		29:58	RO	0.22	1.02			1.016			
				30:11		1.43	325.01	191.48	133.53	1.024	23478-PeCDF	AN	
				30:19		1.45	380.55	225.40	155.15	1.028			
				30:38		1.41	78.31	45.78	32.53	1.039			J

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		30:51	RO	0.37	1.04			1.046			
				31:08		1.42	39.80	23.36	16.44	1.056			J
340-342			19 Peaks				5,978.96						
13C12-PeCDF				1.32-1.78						0.864-1.136			
352-354	DC	NL		0:00	RO	0.91	0.71			0.000			
				28:38		1.40	13.48	7.86	5.62	0.971			
				28:48	RO	0.83	4.28	2.60	3.13	0.977			
				29:14	RO	2.13	4.77	3.99	1.87	0.992			
				29:29		1.41	3,084.80	1,804.50	1,280.30	1.000	13C12-PeCDF 123	IS2	
				29:45		1.63	29.06	18.00	11.06	1.009			
	DC	SN		29:57	RO	2.13	3.54			1.016			
				30:09		1.45	2,894.33	1,713.30	1,181.03	1.023	13C12-PeCDF 234	SUR2	
				30:40	RO	1.10	2.80	1.70	1.55	1.040			
				31:08	RO	0.91	6.98	4.24	4.65	1.056			
352-354			8 Peaks				6,040.50						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.937-1.021			
356-358	DC	NL		0:00		1.71	1.03			0.000			
				28:45	RO	1.06	343.05	208.52	196.41	0.943			
				29:13		1.42	23.09	13.55	9.54	0.958			J
				29:27		1.70	211.55	133.15	78.40	0.966			
				29:35		1.73	34.91	22.13	12.78	0.970			J
				29:46		1.50	133.83	80.30	53.53	0.976			
				30:01	RO	1.95	46.05	35.18	18.06	0.984			J
				30:13		1.47	55.33	32.92	22.41	0.991			J
				30:20	RO	0.39	20.28	12.33	31.92	0.995			J
				30:30		1.40	28.26	16.49	11.77	1.000	12378-PeCDD	AN	J
				30:38	RO	1.28	16.04	9.75	7.62	1.004			J
				30:57		1.60	16.85	10.38	6.47	1.015			J
	DC	WH		31:26	RO	2.24	1.79			1.031			
356-358			11 Peaks				929.24						
13C12-PeCDD				1.32-1.78						0.869-1.131			
368-370	DC	NL		0:00	RO	1.26	0.48			0.000			
				30:30		1.46	1,888.03	1,121.03	767.00	1.000	13C12-PeCDD 123	IS3	
				30:37		1.44	215.30	127.14	88.16	1.004			
368-370			2 Peaks				2,103.33						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.963-1.047			
374-376	DC	NL		0:00	RO	1.51	3.83			0.000			
				31:57		1.30	210.98	119.39	91.59	0.969			
				32:05		1.28	430.16	241.63	188.53	0.973			
				32:14		1.37	28.97	16.74	12.23	0.977			J
				32:22		1.20	44.91	24.48	20.43	0.981			J
				32:32		1.32	25.39	14.46	10.93	0.986			J
				32:42		1.19	4.12	2.24	1.88	0.991			J
				32:53		1.30	378.42	213.84	164.58	0.997	123478-HxCDF	AN	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				32:59		1.26	165.86	92.61	73.25	1.000	123678-HxCDF	AN	
				33:06		1.30	31.19	17.62	13.57	1.004			J
				33:17		1.32	50.11	28.54	21.57	1.009			QJ
				33:30		1.30	144.87	81.90	62.97	1.016	234678-HxCDF	AN	
	A			34:17	RO	0.95	4.66	2.58	2.73	1.039			J
	AN			34:18		1.16	8.47	4.55	3.92	1.040	123789-HxCDF	AN	PRJ
	M			34:23		1.35	36.00	20.70	15.30	1.042			J
374-376			14	Peaks			1,564.11						
13C12-HxCDF				0.43-0.59						0.879-1.121			
384-386	DC	NL		0:00	RO	5.51	0.56			0.000			
				31:56	RO	0.82	4.51	2.46	2.99	0.968			
				32:53		0.51	2,169.59	732.68	1,436.91	0.997	13C12-HxCDF 478	SUR3	
				32:59		0.51	2,414.95	812.59	1,602.36	1.000	13C12-HxCDF 678	IS4	
				33:15	RO	0.42	6.81	2.30	5.48	1.008			
				33:29		0.51	2,269.44	764.06	1,505.38	1.015	13C12-HxCDF 234	ALT2	
				33:46	RO	0.81	6.22	3.32	4.12	1.024			
	DC	SN		33:52	RO	0.18	1.57			1.027			
	DC	SN		33:59	RO	1.34	1.65			1.030			
	DC	SN		34:01	RO	0.90	2.37			1.031			
				34:17		0.52	1,941.22	660.96	1,280.26	1.039	13C12-HxCDF 789	ALT1	
				34:41	RO	1.02	2.34	1.58	1.55	1.052			
384-386			8	Peaks			8,815.08						

---------- Above: HxCDF / HxCDD Follows ----------

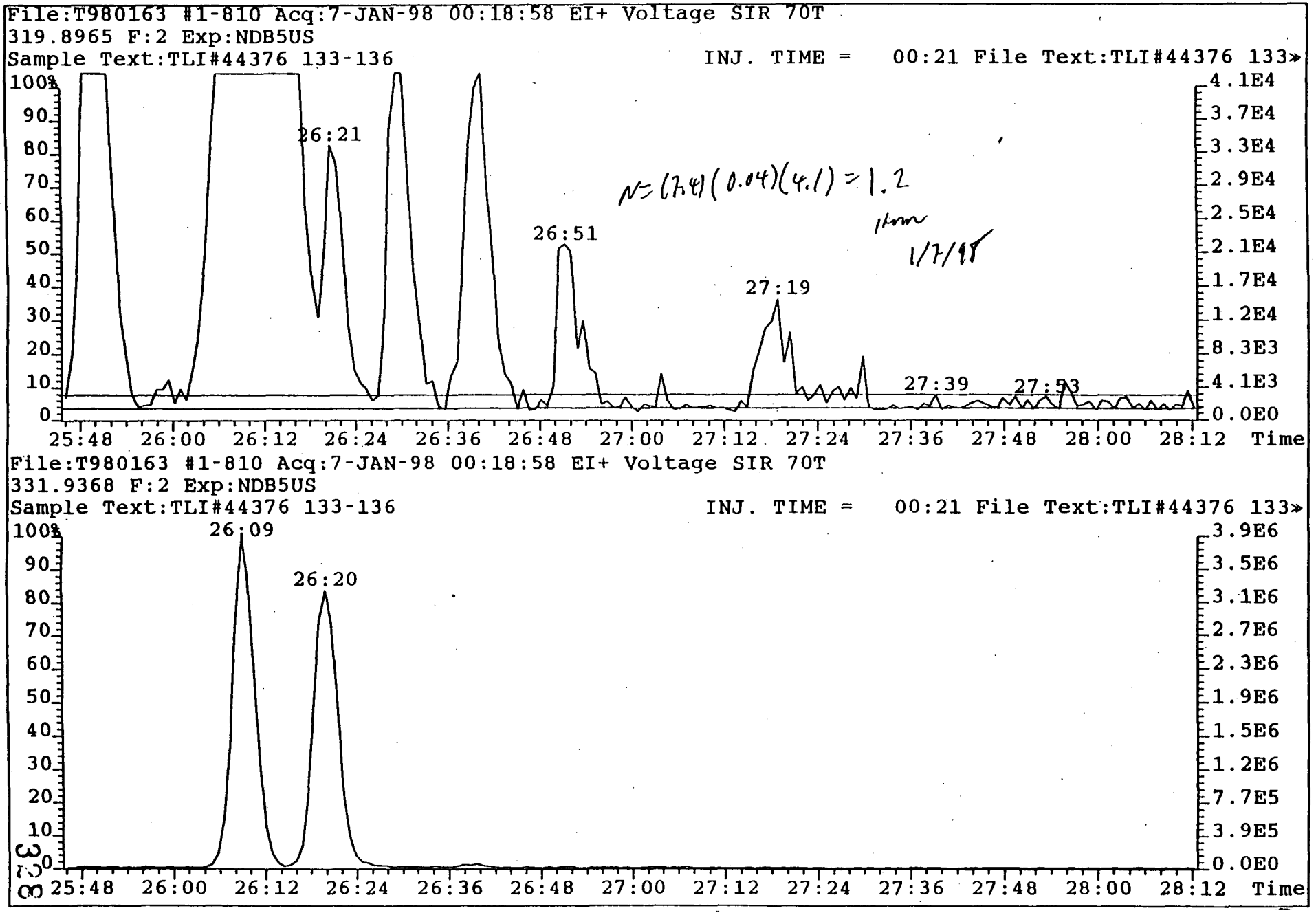
HxCDD				1.05-1.43						0.958-1.014			
390-392	DC	NL		0:00	RO	0.81	1.50			0.000			
				32:25		1.21	36.23	19.82	16.41	0.962			J
	DC	SN		32:39	RO	2.70	0.60			0.969			
				32:51		1.23	192.19	106.13	86.06	0.975			
				33:05		1.29	74.73	42.09	32.64	0.982			
				33:15	RO	1.03	8.44	4.67	4.52	0.987			J
	DC	SN		33:30	RO	2.52	1.03			0.995			
				33:36		1.19	10.45	5.68	4.77	0.998	123478-HxCDD	AN	J
				33:41		1.21	21.91	11.99	9.92	1.000	123678-HxCDD	AN	J
				34:00		1.08	31.68	16.47	15.21	1.009	123789-HxCDD	AN	PRJ
	DC	SN		34:09	RO	0.45	0.52			1.014			
	DC	WH		34:27	RO	0.89	0.85			1.023			
390-392			7	Peaks			375.63						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	2.57	1.61			0.000			
	DC	WL		32:21	RO	2.03	1.66			0.960			
				33:04		1.19	7.38	4.01	3.37	0.982			
				33:36		1.23	1,644.40	905.94	738.46	0.998	13C12-HxCDD 478	SUR4	
				33:41		1.20	2,113.04	1,151.58	961.46	1.000	13C12-HxCDD 678	IS5	
				34:01		1.21	2,216.98	1,215.11	1,001.87	1.010	13C12-HxCDD 789	RS2	
				34:18	RO	1.98	5.44	4.81	2.43	1.018			
	DC	SN		34:24	RO	2.87	2.78			1.021			
				34:30		1.32	5.75	3.27	2.48	1.024			
402-404			6	Peaks			5,992.99						

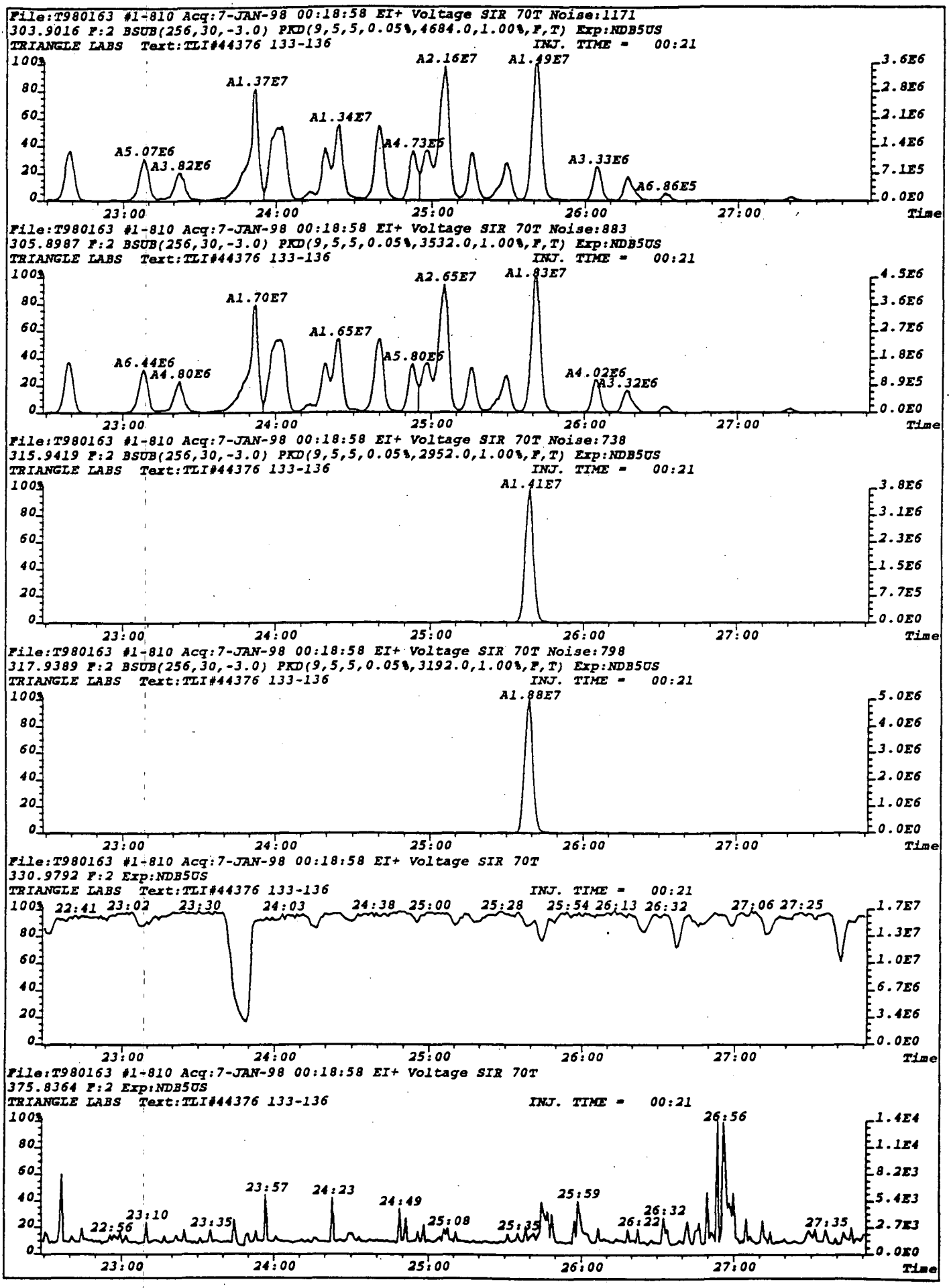
Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.996-1.051			
408-410	DC	NL		0:00	RO	1.37	0.88			0.000			
				36:00		1.04	416.10	212.59	203.51	1.000	1234678-HpCDF	AN	
				36:17		1.11	82.19	43.31	38.88	1.008			
				36:25		1.06	88.36	45.50	42.86	1.012			
	DC	SN		36:38	RO	2.41	1.73			1.018			
	DC	SN		36:50	RO	0.51	1.06			1.024			
	DC	SN		37:11	RO	2.00	0.31			1.033			
				37:36		1.07	51.54	26.70	24.84	1.045	1234789-HpCDF	AN	
	DC	WH		37:59	RO	6.62	0.59			1.056			
408-410			4	Peaks			638.19						
13C12-HpCDF						0.37-0.51				0.944-1.111			
418-420	DC	NL		0:00	RO	0.85	1.80			0.000			
				35:59		0.44	1,663.83	509.08	1,154.75	1.000	13C12-HpCDF 678	IS6	
				36:21	RO	0.73	6.09	3.07	4.23	1.010			
	DC	SN		36:43		0.44	2.75			1.020			
				37:36		0.43	1,479.40	447.89	1,031.51	1.045	13C12-HpCDF 789	SUR5	
				37:52		0.38	12.16	3.37	8.79	1.052			
418-420			4	Peaks			3,161.48						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.975-1.005			
424-426	DC	NL		0:00	RO	0.73	0.22			0.000			
D	D	NH		36:09	RO	0.47	12.18			0.975			
				36:18		0.98	72.50	35.93	36.57	0.979			
	DC	SN		36:52	RO	0.74	0.96			0.995			
				37:05		1.00	70.84	35.34	35.50	1.000	1234678-HpCDD	AN	
	DC	WH		37:18	RO	1.50	0.73			1.006			
	DC	WH		37:36	RO	1.66	1.57			1.014			
424-426			2	Peaks			143.34						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL		0:00		1.18	2.40			0.000			
	DC	SN		36:17	RO	2.76	1.29			0.979			
				37:04		1.02	1,753.92	883.98	869.94	1.000	13C12-HpCDD 678	IS7	
				37:25	RO	1.82	6.43	5.73	3.15	1.009			
436-438			2	Peaks			1,760.35						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL		0:00	RO	1.73	0.28			0.000			
	DC	WL		35:34	RO	2.00	0.25			0.869			
	DC	WL		35:39	RO	2.34	0.55			0.871			
	DC	WL		35:44	RO	3.26	0.36			0.873			
	DC	WL		35:59	RO	1.83	0.57			0.879			
	DC	WL		36:09		0.77	1.01			0.883			
	DC	SN		37:02	RO	1.85	1.36			0.905			

Compound/ Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
		DC	SN	37:15	RO	1.71	0.96			0.910			
		DC	SN	37:34	RO	1.04	1.04			0.918			
		DC	SN	37:39	RO	1.50	0.42			0.920			
		DC	SN	37:51	RO	0.37	0.93			0.925			
		DC	SN	38:07	RO	0.58	0.76			0.931			
		DC	SN	38:11	RO	2.40	0.19			0.933			
		DC	SN	38:20	RO	0.64	0.59			0.936			
		DC	SN	38:31	RO	4.25	0.45			0.941			
		DC	SN	38:40	RO	0.52	1.04			0.945			
		DC	SN	38:56	RO	0.75	1.57			0.951			
		DC	SN	39:10	RO	1.45	1.10			0.957			
		DC	SN	39:54	RO	1.06	0.66			0.975			
		DC	SN	40:18	RO	0.30	0.49			0.985			
		DC	SN	40:26	RO	1.71	0.45			0.988			
		DC	SN	40:32	RO	1.81	0.40			0.990			
N				41:10		0.85	529.10	243.50	285.60	1.006	OCDF		AN
		DC	SN	41:29	RO	3.65	1.83			1.013			
		DC	SN	41:38		0.97	1.50			1.017			
442-444			1	Peak			529.10						
OCDD						0.76-1.02				0.902-1.098			
458-460		DC	NL	0:00		0.86	0.26			0.000			
				40:57		0.76	89.95	38.96	50.99	1.000	OCDD		AN
		DC	SN	41:10		1.01	2.53			1.006			
458-460			1	Peak			89.95						
13C12-OCDD						0.76-1.02				0.997-1.005			
470-472		DC	NL	0:00	RO	1.08	0.25			0.000			
				40:56		0.90	2,434.57	1,154.15	1,280.42	1.000	13C12-OCDD		IS8
J-472			1	Peak			2,434.57						

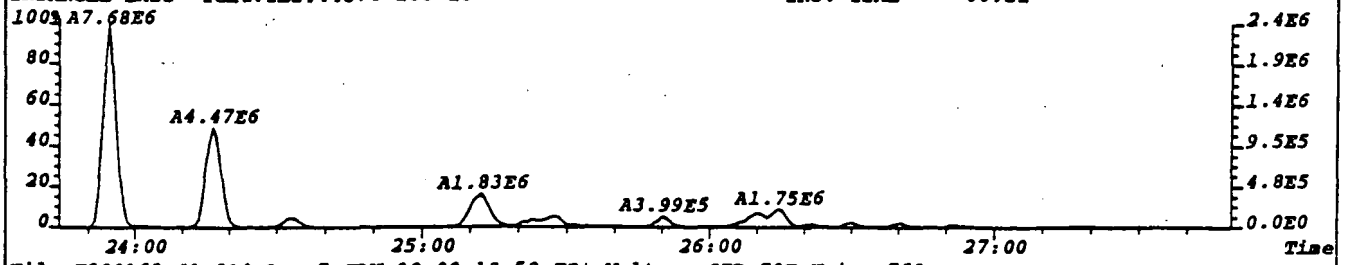
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

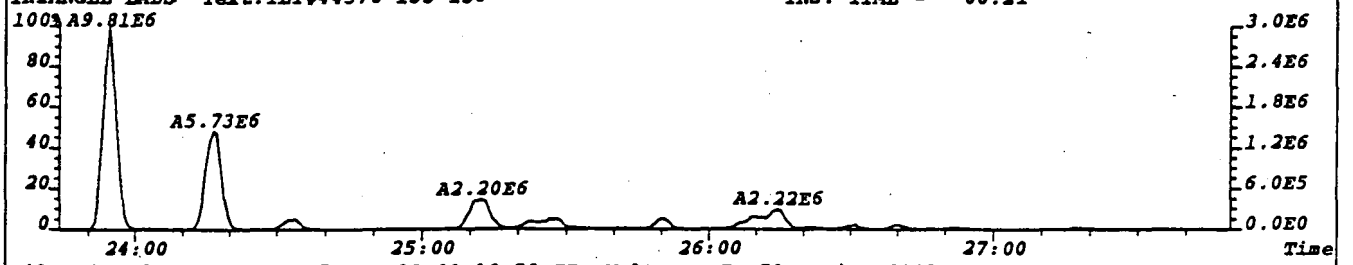

File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
26:21
26:51
27:19
27:39
27:53
N=(7.4)(0.04)(4.1)=1.2
1/7/98
Time
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
26:09
26:20
Time


File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:1171
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4684.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A5.07E6
A3.82E6
A1.37E7
A1.34E7
A4.73E6
A2.16E7
A1.49E7
A3.33E6
A6.86E5
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:883
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3532.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A6.44E6
A4.80E6
A1.70E7
A1.65E7
A5.80E6
A2.65E7
A1.83E7
A4.02E6
A3.32E6
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:738
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,2952.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.41E7
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:798
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.88E7
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
22:41 23:02 23:30 24:03 24:38 25:00 25:28 25:54 26:13 26:32 27:06 27:25
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
22:56 23:10 23:35 23:57 24:23 24:49 25:08 25:35 25:59 26:22 26:32 26:56 27:35
Time

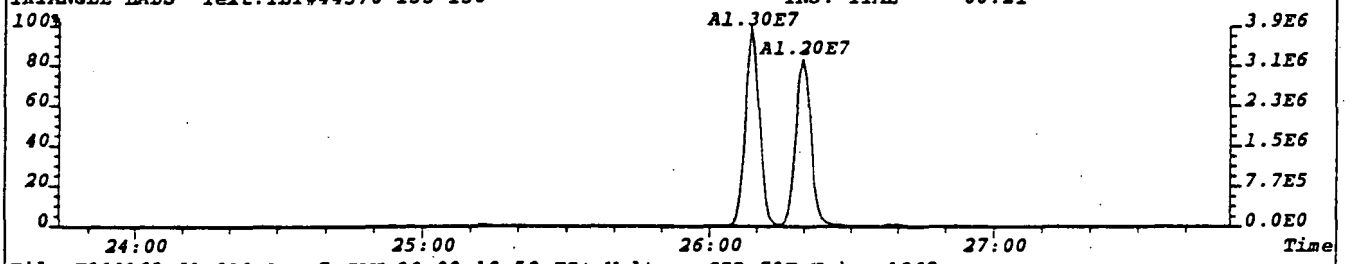
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:325
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1300.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



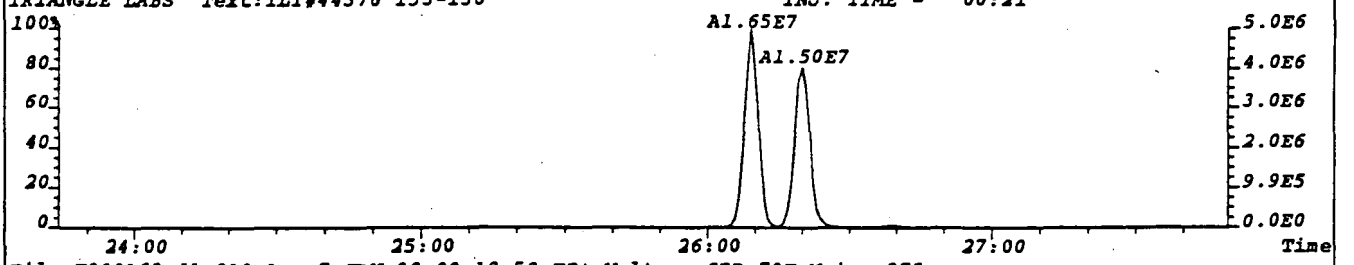
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:758
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3032.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



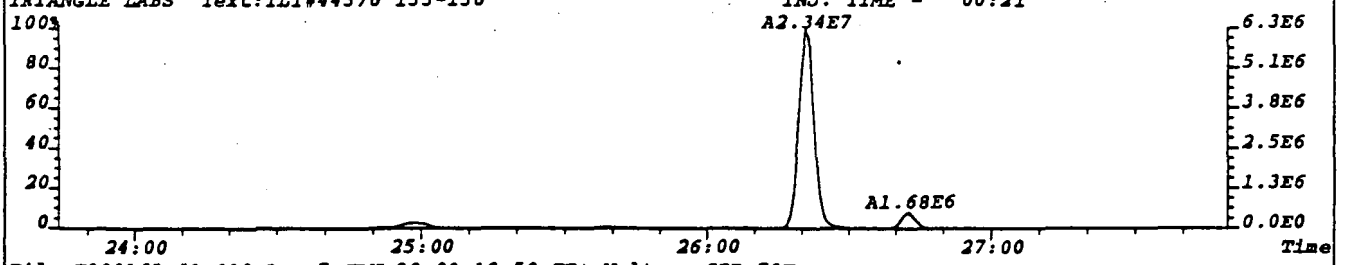
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:3991
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,15964.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



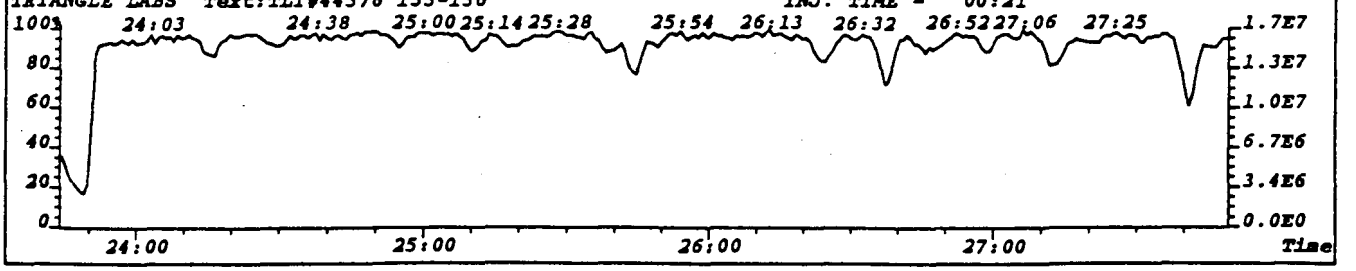
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:1362
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21

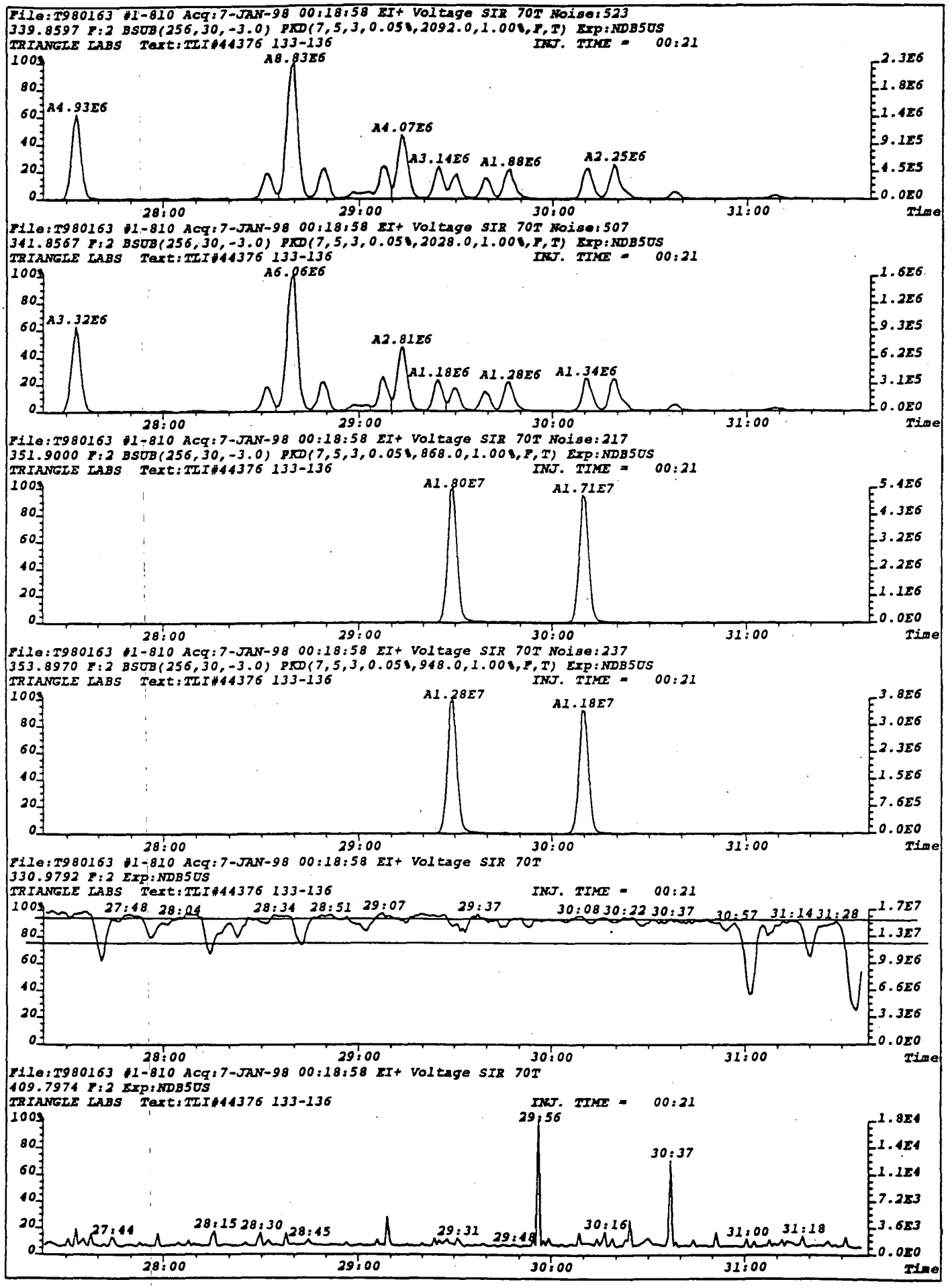


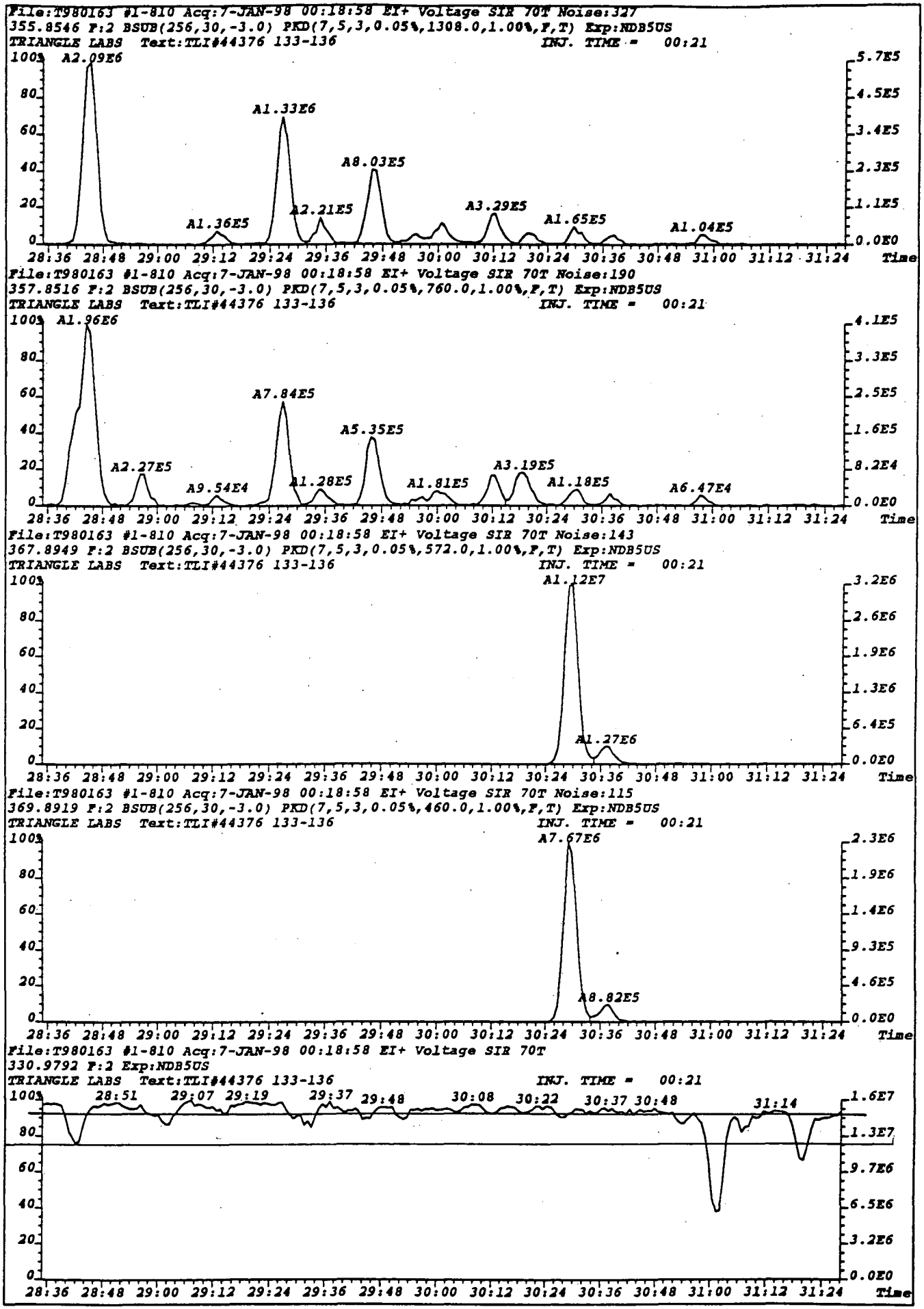
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:375
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21

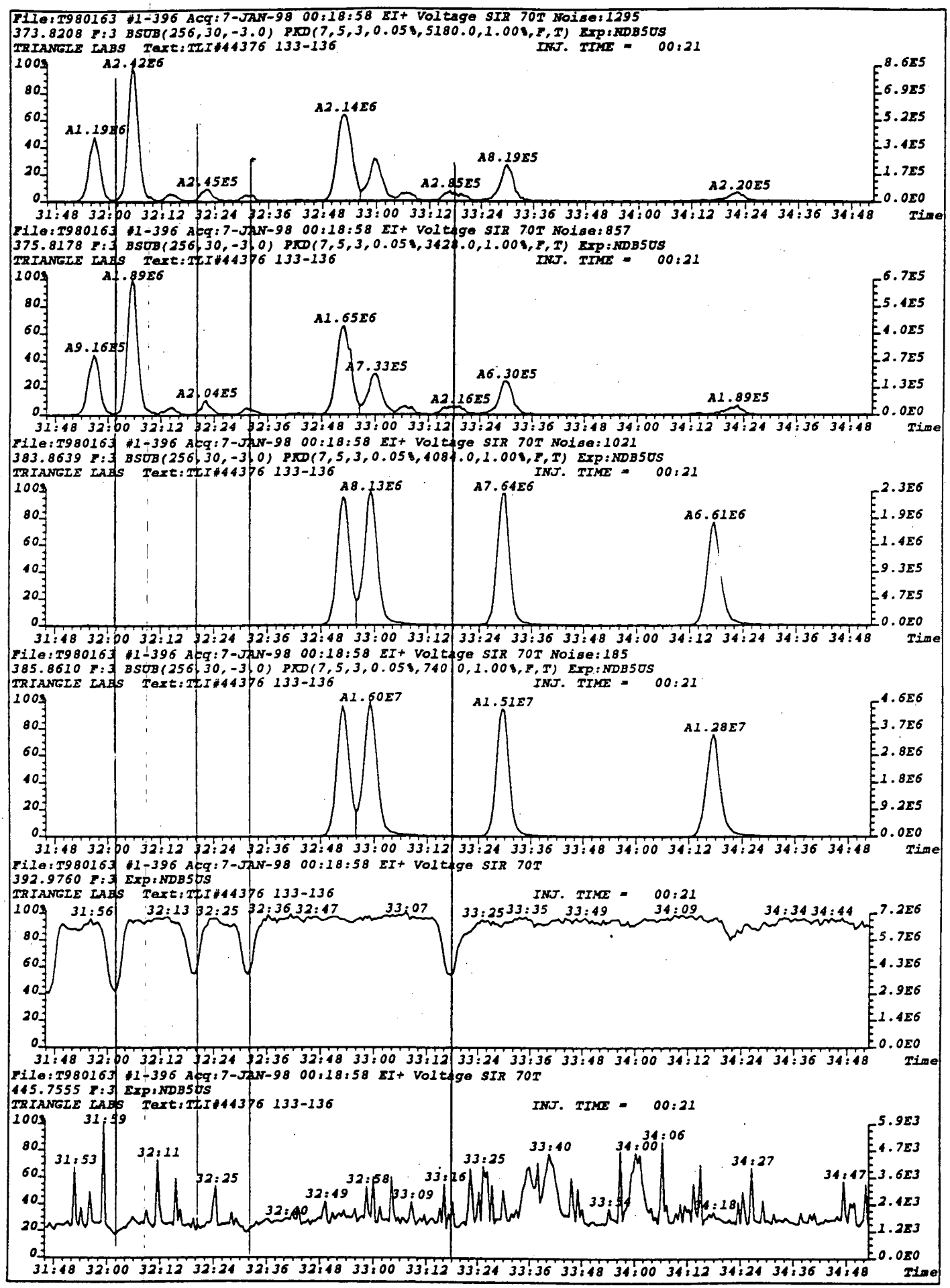


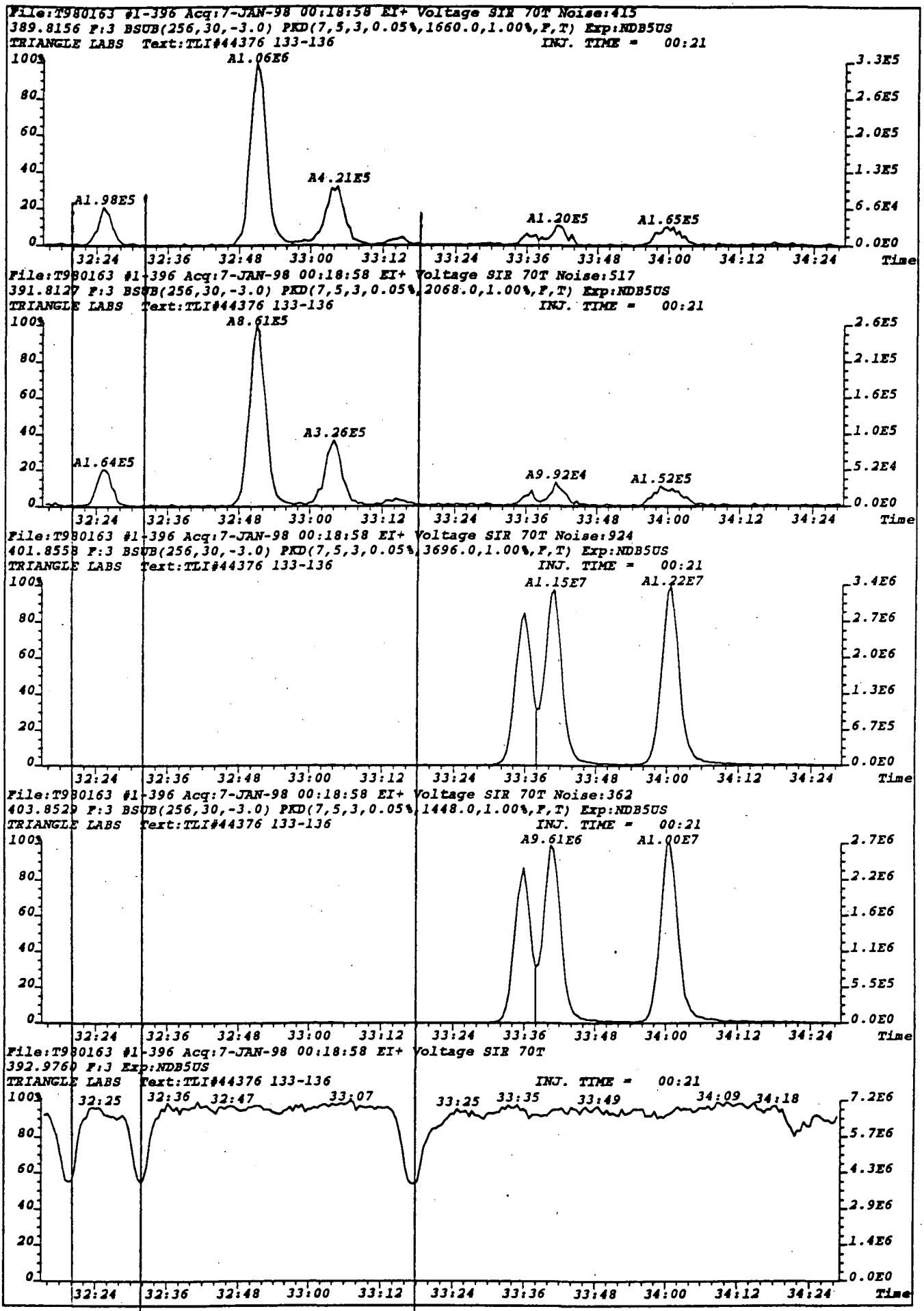
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



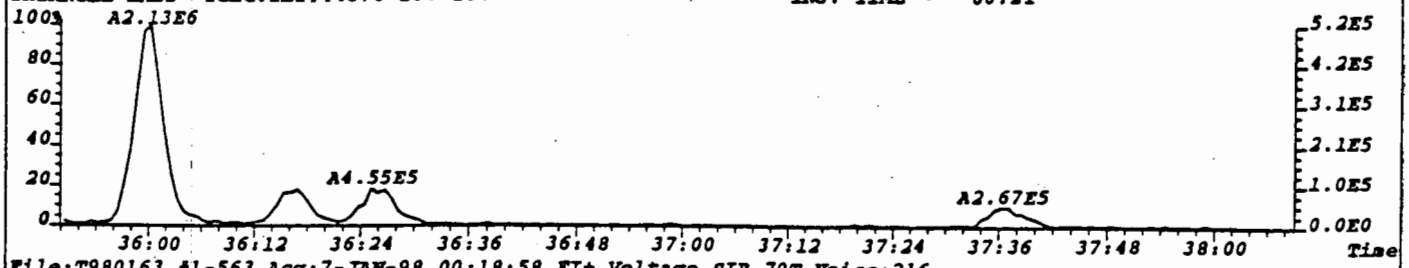

File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:523
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2092.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
A4.93E6
A8.83E6
A4.07E6
A3.14E6
A1.88E6
A2.25E6
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:507
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2028.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
A3.32E6
A6.06E6
A2.81E6
A1.18E6
A1.28E6
A1.34E6
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:217
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,868.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
A1.80E7
A1.71E7
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:237
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,948.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
A1.28E7
A1.18E7
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
27:48 28:04 28:34 28:51 29:07 29:37 30:08 30:22 30:37 30:57 31:14 31:28
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21
29:56
30:37
27:44 28:15 28:30 28:45 29:31 29:48 30:16 31:00 31:18
28:00 29:00 30:00 31:00 Time


File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:327
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1308.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A2.09E6
A1.33E6
A8.03E5
A1.36E5
A2.21E5
A3.29E5
A1.65E5
A1.04E5
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:190
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,760.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.96E6
A7.84E5
A5.35E5
A2.27E5
A9.54E4
A1.28E5
A1.81E5
A3.19E5
A1.18E5
A6.47E4
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:143
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,572.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.12E7
A1.27E6
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:115
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,460.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A7.67E6
A8.82E5
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
28:51 29:07 29:19 29:37 29:48 30:08 30:22 30:37 30:48 31:14
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time

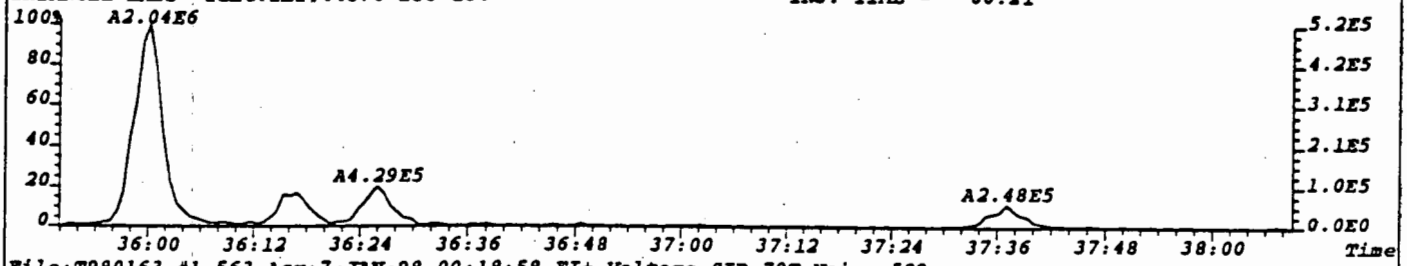

File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:1295
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5180.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A2.42E6
A1.19E6
A2.14E6
A8.19E5
A2.45E5
A2.85E5
A2.20E5
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:857
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3428.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.89E6
A9.16E5
A1.65E6
A7.33E5
A6.30E5
A2.04E5
A2.16E5
A1.89E5
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:1021
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4084.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A8.13E6
A7.64E6
A6.61E6
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:185
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,740.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.60E7
A1.51E7
A1.28E7
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
Time


File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:415
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1660.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.06E6
A4.21E5
A1.98E5
A1.20E5
A1.65E5
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:517
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2068.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A8.61E5
A3.26E5
A1.64E5
A9.92E4
A1.52E5
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:924
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3696.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A1.15E7
A1.22E7
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:362
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1448.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A9.61E6
A1.00E7
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
32:25
32:36
32:47
33:07
33:25
33:35
33:49
34:09
34:18
Time

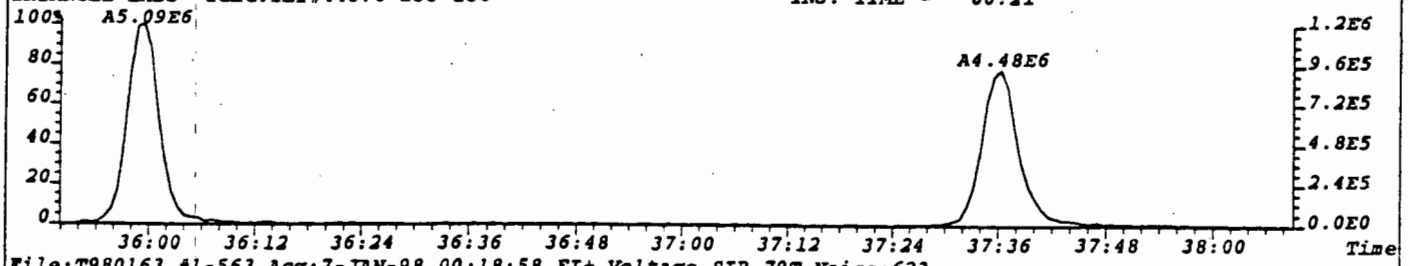
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:297
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1188.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



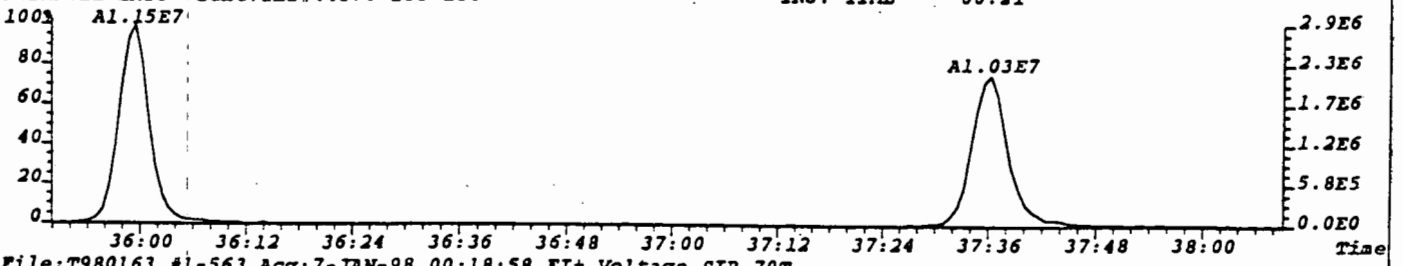
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:216
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,864.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



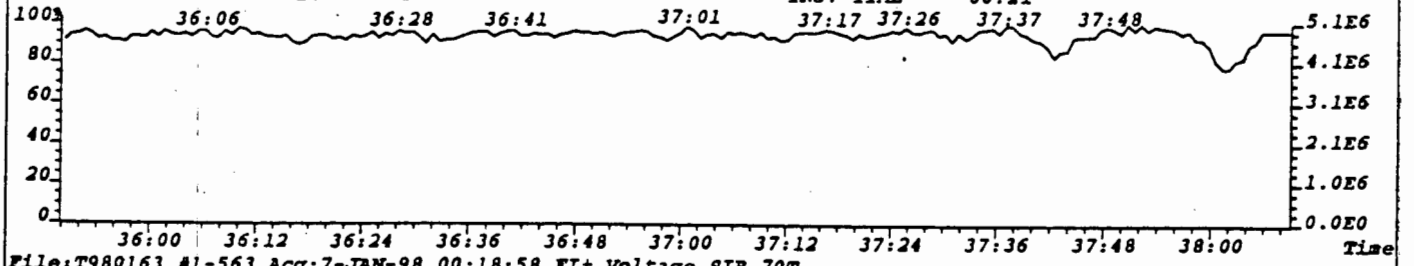
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:529
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



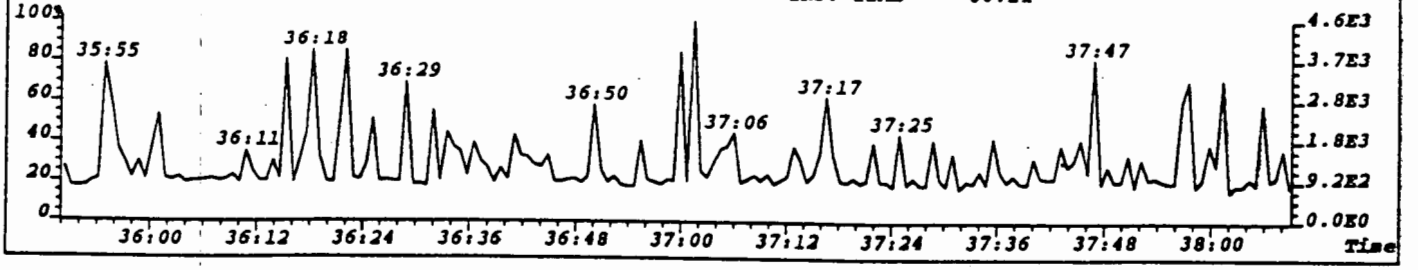
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:623
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2492.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21

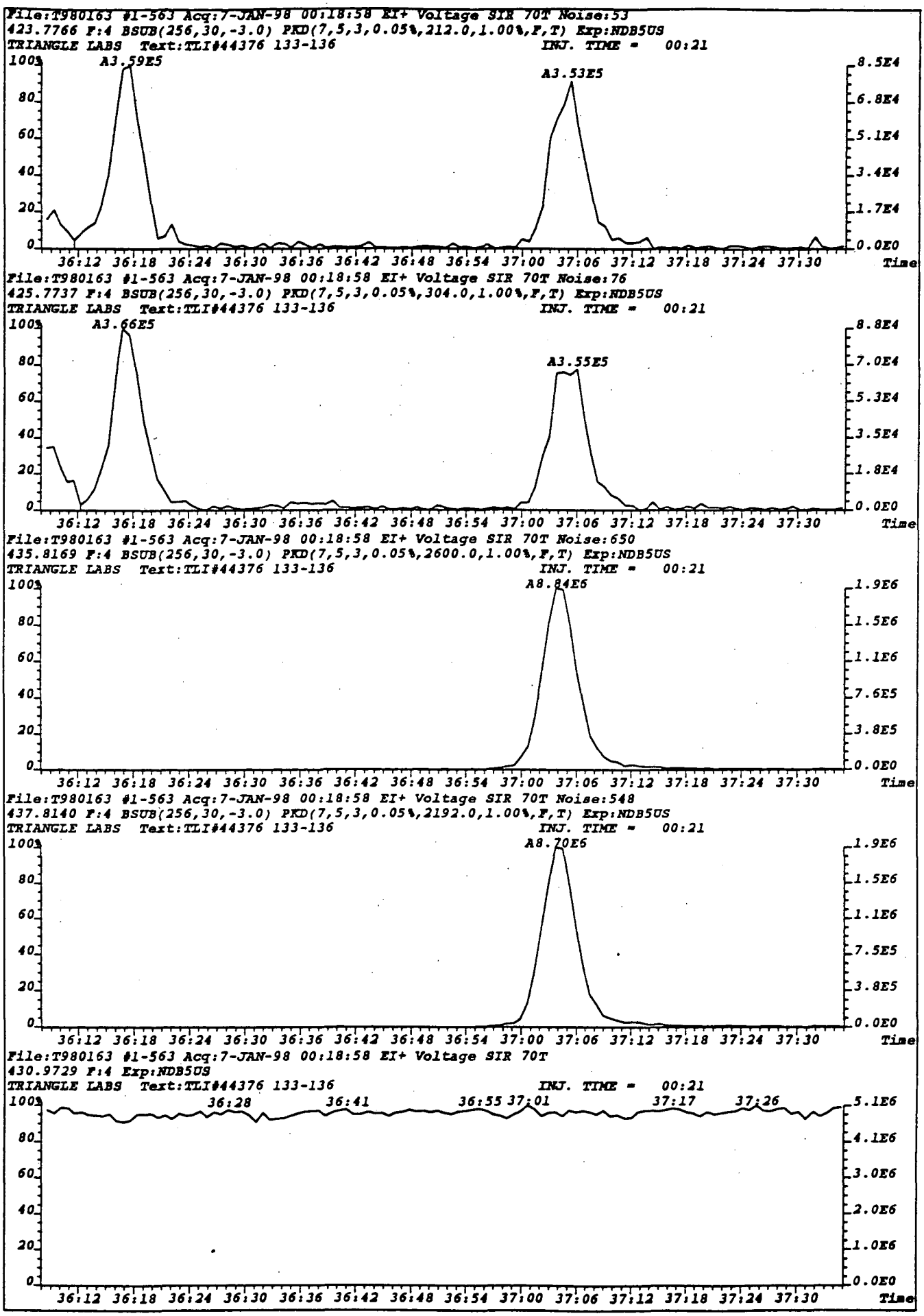


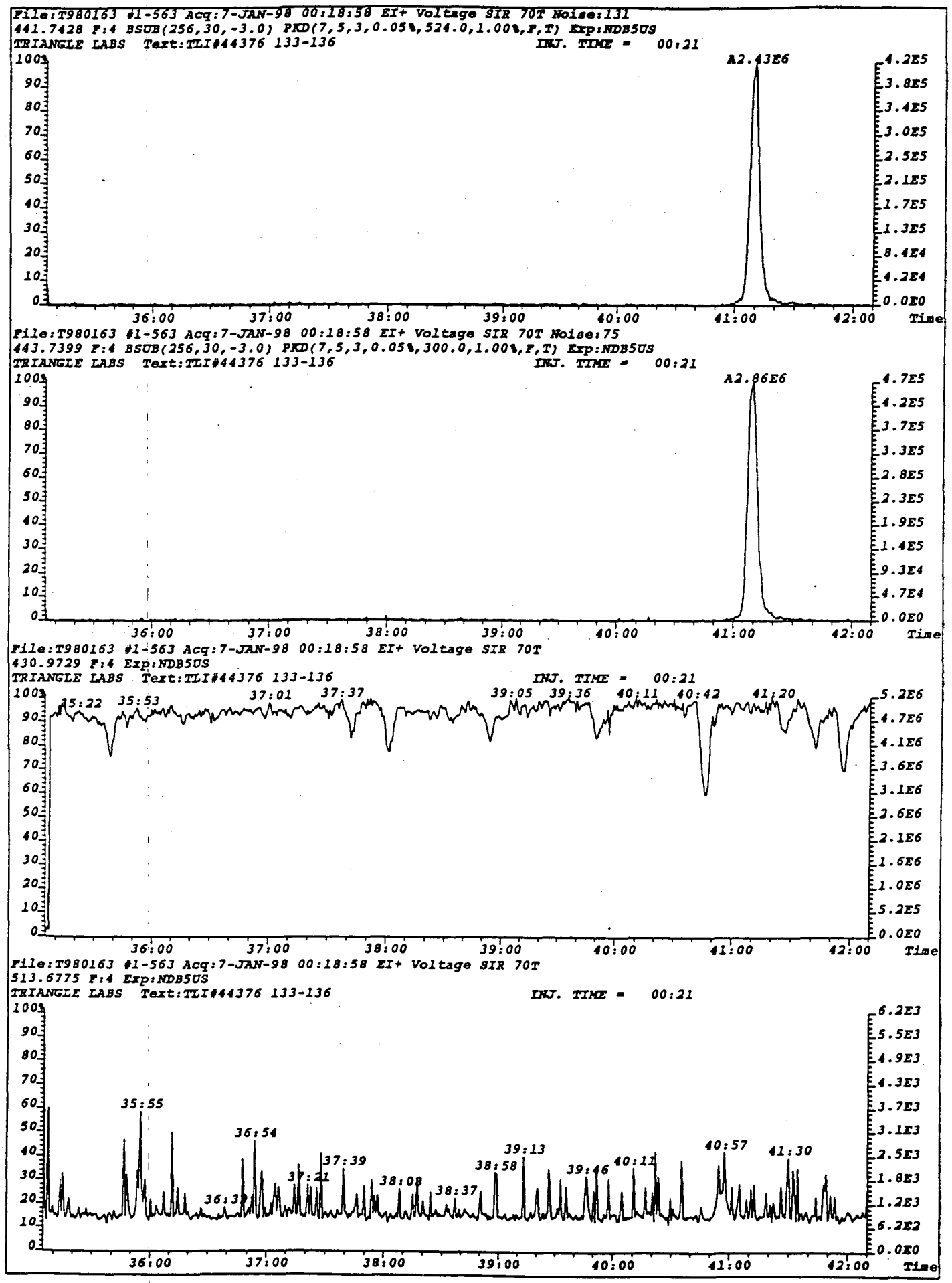
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



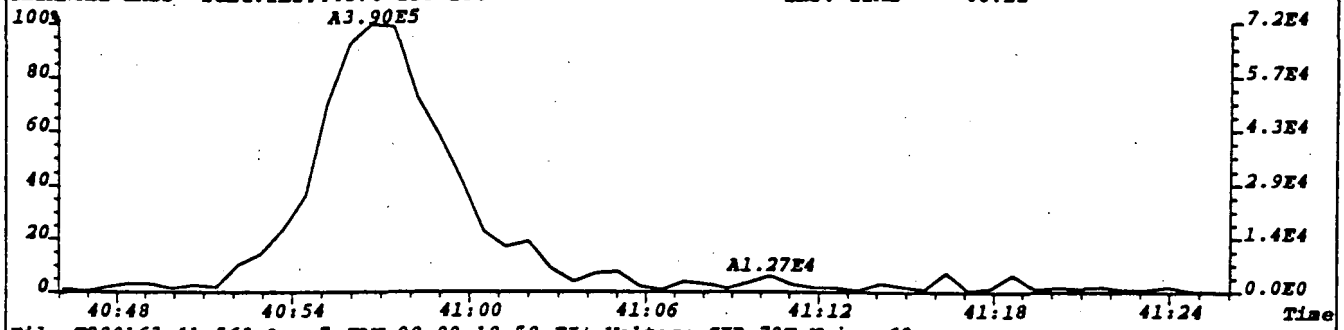
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



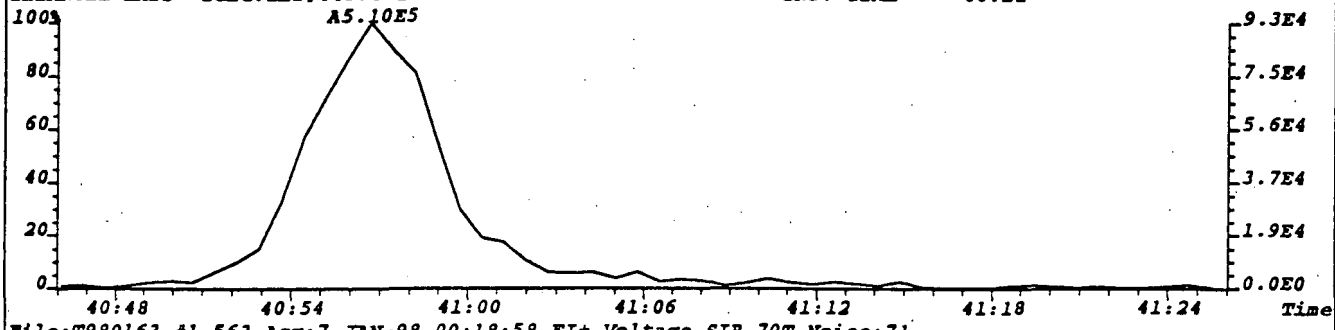

File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:53
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A3.59E5
A3.53E5
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:76
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,304.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A3.66E5
A3.55E5
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:650
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2600.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A8.84E6
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:548
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2192.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A8.70E6
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30
Time


File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:131
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,524.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A2.43E6
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:75
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,300.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
A2.86E6
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
35:22
35:53
37:01
37:37
39:05
39:36
40:11
40:42
41:20
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136
INJ. TIME = 00:21
35:55
36:54
37:39
38:08
38:37
38:58
39:13
39:46
40:11
40:57
41:30
Time

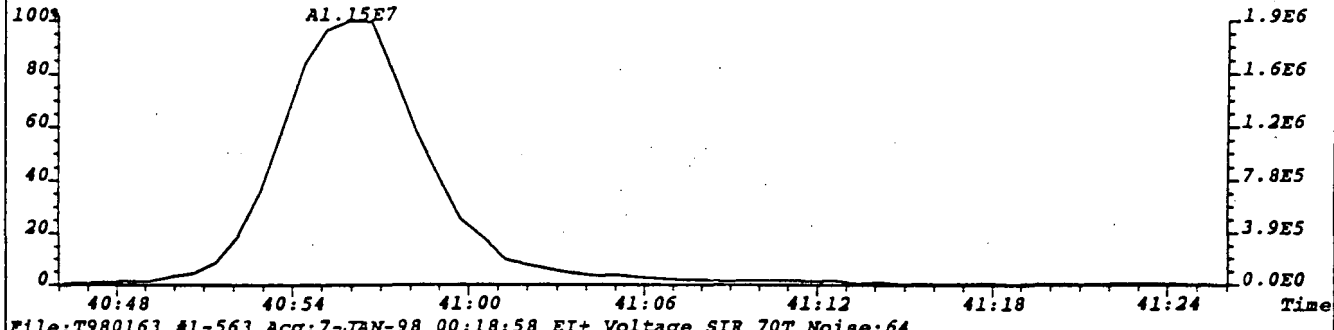
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:61
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,244.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



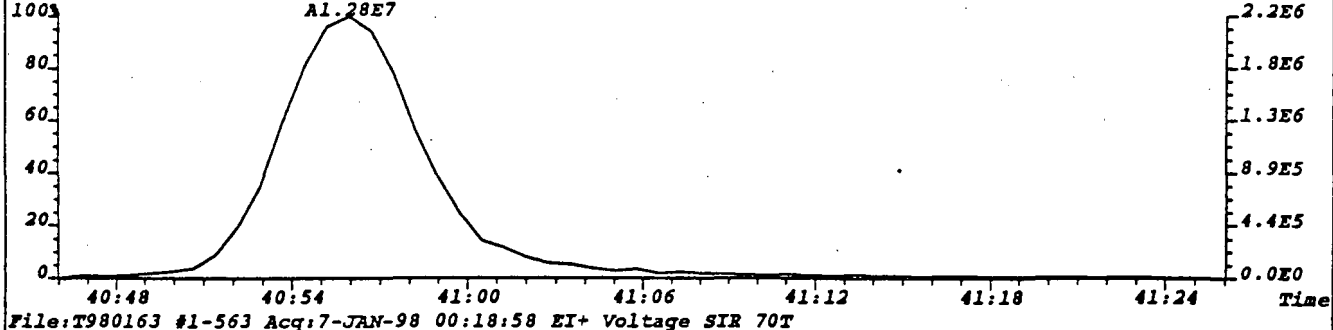
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:68
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,272.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



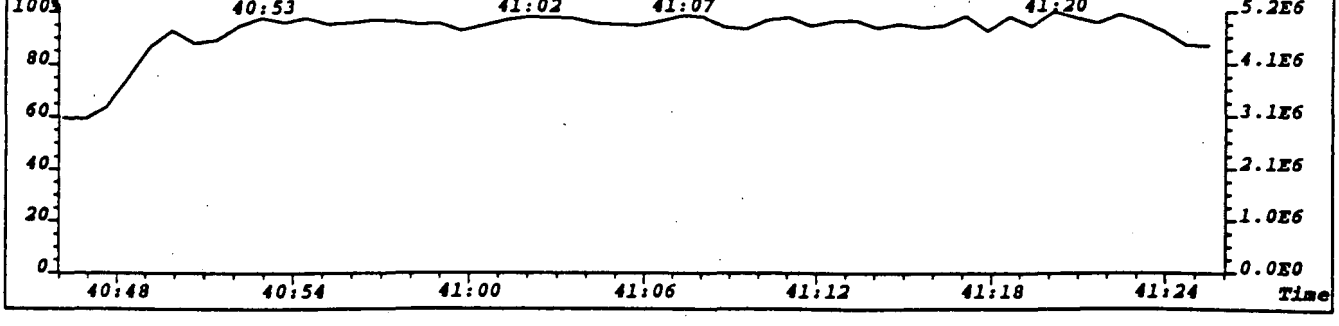
File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:71
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21

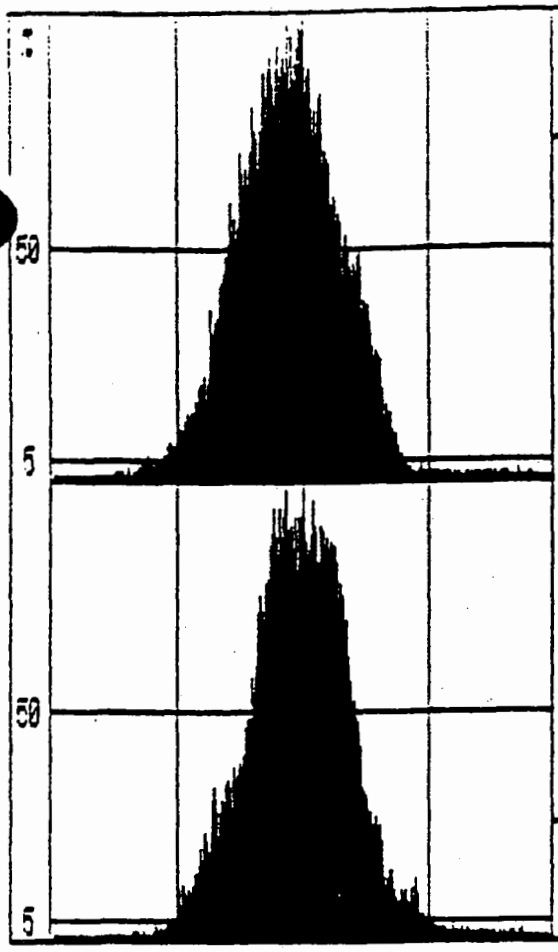


File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T Noise:64
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,256.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



File:T980163 #1-563 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 133-136 INJ. TIME = 00:21



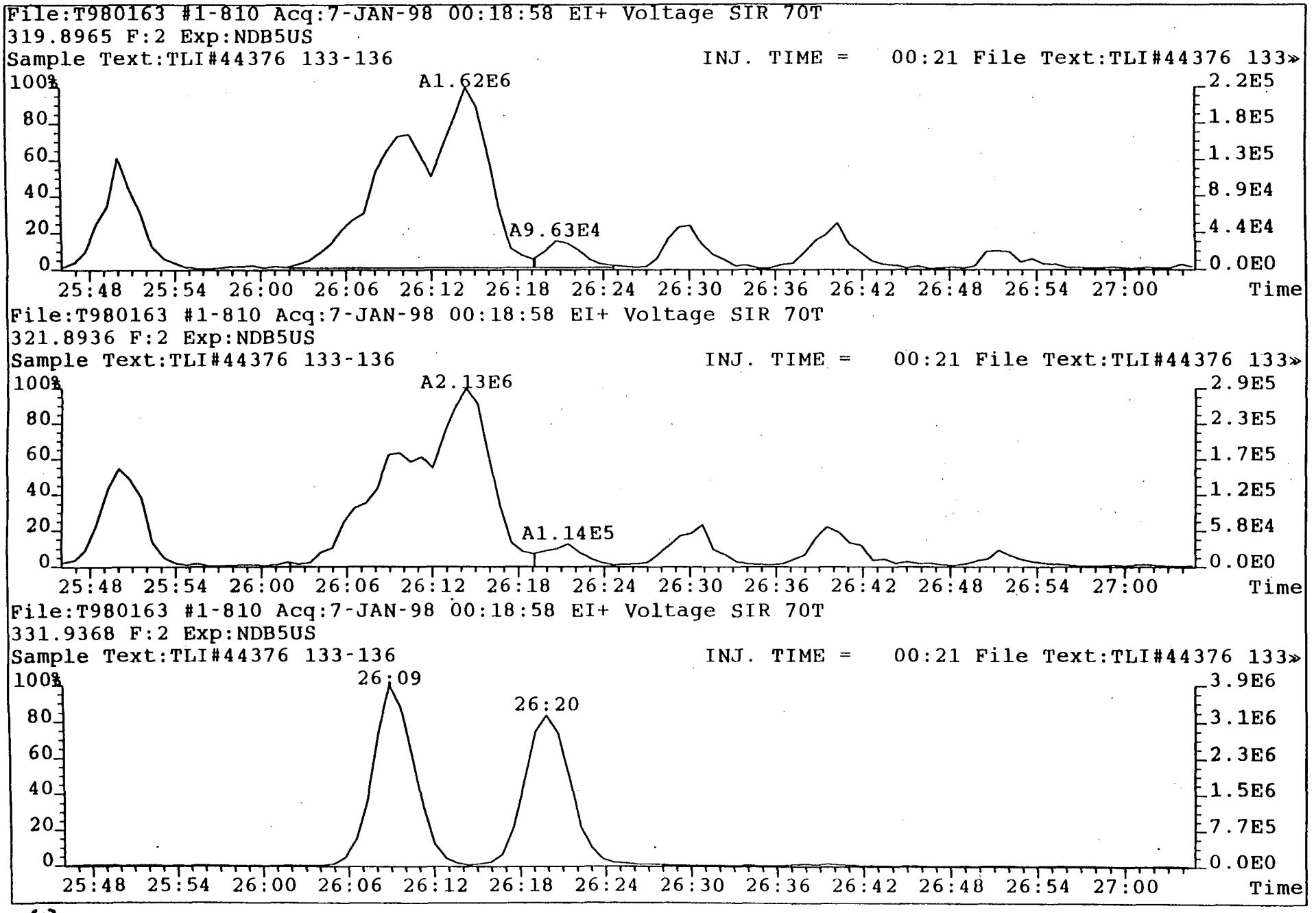


Ref. mass 292.9825 Peak top
Height 3.12 volts Span 200 ppm

System file name	NDBSUS
Data file name	A:TS00161
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

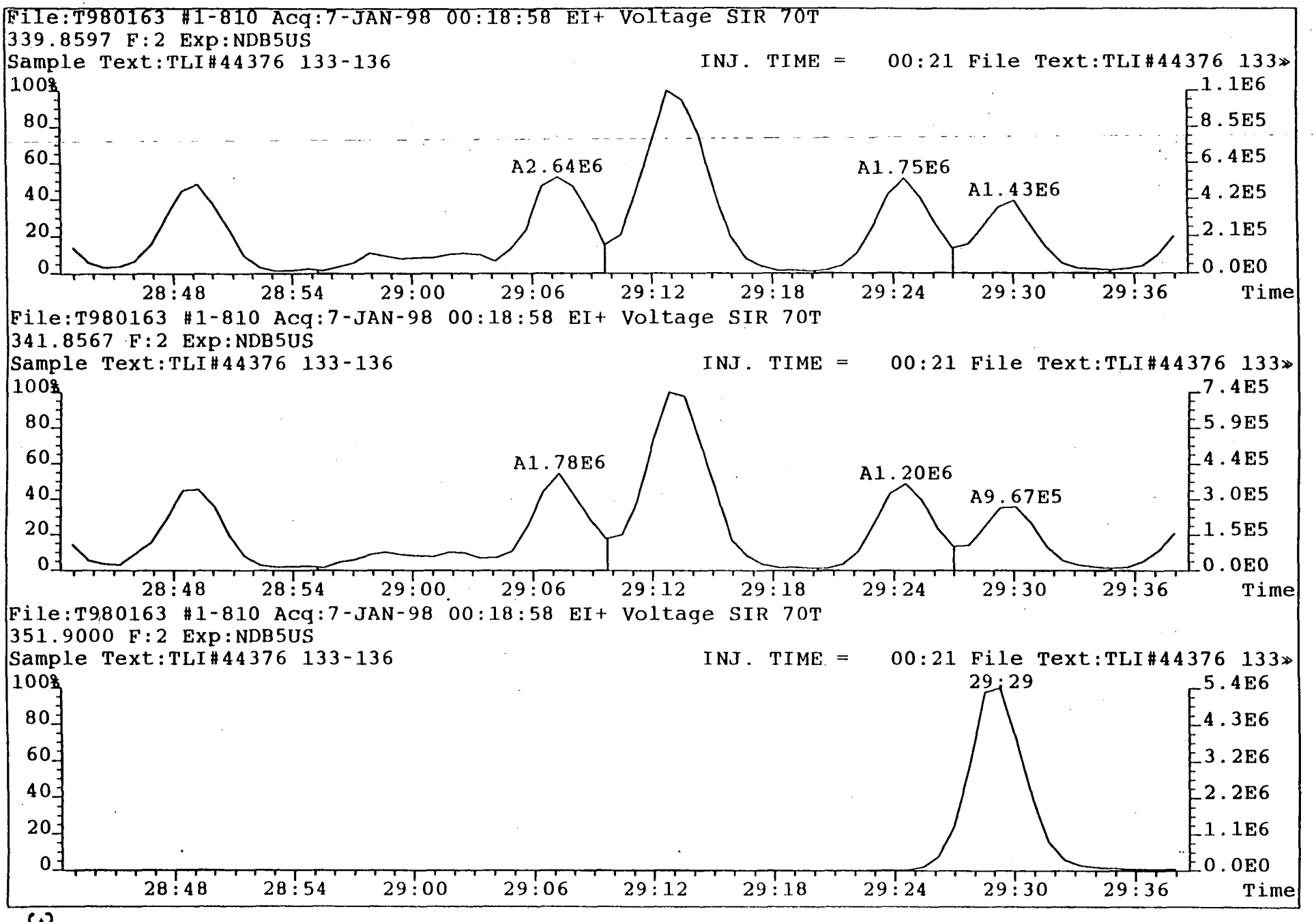
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

Channel I 330.9792 Peak top
Height 2.94 volts Span 200 ppm


File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
A1.62E6
A9.63E4
100%
80
60
40
20
0
2.2E5
1.8E5
1.3E5
8.9E4
4.4E4
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00
Time
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
A2.13E6
A1.14E5
2.9E5
2.3E5
1.7E5
1.2E5
5.8E4
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00
Time
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
26:09
26:20
3.9E6
3.1E6
2.3E6
1.5E6
7.7E5
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 26:48 26:54 27:00
Time

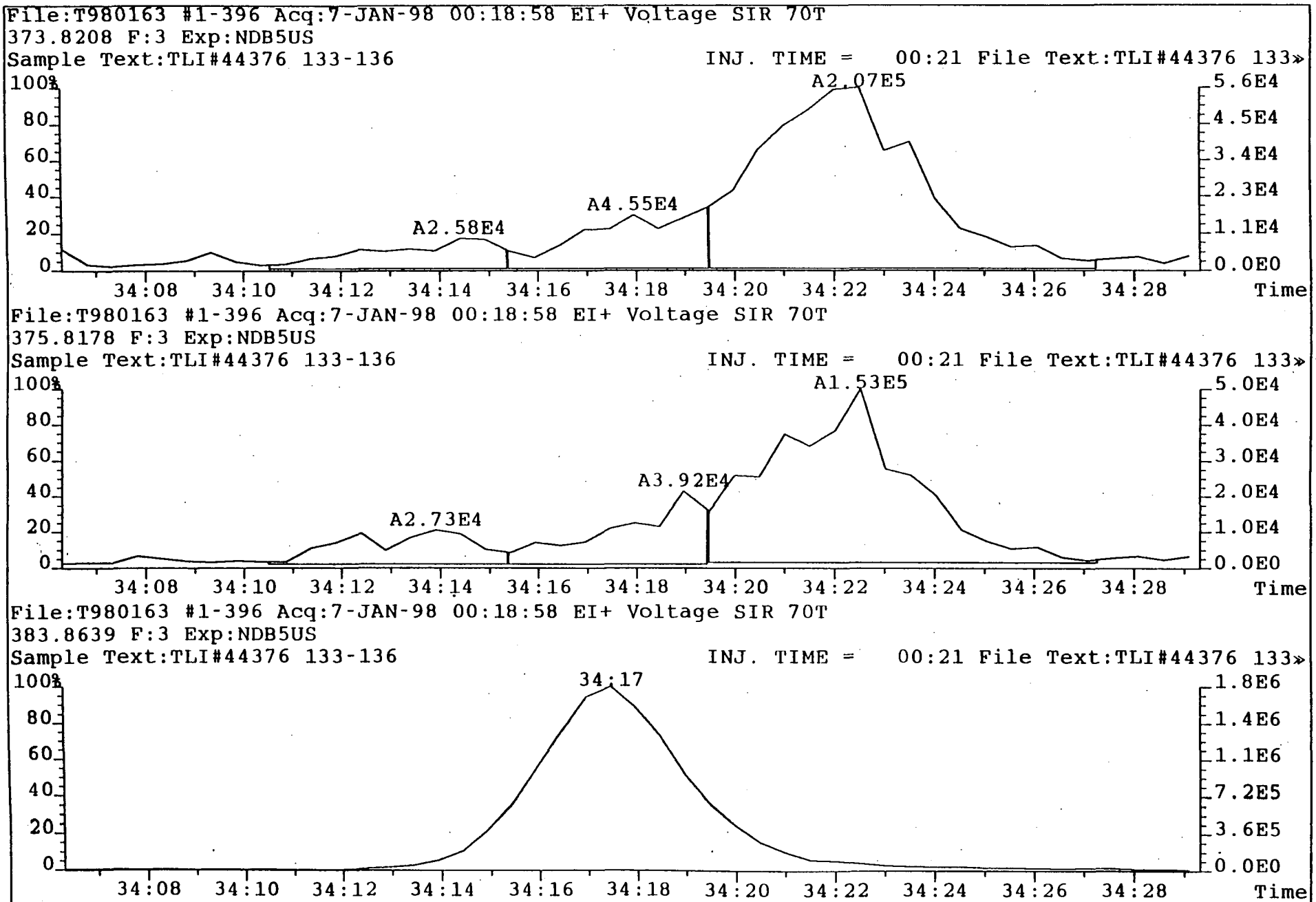
340

5/11/98


File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
339.8597 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
100%
80
60
40
20
0
A2.64E6
A1.75E6
A1.43E6
1.1E6
8.5E5
6.4E5
4.2E5
2.1E5
0.0E0
28:48
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
341.8567 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
100%
80
60
40
20
0
A1.78E6
A1.20E6
A9.67E5
7.4E5
5.9E5
4.4E5
3.0E5
1.5E5
0.0E0
28:48
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time
File:T980163 #1-810 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
351.9000 F:2 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
100%
80
60
40
20
0
29:29
5.4E6
4.3E6
3.2E6
2.2E6
1.1E6
0.0E0
28:48
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time

3.4.1

1/11/98


File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
A2.07E5
A4.55E4
A2.58E4
100%
80
60
40
20
0
5.6E4
4.5E4
3.4E4
2.3E4
1.1E4
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 Time
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
A1.53E5
A3.92E4
A2.73E4
100%
80
60
40
20
0
5.0E4
4.0E4
3.0E4
2.0E4
1.0E4
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 Time
File:T980163 #1-396 Acq:7-JAN-98 00:18:58 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 133-136
INJ. TIME = 00:21 File Text:TLI#44376 133»
34:17
100%
80
60
40
20
0
1.8E6
1.4E6
1.1E6
7.2E5
3.6E5
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 Time

Eastern Research Group

TLI Project: 44376 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 133-136 — Analysis File: P980168

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-8A-8D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/10/98	ConCal:	P980164
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	WK	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.57			0.75	23:06	—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.0	73.9	40%-130%	0.77	23:05	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:55	—

699 01/11/98

C2NF_PSR v2.01, LABS 6.10.08i

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:36 01/11/98

Initial ....Date...

Data Review By: [signature] 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P980168B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

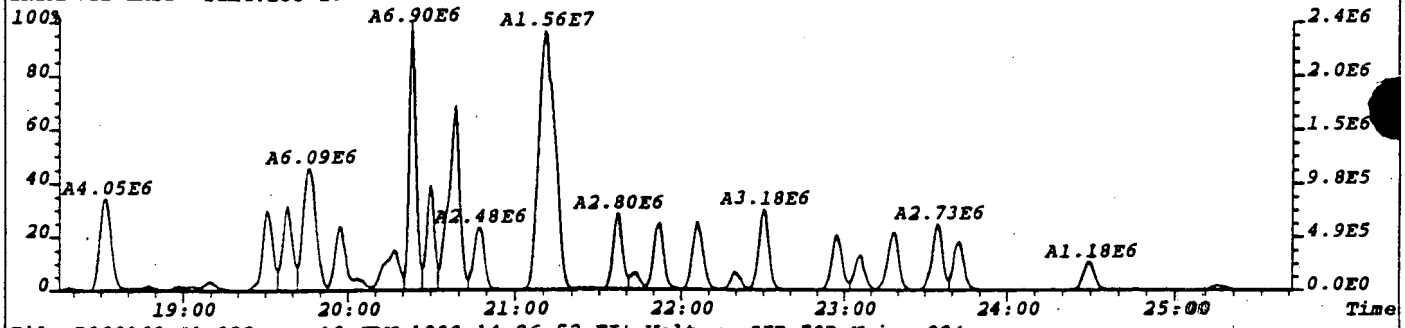
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.793-1.101			
304-306	DC	NL		0:00	RO	1.43	3.52			0.000			
				18:18		0.68	17.37	7.00	10.37	0.793			
				18:32		0.81	906.70	405.08	501.62	0.803			
				18:41	RO	0.15	4.02	1.75	11.56	0.809			
				18:47		0.84	25.17	11.51	13.66	0.814			
				18:58	RO	0.64	27.42	11.93	18.62	0.822			
				19:03	RO	1.28	23.06	16.72	13.03	0.825			
				19:10		0.87	90.30	42.10	48.20	0.830			
				19:30		0.72	780.15	326.71	453.44	0.845			
				19:38		0.76	746.92	321.40	425.52	0.851			
				19:46		0.74	1,434.57	608.65	825.92	0.856			
				19:57		0.89	653.21	307.66	345.55	0.864			
				20:17		0.73	568.40	238.96	329.44	0.879			
				20:23	RO	0.92	1,323.27	689.97	747.61	0.883			
				20:30		0.76	717.28	309.80	407.48	0.888			
				20:39		0.72	1,877.11	785.05	1,092.06	0.895			
				20:47		0.70	601.52	247.87	353.65	0.900			
				21:11		0.74	3,681.67	1,561.86	2,119.81	0.918			
				21:36		0.74	658.13	279.68	378.45	0.936			
				21:43		0.69	149.07	60.74	88.33	0.941			
				21:52		0.75	617.50	264.52	352.98	0.947			
				22:06		0.74	667.11	283.48	383.63	0.957			
				22:19		0.77	150.40	65.63	84.77	0.967			
				22:30		0.76	734.60	317.60	417.00	0.975			
				22:57		0.75	532.68	227.80	304.88	0.994			
				23:06		0.75	319.30	137.11	182.19	1.001	2378-TCDF		AN
				23:18		0.75	574.35	245.76	328.59	1.009			
				23:34		0.75	639.19	273.04	366.15	1.021			
				23:42		0.74	465.71	198.01	267.70	1.027			
				24:30		0.74	278.05	118.10	159.95	1.061			
				25:14	RO	0.59	37.28	16.22	27.59	1.093			
304-306		30	Peaks				19,301.51						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.02	3.12			0.000			
	DC	WL		20:33	RO	0.64	9.06			0.890			
	DC	WL		21:48	RO	1.01	9.95			0.944			
				23:05		0.77	2,163.99	939.96	1,224.03	1.000	13C12-2378-TCDF		ISO
				23:42	RO	1.07	7.45	4.49	4.21	1.027			
	DC	WH		25:13	RO	0.52	11.88			1.092			
316-318		2	Peaks				2,171.44						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.907-1.093			
332-334		DC	NL	0:00	RO	1.75	1.43			0.000			
				20:33	RO	0.54	6.02	2.62	4.86	0.950			
				21:38		0.80	1,825.45	810.63	1,014.82	1.000	13C12-2378-TCDD	IS1	
				21:55		0.82	2,109.71	950.17	1,159.54	1.013	13C12-1234-TCDD	RS1	
				22:41		0.76	21.32	9.21	12.11	1.049			
		DC	WH	24:14	RO	0.47	5.10			1.120			
		DC	WH	24:27	RO	0.55	3.68			1.130			
		DC	WH	24:32	RO	1.11	10.07			1.134			
332-334			4 Peaks				3,962.50						

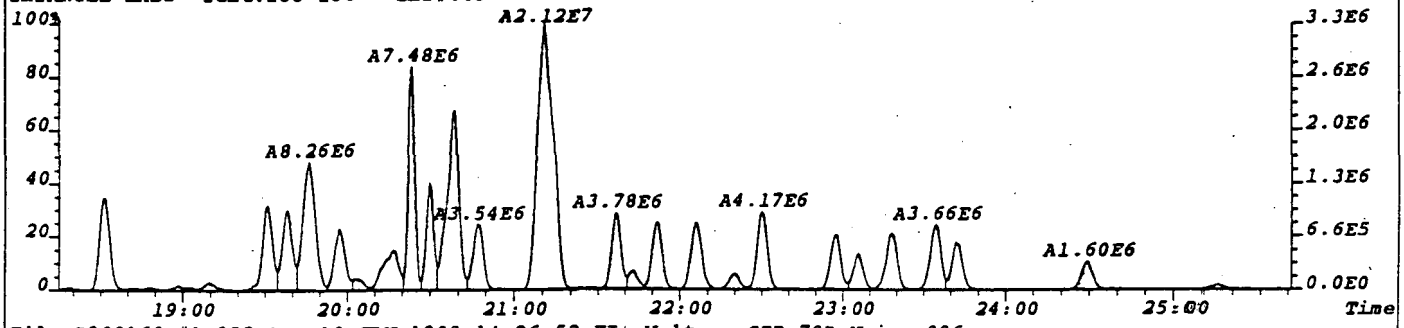
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

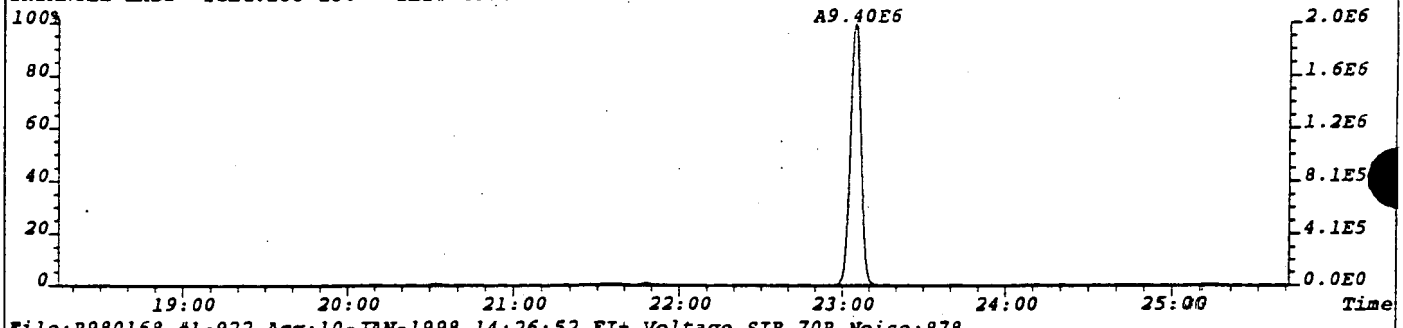
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:1423
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5692.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376



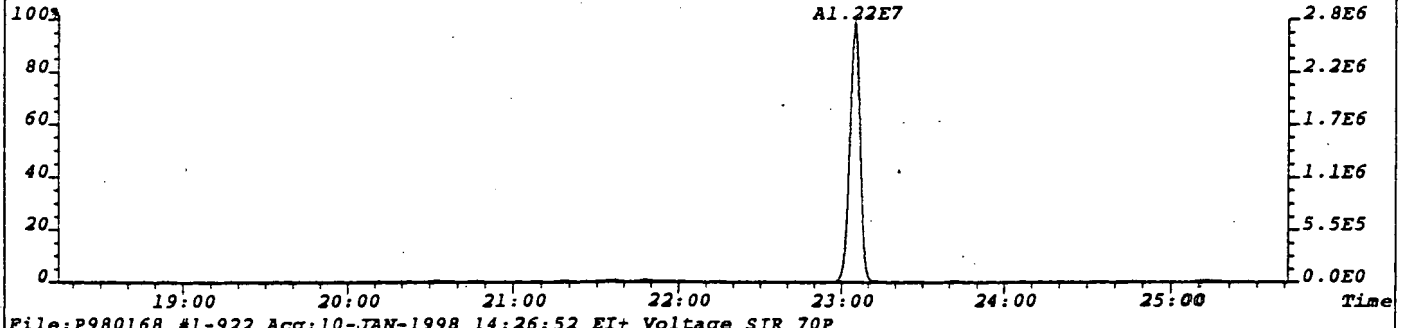
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:994
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3976.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376



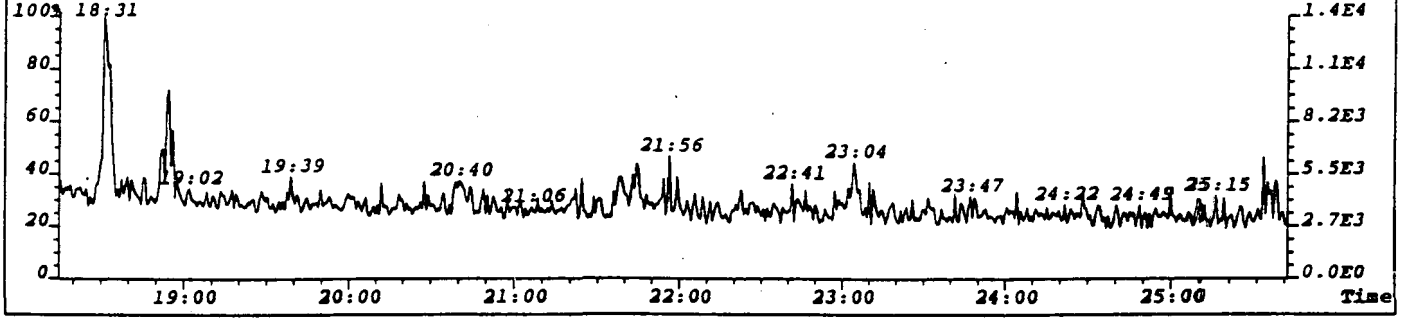
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:896
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3584.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376

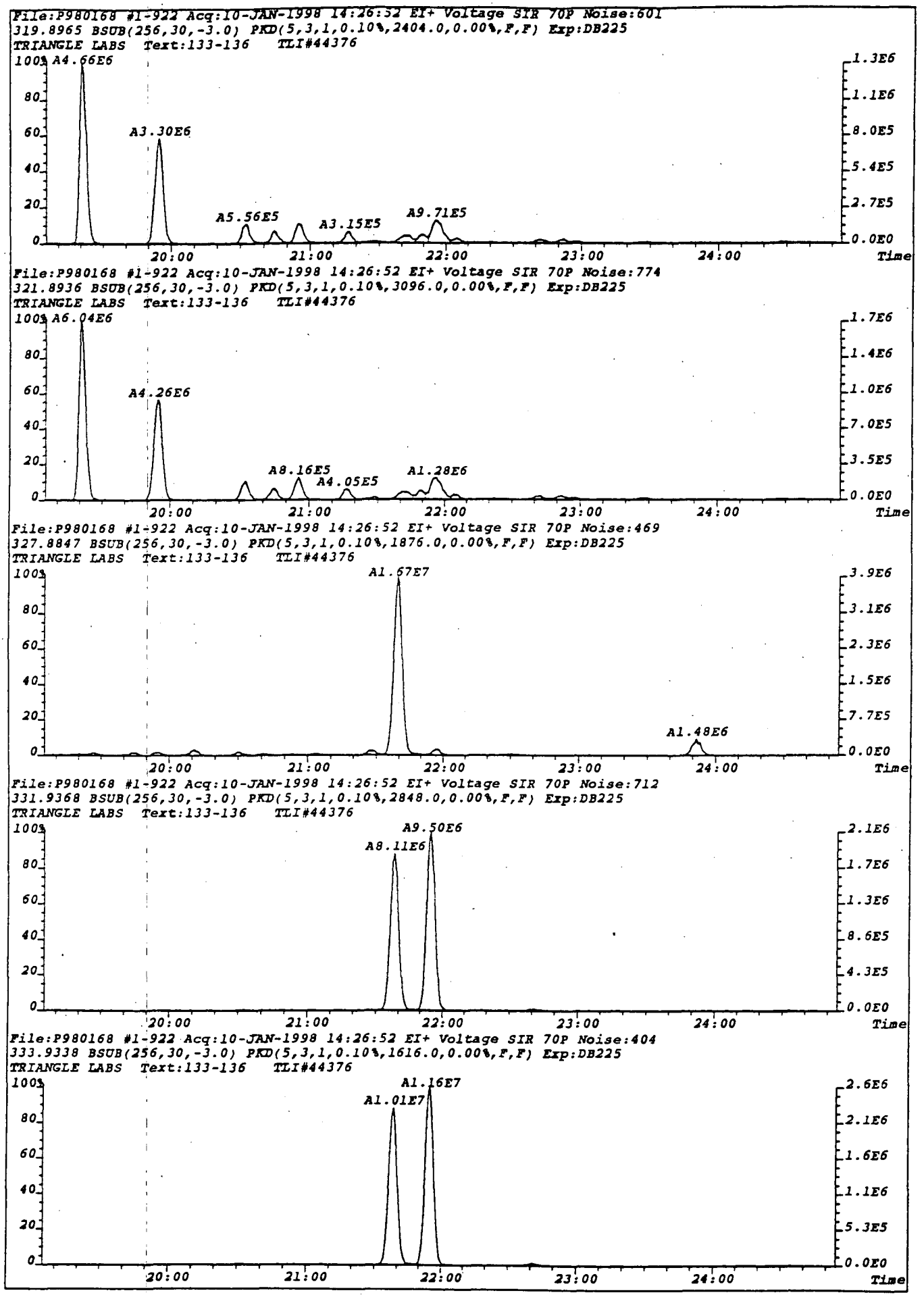


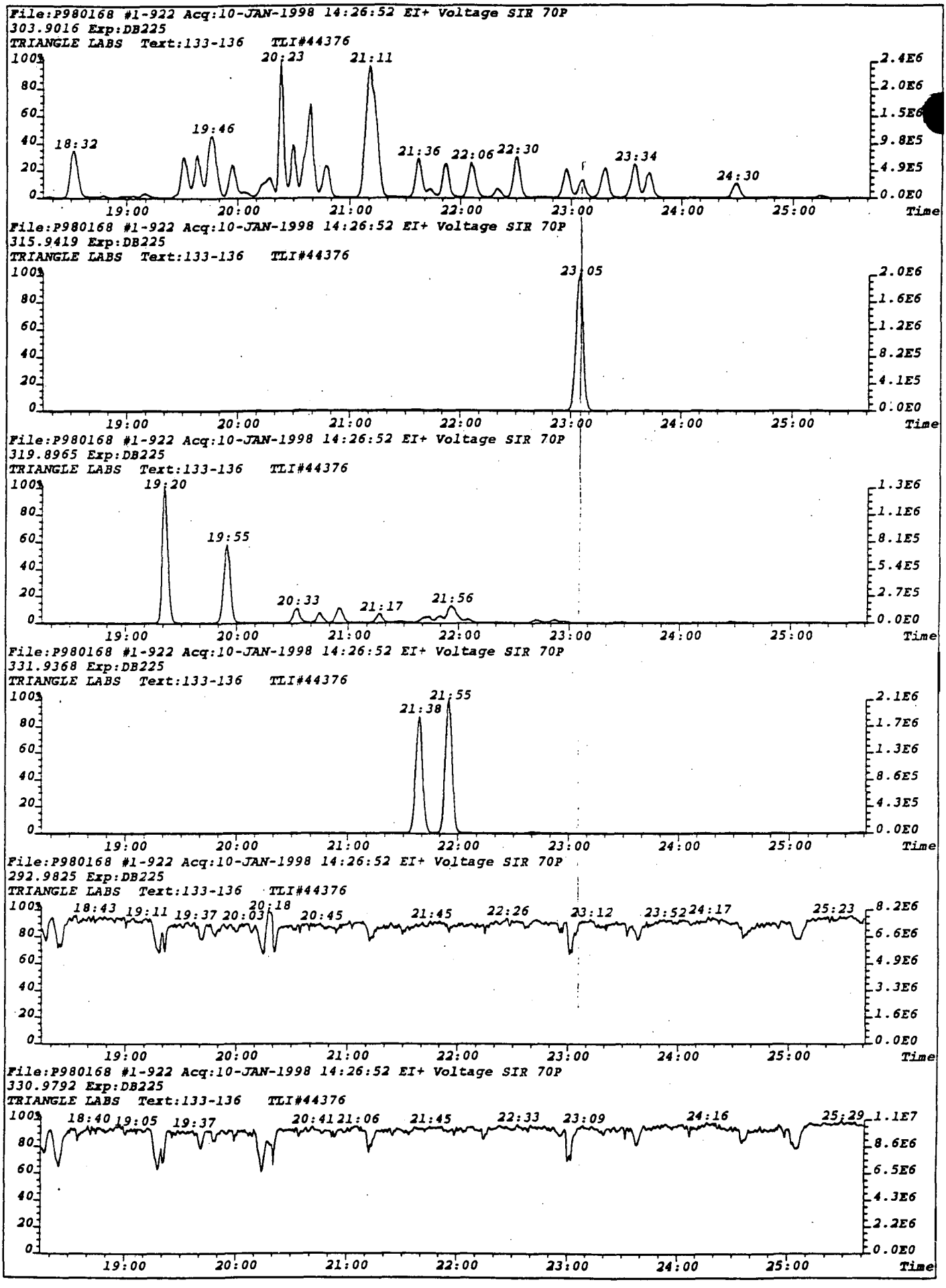
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:878
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3512.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376

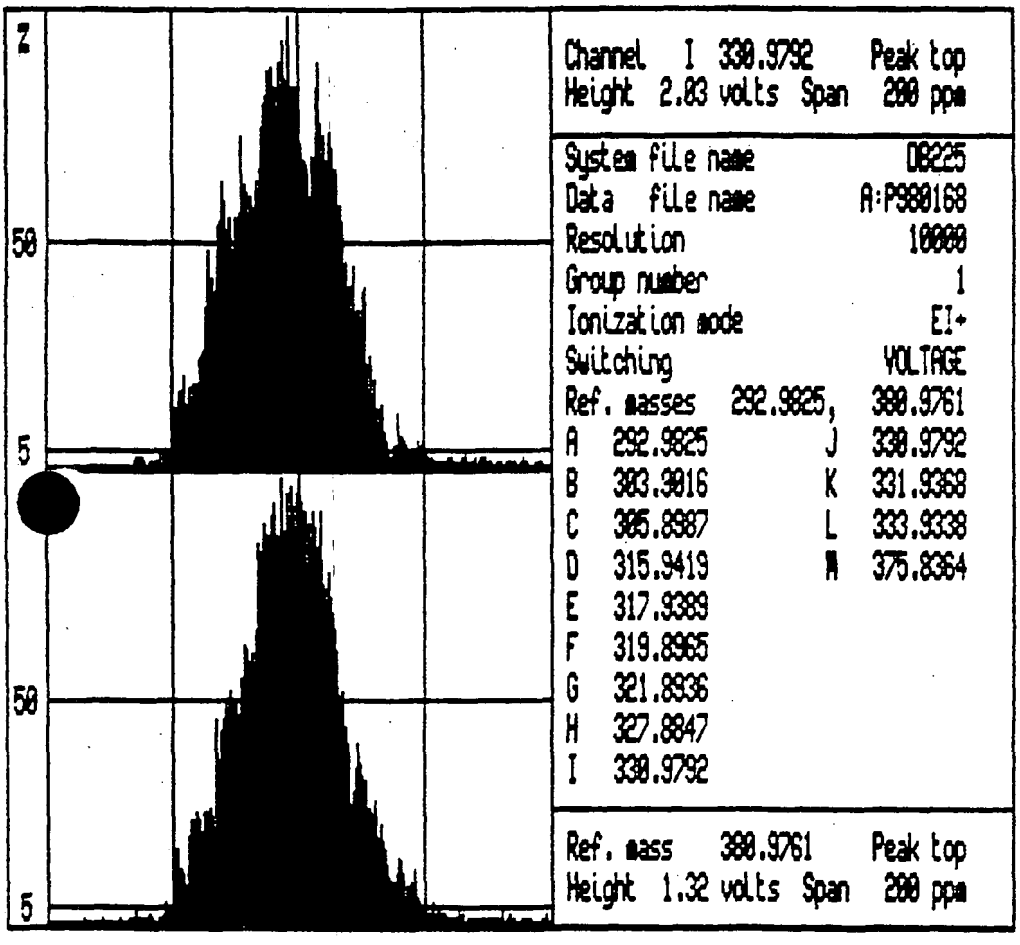


File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376




File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:601
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2404.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
A4.66E6
A3.30E6
A5.56E5
A3.15E5
A9.71E5
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:774
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3096.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
A6.04E6
A4.26E6
A8.16E5
A4.05E5
A1.28E6
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:469
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1876.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
A1.67E7
A1.48E6
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:712
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2848.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
A9.50E6
A8.11E6
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P Noise:404
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1616.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
A1.16E7
A1.01E7
Time


File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
18:32
19:46
20:23
21:11
21:36
22:06
22:30
23:34
24:30
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
23:05
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
19:20
19:55
20:33
21:17
21:56
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
21:38
21:55
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
18:43
19:11
19:37
20:03
20:18
20:45
21:45
22:26
23:12
23:52
24:17
25:23
Time
File:P980168 #1-922 Acq:10-JAN-1998 14:26:52 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:133-136 TLI#44376
18:40
19:05
19:37
20:41
21:06
21:45
22:33
23:09
24:16
25:29
Time



Channel I 330.9792 Peak top
Height 2.83 volts Span 200 ppm

System file name	DB225
Data file name	A:P980168
Resolution	10000
Group number	1
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 380.9761

A	292.9825	J	330.9792
B	303.9816	K	331.9368
C	305.8987	L	333.9338
D	315.9419	M	375.8364
E	317.9389		
F	319.8965		
G	321.8936		
H	327.8847		
I	330.9792		

Ref. mass 380.9761 Peak top
Height 1.32 volts Span 200 ppm

Eastern Research Group

TLI Project: **44376** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **137-140** — Analysis File: **T980164**

Client Project:	**Culp Aluminum Alloys**				
Sample Matrix:	**M23TRAIN**	Date Received:	**12/17/97**	Spike File:	**SPX23704**
TLI ID:	**194-59-9A-9D**	Date Extracted:	**12/29/97**	ICal:	**TF5D177**
		Date Analyzed:	**01/07/98**	ConCal:	**T980160**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**T980152**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**CRV**	% Solids:	**n/a**

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	0.04			0.75	26:21	___
1,2,3,7,8-PeCDD	0.06			1.44	30:31	J__
1,2,3,4,7,8-HxCDD	0.02			1.23	33:36	J__
1,2,3,6,7,8-HxCDD	0.05			1.31	33:41	J__
1,2,3,7,8,9-HxCDD	0.06			1.26	33:59	PRJ
1,2,3,4,6,7,8-HpCDD	0.12			0.92	37:05	___
1,2,3,4,6,7,8,9-OCDD	0.16			0.76	40:56	JB_
2,3,7,8-TCDF	4.2			0.81	25:41	___
1,2,3,7,8-PeCDF	0.38			1.50	29:30	___
2,3,4,7,8-PeCDF	0.51			1.45	30:10	___
1,2,3,4,7,8-HxCDF	0.56			1.27	32:52	___
1,2,3,6,7,8-HxCDF	0.21			1.37	32:59	___
2,3,4,6,7,8-HxCDF	0.22			1.30	33:30	___
1,2,3,7,8,9-HxCDF	0.01			1.22	34:18	PRJ
1,2,3,4,6,7,8-HpCDF	0.41			1.08	35:59	___
1,2,3,4,7,8,9-HpCDF	EMPC		0.05			J__
1,2,3,4,6,7,8,9-OCDF	0.24			0.84	41:08	___

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	7.4	12			___
Total PeCDD	1.1	7		1.9	___
Total HxCDD	0.86	7			___
Total HpCDD	0.26	2			___
Total TCDF	34.0	14		34.2	Q__
Total PeCDF	9.9	14		10.1	___
Total HxCDF	2.4	12		2.5	___
Total HpCDF	0.60	3		0.66	___

Triangle Laboratories, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Eastern Research Group

TLI Project: 44376
Client Sample: 137-140

Method 23 PCDD/PCDF Analysis (a)
Analysis File: T980164

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.6	64.1	40%-130%	0.73	25:38	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.6	64.3	40%-130%	0.80	26:20	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.0	75.6	40%-130%	1.39	29:29	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.6	90.9	40%-130%	1.46	30:29	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.9	71.9	40%-130%	0.51	32:58	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.6	90.2	40%-130%	1.22	33:40	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.3	83.4	25%-130%	0.43	35:59	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.4	109	25%-130%	1.02	37:04	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	8.6	108	25%-130%	0.88	40:55	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.4	84.8	70%-140%		26:21	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.9	97.4	70%-140%	1.43	30:09	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	4.0	100	70%-140%	0.52	32:52	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	4.0	101	70%-140%	1.21	33:35	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.3	108	70%-140%	0.44	37:36	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	80.0	40%-130%	0.51	34:17	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.9	71.7	40%-130%	0.53	33:29	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	26:09	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.20	34:00	—

Data Reviewer: 6 SS 01/15/98

X237_PSR v2.01, LARS 6.10.08o

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 09:29 01/15/98

Initial ....Date...

Data Review By: GSS 1/15/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980164B.dbf
01/15/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.876-1.072			
304-306	DC	NL		0:00	RO	0.93	4.00			0.000			
				22:38		0.82	1,452.45	654.53	797.92	0.883			
				23:08		0.77	1,320.95	576.20	744.75	0.902			
				23:21		0.81	1,030.12	460.18	569.94	0.911			
				23:51		0.81	3,821.26	1,713.32	2,107.94	0.930			Q
				24:02		0.81	3,572.81	1,598.96	1,973.85	0.938			
				24:24		0.81	3,527.18	1,574.70	1,952.48	0.952			
				24:39		0.82	2,196.36	991.49	1,204.87	0.962			
	M			25:04		0.80	7,090.00	3,160.00	3,930.00	0.978			
				25:15		0.82	1,206.49	543.77	662.72	0.985			
				25:30		0.79	1,302.82	576.49	726.33	0.995			
				25:41		0.81	3,968.53	1,781.28	2,187.25	1.002	2378-TCDF	AN	
				26:05		0.81	896.37	400.68	495.69	1.018			
				26:17		0.81	706.36	315.30	391.06	1.025			
				26:32	RO	0.94	160.10	85.12	90.45	1.035			
				26:59	RO	0.64	13.49	5.87	9.18	1.053			J
				27:20		0.75	91.70	39.27	52.43	1.066			
	DC	WH		27:33	RO	1.05	19.77			1.075			
304-306			16 Peaks				32,356.99						
13C12-TCDF						0.65-0.89				0.961-1.039			
316-318	DC	NL		0:00		0.76	3.86			0.000			
	DC	WL		23:31		0.74	18.64			0.917			
	DC	WL		24:04		0.84	31.18			0.939			
	DC	WL		24:14	RO	1.18	6.96			0.945			
				25:06		0.87	12.03	5.60	6.43	0.979			
				25:14		0.67	19.97	7.98	11.99	0.984			
				25:38		0.73	2,762.24	1,165.34	1,596.90	1.000	13C12-2378-TCDF	ISO	
				26:03	RO	0.61	14.67	6.38	10.47	1.016			
				26:16	RO	0.48	14.44	6.28	12.96	1.025			
	DC	WH		27:34	RO	0.90	12.80			1.075			
316-318			5 Peaks				2,823.35						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.901-1.043			
320-322	DC	NL		0:00	RO	0.15	0.90			0.000			
				23:54		0.78	2,518.62	1,102.87	1,415.75	0.908			
				24:16		0.76	1,492.99	646.32	846.67	0.922			
				24:34		0.74	138.68	59.20	79.48	0.933			
				25:12		0.80	507.70	225.30	282.40	0.957			
				25:28		0.76	276.04	119.59	156.45	0.967			
				25:51		0.73	119.50	50.34	69.16	0.982			

Compound/ M_Z....	QC	Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
M					26:14		0.79	472.00	209.00	263.00	0.996			
AN					26:21		0.75	28.40	12.20	16.20	1.001	2378-TCDD	AN	
					26:30		0.74	45.09	19.20	25.89	1.006			
					26:39		0.65	49.81	19.56	30.25	1.012			
					26:52		0.66	17.82	7.11	10.71	1.020			
					27:17		0.80	13.10	5.82	7.28	1.036			J
320-322					12 Peaks			5,679.75						
37C1-TCDD											0.924-1.076			
328	DC	NL			0:00			1.24			0.000			
	DC	WL			23:54			13.37			0.908			
	DC	WL			24:10			28.37			0.918			
	DC	WL			24:16			13.88			0.922			
					24:27			6.94	6.94		0.928			
					24:35			3.06	3.06		0.934			
					25:00			861.52	861.52		0.949			
					25:12			6.77	6.77		0.957			
					25:16			2.96	2.96		0.959			
					25:40			10.77	10.77		0.975			
					25:53			3.44	3.44		0.983			
	DC	SN			26:03			2.13			0.989			
					26:21			1,909.89	1,909.89		1.001	37C1-TCDD	SUR1	
					26:43			207.89	207.89		1.015			
	DC	SN			26:55			1.36			1.022			
	DC	SN			26:59			1.44			1.025			
	DC	SN			27:03			2.05			1.027			
					27:13			3.21	3.21		1.034			
					27:36			11.20	11.20		1.048			
					27:46			3.01	3.01		1.054			
.8					12 Peaks			3,030.66						
13C12-TCDD							0.65-0.89				0.924-1.076			
332-334	DC	NL			0:00	RO	2.87	4.87			0.000			
					25:12	RO	0.46	9.52	4.14	8.99	0.957			
					26:09		0.81	2,791.15	1,250.33	1,540.82	0.993	13C12-1234-TCDD	RS1	
					26:20		0.80	2,239.75	994.43	1,245.32	1.000	13C12-2378-TCDD	IS1	
					26:39		0.71	37.56	15.59	21.97	1.012			
332-334					4 Peaks			5,077.98						
---------- Above: TCDD / PeCDF Follows ----------														
PeCDF							1.32-1.78				0.928-1.061			
340-342	DC	NL			0:00	RO	1.08	1.88			0.000			
					27:33		1.52	1,043.72	629.11	414.61	0.934			
					27:43	RO	0.59	15.33	9.32	15.93	0.940			J
					27:53	RO	1.87	21.34	15.64	8.37	0.946			J
					28:00	RO	2.06	17.65	14.26	6.92	0.950			J
					28:11	RO	1.93	22.77	17.21	8.93	0.956			J
					28:16	RO	1.11	17.87	10.86	9.81	0.959			J
					28:31		1.53	325.97	196.99	128.98	0.967			
					28:39		1.46	1,838.00	1,091.59	746.41	0.972			
AD	D		EE		28:46	RO	1.28	378.39			0.976			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				28:48		1.52	376.33	227.05	149.28	0.977			
				29:07		1.43	529.76	312.00	217.76	0.988			
				29:13		1.49	830.32	496.78	333.54	0.991			
				29:25		1.50	354.28	212.50	141.78	0.998			
				29:30		1.50	272.94	163.59	109.35	1.001	12378-PeCDF	AN	
				29:39		1.52	237.81	143.30	94.51	1.006			
				29:46		1.52	371.00	223.58	147.42	1.010			
				30:10		1.45	362.52	214.47	148.05	1.023	23478-PeCDF	AN	
				30:19		1.43	429.21	252.86	176.35	1.028			
				30:37		1.38	98.62	57.23	41.39	1.038			
	DC	SN	30:51	RO	1.05	3.92				1.046			
				31:08		1.63	44.97	27.85	17.12	1.056			J
340-342		19	Peaks				7,210.41						
13C12-PeCDF					1.32-1.78					0.864-1.136			
352-354	DC	NL	0:00		1.41	0.99				0.000			
			28:37		1.44	15.25		9.00	6.25	0.971			
			28:49		1.33	6.16		3.52	2.64	0.977			
			29:29		1.39	2,699.35		1,570.34	1,129.01	1.000	13C12-PeCDF 123	IS2	
			29:45		1.48	25.95		15.48	10.47	1.009			
	DC	SN	29:54	RO	0.85	2.99				1.014			
			30:09		1.43	2,611.27		1,535.11	1,076.16	1.023	13C12-PeCDF 234	SUR2	
	DC	SN	30:25	RO	4.53	3.67				1.032			
			31:07	RO	1.10	5.23		3.18	2.90	1.055			
352-354		6	Peaks				5,363.21						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD					1.32-1.78					0.937-1.021			
356-358	DC	NL	0:00		1.45	0.98				0.000			
A			28:46	RO	1.28	378.39		230.00	179.00	0.944			
	DC	SN	28:55	RO	0.02	2.99				0.949			
			29:14	RO	1.16	23.46		14.26	12.34	0.959			J
			29:27		1.56	266.21		162.38	103.83	0.966			
			29:35		1.68	38.81		24.35	14.46	0.970			J
			29:46		1.64	164.70		102.32	62.38	0.976			
			29:59		1.49	65.09		38.95	26.14	0.984			
			30:12		1.69	71.19		44.74	26.45	0.991			
			30:20	RO	0.48	29.02		17.64	37.03	0.995			J
			30:31		1.44	35.86		21.19	14.67	1.001	12378-PeCDD	AN	J
			30:38		1.63	21.13		13.10	8.03	1.005			J
			30:58	RO	1.88	18.59		13.71	7.29	1.016			J
	DC	WH	31:10	RO	2.37	1.17				1.022			
356-358		11	Peaks				1,112.45						
13C12-PeCDD					1.32-1.78					0.869-1.131			
368-370	DC	NL	0:00	RO	1.12	0.46				0.000			
	DC	SN	28:45	RO	5.17	0.89				0.943			
	DC	SN	29:25		1.33	1.91				0.965			
			30:29		1.46	1,801.71		1,068.17	733.54	1.000	13C12-PeCDD 123	IS3	
			30:37		1.44	175.87		103.71	72.16	1.004			
368-370		2	Peaks				1,977.58						

Compound/ Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.963-1.047			
374-376	DC	NL	0:00	RO	2.06		3.38			0.000			
			31:56		1.31		228.18	129.31	98.87	0.969			
			32:04		1.31		453.50	257.07	196.43	0.973			
			32:13		1.42		29.19	17.12	12.07	0.977			J
			32:22		1.26		52.20	29.06	23.14	0.982			J
			32:31	RO	1.44		27.19	17.48	12.14	0.986			J
	DC	SN	32:41	RO	0.66		2.64			0.991			
			32:52		1.27		366.29	205.15	161.14	0.997	123478-HxCDF	AN	
			32:59		1.37		157.23	90.76	66.47	1.001	123678-HxCDF	AN	
			33:07		1.18		30.59	16.54	14.05	1.005			J
			33:16		1.34		54.50	31.19	23.31	1.009			QJ
			33:30		1.30		131.32	74.13	57.19	1.016	234678-HxCDF	AN	
	M		34:14		1.42		7.24	4.25	2.99	1.038			J
	AN		34:18		1.22		7.04	3.87	3.17	1.040	123789-HxCDF	AN	PRJ
	M		34:22		1.24		32.00	17.70	14.30	1.042			J
374-376			13 Peaks				1,576.47						
13C12-HxCDF						0.43-0.59				0.879-1.121			
384-386	DC	NL	0:00	RO	0.63		3.55			0.000			
	DC	SN	31:56		0.57		4.11			0.969			
	DC	SN	32:01		0.44		5.54			0.971			
			32:52		0.52		2,085.20	715.56	1,369.64	0.997	13C12-HxCDF 478	SUR3	
			32:58		0.51		2,263.25	766.17	1,497.08	1.000	13C12-HxCDF 678	IS4	
	DC	SN	33:18	RO	0.32		3.43			1.010			
			33:29		0.53		2,155.53	745.38	1,410.15	1.016	13C12-HxCDF 234	ALT2	
	DC	SN	33:46	RO	1.37		2.81			1.024			
			34:17		0.51		1,903.28	641.22	1,262.06	1.040	13C12-HxCDF 789	ALT1	
	DC	SN	34:39	RO	0.40		2.66			1.051			
384-386			4 Peaks				8,407.26						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.958-1.014			
390-392	DC	NL	0:00	RO	0.40		0.89			0.000			
			32:24		1.22		41.13	22.59	18.54	0.962			J
	DC	SN	32:32	RO	0.52		0.54			0.966			
			32:51		1.22		198.84	109.11	89.73	0.976			
			33:04		1.26		100.49	56.09	44.40	0.982			
			33:14		1.12		8.70	4.59	4.11	0.987			J
	DC	SN	33:25	RO	0.83		0.45			0.993			
	DC	SN	33:29	RO	2.96		1.21			0.995			
	M		33:36		1.23		9.05	4.99	4.06	0.998	123478-HxCDD	AN	J
	M		33:41		1.31		24.50	13.90	10.60	1.000	123678-HxCDD	AN	J
			33:59		1.26		30.36	16.95	13.41	1.009	123789-HxCDD	AN	PRJ
	DC	WH	34:12	RO	1.48		0.52			1.016			
390-392			7 Peaks				413.07						
13C12-HxCDD						1.05-1.43				0.970-1.030			
402-404	DC	NL	0:00	RO	2.24		1.86			0.000			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				33:03	RO	1.57	6.76	4.75	3.02	0.982			
				33:35		1.21	1,648.36	901.76	746.60	0.998	13C12-HxCDD 478	SUR4	
				33:40		1.22	2,007.08	1,103.20	903.88	1.000	13C12-HxCDD 678	IS5	
				33:53	RO	0.65	6.07	3.36	5.18	1.006			
				34:00		1.20	2,230.33	1,215.86	1,014.47	1.010	13C12-HxCDD 789	RS2	
				34:17	RO	0.71	6.32	3.50	4.96	1.018			
	DC	SN	34:22	RO	1.76	4.91				1.021			
	DC	SN	34:29	RO	2.50	1.93				1.024			
402-404			6 Peaks				5,904.92						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.996-1.051			
408-410	DC	NL	0:00	RO	1.29	0.78				0.000			
			35:59		1.08	252.56	131.26	121.30	1.000	1234678-HpCDF		AN	
			36:17		1.06	48.56	25.00	23.56	1.008				J
			36:26		1.10	53.82	28.24	25.58	1.013				
	DC	SN	36:38	RO	2.03	0.71			1.018				
	DC	SN	36:48	RO	1.71	1.59			1.023				
			37:36	RO	1.36	25.01	16.72	12.26	1.045	1234789-HpCDF		AN	J
	DC	WH	37:54	RO	1.49	1.63			1.053				
408-410			4 Peaks				379.95						
13C12-HpCDF						0.37-0.51				0.944-1.111			
418-420	DC	NL	0:00	RO	0.64	1.74				0.000			
			35:59		0.43	1,657.50	501.86	1,155.64	1.000	13C12-HpCDF 678		IS6	
	DC	SN	36:29		0.44	6.59			1.014				
			37:36		0.44	1,397.20	423.94	973.26	1.045	13C12-HpCDF 789		SUR5	
	DC	SN	38:09		0.50	2.29			1.060				
418-420			2 Peaks				3,054.70						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.975-1.005			
424-426	DC	NL	0:00		0.92	0.25				0.000			
	DC	SN	36:09	RO	0.58	2.20				0.975			
			36:17		0.96	62.47	30.63	31.84	0.979				
	DC	SN	36:35	RO	0.36	0.53				0.987			
			37:05		0.92	56.22	26.98	29.24	1.000	1234678-HpCDD		AN	
424-426			2 Peaks				118.69						
13C12-HpCDD						0.88-1.20				0.973-1.027			
436-438	DC	NL	0:00	RO	1.53	1.59				0.000			
			37:04		1.02	1,759.67	887.38	872.29	1.000	13C12-HpCDD 678		IS7	
436-438			1 Peak				1,759.67						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.902-1.098			
442-444	DC	NL	0:00	RO	1.75	0.38				0.000			
	DC	WL	35:29		0.93	0.29				0.867			
	DC	WL	35:41	RO	1.54	0.49				0.872			

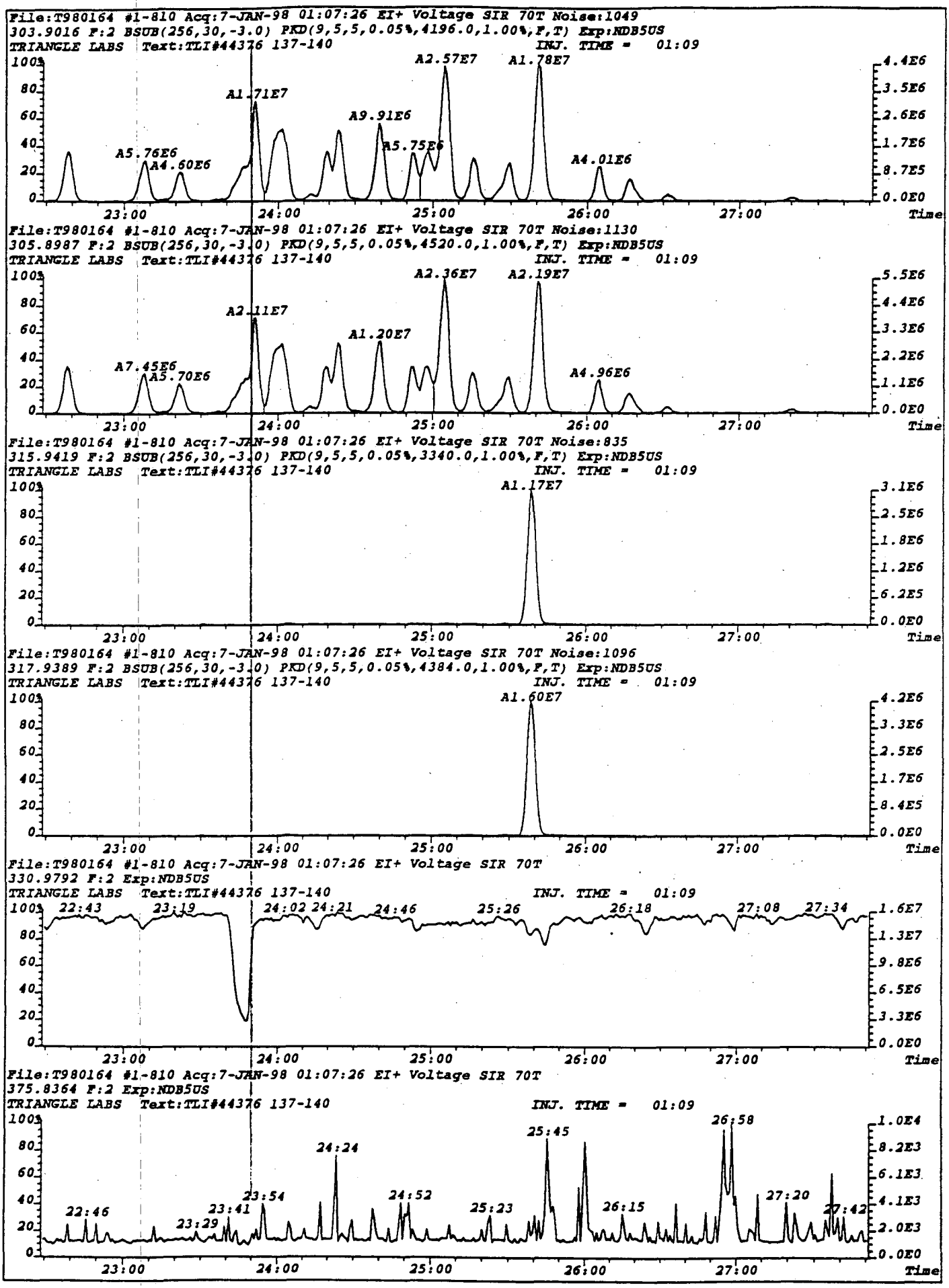
Listing of T980164B.dbf
Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	WL		36:02	RO	1.15	0.62			0.881			
	DC	WL		36:18	RO	3.00	0.53			0.887			
	DC	WL		36:33	RO	0.73	0.68			0.893			
	DC	SN		36:56	RO	4.92	0.25			0.903			
	DC	SN		37:05	RO	1.51	1.47			0.906			
	DC	SN		37:33	RO	2.07	0.57			0.918			
	DC	SN		37:42		0.94	0.64			0.921			
	DC	SN		37:45	RO	1.65	0.49			0.923			
	DC	SN		37:51	RO	1.71	0.79			0.925			
	DC	SN		37:56	RO	2.32	0.42			0.927			
	DC	SN		38:07	RO	0.31	0.47			0.932			
	DC	SN		38:14	RO	0.66	1.68			0.934			
	DC	SN		38:32	RO	3.44	0.17			0.942			
	DC	SN		38:40	RO	3.03	0.55			0.945			
	DC	SN		38:54	RO	0.08	0.11			0.951			
	DC	SN		39:16	RO	0.74	0.53			0.960			
	DC	SN		39:27	RO	1.28	0.95			0.964			
	DC	SN		39:49	RO	1.69	0.49			0.973			
	DC	SN		40:11	RO	0.35	0.47			0.982			
	DC	SN		40:19	RO	0.56	0.81			0.985			
	DC	SN		40:19	RO	0.68	0.57			0.985			
	DC	SN		40:41	RO	3.80	0.28			0.994			
	DC	SN		40:48	RO	0.16	0.34			0.997			
N				41:08		0.84	101.12	46.21	54.91	1.005	OCDF	AN	
	DC	SN		41:22	RO	0.56	1.42			1.011			
	DC	SN		41:37	RO	0.65	1.23			1.017			
	DC	SN		41:42	RO	1.40	0.38			1.019			
	DC	SN		42:01	RO	0.18	0.36			1.027			
	DC	SN		42:05	RO	0.02	0.02			1.029			
442-444			1	Peak			101.12						
OCDD				0.76-1.02						0.902-1.098			
458-460	DC	NL		0:00	RO	1.08	0.23			0.000			
M				40:56		0.76	54.00	23.40	30.60	1.000	OCDD	AN	J
	DC	SN		41:12	RO	2.38	0.98			1.007			
458-460			1	Peak			54.00						
13C12-OCDD				0.76-1.02						0.997-1.005			
470-472	DC	NL		0:00	RO	1.30	0.19			0.000			
				40:55		0.88	2,360.34	1,107.31	1,253.03	1.000	13C12-OCDD	IS8	
	DC	WH		41:22		0.81	6.58			1.011			
	DC	WH		41:26	RO	0.53	4.69			1.013			
470-472			1	Peak			2,360.34						

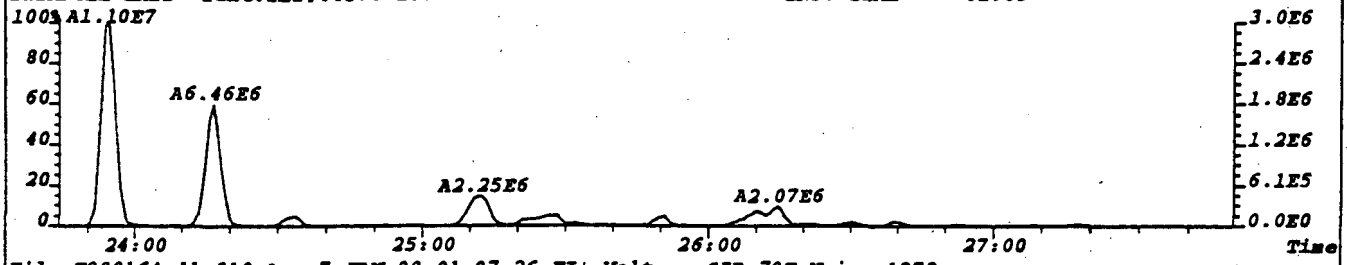
Compound/
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

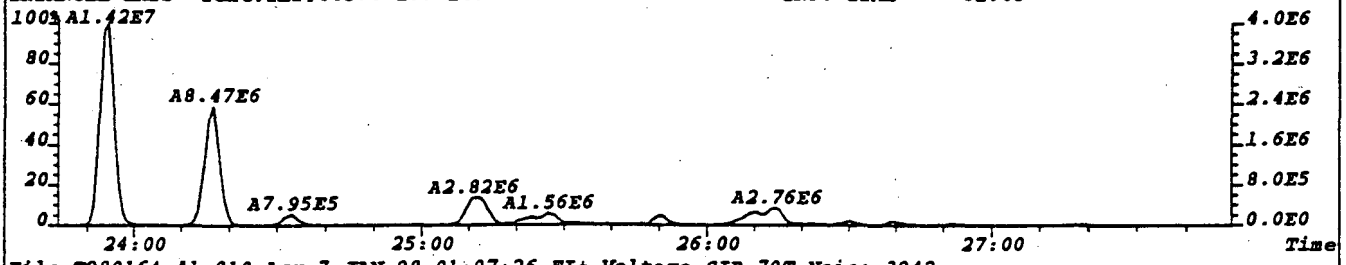
*** End of Report ***


File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1049
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A2.57E7
A1.78E7
A1.71E7
A9.91E6
A5.75E6
A5.76E6
A4.60E6
A4.01E6
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1130
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4520.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A2.36E7
A2.19E7
A2.11E7
A1.20E7
A7.45E6
A5.70E6
A4.96E6
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:835
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,3340.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.17E7
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1096
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,4384.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.60E7
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
22:43
23:19
24:02
24:21
24:46
25:26
26:18
27:08
27:34
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
22:46
23:29
23:41
23:54
24:24
24:52
25:23
25:45
26:15
26:58
27:20
27:42
Time

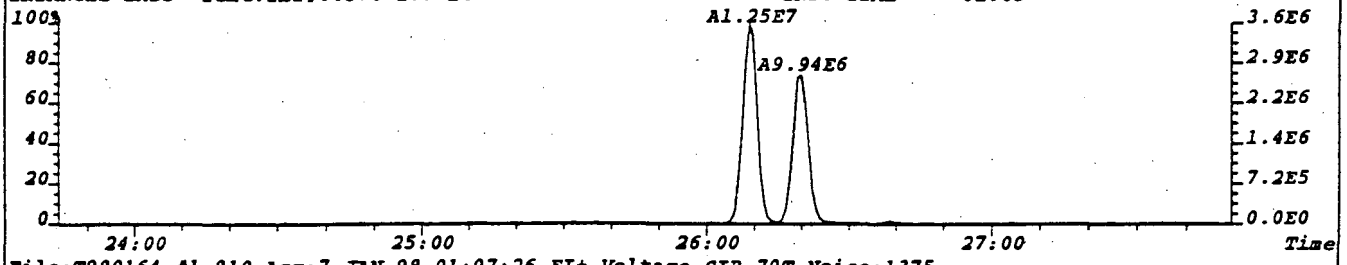
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:197
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,788.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



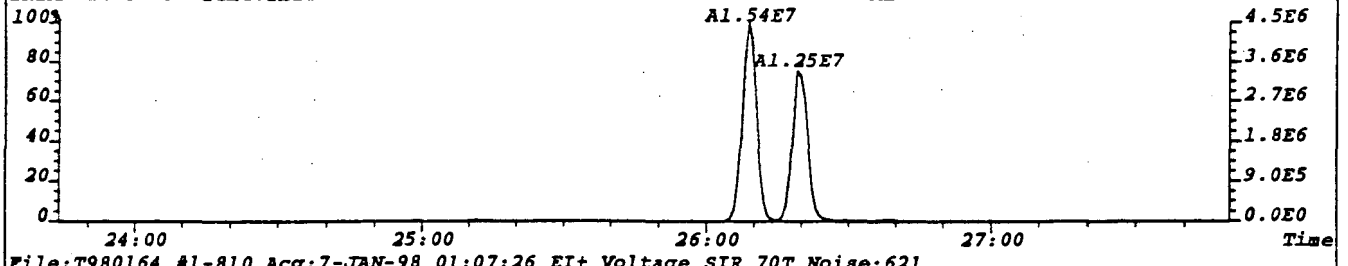
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1272
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5088.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



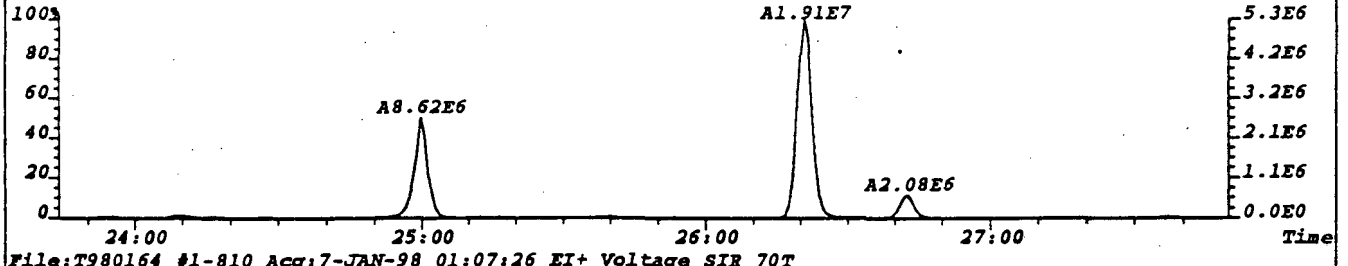
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:3942
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,15768.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



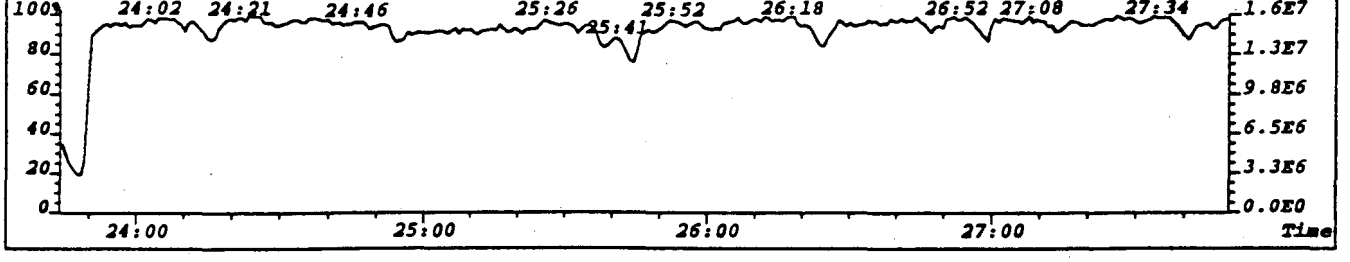
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1375
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5500.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

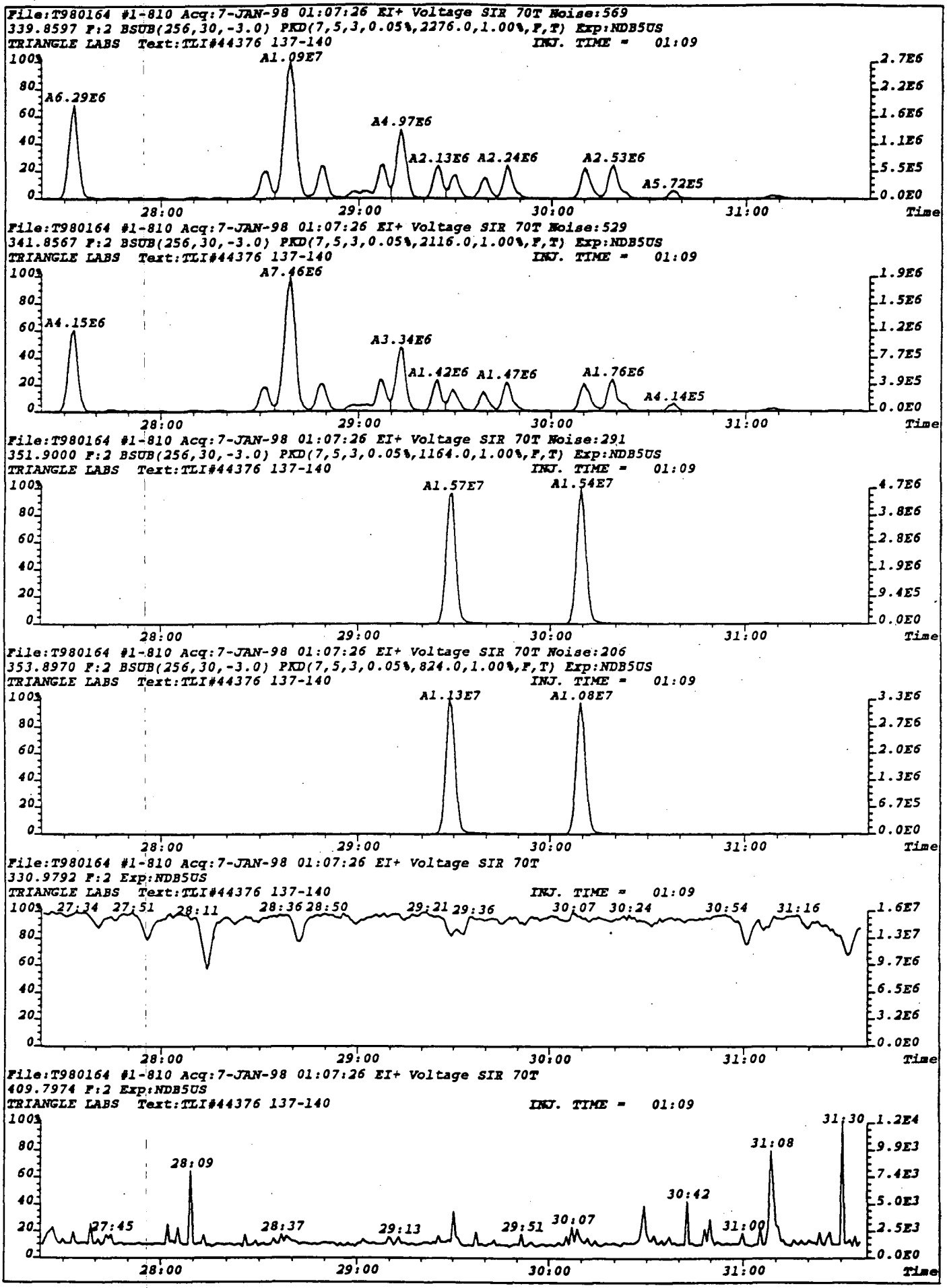


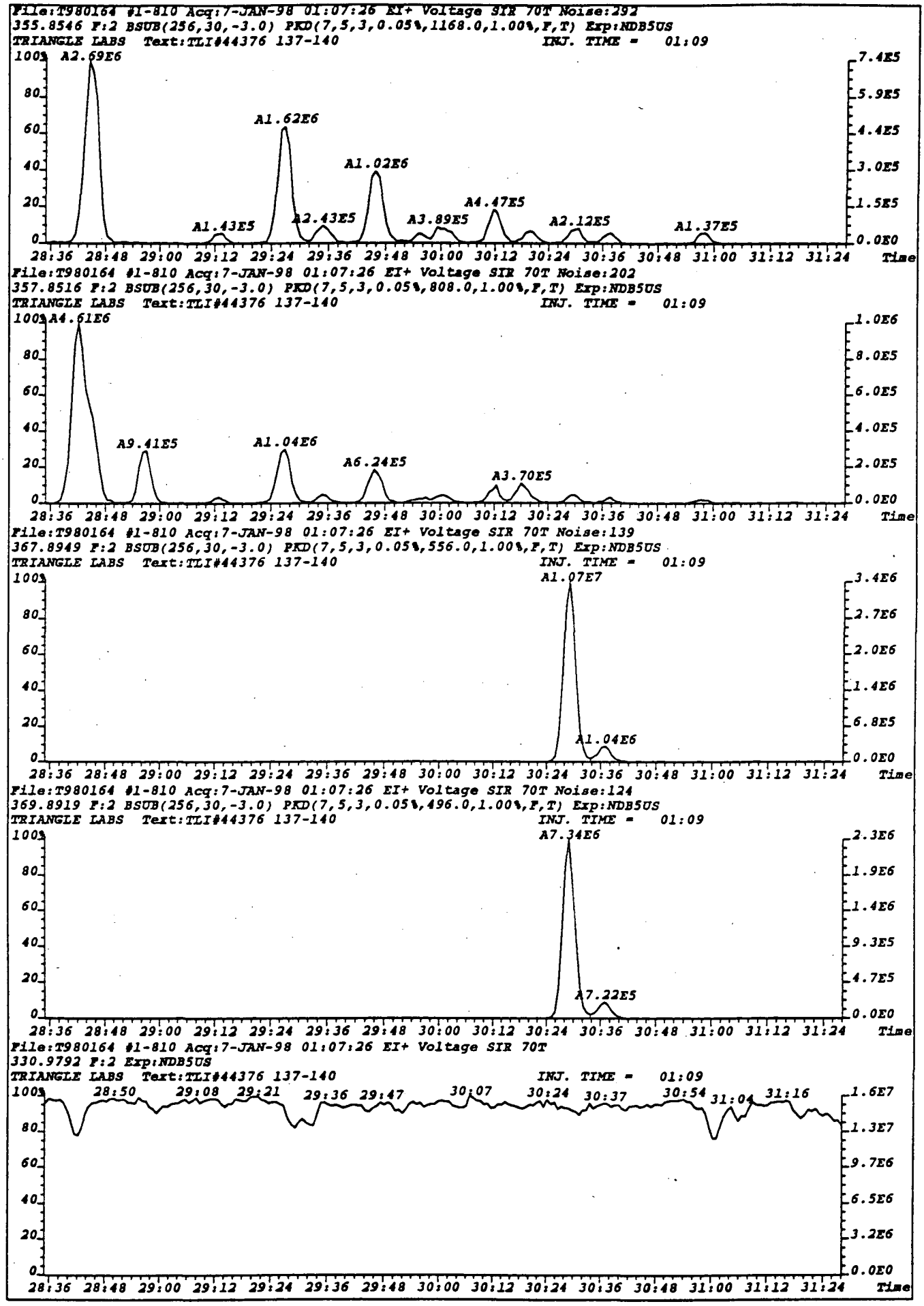
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:621
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2484.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

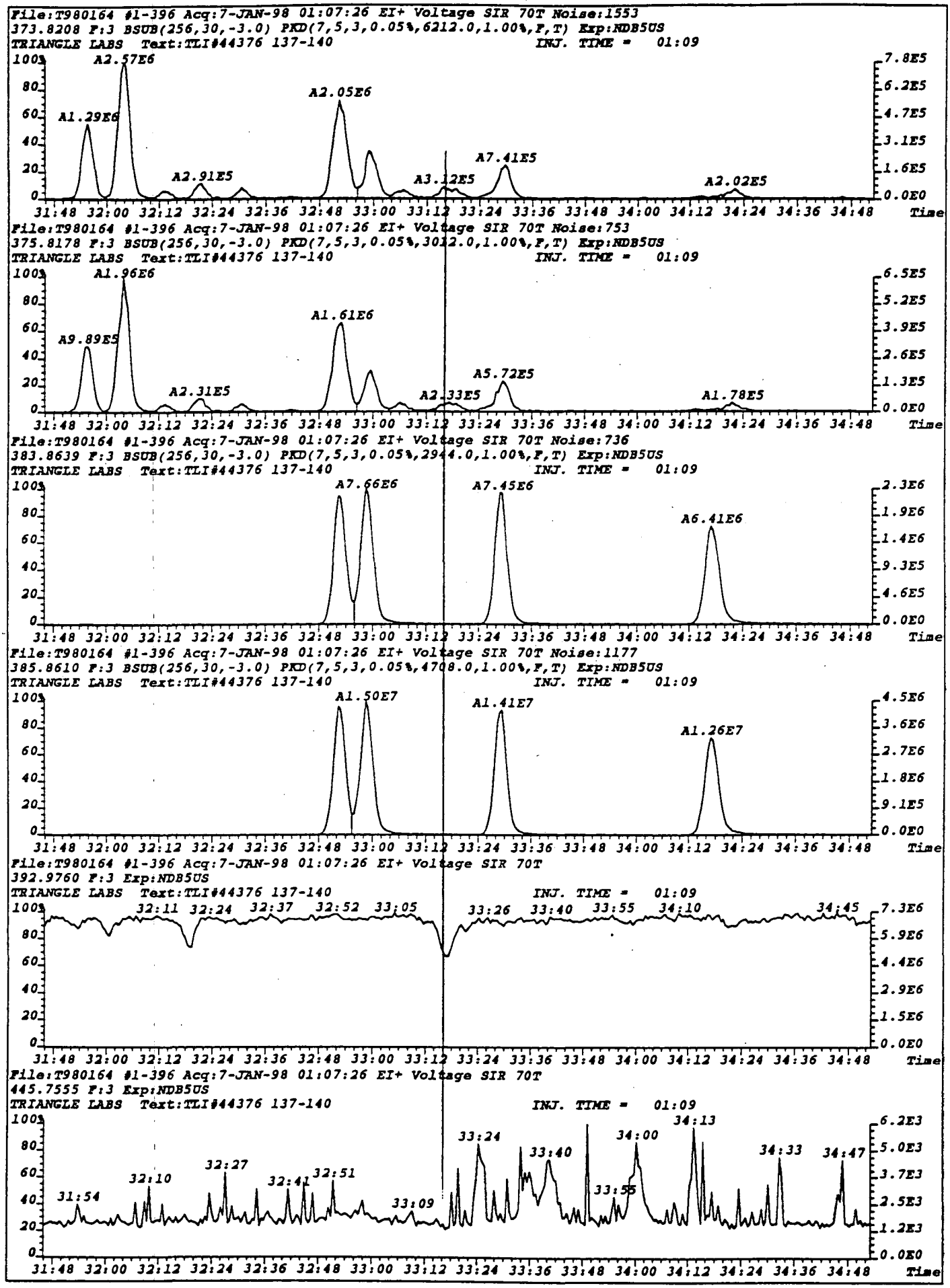


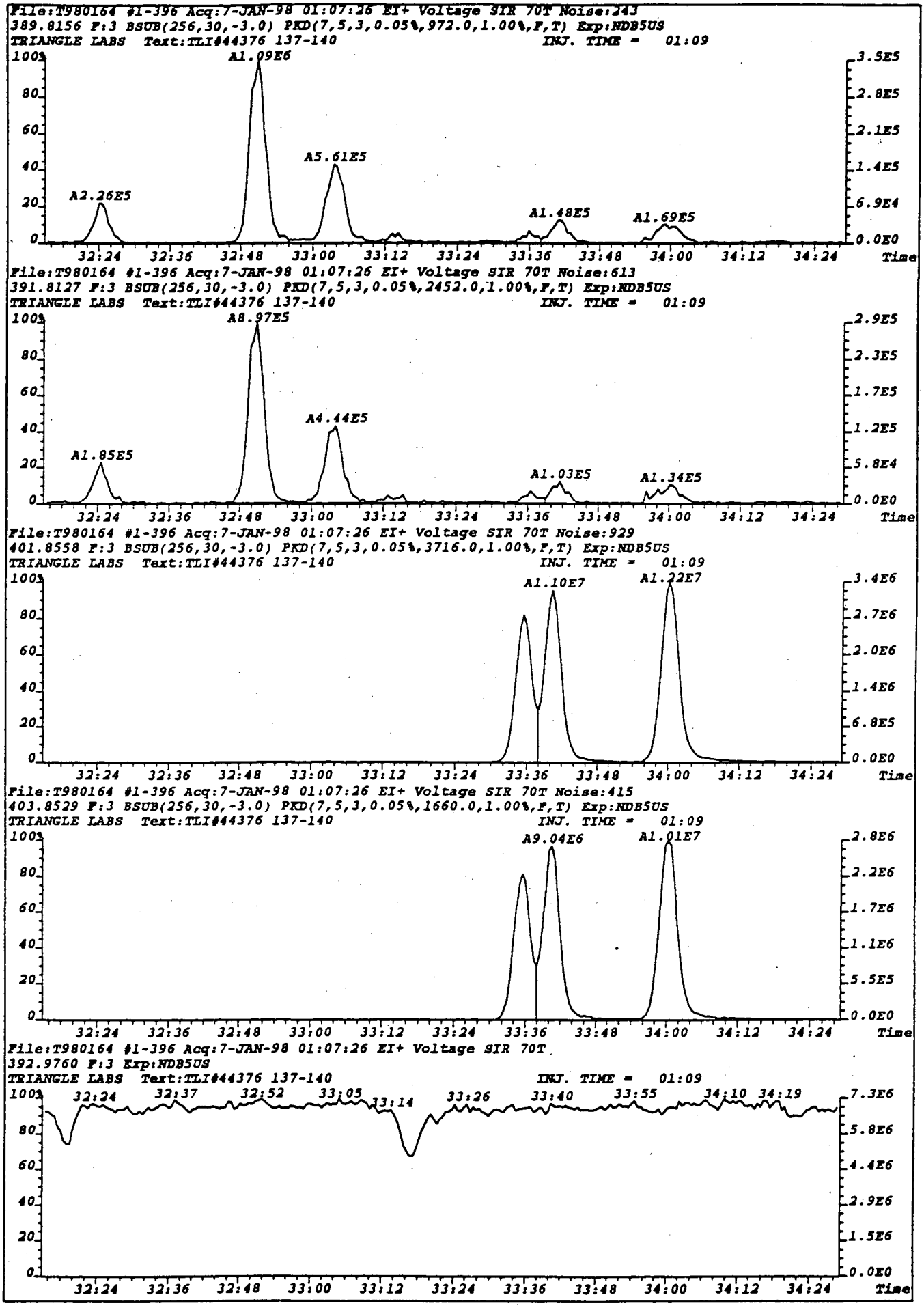
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

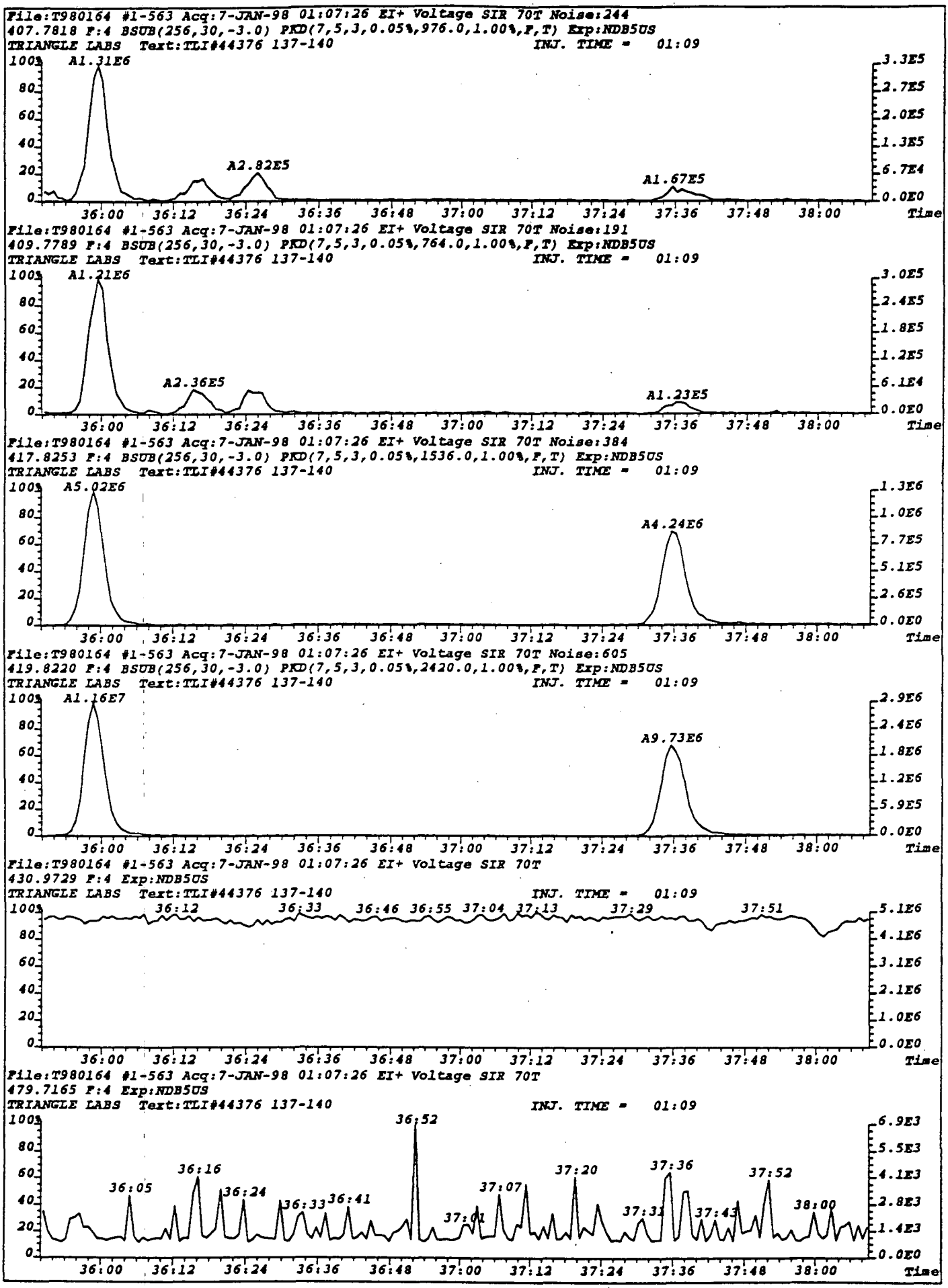



File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:569
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2276.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A6.29E6
A1.09E7
A4.97E6
A2.13E6
A2.24E6
A2.53E6
A5.72E5
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:529
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2116.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A4.15E6
A7.46E6
A3.34E6
A1.42E6
A1.47E6
A1.76E6
A4.14E5
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:291
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1164.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.57E7
A1.54E7
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:206
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,824.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.13E7
A1.08E7
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
27:34 27:51 28:11 28:36 28:50 29:21 29:36 30:07 30:24 30:54 31:16
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
28:09
27:45
28:37
29:13
29:51
30:07
30:42
31:08
31:30
Time

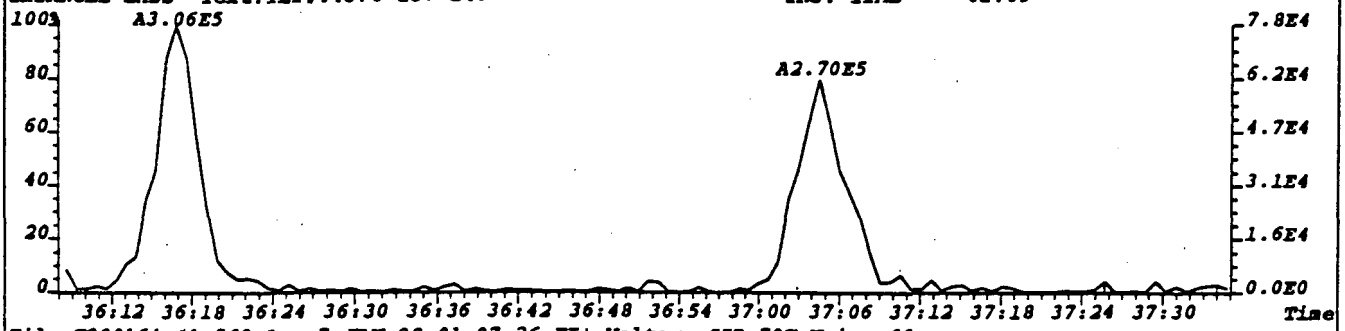

File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:292
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1168.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A2.69E6
A1.62E6
A1.02E6
A4.47E5
A1.43E5
A2.43E5
A3.89E5
A2.12E5
A1.37E5
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:202
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,808.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A4.61E6
A9.41E5
A1.04E6
A6.24E5
A3.70E5
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:139
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.07E7
A1.04E6
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:124
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,496.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A7.34E6
A7.22E5
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
28:50 29:08 29:21 29:36 29:47 30:07 30:24 30:37 30:54 31:04 31:16
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24
Time


File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1553
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6212.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A2.57E6
A1.29E6
A2.05E6
A2.91E5
A3.12E5
A7.41E5
A2.02E5
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:753
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3012.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.96E6
A9.89E5
A1.61E6
A2.31E5
A2.33E5
A5.72E5
A1.78E5
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:736
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2944.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A7.66E6
A7.45E6
A6.41E6
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:1177
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4708.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.50E7
A1.41E7
A1.26E7
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
Time

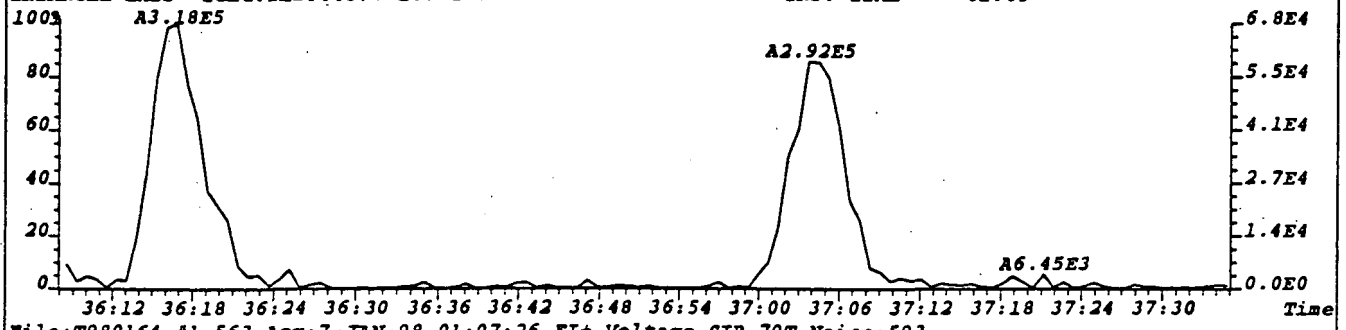

File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:243
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,972.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.09E6
A5.61E5
A2.26E5
A1.48E5
A1.69E5
Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:613
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2452.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A8.97E5
A4.44E5
A1.85E5
A1.03E5
A1.34E5
Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:929
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3716.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.10E7
A1.22E7
Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:415
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1660.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A9.04E6
A1.01E7
Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
Time


File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:244
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,976.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.31E6
A2.82E5
A1.67E5
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:191
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,764.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.21E6
A2.36E5
A1.23E5
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:384
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1536.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A5.02E6
A4.24E6
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:605
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2420.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A1.16E7
A9.73E6
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
36:52
36:16
36:05
36:24
36:33
36:41
37:07
37:20
37:36
37:52
38:00
Time

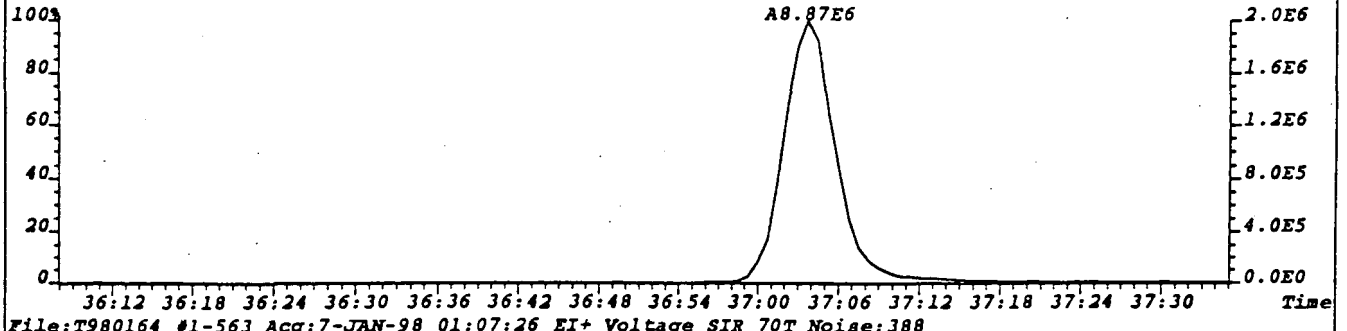
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:59
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,236.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



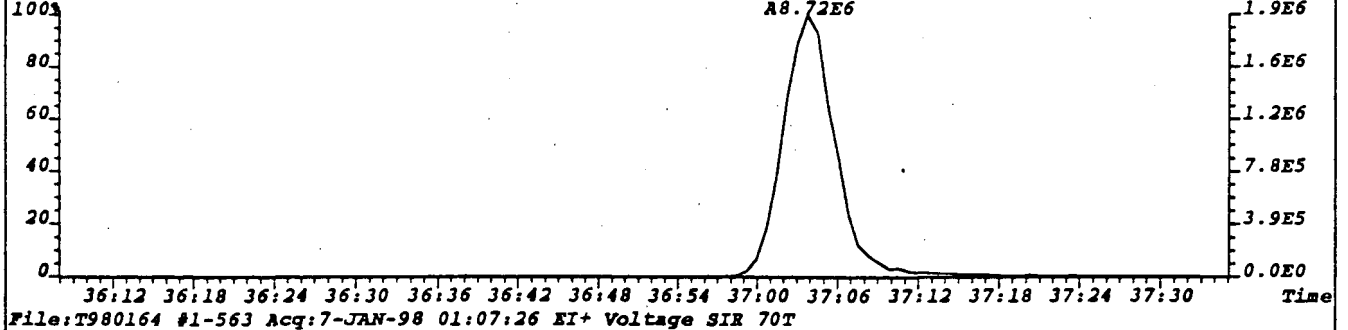
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:66
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,264.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



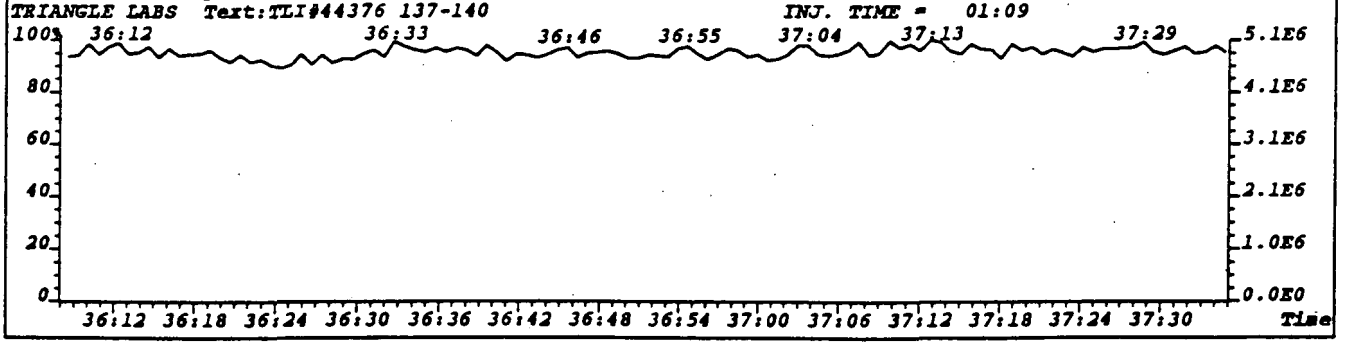
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:593
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2372.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

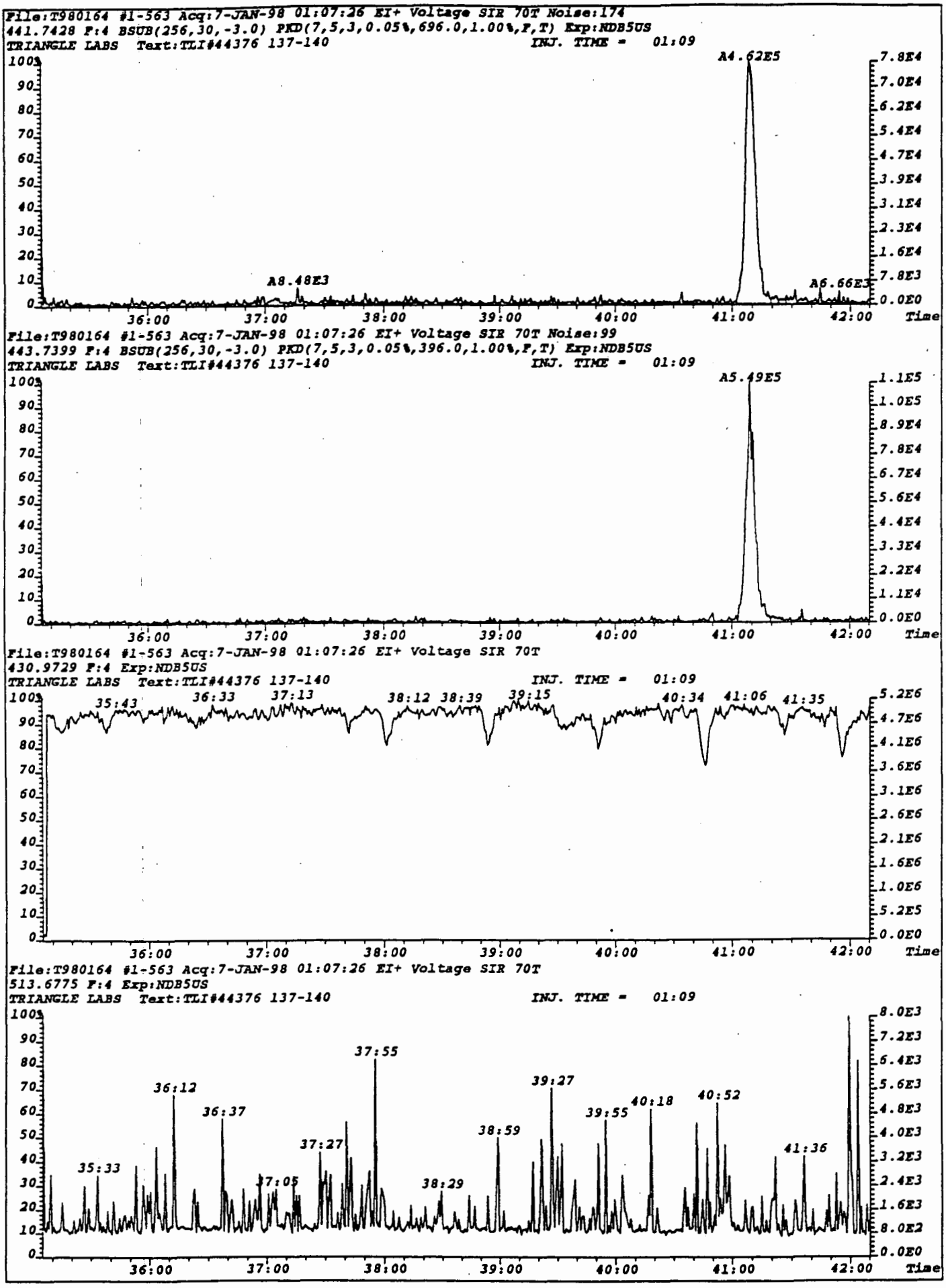


File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:388
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1552.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

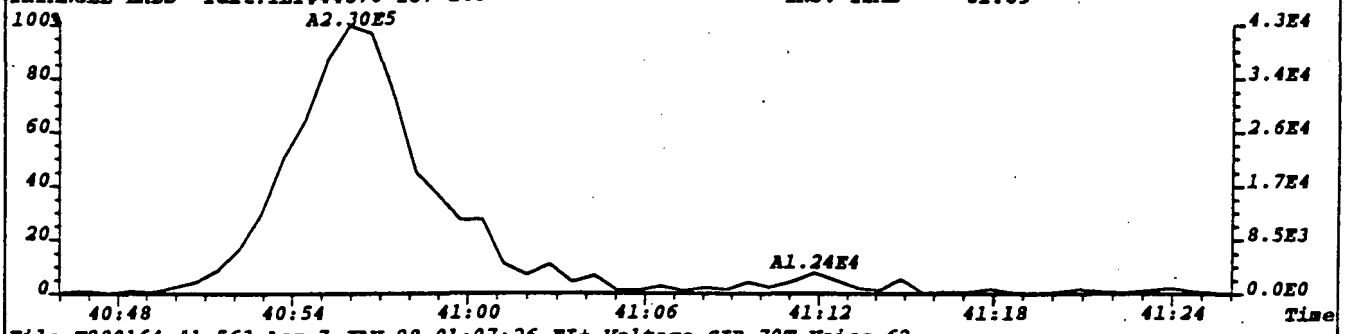


File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

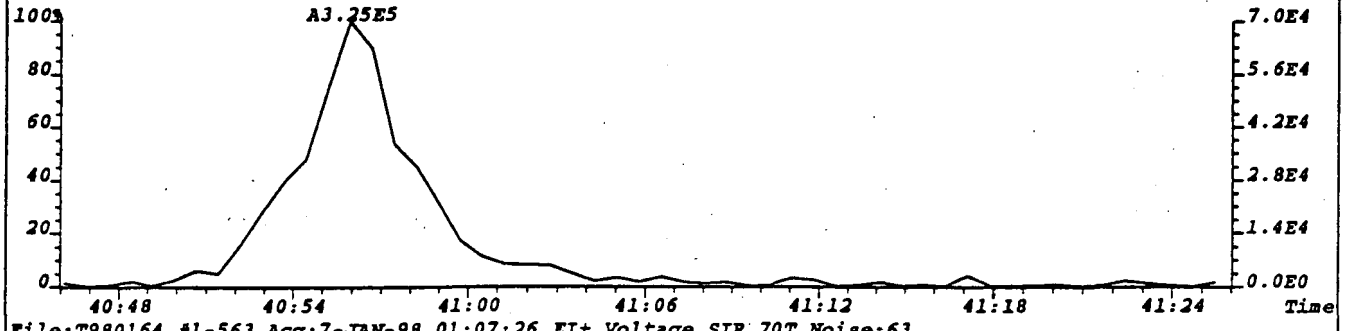



File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:174
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,696.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A4.62E5
A8.48E3
A6.66E3
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:99
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,396.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
A5.49E5
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
35:43
36:33
37:13
38:12
38:39
39:15
40:34
41:06
41:35
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140
INJ. TIME = 01:09
35:33
36:12
36:37
37:05
37:27
37:55
38:29
38:59
39:27
39:55
40:18
40:52
41:36
36:00
37:00
38:00
39:00
40:00
41:00
42:00
Time

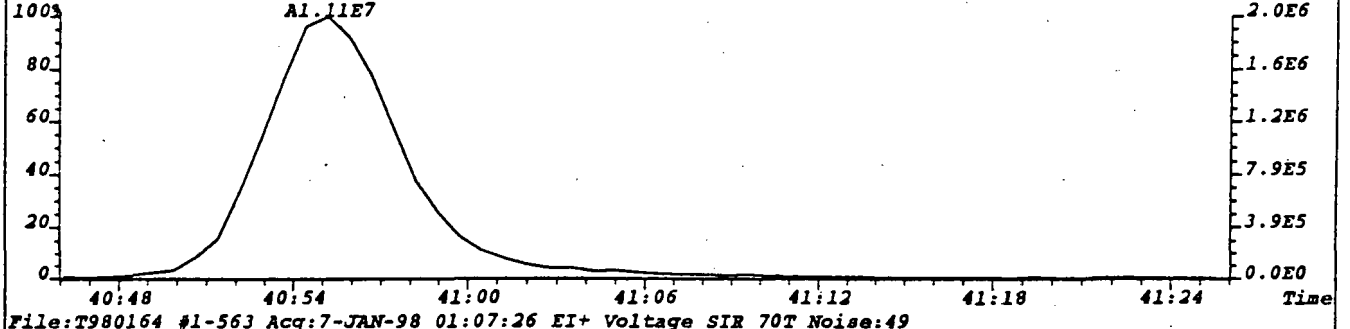
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:64
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,256.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



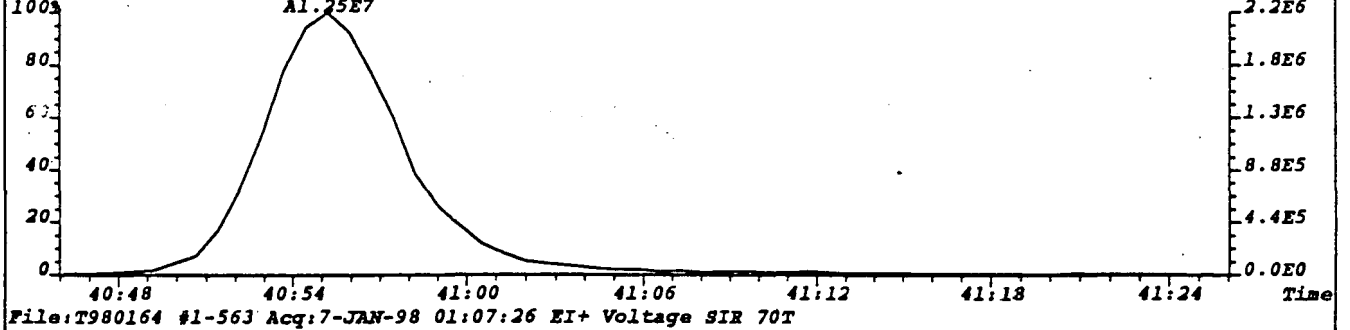
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:62
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,248.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



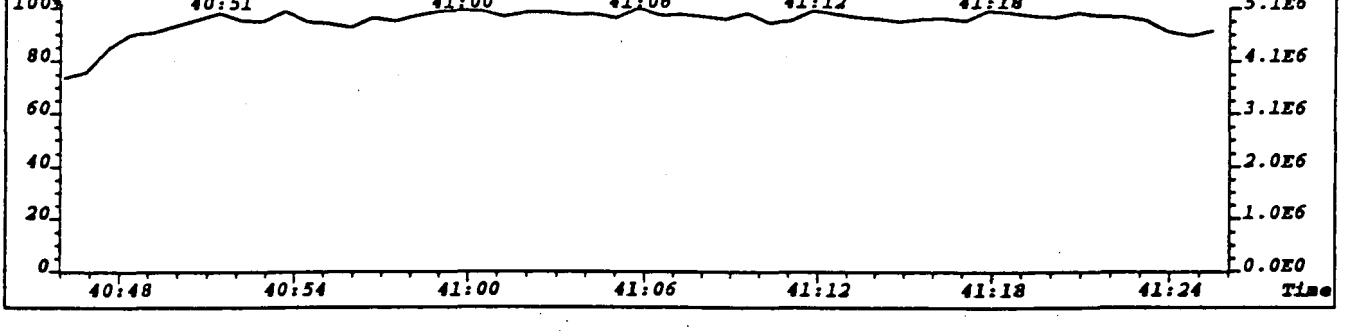
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:63
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09

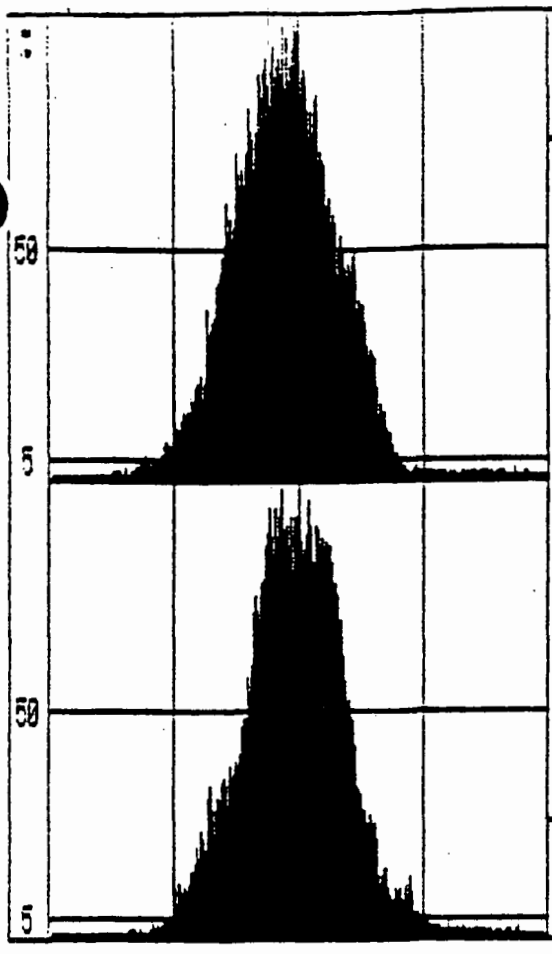


File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T Noise:49
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,196.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 137-140 INJ. TIME = 01:09



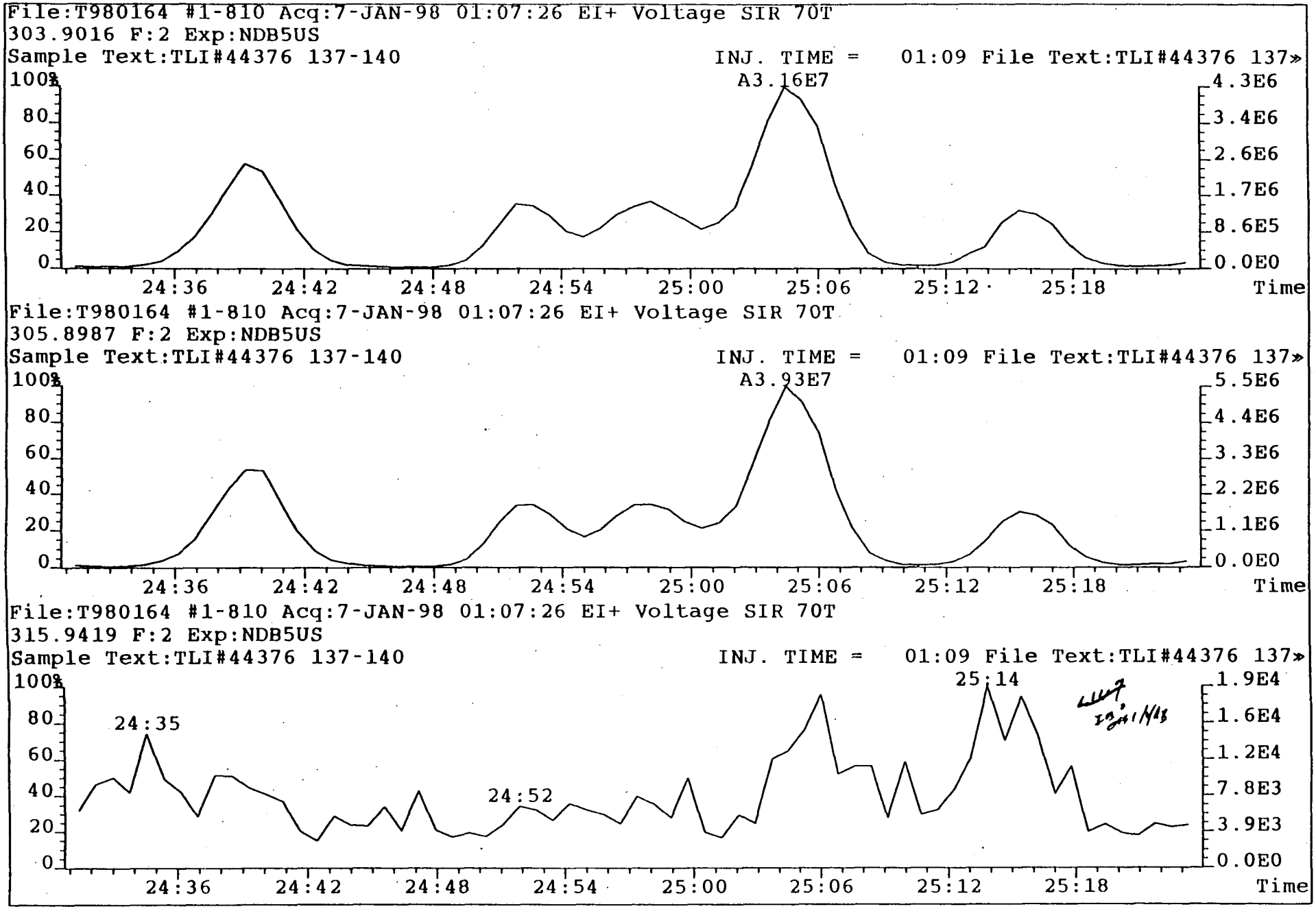


Ref. mass 292.9825 Peak top
Height 3.12 volts Span 200 ppm

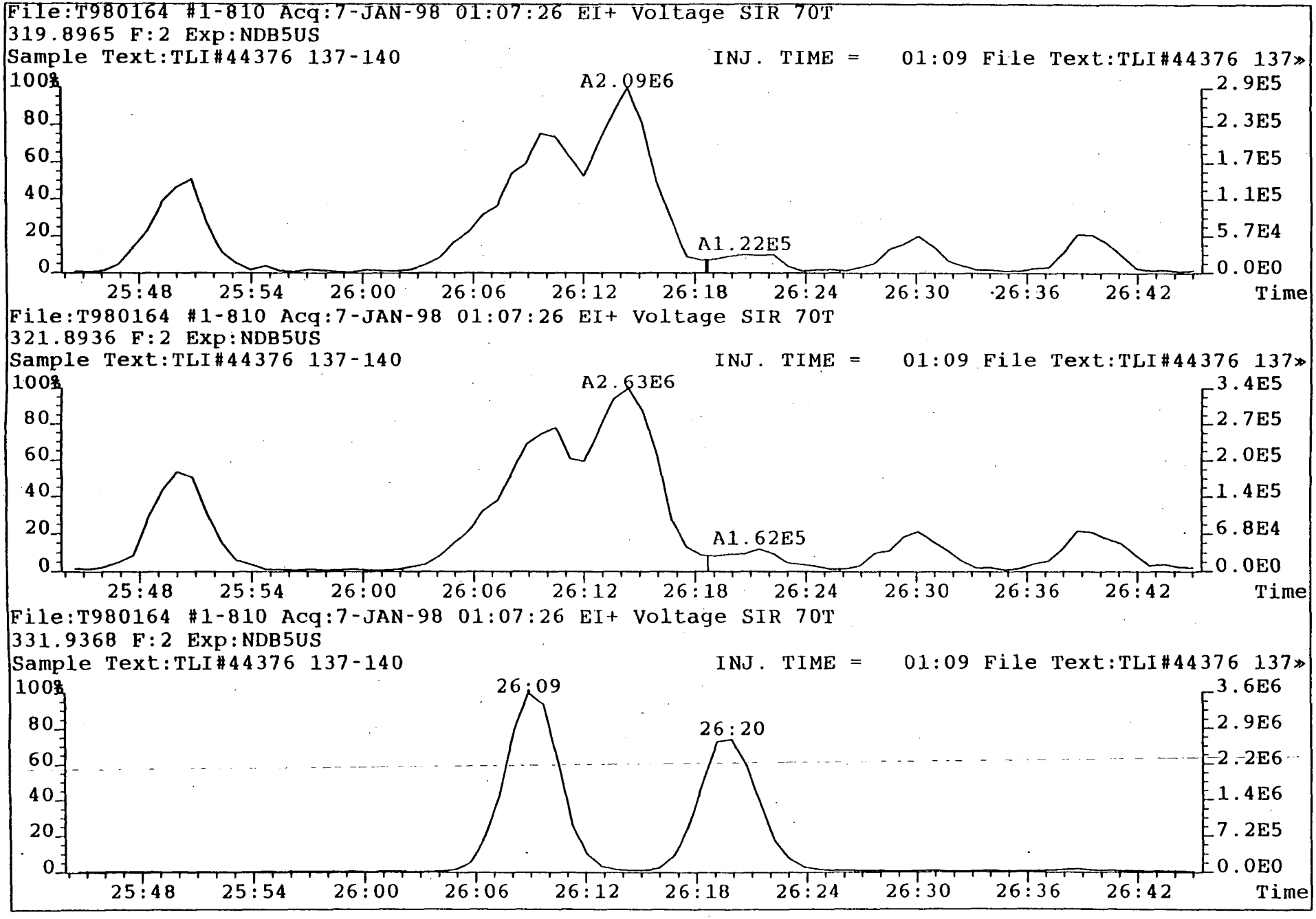
System file name	NDESUS
Data file name	A:TS80161
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

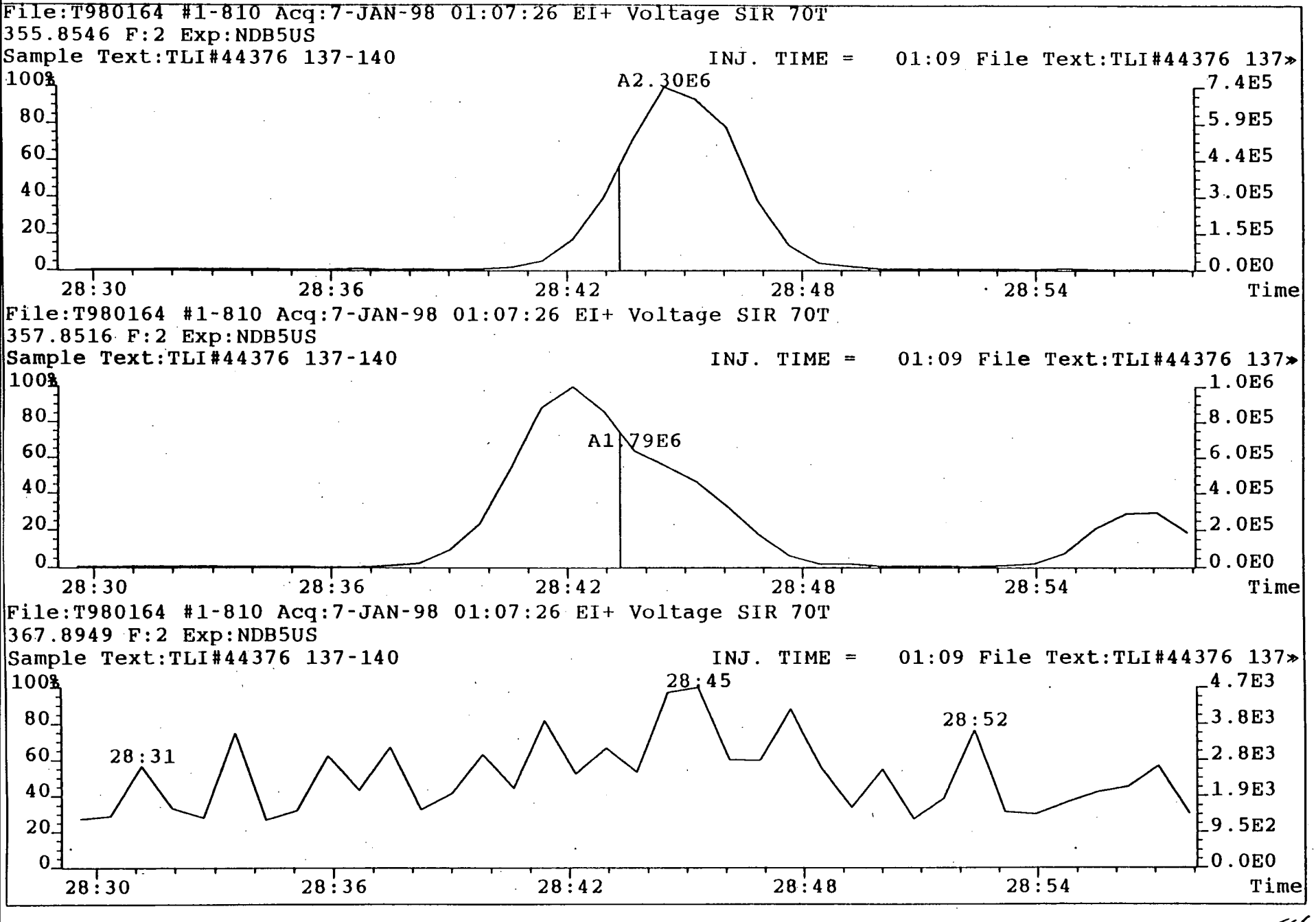
A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

Channel I 330.9792 Peak top
Height 2.94 volts Span 200 ppm

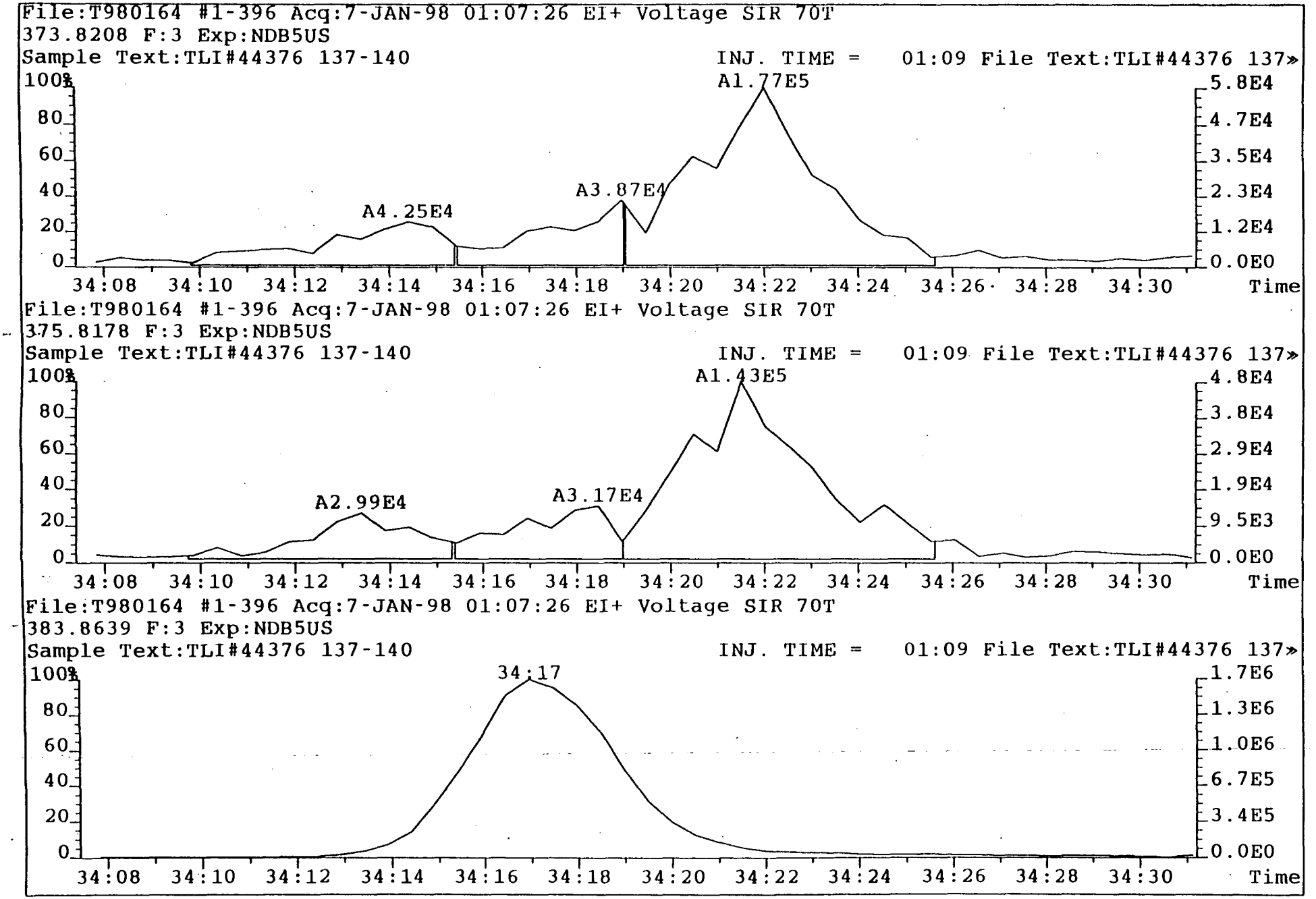

File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
303.9016 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A3.16E7
100%
80
60
40
20
0
4.3E6
3.4E6
2.6E6
1.7E6
8.6E5
0.0E0
24:36 24:42 24:48 24:54 25:00 25:06 25:12 25:18 Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
305.8987 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A3.93E7
100%
80
60
40
20
0
5.5E6
4.4E6
3.3E6
2.2E6
1.1E6
0.0E0
24:36 24:42 24:48 24:54 25:00 25:06 25:12 25:18 Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
315.9419 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
100%
80
60
40
20
0
24:35
24:52
25:14
1.9E4
1.6E4
1.2E4
7.8E3
3.9E3
0.0E0
24:36 24:42 24:48 24:54 25:00 25:06 25:12 25:18 Time

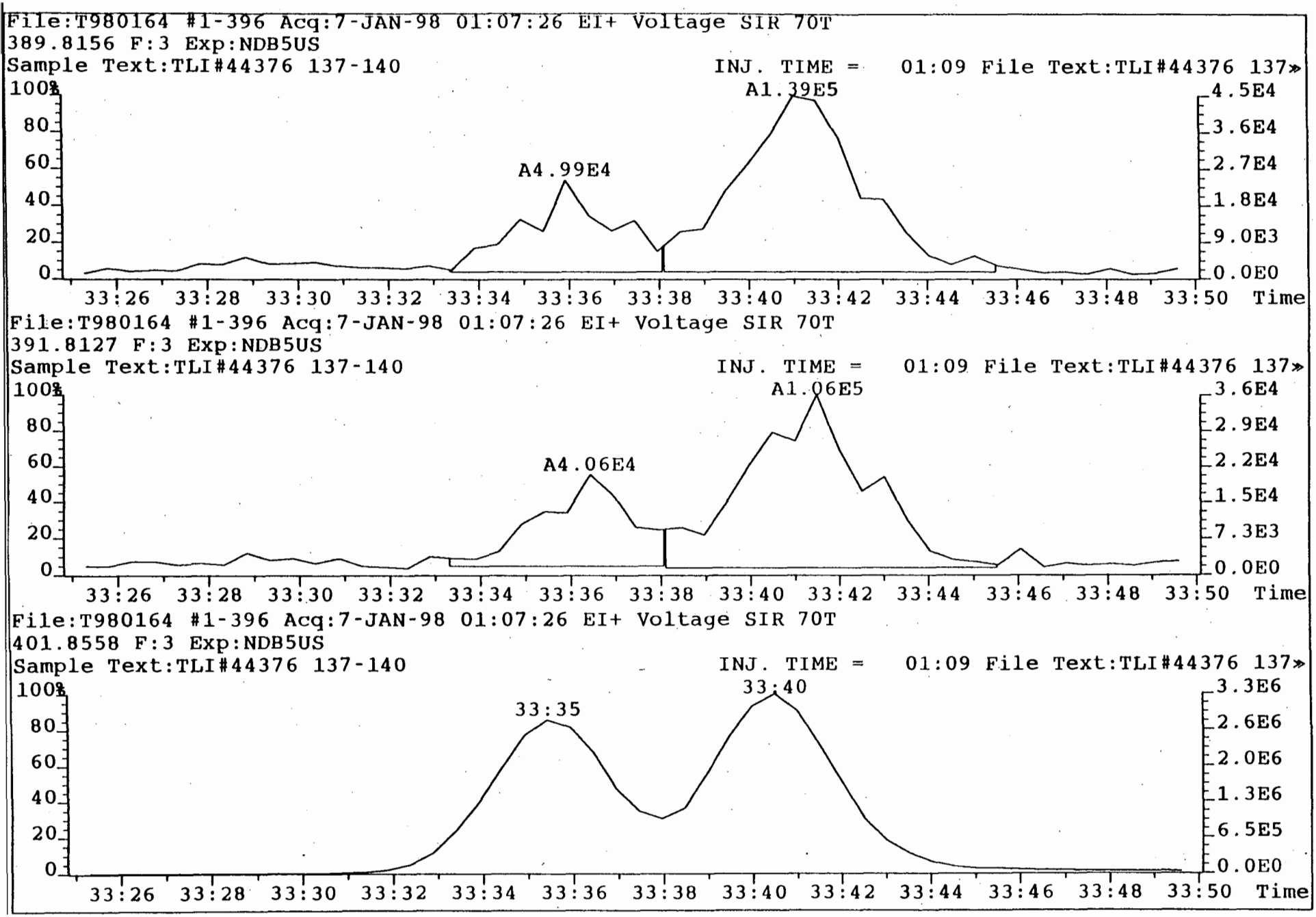
6gg
1/11/98


File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
319.8965 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A2.09E6
A1.22E5
100%
80
60
40
20
0
2.9E5
2.3E5
1.7E5
1.1E5
5.7E4
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
321.8936 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A2.63E6
A1.62E5
3.4E5
2.7E5
2.0E5
1.4E5
6.8E4
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
331.9368 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
26:09
26:20
3.6E6
2.9E6
2.2E6
1.4E6
7.2E5
0.0E0
25:48 25:54 26:00 26:06 26:12 26:18 26:24 26:30 26:36 26:42 Time

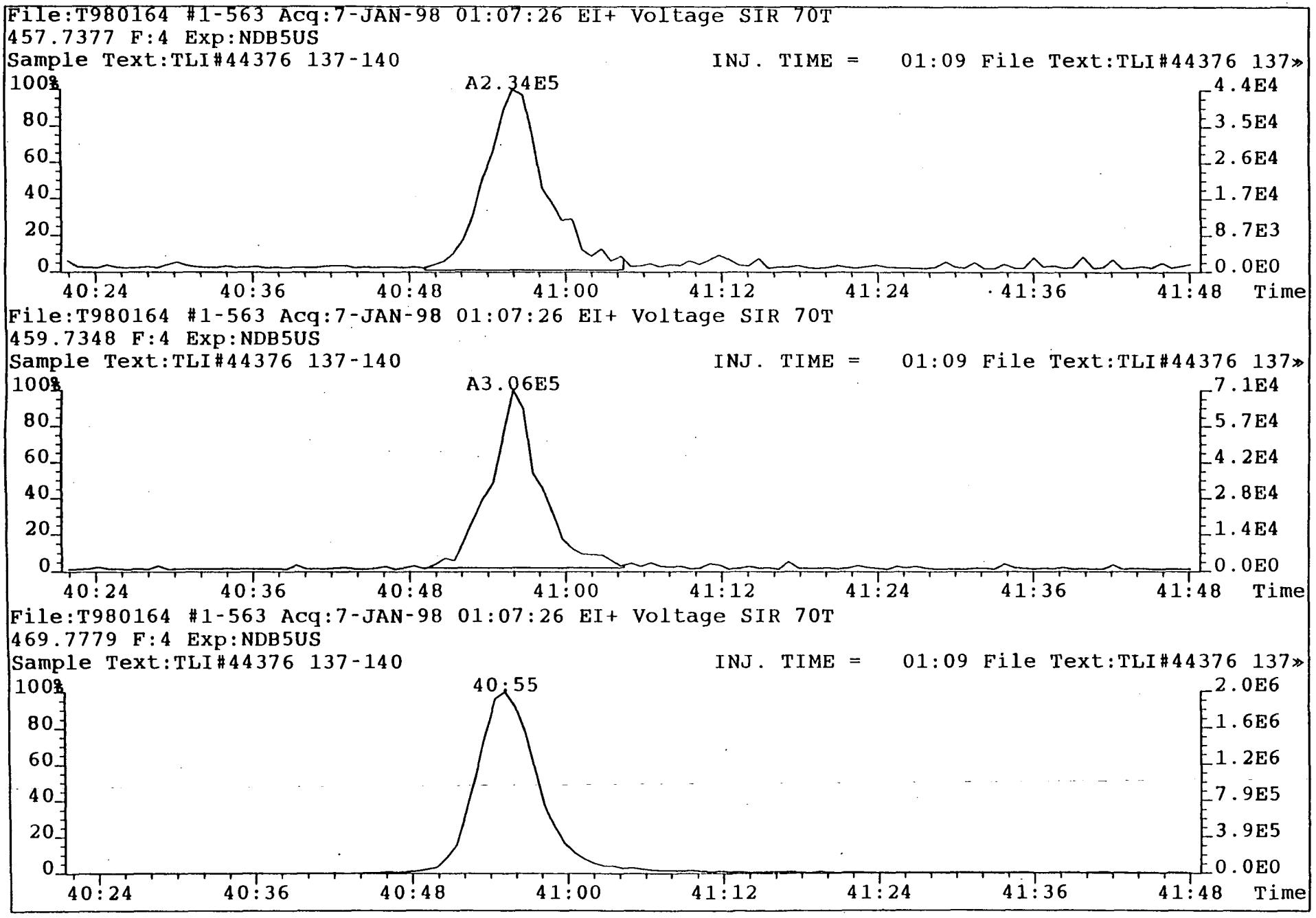

File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
355.8546 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A2.30E6
100%
80
60
40
20
0
7.4E5
5.9E5
4.4E5
3.0E5
1.5E5
0.0E0
28:30
28:36
28:42
28:48
28:54
Time
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
357.8516 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A1.79E6
1.0E6
8.0E5
6.0E5
4.0E5
2.0E5
0.0E0
File:T980164 #1-810 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
367.8949 F:2 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
28:45
28:31
28:52
4.7E3
3.8E3
2.8E3
1.9E3
9.5E2

GSS
1/14/99


File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
373.8208 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A1.77E5
A3.87E4
A4.25E4
100%
80
60
40
20
0
5.8E4
4.7E4
3.5E4
2.3E4
1.2E4
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
375.8178 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A1.43E5
A3.17E4
A2.99E4
100%
80
60
40
20
0
4.8E4
3.8E4
2.9E4
1.9E4
9.5E3
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
383.8639 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
34:17
100%
80
60
40
20
0
1.7E6
1.3E6
1.0E6
6.7E5
3.4E5
0.0E0
34:08 34:10 34:12 34:14 34:16 34:18 34:20 34:22 34:24 34:26 34:28 34:30 Time


File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
389.8156 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A1.39E5
A4.99E4
100%
80
60
40
20
0
4.5E4
3.6E4
2.7E4
1.8E4
9.0E3
0.0E0
33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 33:46 33:48 33:50 Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
391.8127 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A1.06E5
A4.06E4
3.6E4
2.9E4
2.2E4
1.5E4
7.3E3
0.0E0
33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 33:46 33:48 33:50 Time
File:T980164 #1-396 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
401.8558 F:3 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
33:40
33:35
3.3E6
2.6E6
2.0E6
1.3E6
6.5E5
0.0E0
33:26 33:28 33:30 33:32 33:34 33:36 33:38 33:40 33:42 33:44 33:46 33:48 33:50 Time

GSS
1/11/98


File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
457.7377 F:4 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A2.34E5
100%
80
60
40
20
0
4.4E4
3.5E4
2.6E4
1.7E4
8.7E3
0.0E0
40:24
40:36
40:48
41:00
41:12
41:24
41:36
41:48
Time
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
459.7348 F:4 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
A3.06E5
100%
80
60
40
20
0
7.1E4
5.7E4
4.2E4
2.8E4
1.4E4
0.0E0
40:24
40:36
40:48
41:00
41:12
41:24
41:36
41:48
Time
File:T980164 #1-563 Acq:7-JAN-98 01:07:26 EI+ Voltage SIR 70T
469.7779 F:4 Exp:NDB5US
Sample Text:TLI#44376 137-140
INJ. TIME = 01:09 File Text:TLI#44376 137»
40:55
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
7.9E5
3.9E5
0.0E0
40:24
40:36
40:48
41:00
41:12
41:24
41:36
41:48
Time

Eastern Research Group

TLI Project: 44376 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: 137-140 — Analysis File: P98016

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	M23TRAIN	Date Received:	12/17/97	Spike File:	SPC2NF04
TLI ID:	194-59-9A-9D	Date Extracted:	12/29/97	ICal:	PF22206
		Date Analyzed:	01/10/98	ConCal:	P980164
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	X980083	% Lipid:	n/a
GC Column:	DB-225	Analyst:	WK	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.69			0.74	23:06	___

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	72.5	40%-130%	0.77	23:04	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	21:54	___

Data Reviewer: _____ 01/11/98

C2NF_PSR v2.01, LARS 6.10.0

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 13:36 01/11/98

Initial ....Date...

Data Review By: GH 1/11/98 Calculated Noise Area: 2.00

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

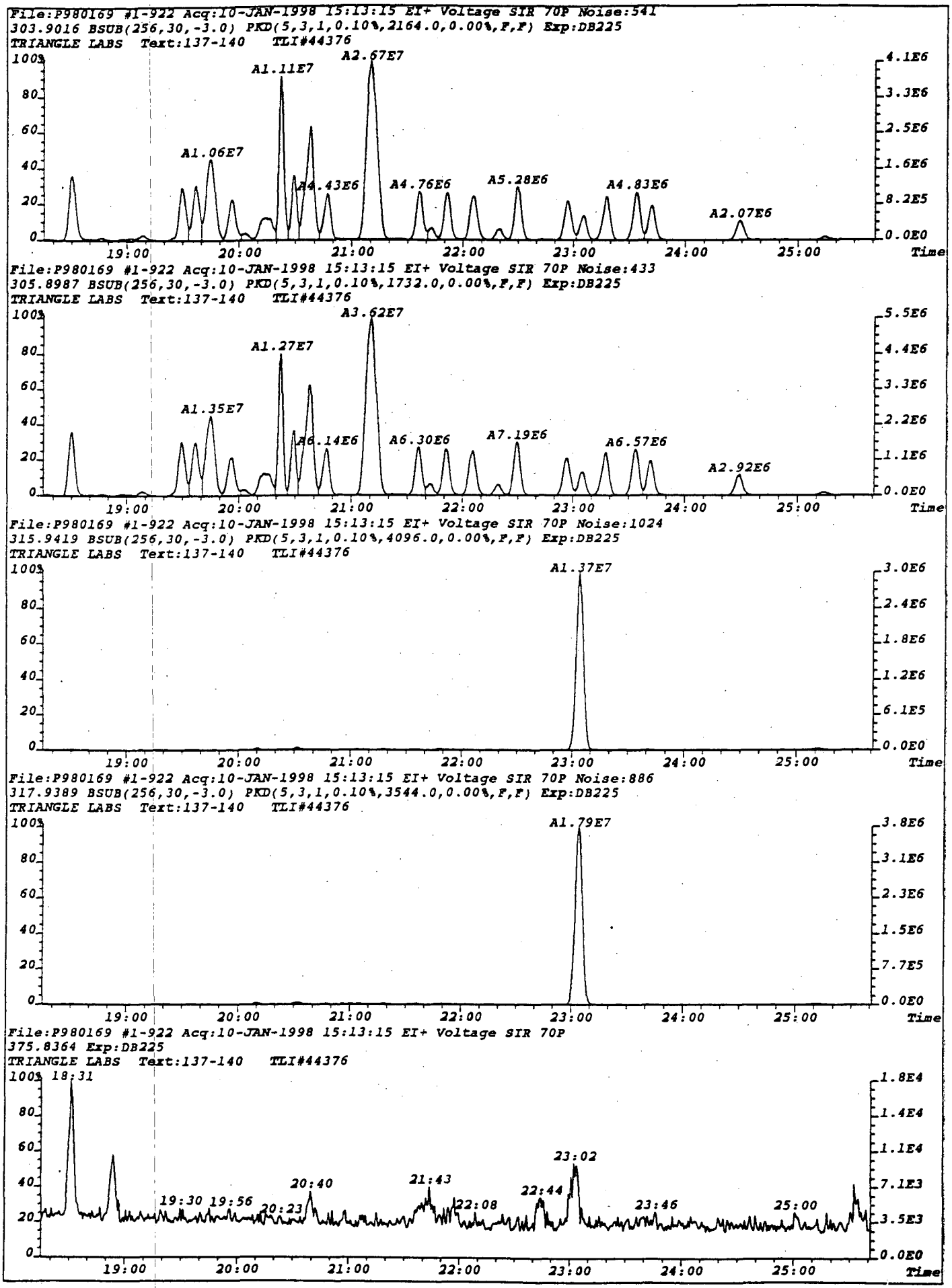
Page No. 1 Listing of P980169B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

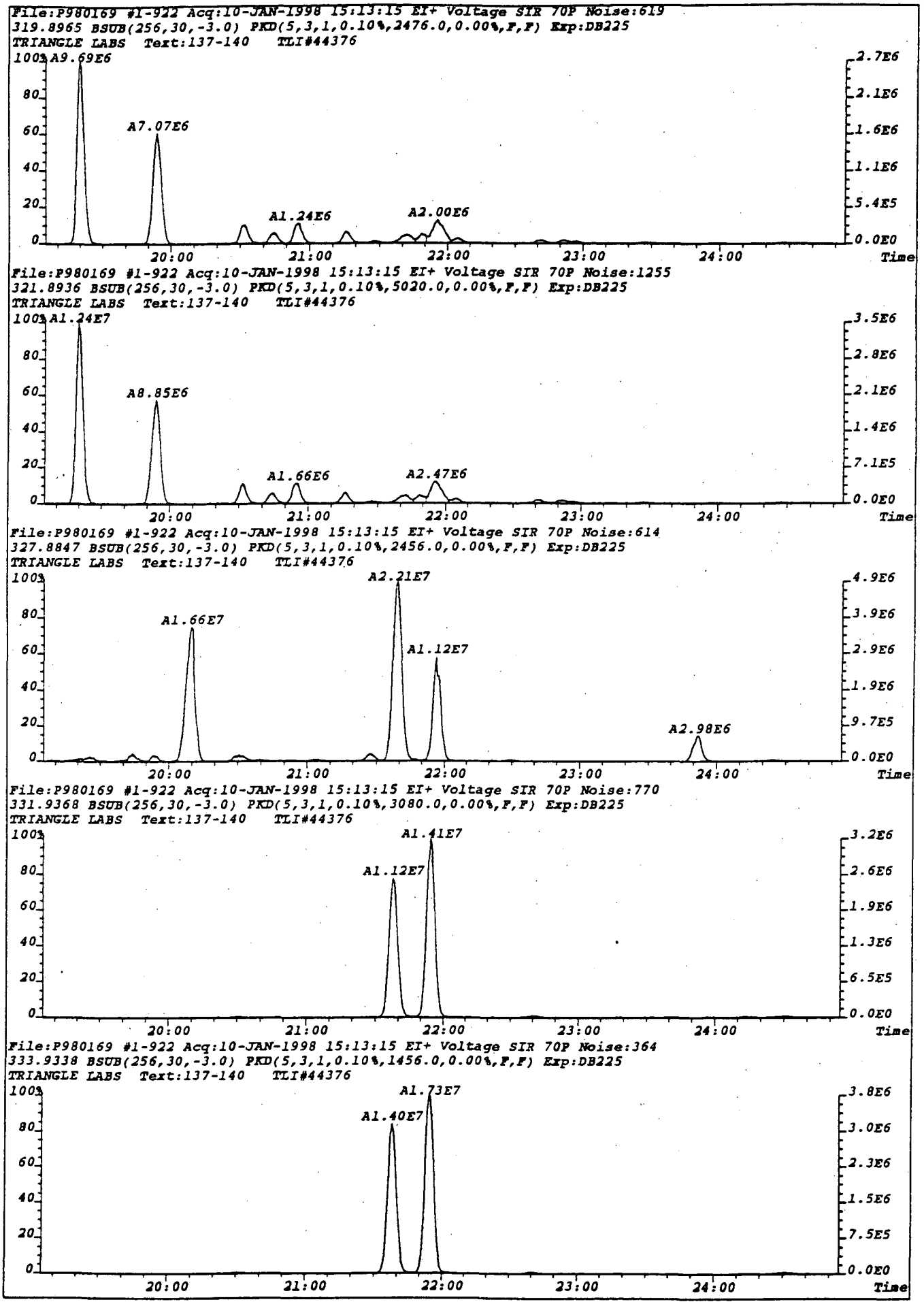
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.793-1.101			
304-306	DC	NL		0:00	RO	1.24	1.54			0.000			
	DC	WL		18:16		0.82	18.19			0.792			
				18:30		0.82	1,472.09	664.54	807.55	0.802			
				18:46	RO	1.16	40.29	26.48	22.76	0.814			
				18:57	RO	0.61	32.55	14.16	23.09	0.822			
				19:01	RO	1.42	27.33	21.88	15.44	0.824			
				19:09		0.85	126.48	58.28	68.20	0.830			
				19:30		0.69	1,252.24	513.30	738.94	0.845			
				19:37		0.72	1,281.24	538.03	743.21	0.850			
				19:45		0.78	2,406.31	1,056.33	1,349.98	0.856			
				19:56		0.74	981.93	417.11	564.82	0.864			
				20:03		0.84	137.85	62.85	75.00	0.869			
				20:14		0.75	936.34	400.04	536.30	0.377			
				20:23		0.87	2,379.56	1,106.70	1,272.86	0.884			
				20:29		0.75	1,132.72	486.26	646.46	0.888			
				20:38		0.73	3,100.95	1,306.96	1,793.99	0.895			
				20:47		0.72	1,057.33	443.44	613.89	0.901			
				21:11		0.74	6,295.95	2,674.17	3,621.78	0.918			
				21:23		0.65	9.99	3.94	6.05	0.927			J
				21:26		0.65	15.48	6.07	9.41	0.929			J
				21:36		0.76	1,105.69	475.78	629.91	0.936			
				21:43		0.65	257.76	101.69	156.07	0.941			
				21:51		0.75	1,091.00	465.86	625.14	0.947			
				22:06		0.74	1,132.08	479.95	652.13	0.958			
				22:20		0.72	252.44	105.63	146.81	0.968			
				22:29		0.73	1,246.59	527.71	718.88	0.975			
				22:56		0.75	937.02	400.29	536.73	0.994			
				23:06		0.74	566.74	241.13	325.61	1.001	2378-TCDF	AN	
				23:17		0.72	1,026.34	431.06	595.28	1.009			
				23:34		0.74	1,139.93	483.23	656.70	1.022			
				23:42		0.73	817.41	345.61	471.80	1.027			
				24:29		0.71	499.46	207.29	292.17	1.061			
	DC	SN		24:37	RO	0.58	2.64			1.067			
				25:14		0.72	77.90	32.50	45.40	1.094			
				25:22		0.89	4.39	2.07	2.32	1.100			J
304-306			32 Peaks				32,841.38						
13C12-TCDF						0.65-0.89				0.957-1.043			
316-318	DC	NL		0:00	RO	1.16	3.13			0.000			
	DC	WL		18:30	RO	0.61	7.68			0.802			
	DC	WL		20:10		0.86	15.36			0.874			
	DC	WL		20:31		0.79	26.88			0.889			
	DC	WL		21:18		0.88	10.16			0.923			

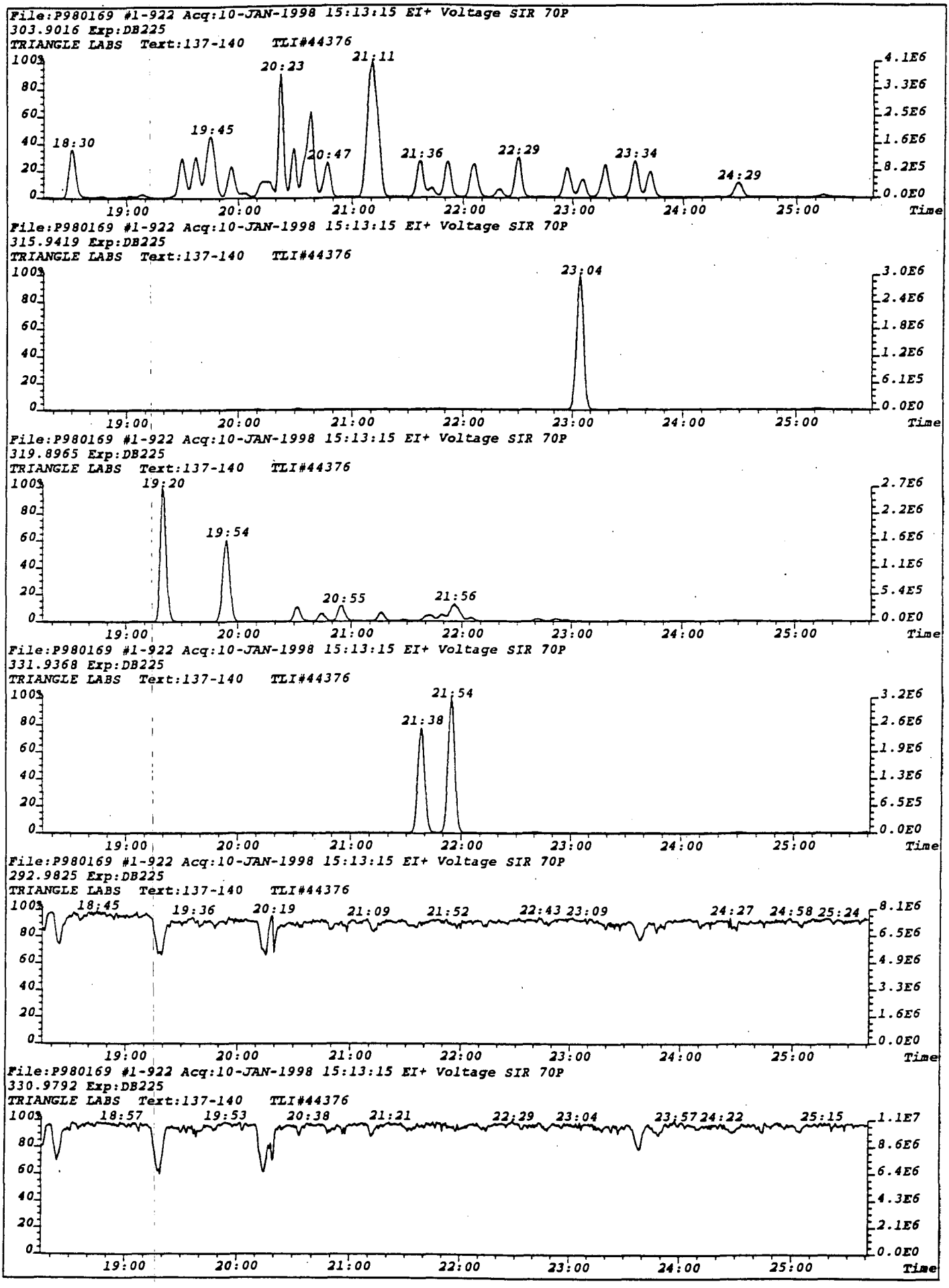
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
		DC	WL	21:35	RO	1.02	14.73			0.936			
		DC	WL	21:47		0.82	15.14			0.944			
				23:04		0.77	3,161.05	1,372.31	1,788.74	1.000	13C12-2378-TCDF	IS0	
				23:29	RO	1.15	6.78	4.39	3.83	1.018			
				23:41	RO	1.14	9.19	5.93	5.19	1.027			
		DC	WH	25:12		0.65	29.58			1.092			
316-318			3 Peaks				3,177.02						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.907-1.093			
332-334		DC	NL	0:00	RO	2.11	1.29			0.000			
				20:30	RO	1.00	9.84	5.56	5.56	0.948			
				21:38		0.80	2,519.14	1,116.05	1,403.09	1.000	13C12-2378-TCDD	IS1	
				21:54		0.81	3,142.22	1,409.65	1,732.57	1.012	13C12-1234-TCDD	RS1	
				22:40		0.80	26.63	11.83	14.80	1.048			
				23:17	RO	0.53	4.87	2.12	4.03	1.076			
		DC	WH	23:57	RO	0.90	4.76			1.107			
		DC	WH	24:13	RO	1.21	11.45			1.119			
		DC	WH	24:32	RO	0.62	26.85			1.134			
332-334			5 Peaks				5,702.70						

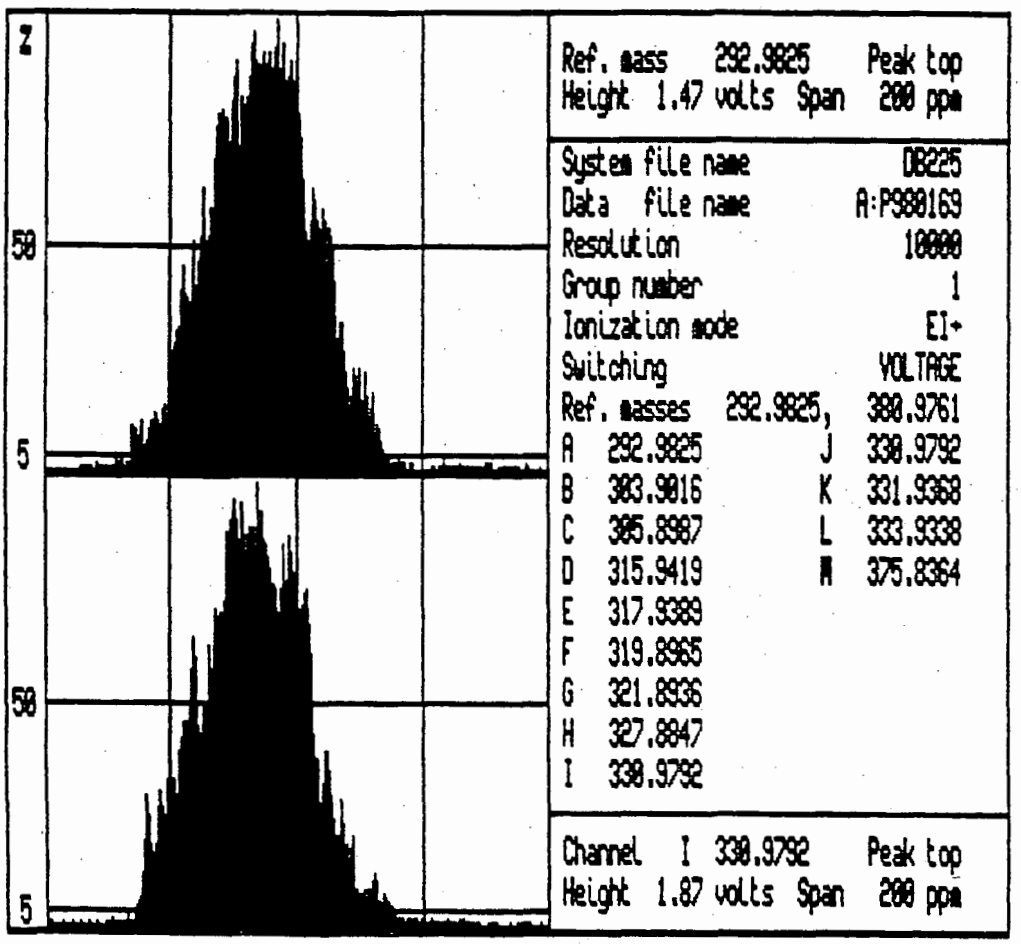
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***


File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:541
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2164.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.11E7
A2.67E7
A1.06E7
A4.43E6
A4.76E6
A5.28E6
A4.83E6
A2.07E6
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:433
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1732.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A3.62E7
A1.27E7
A1.35E7
A6.14E6
A6.30E6
A7.19E6
A6.57E6
A2.92E6
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:1024
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4096.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.37E7
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:886
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3544.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.79E7
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
18:31
19:30
19:56
20:23
20:40
21:43
22:08
22:44
23:02
23:46
25:00
Time


File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:619
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2476.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A9.69E6
A7.07E6
A1.24E6
A2.00E6
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:1255
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,5020.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.24E7
A8.85E6
A1.66E6
A2.47E6
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:614
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2456.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A2.21E7
A1.66E7
A1.12E7
A2.98E6
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:770
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3080.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.41E7
A1.12E7
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P Noise:364
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1456.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
A1.73E7
A1.40E7
100%
80
60
40
20
0
20:00
21:00
22:00
23:00
24:00
Time
2.7E6
2.1E6
1.6E6
1.1E6
5.4E5
0.0E0
3.5E6
2.8E6
2.1E6
1.4E6
7.1E5
4.9E6
3.9E6
2.9E6
1.9E6
9.7E5
3.2E6
2.6E6
1.9E6
1.3E6
6.5E5
3.8E6
3.0E6
2.3E6
1.5E6
7.5E5


File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
18:30
19:45
20:23
20:47
21:11
21:36
22:29
23:34
24:29
4.1E6
3.3E6
2.5E6
1.6E6
8.2E5
0.0E0
Time
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
23:04
3.0E6
2.4E6
1.8E6
1.2E6
6.1E5
0.0E0
Time
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
19:20
19:54
20:55
21:56
2.7E6
2.2E6
1.6E6
1.1E6
5.4E5
0.0E0
Time
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
21:38
21:54
3.2E6
2.6E6
1.9E6
1.3E6
6.5E5
0.0E0
Time
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
18:45
19:36
20:19
21:09
21:52
22:43
23:09
24:27
24:58
25:24
8.1E6
6.5E6
4.9E6
3.3E6
1.6E6
0.0E0
Time
File:P980169 #1-922 Acq:10-JAN-1998 15:13:15 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:137-140 TLI#44376
18:57
19:53
20:38
21:21
22:29
23:04
23:57
24:22
25:15
1.1E7
8.6E6
6.4E6
4.3E6
2.1E6
0.0E0
Time


Z
50
5
50
5
Ref. mass 292.9825 Peak top
Height 1.47 volts Span 200 ppm
System file name DB225
Data file name A:P980169
Resolution 10000
Group number 1
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 380.9761
A 292.9825
B 303.9816
C 305.8987
D 315.9419
E 317.9389
F 319.8965
G 321.8936
H 327.8847
I 330.9792
J 330.9792
K 331.9368
L 333.9338
M 375.8364
Channel I 330.9792 Peak top
Height 1.87 volts Span 200 ppm

Eastern Research Group

TLI Project: 44376 — Method 23 PCDD/PCDF Analysis (a)

Client Sample: CleanUp Blk — Analysis File: T980167

Client Project:	Culp Aluminum Alloys				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPX23704
TLI ID:	TLI Clean-Up	Date Extracted:	12/31/97	ICal:	TF5D177
		Date Analyzed:	01/07/98	ConCal:	T980160
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	T980152	% Lipid:	n/a
GC Column:	DB-5	Analyst:	CRV	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.003				—
1,2,3,7,8-PeCDD	ND	0.004				—
1,2,3,4,7,8-HxCDD	ND	0.005				—
1,2,3,6,7,8-HxCDD	ND	0.004				—
1,2,3,7,8,9-HxCDD	ND	0.004				—
1,2,3,4,6,7,8-HpCDD	ND	0.004				—
1,2,3,4,6,7,8,9-OCDD	EMPC		0.02			JB_
2,3,7,8-TCDF	ND	0.003				—
1,2,3,7,8-PeCDF	ND	0.003				—
2,3,4,7,8-PeCDF	ND	0.003				—
1,2,3,4,7,8-HxCDF	ND	0.003				—
1,2,3,6,7,8-HxCDF	ND	0.003				—
2,3,4,6,7,8-HxCDF	ND	0.004				—
1,2,3,7,8,9-HxCDF	ND	0.004				—
1,2,3,4,6,7,8-HpCDF	ND	0.003				—
1,2,3,4,7,8,9-HpCDF	ND	0.004				—
1,2,3,4,6,7,8,9-OCDF	ND	0.004				—

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	ND		0.003		—
Total PeCDD	ND		0.004		—
Total HxCDD	ND		0.004		—
Total HpCDD	ND		0.004		—
Total TCDF	ND		0.003		—
Total PeCDF	ND		0.003		—
Total HxCDF	ND		0.003		—
Total HpCDF	ND		0.003		—

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: **44376** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **CleanUp Blk** Analysis File: **T980167**

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.1	52.5	40%-130%	0.72	25:38	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.2	54.6	40%-130%	0.82	26:19	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.7	68.7	40%-130%	1.41	29:29	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.1	76.8	40%-130%	1.45	30:29	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.5	63.7	40%-130%	0.51	32:58	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.2	80.6	40%-130%	1.23	33:40	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.4	84.9	25%-130%	0.44	35:59	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.3	108	25%-130%	1.03	37:04	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	9.2	115	25%-130%	0.89	40:54	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.0	74.5	40%-130%	0.52	34:17	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.8	69.2	40%-130%	0.51	33:29	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.83	26:08	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	34:00	—

Data Reviewer: GSS 01/11/98

X237_PSR v2.01. LARS 6.10.08

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 14:06 01/11/98

Initial ....Date...

Data Review By: GH 1/11/98 Calculated Noise Area: 0.78

he Total Area for each peak with an ion abundance ratio outside
atio limits has been recalculated according to method requirements.

Page No. 1 Listing of T980167B.dbf
01/11/98 Matched GC Peaks / Ratio / Ret. Time

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.876-1.072			
304-306	DC	NL		0:00	RO	1.36	1.17			0.000			
	D	D	SN	23:45	RO	1.17	5.42			0.927			
	D	D	SN	24:03	RO	0.91	3.81			0.938			
	D	D	SN	24:39		0.70	4.29			0.962			
		DC	SN	26:30	RO	1.84	0.87			1.034			
304-306			0	Peaks			0.00						
13C12-TCDF				0.65-0.89						0.961-1.039			
316-318	DC	NL		0:00		0.89	1.21			0.000			
	DC	WL		22:40	RO	0.55	1.47			0.884			
				24:39	RO	1.00	4.16	2.34	2.35	0.962			
				25:15		0.84	10.64	4.86	5.78	0.985			
				25:38		0.72	2,270.60	951.54	1,319.06	1.000	13C12-2378-TCDF	IS0	
				26:03		0.82	18.66	8.40	10.26	1.016			
316-318			4	Peaks			2,304.06						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.901-1.043			
0-322	DC	NL		0:00		0.89	0.34			0.000			
D	D	SN		23:55	RO	1.79	2.73			0.909			
	DC	SN		24:16		0.66	2.33			0.922			
	DC	SN		24:20		0.77	0.53			0.925			
	DC	SN		24:31	RO	0.51	0.90			0.932			
	DC	SN		24:38		0.70	0.80			0.936			
	DC	SN		24:44	RO	1.18	0.30			0.940			
	DC	SN		24:52	RO	1.33	0.27			0.945			
	DC	SN		25:07	RO	0.32	1.08			0.954			
	DC	SN		25:37	RO	1.82	1.58			0.973			
	DC	SN		25:48	RO	0.32	0.78			0.980			
	DC	SN		25:56	RO	1.22	1.13			0.985			
	DC	SN		26:09	RO	2.73	0.85			0.994			
	DC	SN		26:30	RO	1.05	0.99			1.007			
	DC	SN		26:53	RO	2.09	0.80			1.022			
	DC	WH		27:42	RO	1.57	0.65			1.053			
320-322			0	Peaks			0.00						
37Cl-TCDD										0.924-1.076			
328	DC	NL		0:00			0.17			0.000			
	DC	WL		23:33			1.15			0.895			
	DC	WL		23:55			0.60			0.909			
	DC	WL		24:09			1.35			0.918			
	DC	WL		24:16			0.51			0.922			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		24:24			0.47			0.927			
	DC	SN		24:31			0.77			0.932			
	DC	SN		24:38			0.28			0.936			
	DC	SN		24:40			0.30			0.937			
	DC	SN		24:51			0.59			0.944			
				25:00			31.83	31.83		0.950			
	DC	SN		25:11			0.37			0.957			
	DC	SN		25:17			0.58			0.961			
	DC	SN		25:37			0.41			0.973			
	DC	SN		25:45			0.27			0.978			
	DC	SN		25:48			0.17			0.980			
	DC	SN		25:55			0.27			0.985			
	DC	SN		26:05			0.61			0.991			
	DC	SN		26:10			0.42			0.994			
	DC	SN		26:18			0.76			0.999	37Cl-TCDD	SUR1	
	DC	SN		26:25			0.13			1.004			
	DC	SN		26:36			0.40			1.011			
	DC	SN		26:43			0.47			1.015			
				26:54			1.49	1.49		1.022			
	DC	SN		27:10			0.16			1.032			
	DC	SN		27:16			0.19			1.036			
	DC	SN		27:20			0.37			1.039			
	DC	SN		27:26			0.23			1.042			
	DC	SN		27:42			0.50			1.053			
	DC	SN		27:45			0.48			1.054			
328			2	Peaks			33.32						
13C12-TCDD					0.65-0.89					0.924-1.076			
332-334	DC	NL		0:00	RO	1.81	3.84			0.000			
	DC	WL		23:49	RO	1.48	4.18			0.905			
				25:14	RO	0.64	9.63	4.19	6.58	0.959			
				25:48	RO	3.11	3.89	6.84	2.20	0.980			
				25:59	RO	0.58	2.30	1.00	1.73	0.987			
				26:08		0.83	2,797.47	1,266.48	1,530.99	0.993	13C12-1234-TCDD	RS1	
				26:19		0.82	1,907.62	862.28	1,045.34	1.000	13C12-2378-TCDD	IS1	
				26:39		0.88	35.05	16.45	18.60	1.013			
				27:09	RO	1.38	3.52	2.74	1.99	1.032			
				27:16	RO	2.20	1.98	2.46	1.12	1.036			
332-334			8	Peaks			4,761.46						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF					1.32-1.78					0.928-1.061			
340-342	DC	NL		0:00	RO	0.81	0.63			0.000			
	DC	SN		27:43	RO	0.82	0.51			0.940			
	DC	SN		27:51	RO	0.54	0.41			0.945			
	DC	SN		27:55	RO	0.11	0.08			0.947			
D	D	SN		28:37	RO	1.95	5.64			0.971			
	DC	SN		28:48	RO	1.08	1.15			0.977			
	DC	SN		28:57	RO	0.94	0.53			0.982			
D	D	SN		29:13	RO	1.13	3.32			0.991			
	DC	SN		29:22	RO	0.78	0.77			0.996			

Compound/ Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	D	D	SN	29:28	RO	1.02	2.02			0.999	12378-PeCDF		AN
		DC	SN	29:40	RO	1.19	1.56			1.006			
		DC	SN	29:48	RO	1.89	1.79			1.011			
	D	D	SN	30:11		1.46	2.75			1.024	23478-PeCDF		AN
		DC	SN	30:20	RO	0.66	1.02			1.029			
		DC	SN	30:53	RO	0.08	0.30			1.047			
		DC	SN	31:08	RO	0.27	0.54			1.056			
		DC	WH	31:23	RO	0.20	0.35			1.064			
340-342			0	Peaks			0.00						
13C12-PeCDF				1.32-1.78						0.864-1.136			
352-354		DC	NL	0:00	RO	0.91	0.35			0.000			
				28:37	RO	2.16	4.08	3.46	1.60	0.971			
				29:29		1.41	2,459.25	1,440.41	1,018.84	1.000	13C12-PeCDF 123	IS2	
				29:47	RO	0.85	6.88	4.18	4.90	1.010			
				29:55	RO	0.77	5.49	3.34	4.36	1.015			
				30:10	RO	1.23	14.84	9.02	7.36	1.023	13C12-PeCDF 234	SUR2	
				31:07		1.46	7.42	4.40	3.02	1.055			
352-354			6	Peaks			2,497.96						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.937-1.021			
356-358		DC	NL	0:00	RO	0.94	0.28			0.000			
		DC	SN	28:55	RO	0.19	0.69			0.949			
	D	D	SN	29:29	RO	2.54	2.70			0.967			
		DC	SN	29:45	RO	0.66	0.74			0.976			
		DC	SN	30:20	RO	1.86	0.71			0.995			
	D	D	SN	30:30	RO	1.01	1.91			1.001	12378-PeCDD		AN
		DC	WH	31:27	RO	0.85	0.36			1.032			
356-358			0	Peaks			0.00						
13C12-PeCDD				1.32-1.78						0.869-1.131			
368-370		DC	NL	0:00	RO	1.21	0.28			0.000			
				30:29		1.45	1,524.95	902.56	622.39	1.000	13C12-PeCDD 123	IS3	
				30:37	RO	1.24	151.19	91.90	73.99	1.004			
				30:49	RO	0.56	1.99	1.21	2.15	1.011			
				30:54	RO	0.68	1.91	1.16	1.71	1.014			
		DC	SN	31:11	RO	5.62	1.81			1.023			
368-370			4	Peaks			1,680.04						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.963-1.047			
374-376		DC	NL	0:00	RO	1.93	0.60			0.000			
		DC	SN	31:56	RO	0.83	1.03			0.969			
		DC	SN	32:04		1.19	2.04			0.973			
		DC	SN	32:10	RO	2.33	0.40			0.976			
		DC	SN	32:14	RO	1.71	0.47			0.978			
		DC	SN	32:31	RO	1.67	0.13			0.986			
		DC	SN	32:31	RO	2.55	0.25			0.986			
		DC	SN	32:36		1.30	0.23			0.989			

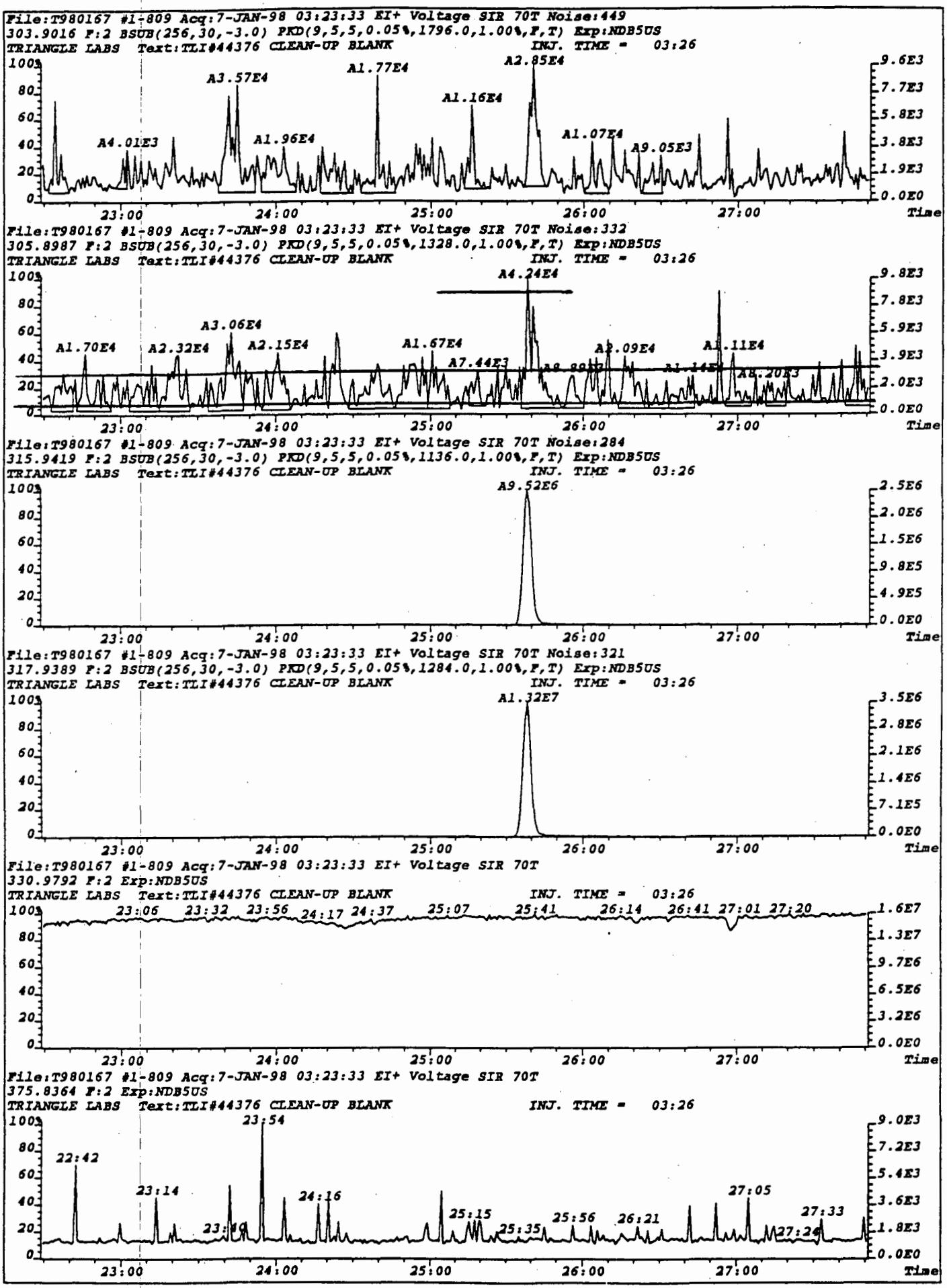
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		32:52	RO	3.38	0.83			0.997	123478-HxCDF	AN	
	DC	SN		32:59		1.41	1.35			1.001	123678-HxCDF	AN	
	DC	SN		33:11		1.33	0.28			1.007			
	DC	SN		33:16	RO	7.75	0.09			1.009			
	DC	SN		33:20	RO	2.10	0.22			1.011			
	DC	SN		33:29		1.05	1.74			1.016	234678-HxCDF	AN	
	DC	SN		33:35	RO	2.78	0.20			1.019			
	DC	SN		33:44	RO	0.36	0.38			1.023			
	DC	SN		33:47	RO	0.62	0.23			1.025			
	DC	SN		34:32	RO	0.21	0.09			1.048			
	DC	WH		34:41	RO	0.25	0.20			1.052			
	DC	WH		34:47	RO	0.56	0.34			1.055			
	DC	WH		34:51	RO	0.53	0.29			1.057			
374-376		0	Peaks				0.00						
13C12-HxCDF				0.43-0.59						0.879-1.121			
384-386	DC	NL		0:00	RO	1.33	1.18			0.000			
				31:55	RO	0.42	3.76	1.27	2.99	0.968			
				32:58		0.51	2,092.55	703.16	1,389.39	1.000	13C12-HxCDF 678	IS4	
				33:29		0.51	2,166.62	735.94	1,430.68	1.016	13C12-HxCDF 234	ALT2	
				34:17		0.52	1,845.56	630.45	1,215.11	1.040	13C12-HxCDF 789	ALT1	
				34:40	RO	0.93	3.44	2.13	2.28	1.052			
384-386		5	Peaks				6,111.93						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.958-1.014			
390-392	DC	NL		0:00	RO	0.68	0.47			0.000			
	DC	SN		32:17		1.27	0.59			0.959			
	DC	SN		32:23	RO	0.62	0.23			0.962			
	DC	SN		32:31		1.13	0.49			0.966			
	DC	SN		32:58	RO	1.79	1.79			0.979			
	DC	SN		33:06	RO	0.41	0.36			0.983			
	DC	SN		33:15	RO	1.67	0.20			0.988			
	DC	SN		33:19	RO	0.43	0.16			0.990			
	DC	SN		33:29	RO	2.47	1.39			0.995			
	DC	SN		33:40	RO	1.48	0.99			1.000	123678-HxCDD	AN	
	DC	SN		33:54	RO	0.78	0.25			1.007			
	DC	SN		33:57	RO	0.80	0.67			1.008			
	DC	SN		34:01	RO	1.93	0.60			1.010	123789-HxCDD	AN	
	DC	WH		34:13	RO	0.67	0.29			1.016			
	DC	WH		34:17	RO	2.35	1.28			1.018			
390-392		0	Peaks				0.00						
13C12-HxCDD				1.05-1.43						0.970-1.030			
402-404	DC	NL		0:00	RO	3.50	0.67			0.000			
				33:03		1.33	5.49	3.13	2.36	0.982			
				33:40		1.23	1,869.57	1,030.31	839.26	1.000	13C12-HxCDD 678	IS5	
				34:00		1.23	2,325.22	1,283.76	1,041.46	1.010	13C12-HxCDD 789	RS2	
				34:27	RO	0.50	1.99	1.10	2.19	1.023			
402-404		4	Peaks				4,202.27						

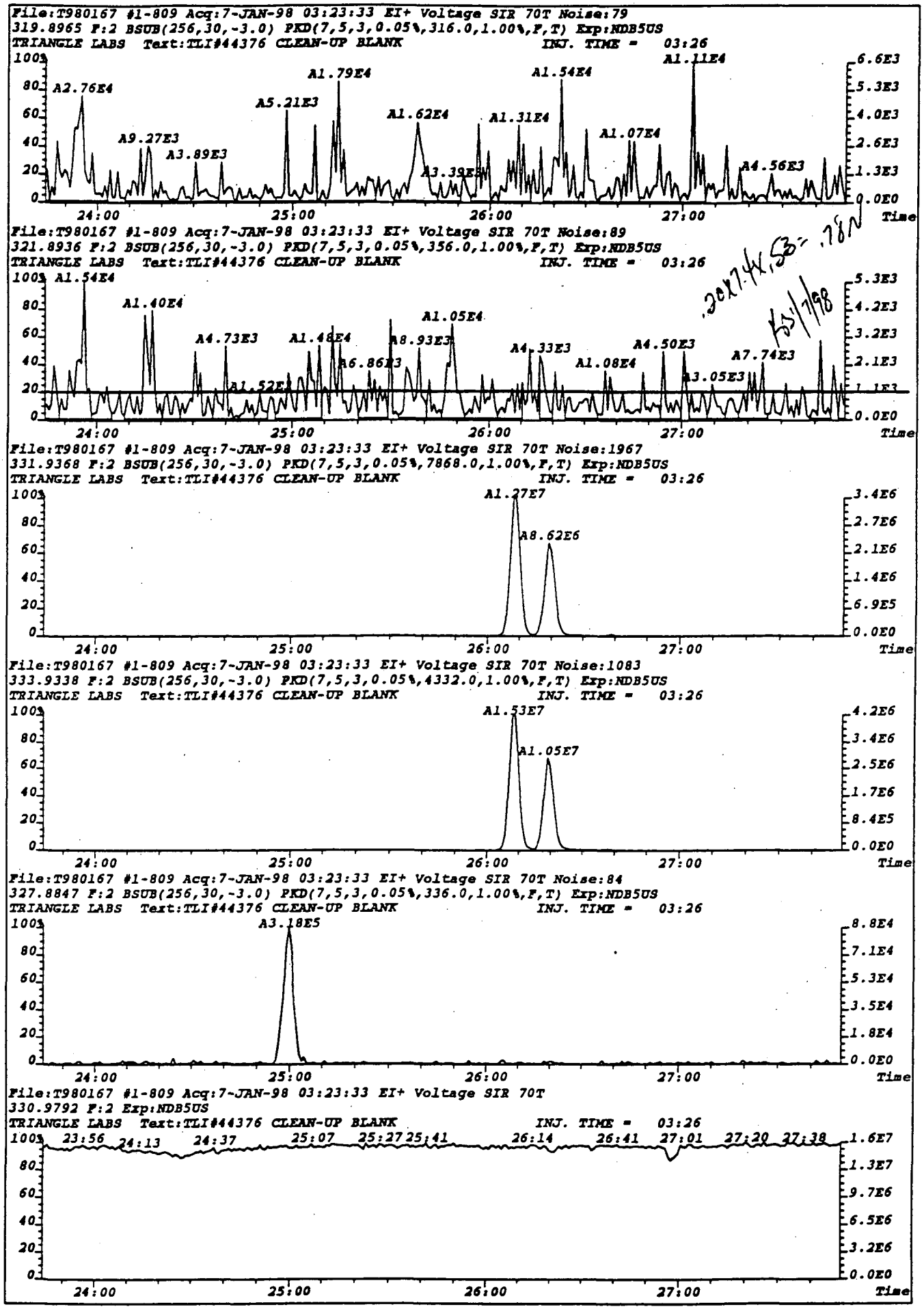
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.996-1.051			
408-410	DC	NL		0:00	RO	1.36	0.22			0.000			
	DC	SN		35:59	RO	1.82	1.39			1.000	1234678-HpCDF	AN	
	DC	SN		36:27	RO	0.45	1.00			1.013			
	DC	SN		36:55	RO	1.40	0.61			1.026			
	DC	SN		37:45	RO	0.74	0.45			1.049			
	DC	WH		37:52	RO	1.44	0.69			1.052			
	DC	WH		38:03	RO	0.72	0.45			1.057			
408-410			0	Peaks			0.00						
13C12-HpCDF				0.37-0.51						0.944-1.111			
418-420	DC	NL		0:00	RO	2.11	0.40			0.000			
				35:59		0.44	1,759.25	534.28	1,224.97	1.000	13C12-HpCDF 678	IS6	
				36:27		0.47	6.08	1.94	4.14	1.013			
	DC	SN		36:36	RO	0.15	0.59			1.017			
	DC	SN		36:48	RO	1.67	1.14			1.023			
	DC	SN		37:45	RO	0.82	1.25			1.049			
418-420			2	Peaks			1,765.33						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.975-1.005			
424-426	DC	NL		0:00		1.20	0.22			0.000			
	DC	WL		36:05	RO	0.45	0.73			0.973			
	DC	SN		36:17		1.15	0.86			0.979			
	DC	SN		36:27	RO	1.70	0.61			0.983			
	DC	SN		36:52	RO	3.00	0.47			0.995			
	DC	SN		37:05	RO	3.00	1.06			1.000	1234678-HpCDD	AN	
	DC	WH		37:33	RO	2.45	0.22			1.013			
	DC	WH		37:37	RO	0.32	0.41			1.015			
424-426			0	Peaks			0.00						
13C12-HpCDD				0.88-1.20						0.973-1.027			
436-438	DC	NL		0:00	RO	4.52	0.67			0.000			
				37:04		1.03	1,821.13	923.95	897.18	1.000	13C12-HpCDD 678	IS7	
436-438			1	Peak			1,821.13						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.902-1.098			
442-444	DC	NL		0:00	RO	1.14	0.26			0.000			
	DC	WL		35:51	RO	1.50	0.30			0.877			
	DC	WL		36:10	RO	0.39	0.32			0.884			
	DC	WL		36:46		1.00	1.32			0.899			
	DC	SN		37:03	RO	3.44	0.68			0.906			
	DC	SN		37:41	RO	1.27	0.70			0.921			
	DC	SN		38:00	RO	1.89	1.02			0.929			
	DC	SN		38:21	RO	0.22	0.34			0.938			
	DC	SN		38:44	RO	3.00	0.09			0.947			
	DC	SN		38:49	RO	0.70	0.74			0.949			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		39:06	RO	0.56	0.49			0.956			
	DC	SN		39:11	RO	0.73	1.23			0.958			
	DC	SN		40:09	RO	0.48	0.68			0.982			
	DC	SN		40:48	RO	0.33	0.34			0.998			
	DC	SN		40:57	RO	1.67	1.25			1.001			
	DC	SN		41:12		0.90	1.20			1.007	OCDF	AN	
	DC	SN		41:48	RO	1.07	0.51			1.022			
442-444		0	Peaks				0.00						
OCDD				0.76-1.02						0.902-1.098			
458-460	DC	NL		0:00	RO	1.08	0.23			0.000			
				40:54	RO	0.66	7.28	3.43	5.20	1.000	OCDD	AN	J
	DC	SN		41:10		0.89	0.70			1.007			
458-460		1	Peak				7.28						
13C12-OCDD				0.76-1.02						0.997-1.005			
470-472	DC	NL		0:00	RO	1.08	0.23			0.000			
				40:54		0.89	2,615.72	1,232.09	1,383.63	1.000	13C12-OCDD	IS8	
	DC	WH		41:23	RO	1.74	7.45			1.012			
470-472		1	Peak				2,615.72						

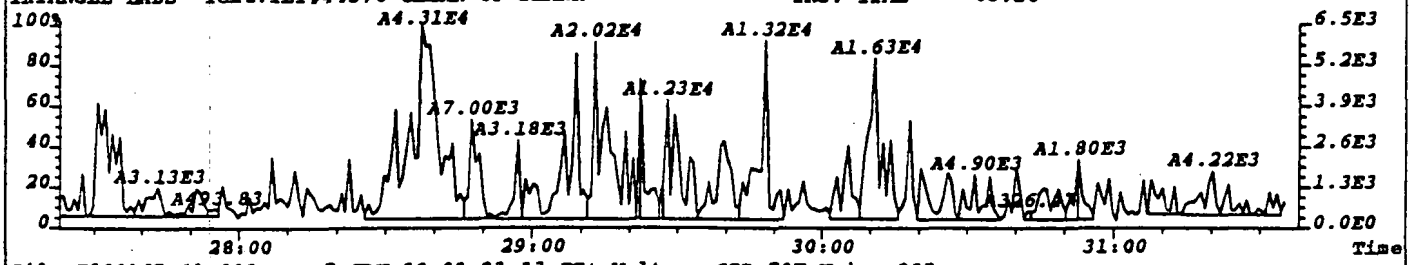
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside Limits	<M-Below Method Detection Limit	T-Time Changed
Rel.RT-Relative Retention Time	NL-Channel Specific Noise Level	M-Peak Area Changed
		N-Name Changed
		X-Ether Interference

*** End of Report ***

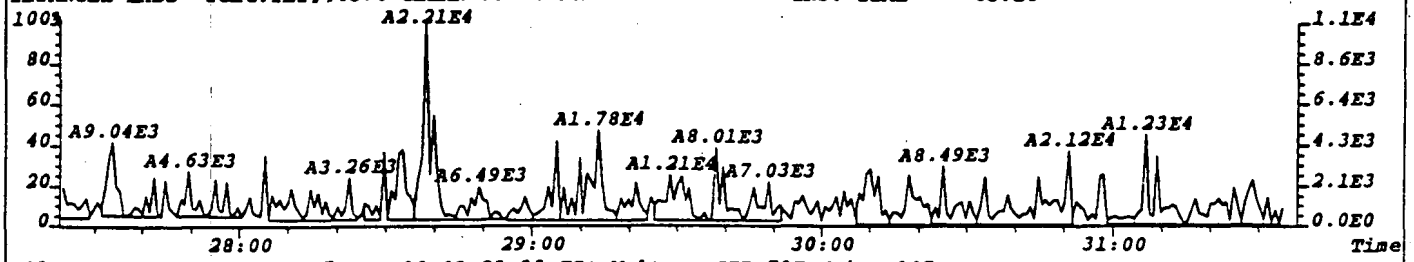

File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:449
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1796.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A4.01E3
A3.57E4
A1.96E4
A1.77E4
A1.16E4
A2.85E4
A1.07E4
A9.05E3
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:332
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1328.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.70E4
A2.32E4
A3.06E4
A2.15E4
A1.67E4
A7.44E3
A4.24E4
A2.09E4
A1.11E4
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:284
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1136.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A9.52E6
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:321
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1284.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.32E7
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
23:06 23:32 23:56 24:17 24:37 25:07 25:41 26:14 26:41 27:01 27:20
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
375.8364 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
22:42
23:14
23:54
24:16
25:15
25:35
25:56
26:21
27:05
27:33
23:00
24:00
25:00
26:00
27:00
Time


File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:79
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,316.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A2.76E4
A9.27E3
A3.89E3
A5.21E3
A1.79E4
A1.62E4
A3.39E3
A1.31E4
A1.54E4
A1.07E4
A1.11E4
A4.56E3
Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:89
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,356.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.54E4
A1.40E4
A4.73E3
A1.48E4
A6.86E3
A8.93E3
A1.05E4
A4.33E3
A1.08E4
A4.50E3
A3.05E3
A7.74E3
Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:1967
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,7868.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.27E7
A8.62E6
Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:1083
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4332.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.53E7
A1.05E7
Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:84
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,336.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A3.18E5
Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
23:56 24:13 24:37 25:07 25:27 25:41 26:14 26:41 27:01 27:20 27:38
Time

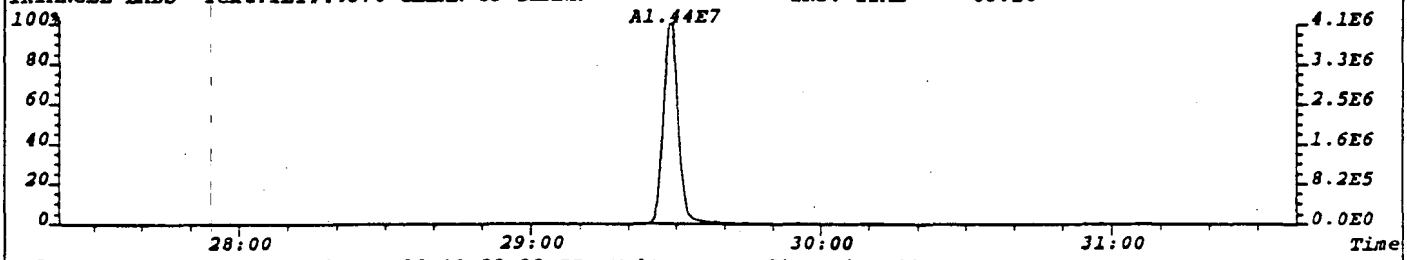
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:189
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,756.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



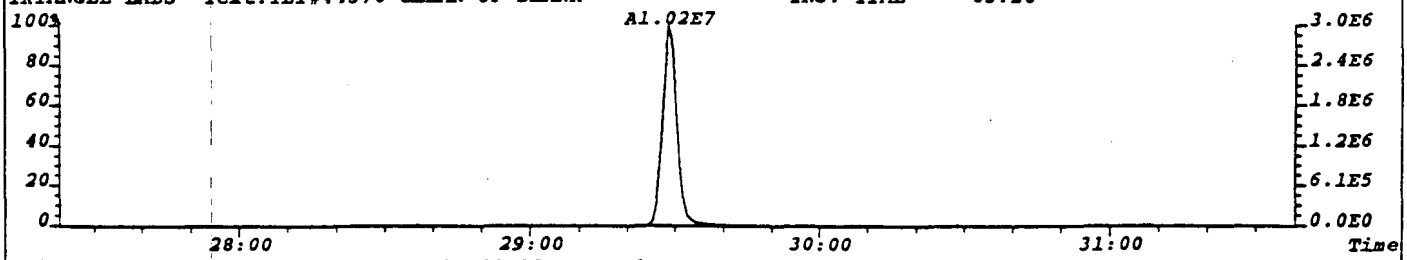
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:235
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,940.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



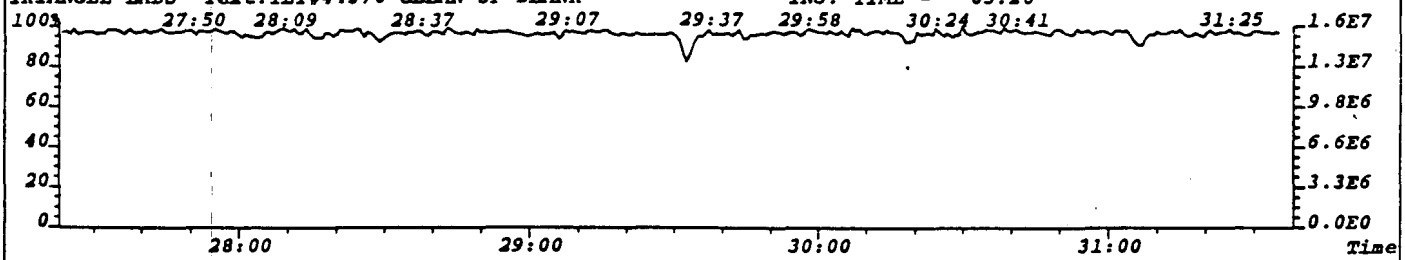
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:107
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,428.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



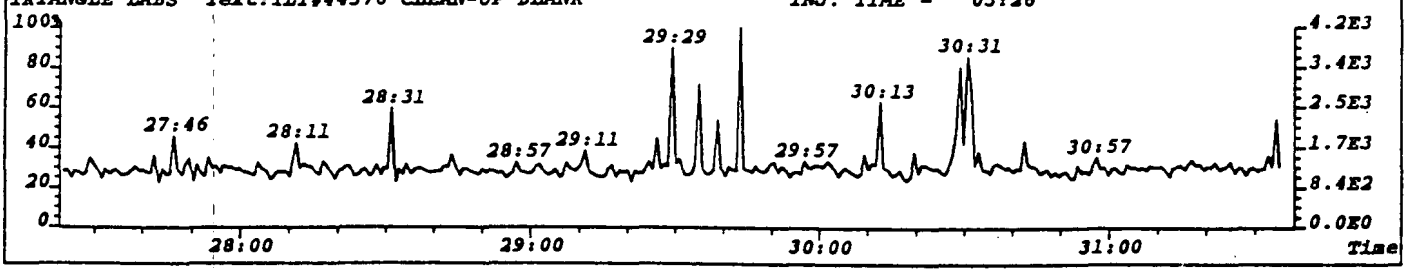
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:114
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,456.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26

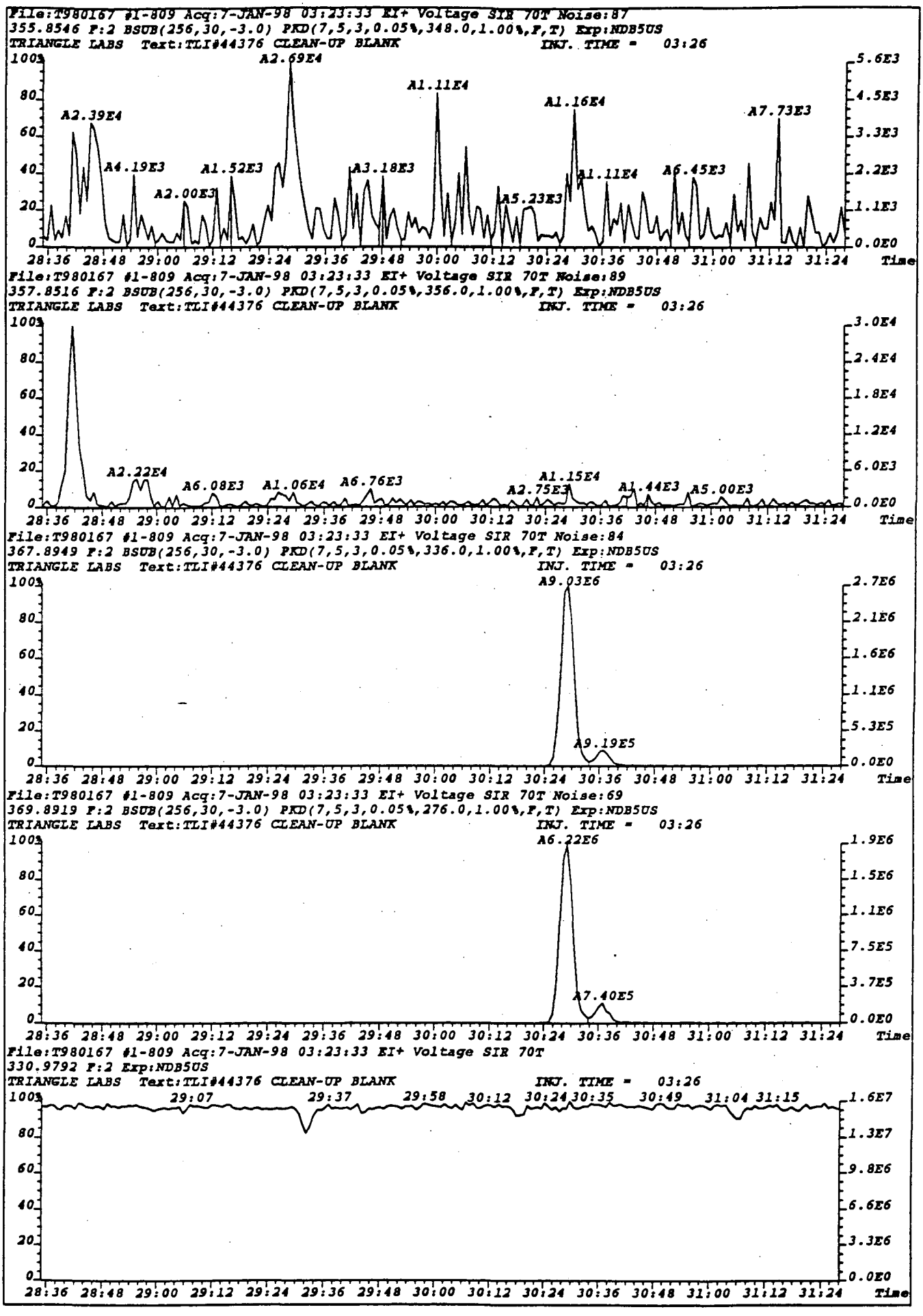


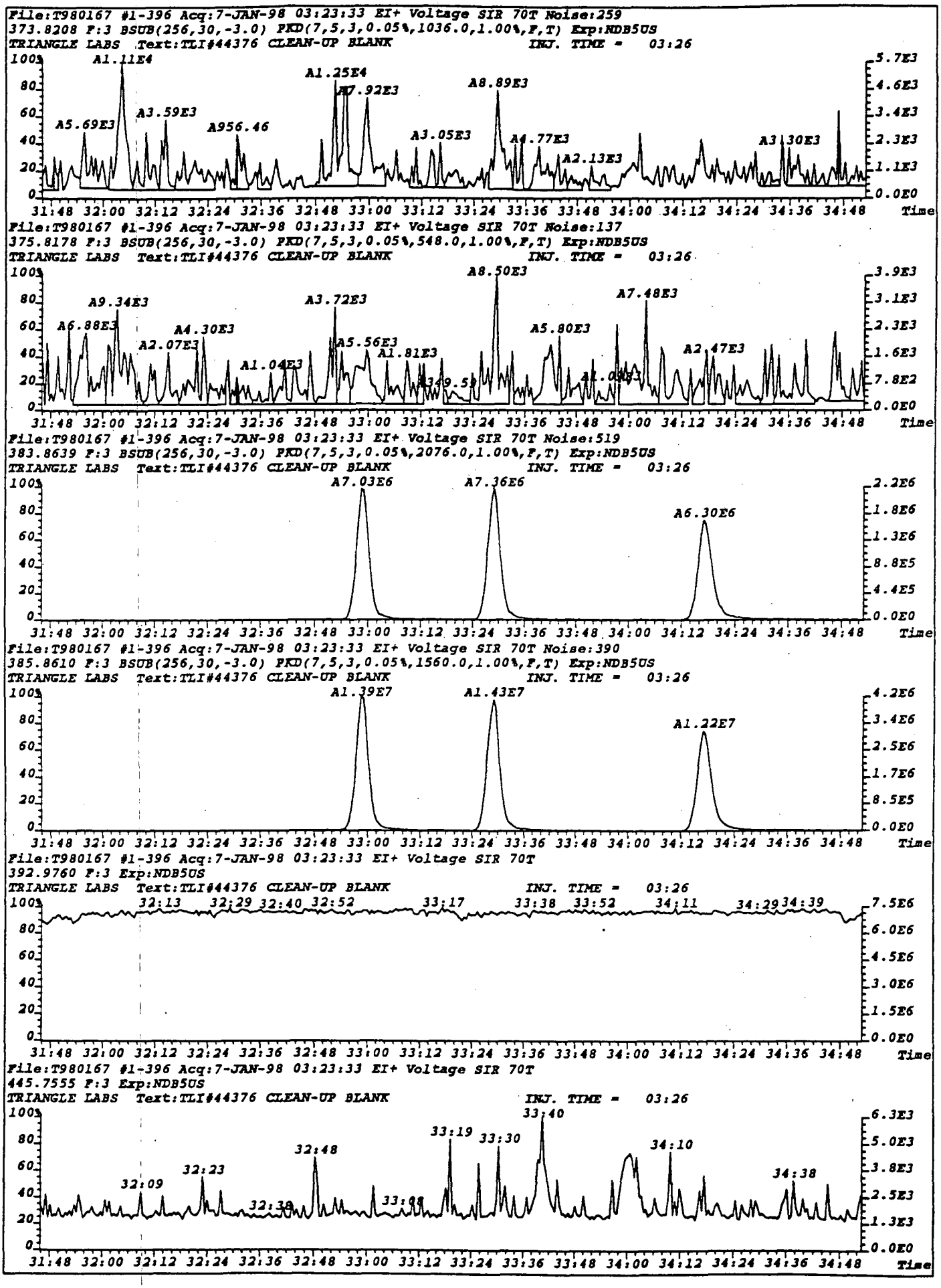
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26

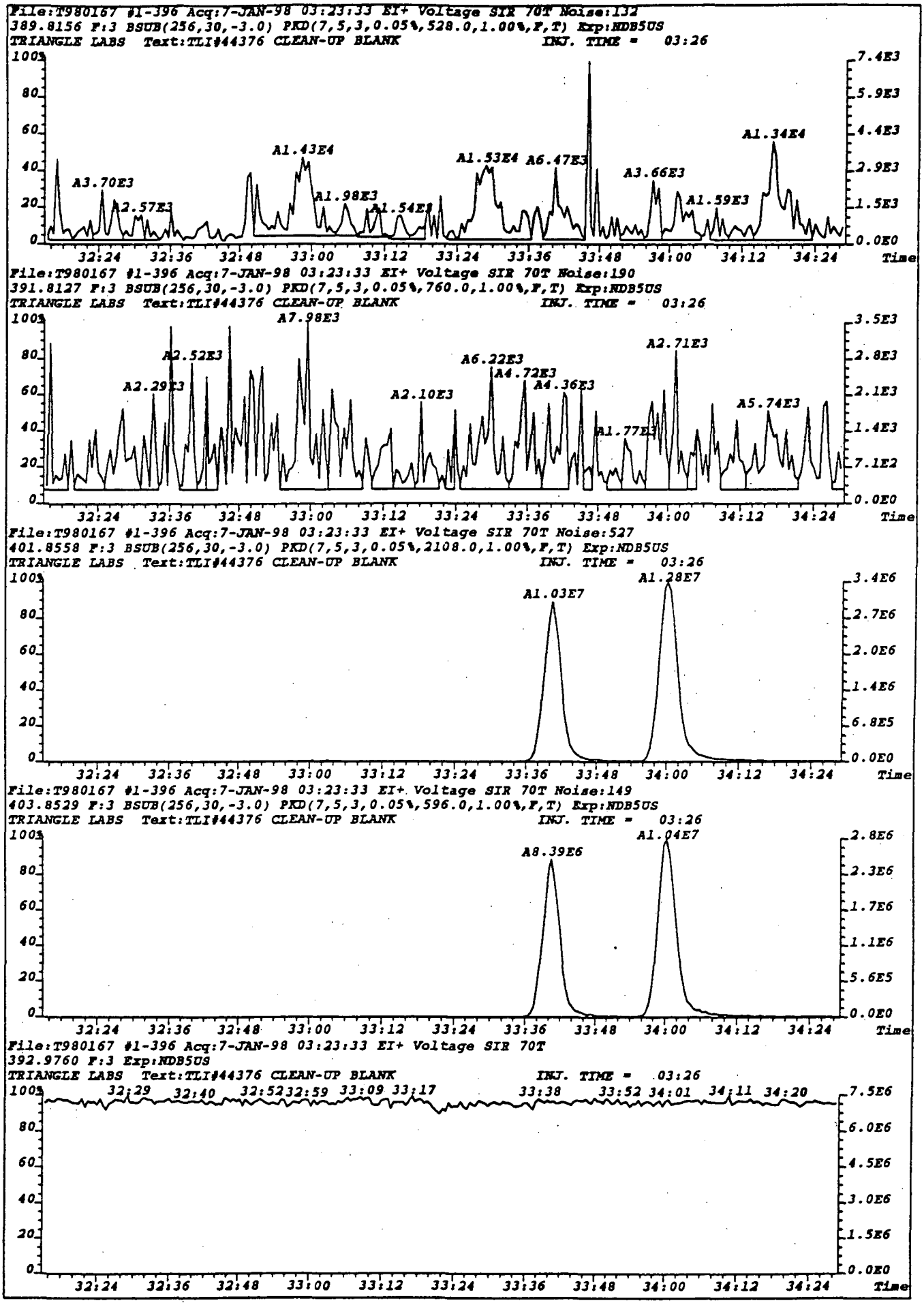


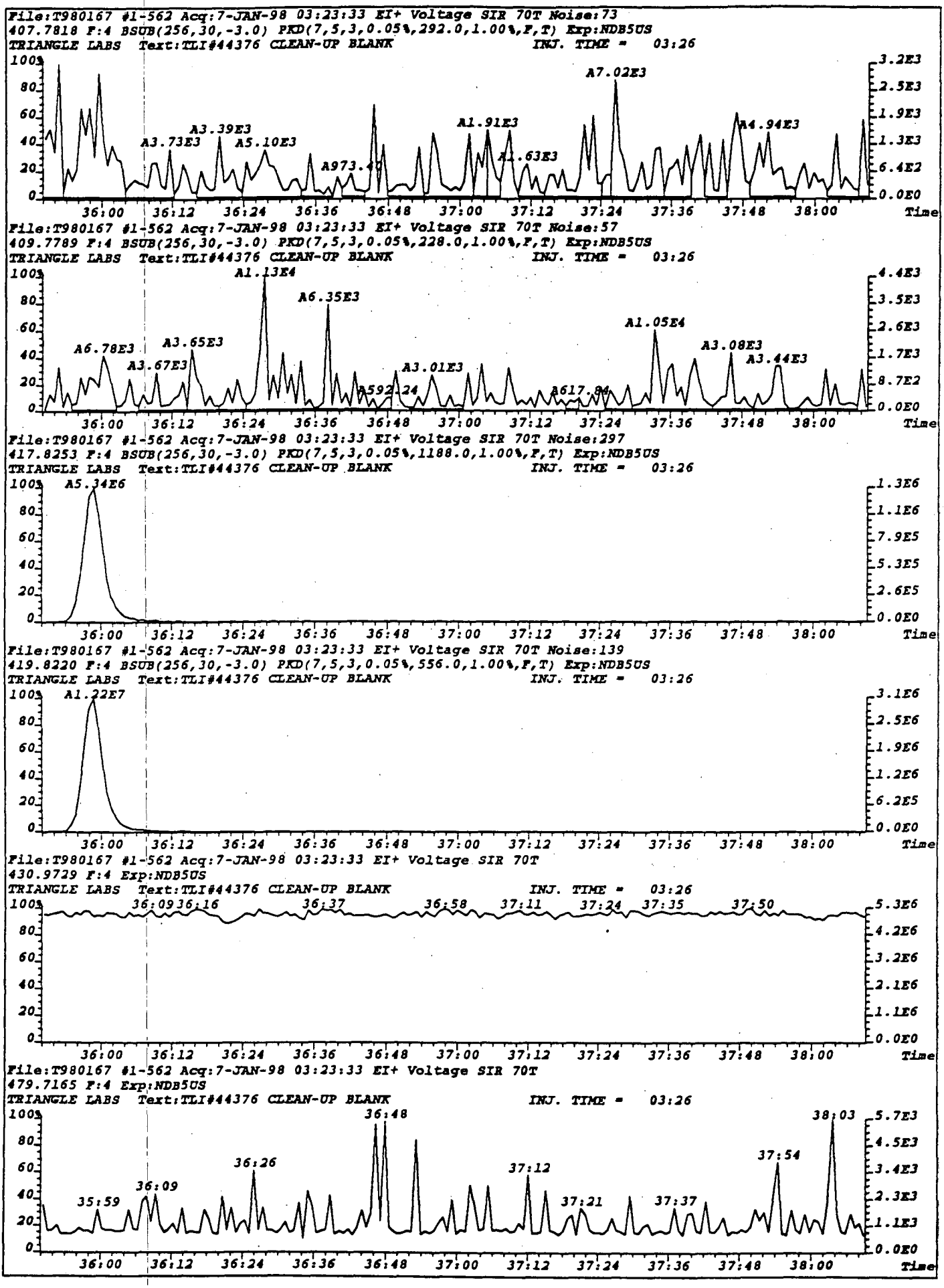
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
409.7974 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26

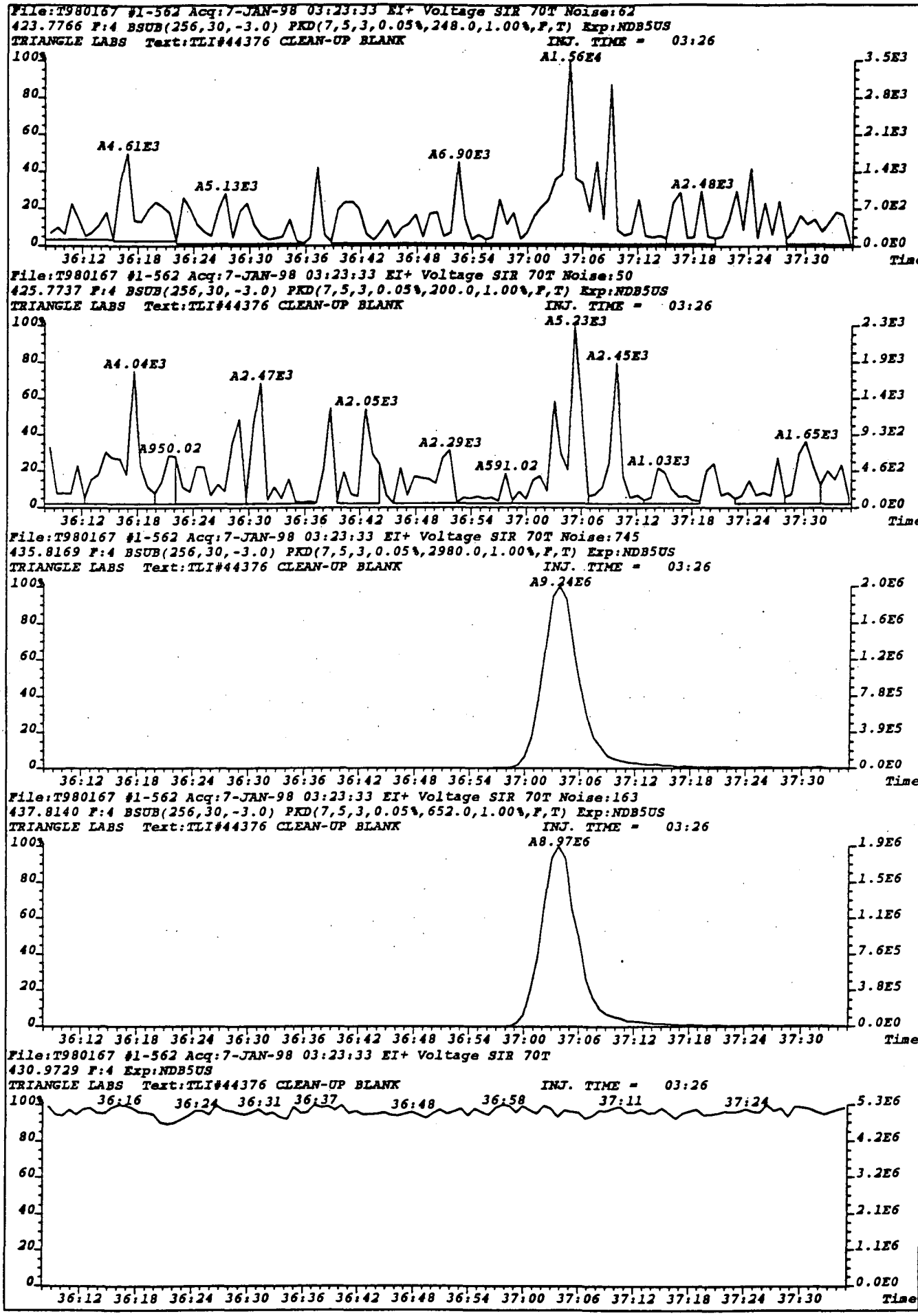



File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:87
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,348.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A2.69E4
A1.11E4
A1.16E4
A2.39E4
A7.73E3
A4.19E3
A1.52E3
A3.18E3
A2.00E3
A1.11E4
A6.45E3
A5.23E3
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:89
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,356.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A2.22E4
A6.08E3
A1.06E4
A6.76E3
A1.15E4
A2.75E3
A1.44E3
A5.00E3
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:84
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,336.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A9.03E6
A9.19E5
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:69
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,276.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A6.22E6
A7.40E5
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time
File:T980167 #1-809 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
330.9792 F:2 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
29:07 29:37 29:58 30:12 30:24 30:35 30:49 31:04 31:15
28:36 28:48 29:00 29:12 29:24 29:36 29:48 30:00 30:12 30:24 30:36 30:48 31:00 31:12 31:24 Time

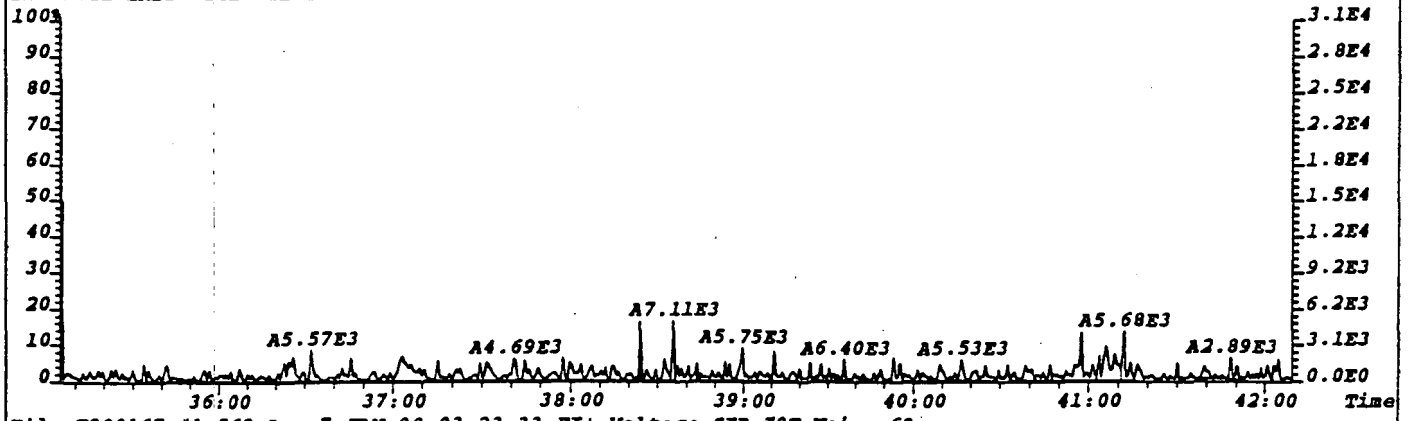

File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:259
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1036.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.11E4
A1.25E4
A7.92E3
A8.89E3
A5.69E3
A3.59E3
A956.46
A3.05E3
A4.77E3
A2.13E3
A3.30E3
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:137
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,548.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A8.50E3
A9.34E3
A3.72E3
A7.48E3
A6.88E3
A4.30E3
A2.07E3
A5.56E3
A1.81E3
A1.04E3
A5.80E3
A2.47E3
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:519
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2076.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A7.03E6
A7.36E6
A6.30E6
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:390
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1560.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.39E7
A1.43E7
A1.22E7
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
445.7555 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
33:40
33:19
33:30
32:48
34:10
32:23
32:09
34:38
Time


File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:132
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,528.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A3.70E3
A2.57E3
A1.43E4
A1.98E3
A1.54E3
A1.53E4
A6.47E3
A3.66E3
A1.59E3
A1.34E4
Time
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:190
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,760.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A7.98E3
A2.52E3
A2.29E3
A2.10E3
A6.22E3
A4.72E3
A4.36E3
A1.77E3
A2.71E3
A5.74E3
Time
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:527
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2108.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.03E7
A1.28E7
Time
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:149
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,596.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A8.39E6
A1.04E7
Time
File:T980167 #1-396 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
392.9760 F:3 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
Time

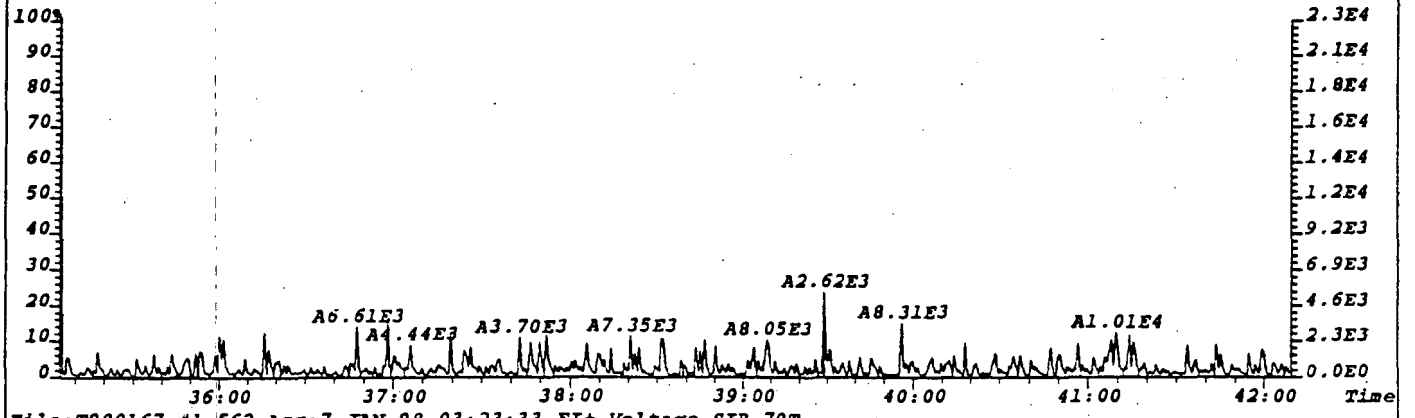

File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:73
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,292.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A7.02E3
A3.39E3
A3.73E3
A5.10E3
A1.91E3
A4.94E3
A973.44
A1.63E3
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:57
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,228.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.13E4
A6.35E3
A6.78E3
A3.65E3
A3.67E3
A1.05E4
A3.08E3
A3.44E3
A3.01E3
A592.24
A617.84
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:297
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1188.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A5.34E6
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:139
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,556.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
A1.22E7
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
479.7165 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26
35:59
36:09
36:26
36:48
37:12
37:21
37:37
37:54
38:03
Time


File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:62
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,248.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A1.56E4
A4.61E3
A5.13E3
A6.90E3
A2.48E3
36:12 36:18 36:24 36:30 36:36 36:42 36:48 36:54 37:00 37:06 37:12 37:18 37:24 37:30
Time
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:50
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,200.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A5.23E3
A4.04E3
A2.47E3
A2.45E3
A2.05E3
A950.02
A2.29E3
A591.02
A1.03E3
A1.65E3
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:745
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2980.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A9.24E6
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:163
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,652.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
A8.97E6
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK
INJ. TIME = 03:26
36:16 36:24 36:31 36:37 36:48 36:58 37:11 37:24

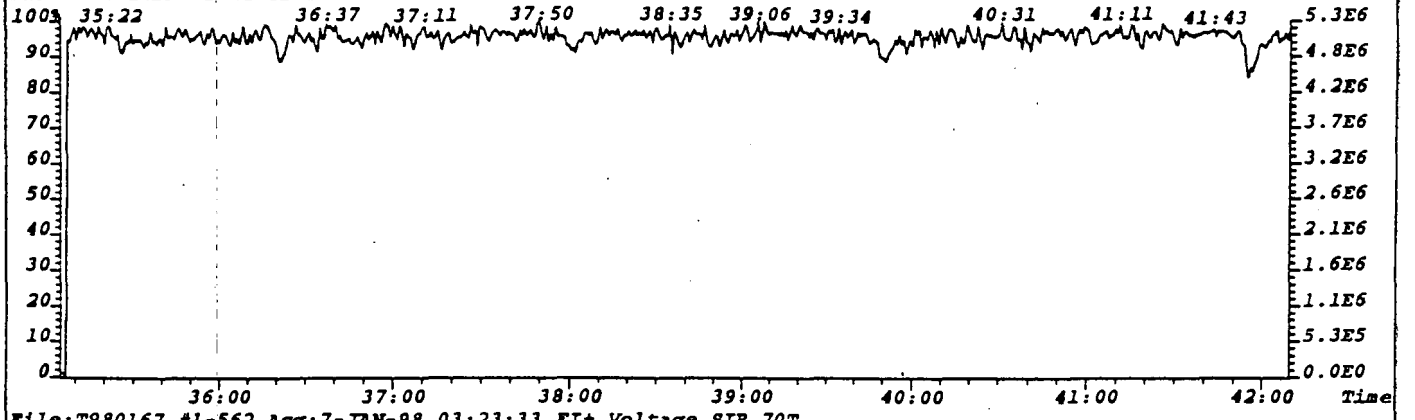
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:81
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,324.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



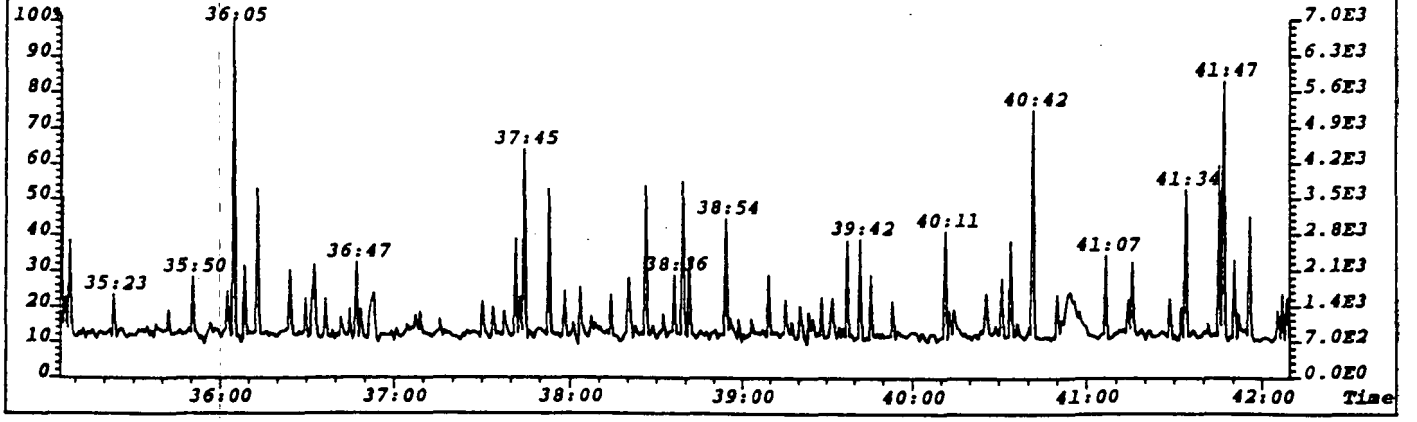
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:69
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,276.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



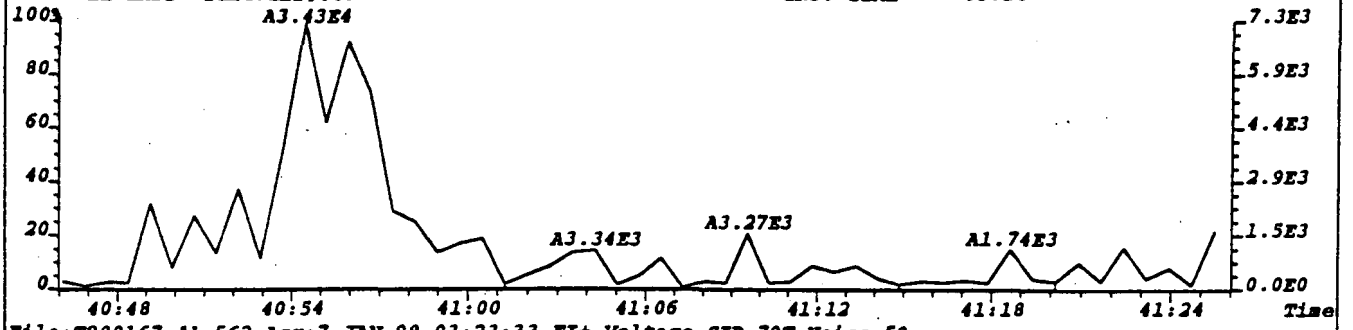
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



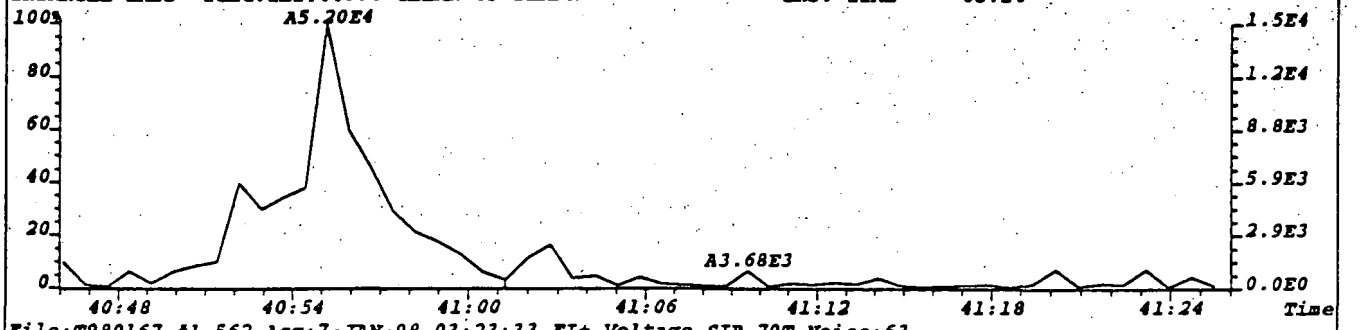
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
513.6775 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



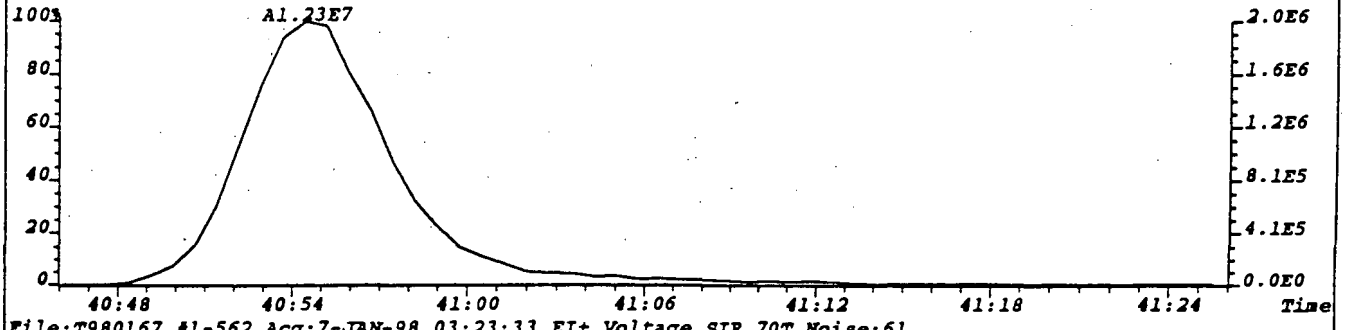
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:65
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,260.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



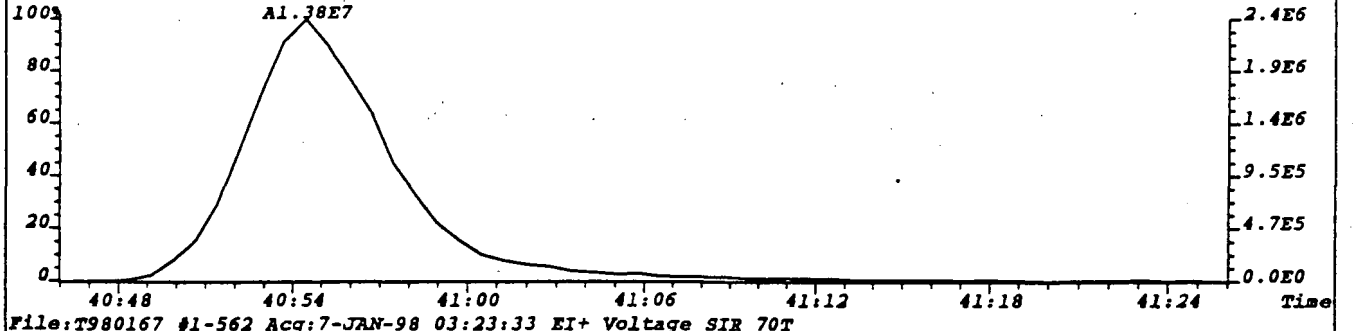
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:59
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,236.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



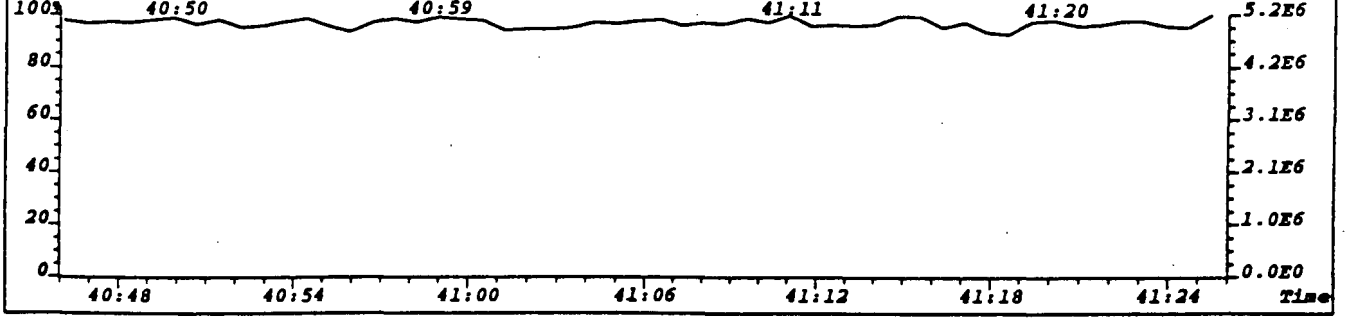
File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:63
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,252.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26

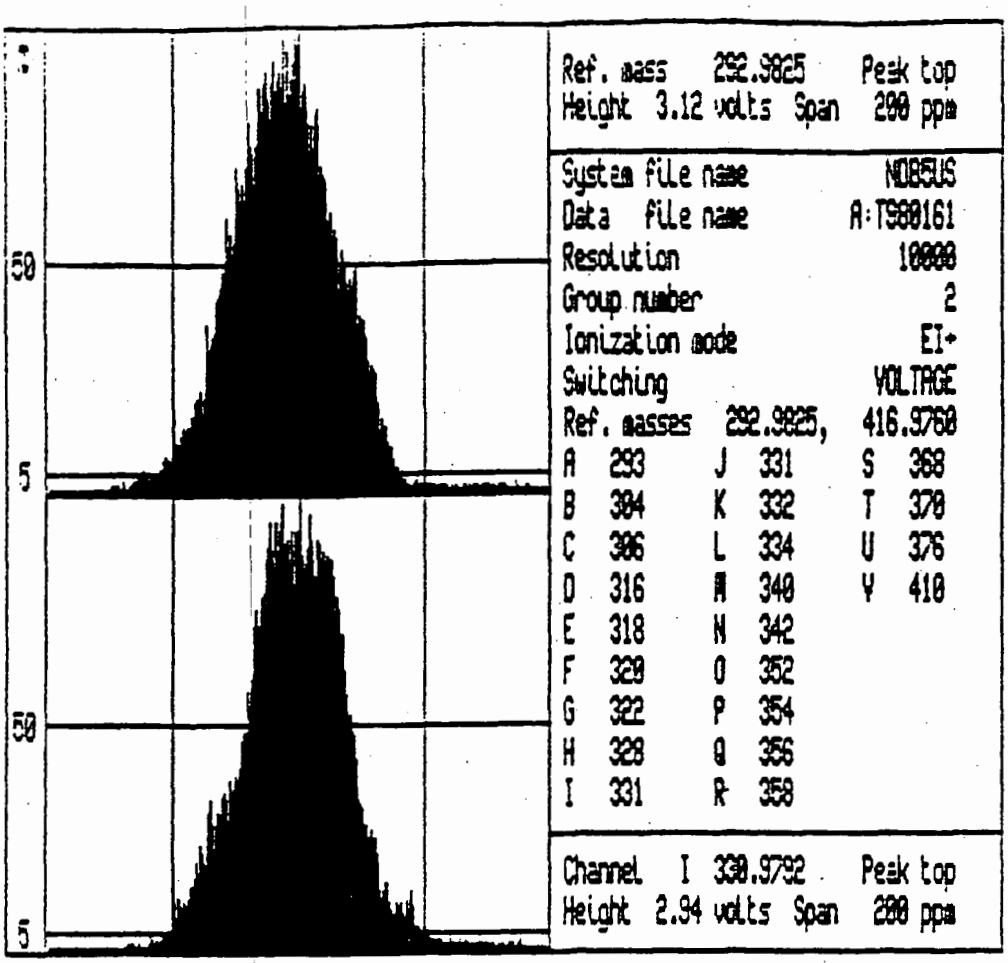


File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T Noise:61
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,244.0,1.00%,F,T) Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26



File:T980167 #1-562 Acq:7-JAN-98 03:23:33 EI+ Voltage SIR 70T
430.9729 F:4 Exp:NDB5US
TRIANGLE LABS Text:TLI#44376 CLEAN-UP BLANK INJ. TIME = 03:26





Ref. mass 292.9825 Peak top
Height 3.12 volts Span 200 ppm

System file name	NOBSUS
Data file name	A:T980161
Resolution	10000
Group number	2
Ionization mode	EI+
Switching	VOLTAGE
Ref. masses	292.9825, 416.9760

A	293	J	331	S	368
B	304	K	332	T	370
C	306	L	334	U	376
D	316	M	340	V	410
E	318	N	342		
F	320	O	352		
G	322	P	354		
H	328	Q	356		
I	331	R	358		

Channel I 330.9792 Peak top
Height 2.94 volts Span 200 ppm

TRIANGLE LABS

CALIBRATION DATA

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

TRIANGLE LABORATORIES OF RTP, INC. Date: 02/20/96

Initial Calibration Summary for PF22206

Analysis Date....: 02/20/96 Method.....: C2NF

Instrument.....: P GC Column...: DB-225

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
2378-TCDF	1.040	0.109	10%	21:32	14:31	25:31	0.767		10
TOTAL TCDF	1.040	0.109	10%				0.767		10
2378-TCDD	0.992	0.101	10%	20:12	16:11	24:11	0.782		10
TOTAL TCDD	0.992	0.101	10%				0.782		10

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	1.014	0.048	5%	20:12	18:11	22:11			10

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.388	0.062	4%	21:31	20:31	22:31	0.758		10
13C12-2378-TCDD	1.067	0.036	3%	20:11	18:11	22:11	0.786		10

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	20:27			0.794		10

*** End of Report ***

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial Calibration Summary for XF24087

Analysis Date....: 04/08/97 Method.....: C2NF
Instrument.....: X GC Column...: DB-225

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
2378-TCDF	0.967	0.044	5%	21:49	14:49	25:49	0.779		10
TOTAL TCDF	0.967	0.044	5%				0.779		10
2378-TCDD	1.095	0.097	9%	20:37	16:36	24:36	0.793		10
TOTAL TCDD	1.095	0.097	9%				0.793		10
Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	1.018	0.047	5%	20:37	18:36	22:36			10
Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.392	0.071	5%	21:49	20:49	22:49	0.787		10
13C12-2378-TCDD	1.105	0.037	3%	20:36	18:36	22:36	0.783		10
Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	20:50			0.796		10

*** End of Report ***

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 02:46 04/09/97

TRIANGLE LABORATORIES, INC. Date: 12/18/97

Initial Calibration Summary for TF5D177

Analysis Date....: 12/17/97 Method.....: M237
Instrument.....: T

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total MCDF	2.537	0.000	0%	10:19	6:05	20:05	2.821		1
Total MCDD	2.024	0.000	0%	11:03	6:45	20:45	3.317		1
Total DCDF	0.705	0.000	0%	14:10	13:05	21:05	5.319		1
Total DCDD	1.353	0.000	0%	15:02	13:45	21:45	1.415		1
Total TriCDF	0.860	0.000	0%	20:01	17:05	24:05	0.920		1
Total TriCDD	0.444	0.000	0%	20:07	18:45	24:45	1.118		1
2378-TCDF	1.370	0.153	11%	26:06	22:05	30:05	0.799		6
TOTAL TCDF	1.370	0.153	11%				0.799		6
2378-TCDD	1.363	0.211	15%	26:46	22:45	30:45	0.768		6
TOTAL TCDD	1.363	0.211	15%				0.768		6
12378-PeCDF	1.061	0.104	10%	29:53	25:52	33:52	1.492		6
23478-PeCDF	1.060	0.095	9%	30:33			1.501		6
TOTAL PeCDF	1.060	0.099	9%				1.496		6
12378-PeCDD	1.293	0.111	9%	30:52	26:51	34:51	1.596		6
TOTAL PeCDD	1.293	0.111	9%				1.596		6
123478-HxCDF	1.154	0.133	12%	33:15	29:21	37:21	1.270		6
123678-HxCDF	1.298	0.186	14%	33:21			1.269		6
234678-HxCDF	1.043	0.130	12%	33:52			1.288		6
123789-HxCDF	0.974	0.149	15%	34:41			1.279		6
TOTAL HxCDF	1.117	0.149	13%				1.276		6
123478-HxCDD	0.883	0.085	10%	33:59	30:03	38:03	1.250		6
123678-HxCDD	1.000	0.121	12%	34:03			1.231		6
123789-HxCDD	0.992	0.147	15%	34:24			1.241		6
TOTAL HxCDD	0.959	0.117	12%				1.240		6
1234678-HpCDF	1.473	0.121	8%	36:24	32:24	40:24	1.055		6
1234789-HpCDF	1.122	0.080	7%	38:03			1.054		6
TOTAL HpCDF	1.297	0.100	8%				1.055		6
1234678-HpCDD	1.035	0.100	10%	37:30	33:30	41:30	1.031		6
TOTAL HpCDD	1.035	0.100	10%				1.031		6
OCDF	1.440	0.091	6%	41:41	37:26	45:26	0.908		6
OCDD	1.113	0.094	8%	41:27	37:26	45:26	0.845		6

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	1.006	0.009	1%	26:46	24:45	28:45			6
13C12-PeCDF 234	0.993	0.041	4%	30:32	27:52	31:52	1.478		6
13C12-HxCDF 478	0.921	0.032	3%	33:14			0.506		6
13C12-HxCDF 234	0.954	0.039	4%	33:51			0.507		6
13C12-HxCDF 789	0.755	0.033	4%	34:40			0.508		6
13C12-HxCDD 478	0.812	0.047	6%	33:58			1.217		6
13C12-HpCDF 789	0.780	0.043	6%	38:03	34:24	40:24	0.430		6

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.545	0.058	4%	26:05	25:05	27:05	0.733		6
13C12-2378-TCDD	1.248	0.044	4%	26:45	24:45	28:45	0.789		6
13C12-PeCDF 123	1.280	0.109	9%	29:52	25:52	33:52	1.458		6

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial Calibration Summary for TF5D177

13C12-PeCDD 123	0.710	0.064	9%	30:51	26:51	34:51	1.472		6
13C12-HxCDF 678	1.412	0.046	3%	33:21	29:21	37:21	0.506		6
13C12-HxCDD 678	0.998	0.052	5%	34:03	33:03	35:03	1.213		6
13C12-HpCDF 678	0.891	0.043	5%	36:24	34:24	40:24	0.434		6
13C12-HpCDD 678	0.722	0.026	4%	37:30	36:30	38:30	1.030		6
13C12-OCDD	0.490	0.019	4%	41:26	39:26	43:26	0.859		6
Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	26:35			0.817		6
13C12-HxCDD 789	1.000	0.000	0%	34:23			1.203		6

*** End of Report ***

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/06/98

TRIANGLE LABORATORIES, INC.
Continuing Calibration for T980148

Analysis Date....: 01/06/98
Operator.....: BR
Init Calibration.: TF5D177
ICal Date.....: 12/17/97

Method.....: M237
Instrument..: T
Std.Conc....: 5.00

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		5:41 19:41			2.537	-2.537	100.0%
Total MCDD	0.000		6:21 20:21			2.024	-2.024	100.0%
Total DCDF	0.000		12:41 20:41			0.705	-0.705	100.0%
Total DCDD	0.000		13:21 21:21			1.353	-1.353	100.0%
Total TriCDF	0.000		16:41 23:41			0.860	-0.860	100.0%
Total TriCDD	0.000		18:21 24:21			0.444	-0.444	100.0%
2378-TCDF	1.155	0.83	22:33 27:34	25:41	1.0000	1.370	-0.215	-15.7%
TOTAL TCDF	1.155	0.83				1.370	-0.215	-15.7%
2378-TCDD	1.161	0.86	23:48 27:32	26:22	1.0006	1.363	-0.202	-14.8%
TOTAL TCDD	1.161	0.86				1.363	-0.202	-14.8%
12378-PeCDF	0.985	1.49	27:27 31:21	29:31	1.0006	1.061	-0.076	-7.2%
23478-PeCDF	0.914	1.50		30:12	1.0237	1.060	-0.146	-13.8%
AL PeCDF	0.949	1.50				1.060	-0.111	-10.5%
12378-PeCDD	1.286	1.58	28:38 31:11	30:31	1.0005	1.293	-0.007	-0.5%
TOTAL PeCDD	1.286	1.58				1.293	-0.007	-0.5%
123478-HxCDF	1.071	1.28	31:48 34:36	32:54	0.9975	1.154	-0.083	-7.2%
123678-HxCDF	1.190	1.27		33:00	1.0005	1.298	-0.108	-8.4%
234678-HxCDF	1.001	1.21		33:30	1.0157	1.043	-0.042	-4.1%
123789-HxCDF	0.866	1.32		34:19	1.0404	0.974	-0.108	-11.1%
TOTAL HxCDF	1.032	1.27				1.117	-0.085	-7.6%
123478-HxCDD	0.789	1.28	32:17 34:12	33:37	0.9975	0.883	-0.094	-10.7%
123678-HxCDD	0.885	1.22		33:42	1.0000	1.000	-0.115	-11.5%

Find

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

123789-HxCDD	0.902	1.19		34:02	1.0099	0.992	-0.090	-9.1%
TOTAL HxCDD	0.859	1.23				0.959	-0.100	-10.5%
1234678-HpCDF	1.310	1.13	35:54 37:53	36:01	1.0009	1.473	-0.163	-11.1%
1234789-HpCDF	0.991	1.20		37:38	1.0459	1.122	-0.131	-11.6%
TOTAL HpCDF	1.151	1.16				1.297	-0.146	-11.3%
1234678-HpCDD	0.919	1.03	36:11 37:19	37:05	1.0000	1.035	-0.116	-11.2%
TOTAL HpCDD	0.919	1.03				1.035	-0.116	-11.2%
OCDF	1.233	0.87	36:56 44:56	41:10	1.0057	1.440	-0.207	-14.4%
OCDD	1.014	0.85	36:56 44:56	40:56	1.0000	1.113	-0.099	-8.9%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.941		24:21 28:21	26:22	1.0006	1.006	-0.065	-6.4%
13C12-PeCDF 234	0.912	1.47	25:30 33:30	30:11	1.0232	0.993	-0.081	-8.2%
13C12-HxCDF 478	0.951	0.52		32:54	0.9975	0.921	0.030	3.2%
13C12-HxCDF 234	0.895	0.51		33:30	1.0157	0.954	-0.059	-6.1%
13C12-HxCDF 789	0.691	0.51		34:18	1.0399	0.755	-0.064	-8.5%
13C12-HxCDD 478	0.788	1.05		33:36	0.9970	0.812	-0.024	-2.9%
13C12-HpCDF 789	0.766	0.43	33:59 39:59	37:37	1.0454	0.780	-0.014	-1.8%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.290	0.70	24:41 26:41	25:41	1.0000	1.545	-0.255	-16.5%
13C12-2378-TCDD	1.098	0.81	24:21 28:21	26:21	1.0000	1.248	-0.150	-12.0%
13C12-PeCDF 123	1.047	1.49	25:30 33:30	29:30	1.0000	1.280	-0.233	-18.2%
13C12-PeCDD 123	0.499	1.41	26:30 34:30	30:30	1.0000	0.710	-0.211	-29.7%
13C12-HxCDF 678	1.256	0.52	28:59 36:59	32:59	1.0000	1.412	-0.156	-11.0%
13C12-HxCDD 678	1.059	1.24	32:42 34:42	33:42	1.0000	0.998	0.061	6.1%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/06/98

TRIANGLE LABORATORIES, INC.
Continuing Calibration for T980148

13C12-HpCDF 678	0.821	0.43	33:59 39:59	35:59	1.0000	0.891	-0.070	-7.9%
13C12-HpCDD 678	0.749	1.01	36:05 38:05	37:05	1.0000	0.722	0.027	3.7%
:12-OCDD	0.529	0.90	40:51 41:11	40:56	1.0000	0.490	0.039	8.0%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.80		26:10	0.9930	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.15		34:01	1.0094	1.000	0.000	0.0%

QC Front End Check: 1.9657

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/07/98 TRIANGLE LABORATORIES, INC.

Continuing Calibration for T980160

Analysis Date....: 01/06/98 Method.....: M237
Operator.....: CRV Instrument..: T
Init Calibration.: TF5D177 Std.Conc....: 5.00
ICal Date.....: 12/17/97

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		5:40 19:40			2.537	-2.537	100.0%
Total MCDD	0.000		6:21 20:21			2.024	-2.024	100.0%
Total DCDF	0.000		12:40 20:40			0.705	-0.705	100.0%
Total DCDD	0.000		13:21 21:21			1.353	-1.353	100.0%
Total TriCDF	0.000		16:40 23:40			0.860	-0.860	100.0%
Total TriCDD	0.000		18:21 24:21			0.444	-0.444	100.0%
2378-TCDF	1.354	0.84	22:29 27:31	25:41	1.0006	1.370	-0.016	-1.2%
TOTAL TCDF	1.354	0.84				1.370	-0.016	-1.2%
2378-TCDD	1.159	0.75	23:44 27:29	26:21	1.0000	1.363	-0.204	-14.9%
TOTAL TCDD	1.159	0.75				1.363	-0.204	-14.9%
12378-PeCDF	0.931	1.42	27:23 31:18	29:30	1.0000	1.061	-0.130	-12.2%
23478-PeCDF	0.953	1.53		30:11	1.0232	1.060	-0.107	-10.1%
TOTAL PeCDF	0.942	1.47				1.060	-0.118	-11.1%
12378-PeCDD	1.229	1.62	28:35 31:08	30:31	1.0005	1.293	-0.064	-5.0%
TOTAL PeCDD	1.229	1.62				1.293	-0.064	-5.0%
123478-HxCDF	1.033	1.31	31:46 34:33	32:53	0.9970	1.154	-0.121	-10.5%
123678-HxCDF	1.217	1.26		32:59	1.0000	1.298	-0.081	-6.2%
234678-HxCDF	0.951	1.28		33:30	1.0157	1.043	-0.092	-8.8%
123789-HxCDF	0.858	1.32		34:19	1.0404	0.974	-0.116	-11.9%
TOTAL HxCDF	1.015	1.29				1.117	-0.102	-9.1%
123478-HxCDD	0.765	1.30	32:15 34:09	33:36	0.9980	0.883	-0.118	-13.3%
123678-HxCDD	0.885	1.26		33:42	1.0010	1.000	-0.115	-11.5%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

123789-HxCDD	0.868	1.20		34:01	1.0104	0.992	-0.124	-12.5%
TOTAL HxCDD	0.839	1.25				0.959	-0.120	-12.5%
4678-HpCDF	1.367	1.07	35:50 37:49	35:59	1.0000	1.473	-0.106	-7.2%
1234789-HpCDF	1.030	1.18		37:37	1.0454	1.122	-0.092	-8.2%
TOTAL HpCDF	1.198	1.11				1.297	-0.099	-7.6%
1234678-HpCDD	0.960	0.93	36:08 37:15	37:05	1.0004	1.035	-0.075	-7.2%
TOTAL HpCDD	0.960	0.93				1.035	-0.075	-7.2%
OCDF	1.283	0.88	36:54 44:54	41:10	1.0065	1.440	-0.157	-10.9%
OCDD	0.982	0.84	36:54 44:54	40:56	1.0008	1.113	-0.131	-11.8%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.935		24:21 28:21	26:21	1.0000	1.006	-0.071	-7.1%
13C12-PeCDF 234	1.007	1.49	25:30 33:30	30:10	1.0226	0.993	0.014	1.4%
13C12-HxCDF 478	0.966	0.51		32:53	0.9970	0.921	0.045	4.9%
13C12-HxCDF 234	0.884	0.51		33:29	1.0152	0.954	-0.070	-7.4%
13C12-HxCDF 789	0.695	0.52		34:17	1.0394	0.755	-0.060	-8.0%
13C12-HxCDD 478	0.766	1.19		33:35	0.9975	0.812	-0.046	-5.7%
13C12-HpCDF 789	0.845	0.42	33:59 39:59	37:36	1.0449	0.780	0.065	8.3%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.294	0.73	24:40 26:40	25:40	1.0000	1.545	-0.251	-16.2%
13C12-2378-TCDD	1.176	0.77	24:21 28:21	26:21	1.0000	1.248	-0.072	-5.8%
13C12-PeCDF 123	1.218	1.47	25:30 33:30	29:30	1.0000	1.280	-0.062	-4.8%
13C12-PeCDD 123	0.631	1.50	26:30 34:30	30:30	1.0000	0.710	-0.079	-11.1%
13C12-HxCDF 678	1.305	0.51	28:59 36:59	32:59	1.0000	1.412	-0.107	-7.6%
13C12-HxCDD 678	1.058	1.16	32:40 34:40	33:40	1.0000	0.998	0.060	6.0%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

13C12-HpCDF 678	0.834	0.44	33:59 39:59	35:59	1.0000	0.891	-0.057	-6.4%
13C12-HpCDD 678	0.794	1.03	36:04 38:04	37:04	1.0000	0.722	0.072	10.0%
13C12-OCDD	0.589	0.91	40:46 41:06	40:54	1.0000	0.490	0.099	20.1%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.80		26:10	0.9930	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.20		34:01	1.0104	1.000	0.000	0.0%

QC Front End Check: 1.4346

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/07/98

TRIANGLE LABORATORIES, INC.
Continuing Calibration for X980080

Analysis Date....: 01/07/98
Operator.....: BJG
Init Calibration.: XF24087
Cal Date.....: 04/08/97
lysis Time....: 11:23

Method.....: C2NF
Instrument..: X
Std.Conc....: 5.00

GC Column...: DB-225

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
2378-TCDF	1.113	0.77	16:57 23:29	21:28	1.0008	0.967	0.146	15.1%
TOTAL TCDF	1.113	0.77				0.967	0.146	15.1%
2378-TCDD	1.176	0.82	17:46 22:51	20:13	1.0017	1.095	0.081	7.4%
TOTAL TCDD	1.176	0.82				1.095	0.081	7.4%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	1.030		18:11 22:11	20:12	1.0008	1.018	0.012	1.1%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.374	0.80	20:27 22:27	21:27	1.0000	1.392	-0.018	-1.3%
.2-2378-TCDD	1.106	0.78	18:11 22:11	20:11	1.0000	1.105	0.001	0.0%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.80		20:27	1.0132	1.000	0.000	0.0%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Date: 01/10/98 TRIANGLE LABORATORIES OF RTP, INC.

Continuing Calibration for P980164

Analysis Date....: 01/10/98 Method.....: C2NF
Operator.....: WK Instrument..: P
Init Calibration.: PF22206 Std.Conc....: 5.00
ICal Date.....: 02/20/96
Analysis Time....: 10:22 GC Column...: DB-225

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
2378-TCDF	1.017	0.80	18:15 25:21	23:02	1.0007	1.040	-0.023	-2.2%
TOTAL TCDF	1.017	0.80				1.040	-0.023	-2.2%
2378-TCDD	1.062	0.82	19:05 24:34	21:36	1.0015	0.992	0.070	7.1%
TOTAL TCDD	1.062	0.82				0.992	0.070	7.1%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.966		19:34 23:34	21:35	1.0008	1.014	-0.048	-4.8%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.509	0.75	22:01 24:01	23:01	1.0000	1.388	0.121	8.7%
13C12-2378-TCDD	1.222	0.82	19:34 23:34	21:34	1.0000	1.067	0.155	14.5%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.80		21:51	1.0131	1.000	0.000	0.0%

Triangle Laboratories, Inc.® Analytical Services Division
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Appendix C

HCl
Laboratory Analysis Data

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Chloride by

Ion Chromatography

METHOD 26

Date : January 27, 1998

Client ID : Eastern Research Group

TLI Project Number : 44369

This report should only be reproduced in full. Any partial reproduction of this report requires permission from Triangle Laboratories, Inc.

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Objective: Analysis of thirty-nine impinger samples for chloride by Method 26

Method: Thirty-nine impinger samples were received by Triangle Laboratories, Inc. on December 17, 1997 without coolant in good condition. The samples were stored at 4°C prior to analysis. This report pertains only to the analysis of two of the samples for chloride. The samples were analyzed for chloride content by ion chromatography using Method 26 with suppressed conductivity detection. The results reported relate only to the items tested.

The analysis conditions are listed below:

Instrument: Dionex DX300 Ion Chromatograph with a PED-II Conductivity Detector
Eluent flow: 1.5 mL/min. (1.8 mM sodium carbonate/1.7mM sodium bicarbonate)
Suppressor: Anion self-regenerating suppressor-1
Sample Loop: 25 uL
Detection: Conductivity - suppressed ion
Data Recording: Dionex AI 450 software

Report:

Enclosed with the case narrative are copies of the client paperwork, sample log-in sheets, and log book pages. The data are reported as quantitation reports and chromatograms. A seven point calibration curve was performed ranging from 0.5 ppm to 100 ppm both before and after sample analysis. Reported concentrations are mean values determined from duplicate analyses.

Results:

Due to instrument problems, a six point calibration curve from 1 ppm to 100 ppm was used for the chlorine analyses. Because of this, chlorine samples whose concentrations were calculated as being below 1 ppm were reported as less than 1 ppm. Samples in which chloride was not detected were reported as detection limits.

* Due to the levels of chloride present, samples CAA-15, CAA-19, CAA-35, CAA-51, CAA-55, and CAA-63 were analyzed at dilutions.

Samples CAA-03 and CAA-04 were used to analyze matrix spikes and matrix spike duplicates. The matrix spike and matrix spike duplicate sample recoveries were within QC criteria for the chloride spikes. The high recoveries of the chlorine spikes may be a matrix effect. Its cause is
* being investigated.

The data in this package has been judged to be valid according to the guidelines of Method 26 except as noted above. Should you have any questions, please feel free to contact our Project Scientist, Amy Boehm, at (919) 544-5729, Ext. 268.

For Triangle Laboratories , Inc.,

Report Preparation:

Sarah A Hubbard

Sarah A. Hubbard
Report Preparation Chemist

Quality Control:

Linda F. Jones

Report Preparation Chemist

The total number of pages in this data package is 115.

TRIANGLE LABS

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Accredidation pending. Certificate Number 0226-01. Accreditation for technical competence in Environmental Testing.(Including Waste Water, Sol/Haz Waste, Pulp/Paper, and Air Matrices) Parameters are AOX/TOX, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1998. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1998. Certificate number OS-00397. Dioxin in drinking water.

State of Arizona, Department of Health Services. Expires May 26, 1998. Certificate #AZ0423. Drinking Water for Dioxin, Dioxin in WW and S/H Waste.

State of Arkansas, Department of Pollution Control and Ecology. Expires February 18, 1998. Pulp/paper, soil, water, and Hazardous Waste for Dioxin/Furan; AOX/TOX, Volatiles, Semi-volatiles, and Metals.

State of California, Department of Health Services. Expires August 31, 1999. Certificate #1922. Selected Metals in Waste Water; Volatiles, Semi-volatiles, and Dioxin/furan in WW and Sol/Haz Waste. Dioxin in drinking water.

State of Connecticut, Department of Health Services. Expires September 30, 1999. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1998. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1998. Dioxin in DW. Drinking Water ID HRS# 87424. Metals, Extractable Organics (GC/MS), Pesticides/PCB's (GC) and Volatiles (GC/MS) in Environmental Samples. Environmental water ID HRS# E87411.

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Hawaii Department of Health. Expires March 1, 1998. Dioxin in drinking water. "Accepted" status for regulatory purposes .

Idaho Department of Health and Welfare. Expires December 31, 1998. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non portable Water and Solid and Hazardous Waste. Method 1613 for drinking water. ID #'s - Drinking water and/or pollution control - E-215. Solid or Hazardous Waste - E-1209.

Commonwealth of Kentucky, Department for Environmental Protection. Expires December 31, 1998. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30, 1998. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires June 3, 1998. Drinking water by Method 1613.

Mississippi State Department of Health. No expiration date. Dioxin in drinking water.

Montana Department of Health and Environmental Services. Expires December 31, 1998. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Expires June 30, 1998. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Recertification pending. Dioxin in drinking water.

New York State Department of Health. Expires April 1, 1998. ID #11026. Environmental Analyses of non-potable Water, Solid and Hazardous Waste. Method 1613 in DW.

State of North Carolina, Department of Environment Health and Natural Resources Expires August 31, 1999. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 2000. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1998. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Revised 1/20/98 RM
y:certific\certlist.mem

Oklahoma Department of Environmental Quality. Expires August 31, 1998. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires April 1, 1998. Certificate number #99040001 (drinking water). Expires August 31, 1999. Certificate number #99040002 (other parameters). Dioxin/Furans, BNA, Volatiles, and PCBs/pesticides under Clean Water Act, 2,3,7,8-TCDD for Drinking Water, and Organic extractables for Solid and Hazardous Waste.

State of Tennessee. Department of Environment and Conservation. Expires February 5, 1999. ID #02992. Method 1613 Drinking water only.

U.S. Department of Agriculture Soil Permit. Expires September 30, 2001. Permit No. S-3790. Under the authority of the Federal Plant Pest Act, permission is granted to receive foreign soil samples for use in laboratory analysis.

U.S. Army Corps of Engineers. Recertification Pending. Validated to perform methods 8280 & 8290 for Lockbourne Landfill Site Investigation, Defense Distribution Depot Projects, and assorted projects for the USACE North Pacific Division Laboratory.

U.S. EPA Region V. Expires November 14, 1999. Dioxin in drinking water.

U.S. EPA Region VIII, for the State of Wyoming. Expires November 12, 1998. Dioxin in drinking water.

State of Utah, Department of Health. Extended by State to March 31, 1998. Certificate Number E-166. Certification for the following parameters: Semi-Volatiles and Volatiles under RCRA; Volatiles under Clean Water Act; Dioxin/furans by Method 8280; Drinking water for Dioxin by Method 1613; Metals including Mercury and Microwave Digestion.

Commonwealth of Virginia, Department of General Services, Division of Consolidated Laboratory Services. Expires June 30, 1998. ID # 00341. Dioxin in drinking water.

State of Washington, Department of Ecology. Expires September 11, 1998. Lab Accreditation Number C067. Scope of Accreditation applies to water analyses for Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans, BNA Extr (Semivolatile) Organics and Purgeable (Volatile) Organics.

State of Washington, Department of Health. Expires April 30, 1998. Dioxin in drinking water. Lab I.D. 129

State of West Virginia, Department of Health. Expires January 31, 1998. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires August 31, 1998. Laboratory ID Number 999869530. Certification for the following categories of Organics: Purgeable, Base/Neutral, Acid, PCBs, and Dioxin. Expires November 14, 1999. Laboratory ID 999869530. Dioxin in drinking water.

PHARMACEUTICAL

Drug Enforcement Agency (DEA). Expires November 30, 1998. Registration number RT01195835. Controlled substance registration for schedules 1,2,3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1998. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires June 1998. ID #'s 001500 1053481. Annual registration of drug establishment. Annual registration of drug establishment.

OTHER

Clinical Laboratory Improvement Amendments (CLIA) Registration. Expires May 30, 1999. ID # 34D0705123. Department of Health & Human Services, Health Care Financing Administration.

U.S. EPA Large Quantity Hazardous Waste Generator. No expiration date. EPA ID #NCD982156879. Permit indicates that the laboratory is a large generator of hazardous waste.

North Carolina General License for Radiation Protection. No. expiration date. License No. 032-875-OG. The general license applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with specific requirements.

Eastern Research Group COC

COPY

12/17/97

Culp Aluminum Alloys
CHAIN OF CUSTODY

RELINQUISHED BY = Mark Cubbage DATE = 12/17/97 RECEIVED BY: [illegible] DATE: 12/17/97 1230
RELINQUISHED BY = _____ DATE = _____ RECEIVED BY: _____ DATE: _____

SAMPLE ID	FIELD ID					SAMPLE TYPE	PRESERVATIVE	COMMENTS	ANALYSIS
~~CAA-01~~	CAA-	120597 M26-	CDBOUT-	FILTER	1	METHOD 26A, CDBOUT, RUN 1	FILTER		Hydrogen Chlor
~~CAA-02~~	CAA-	120597 M26A-	CDBOUT-	FH	1	METHOD 26A, CDBOUT, RUN 1	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-03 ✓	CAA-	120597 M26A-	CDBOUT-	IMP1,2	1	METHOD 26A, CDBOUT, RUN 1	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-04 ✓	CAA-	120597 M26A-	CDBOUT-	IMP3,4	1	METHOD 26A, CDBOUT, RUN 1	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-05~~	CAA-	120697 M26A-	CDBOUT-	FILTER	2	METHOD 26A, CDBOUT, RUN 2	FILTER		Hydrogen Chlor
~~CAA-06~~	CAA-	120697 M26A-	CDBOUT-	FH	2	METHOD 26A, CDBOUT, RUN 2	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-07 ✓	CAA-	120697 M26A-	CDBOUT-	IMP1,2	2	METHOD 26A, CDBOUT, RUN 2	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-08 ✓	CAA-	120697 M26A-	CDBOUT-	IMP3,4	2	METHOD 26A, CDBOUT, RUN 2	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-09~~	CAA-	120697 M26A-	CDBOUT-	FILTER	3	METHOD 26A, CDBOUT, RUN 3	FILTER		Hydrogen Chlor
~~CAA-10~~	CAA-	120697 M26A-	CDBOUT-	FH	3	METHOD 26A, CDBOUT, RUN 3	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-11 ✓	CAA-	120697 M26A-	CDBOUT-	IMP1,2	3	METHOD 26A, CDBOUT, RUN 3	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-12 ✓	CAA-	120697 M26A-	CDBOUT-	IMP3,4	3	METHOD 26A, CDBOUT, RUN 3	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-13~~	CAA-	120597 M26A-	CDBIN-	FH	1	METHOD 26A, CDBIN, RUN 1	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-15 ✓	CAA-	120597 M26A-	CDBIN-	IMP1,2	1	METHOD 26A, CDBIN, RUN 1	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-16 ✓	CAA-	120597 M26A-	CDBIN-	IMP3,4	1	METHOD 26A, CDBIN, RUN 1	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-17~~	CAA-	120597 M26A-	CDBIN-	FILTER	1	METHOD 26A, CDBIN, RUN 1	FILTER		Hydrogen Chlor
~~CAA-18~~	CAA-	120697 M26A-	CDBIN-	FH	2	METHOD 26A, CDBIN, RUN 2	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-19 ✓	CAA-	120697 M26A-	CDBIN-	IMP1,2	2	METHOD 26A, CDBIN, RUN 2	IMP 1,2 & H20 RINSE Bottle 1 of 2		Hydrogen Chlor
CAA-20 ✓	CAA-	120697 M26A-	CDBIN-	IMP3,4	2	METHOD 26A, CDBIN, RUN 2	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-21~~	CAA-	120697 M26A-	CDBIN-	FILTER	3	METHOD 26A, CDBIN, RUN 3	FILTER		Hydrogen Chlor
~~CAA-22~~	CAA-	120697 M26A-	CDBIN-	FH	3	METHOD 26A, CDBIN, RUN 3	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-23 ✓	CAA-	120697 M26A-	CDBIN-	IMP1,2	3	METHOD 26A, CDBIN, RUN 3	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-24 ✓	CAA-	120697 M26A-	CDBIN-	IMP3,4	3	METHOD 26A, CDBIN, RUN 3	IMP 3,4 & H20 RINSE		Hydrogen Chlor
~~CAA-25~~	CAA-	120897 M26A-	RF1-OUT-	FILTER	1	METHOD 26A, RF1-OUT, RUN 1	FILTER		Hydrogen Chlor
~~CAA-26~~	CAA-	120897 M26A-	RF1-OUT-	FH	1	METHOD 26A, RF1-OUT, RUN 1	FRONT HALF ACETONE RINSE		Hydrogen Chlor
CAA-27 ✓	CAA-	120897 M26A-	RF1-OUT-	IMP1,2	1	METHOD 26A, RF1-OUT, RUN 1	IMP 1,2 & H20 RINSE		Hydrogen Chlor
CAA-28 ✓	CAA-	120897 M26A-	RF1-OUT-	IMP3,4	1	METHOD 26A, RF1-OUT, RUN 1	IMP 3,4 & H20 RINSE		Hydrogen Chlor

Eastern Research Group COC

~~CAA-29~~	CAA-	120997	M26A-	RF1-OUT-	FILTER	2	METHOD 26A, RF1-OUT, RUN 2	FILTER	Hydrogen Chlor
~~CAA-30~~	CAA-	120997	M26A-	RF1-OUT-	FH	2	METHOD 26A, RF1-OUT, RUN 2	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-31	CAA-	120997	M26A-	RF1-OUT-	IMP1,2	2	METHOD 26A, RF1-OUT, RUN 2	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-32	CAA-	120997	M26A-	RF1-OUT-	IMP3,4	2	METHOD 26A, RF1-OUT, RUN 2	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-33~~	CAA-	120997	M26A-	RF1-OUT-	FILTER	3	METHOD 26A, RF1-OUT, RUN 3	FILTER	Hydrogen Chlor
~~CAA-34~~	CAA-	121097	M26A-	RF1-OUT-	FH	3	METHOD 26A, RF1-OUT, RUN 3	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-35	CAA-	121097	M26A-	RF1-OUT-	IMP1,2	3	METHOD 26A, RF1-OUT, RUN 3	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-36	CAA-	121097	M26A-	RF1-OUT-	IMP3,4	3	METHOD 26A, RF1-OUT, RUN 3	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-37~~	CAA-	121197	M26A-	RF2-OUT-	FILTER	4	METHOD 26A, RF2-OUT, RUN 4	FILTER	Hydrogen Chlor
~~CAA-38~~	CAA-	121197	M26A-	RF2-OUT-	FH	4	METHOD 26A, RF2-OUT, RUN 4	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-39	CAA-	121197	M26A-	RF2-OUT-	IMP1,2	4	METHOD 26A, RF2-OUT, RUN 4	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-40	CAA-	121197	M26A-	RF2-OUT-	IMP3,4	4	METHOD 26A, RF2-OUT, RUN 4	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-49~~	CAA-	120897	M26A-	RF1-IN-	FILTER	1	METHOD 26A, RF1-IN, RUN 1	FILTER	Hydrogen Chlor
~~CAA-50~~	CAA-	120897	M26A-	RF1-IN-	FH	1	METHOD 26A, RF1-IN, RUN 1	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-51	CAA-	120897	M26A-	RF1-IN-	IMP1,2	1	METHOD 26A, RF1-IN, RUN 1	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-52	CAA-	120897	M26A-	RF1-IN-	IMP3,4	1	METHOD 26A, RF1-IN, RUN 1	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-53~~	CAA-	120997	M26A-	RF1-IN-	FILTER	2	METHOD 26A, RF1-IN, RUN 2	FILTER	Hydrogen Chlor
~~CAA-54~~	CAA-	120997	M26A-	RF1-IN-	FH	2	METHOD 26A, RF1-IN, RUN 2	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-55	CAA-	120997	M26A-	RF1-IN-	IMP1,2	2	METHOD 26A, RF1-IN, RUN 2	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-56	CAA-	120997	M26A-	RF1-IN-	IMP3,4	2	METHOD 26A, RF1-IN, RUN 2	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-57~~	CAA-	121097	M26A-	RF1-IN-	FILTER	3	METHOD 26A, RF1-IN, RUN 3	FILTER	Hydrogen Chlor
~~CAA-58~~	CAA-	121097	M26A-	RF1-IN-	FH	3	METHOD 26A, RF1-IN, RUN 3	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-59	CAA-	121097	M26A-	RF1-IN-	IMP1,2	3	METHOD 26A, RF1-IN, RUN 3	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-60	CAA-	121097	M26A-	RF1-IN-	IMP3,4	3	METHOD 26A, RF1-IN, RUN 3	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-61~~	CAA-	121197	M26A-	RF2-IN-	FILTER	4	METHOD 26A, RF2-IN, RUN 4	FILTER	Hydrogen Chlor
~~CAA-62~~	CAA-	121197	M26A-	RF2-IN-	FH	4	METHOD 26A, RF2-IN, RUN 4	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-63	CAA-	121197	M26A-	RF2-IN-	IMP1,2	4	METHOD 26A, RF2-IN, RUN 4	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-64	CAA-	121197	M26A-	RF2-IN-	IMP3,4	4	METHOD 26A, RF2-IN, RUN 4	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-73~~	CAA-	120497	M26A-	RBLK1	FILTER	1	METHOD 26A, REAGENT BLANK	FILTER	Hydrogen Chlor
~~CAA-74~~	CAA-	120497	M26A-	RBLK1	Acetone	1	METHOD 26A, REAGENT BLANK	ACETONE	Hydrogen Chlor
CAA-75	CAA-	120497	M26A-	RBLK1	H2S04	1	METHOD 26A, REAGENT BLANK	0.1N Sulfuric Acid	Hydrogen Chlor
CAA-76	CAA-	120497	M26A-	RBLK1	NaOH	1	METHOD 26A, REAGENT BLANK	0.1N NaOH	Hydrogen Chlor

~~CAA-77~~	CAA-	120897	M26A-	RBLK2	FILTER	2	METHOD 26A, REAGENT BLANK	FILTER	Hydrogen Chlor
~~CAA-78~~	CAA-	120897	M26A-	RBLK2	Acetone	2	METHOD 26A, REAGENT BLANK	ACETONE	Hydrogen Chlor
[redacted]	CAA-	120897	M26A-	RBLK2	H2S04	2	METHOD 26A, REAGENT BLANK	0.1N Sulfuric Acid	Hydrogen Chlor
[redacted]	CAA-	120897	M26A-	RBLK2	NaOH	2	METHOD 26A, REAGENT BLANK	0.1N NaOH	Hydrogen Chlor
~~CAA-93~~	CAA-	120697	M26A-	FBLKIN	FILTER	1	FIELD BLANK CDBINLET	FILTER	Hydrogen Chlor
~~CAA-94~~	CAA-	120697	M26A-	FBLKIN	FH	1	FIELD BLANK CDBINLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-95 ✓	CAA-	120697	M26A-	FBLKIN	IMP1,2	1	FIELD BLANK CDBINLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-96 ✓	CAA-	120697	M26A-	FBLKIN	IMP3,4	1	FIELD BLANK CDBINLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-97~~	CAA-	121097	M26A-	FBLKOUT	FILTER	1	FIELD BLANK RFOUTLET	FILTER	Hydrogen Chlor
~~CAA-98~~	CAA-	121097	M26A-	FBLKOUT	FH	1	FIELD BLANK RFOUTLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-99 ✓	CAA-	121097	M26A-	FBLKOUT	IMP1,2	1	FIELD BLANK RFOUTLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-100 ✓	CAA-	121097	M26A-	FBLKOUT	IMP3,4	1	FIELD BLANK RFOUTLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
~~CAA-101~~	CAA-	120997	M26A-	FBLKIN	FILTER	1	FIELD BLANK RFINLET	FILTER	Hydrogen Chlor
~~CAA-102~~	CAA-	120997	M26A-	FBLKIN	FH	1	FIELD BLANK RFINLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-103 ✓	CAA-	120997	M26A-	FBLKIN	IMP1,2	1	FIELD BLANK RFINLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-104 ✓	CAA-	120997	M26A-	FBLKIN	IMP3,4	1	FIELD BLANK RFINLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-231 ✓	CAA-	120597	M26A-	Reagent Blk	DIH2O	1	REAGENT BLANK 1	DIH20	Hydrogen Chlor
CAA-232 ✓	CAA-	120697	M26A-	Reagent Blk	DIH2O	2	REAGENT BLANK 2 WASH	DIH20	Hydrogen Chlor
CAA-234	CAA-	120897	M26A-	GBLKOUT	FH	1	GLASSWARE BLANK RFOUTLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-235	CAA-	120897	M26A-	GBLKOUT	IMP1,2	1	GLASSWARE BLANK RFOUTLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-236	CAA-	120897	M26A-	GBLKOUT	IMP3,4	1	GLASSWARE BLANK RFOUTLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-237	CAA-	120897	M26A-	RBLK2	FILTER	1	REAGENT BLANK 2	FILTER	Hydrogen Chlor
CAA-238	CAA-	120897	M26A-	GBLKIN	FH	2	GLASSWARE BLANK RFINLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-239	CAA-	120897	M26A-	GBLKIN	IMP1,2	2	GLASSWARE BLANK RFINLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-240	CAA-	120897	M26A-	GBLKIN	IMP3,4	2	GLASSWARE BLANK RFINLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-241	CAA-	120597	M26A-	GBLKIN	FH	2	GLASSWARE BLANK CDBINLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-242	CAA-	120597	M26A-	GBLKIN	IMP1,2	2	GLASSWARE BLANK CDBINLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-243	CAA-	120597	M26A-	GBLKIN	IMP3,4	2	GLASSWARE BLANK CDBINLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-244	CAA-	120597	M26A-	GBLKOUT	FH	2	GLASSWARE BLANK CDBOUTLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-245	CAA-	120597	M26A-	GBLKOUT	IMP1,2	2	GLASSWARE BLANK CDBOUTLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-246	CAA-	120597	M26A-	GBLKOUT	IMP3,4	2	GLASSWARE BLANK CDBOUTLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-247	CAA-	120897	M26A-	GBLKOUT	FH	2	GLASSWARE BLANK RFOUTLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor

Eastern Research Group COC

CAA-248	CAA-	120897	M26A-	GBLKOUT	IMP1,2	2	GLASSWARE BLANK RFOUTLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-249	CAA-	120897	M26A-	GBLKOUT	IMP3,4	2	GLASSWARE BLANK RFOUTLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-250	CAA-	120897	M26A-	GBLKIN	FH	2	GLASSWARE BLANK RFINLET	FRONT HALF ACETONE RINSE	Hydrogen Chlor
CAA-251	CAA-	120897	M26A-	GBLKIN	IMP1,2	2	GLASSWARE BLANK RFINLET	IMP 1,2 & H20 RINSE	Hydrogen Chlor
CAA-252	CAA-	120897	M26A-	GBLKIN	IMP3,4	2	GLASSWARE BLANK RFINLET	IMP 3,4 & H20 RINSE	Hydrogen Chlor
CAA-253	CAA-	120997	M26A-	FILTER	FILTER	2	METHOD 26, CDBIN, RUN 2 FILTER	FILTER	Hydrogen Chlor

CAA-254

CDB In Run 2 Imp 1, 2 Bottle 2 of 2 HCl

TRIANGLE LABORATORIES, INC. -- ...N RECORD/CHAIN OF CUSTODY

12

Custody Seal : Absent Sample Seals: Absent
Chain of Custody : Present Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44369
Client: ERG02 - Eastern Research Group

Book 194

Date Received | 12/17/97 | By

Page 52

Box | NO COOLANT | Carrier and Number | CARLILE

TLI Number.. mR/H:CPM.	Client Sample ID..... Client COC ID.....*	Matrix Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-52-1	CAA-03 CAA-03	40 ML LIQUID R03									
194-52-2	CAA-04 CAA-04	40 ML LIQUID R03									
194-52-3	CAA-07 CAA-07	40 ML LIQUID R03									
194-52-4	CAA-08 CAA-08	40 ML LIQUID R03									
194-52-5	CAA-11 CAA-11	40 ML LIQUID R03									
194-52-6	CAA-12 CAA-12	40 ML LIQUID R03									
194-52-7	CAA-15 CAA-15	40 ML LIQUID R03									
194-52-8	CAA-19 CAA-19	40 ML LIQUID R03									
194-52-9	CAA-20 CAA-20	40 ML LIQUID R03									
194-52-10	CAA-23 CAA-23	40 ML LIQUID R03									
194-52-11	CAA-24 CAA-24	40 ML LIQUID R03									
194-52-12	CAA-27 CAA-27	40 ML LIQUID R03									
194-52-13	CAA-28 CAA-28	40 ML LIQUID R03									
194-52-14	CAA-31 CAA-31	40 ML LIQUID R03									

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- LOG IN RECORD/CHAIN OF CUSTODY

Custody Seal : Absent | Sample Seals: Absent | TLI Project Number 44369 | Book
Chain of Custody : Present | Container...: Intact | Client: ERG02 - Eastern Research Group
Sample Tags : Absent | | 194
Sample Tag Numbers: Not Listed on Chain of Custody | | Page
SMO Forms : N/A | Date Received 12/17/97 | By
Box NO COOLANT | Carrier and Number CARLILE | 52

TLI Number.. ...Client Sample ID..... .....Matrix mR/H:CPM. .....Client COC ID.....* Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-52-15 CAA-32 40 ML LIQUID CAA-32 R03									
194-52-16 CAA-35 40 ML LIQUID CAA-35 R03									
194-52-17 CAA-36 40 ML LIQUID CAA-36 R03									
194-52-18 CAA-39 40 ML LIQUID CAA-39 R03									
194-52-19 CAA-40 40 ML LIQUID CAA-40 R03									
194-52-20 CAA-51 40 ML LIQUID CAA-40 51 (IE) gal 1/23/98 R03									
194-52-21 CAA-52 40 ML LIQUID CAA-52 R03									
194-52-22 CAA-55 40 ML LIQUID CAA-55 R03									
194-52-23 CAA-56 40 ML LIQUID CAA-56 R03									
194-52-24 CAA-59 40 ML LIQUID CAA-59 R03									
194-52-25 CAA-60 40 ML LIQUID CAA-60 R03									
194-52-26 CAA-63 40 ML LIQUID CAA-63 R03									
194-52-27 CAA-64 40 ML LIQUID CAA-64 R03									
194-52-28 CAA-75 40 ML LIQUID CAA-75 R03									

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES, INC. -- [redacted] RECORD/CHAIN OF CUSTODY

Custody Seal : Absent Sample Seals: Absent
Chain of Custody : Present Container...: Intact
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

TLI Project Number 44369
Client: ERG02 - Eastern Research Group

Book 194

Date Received 12/17/97 By

Page 52

Box NO COOLANT

Carrier and Number CARLILE

TLI Number.. ...Client Sample ID..... .....Matrix mR/H:CPM. .....Client COC ID.....* Location.....	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	DISPOSED Date/Init
194-52-29 CAA-95 40 ML LIQUID CAA-95 R03									
194-52-30 CAA-96 40 ML LIQUID CAA-96 R03									
194-52-31 CAA-99 40 ML LIQUID CAA-99 R03									
194-52-32 CAA-100 40 ML LIQUID CAA-100 R03									
194-52-33 CAA-103 40 ML LIQUID CAA-103 R03									
194-52-34 CAA-104 40 ML LIQUID CAA-104 R03									
194-52-35 CAA-231 40 ML LIQUID CAA-231 R03									
194-52-36 CAA-232 40 ML LIQUID CAA-232 R03									
194-52-37 CAA-254 40 ML LIQUID CAA-254 R03									
194-52-38 CAA-16 40 ML LIQUID CAA-16 R03									
194-52-39 CAA-76 40 ML LIQUID CAA-76 R03									

Receiving Remarks:

Archive Remarks:

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 44369 Client: Eastern Research Group (ERG02)

Sample Information

Method: 26/26A Extraction Date: 1/6/98

Solvent/Acids(): _____ Lot: _____

Sample # crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	pH	Total volume (ml)	Dilution				
000	TLI Blank / TLI Blank			/	/					
001	194-52-1 / CAA-03			1	37 ~~33~~ LOS 1-6-98					
002	194-52-2 / CAA-04			7	34					
003	194-52-3 / CAA-07			1	37					
004	194-52-4 / CAA-08			7	37					
005	194-52-5 / CAA-11			3	34					
006	194-52-6 / CAA-12			7	37					
007	194-52-7 / CAA-15			1	31	2fold				
008	194-52-8 / CAA-19			1	40	2fold				
009	194-52-9 / CAA-20			7	35					
010	194-52-10 / CAA-23			7	36					
011	194-52-11 / CAA-24			7	37					
012	194-52-12 / CAA-27			1	37					

Comments: Jodie Jones

REV 07/26/93 (PSTMP 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 44369 Client: Eastern Research Group (ERG02)

Sample Information

Method: 26/26A Extraction Date: 1/6/98

Solvent/Acids(): _____ Lot: _____

Sample # crd	TLI SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	__/__/__	pH __/__/__	Total Volume (ml)	Dilution __/__/__	__/__/__	__/__/__
013	194-52-13 CAA-28				8	35			
014	194-52-14 CAA-31				1	35			
015	194-52-15 CAA-32				8	36			
016	194-52-16 CAA-35				1	40	20fold		
017	194-52-17 CAA-36				7	37			
018	194-52-18 CAA-39				1	28			
019	194-52-19 CAA-40				8	27			
020	194-52-20 CAA-51				1	41	20fold		
021	194-52-21 CAA-52				7	36			
022	194-52-22 CAA-55				1	37	20fold		
023	194-52-23 CAA-56				7	40			
024	194-52-24 CAA-59				1	35			
025	194-52-25 CAA-60				8	35			

Comments: Initial pH

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

ect: 44369 Client: Eastern Research Group (ERG02)

Sample Information

Method: 26/26A Extraction Date: 1/6/1998 for HCL

Solvent/Acids(): _____ Lot: _____

Sample # crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	__/__/__	PH __/__/__	Total volume __/__/__	Dilution __/__/__	__/__/__	__/__/__
026	194-52-26 CAA-63				1	41	20fold		
027	194-52-27 CAA-64				8	34			
028	194-52-28 CAA-75				1	35			
029	194-52-29 CAA-95				1	34			
030	194-52-30 CAA-96				13	35			
031	194-52-31 CAA-99				1	35			
032	194-52-32 CAA-10[illegible]				13	40			
033	194-52-33 CAA-103				1	38			
034	194-52-34 CAA-104				13	41			
035	194-52-35 CAA-23[illegible]				7	37			
036	194-52-36 CAA-23[illegible]				7	40			
037	194-52-37 CAA-25[illegible]				1	36			
038	194-52-38 CAA-1[illegible]				13	35			

Notes: _____

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 44369 Client: Eastern Research Group (ERG02)

Sample Information

Method: 26/26A Extraction Date: 1/6/1998 - ACL

Solvent/Acids(): _____ Lot: _____

Sample # crd	TLI SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	pH __/__/__	Total volume __/__/__	Dilution __/__/__	__/__/__	__/__/__
039	194-52-39 CAA-76			8	35			

Comments: _____

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES OF RTP, INC.

[PSTMF2]

PROJECT COMMUNICATION TRACKING FORM

TLI project Number: 44369

Use this form to record all exchanges of information between production units as well as personnel handling this project. Decisions, corrective actions and recommendations must also appear on this tracking document.

Date	Name	Comment / Decision / Resolution / Action / Observation
1-6-98	LDJ	MS/MSD was performed on sample 194-52-1 (CAA-03). 3ml of sample and 3ml of 100 ppm chloride Std.
1-6-98	LDJ	The following samples had dilutions 194-52-7 = 2 fold dilution 194-52-8 = 2 fold dilution 194-52-16 = 20 fold dilution 194-52-20 = 20 fold dilution 194-52-22 = 80 fold dilution 194-52-26 = 20 fold dilution
1-9-98	LDJ	MS/MSD was performed on sample 194-52-2 (CAA-04) 3ml of sample and 3ml of 100ppm chloride std.
1-26-98	LDJ	2 Fold Dilution → 3ml of sample and 3ml of HPLC water. 20 Fold Dilution → 250µl of sample and 5ml of HPLC water.

ATTACHMENT I

DIONEX SCHEDULE - C:\DX\SCHEDULE\44369HCL.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	STD 0.5 PPM F	..\CHLORIDE	STD005	1	1	1
2	STD 0.5 PPM F	..\CHLORIDE	STD005	1	1	1
3	STD 1.0 PPM F	..\CHLORIDE	STD001	1	1	1
4	STD 1.0 PPM F	..\CHLORIDE	STD001	1	1	1
5	STD 5.0 PPM F	..\CHLORIDE	STD005	1	1	1
6	STD 5.0 PPM F	..\CHLORIDE	STD005	1	1	1
7	STD 10.0 PPM F	..\CHLORIDE	STD010	1	1	1
8	STD 10.0 PPM F	..\CHLORIDE	STD010	1	1	1
9	STD 25.0 PPM F	..\CHLORIDE	STD025	1	1	1
10	STD 25.0 PPM F	..\CHLORIDE	STD025	1	1	1
11	STD 50.0 PPM F	..\CHLORIDE	STD050	1	1	1
12	STD 50.0 PPM F	..\CHLORIDE	STD050	1	1	1
13	STD 100.0 PPM F	..\CHLORIDE	STD100	1	1	1
14	STD 100.0 PPM F	..\CHLORIDE	STD100	1	1	1
15	H2SO4 BLANK	..\CHLORIDE	H2SO4BL	1	1	1
16	H2SO4 BLANK	..\CHLORIDE	H2SO4BL	1	1	1
17	QC 20 PPM	..\CHLORIDE	QC20PPM	1	1	1
18	QC 20 PPM	..\CHLORIDE	QC20PPM	1	1	1
19	194-52-1	..\CHLORIDE	1945201	1	1	1
20	194-52-1	..\CHLORIDE	1945201	1	1	1
21	194-52-3	..\CHLORIDE	1945203	1	1	1
22	194-52-3	..\CHLORIDE	1945203	1	1	1
23	194-52-5	..\CHLORIDE	1945205	1	1	1
24	194-52-5	..\CHLORIDE	1945205	1	1	1
25	194-52-7	..\CHLORIDE	1945207	1	2	1
26	194-52-7	..\CHLORIDE	1945207	1	2	1
27	194-52-8	..\CHLORIDE	1945208	1	2	1
28	194-52-8	..\CHLORIDE	1945208	1	2	1
29	194-52-12	..\CHLORIDE	1945212	1	1	1
30	194-52-12	..\CHLORIDE	1945212	1	1	1
31	194-52-14	..\CHLORIDE	1945214	1	1	1
32	194-52-14	..\CHLORIDE	1945214	1	1	1
33	194-52-16	..\CHLORIDE	1945216	1	20	1
34	194-52-16	..\CHLORIDE	1945216	1	20	1
35	194-52-18	..\CHLORIDE	1945218	1	1	1
36	194-52-18	..\CHLORIDE	1945218	1	1	1
37	194-52-20	..\CHLORIDE	1945220	1	20	1
38	194-52-20	..\CHLORIDE	1945220	1	20	1
39	194-52-22	..\CHLORIDE	1945222	1	20	1
40	194-52-22	..\CHLORIDE	1945222	1	20	1
41	194-52-24	..\CHLORIDE	1945224	1	1	1
42	194-52-24	..\CHLORIDE	1945224	1	1	1
43	194-52-26	..\CHLORIDE	1945226	1	20	1
44	194-52-26	..\CHLORIDE	1945226	1	20	1
45	194-52-28	..\CHLORIDE	1945228	1	1	1
46	194-52-28	..\CHLORIDE	1945228	1	1	1
47	194-52-29	..\CHLORIDE	1945229	1	1	1
48	194-52-29	..\CHLORIDE	1945229	1	1	1
49	194-52-31	..\CHLORIDE	1945231	1	1	1
50	194-52-31	..\CHLORIDE	1945231	1	1	1
51	194-52-33	..\CHLORIDE	1945233	1	1	1
52	194-52-33	..\CHLORIDE	1945233	1	1	1
53	194-52-37	..\CHLORIDE	1945237	1	1	1
54	194-52-37	..\CHLORIDE	1945237	1	1	1
55	194-52-1 MS	..\CHLORIDE	1945201	1	2	1
56	194-52-1 MS	..\CHLORIDE	1945201	1	2	1
57	194-52-1 MSD	..\CHLORIDE	1945201	1	2	1
58	194-52-1 MSD	..\CHLORIDE	1945201	1	2	1

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.St
59	195-18-1	..\CHLORIDE	1951801	1	100	1
60	195-18-1	..\CHLORIDE	1951801	1	100	1
61	195-18-4	..\CHLORIDE	1951804	1	1	1
62	195-18-4	..\CHLORIDE	1951804	1	1	1
63	195-18-5	..\CHLORIDE	1951805	1	100	1
64	195-18-5	..\CHLORIDE	1951805	1	100	1
65	195-18-7	..\CHLORIDE	1951807	1	100	1
66	195-18-7	..\CHLORIDE	1951807	1	100	1
67	195-18-9	..\CHLORIDE	1951809	1	100	1
68	195-18-9	..\CHLORIDE	1951809	1	100	1
69	195-18-11	..\CHLORIDE	1951811	1	1	1
70	195-18-11	..\CHLORIDE	1951811	1	1	1
71	195-18-4 MS	..\CHLORIDE	1951804	1	2	1
72	195-18-4 MS	..\CHLORIDE	1951804	1	2	1
73	195-18-4 MSD	..\CHLORIDE	1951804	1	2	1
74	195-18-4 MSD	..\CHLORIDE	1951804	1	2	1
75	195-35-1	..\CHLORIDE	1953501	1	1	1
76	195-35-1	..\CHLORIDE	1953501	1	1	1
77	195-35-1 MS	..\CHLORIDE	1953501	1	2	1
78	195-35-1 MS	..\CHLORIDE	1953501	1	2	1
79	195-35-1 MSD	..\CHLORIDE	1953501	1	2	1
80	195-35-1 MSD	..\CHLORIDE	1953501	1	2	1
81	STD 0.5 PPM B	..\CHLORIDE	STD005	1	1	1
82	STD 0.5 PPM B	..\CHLORIDE	STD005	1	1	1
83	STD 1.0 PPM B	..\CHLORIDE	STD001	1	1	1
84	STD 1.0 PPM B	..\CHLORIDE	STD001	1	1	1
85	STD 5.0 PPM B	..\CHLORIDE	STD005	1	1	1
86	STD 5.0 PPM B	..\CHLORIDE	STD005	1	1	1
87	STD 10.0 PPM B	..\CHLORIDE	STD010	1	1	1
88	STD 10.0 PPM B	..\CHLORIDE	STD010	1	1	1
89	STD 25.0 PPM B	..\CHLORIDE	STD025	1	1	1
90	STD 25.0 PPM B	..\CHLORIDE	STD025	1	1	1
91	STD 50.0 PPM B	..\CHLORIDE	STD050	1	1	1
92	STD 50.0 PPM B	..\CHLORIDE	STD050	1	1	1
93	STD 100.0 PPM B	..\CHLORIDE	STD100	1	1	1
94	STD 100.0 PPM B	..\CHLORIDE	STD100	1	1	1
95	END	..\STANDCL.	END	1	1	1

Comment:
TLI PROJECT,44369,44434,44451, ANALYZED ON THIS SCHEDULE FOR (HCL) DATE 01-06-98.(STD) USED FOR THIS PROJECT ARE ICS3-1-3 THRU 9 QC USED LOT #M-IONO3141,ANION ELUENT USED LOT #010698. LOOP SIZE (25uL) RAN BY LESLIE JONES.

Leslie D Jones 1-6-98

DIONEX SCHEDULE - C:\DX\SCHEDULE\44369CL2.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.St
1	STD 0.5 PPM F	..\CHLORIDE	STD005	1	1	1
2	STD 0.5 PPM F	..\CHLORIDE	STD005	1	1	1
3	STD 1.0 PPM F	..\CHLORIDE	STD001	1	1	1
4	STD 1.0 PPM F	..\CHLORIDE	STD001	1	1	1
5	STD 5.0 PPM F	..\CHLORIDE	STD005	1	1	1
6	STD 5.0 PPM F	..\CHLORIDE	STD005	1	1	1
7	STD 10.0 PPM F	..\CHLORIDE	STD010	1	1	1
8	STD 10.0 PPM F	..\CHLORIDE	STD010	1	1	1
9	STD 25.0 PPM F	..\CHLORIDE	STD025	1	1	1
10	STD 25.0 PPM F	..\CHLORIDE	STD025	1	1	1
11	STD 50.0 PPM F	..\CHLORIDE	STD050	1	1	1
12	STD 50.0 PPM F	..\CHLORIDE	STD050	1	1	1
13	STD 100.0 PPM F	..\CHLORIDE	STD100	1	1	1
14	STD 100.0 PPM F	..\CHLORIDE	STD100	1	1	1
15	NAOH BLANK	..\CHLORIDE	NAOHBL	1	1	1
16	NAOH BLANK	..\CHLORIDE	NAOHBL	1	1	1
17	QC 30 PPM	..\CHLORIDE	QC30PPM	1	1	1
18	QC 30 PPM	..\CHLORIDE	QC30PPM	1	1	1
19	194-52-2	..\CHLORIDE	1945202	1	1	1
20	194-52-2	..\CHLORIDE	1945202	1	1	1
21	194-52-4	..\CHLORIDE	1945204	1	1	1
22	194-52-4	..\CHLORIDE	1945204	1	1	1
23	194-52-6	..\CHLORIDE	1945206	1	1	1
24	194-52-6	..\CHLORIDE	1945206	1	1	1
25	194-52-9	..\CHLORIDE	1945209	1	2	1
26	194-52-9	..\CHLORIDE	1945209	1	2	1
27	194-52-10	..\CHLORIDE	1945210	1	2	1
28	194-52-10	..\CHLORIDE	1945210	1	2	1
29	194-52-11	..\CHLORIDE	1945211	1	1	1
30	194-52-11	..\CHLORIDE	1945211	1	1	1
31	194-52-13	..\CHLORIDE	1945213	1	1	1
32	194-52-13	..\CHLORIDE	1945213	1	1	1
33	194-52-15	..\CHLORIDE	1945215	1	1	1
34	194-52-15	..\CHLORIDE	1945215	1	1	1
35	194-52-17	..\CHLORIDE	1945217	1	1	1
36	194-52-17	..\CHLORIDE	1945217	1	1	1
37	194-52-19	..\CHLORIDE	1945219	1	1	1
38	194-52-19	..\CHLORIDE	1945219	1	1	1
39	194-52-21	..\CHLORIDE	1945221	1	1	1
40	194-52-21	..\CHLORIDE	1945221	1	1	1
41	194-52-23	..\CHLORIDE	1945223	1	1	1
42	194-52-23	..\CHLORIDE	1945223	1	1	1
43	194-52-25	..\CHLORIDE	1945225	1	1	1
44	194-52-25	..\CHLORIDE	1945225	1	1	1
45	194-52-27	..\CHLORIDE	1945227	1	1	1
46	194-52-27	..\CHLORIDE	1945227	1	1	1
47	194-52-30	..\CHLORIDE	1945230	1	1	1
48	194-52-30	..\CHLORIDE	1945230	1	1	1
49	194-52-32	..\CHLORIDE	1945232	1	1	1
50	194-52-32	..\CHLORIDE	1945232	1	1	1
51	194-52-34	..\CHLORIDE	1945234	1	1	1
52	194-52-34	..\CHLORIDE	1945234	1	1	1
53	194-52-35	..\CHLORIDE	1945235	1	1	1
54	194-52-35	..\CHLORIDE	1945235	1	1	1
55	194-52-36	..\CHLORIDE	1945236	1	1	1
56	194-52-36	..\CHLORIDE	1945236	1	1	1
57	194-52-38	..\CHLORIDE	1945238	1	1	1
58	194-52-38	..\CHLORIDE	1945238	1	1	1

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std
59	194-52-39	..\CHLORIDE	1945239	1	1	1
60	194-52-39	..\CHLORIDE	1945239	1	1	1
61	194-52-2 MS	..\CHLORIDE	1945202	1	2	1
[illegible]	194-52-2 MS	..\CHLORIDE	1945202	1	2	1
[illegible]	194-52-2 MSD	..\CHLORIDE	1945202	1	2	1
64	194-52-2 MSD	..\CHLORIDE	1945202	1	2	1
65	195-18-2	..\CHLORIDE	1951802	1	1	1
66	195-18-2	..\CHLORIDE	1951802	1	1	1
67	195-18-3	..\CHLORIDE	1951803	1	1	1
68	195-18-3	..\CHLORIDE	1951803	1	1	1
69	195-18-6	..\CHLORIDE	1951806	1	1	1
70	195-18-6	..\CHLORIDE	1951806	1	1	1
71	195-18-8	..\CHLORIDE	1951808	1	1	1
72	195-18-8	..\CHLORIDE	1951808	1	1	1
73	195-18-10	..\CHLORIDE	1951810	1	1	1
74	195-18-10	..\CHLORIDE	1951810	1	1	1
75	195-18-12	..\CHLORIDE	1951812	1	1	1
76	195-18-12	..\CHLORIDE	1951812	1	1	1
77	195-18-14	..\CHLORIDE	1951814	1	1	1
78	195-18-14	..\CHLORIDE	1951814	1	1	1
79	195-18-2 MS	..\CHLORIDE	1951802	1	2	1
80	195-18-2 MS	..\CHLORIDE	1951802	1	2	1
81	195-18-2 MSD	..\CHLORIDE	1951802	1	2	1
82	195-18-2 MSD	..\CHLORIDE	1951802	1	2	1
83	195-35-2	..\CHLORIDE	1953502	1	1	1
84	195-35-2	..\CHLORIDE	1953502	1	1	1
85	195-35-2 MS	..\CHLORIDE	1953502	1	2	1
86	195-35-2 MS	..\CHLORIDE	1953502	1	2	1
[illegible]	195-35-2 MSD	..\CHLORIDE	1953502	1	2	1
[illegible]	195-35-2 MSD	..\CHLORIDE	1953502	1	2	1
89	STD 0.5 PPM B	..\CHLORIDE	STD005	1	1	1
90	STD 0.5 PPM B	..\CHLORIDE	STD005	1	1	1
91	STD 1.0 PPM B	..\CHLORIDE	STD001	1	1	1
92	STD 1.0 PPM B	..\CHLORIDE	STD001	1	1	1
93	STD 5.0 PPM B	..\CHLORIDE	STD005	1	1	1
94	STD 5.0 PPM B	..\CHLORIDE	STD005	1	1	1
95	STD 10.0 PPM B	..\CHLORIDE	STD010	1	1	1
96	STD 10.0 PPM B	..\CHLORIDE	STD010	1	1	1
97	STD 25.0 PPM B	..\CHLORIDE	STD025	1	1	1
98	STD 25.0 PPM B	..\CHLORIDE	STD025	1	1	1
99	END	..\STANDCL.	END	1	1	1

Comment:
TLI PROJECT #44369,44434, 44451 ANALYZED ON THIS SCHEDULE FOR (CL2) DATE 01-08-98.(STD) USED FOR THIS PROJECT ARE ICS3-2-1 THRU 7 QC USED ICS3-3-2,ANION ELUENT USED LOT #010898. LOOP SIZE (25uL) RAN BY LESLIE JONES.

DIONEX SCHEDULE - C:\DX\SCHEDULE\44369R.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std
1	STD 50.0 PPM B	..\CHLORIDE	STD050	1	1	1
2	STD 50.0 PPM B	..\CHLORIDE	STD050	1	1	1
3	STD 100.0 PPM B	..\CHLORIDE	STD100	1	1	1
4	STD 100.0 PPM B	..\CHLORIDE	STD100	1	1	1
5	END	..\STANDCL.	END	1	1	1

Comment:
TLI PROJECT 44369,44434,44451 , ANALYZED ON THIS SCHEDULE FOR (CL2)
DATE 01-08-98.(STD) USED FOR THIS PROJECT ARE ICS3-2-1 THRU 7 QC
USED ICS3-3-2 ,ANION ELUENT USED LOT #010898. LOOP SIZE (25uL)
LESLIE JONES

TLI# 44369-HCL
CLIENT SAMPLES
EASTERN RESEARCH GROUP
07/08-JANUARY-98

TLI ID	CLIENT ID	RT	AREA	LOG AREA	RUN CONC ppm	DILUTION FACTOR	SAMPLE CONC ppm	AVG CONC ppm	RPD	TOTAL mL	TOTAL mg Cl	TOTAL mg HCL	PH
194-52-1	CAA-03	1.95	38320169	7.58	6.20	1	6.20	6.23	1.0	37	0.23	0.24	1
		1.95	38727963	7.59	6.26	1	6.26						
194-52-3	CAA-07	1.93	81105730	7.91	12.68	1	12.68	12.66	0.0	37	0.47	0.48	1
		1.93	81063245	7.91	12.65	1	12.65						
194-52-5	CAA-11	1.85	6489136	6.81	1.14	1	1.14	1.14	0.7	34	0.04	0.04	3
		1.85	6439084	6.81	1.13	1	1.13						
194-52-7	CAA-15	1.93	290116387	8.46	42.62	2	85.25	86.36	2.6	31	2.68	2.75	1
		1.95	296065754	8.47	43.73	2	87.47						
194-52-8	CAA-19	1.94	271446567	8.43	40.01	2	80.01	79.81	0.5	40	3.19	3.28	1
		1.94	270012062	8.43	39.81	2	79.61						
194-52-12	CAA-27	1.91	82246253	7.92	12.83	1	12.83	12.87	0.6	37	0.48	0.49	1
		1.91	82777696	7.92	12.91	1	12.91						
194-52-14	CAA-31	1.91	91973978	7.96	14.27	1	14.27	14.22	0.7	35	0.50	0.51	1
		1.91	91333948	7.96	14.18	1	14.18						
194-52-16	CAA-35	1.93	204079040	8.31	30.49	20	609.77	612.62	1.0	40	24.51	25.21	1
		1.93	206224183	8.31	30.79	20	615.87						
194-52-18	CAA-39	1.92	187564064	8.27	28.13	1	28.13	27.97	1.1	26	0.76	0.81	1
		1.92	185313702	8.27	27.81	1	27.81						
194-52-20	CAA-51	1.95	374069468	8.57	54.30	20	1085.94	1085.98	0.0	41	44.53	45.79	1
		1.93	374101093	8.57	54.30	20	1086.02						
194-52-22	CAA-55	1.94	298243419	8.47	43.76	20	875.19	868.21	1.6	37	32.12	33.04	1
		1.94	293249842	8.47	43.06	20	861.23						
194-52-24	CAA-59	1.94	256894761	8.41	37.96	1	37.96	37.69	1.4	35	1.32	1.36	1
		1.94	253057883	8.40	37.42	1	37.42						
194-52-26	CAA-63	1.96	455187710	8.66	65.46	20	1309.14	1309.24	0.0	41	53.68	55.20	1
		1.97	455256685	8.66	65.47	20	1309.33						
194-52-28	CAA-75	1.88	5083926	6.71	0.91	1	0.91	0.91	0.3	35	0.03	0.03	1
		1.90	5102627	6.71	0.91	1	0.91						
194-52-29	CAA-95	1.94	3999603	6.60	0.72	1	0.72	0.71	4.0	34	0.02	0.02	1
		1.93	3835622	6.58	0.69	1	0.69						
194-52-31	CAA-99	ND	ND	ND	ND	1	ND	<0.04	NA	35	<0.014	<0.014	1
		ND	ND	ND	ND	1	ND						
194-52-33	CAA-103	ND	ND	ND	ND	1	ND	<0.04	NA	38	<0.014	<0.014	1
		ND	ND	ND	ND	1	ND						
194-52-37	CAA-254	1.95	341655117	8.53	49.81	1	49.81	49.79	0.1	36	1.79	1.84	1
		1.94	341359444	8.53	49.78	1	49.78						
194-52-1 MS	CAA-03	1.94	383161337	8.58	55.55	2	111.11	111.97	1.5	37	4.14	—	—
		1.94	389413634	8.59	56.42	2	112.83						
194-52-1 MSD	CAA-03	1.94	381973021	8.58	55.38	2	110.76	110.54	0.4	37	4.09	—	—
		1.94	380275536	8.58	55.15	2	110.31						

MATRIX SPIKE

SAMPLE ID		NATIVE AMT. CL (mg)	MS AMT. CL (mg)	AMT. SPIKE (mg)	DF	%RECOVERY
194-52-1 MS	CAA-03	0.23	4.14	3.7	2	106
194-52-1 MSD	CAA-03	0.23	4.09	3.7	2	104

% RECOVERY=[(MS AMT. - NATIVE AMT.)/(SPIKE AMT.)] X 100
TOTAL mg HCL : (TOTAL mg CL) (FW HCL/ MW CL)
TOTAL mg CL2 : TOTAL mg CL x 1
ND= NOT DETECT

Data Reprocessed On 01/08/1998 11:36:14

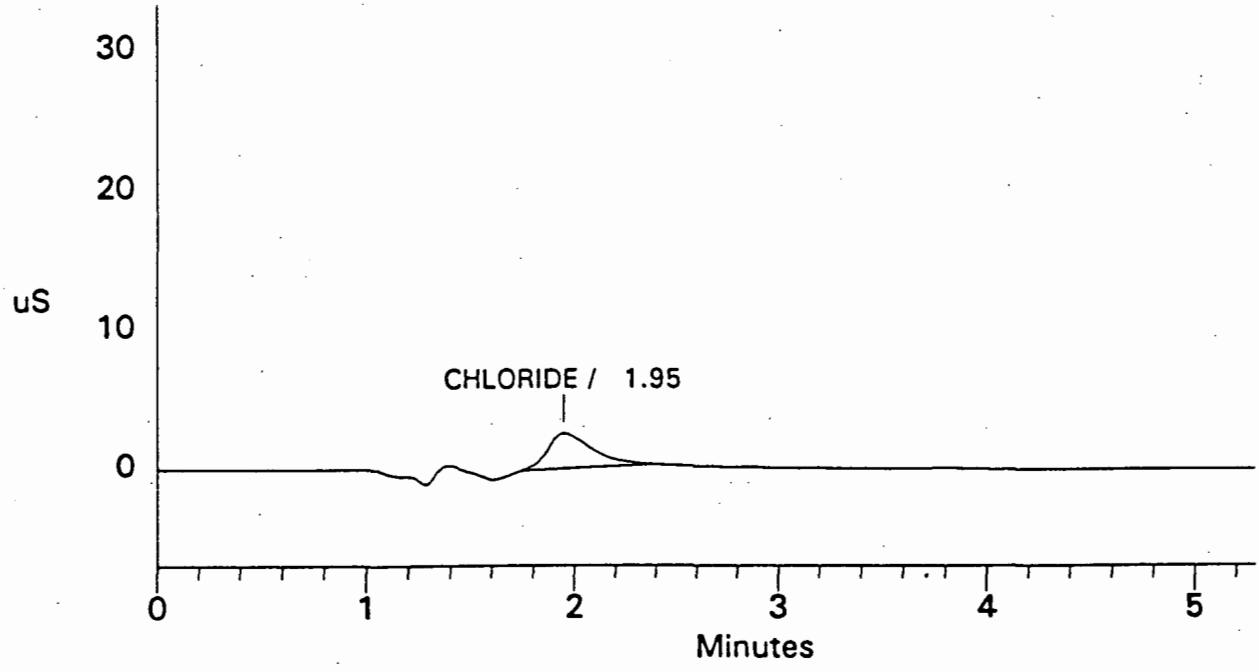
Sample Name: 194-52-1		Date: 01/07/1998 02:22:14	
Data File : C:\DX\DATA\44369HCL\19452011.D19			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 19			Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.29	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.95	CHLORIDE	0.000	2531346	38320169	1	-9.46
		Totals	0.000	2531346	38320169		

File: 19452011.D19 Sample: 194-52-1



Data Reprocessed On 01/08/1998 11:38:07

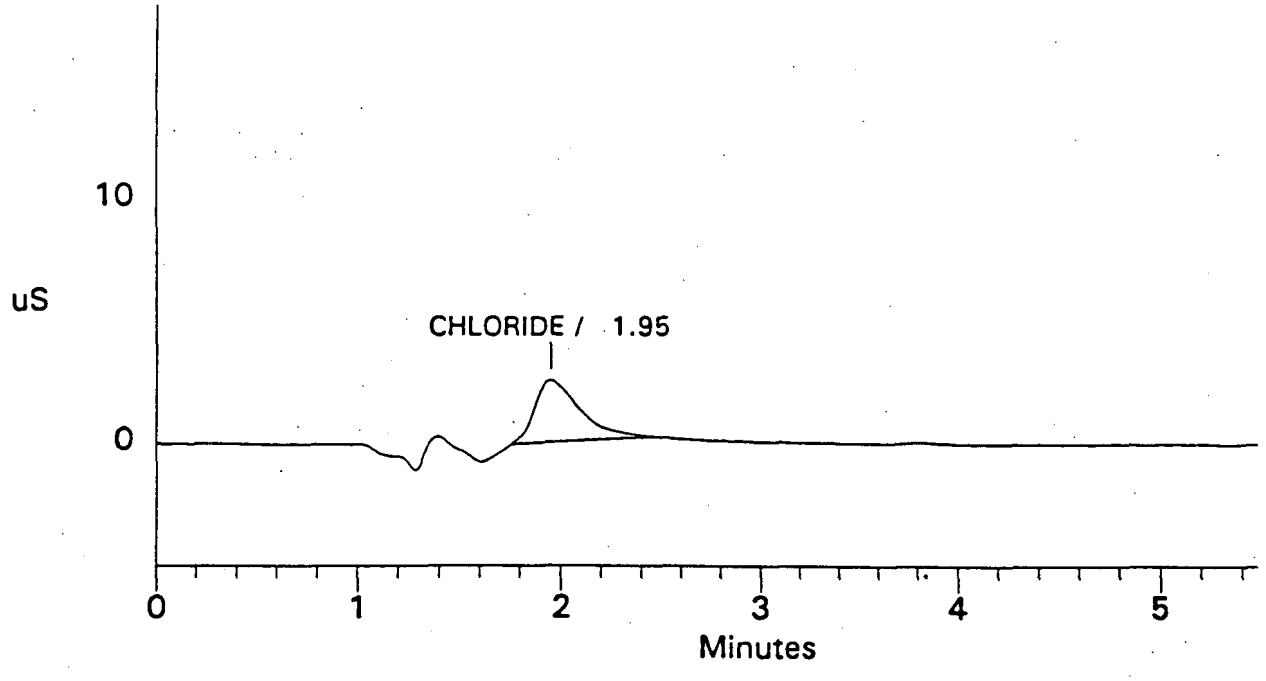
Sample Name: 194-52-1 Date: 01/07/1998 02:36:00
Data File : C:\DX\DATA\44369HCL\19452011.D20
Method : C:\DX\METHOD\CHLORIDE.met
GPIB Address: 1 System: 1 Inject#: 20 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.47	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.95	CHLORIDE	0.000	2484337	38727983	1	-9.46
		Totals	0.000	2484337	38727983		

File: 19452011.D20 Sample: 194-52-1



Data Reprocessed On 01/07/1998 13:35:09

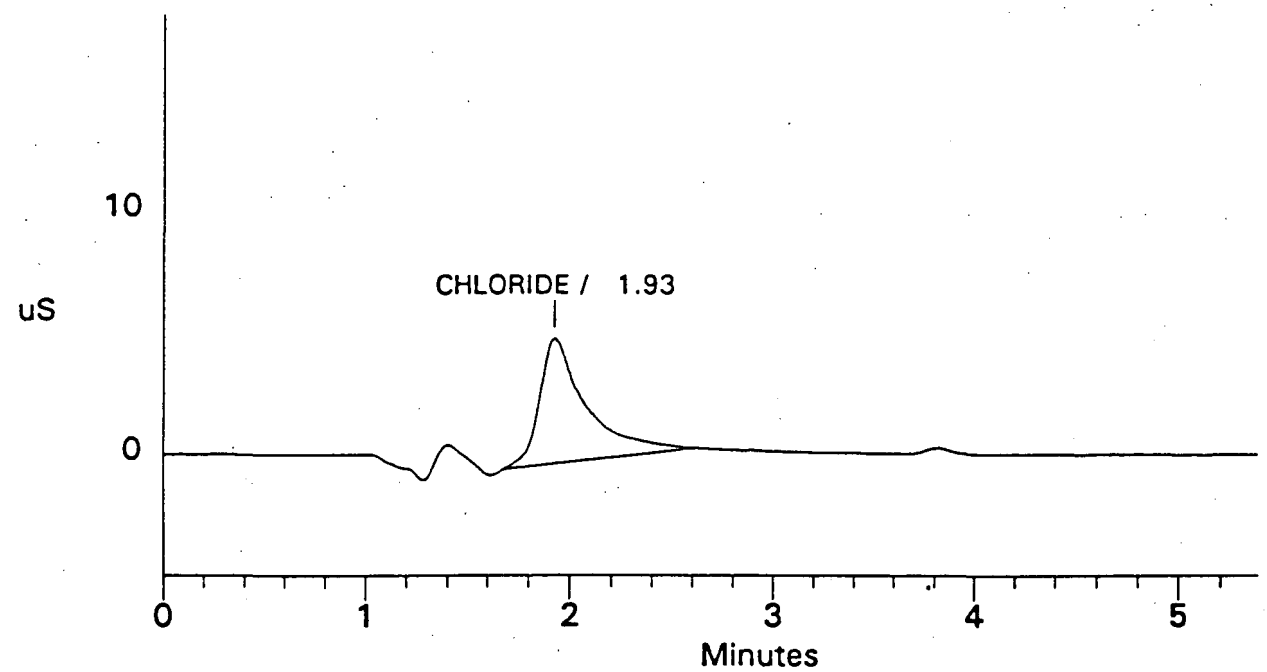
Sample Name: 194-52-3 Date: 01/07/1998 02:49:45
Data File : C:\DX\DATA\44369HCL\19452031.D21
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 21 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	5100075	81105730	1	-10.39
		Totals	0.000	5100075	81105730		

File: 19452031.D21 Sample: 194-52-3



Data Reprocessed On 01/07/1998 13:37:02

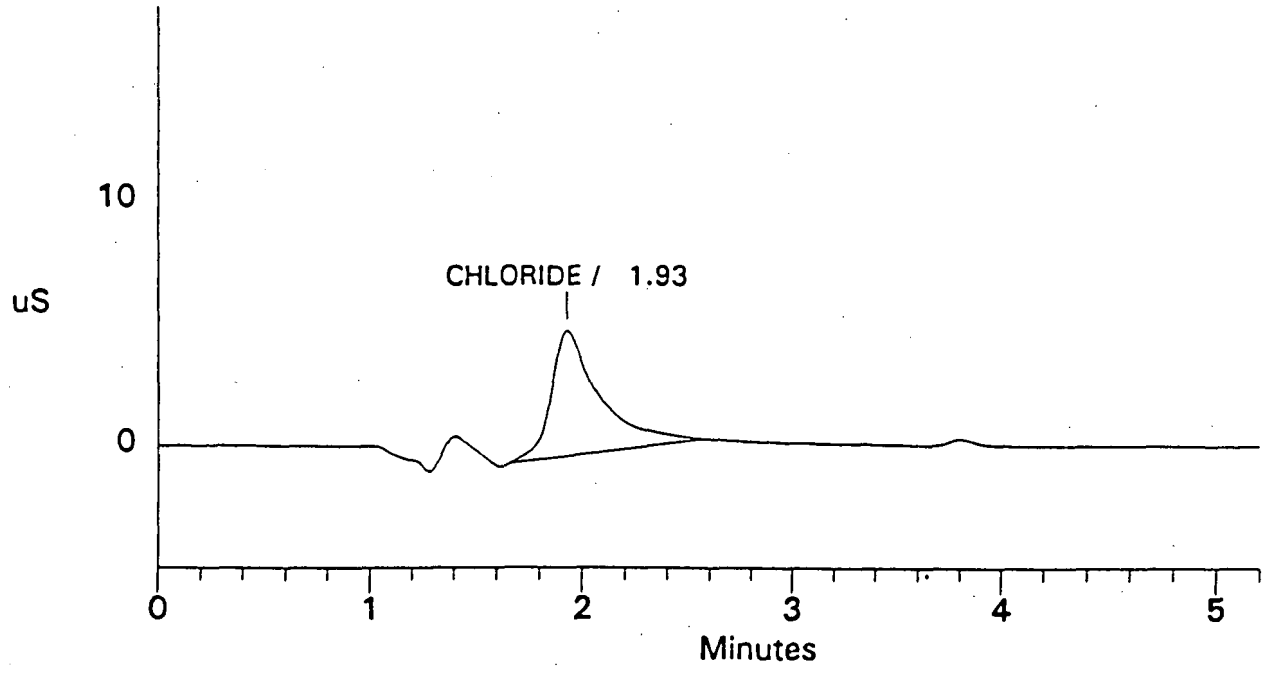
Sample Name: 194-52-3 Date: 01/07/1998 03:03:30
Data File : C:\DX\DATA\44369HCL\19452031.D22
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 22 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	5122099	81063245	1	-10.39
		Totals	0.000	5122099	81063245		

File: 19452031.D22 Sample: 194-52-3



Data Reprocessed On 01/07/1998 13:38:37

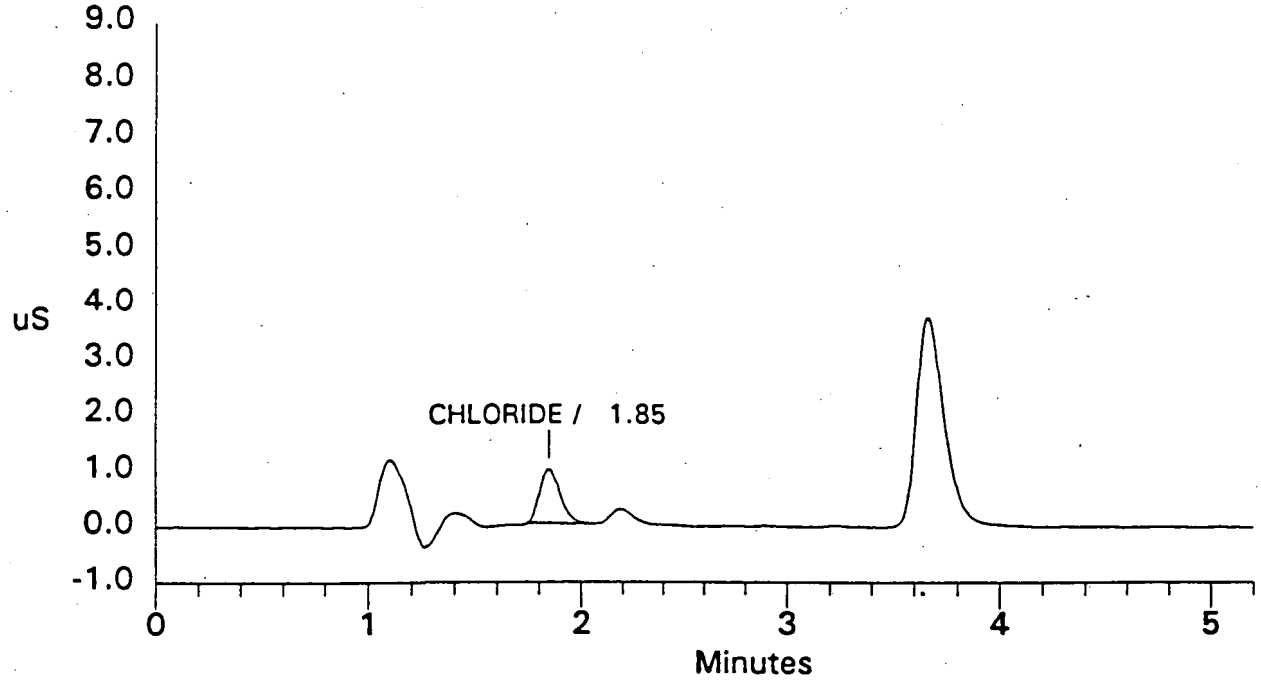
Sample Name: 194-52-5 Date: 01/07/1998 03:17:15
Data File : C:\DX\DATA\44369HCL\19452051.D23
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 23 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.85	CHLORIDE	0.000	961962	6489136	1	-14.11
		Totals	0.000	961962	6489136		

File: 19452051.D23 Sample: 194-52-5



Data Reprocessed On 01/07/1998 13:39:45

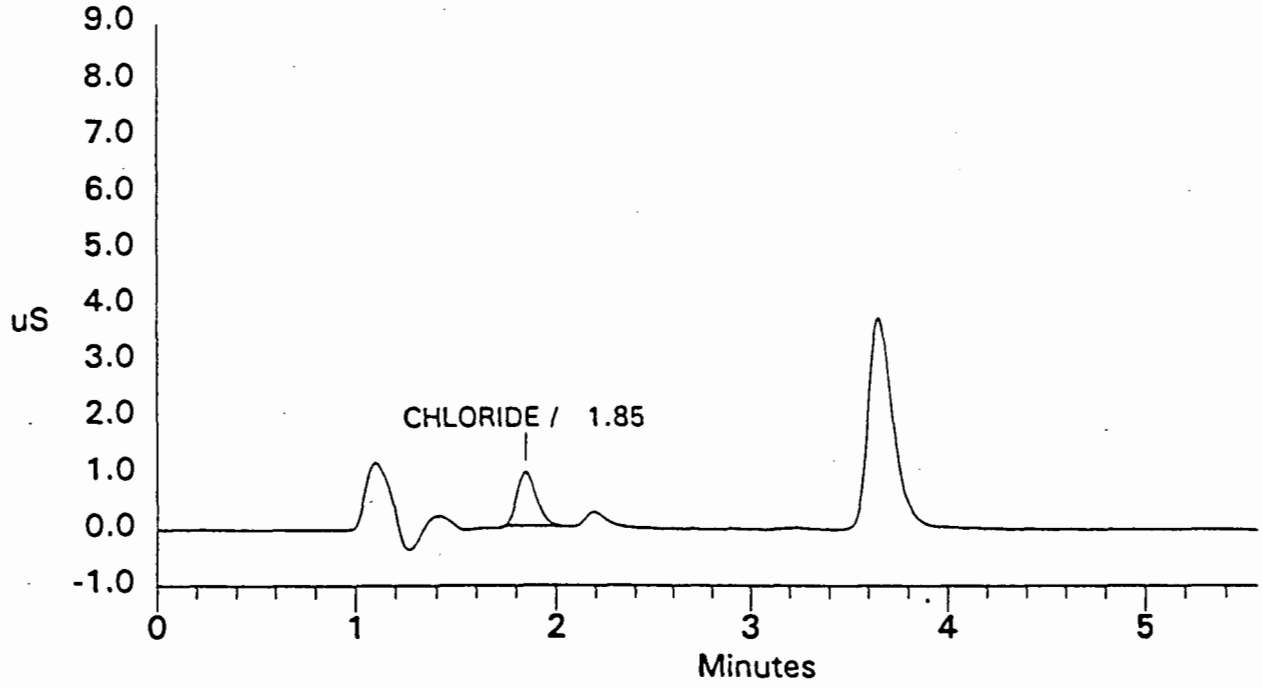
Sample Name: 194-52-5 Date: 01/07/1998 03:31:01
Data File : C:\DX\DATA\44369HCL\19452051.D24
Method : C:\DX\METHOD\CHLORIDE.met
GC Address: 1 System: 1 Inject#: 24 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.56	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.85	CHLORIDE	0.000	950632	6439064	1	-14.11
		Totals	0.000	950632	6439064		

File: 19452051.D24 Sample: 194-52-5



Data Reprocessed On 01/26/1998 14:52:08

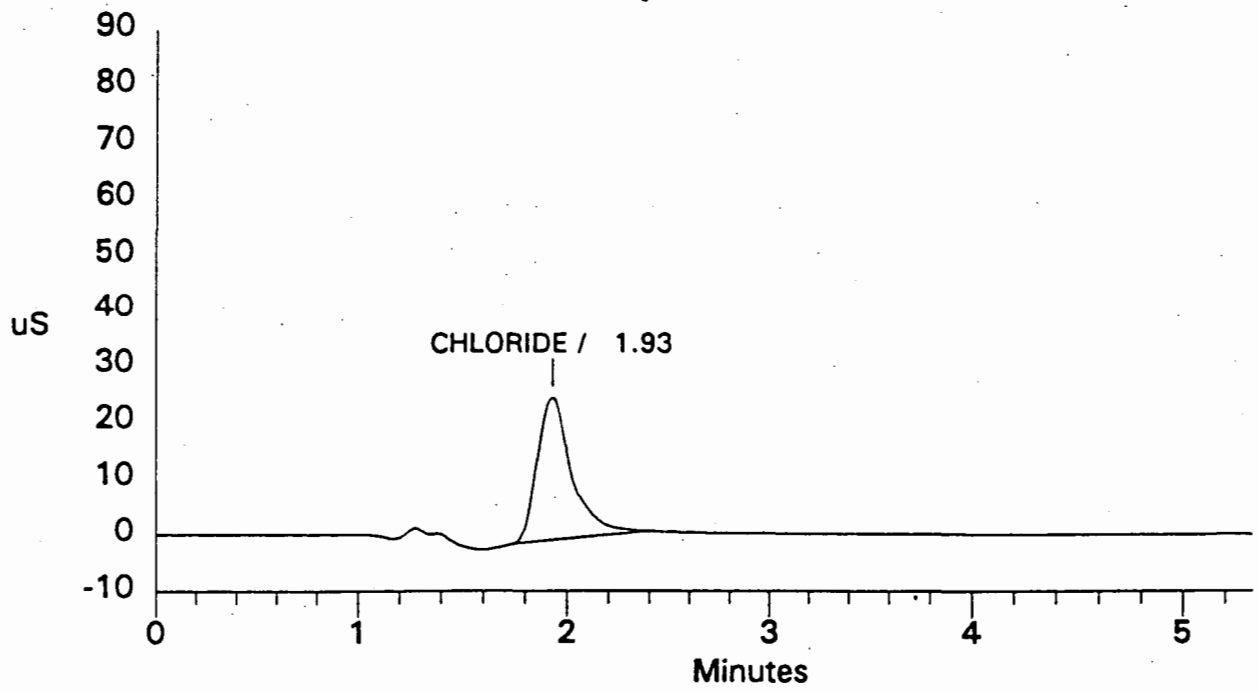
Sample Name: 194-52-7 Date: 01/07/1998 03:44:47
Data File : C:\DX\DATA\44369HCL\19452071.D25
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 25 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	25116117	290116367	1	-10.23
		Totals	0.000	25116117	290116367		

File: 19452071.D25 Sample: 194-52-7



Data Reprocessed On 01/07/1998 13:42:08

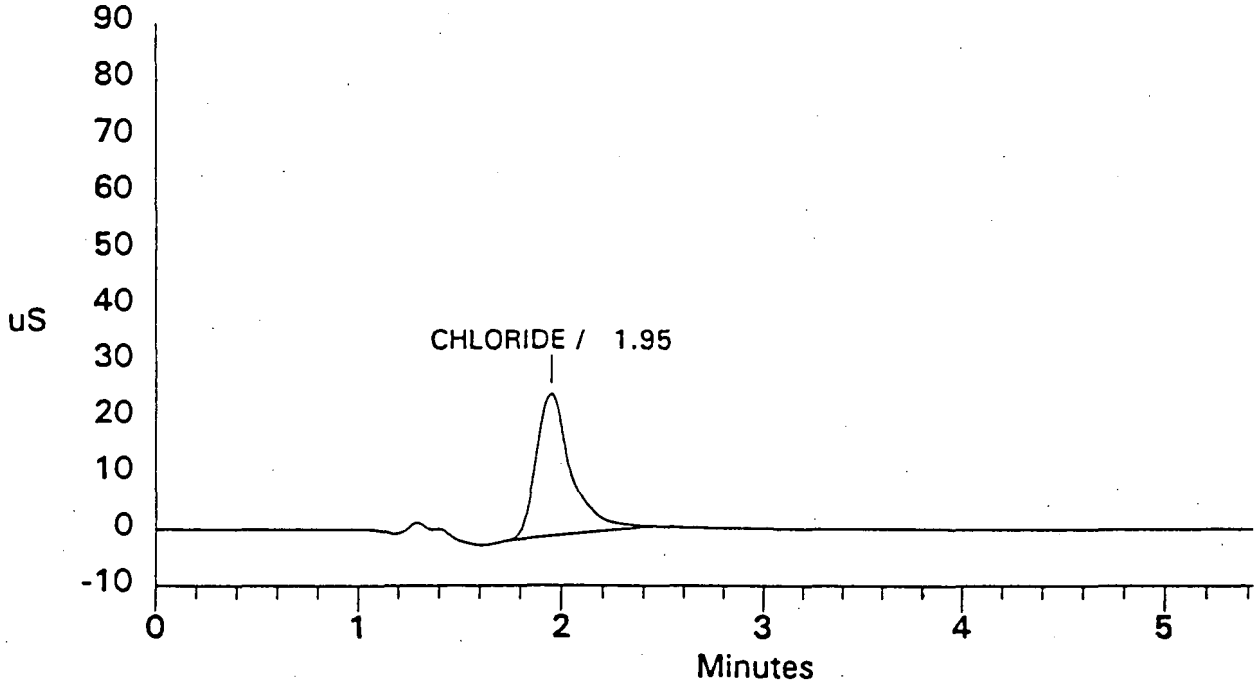
Sample Name: 194-52-7 Date: 01/07/1998 03:58:32
Data File : C:\DX\DATA\44369HCL\19452071.D26
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 26 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.95	CHLORIDE	0.000	25124595	298065754	1	-9.46
		Totals	0.000	25124595	298065754		

File: 19452071.D26 Sample: 194-52-7



Data Reprocessed On 01/07/1998 13:42:55

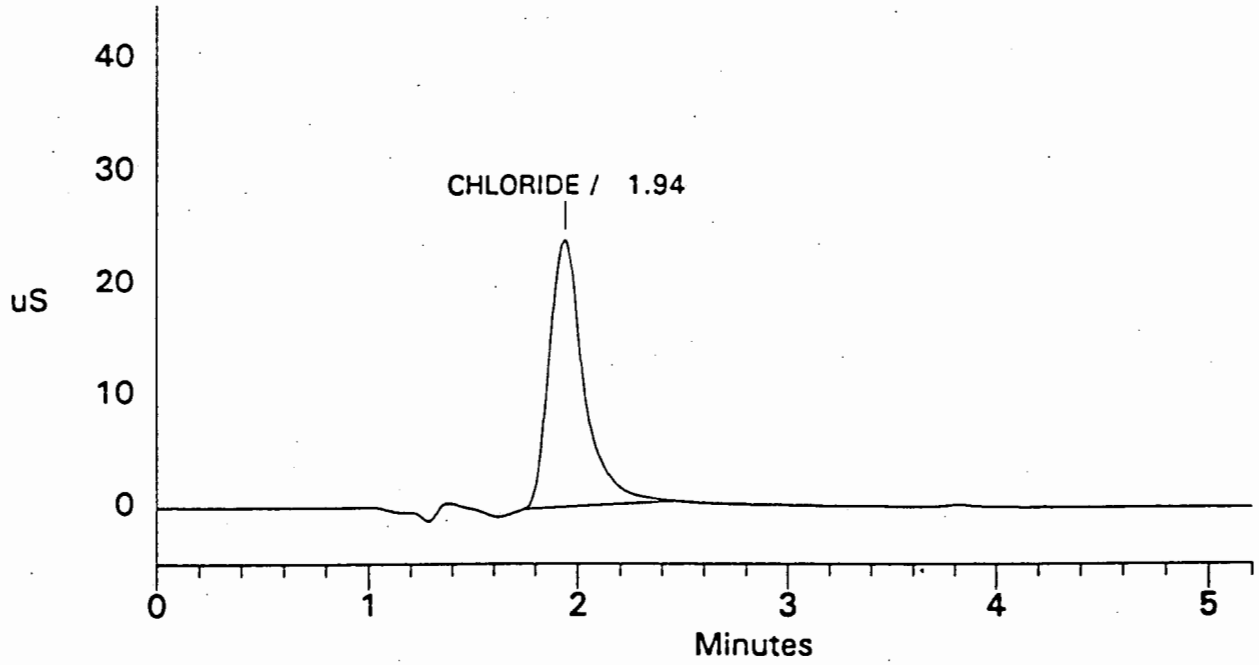
Sample Name: 194-52-8 Date: 01/07/1998 04:12:17
Data File : C:\DX\DATA\44369HCL\19452081.D27
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 27 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	23986044	271446567	1	-9.77
		Totals	0.000	23986044	271446567		

File: 19452081.D27 Sample: 194-52-8



Data Reprocessed On 01/07/1998 13:44:07

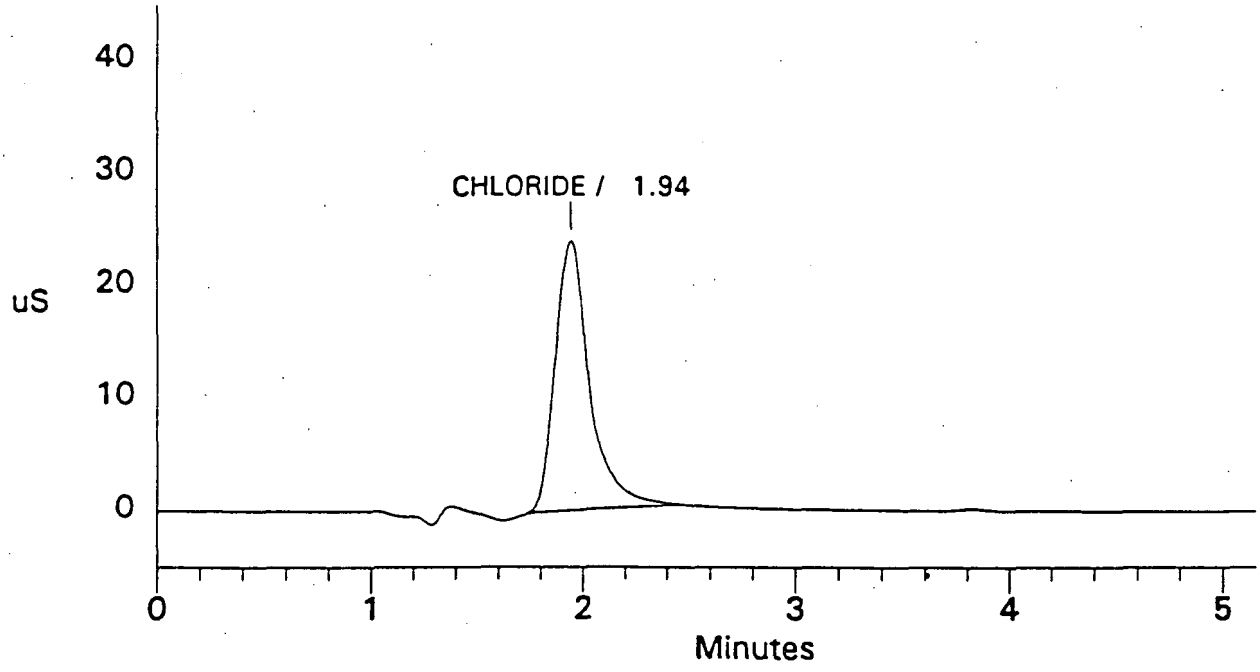
Sample Name: 194-52-8 Date: 01/07/1998 04:26:03
Data File : C:\DX\DATA\44369HCL\19452081.D28
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 28 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	23949863	270012062	1	-9.77
		Totals	0.000	23949863	270012062		

File: 19452081.D28 Sample: 194-52-8



Data Reprocessed On 01/26/1998 14:54:27

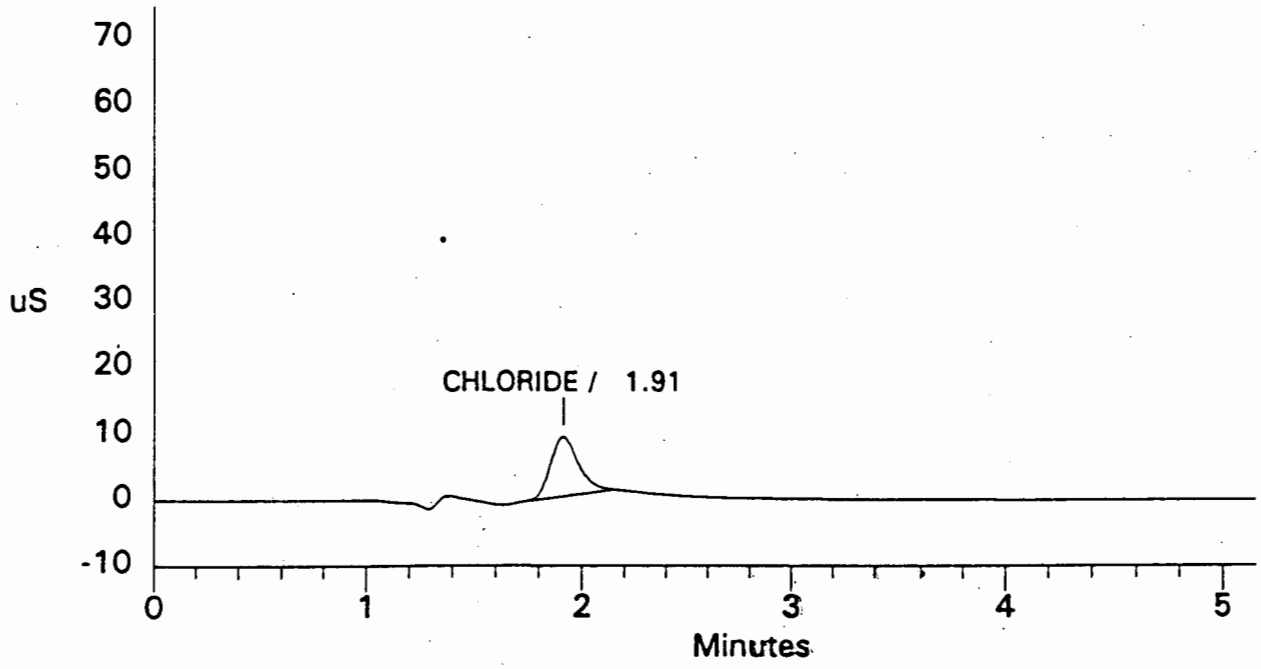
Sample Name: 194-52-12 Date: 01/07/1998 04:39:48
Data File : C:\DX\DATA\44369HCL\19452121.D29
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 29 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.91	CHLORIDE	0.000	9086889	82248253	1	-11.01
		Totals	0.000	9086889	82248253		

File: 19452121.D29 Sample: 194-52-12



Data Reprocessed On 01/26/1998 14:55:34

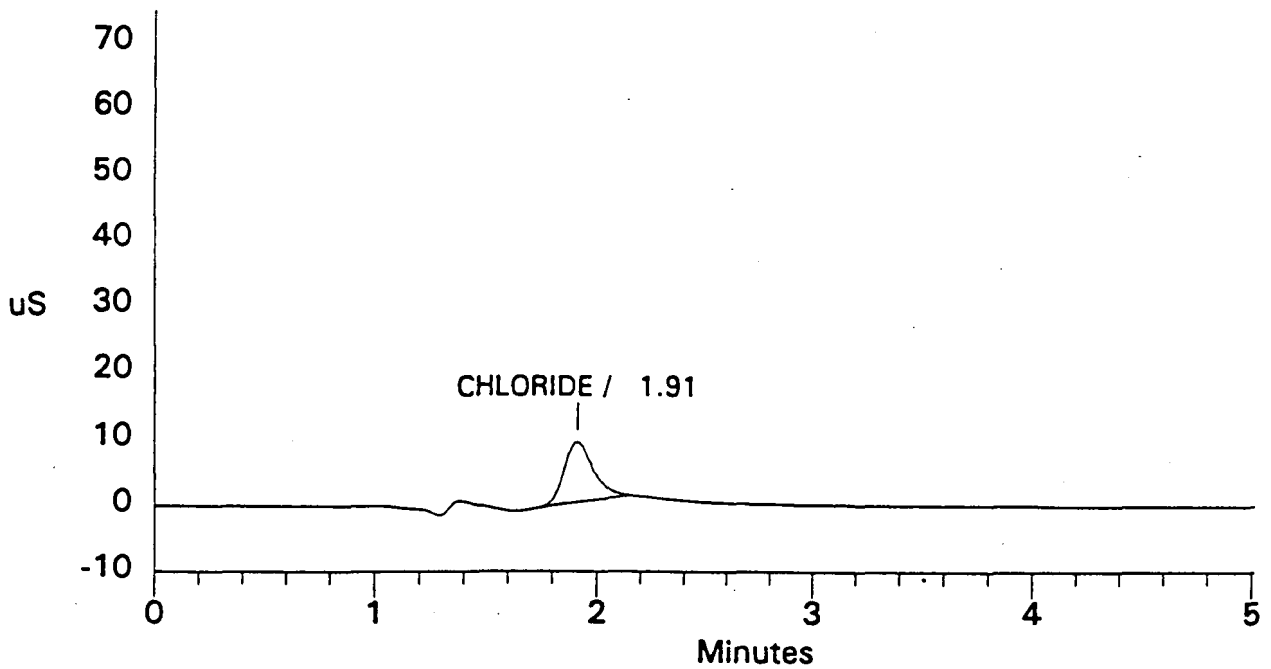
Sample Name: 194-52-12 Date: 01/07/1998 04:53:36
Data File : C:\DX\DATA\44369HCL\19452121.D30
Method : C:\DX\METHOD\CHLORIDE.met
LCI Address: 1 System: 1 Inject#: 30 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.02	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.91	CHLORIDE	0.000	9125430	82777696	1	-11.01
		Totals	0.000	9125430	82777696		

File: 19452121.D30 Sample: 194-52-12



Data Reprocessed On 01/26/1998 14:57:21

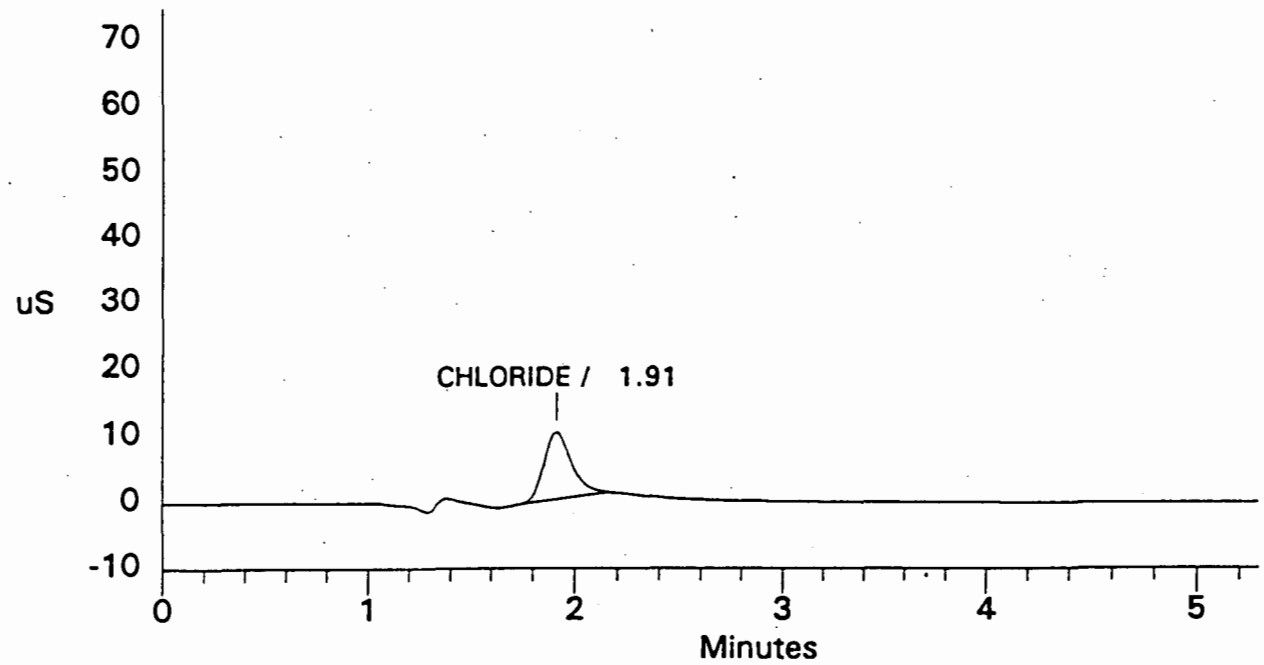
Sample Name: 194-52-14 Date: 01/07/1998 05:07:21
Data File : C:\DX\DATA\44369HCL\19452141.D31
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 31 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.29	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.91	CHLORIDE	0.000	10117422	91973978	1	-11.01
		Totals	0.000	10117422	91973978		

File: 19452141.D31 Sample: 194-52-14



Data Reprocessed On 01/26/1998 14:58:16

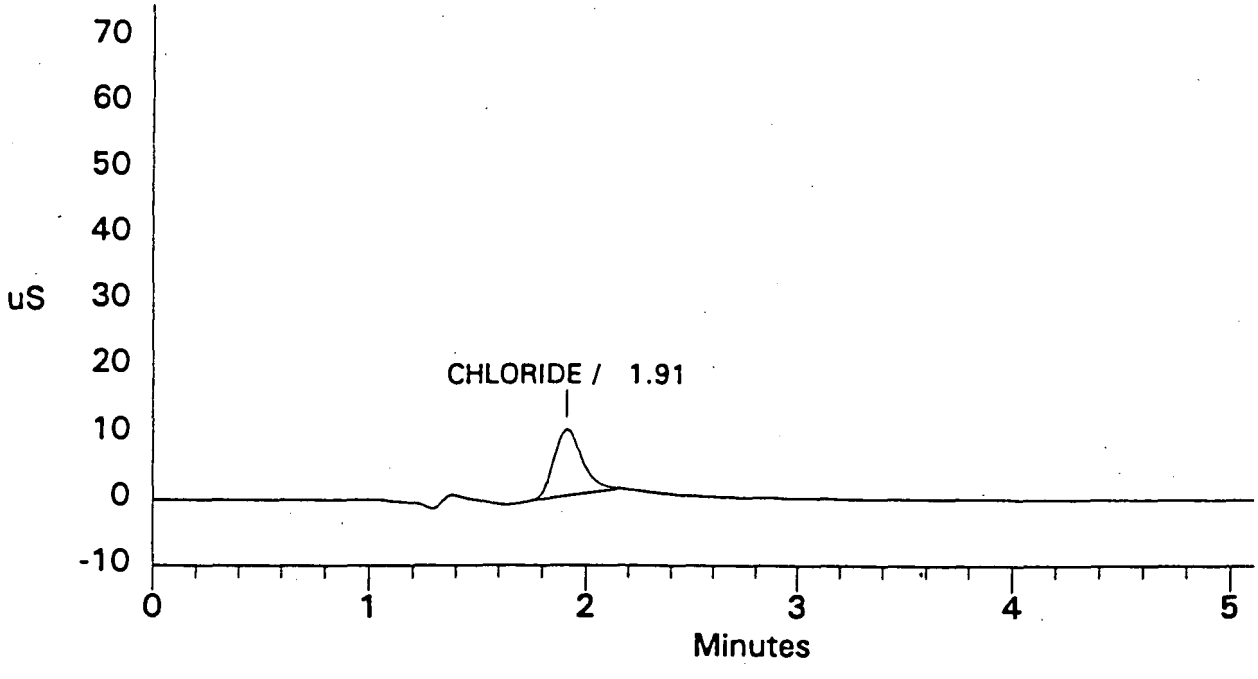
Sample Name: 194-52-14 Date: 01/07/1998 05:21:07
Data File : C:\DX\DATA\44369HCL\19452141.D32
Method : C:\DX\METHOD\CHLORIDE.met
AutoCI Address: 1 System: 1 Inject#: 32 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.11	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.91	CHLORIDE	0.000	10065521	91333946	1	-11.01
		Totals	0.000	10065521	91333946		

File: 19452141.D32 Sample: 194-52-14



Data Reprocessed On 01/07/1998 13:53:05

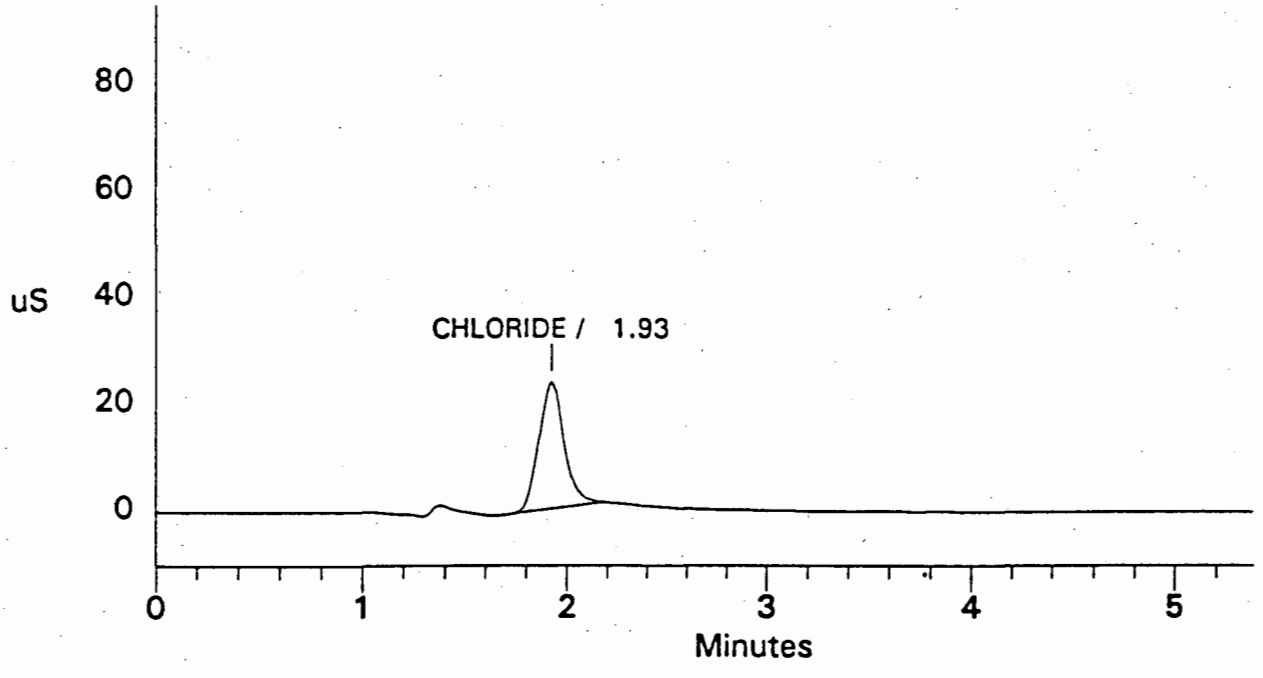
Sample Name: 194-52-16 Date: 01/07/1998 05:34:52
Data File : C:\DX\DATA\44369HCL\19452161.D33
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 33 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	20	3600	5Hz	0.00	5.38	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	23595666	204079040	1	-10.39
		Totals	0.000	23595666	204079040		

File: 19452161.D33 Sample: 194-52-16



Data Reprocessed On 01/07/1998 13:56:29

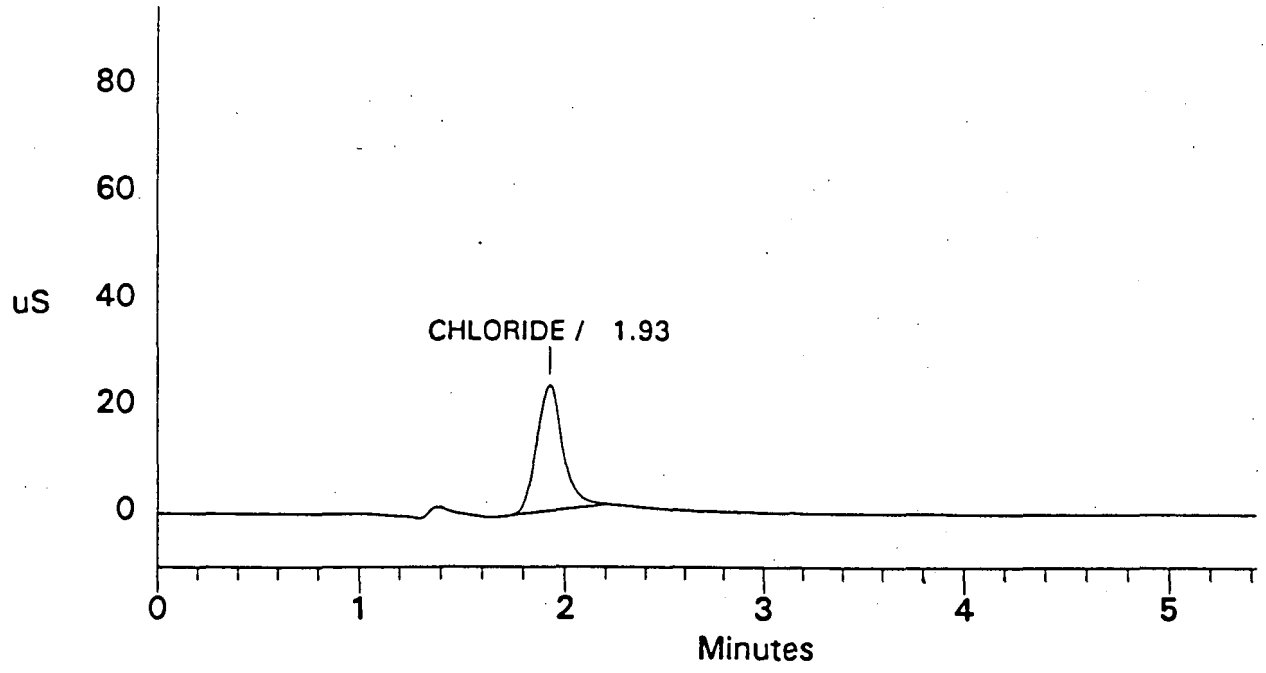
Sample Name: 194-52-16 Date: 01/07/1998 05:48:38
Data File : C:\DX\DATA\44369HCL\19452161.D34
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 34 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	23564735	206224183	1	-10.39
		Totals	0.000	23564735	206224183		

File: 19452161.D34 Sample: 194-52-16



Data Reprocessed On 01/26/1998 15:40:12

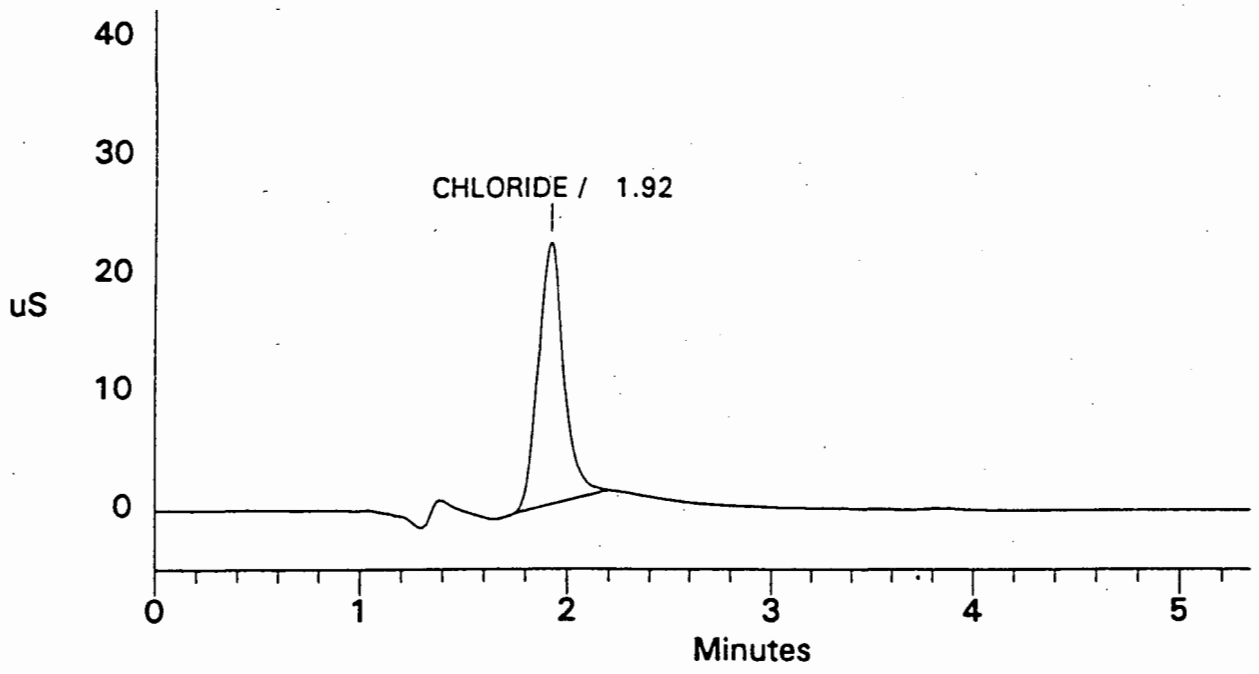
Sample Name: 194-52-18		Date: 01/07/1998 06:02:24	
Data File : C:\DX\DATA\44369HCL\19452181.D35			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1	Inject#: 35		Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.92	CHLORIDE	0.000	22198956	187564064	1	-10.54
		Totals	0.000	22198956	187564064		

File: 19452181.D35 Sample: 194-52-18



Data Reprocessed On 01/26/1998 15:42:10

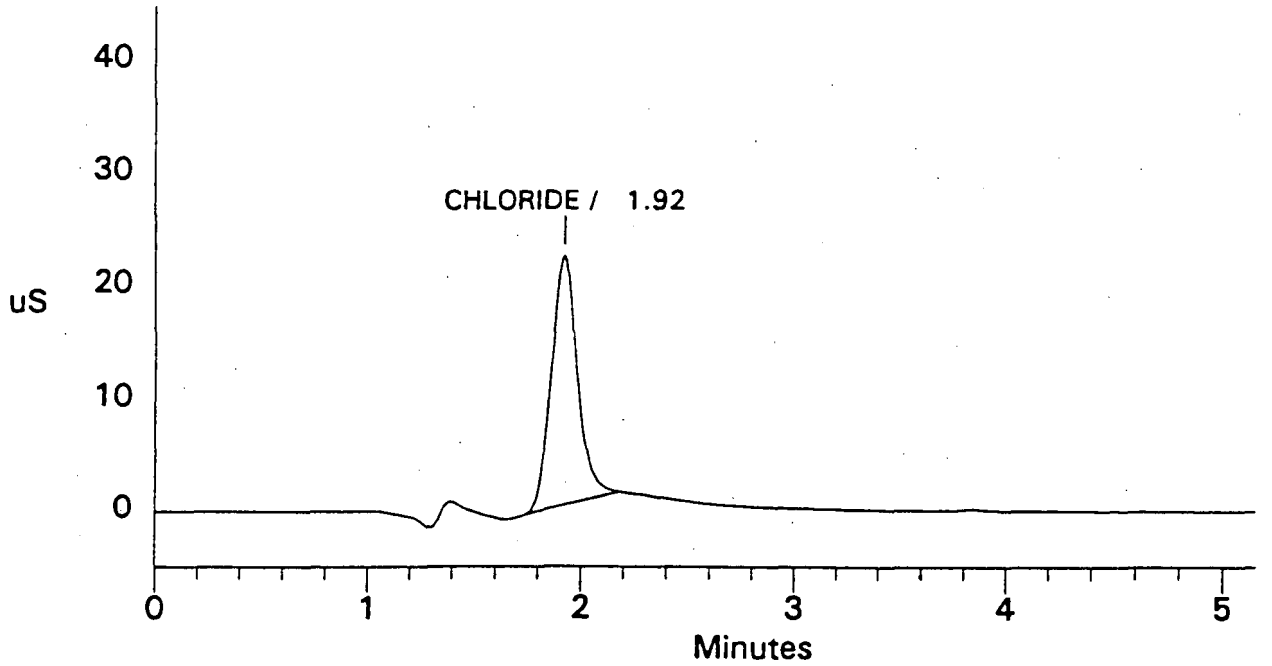
Sample Name: 194-52-18 Date: 01/07/1998 06:16:10
Data File : C:\DX\DATA\44369HCL\19452181.D36
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 36 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.92	CHLORIDE	0.000	22155154	185313702	1	-10.54
		Totals	0.000	22155154	185313702		

File: 19452181.D36 Sample: 194-52-18



Data Reprocessed On 01/07/1998 13:58:53

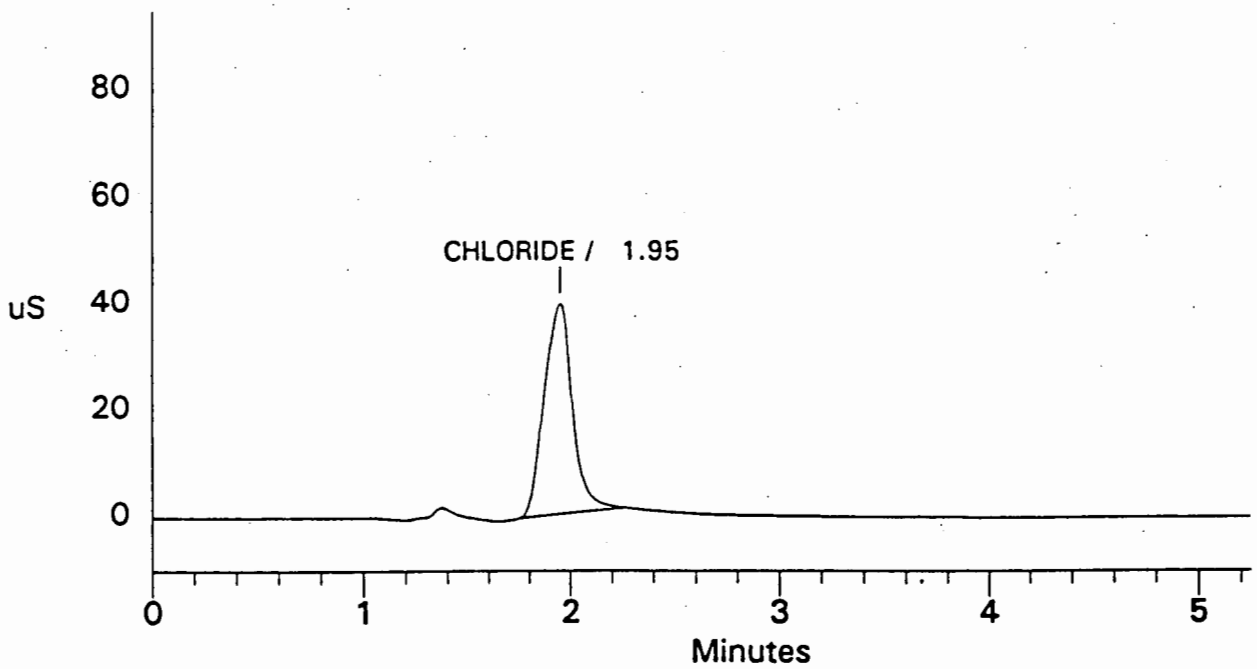
Sample Name: 194-52-20 Date: 01/07/1998 06:29:56
Data File : C:\DX\DATA\44369HCL\19452201.D37
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 37 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.25	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.95	CHLORIDE	0.000	39473334	374069466	1	-9.30
		Totals	0.000	39473334	374069466		

File: 19452201.D37 Sample: 194-52-20



Data Reprocessed On 01/07/1998 13:59:57

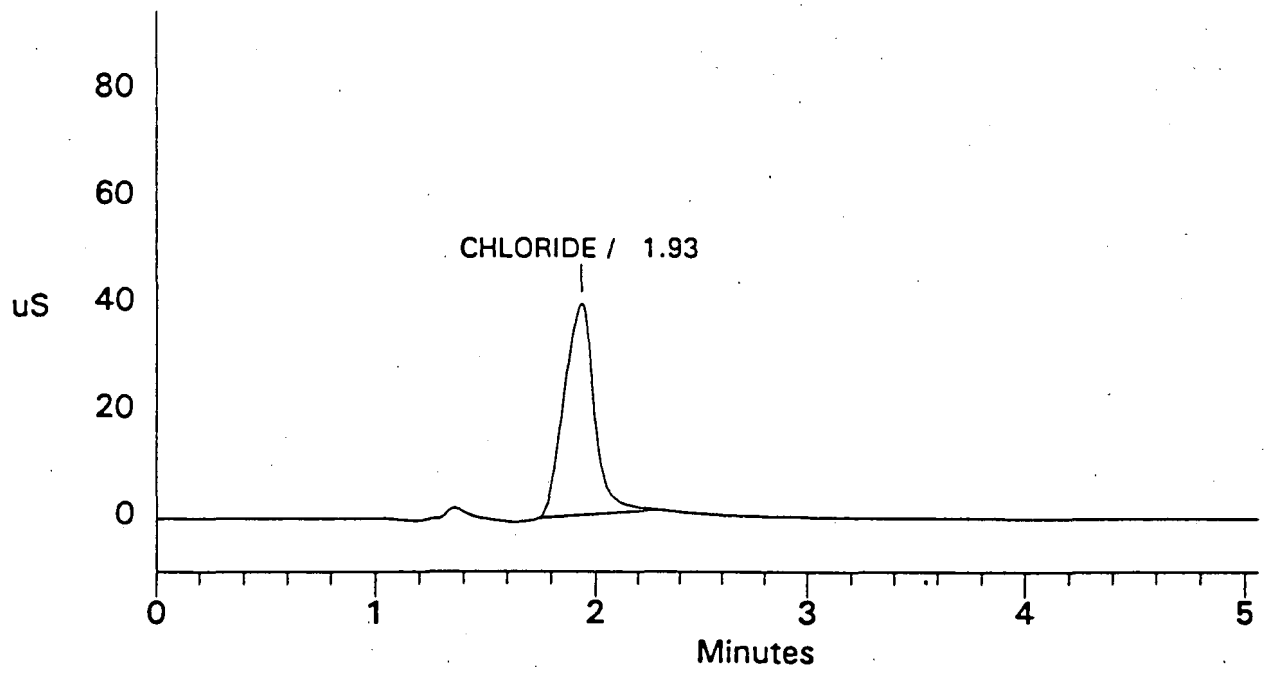
Sample Name: 194-52-20 Date: 01/07/1998 06:43:42
Data File : C:\DX\DATA\44369HCL\19452201.D38
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 38 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.06	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	39370862	374101093	1	-10.08
		Totals	0.000	39370862	374101093		

File: 19452201.D38 Sample: 194-52-20



Data Reprocessed On 01/26/1998 15:54:46

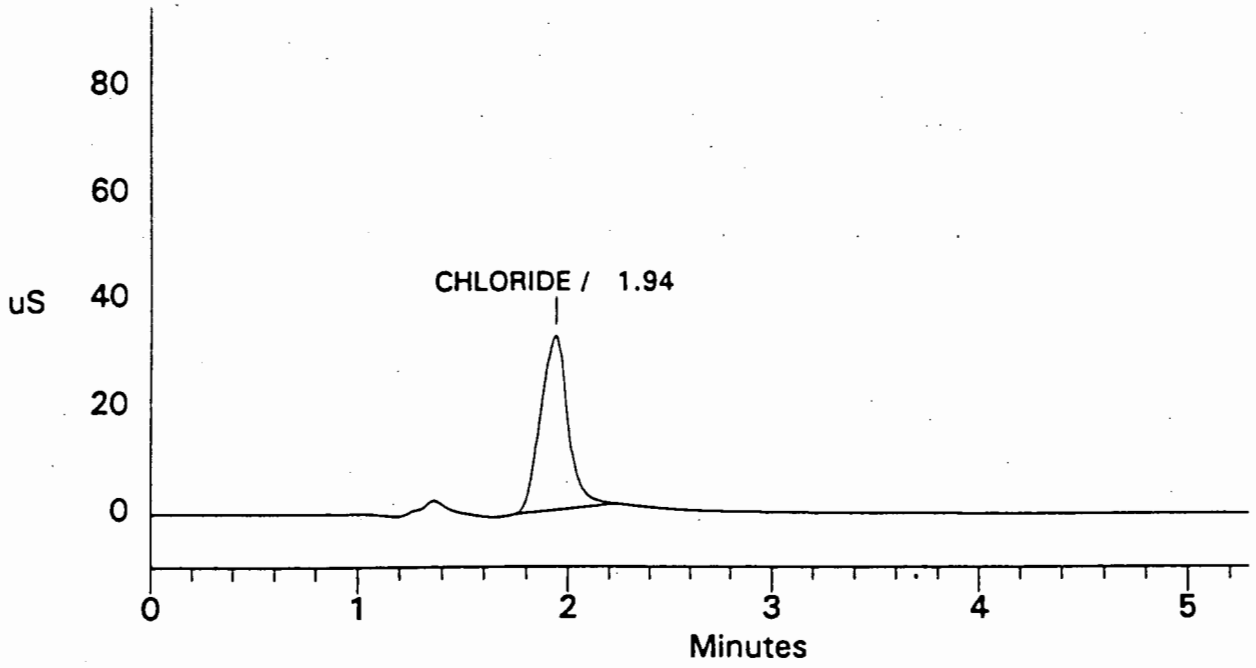
Sample Name: 194-52-22 Date: 01/07/1998 06:57:28
Data File : C:\DX\DATA\44369HCL\19452221.D39
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 39 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	20	3600	5Hz	0.00	5.29	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	32558757	298243419	1	-9.77
		Totals	0.000	32558757	298243419		

File: 19452221.D39 Sample: 194-52-22



Data Reprocessed On 01/26/1998 15:56:07

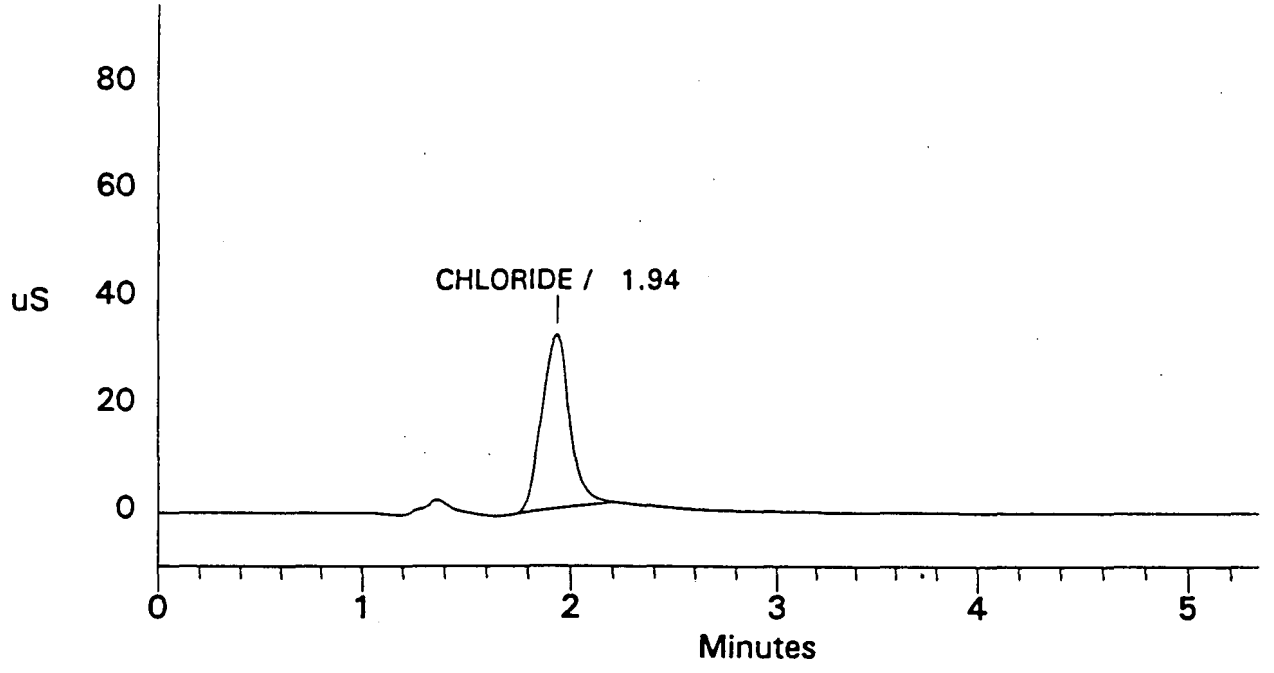
Sample Name: 194-52-22 Date: 01/07/1998 07:11:13
Data File : C:\DX\DATA\44369HCL\19452221.D40
ethod : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 40 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	32436487	293249642	1	-9.92
		Totals	0.000	32436487	293249642		

File: 19452221.D40 Sample: 194-52-22



Data Reprocessed On 01/26/1998 15:58:36

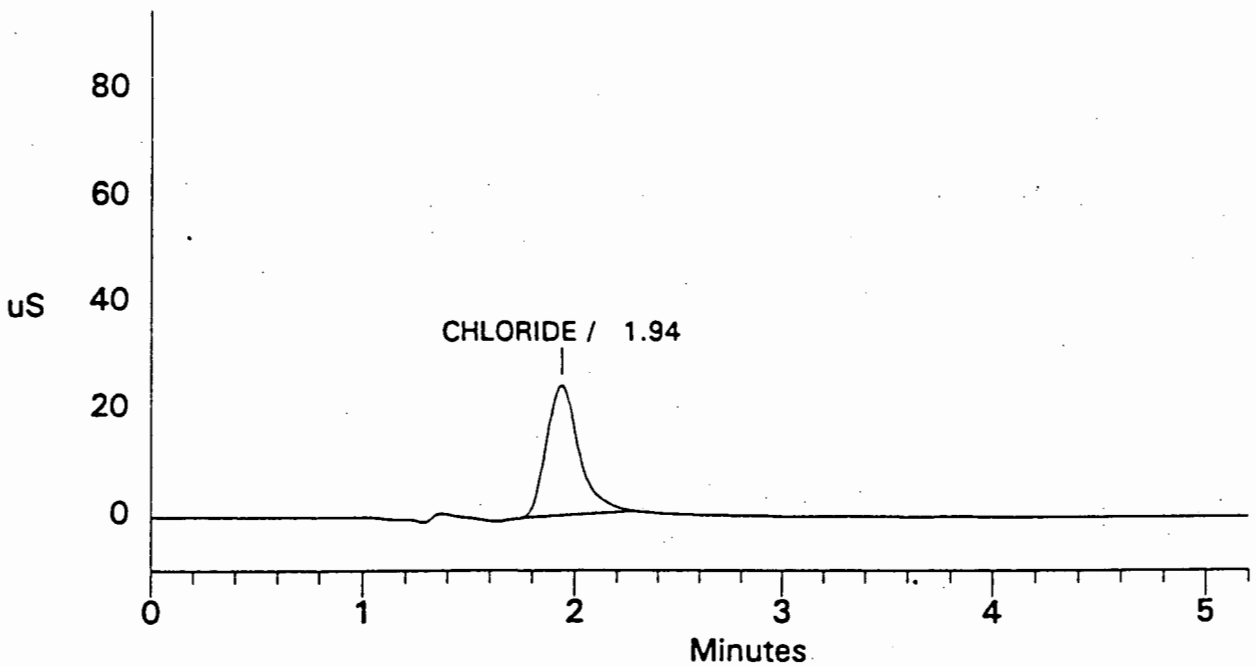
Sample Name: 194-52-24 Date: 01/07/1998 07:24:59
Data File : C:\DX\DATA\44369HCL\19452241.D41
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 41 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	24252613	256894761	1	-9.92
		Totals	0.000	24252613	256894761		

File: 19452241.D41 Sample: 194-52-24



Data Reprocessed On 01/26/1998 16:00:16

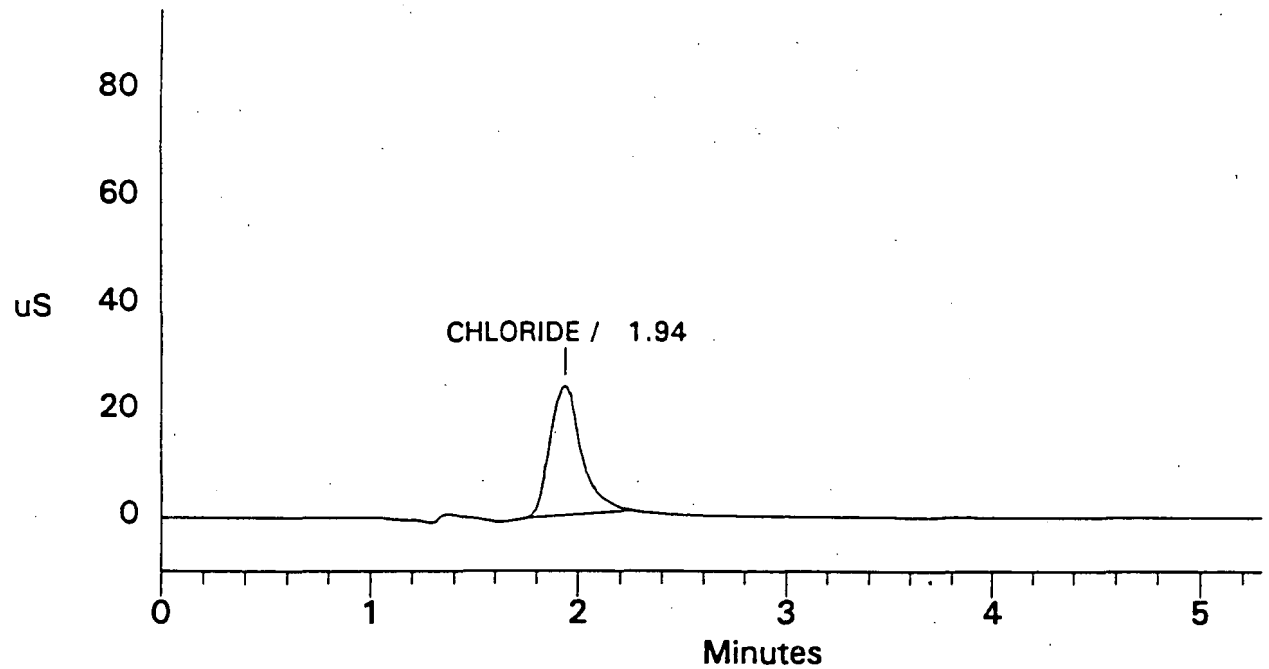
Sample Name: 194-52-24 Date: 01/07/1998 07:38:45
Data File : C:\DX\DATA\44369HCL\19452241.D42
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 42 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.29	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	24142469	253057883	1	-9.92
		Totals	0.000	24142469	253057883		

File: 19452241.D42 Sample: 194-52-24



Data Reprocessed On 01/26/1998 16:01:44

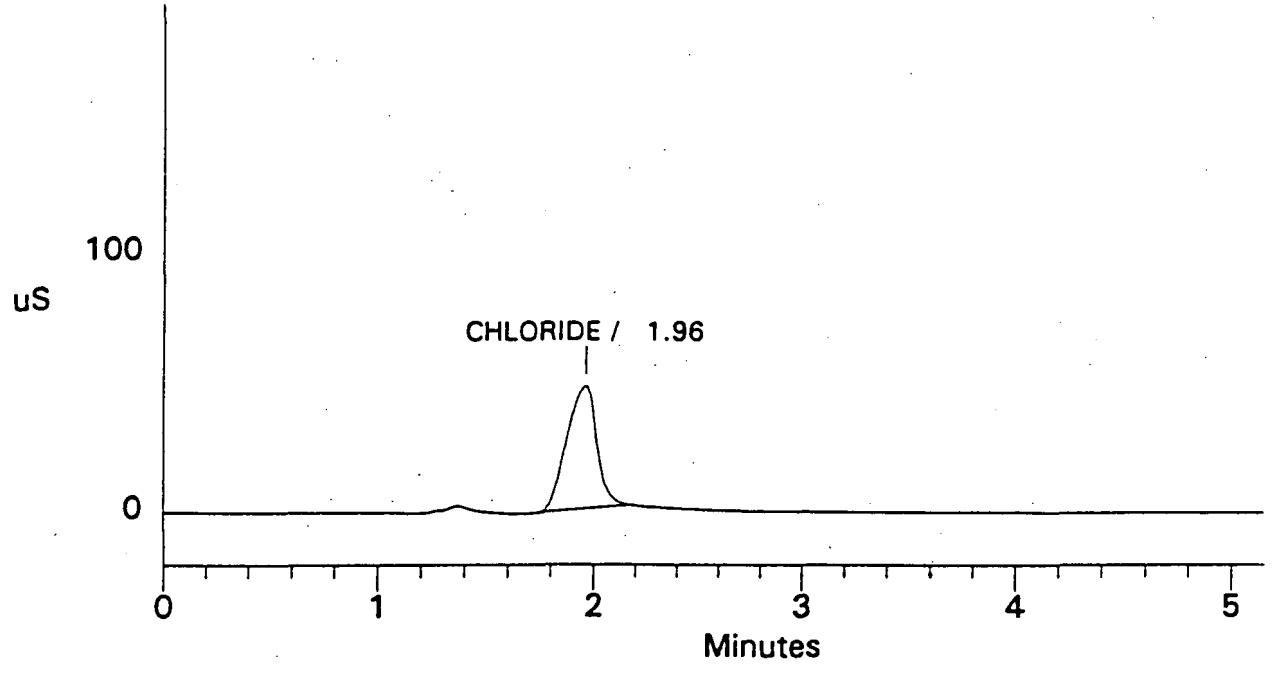
Sample Name: 194-52-26 Date: 01/07/1998 07:52:31
Data File : C:\DX\DATA\44369HCL\19452261.D43
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 43 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.96	CHLORIDE	0.000	46917783	455187710	1	-8.68
		Totals	0.000	46917783	455187710		

File: 19452261.D43 Sample: 194-52-26



Data Reprocessed On 01/26/1998 16:03:09

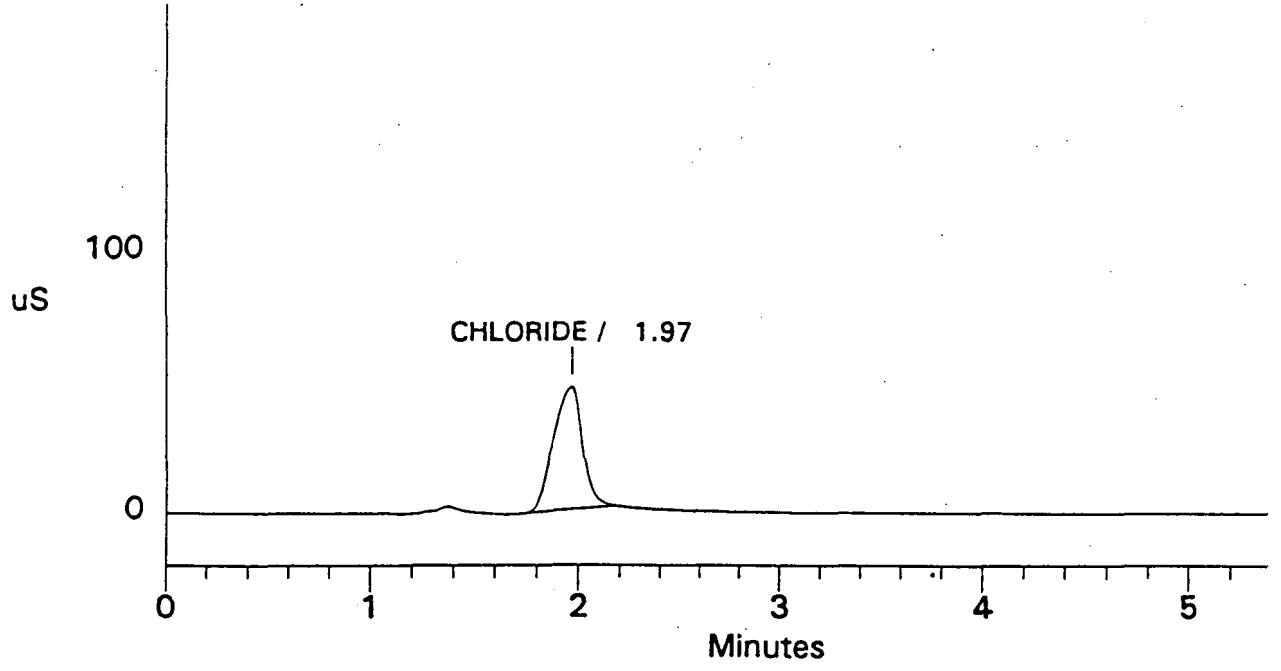
Sample Name: 194-52-26 Date: 01/07/1998 08:06:17
Data File : C:\DX\DATA\44369HCL\19452261.D44
Method : C:\DX\METHOD\CHLORIDE.met
LCI Address: 1 System: 1 Inject#: 44 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	20	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.97	CHLORIDE	0.000	46852353	455256685	1	-8.53
		Totals	0.000	46852353	455256685		

File: 19452261.D44 Sample: 194-52-26



Data Reprocessed On 01/07/1998 14:20:20

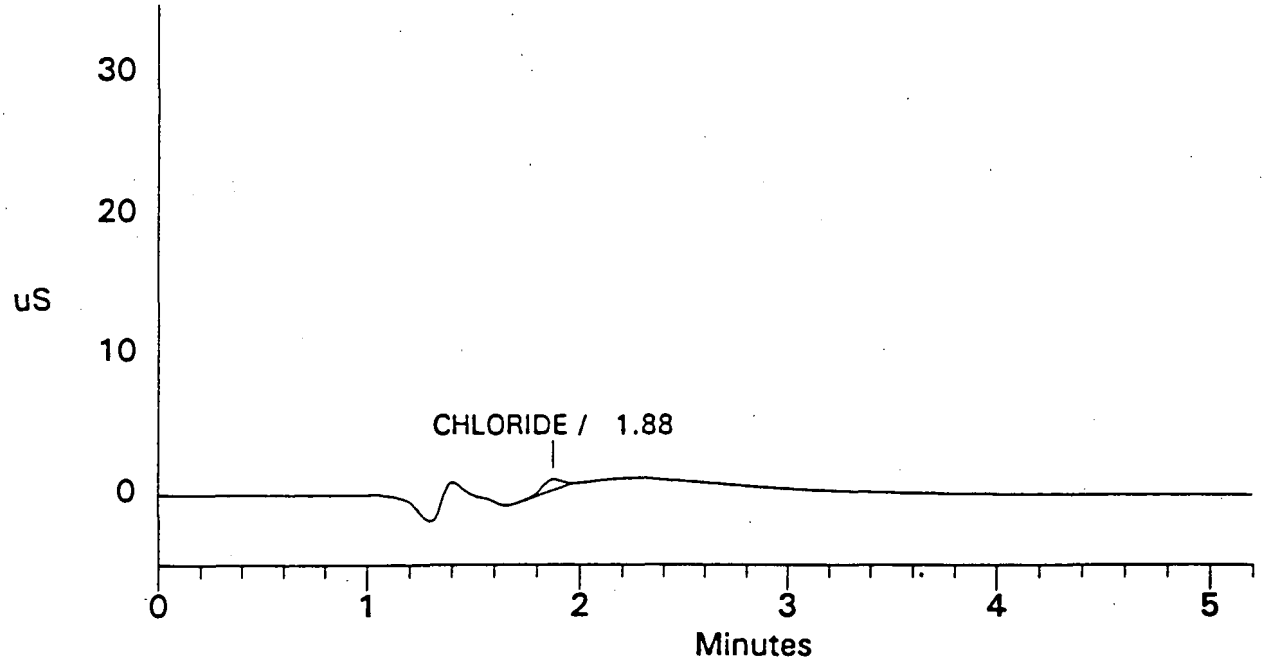
Sample Name: 194-52-28 Date: 01/07/1998 08:33:49
Data File : C:\DX\DATA\44369HCL\19452281.D46
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 46 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	783678	5083926	1	-12.71
		Totals	0.000	783678	5083926		

File: 19452281.D46 Sample: 194-52-28



Data Reprocessed On 01/07/1998 14:10:34

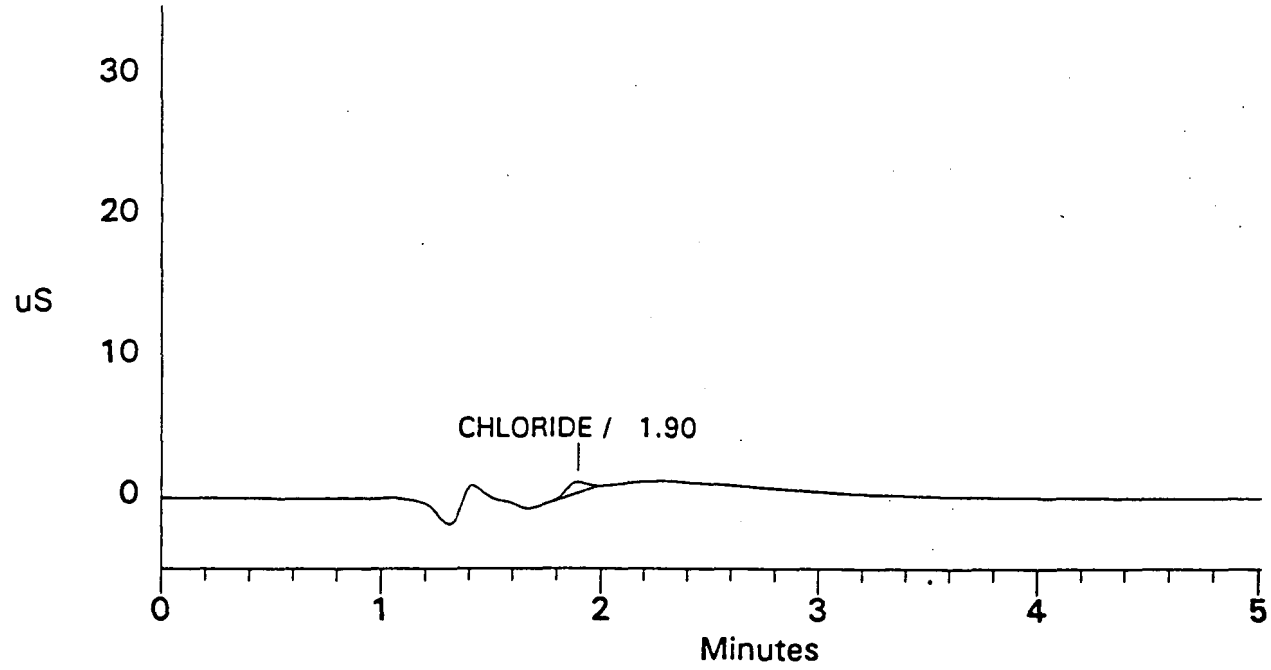
Sample Name: 194-52-28 Date: 01/07/1998 08:20:03
Data File : C:\DX\DATA\44369HCL\19452281.D45
Method : C:\DX\METHOD\CHLORIDE.met
GPIB Address: 1 System: 1 Inject#: 45 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.02	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.90	CHLORIDE	0.000	774789	5102627	1	-11.78
		Totals	0.000	774789	5102627		

File: 19452281.D45 Sample: 194-52-28



Data Reprocessed On 01/07/1998 14:27:56

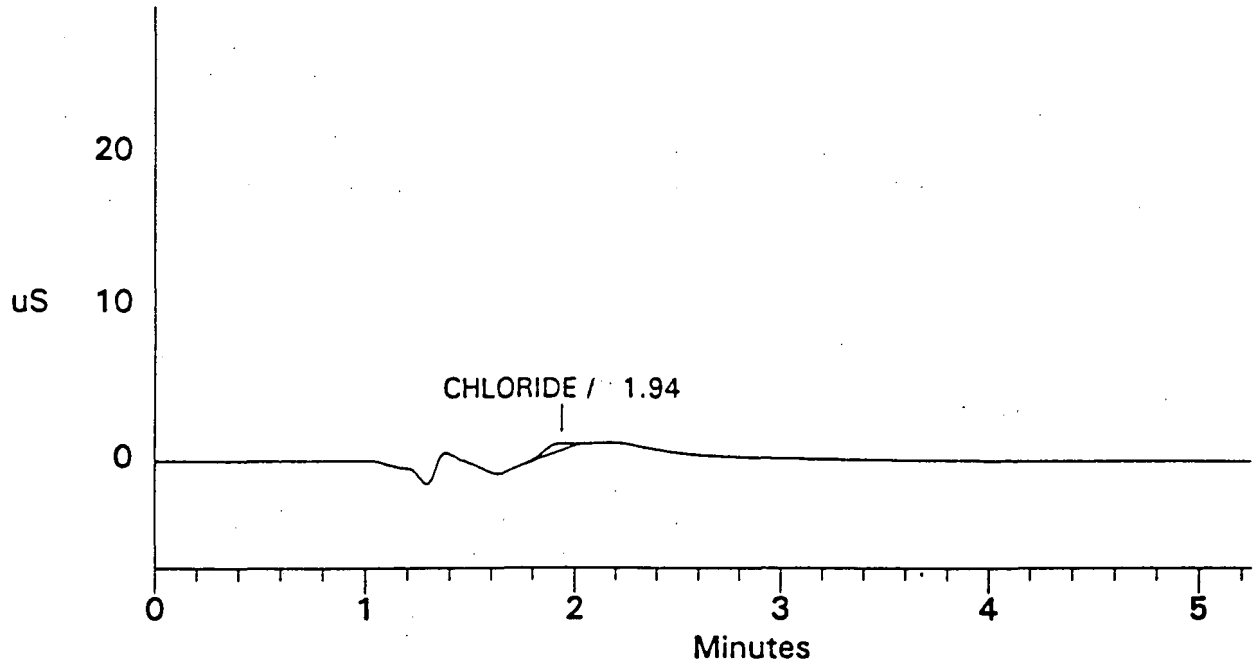
Sample Name: 194-52-29 Date: 01/07/1998 09:01:21
Data File : C:\DX\DATA\44369HCL\19452291.D48
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 48 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.25	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	429373	3999603	1	-9.92
		Totals	0.000	429373	3999603		

File: 19452291.D48 Sample: 194-52-29



Data Reprocessed On 01/07/1998 14:27:01

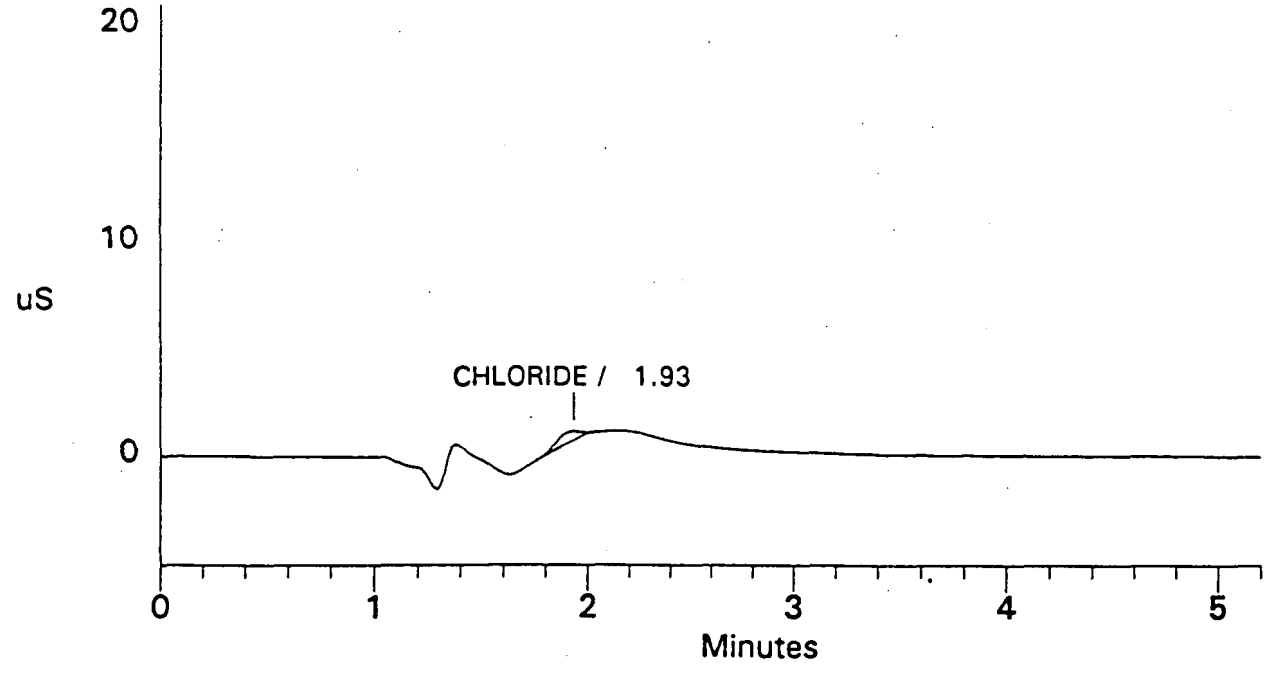
Sample Name: 194-52-29 Date: 01/07/1998 08:47:36
Data File : C:\DX\DATA\44369HCL\19452291.D47
ethod : C:\DX\METHOD\CHLORIDE.met
CI Address: 1 System: 1 Inject#: 47 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.93	CHLORIDE	0.000	430714	3835622	1	-10.08
		Totals	0.000	430714	3835622		

File: 19452291.D47 Sample: 194-52-29



Data Reprocessed On 01/27/1998 10:20:30

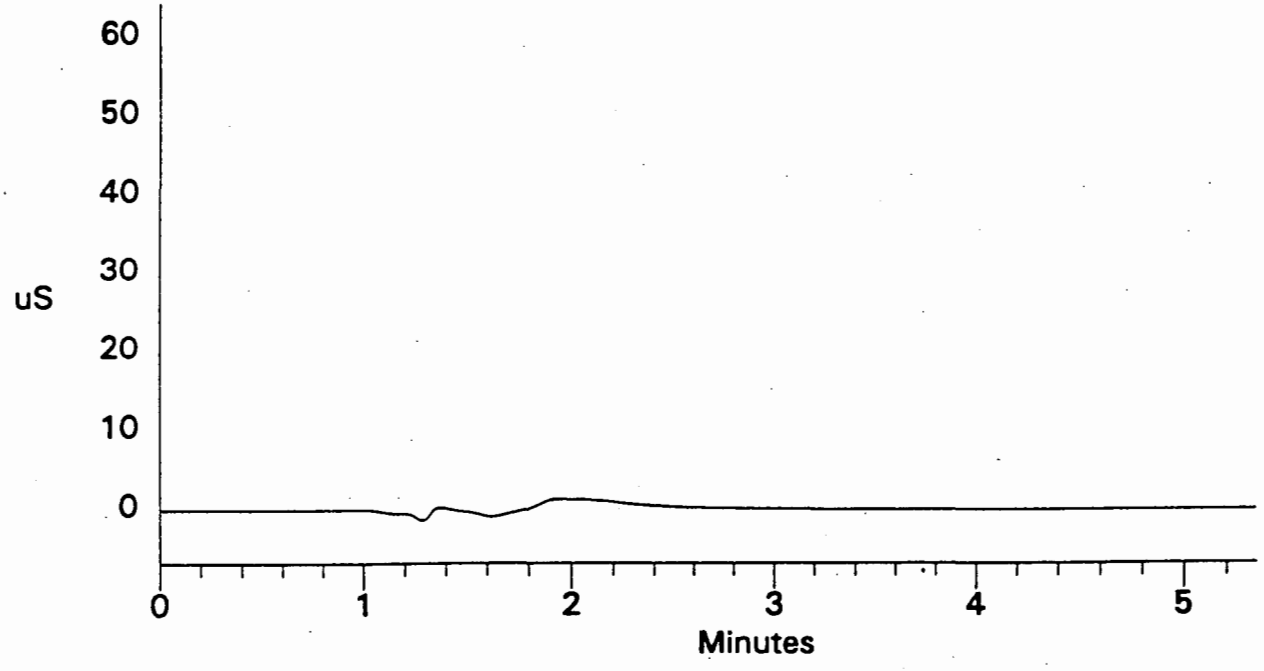
Sample Name: 194-52-31 Date: 01/07/1998 09:15:06
Data File : C:\DX\DATA\44369HCL\19452311.D49
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 49 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3600	5Hz	0.00	5.34	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452311.D49 Sample: 194-52-31



Data Reprocessed On 01/27/1998 10:21:39

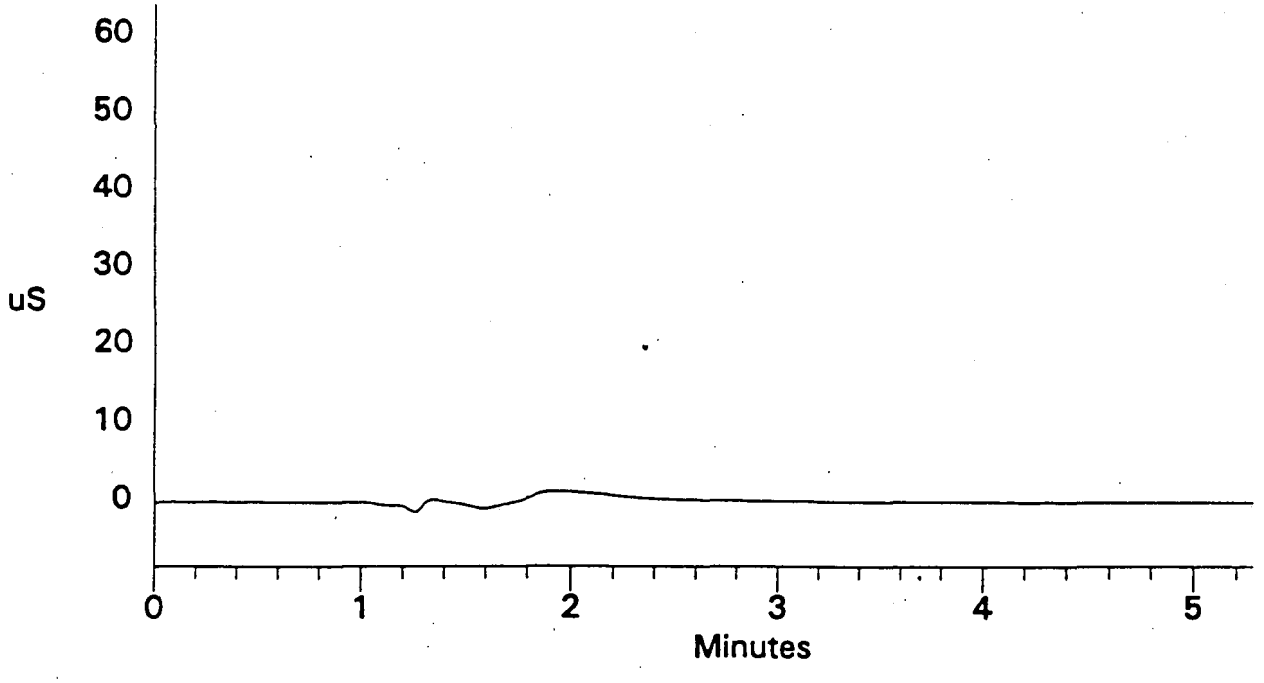
Sample Name: 194-52-31 Date: 01/07/1998 09:28:54
Data File : C:\DX\DATA\44369HCL\19452311.D50
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 50 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.28	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452311.D50 Sample: 194-52-31



Data Reprocessed On 01/27/1998 10:22:18

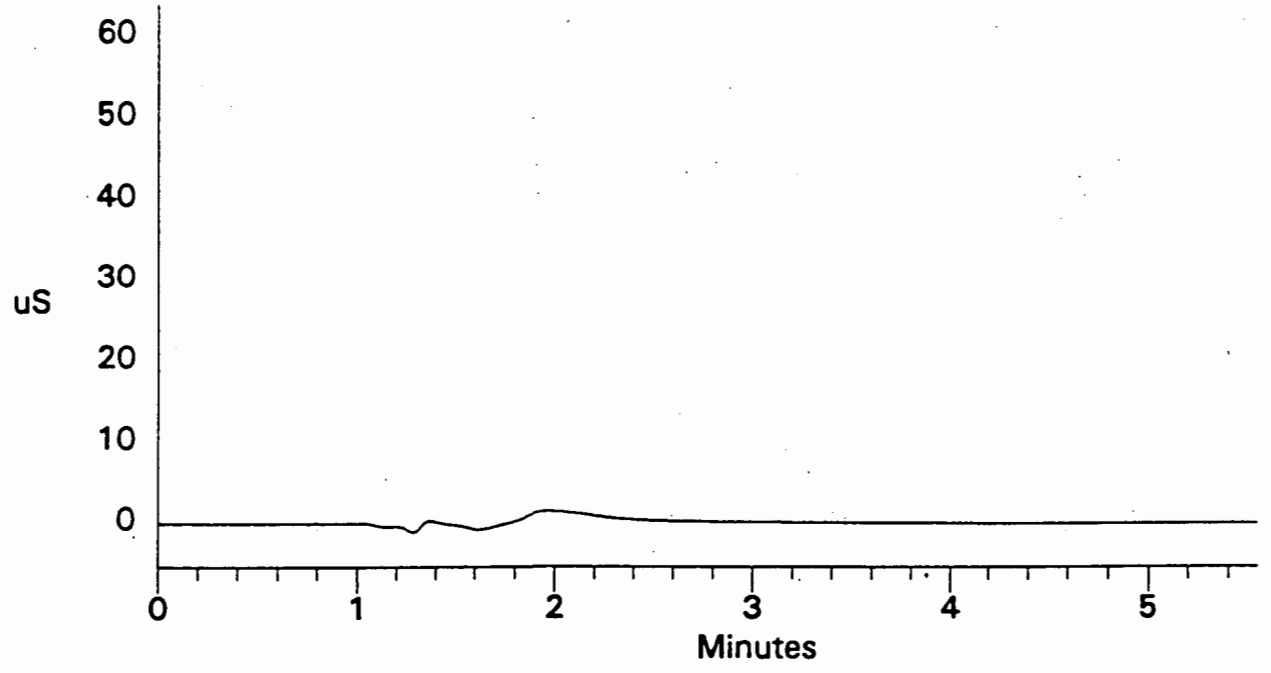
Sample Name: 194-52-33 Date: 01/07/1998 09:42:40
Data File : C:\DX\DATA\44369HCL\19452331.D51
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 51 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.55	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452331.D51 Sample: 194-52-33



Data Reprocessed On 01/27/1998 10:22:59

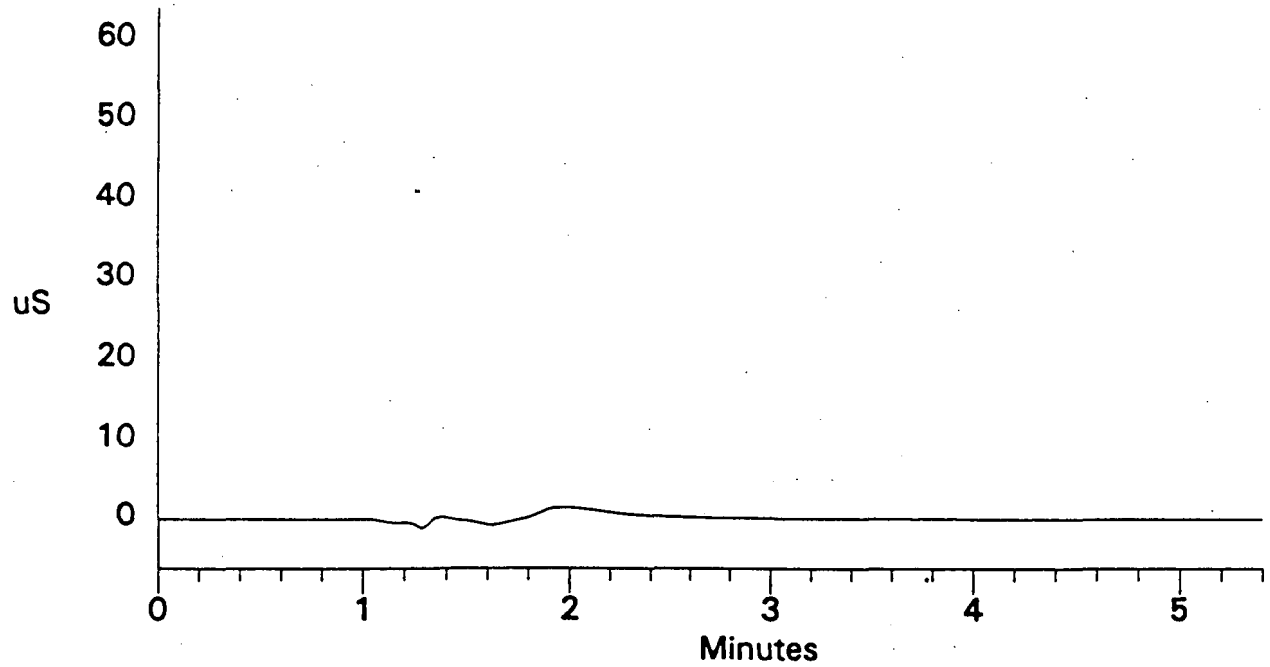
Sample Name: 194-52-33 Date: 01/07/1998 09:56:28
Data File : C:\DX\DATA\44369HCL\19452331.D52
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 52 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.40	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452331.D52 Sample: 194-52-33



Data Reprocessed On 01/07/1998 14:48:35

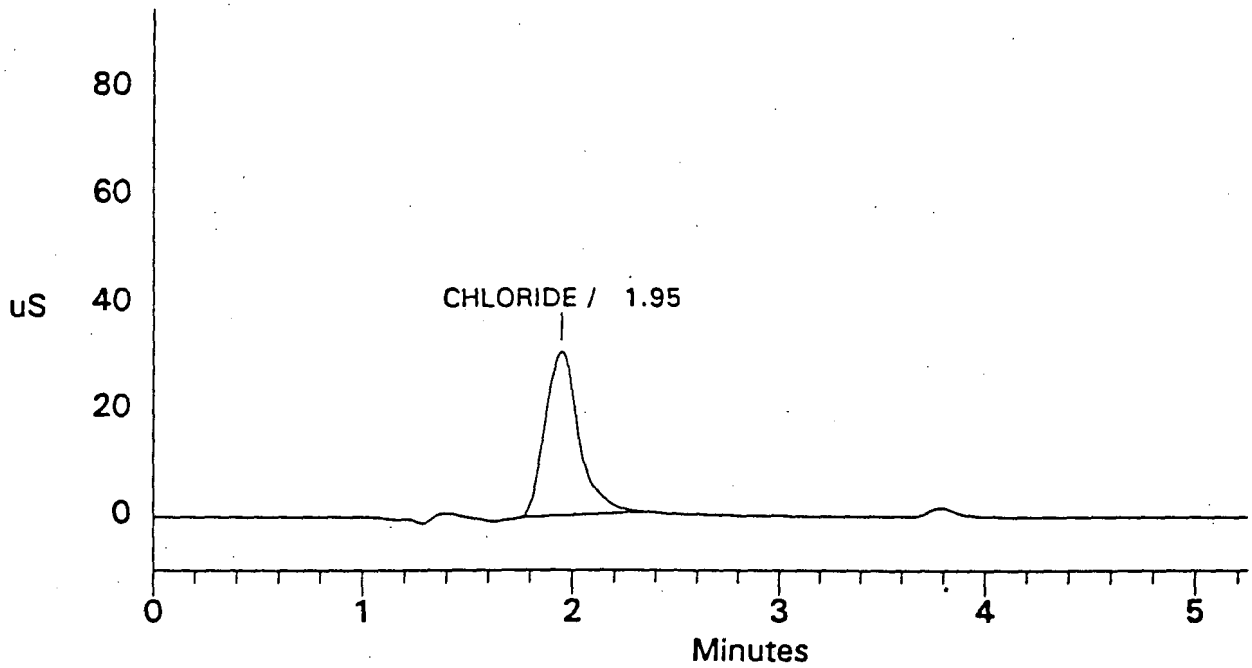
Sample Name: 194-52-37 Date: 01/07/1998 10:24:01
Data File : C:\DX\DATA\44369HCL\19452371.D54
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 54 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.25	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.95	CHLORIDE	0.000	30711766	341655117	1	-9.46
		Totals	0.000	30711766	341655117		

File: 19452371.D54 Sample: 194-52-37



Data Reprocessed On 01/07/1998 14:47:37

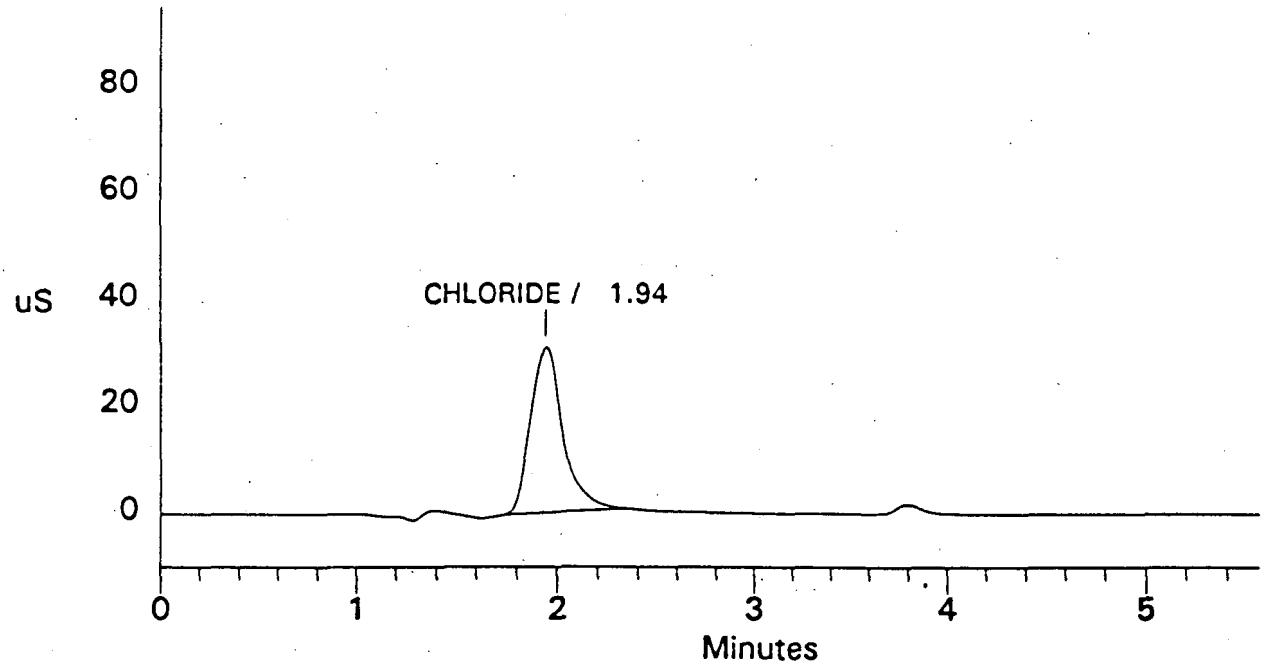
Sample Name: 194-52-37 Date: 01/07/1998 10:10:14
Data File : C:\DX\DATA\44369HCL\19452371.D53
Method : C:\DX\METHOD\CHLORIDE.met
CI Address: 1 System: 1 Inject#: 53 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.56	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	30766719	341359444	1	-9.61
		Totals	0.000	30766719	341359444		

File: 19452371.D53 Sample: 194-52-37



Data Reprocessed On 01/07/1998 13:28:42

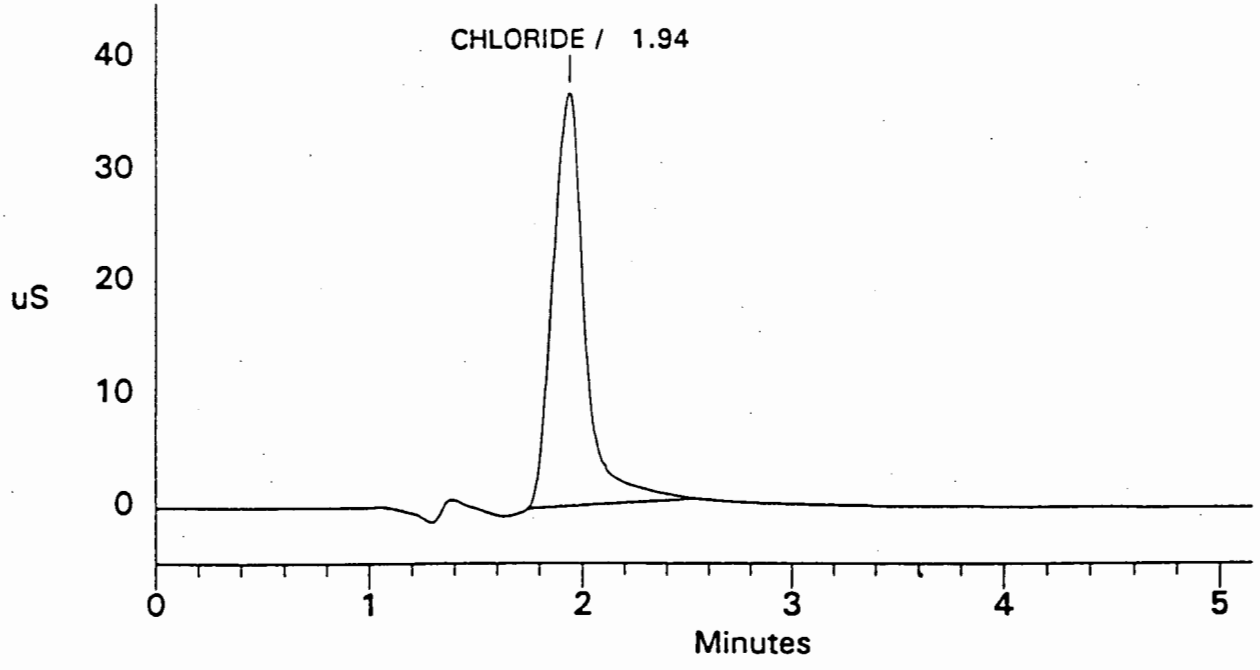
Sample Name: 194-52-1 MS Date: 01/07/1998 10:37:48
Data File : C:\DX\DATA\44369HCL\19452011.D55
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 55 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	36739984	383161337	1	-9.77
		Totals	0.000	36739984	383161337		

File: 19452011.D55 Sample: 194-52-1 MS



Data Reprocessed On 01/07/1998 13:30:25

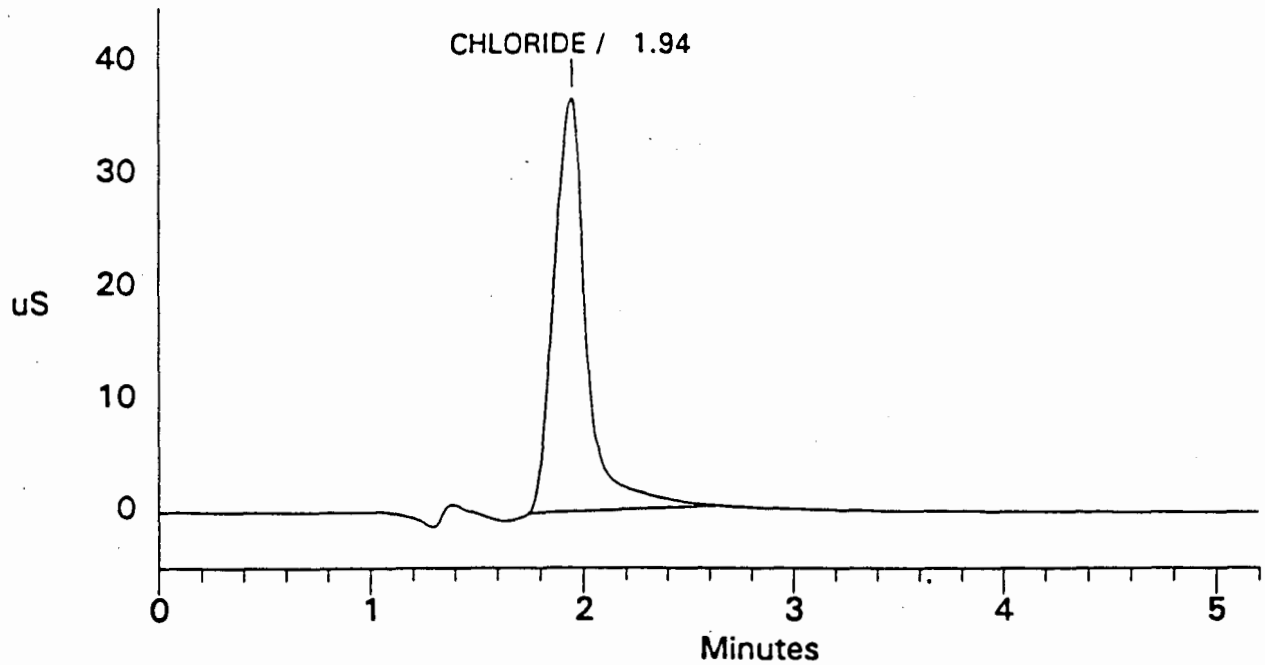
Sample Name: 194-52-1 MS Date: 01/07/1998 10:51:34
Data File : C:\DX\DATA\44369HCL\19452011.D56
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 56 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.20	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	36745958	389413634	1	-9.77
		Totals	0.000	36745958	389413634		

File: 19452011.D56 Sample: 194-52-1 MS



Data Reprocessed On 01/07/1998 13:31:58

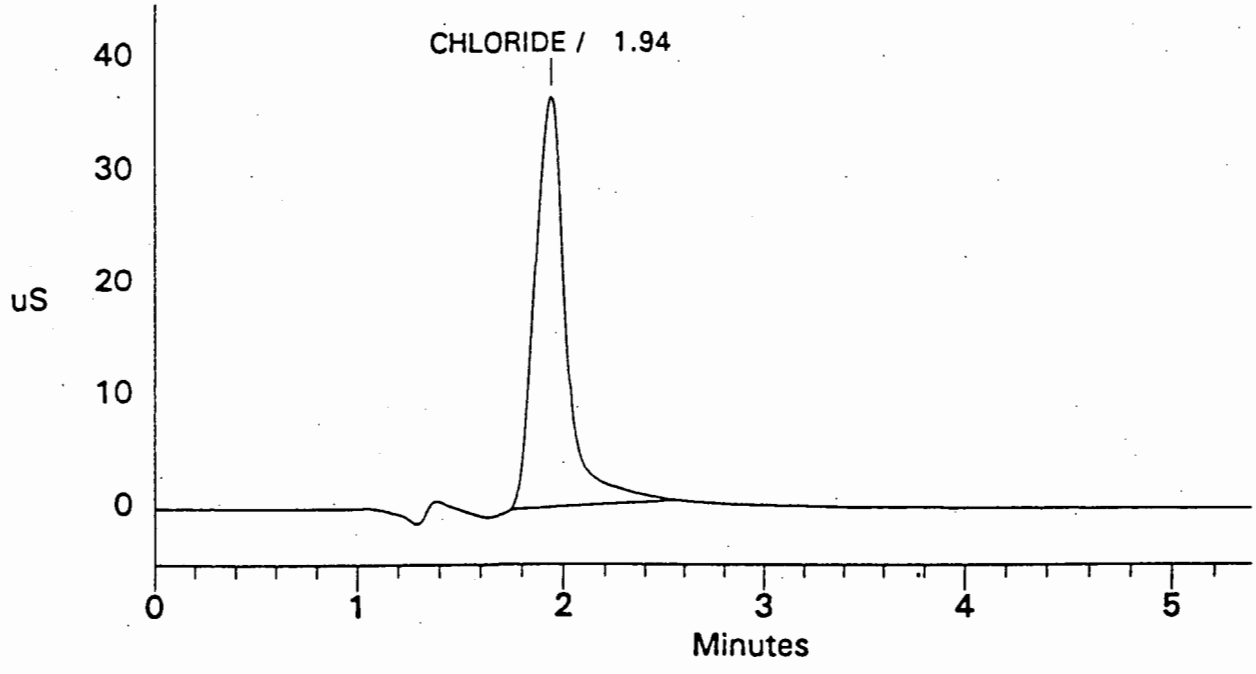
Sample Name: 194-52-1 MSD Date: 01/07/1998 11:05:18
Data File : C:\DX\DATA\44369HCL\19452011.D57
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 57 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	36520618	381923021	1	-9.77
		Totals	0.000	36520618	381923021		

File: 19452011.D57 Sample: 194-52-1 MSD



Data Reprocessed On 01/07/1998 13:32:43

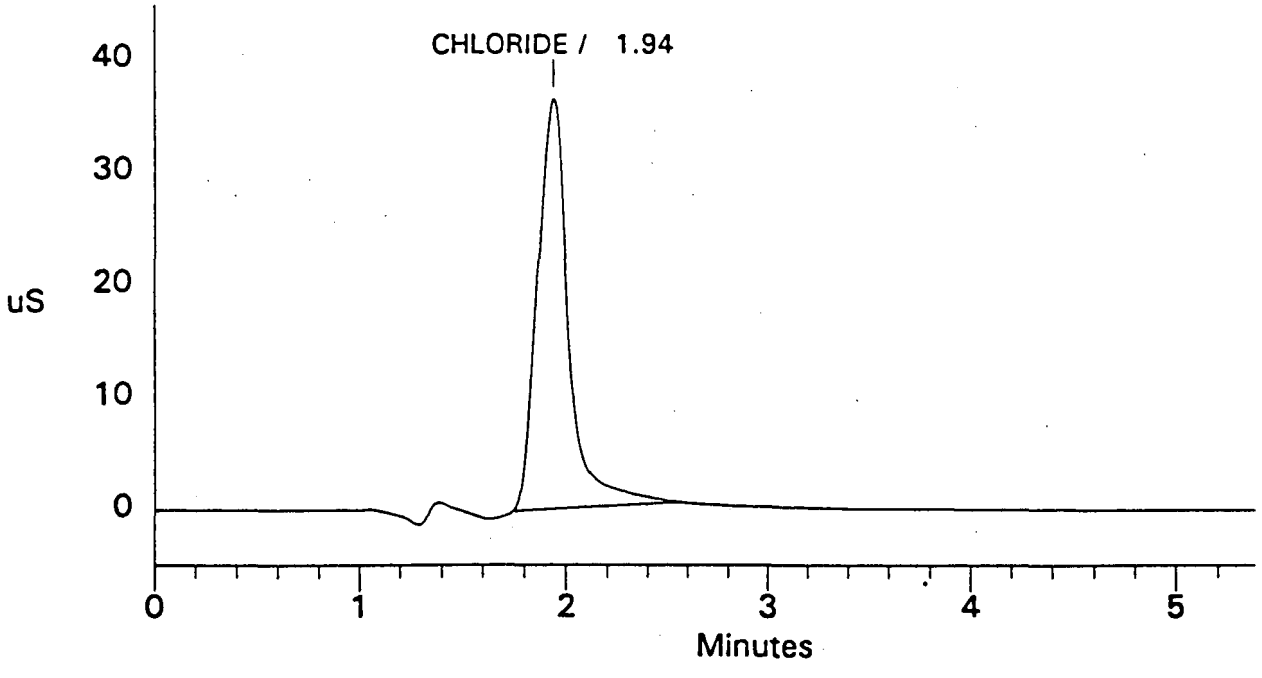
Sample Name: 194-52-1 MSD Date: 01/07/1998 11:19:05
Data File : C:\DX\DATA\44369HCL\19452011.D58
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 58 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2	3600	5Hz	0.00	5.38	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.94	CHLORIDE	0.000	36414745	380275538	1	-9.92
		Totals	0.000	36414745	380275538		

File: 19452011.D58 Sample: 194-52-1 MSD



TRIANGLE LABO[redacted]ES INC.

TLI# 44369-CL2
CLIENT SAMPLES
EASTERN RESEARCH GROUP
09-JANUARY/98

TLI ID	CLIENT ID	RT	AREA	LOG AREA	RUN CONC ppm	DILUTION FACTOR	SAMPLE CONC ppm	AVG CONC ppm	RPD	TOTAL mL	TOTAL mg Cl	TOTAL mg CL2	PH
194-52-2	CAA-04	1.92	783026	—	<1	1	<1	<1	NA	34	<0.034	<0.034	7
		1.90	759183	—	<1	1	<1						
194-52-4	CAA-08	1.89	693189	—	<1	1	<1	<1	NA	37	<0.037	<0.037	7
		1.89	706781	—	<1	1	<1						
194-52-6	CAA-12	1.89	569062	—	<1	1	<1	<1	NA	37	<0.037	<0.037	7
		1.89	566901	—	<1	1	<1						
194-52-9	CAA-20	1.91	656131	—	<1	1	<1	<1	NA	35	<0.035	<0.035	7
		1.89	616935	—	<1	1	<1						
194-52-10	* CAA-23 for HCl not Cl_2	1.89	290303658	8.46	66.75	1	66.75	66.73	0.1	36	2.40	2.40	7
		1.89	290051032	8.46	66.70	1	66.70						
194-52-11	CAA-24	1.90	1190651	—	<1	1	<1	<1	NA	37	<0.037	<0.037	7
		1.89	1176658	—	<1	1	<1						
194-52-13	CAA-28	1.88	2409554	—	<1	1	<1	<1	NA	35	<0.035	<0.035	8
		1.88	2369122	—	<1	1	<1						
194-52-15	CAA-32	1.89	5317500	6.73	1.97	1	1.97	1.97	0.4	36	0.07	0.07	8
		1.89	5343789	6.73	1.98	1	1.98						
194-52-17	CAA-36	1.89	23515386	7.37	7.30	1	7.30	7.27	0.9	37	0.27	0.27	7
		1.88	23284724	7.37	7.23	1	7.23						
194-52-19	CAA-40	1.88	2278446	—	<1	1	<1	<1	NA	27	<0.027	<0.027	8
		1.90	2210849	—	<1	1	<1						
194-52-21	CAA-52	1.88	3633374	6.56	1.41	1	1.41	1.41	0.3	36	0.05	0.05	7
		1.90	3644451	6.56	1.41	1	1.41						
194-52-23	CAA-56	1.89	166547469	8.22	40.92	1	40.92	40.95	0.2	40	1.64	1.64	7
		1.89	166842253	8.22	40.98	1	40.98						
194-52-25	CAA-60	1.87	1148613	—	<1	1	<1	<1	NA	35	<0.035	<0.035	8
		1.87	1146965	—	<1	1	<1						
194-52-27	CAA-64	1.88	5713691	8.76	2.10	1	2.10	2.10	0.5	34	0.07	0.07	8
		1.88	5746518	8.76	2.11	1	2.11						
194-52-30	CAA-96	ND	ND	ND	ND	1	<1	<1	NA	35	<0.035	<0.035	13
		ND	ND	ND	ND	1	<1						
194-52-32	CAA-100	ND	ND	ND	ND	1	<1	<1	NA	40	<0.040	<0.040	13
		ND	ND	ND	ND	1	<1						
194-52-34	CAA-104	ND	ND	ND	ND	1	<1	<1	NA	41	<0.041	<0.041	13
		ND	ND	ND	ND	1	<1						

* Samples analyzed according to pH

TLI# 44369-CL2
CLIENT SAMPLES
EASTERN RESEARCH GROUP
09-JANUARY/98

TLI ID	CLIENT ID	RT	AREA	LOG AREA	RUN CONC ppm	DILUTION FACTOR	SAMPLE CONC ppm	AVG CONC ppm	RPD	TOTAL mL	TOTAL mg Cl	TOTAL mg CL2	PH
194-52-35	CAA-231	ND	ND	ND	ND	1	<1	<1	NA	37	<0.037	<0.037	7
		ND	ND	ND	ND	1	<1						
194-52-36	CAA-232	ND	ND	ND	ND	1	<1	<1	NA	40	<0.040	<0.040	7
		ND	ND	ND	ND	1	<1						
194-52-38	CAA-16	1.87	648634	---	<1	1	<1	<1	NA	35	<0.035	<0.035	13
		1.89	695257	---	<1	1	<1						
194-52-39	CAA-76	ND	ND	ND	ND	1	<1	<1	NA	35	<0.035	<0.035	8
		ND	ND	ND	ND	1	<1						
194-52-2 MS	CAA-04	1.83	330222786	8.52	74.78	2	149.55	149.92	0.5	34	5.10	5.10	7
		1.85	332045428	8.52	75.14	2	150.28						
194-52-2 MSD	CAA-04	1.85	330095822	8.52	74.75	2	149.50	149.52	0.0	34	5.08	5.08	7
		1.85	330162583	8.52	74.76	2	149.53						

MATRIX SPIKE

SAMPLE ID		NATIVE AMT. CL (mg)	MS AMT. CL (mg)	AMT. SPIKE (mg)	DF	%RECOVERY
194-52-2 MS	CAA-04	<0.034	5.10	3.4	2	150
194-52-2 MSD	CAA-04	<0.034	5.08	3.4	2	149

% RECOVERY=[(MS AMT. - NATIVE AMT.)/(SPIKE AMT.)] X 100
TOTAL mg HCL : (TOTAL mg CL) (FW HCL/ MW CL)
TOTAL mg CL2 : TOTAL mg CL x 1
ND= NOT DETECT

Data Reprocessed On 01/12/1998 17:34:35

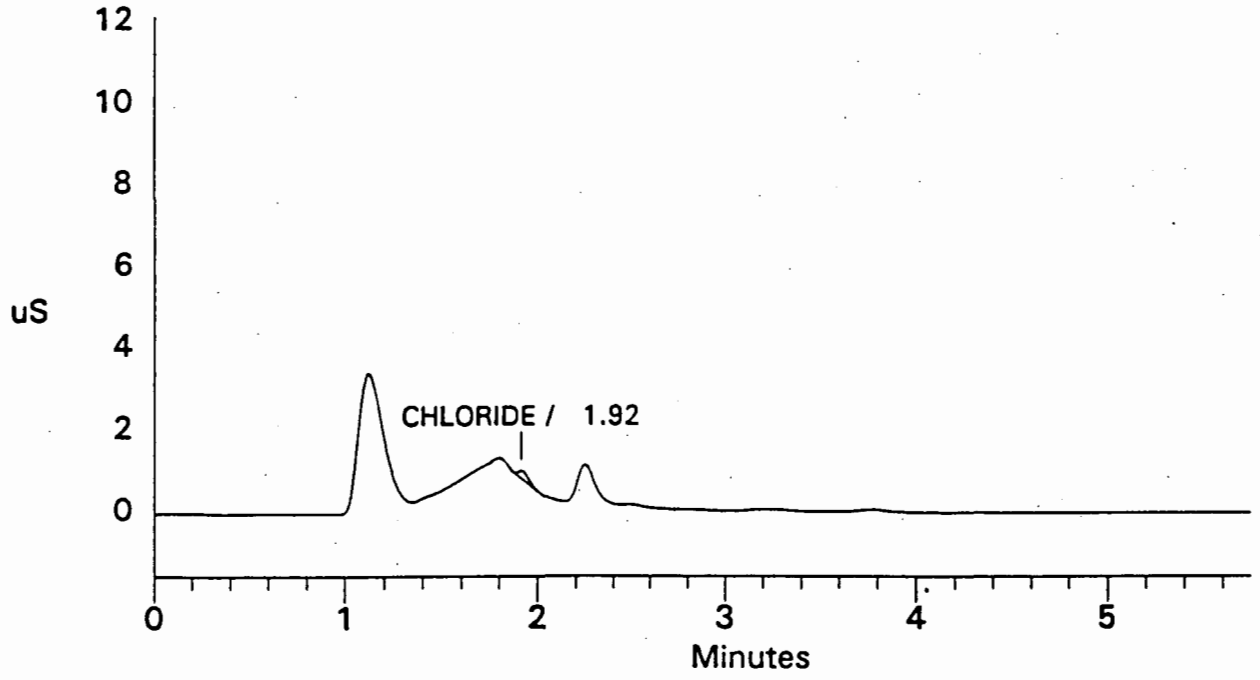
Sample Name: 194-52-2 Date: 01/09/1998 03:41:13
Data File : C:\DX\DATA\44369CL2\19452021.D19
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 19 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.75	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.92	CHLORIDE	0.000	194252	783026	1	-10.85
		Totals	0.000	194252	783026		

File: 19452021.D19 Sample: 194-52-2



Data Reprocessed On 01/12/1998 17:40:48

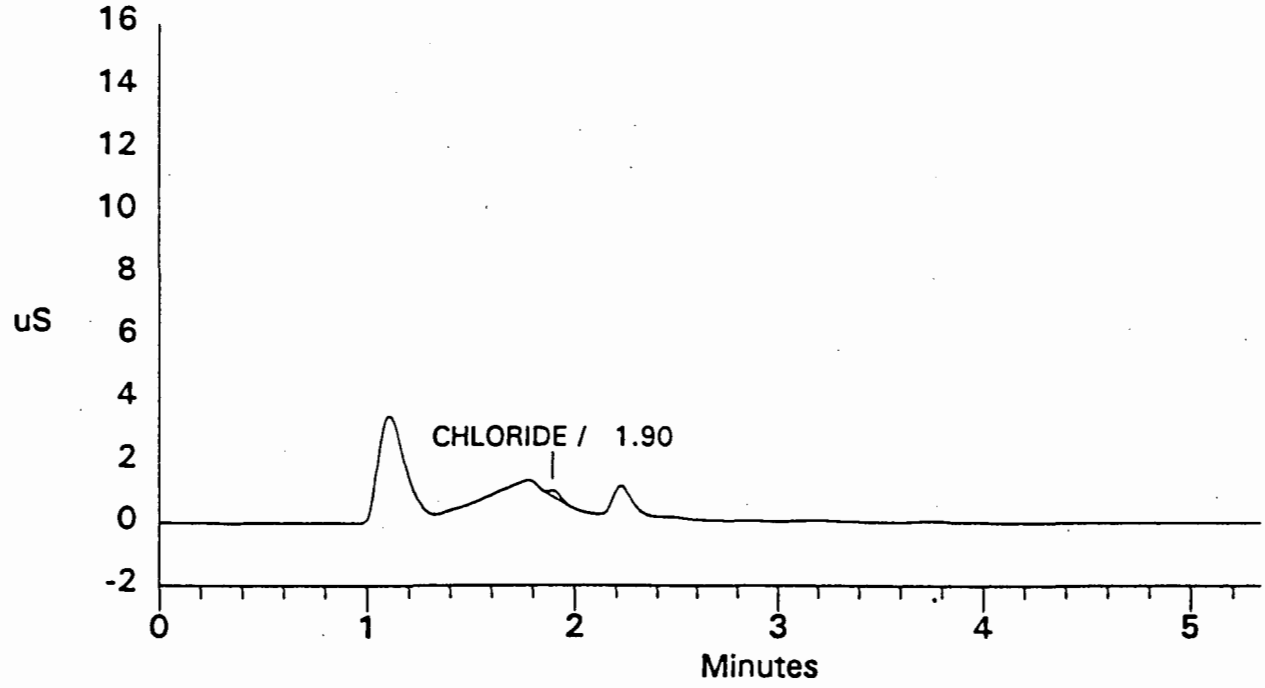
Sample Name: 194-52-2 Date: 01/09/1998 03:54:57
Data File : C:\DX\DATA\44369CL2\19452021.D20
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 20 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.90	CHLORIDE	0.000	194373	759183	1	-11.78
		Totals	0.000	194373	759183		

File: 19452021.D20 Sample: 194-52-2



Data Reprocessed On 01/12/1998 17:43:06

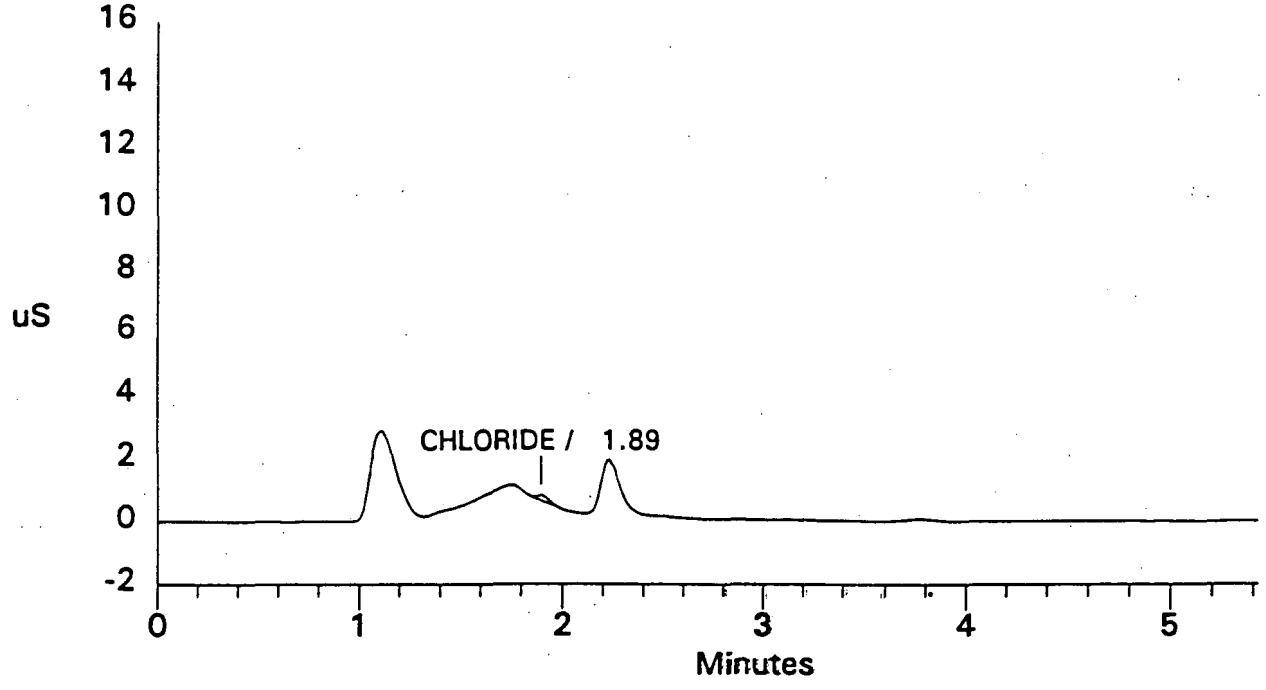
Sample Name: 194-52-4 Date: 01/09/1998 04:08:42
Data File : C:\DX\DATA\44369CL2\19452041.D21
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 21 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	167393	693189	1	-11.94
		Totals	0.000	167393	693189		

File: 19452041.D21 Sample: 194-52-4



Data Reprocessed On 01/12/1998 17:44:55

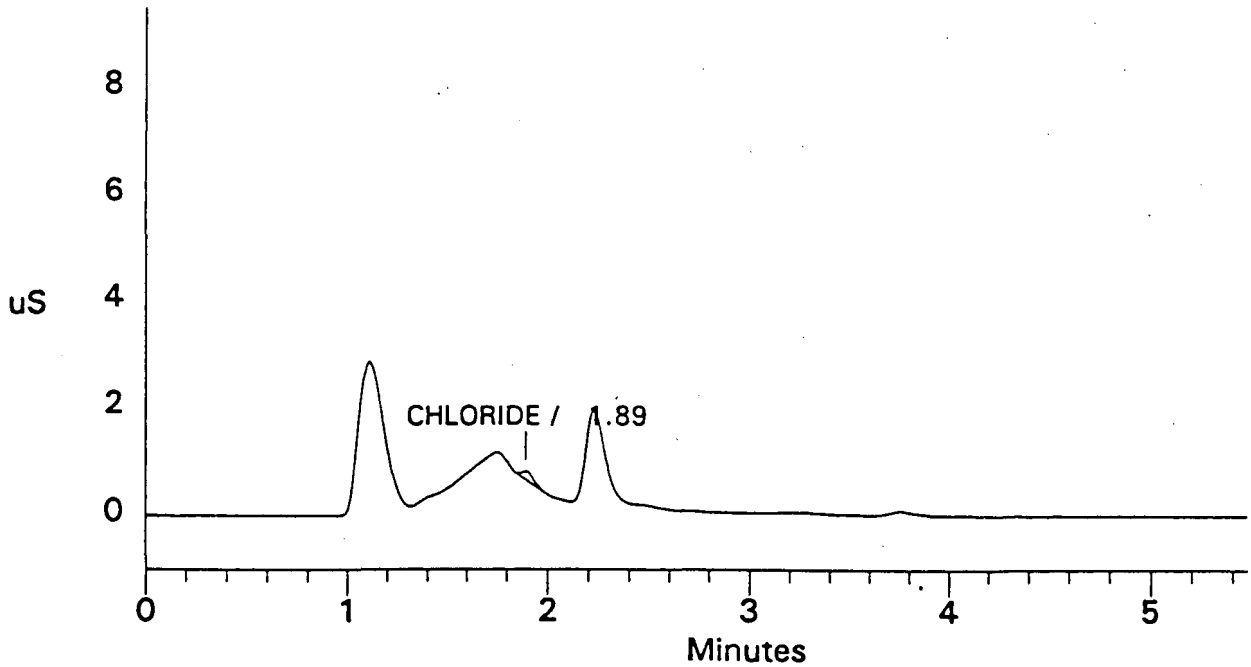
Sample Name: 194-52-4 Date: 01/09/1998 04:22:27
Data File : C:\DX\DATA\44369CL2\19452041.D22
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 22 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.47	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	165797	706781	1	-11.94
		Totals	0.000	165797	706781		

File: 19452041.D22 Sample: 194-52-4



Data Reprocessed On 01/12/1998 17:47:26

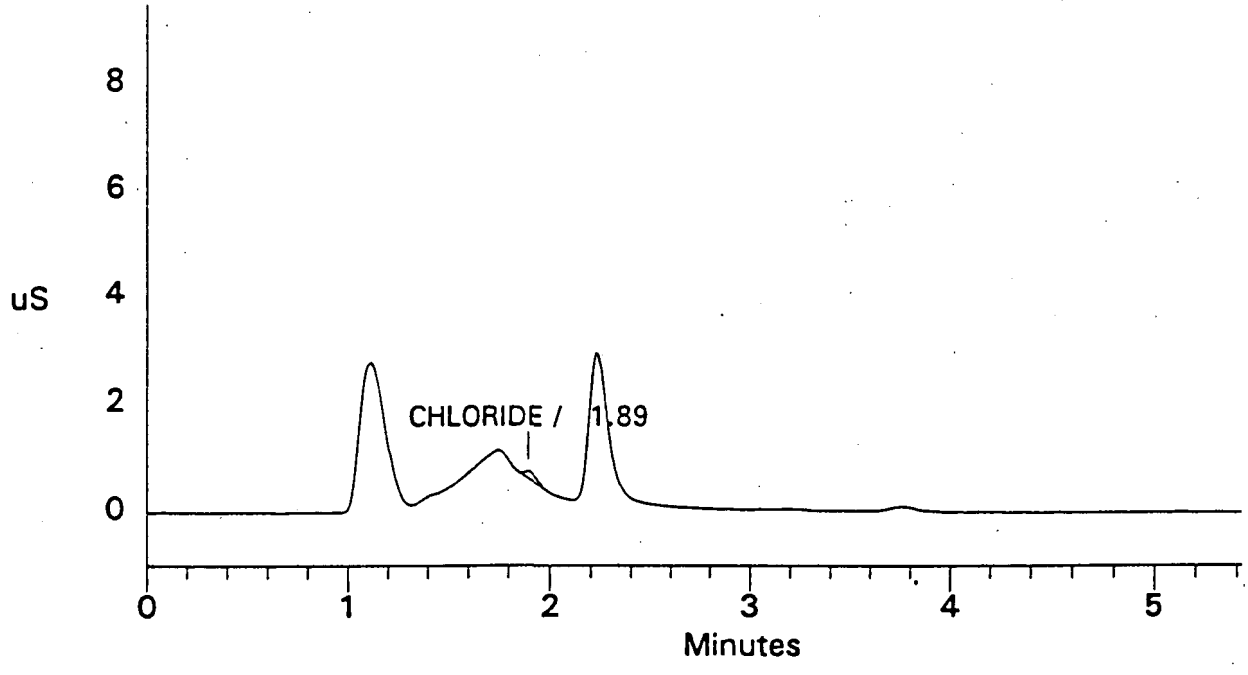
Sample Name: 194-52-6 Date: 01/09/1998 04:36:13
Data File : C:\DX\DATA\44369CL2\19452061.D23
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 23 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	138618	569062	1	-11.94
		Totals	0.000	138618	569062		

File: 19452061.D23 Sample: 194-52-6



Data Reprocessed On 01/13/1998 12:54:45

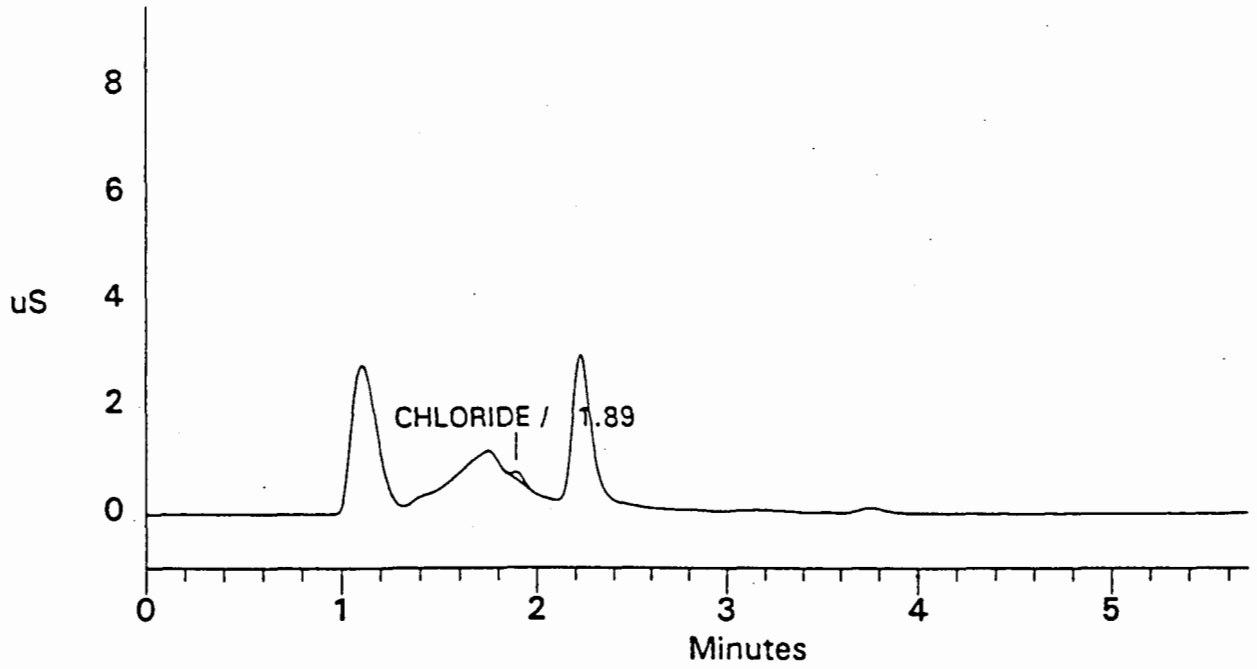
Sample Name: 194-52-6 Date: 01/09/1998 04:49:59
Data File : C:\DX\DATA\44369CL2\19452061.D24
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 24 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.70	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	139271	566901	1	-12.09
		Totals	0.000	139271	566901		

File: 19452061.D24 Sample: 194-52-6



Data Reprocessed On 01/13/1998 12:57:55

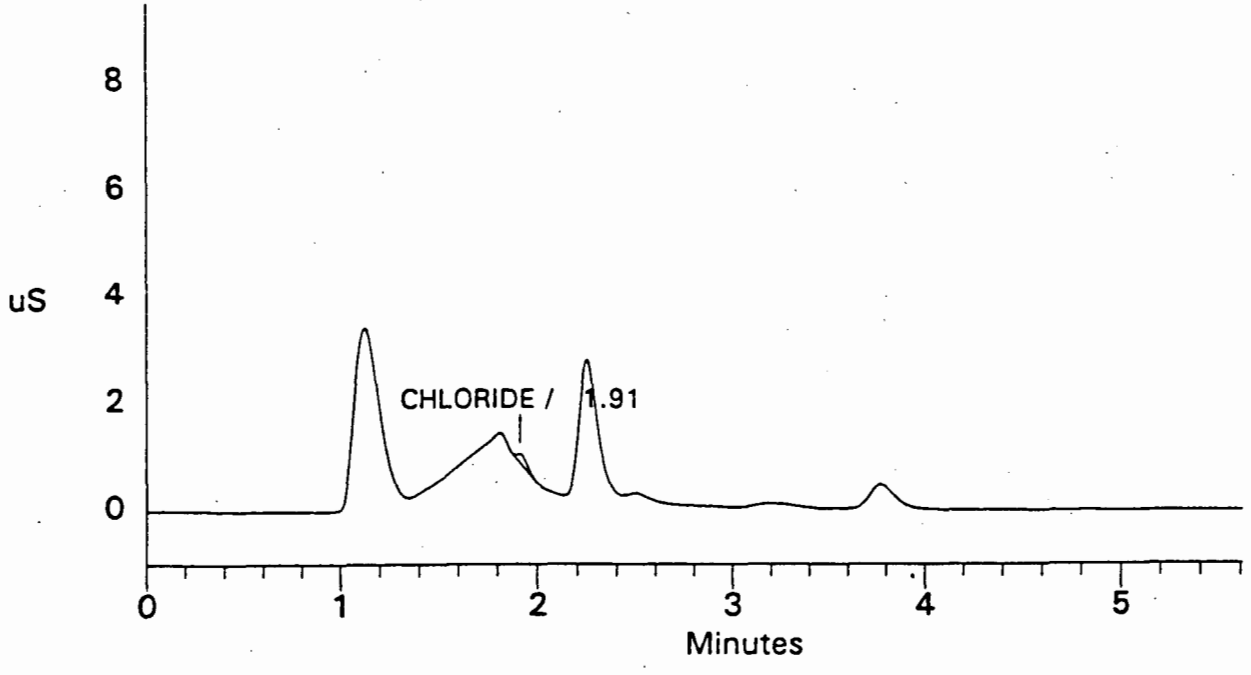
Sample Name: 194-52-9		Date: 01/09/1998 05:03:45	
Data File : C:\DX\DATA\44369CL2\19452091.D25			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 25			Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.61	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.91	CHLORIDE	0.000	171129	656131	1	-11.01
		Totals	0.000	171129	656131		

File: 19452091.D25 Sample: 194-52-9



Data Reprocessed On 01/13/1998 13:06:20

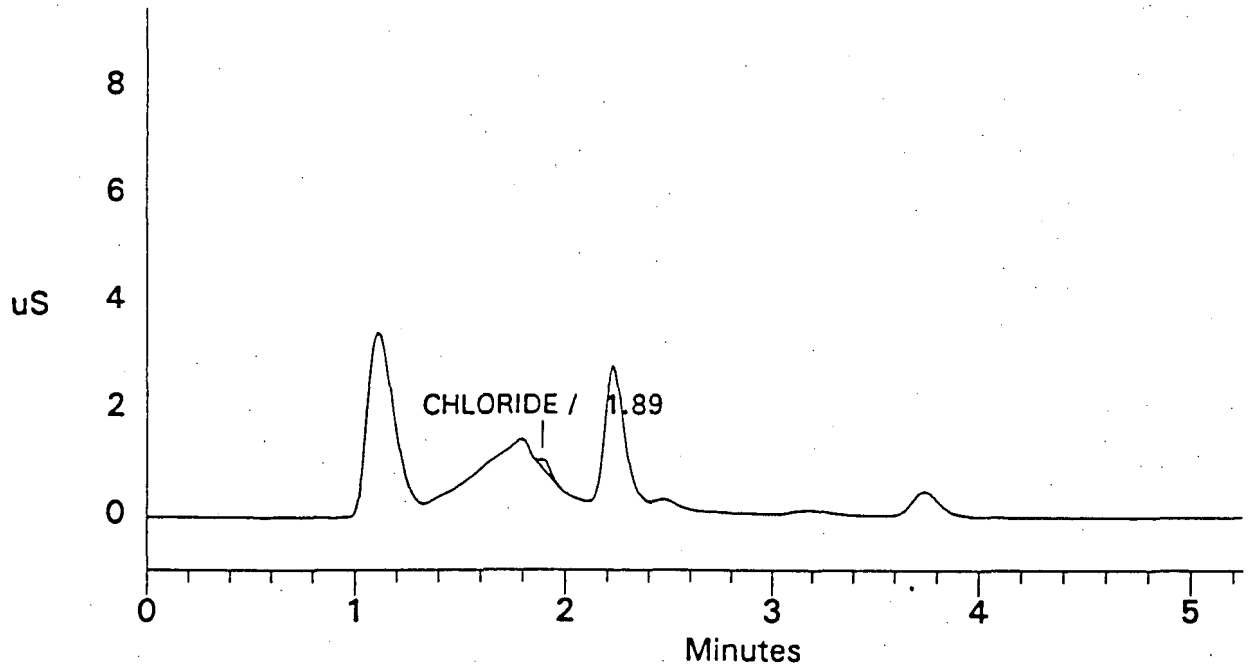
Sample Name: 194-52-9 Date: 01/09/1998 05:17:30
Data File : C:\DX\DATA\44369CL2\19452091.D26
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 26 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.25	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	158443	616935	1	-12.09
		Totals	0.000	158443	616935		

File: 19452091.D26 Sample: 194-52-9



Data Reprocessed On 01/10/1998 16:34:52

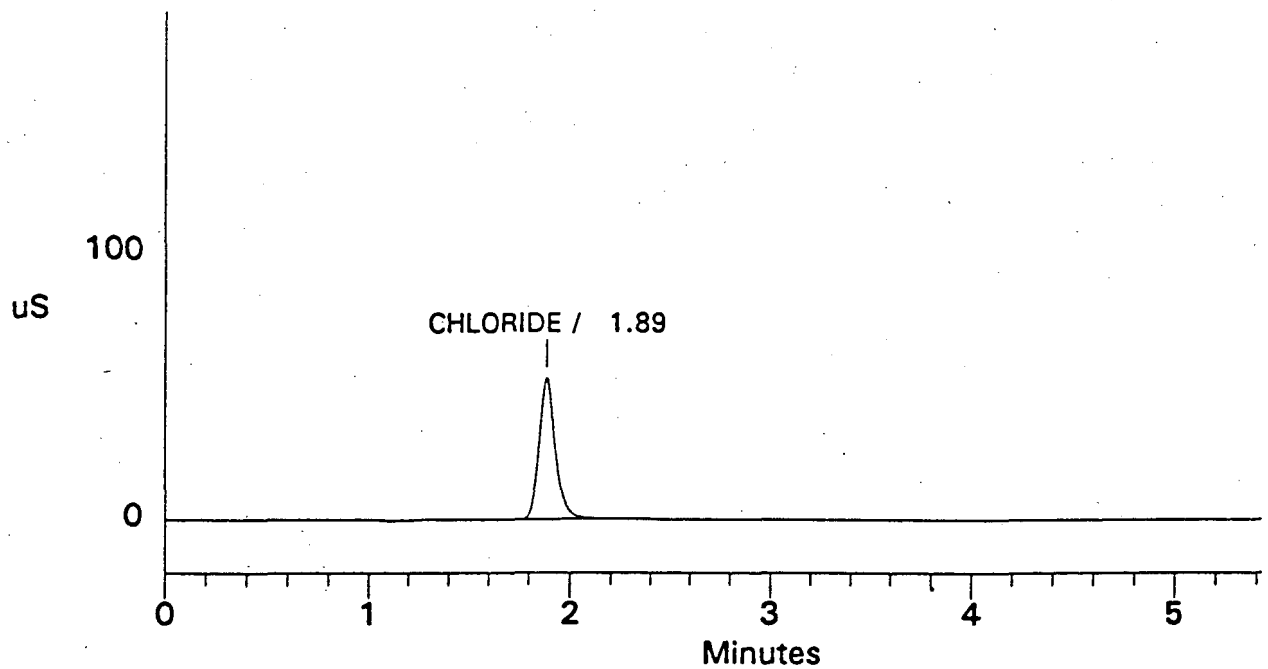
Sample Name: 194-52-10 Date: 01/09/1998 05:31:15
Data File : C:\DX\DATA\44369CL2\19452101.D27
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 27 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	52590852	290303658	1	-12.25
		Totals	0.000	52590852	290303658		

File: 19452101.D27 Sample: 194-52-10



Data Reprocessed On 01/10/1998 16:36:01

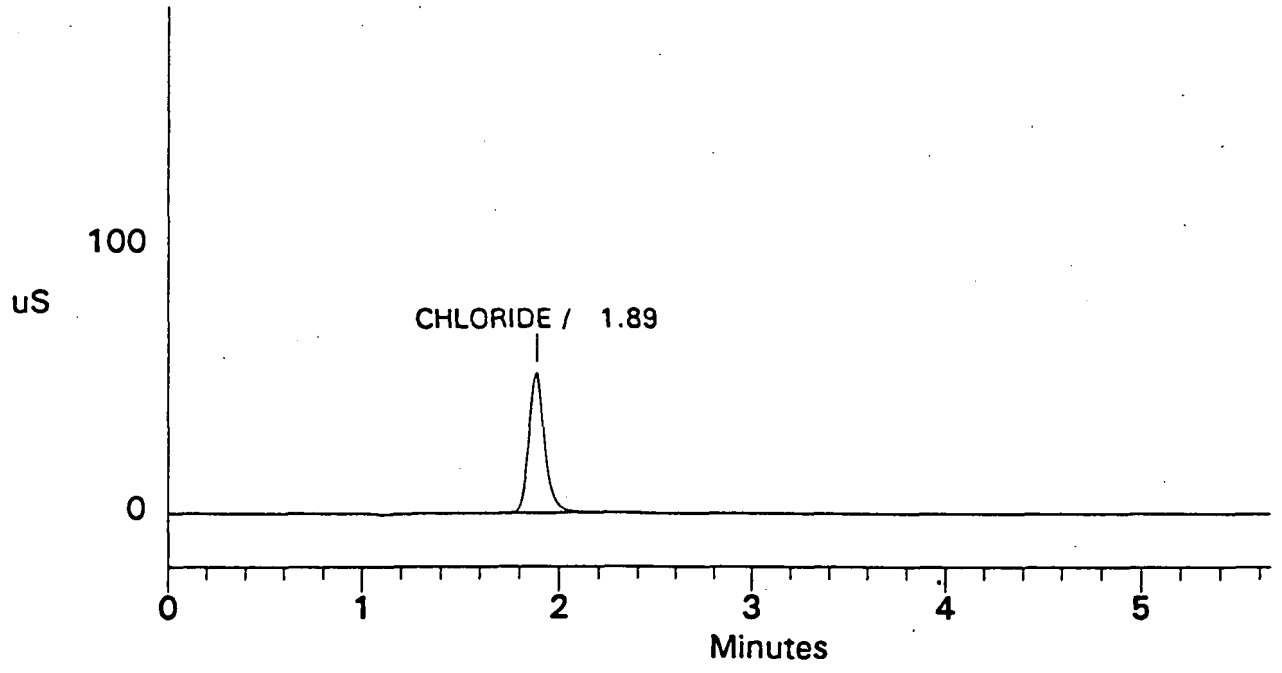
Sample Name: 194-52-10 Date: 01/09/1998 05:45:00
Data File : C:\DX\DATA\44369CL2\19452101.D28
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 28 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.66	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	52271810	290051032	1	-12.09
		Totals	0.000	52271810	290051032		

File: 19452101.D28 Sample: 194-52-10



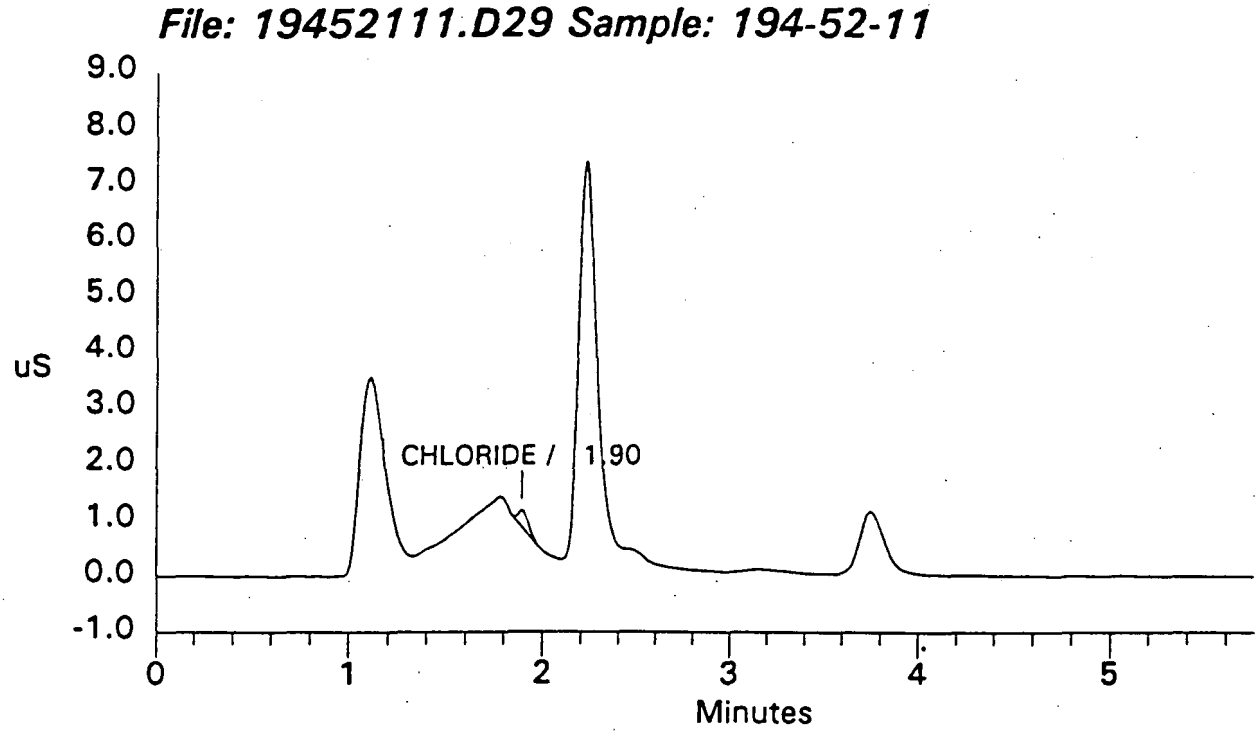
Data Reprocessed On 01/13/1998 13:08:32

Sample Name: 194-52-11 Date: 01/09/1998 05:58:46
Data File : C:\DX\DATA\44369CL2\19452111.D29
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 29 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.75	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.90	CHLORIDE	0.000	310659	1190651	1	-11.78
		Totals	0.000	310659	1190651		



Data Reprocessed On 01/13/1998 13:09:42

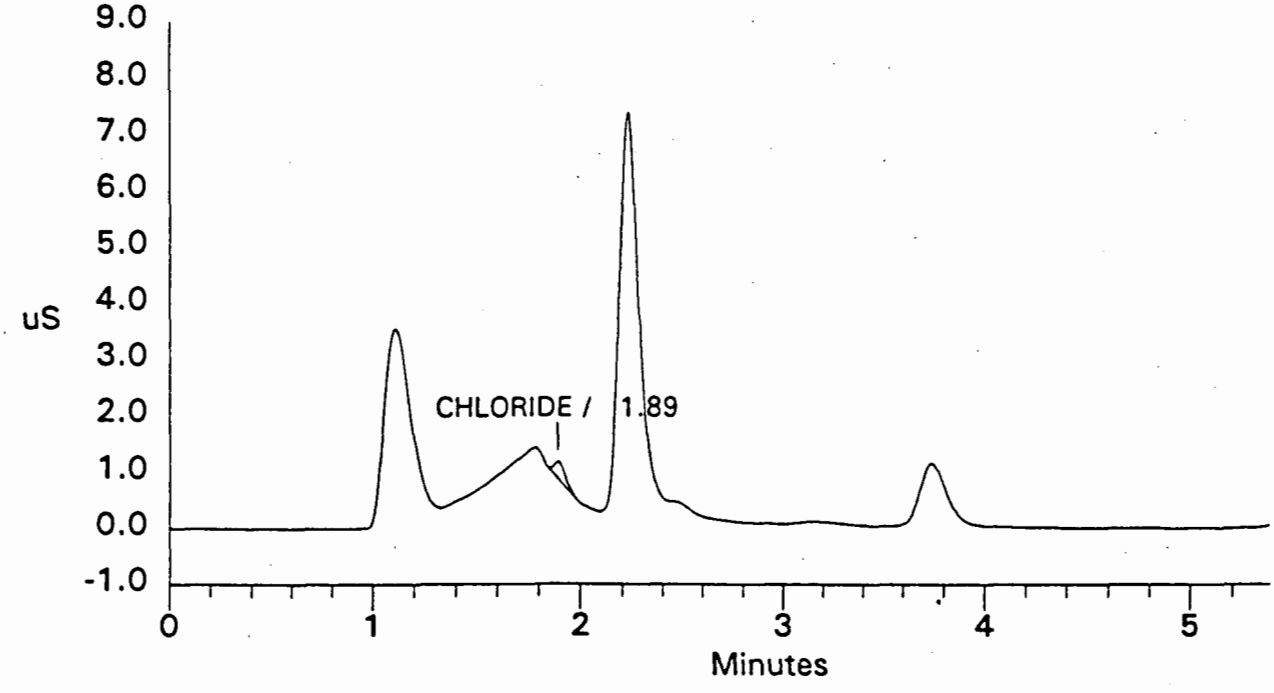
Sample Name: 194-52-11			Date: 01/09/1998 06:12:32
Data File : C:\DX\DATA\44369CL2\19452111.D30			
Method : C:\DX\METHOD\CHLORIDE.met			
ICI Address: 1 System: 1	Inject#: 30		Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	286453	1176658	1	-12.09
		Totals	0.000	286453	1176658		

File: 19452111.D30 Sample: 194-52-11



Data Reprocessed On 01/13/1998 13:11:37

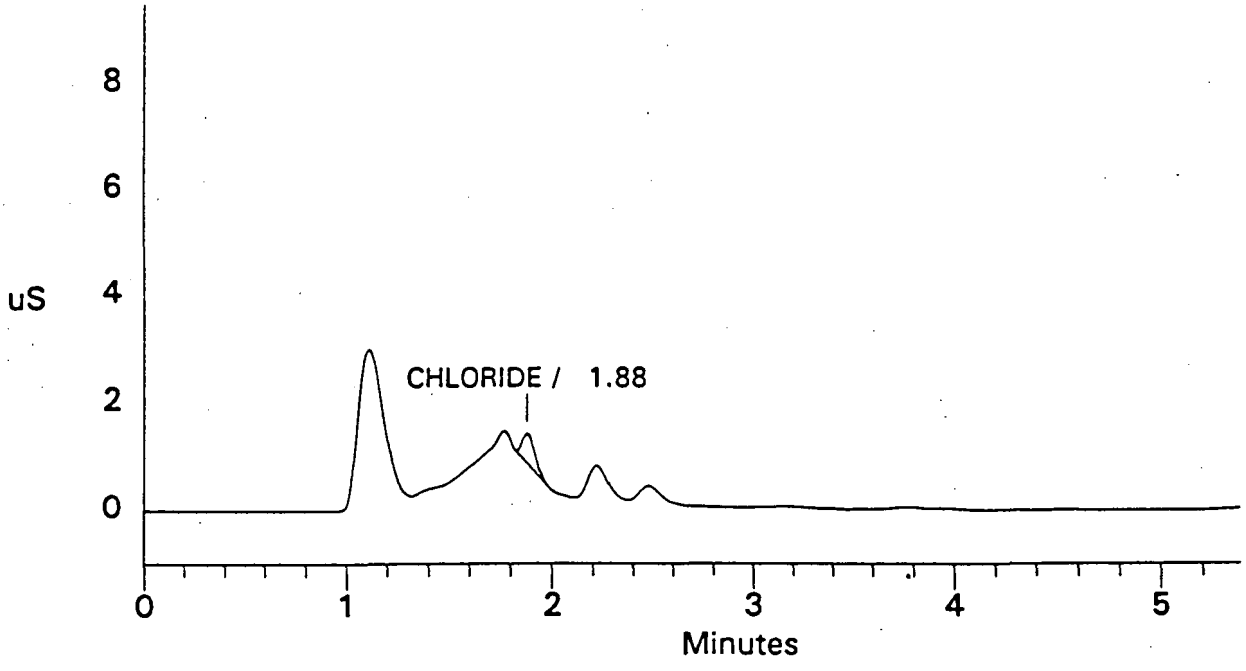
Sample Name: 194-52-13 Date: 01/09/1998 06:26:17
Data File : C:\DX\DATA\44369CL2\19452131.D31
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 31 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	561012	2409554	1	-12.56
		Totals	0.000	561012	2409554		

File: 19452131.D31 Sample: 194-52-13



Data Reprocessed On 01/13/1998 13:13:12

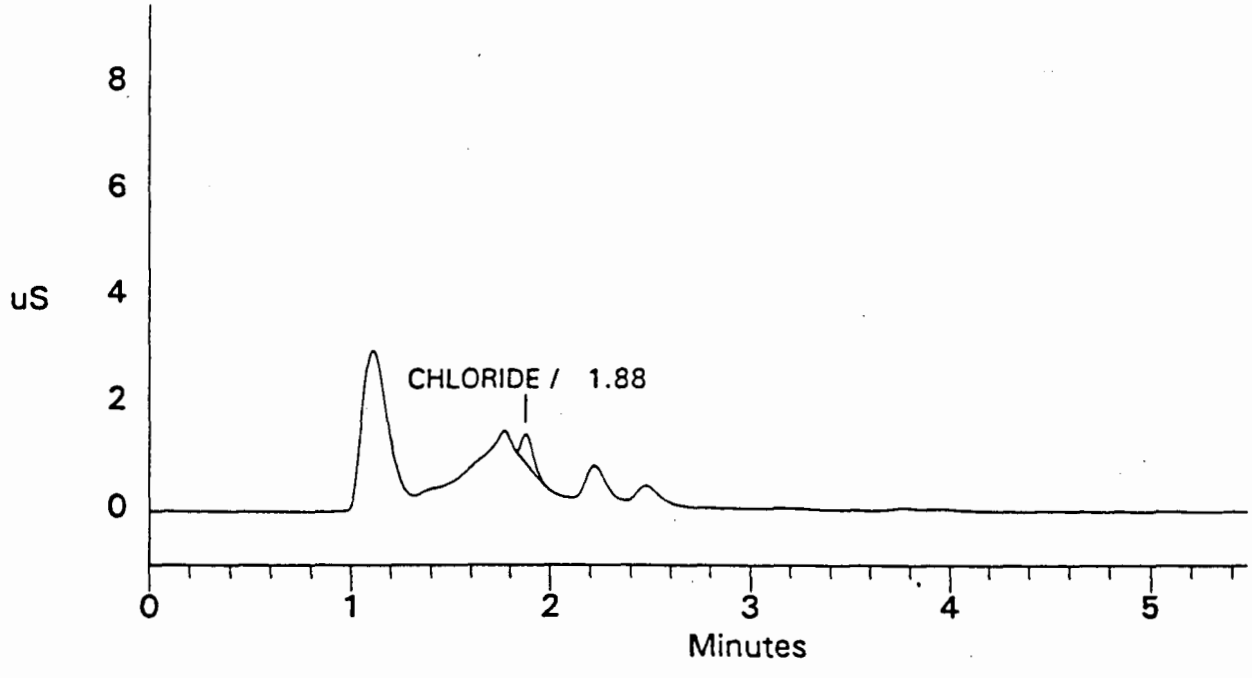
Sample Name: 194-52-13 Date: 01/09/1998 06:40:03
Data File : C:\DX\DATA\44369CL2\19452131.D32
Method : C:\DX\METHOD\CHLORIDE.met
GPIB Address: 1 System: 1 Inject#: 32 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.47	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	550513	2369122	1	-12.56
		Totals	0.000	550513	2369122		

File: 19452131.D32 Sample: 194-52-13



Data Reprocessed On 01/13/1998 13:18:19

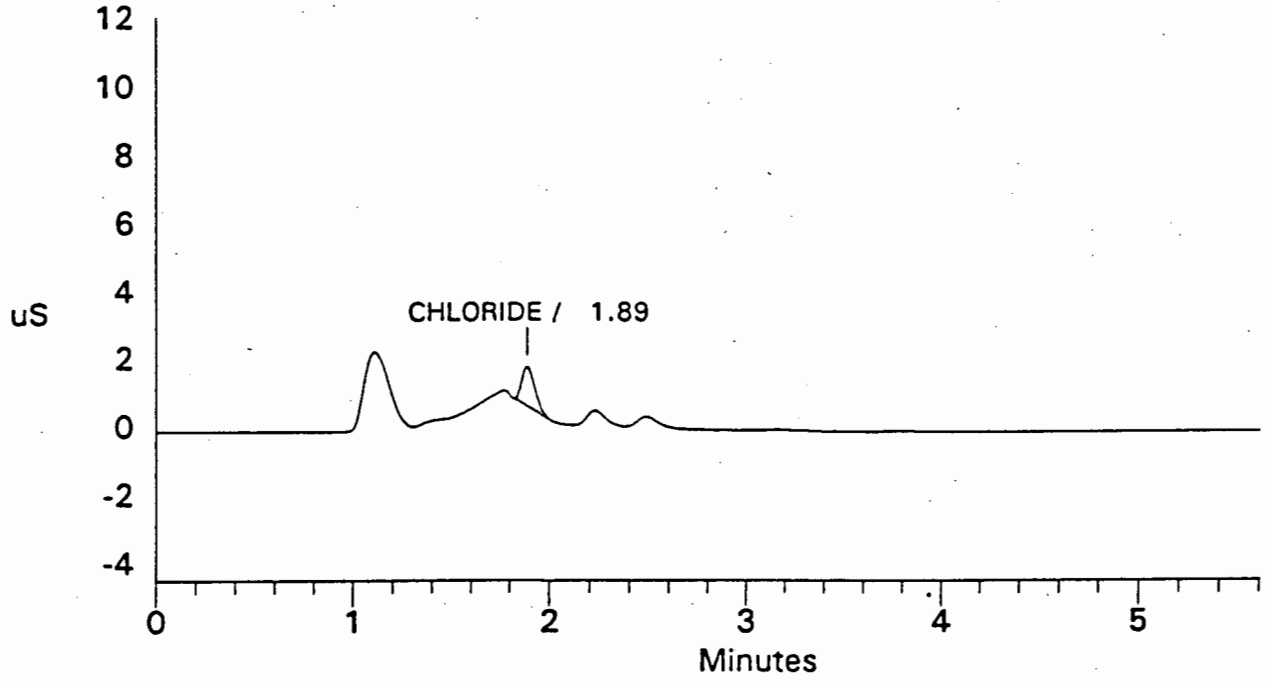
Sample Name: 194-52-15 Date: 01/09/1998 06:53:49
Data File : C:\DX\DATA\44369CL2\19452151.D33
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 33 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.61	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	1161226	5317500	1	-12.09
		Totals	0.000	1161226	5317500		

File: 19452151.D33 Sample: 194-52-15



Data Reprocessed On 01/13/1998 13:28:11

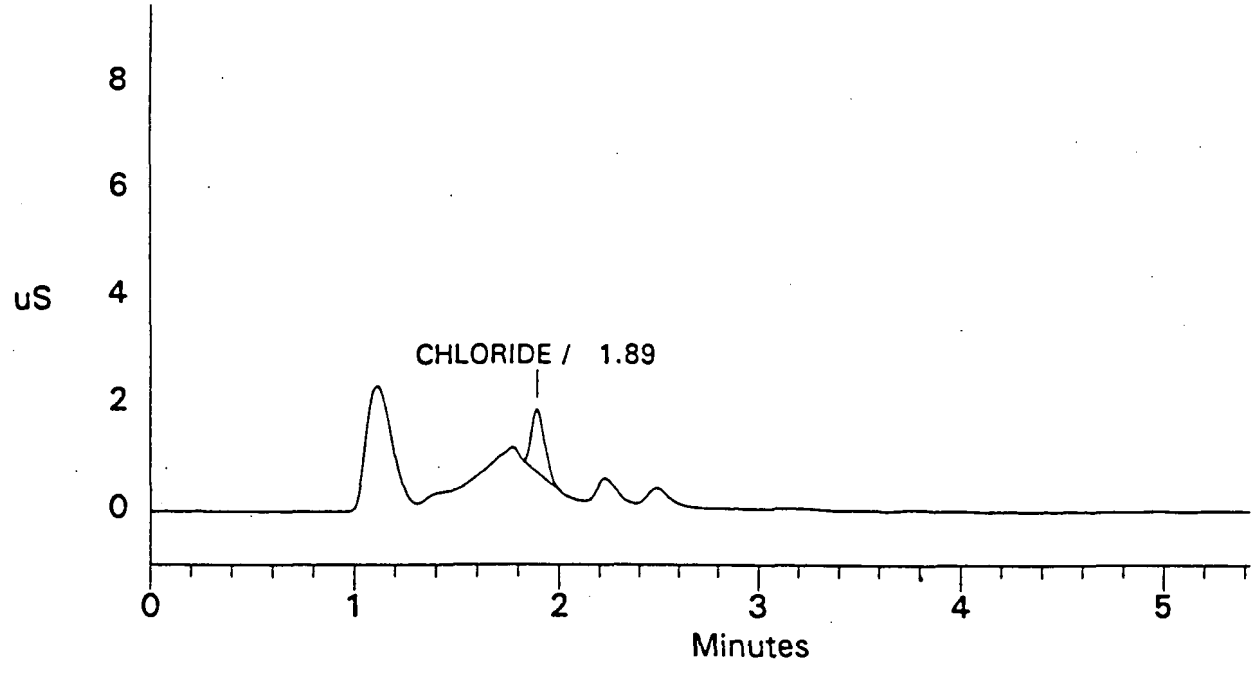
Sample Name: 194-52-15 Date: 01/09/1998 07:07:35
Data File : C:\DX\DATA\44369CL2\19452151.D34
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 34 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	1164815	5343789	1	-12.09
		Totals	0.000	1164815	5343789		

File: 19452151.D34 Sample: 194-52-15



Data Reprocessed On 01/13/1998 13:29:42

Sample Name:	194-52-17
Data File :	C:\DX\DATA\44369CL2\19452171.D35
Method :	C:\DX\METHOD\CHLORIDE.met
ACI Address:	1 System: 1 Inject#: 35
Analyst :	Column:

Date: 01/09/1998 07:21:22

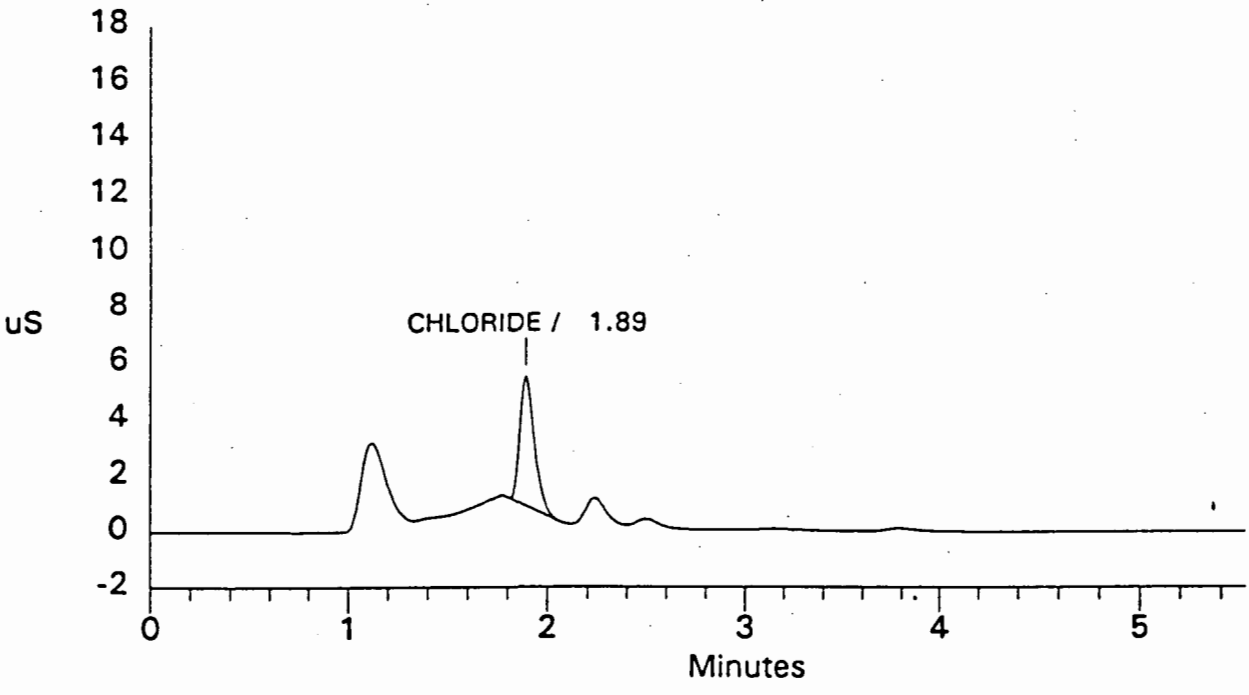
Detector:PED-Cond.

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3600	5Hz	0.00	5.52	1000	

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	4594783	23515386	1	-11.94
		Totals	0.000	4594783	23515386		

File: 19452171.D35 Sample: 194-52-17



Data Reprocessed On 01/13/1998 13:31:51

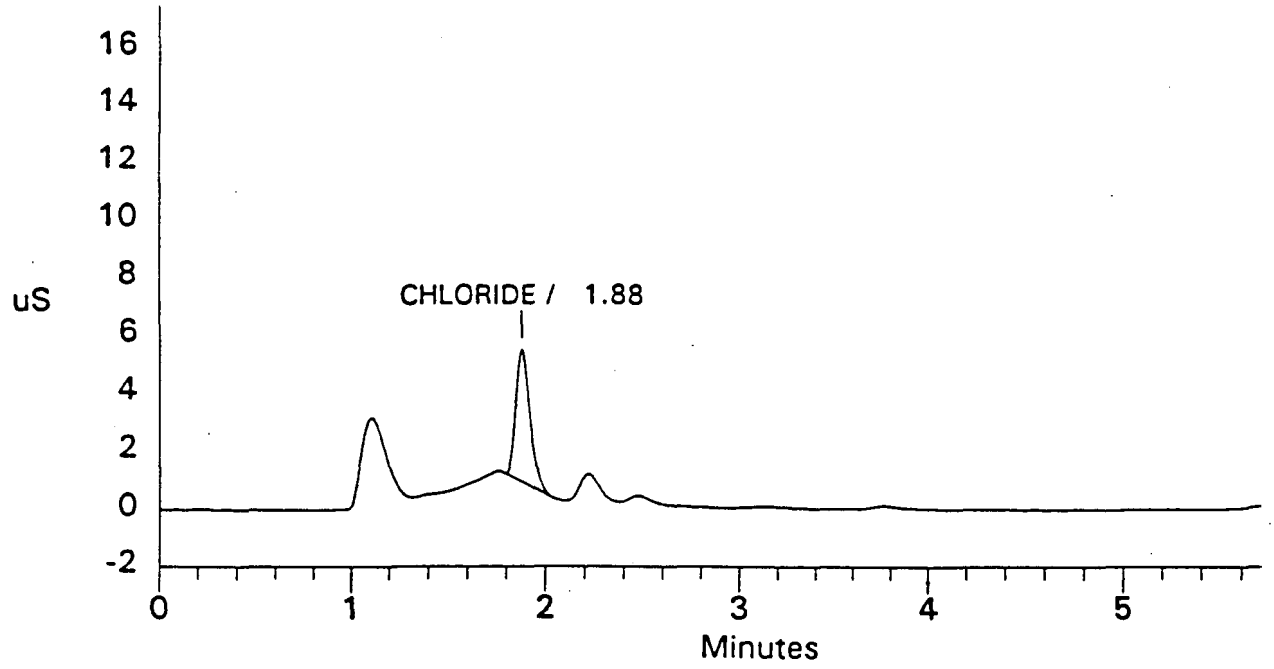
Sample Name: 194-52-17 Date: 01/09/1998 07:35:07
Data File : C:\DX\DATA\44369CL2\19452171.D36
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 36 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.70	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	4566748	23284724	1	-12.71
		Totals	0.000	4566748	23284724		

File: 19452171.D36 Sample: 194-52-17



Data Reprocessed On 01/13/1998 13:35:31

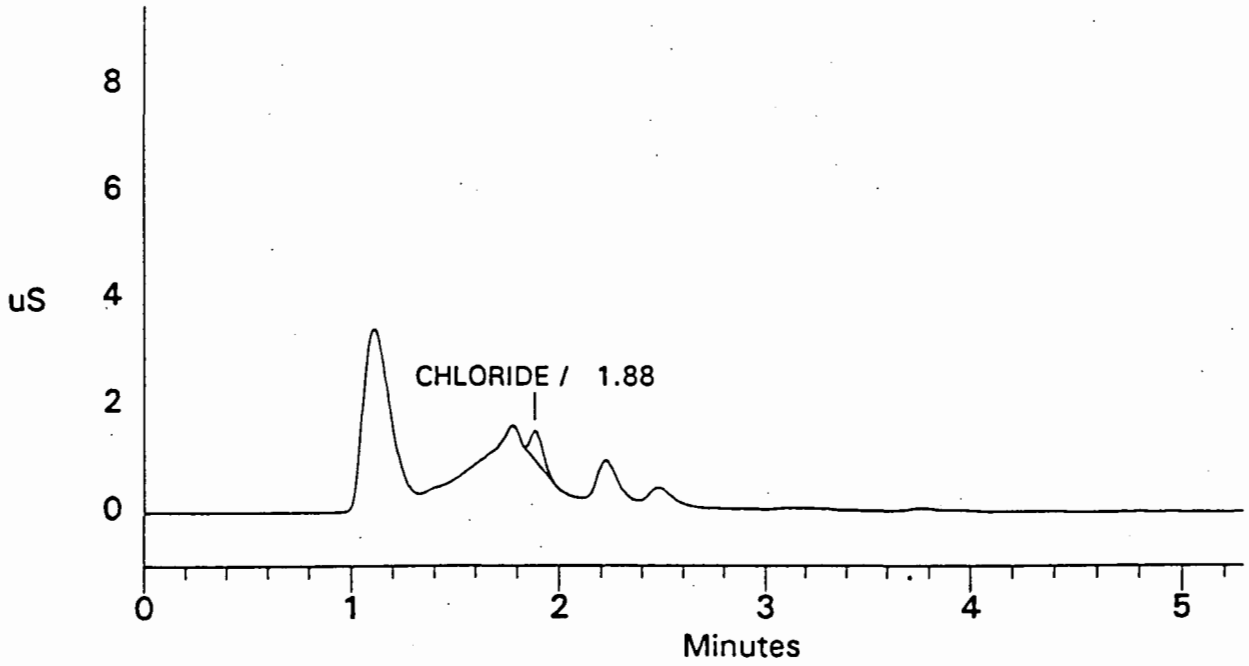
Sample Name: 194-52-19 Date: 01/09/1998 07:48:52
Data File : C:\DX\DATA\44369CL2\19452191.D37
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 37 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.29	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	548183	2278446	1	-12.40
		Totals	0.000	548183	2278446		

File: 19452191.D37 Sample: 194-52-19



Data Reprocessed On 01/13/1998 13:34:23

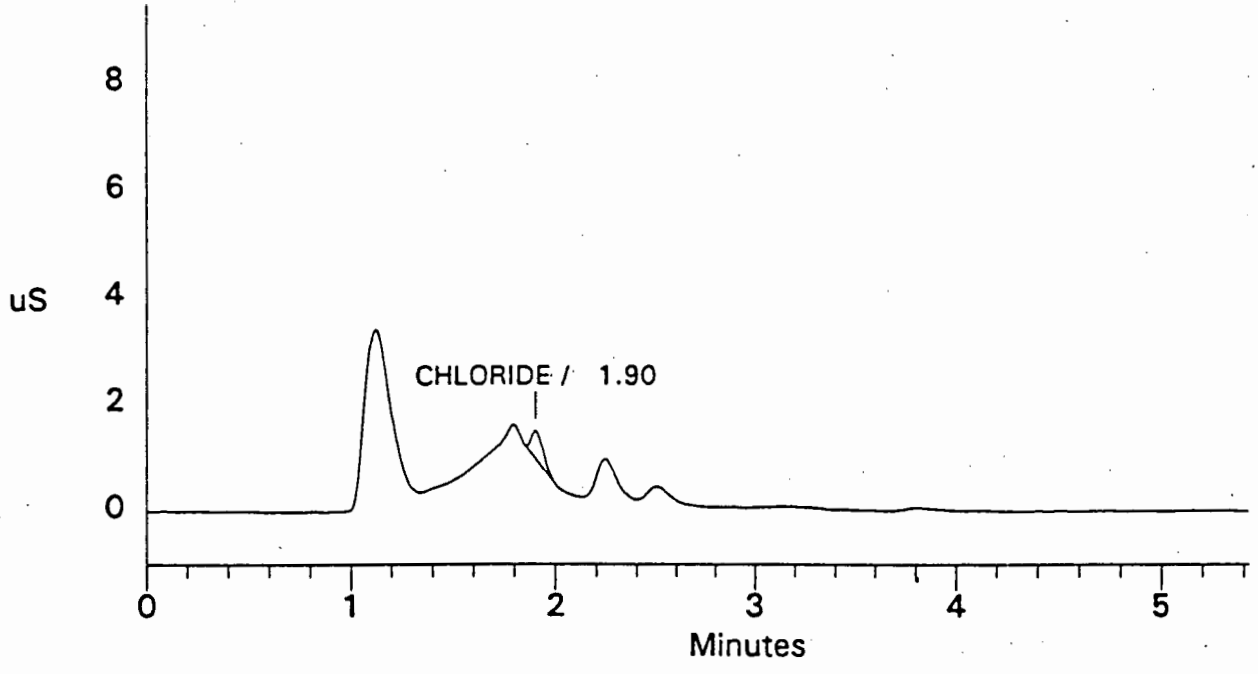
Sample Name: 194-52-19 Date: 01/09/1998 08:02:39
Data File : C:\DX\DATA\44369CL2\19452191.D38
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 38 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.90	CHLORIDE	0.000	543800	2210849	1	-11.47
		Totals	0.000	543800	2210849		

File: 19452191.D38 Sample: 194-52-19



Data Reprocessed On 01/13/1998 13:37:18

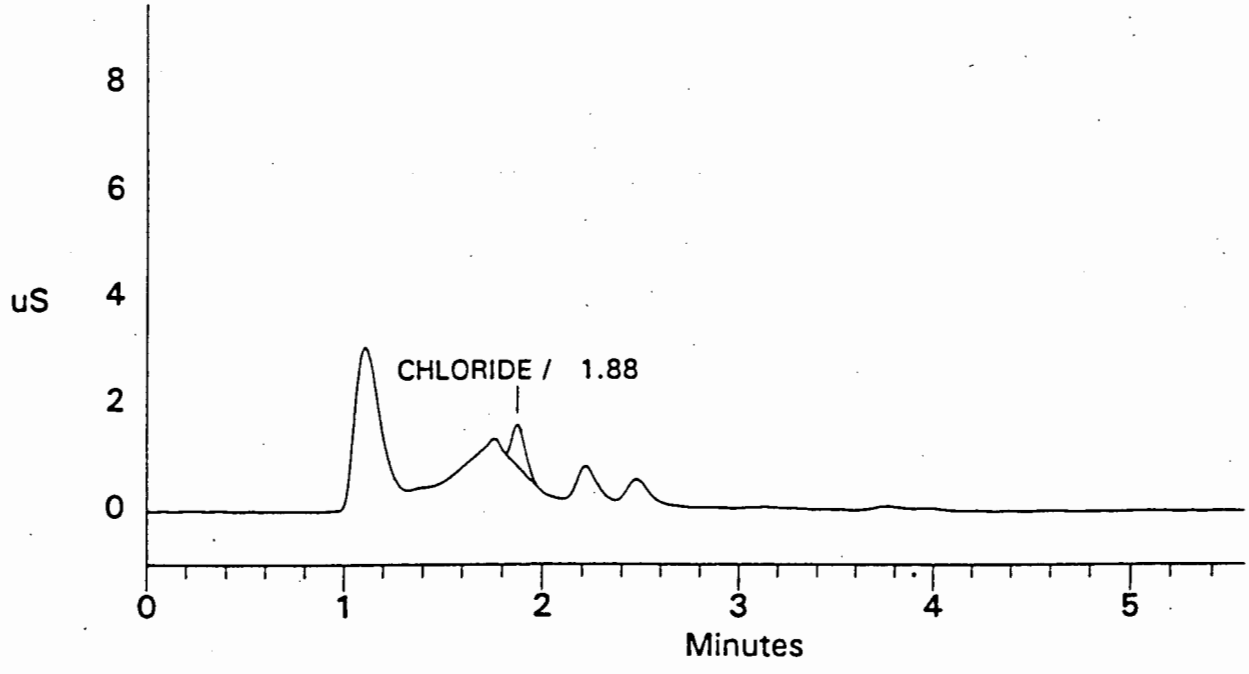
Sample Name: 194-52-21 Date: 01/09/1998 08:16:25
Data File : C:\DX\DATA\44369CL2\19452211.D39
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 39 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.56	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	792388	3633374	1	-12.71
		Totals	0.000	792388	3633374		

File: 19452211.D39 Sample: 194-52-21



Data Reprocessed On 01/13/1998 13:38:35

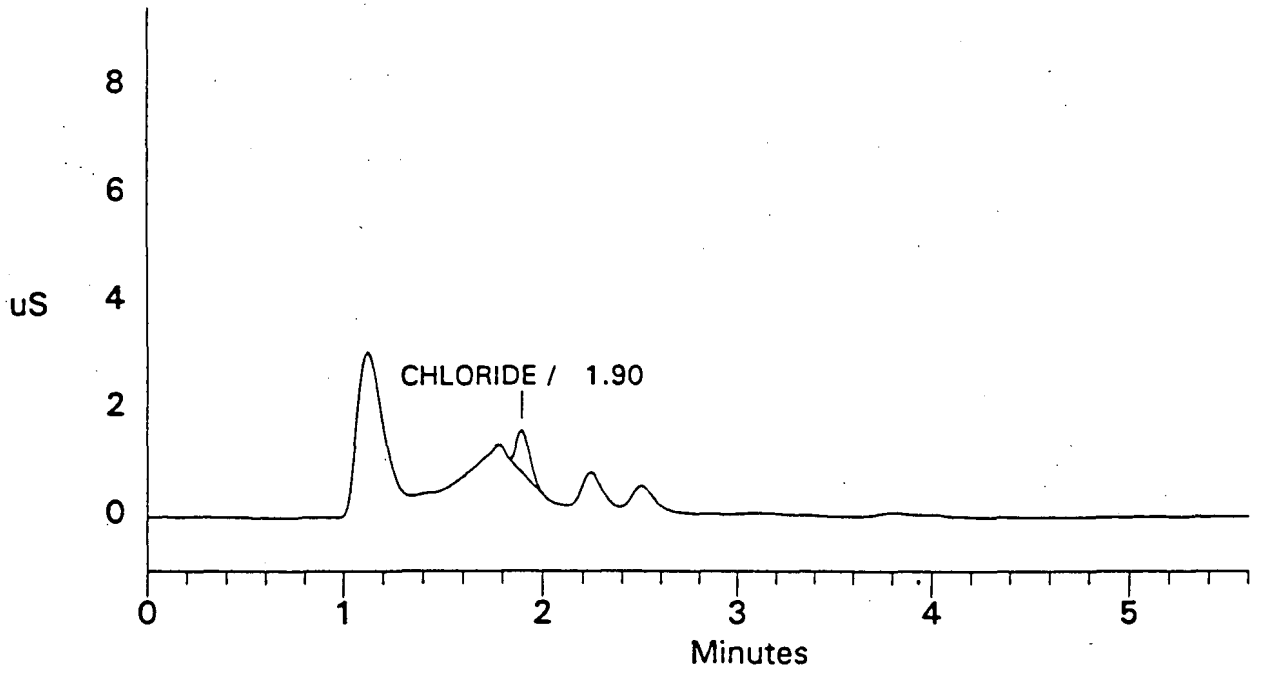
Sample Name: 194-52-21 Date: 01/09/1998 08:30:10
Data File : C:\DX\DATA\44369CL2\19452211.D40
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 40 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.61	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.90	CHLORIDE	0.000	788184	3644451	1	-11.78
		Totals	0.000	788184	3644451		

File: 19452211.D40 Sample: 194-52-21



Data Reprocessed On 01/10/1998 17:09:11

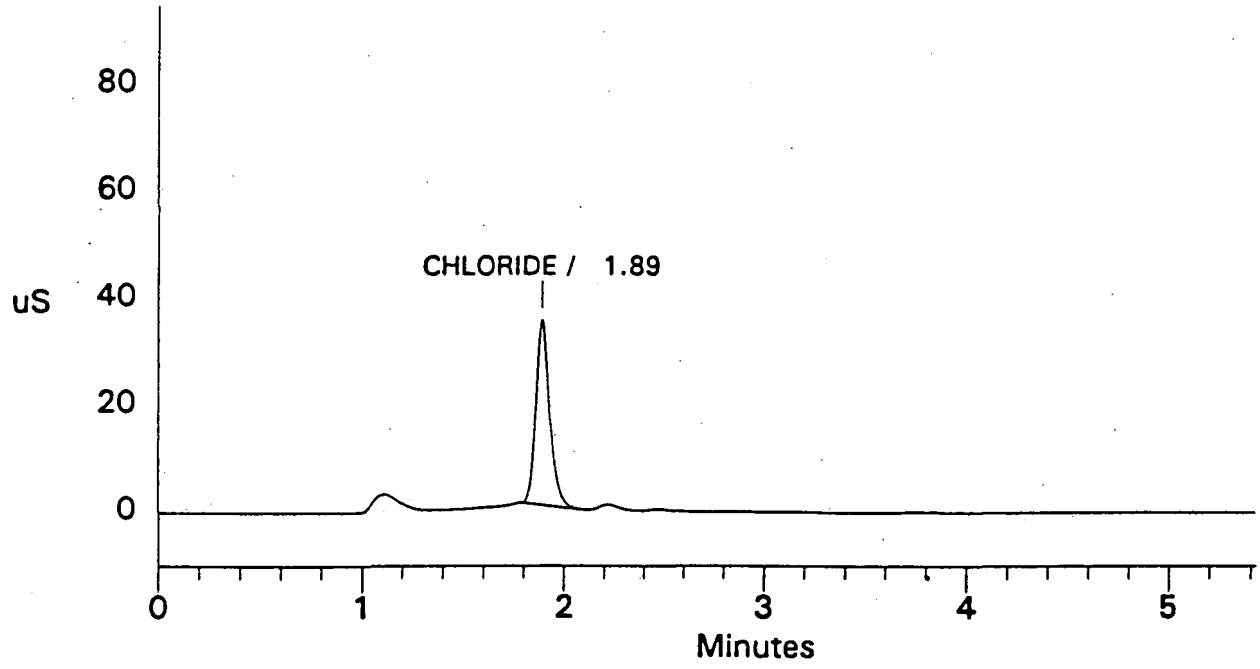
Sample Name: 194-52-23 Date: 01/09/1998 08:43:56
Data File : C:\DX\DATA\44369CL2\19452231.D41
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 41 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	34737558	166547469	1	-12.09
		Totals	0.000	34737558	166547469		

File: 19452231.D41 Sample: 194-52-23



Data Reprocessed On 01/10/1998 17:10:33

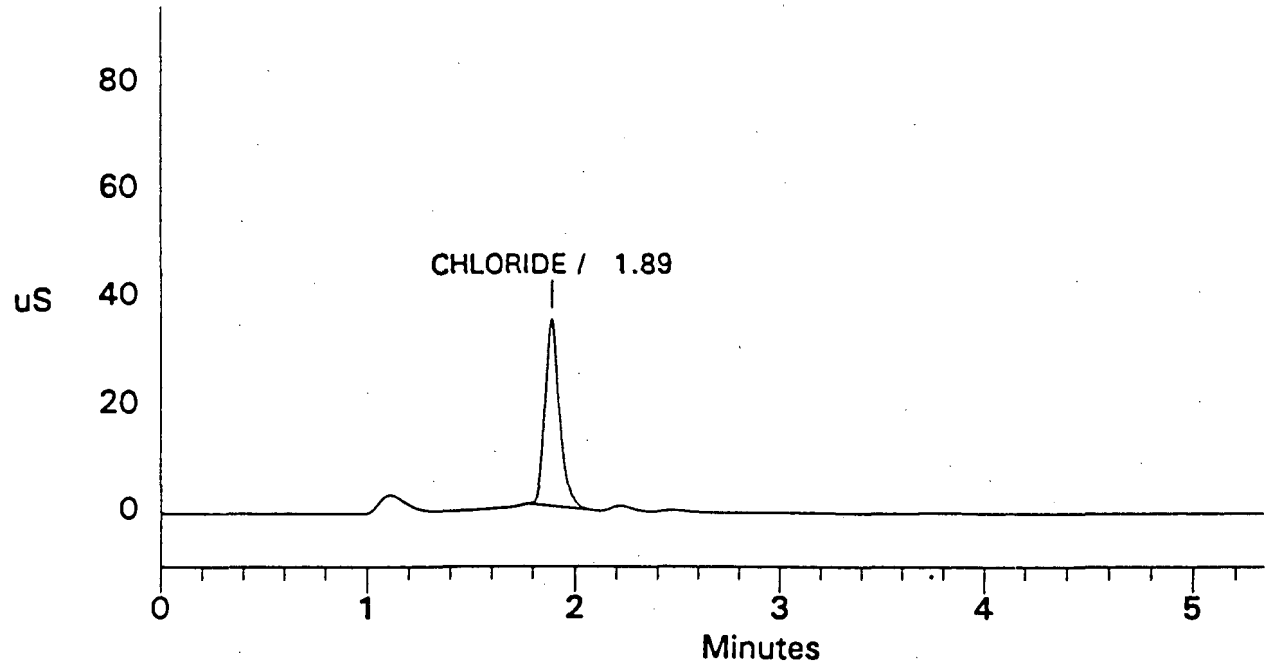
Sample Name: 194-52-23 Date: 01/09/1998 08:57:42
Data File : C:\DX\DATA\44369CL2\19452231.D42
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 42 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	34738893	166842253	1	-12.09
		Totals	0.000	34738893	166842253		

File: 19452231.D42 Sample: 194-52-23



Data Reprocessed On 01/13/1998 13:40:56

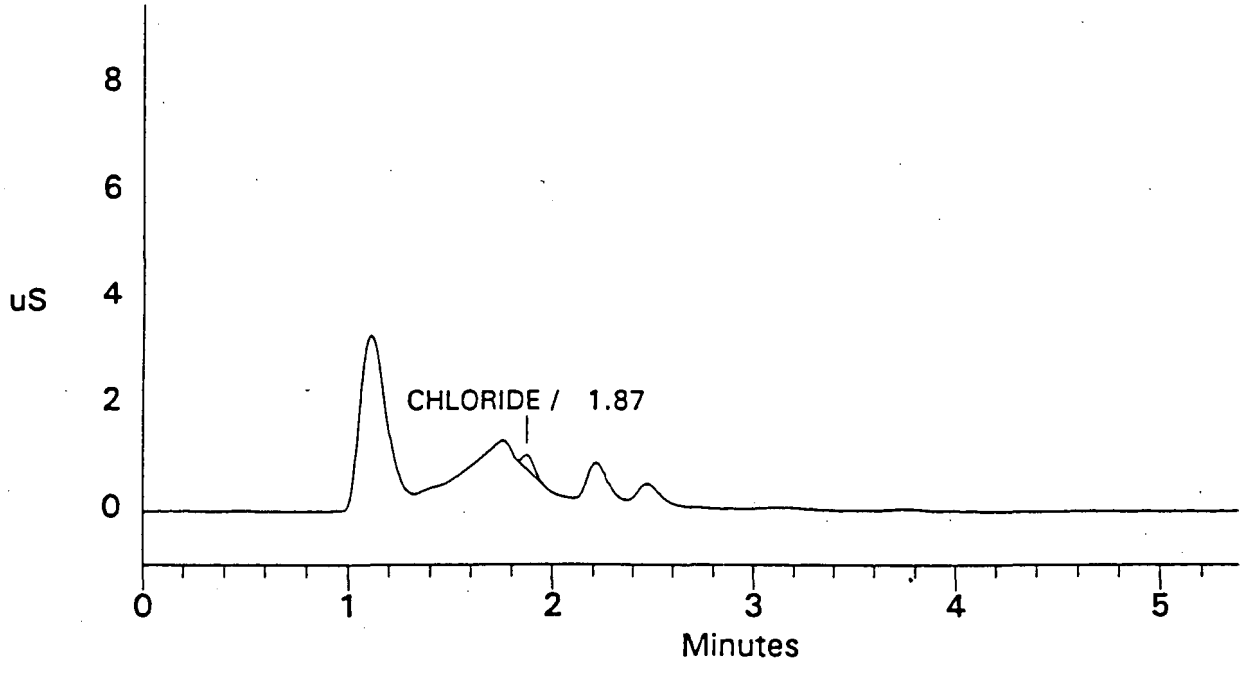
Sample Name:	194-52-25	Date:	01/09/1998 09:11:30
Data File :	C:\DX\DATA\44369CL2\19452251.D43		
Method :	C:\DX\METHOD\CHLORIDE.met		
ACI Address:	1 System: 1 Inject#: 43	Detector:	PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.87	CHLORIDE	0.000	270936	1148613	1	-12.87
		Totals	0.000	270936	1148613		

File: 19452251.D43 Sample: 194-52-25



Data Reprocessed On 01/13/1998 13:42:44

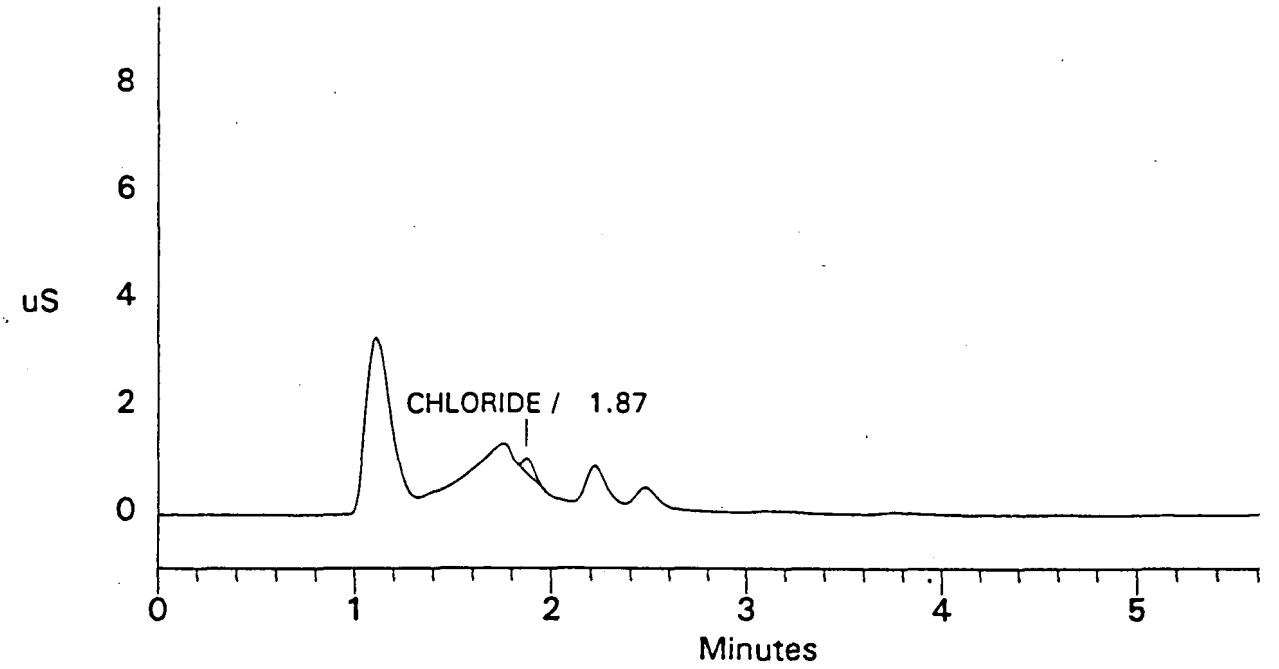
Sample Name: 194-52-25		Date: 01/09/1998 09:25:16	
Data File : C:\DX\DATA\44369CL2\19452251.D44			
Method : C:\DX\METHOD\CHLORIDE.met			
GPIB Address: 1 System: 1 Inject#: 44			Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.61	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.87	CHLORIDE	0.000	268693	1146965	1	-12.87
		Totals	0.000	268693	1146965		

File: 19452251.D44 Sample: 194-52-25



Data Reprocessed On 01/13/1998 13:45:04

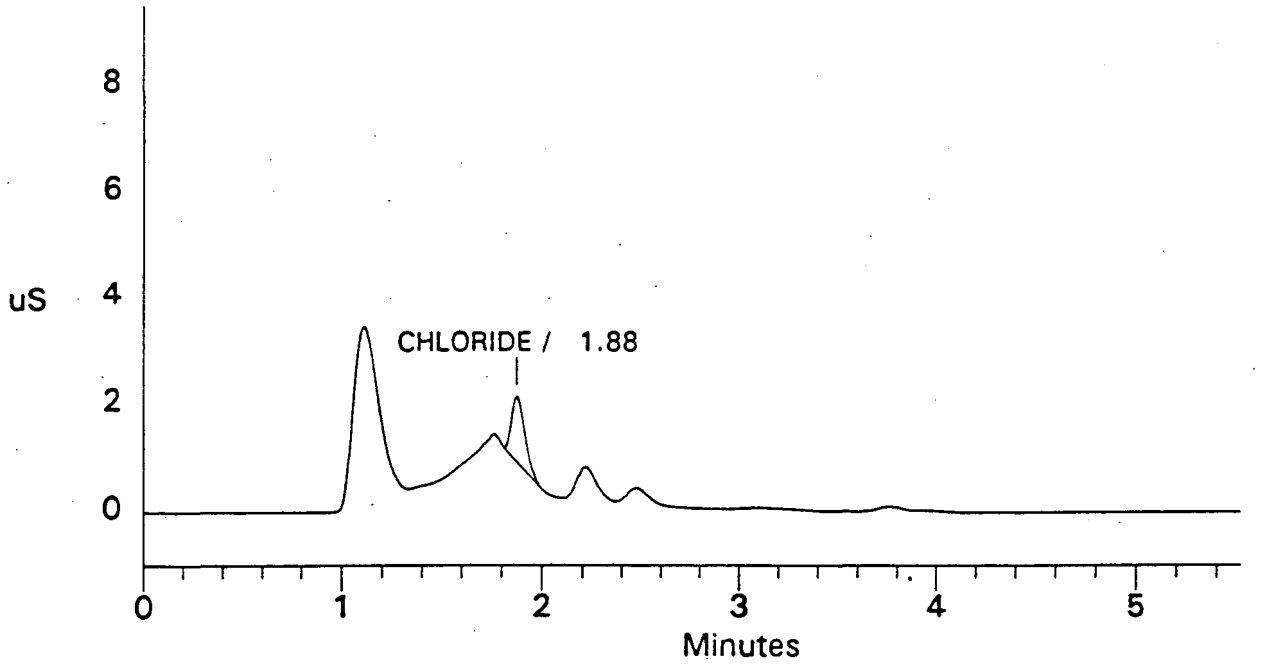
Sample Name: 194-52-27		Date: 01/09/1998 09:39:03	
Data File : C:\DX\DATA\44369CL2\19452271.D45			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 45		Detector:PED-Cond.	
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.52	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	1215165	5713691	1	-12.71
		Totals	0.000	1215165	5713691		

File: 19452271.D45 Sample: 194-52-27



Data Reprocessed On 01/13/1998 13:46:07

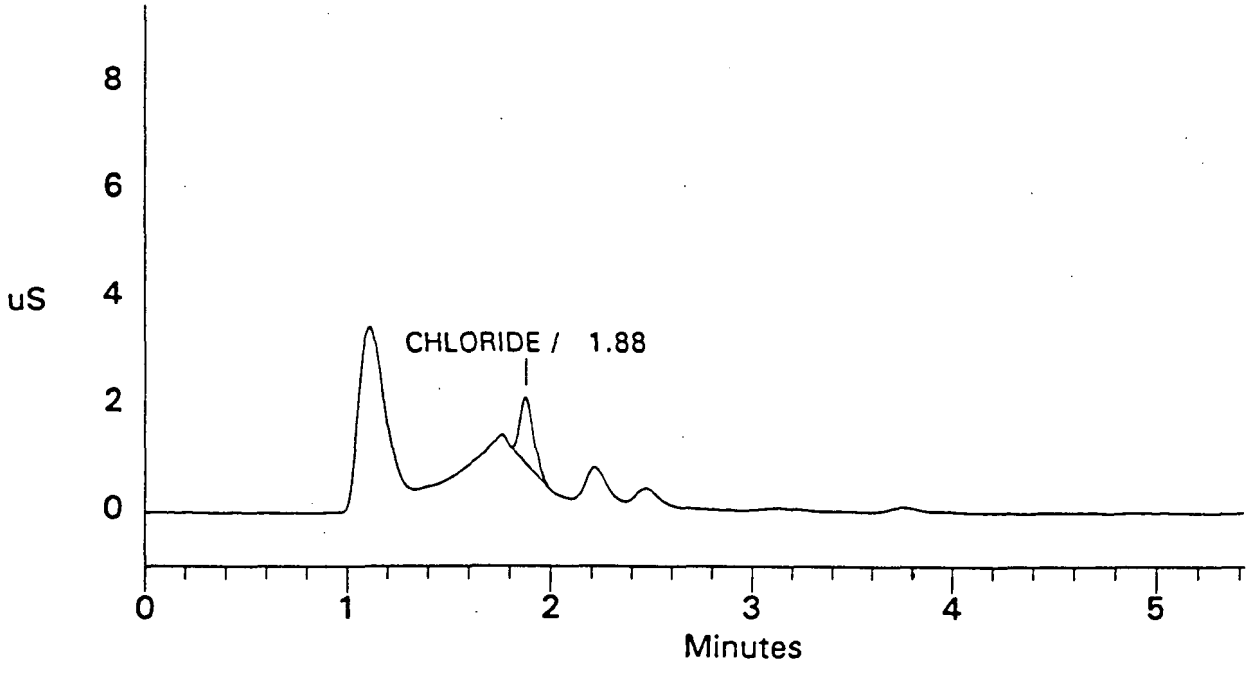
Sample Name: 194-52-27 Date: 01/09/1998 09:52:48
Data File : C:\DX\DATA\44369CL2\19452271.D46
ethod : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 46 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.88	CHLORIDE	0.000	1224925	5746518	1	-12.71
		Totals	0.000	1224925	5746518		

File: 19452271.D46 Sample: 194-52-27



Data Reprocessed On 01/10/1998 17:17:51

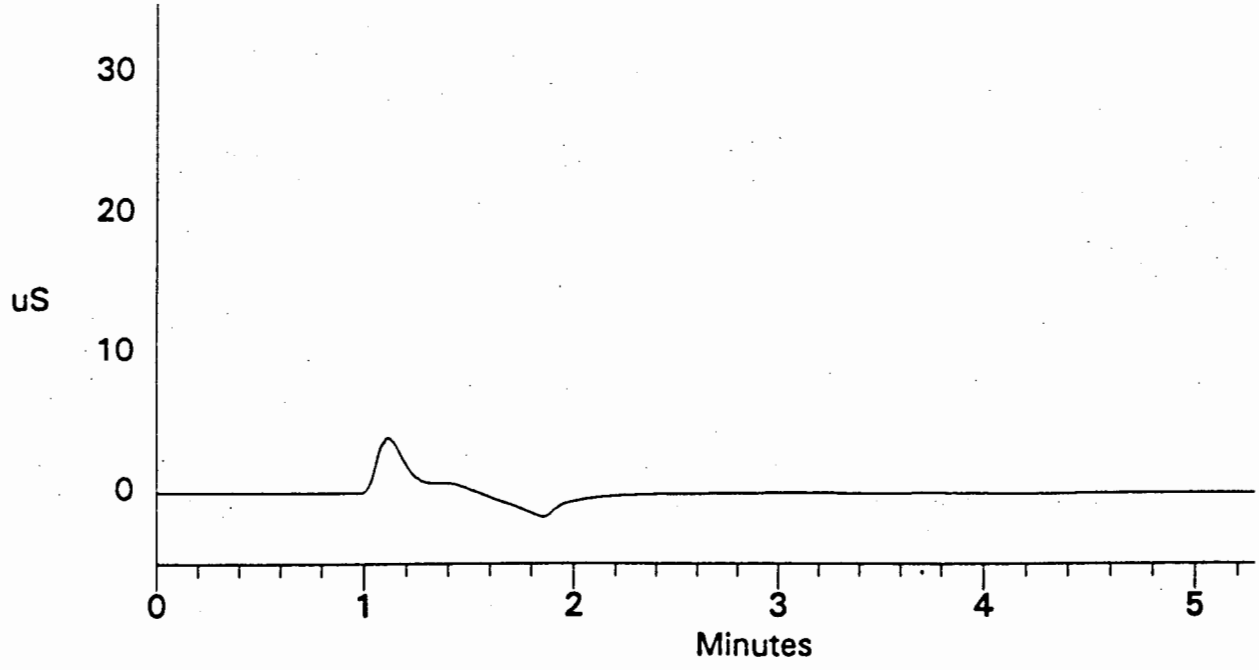
Sample Name: 194-52-30		Date: 01/09/1998 10:06:33	
Data File : C:\DX\DATA\44369CL2\19452301.D47			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 47			Detector:PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.28	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452301.D47 Sample: 194-52-30



Data Reprocessed On 01/10/1998 17:18:51

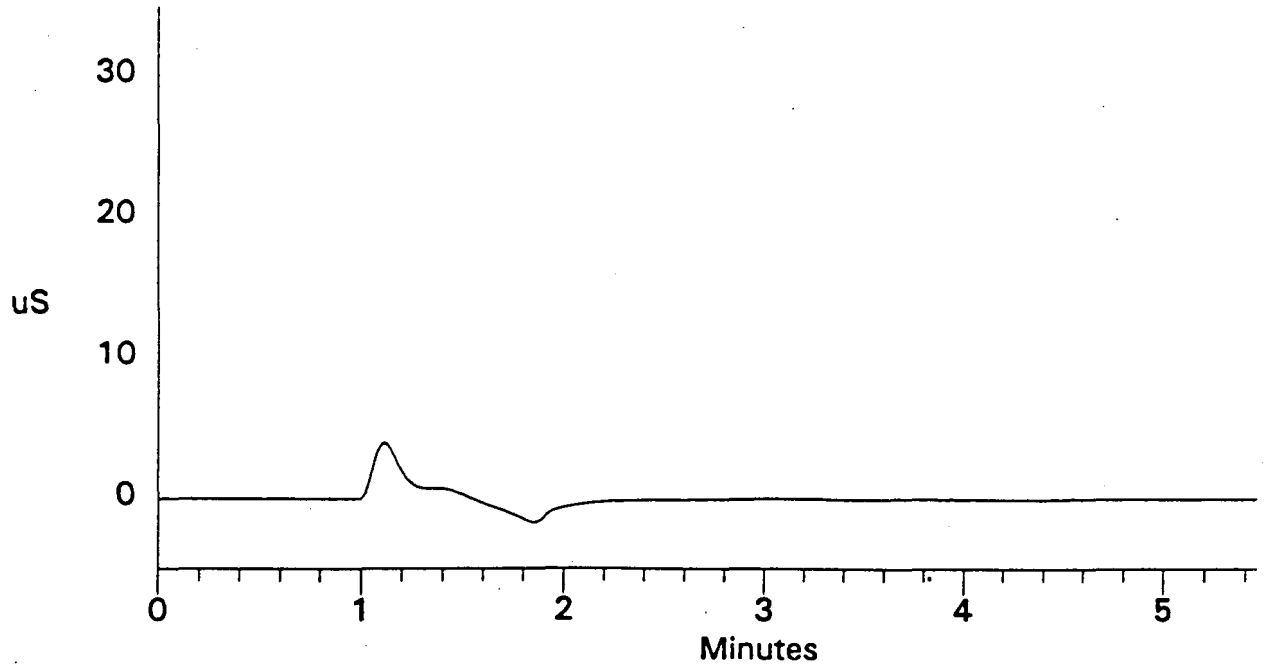
Sample Name: 194-52-30 Date: 01/09/1998 10:20:20
Data File : C:\DX\DATA\44369CL2\19452301.D48
Method : C:\DX\METHOD\CHLORIDE.met
LCI Address: 1 System: 1 Inject#: 48 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.46	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452301.D48 Sample: 194-52-30



Data Reprocessed On 01/10/1998 17:20:37

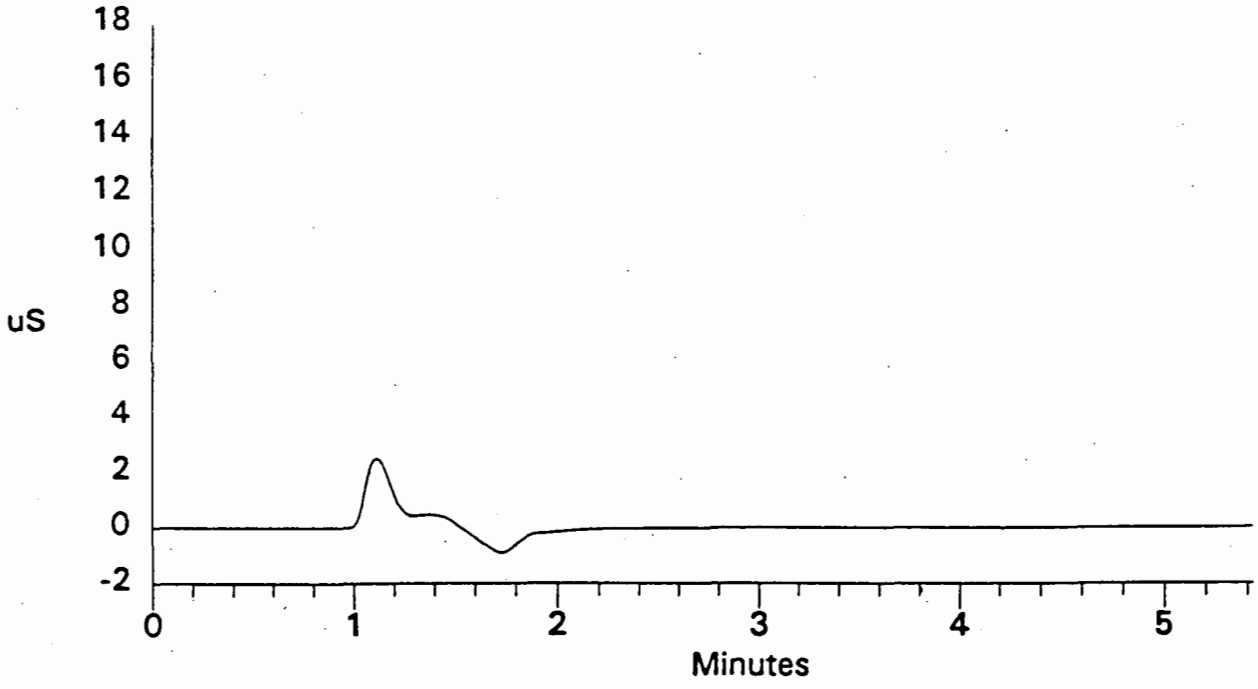
Sample Name: 194-52-32 Date: 01/09/1998 10:34:05
Data File : C:\DX\DATA\44369CL2\19452321.D49
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 49 Detector:PED-Cond
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.43	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452321.D49 Sample: 194-52-32



Data Reprocessed On 01/10/1998 17:21:37

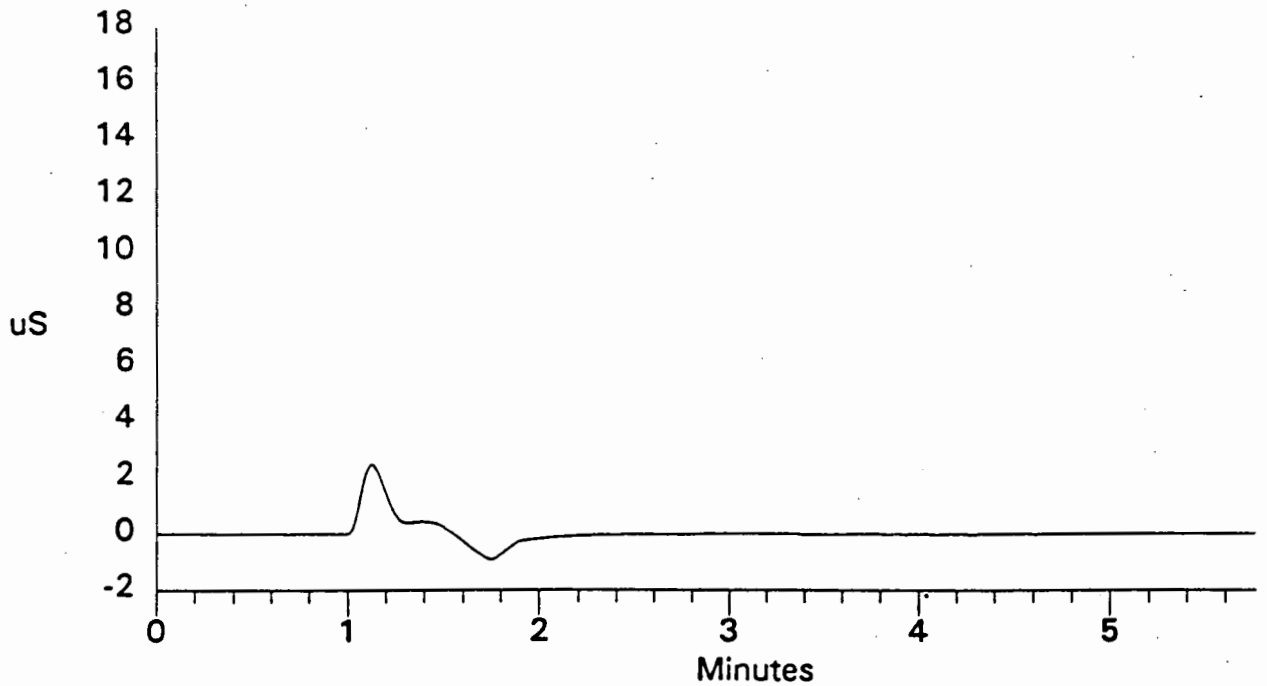
Sample Name: 194-52-32 Date: 01/09/1998 10:47:51
Data File : C:\DX\DATA\44369CL2\19452321.D50
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 50 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.76	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452321.D50 Sample: 194-52-32



Data Reprocessed On 01/10/1998 17:22:53

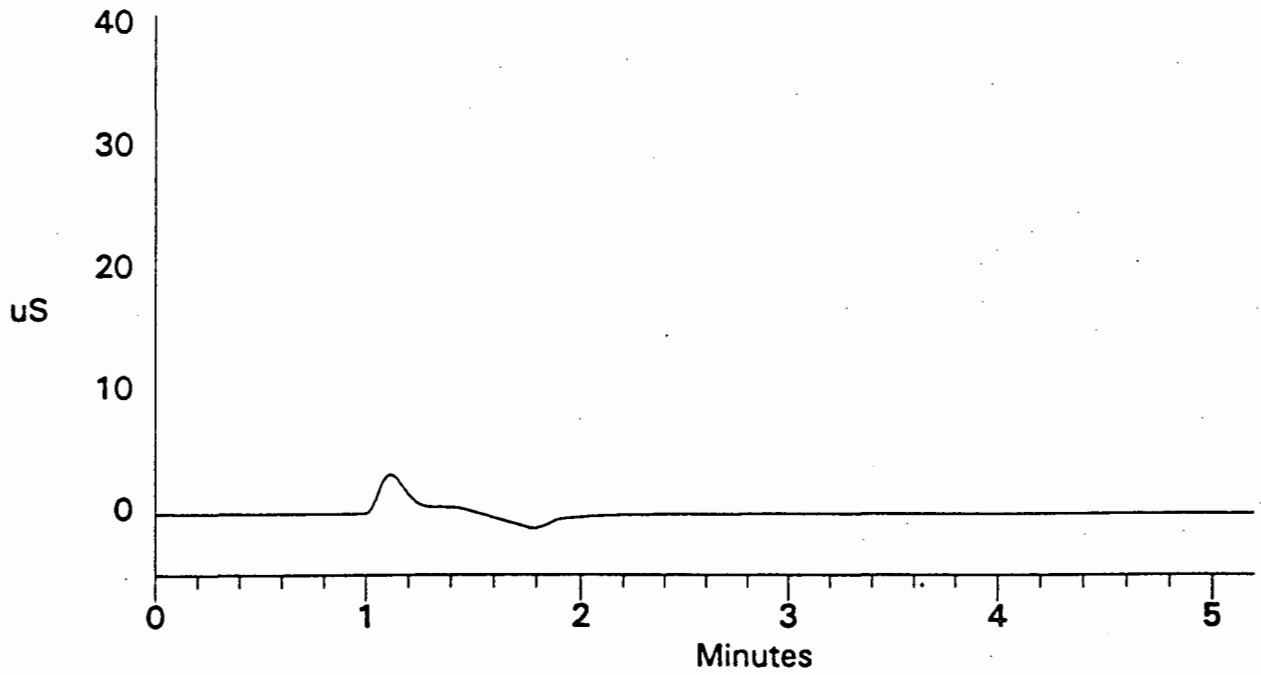
Sample Name: 194-52-34 Date: 01/09/1998 11:01:37
Data File : C:\DX\DATA\44369CL2\19452341.D51
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 51 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.19	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452341.D51 Sample: 194-52-34



Data Reprocessed On 01/10/1998 17:26:07

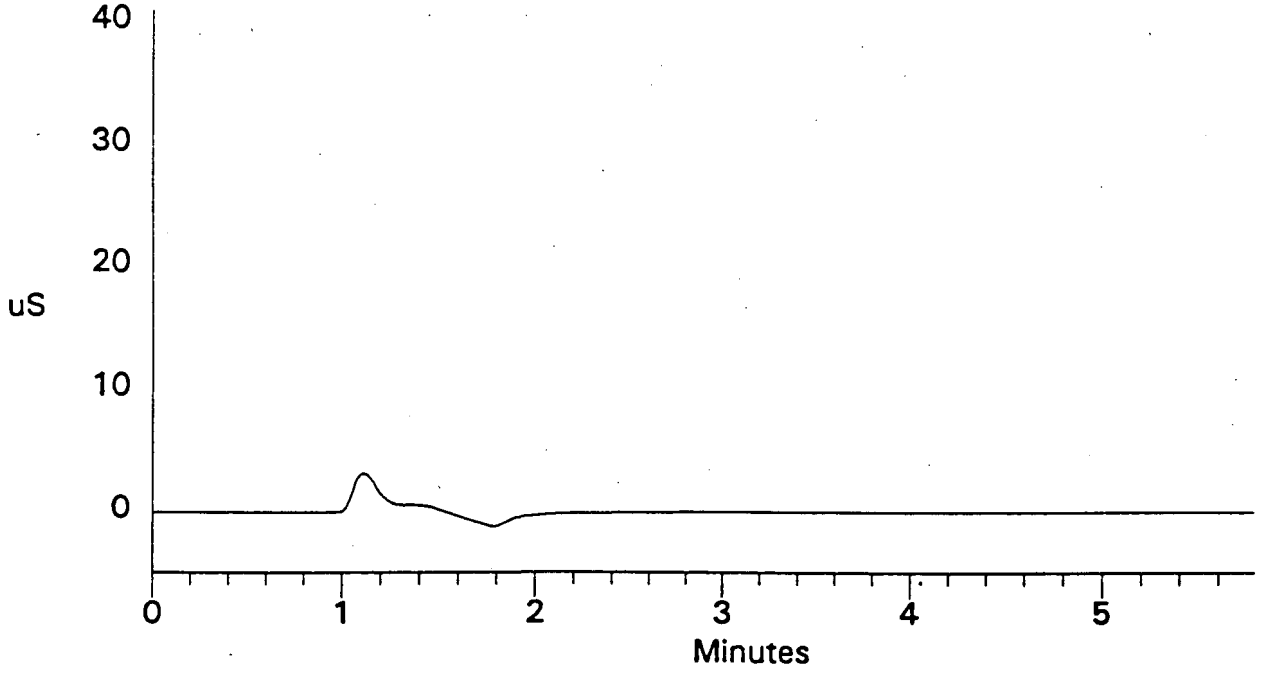
Sample Name: 194-52-34 Date: 01/09/1998 11:15:22
Data File : C:\DX\DATA\44369CL2\19452341.D52
Method : C:\DX\METHOD\CHLORIDE.met
ICI Address: 1 System: 1 Inject#: 52 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.79	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452341.D52 Sample: 194-52-34



Data Reprocessed On 01/10/1998 17:27:59

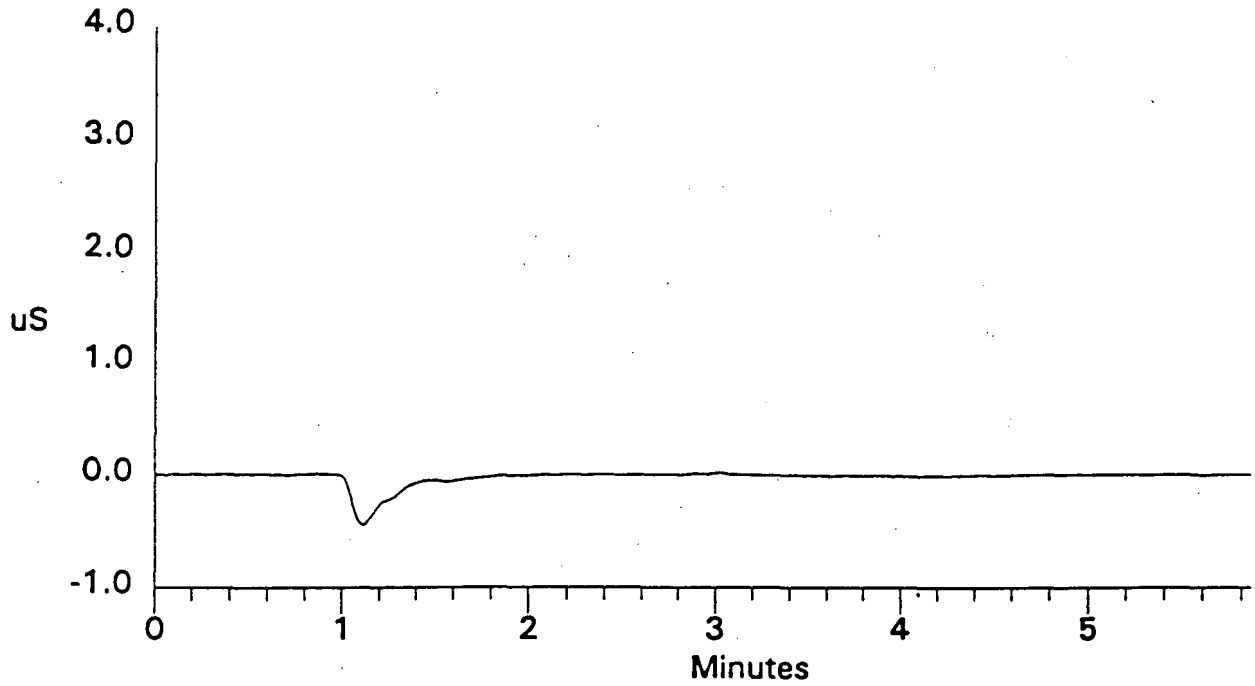
Sample Name: 194-52-35 Date: 01/09/1998 11:29:07
Data File : C:\DX\DATA\44369CL2\19452351.D53
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 53 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.85	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452351.D53 Sample: 194-52-35



Data Reprocessed On 01/10/1998 17:29:27

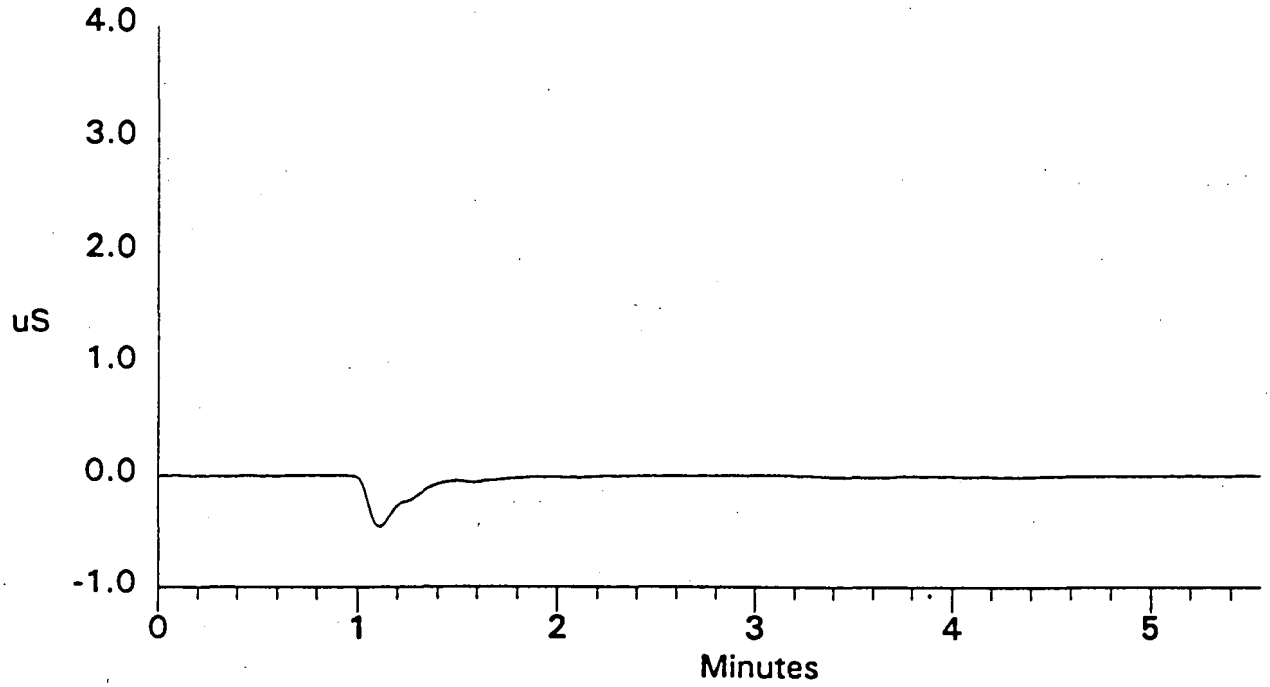
Sample Name: 194-52-35 Date: 01/09/1998 11:42:53
Data File : C:\DX\DATA\44369CL2\19452351.D54
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 54 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.55	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452351.D54 Sample: 194-52-35



Data Reprocessed On 01/10/1998 17:30:40

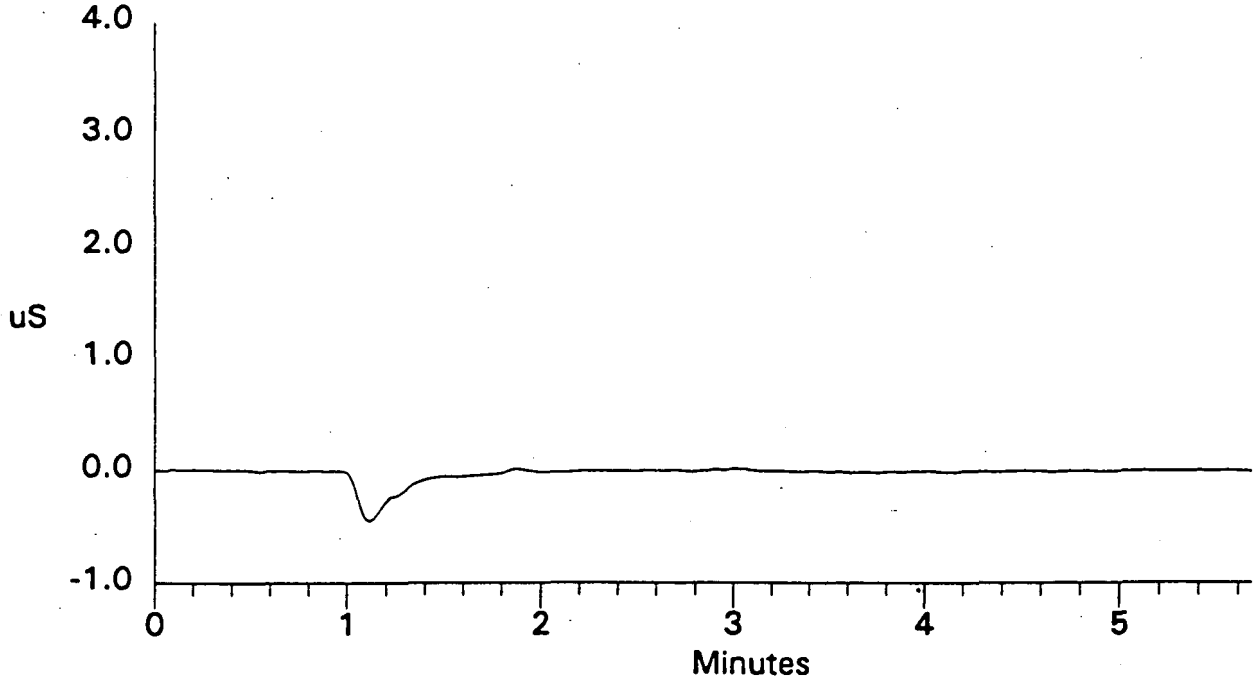
Sample Name:	194-52-36	Date:	01/09/1998 11:56:38
Data File :	C:\DX\DATA\44369CL2\19452361.D55		
Method :	C:\DX\METHOD\CHLORIDE.met		
ACI Address:	1 System: 1 Inject#: 55	Detector:	PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.67	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452361.D55 Sample: 194-52-36



Data Reprocessed On 01/10/1998 17:31:51

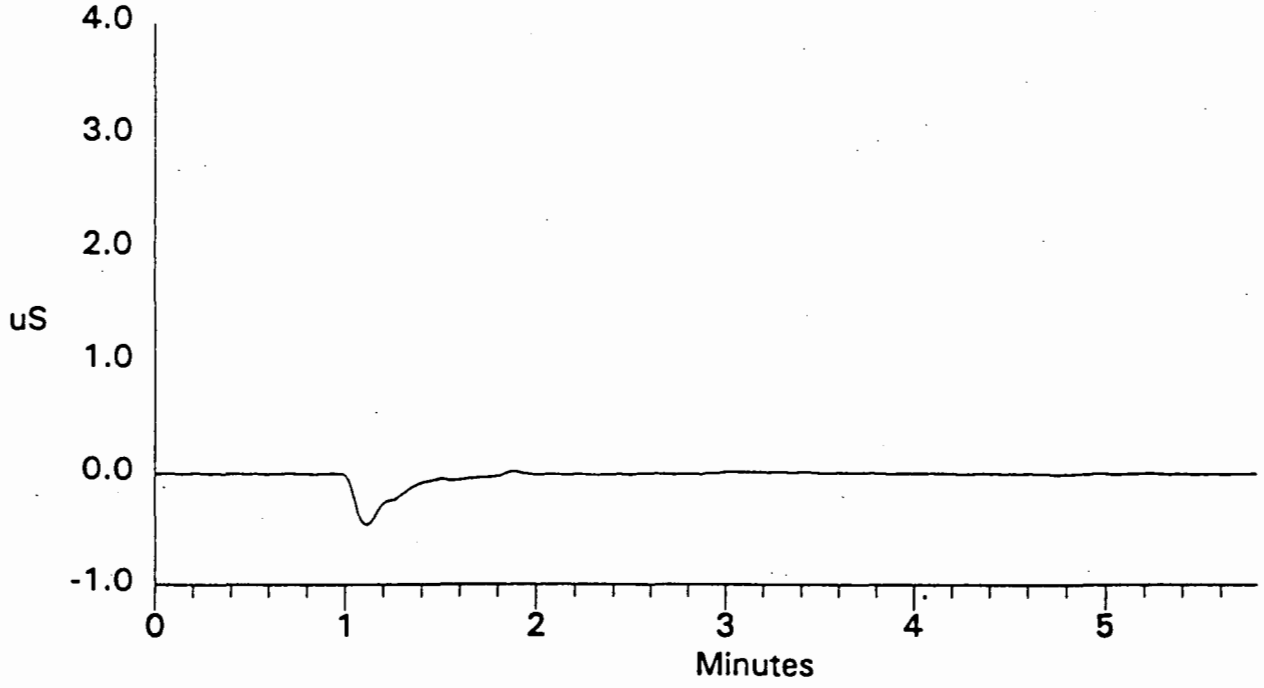
Sample Name: 194-52-36 Date: 01/09/1998 12:10:24
Data File : C:\DX\DATA\44369CL2\19452361.D56
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 56 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.79	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452361.D56 Sample: 194-52-36



Data Reprocessed On 01/13/1998 13:49:47

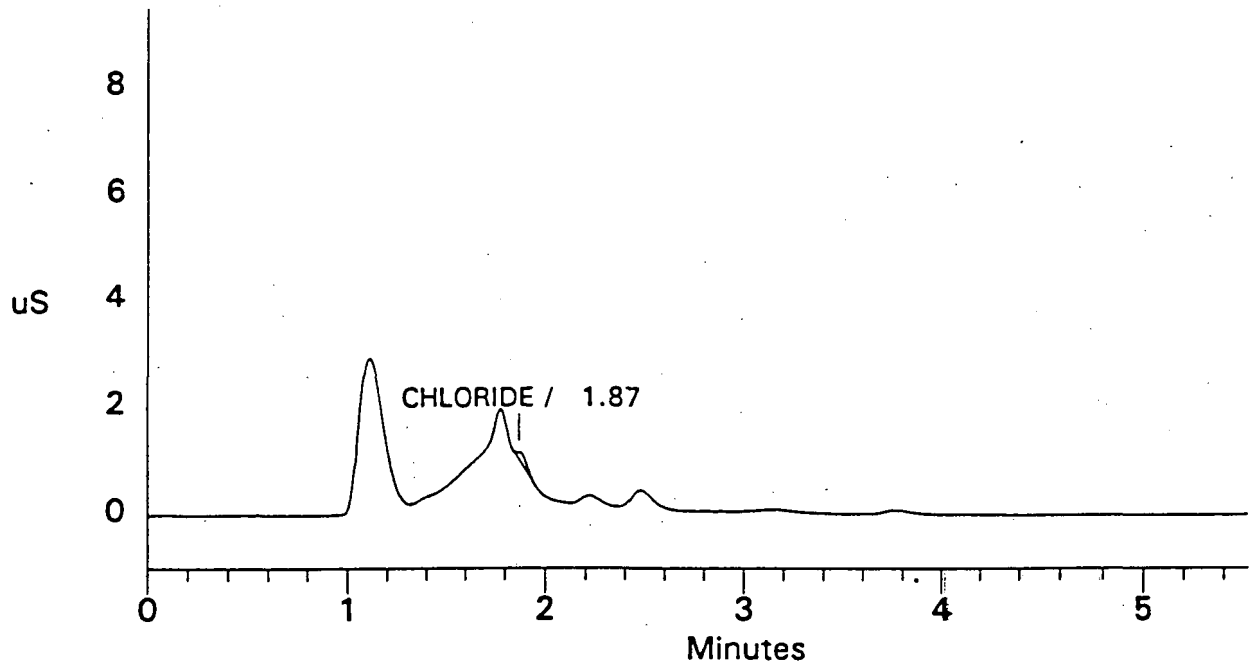
Sample Name: 194-52-38		Date: 01/09/1998 12:24:09	
Data File : C:\DX\DATA\44369CL2\19452381.D57			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 57			Detector:PED-Cond
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.52	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.87	CHLORIDE	0.000	142531	648634	1	-12.87
		Totals	0.000	142531	648634		

File: 19452381.D57 Sample: 194-52-38



Data Reprocessed On 01/13/1998 13:51:34

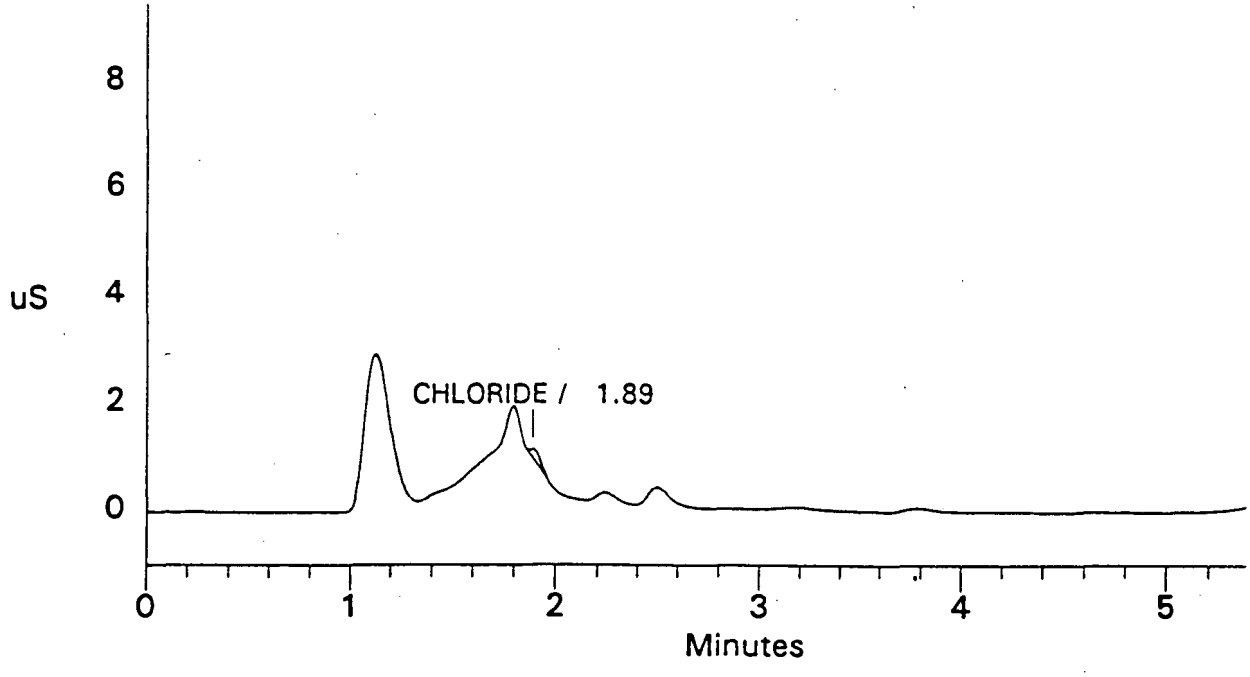
Sample Name: 194-52-38 Date: 01/09/1998 12:37:56
Data File : C:\DX\DATA\44369CL2\19452381.D58
Method : C:\DX\METHOD\CHLORIDE.met
DCI Address: 1 System: 1 Inject#: 58 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.38	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.89	CHLORIDE	0.000	155668	695257	1	-12.09
		Totals	0.000	155668	695257		

File: 19452381.D58 Sample: 194-52-38



Data Reprocessed On 01/10/1998 17:36:03

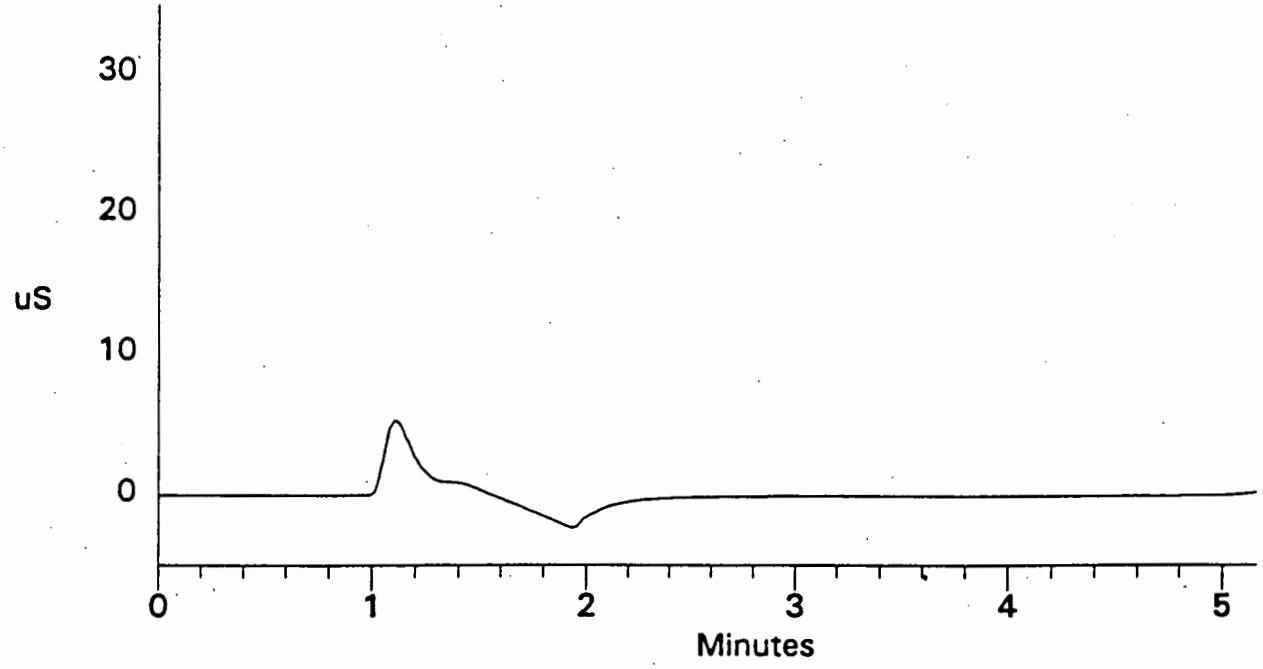
Sample Name: 194-52-39		Date: 01/09/1998 12:51:43	
Data File : C:\DX\DATA\44369CL2\19452391.D59			
Method : C:\DX\METHOD\CHLORIDE.met			
ACI Address: 1 System: 1 Inject#: 59			Detector:PED-Cond
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.16	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452391.D59 Sample: 194-52-39



Data Reprocessed On 01/26/1998 11:46:52

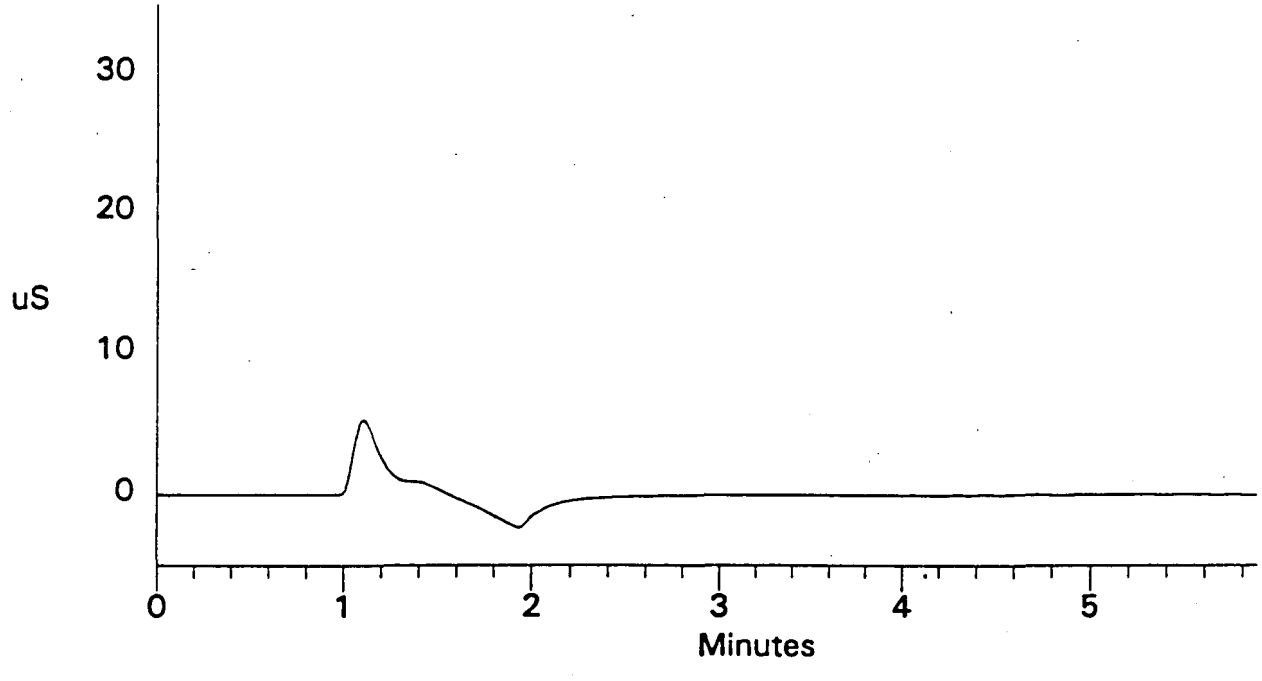
Sample Name: 194-52-39	Date: 01/09/1998 13:05:29
Data File : C:\DX\DATA\44369CL2\19452391.D60	
Method : C:\DX\METHOD\CHLORIDE.met	
LCI Address: 1 System: 1 Inject#: 60	Detector:PED-Cond.
Analyst : Column:	

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3600	5Hz	0.00	5.88	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
0	0.00	CHLORIDE	0.000	0	0	0	0.00
		Totals	0.000	0	0		

File: 19452391.D60 Sample: 194-52-39



Data Reprocessed On 01/10/1998 15:39:53

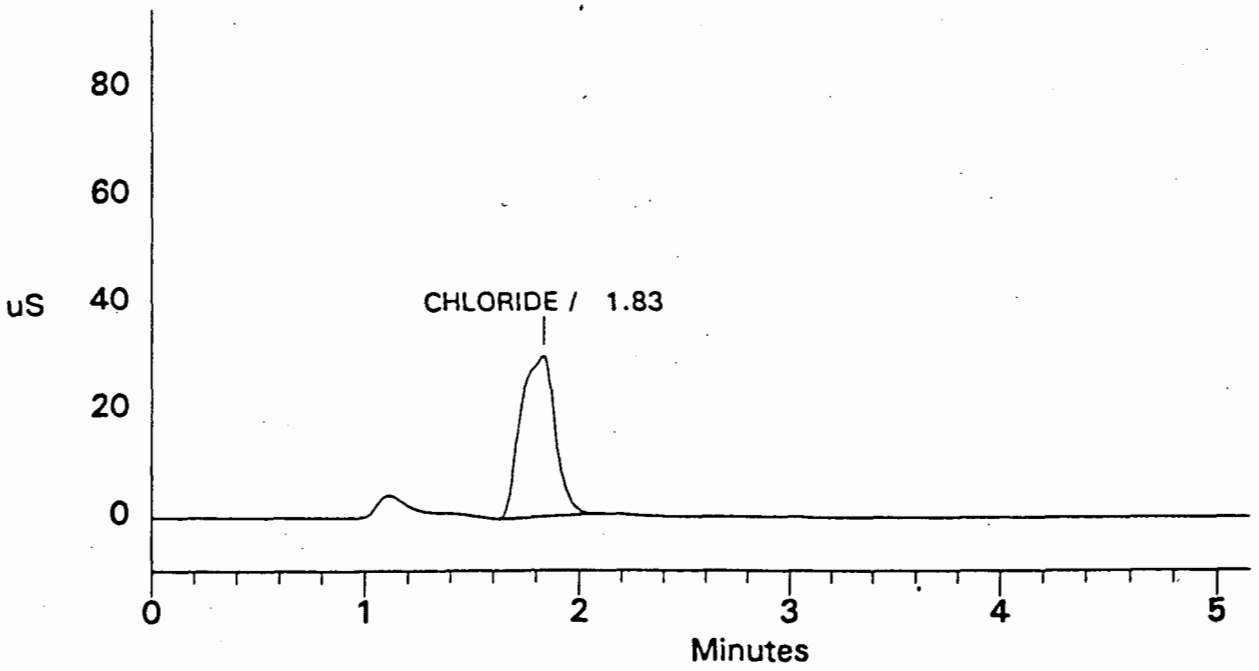
Sample Name: 194-52-2 MS Date: 01/09/1998 13:19:14
Data File : C:\DX\DATA\44369CL2\19452021.D61
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 61 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.15	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.83	CHLORIDE	0.000	29882611	330222786	1	-14.73
		Totals	0.000	29882611	330222786		

File: 19452021.D61 Sample: 194-52-2 MS



Data Reprocessed On 01/10/1998 16:22:08

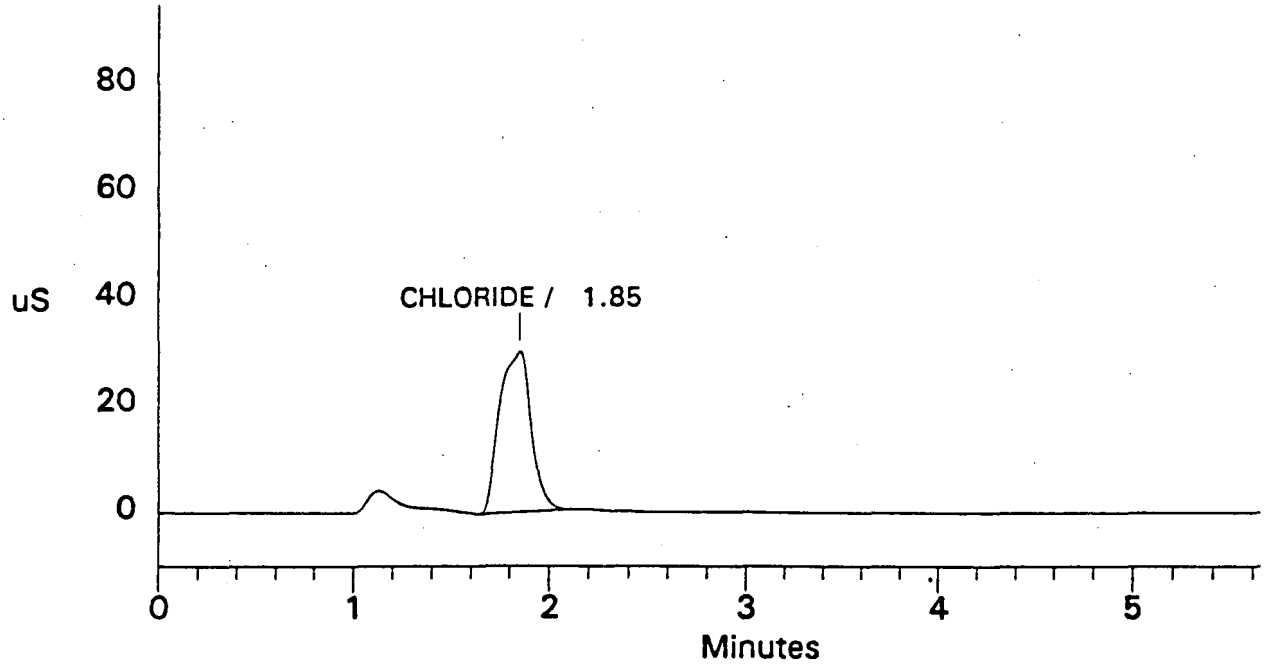
Sample Name: 194-52-2 MS Date: 01/09/1998 13:33:00
Data File : C:\DX\DATA\44369CL2\19452021.D62
Method : C:\DX\METHOD\CHLORIDE.met
LCI Address: 1 System: 1 Inject#: 62 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.64	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.85	CHLORIDE	0.000	29848773	332045428	1	-13.80
		Totals	0.000	29848773	332045428		

File: 19452021.D62 Sample: 194-52-2 MS



Data Reprocessed On 01/10/1998 16:21:36

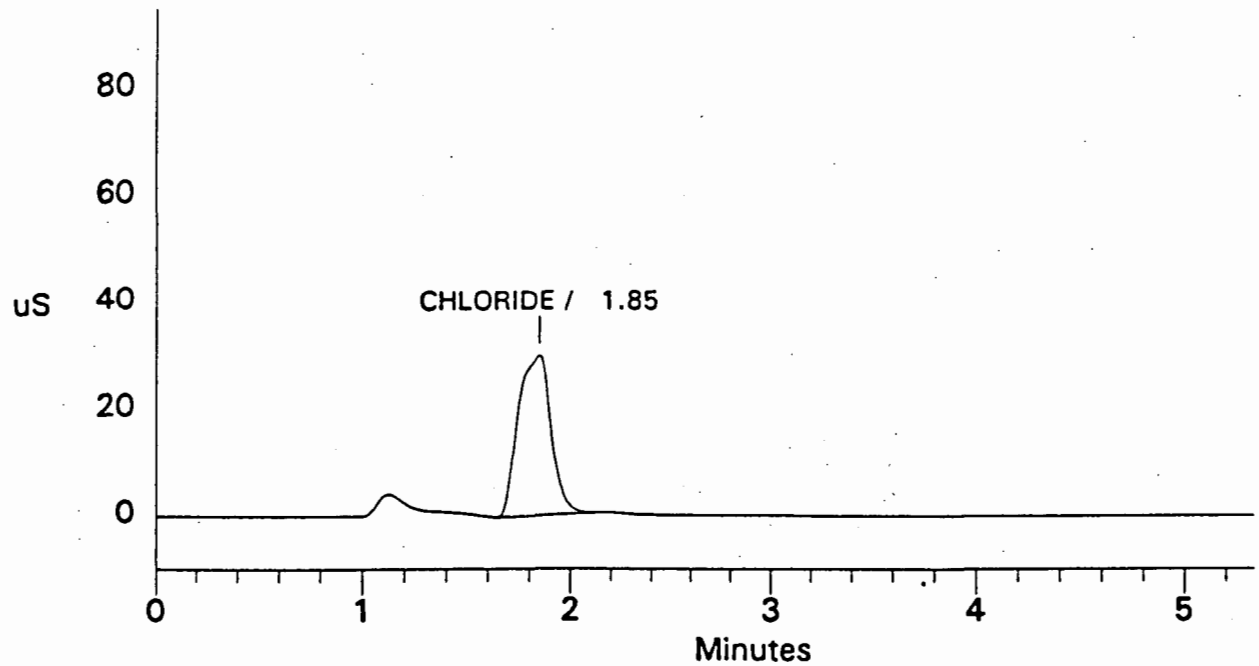
Sample Name:	194-52-2 MSD	Date:	01/09/1998 13:46:46
Data File :	C:\DX\DATA\44369CL2\19452021.D63		
Method :	C:\DX\METHOD\CHLORIDE.met		
ACI Address: 1	System: 1 Inject#: 63	Detector:	PED-Cond.
Analyst :	Column:		

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.34	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.85	CHLORIDE	0.000	29973868	330095822	1	-13.95
		Totals	0.000	29973868	330095822		

File: 19452021.D63 Sample: 194-52-2 MSD



Data Reprocessed On 01/10/1998 16:23:54

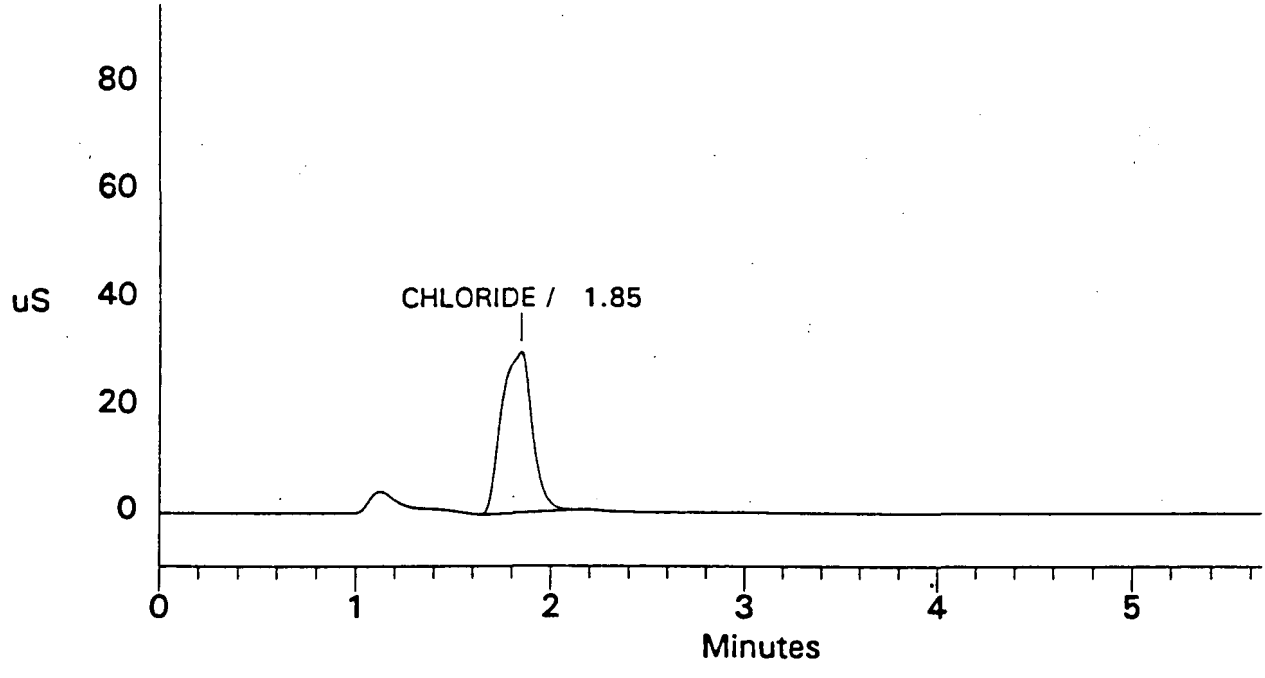
Sample Name: 194-52-2 MSD Date: 01/09/1998 14:00:32
Data File : C:\DX\DATA\44369CL2\19452021.D64
Method : C:\DX\METHOD\CHLORIDE.met
ACI Address: 1 System: 1 Inject#: 64 Detector:PED-Cond.
Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2	3600	5Hz	0.00	5.66	1000

********** Component Report: All Components **********

Pk. Num	Ret Time	Component Name	Concentration	Height	Area	Bl. Code	%Delta
1	1.85	CHLORIDE	0.000	29955458	330162583	1	-14.11
		Totals	0.000	29955458	330162583		

File: 19452021.D64 Sample: 194-52-2 MSD



TLI#44369-HCL
CALIBRATION
06/07-JANUARY-98

CONC (ppm)	RT	AREA	LOG CONC	LOG AREA	PREDICTED (ppm)	%DIFF	RESPONSE (CONC/AREA)
100	1.98	753611891	2.000	8.877	105.80	5.8	1.33E-07
50	1.93	351837453	1.699	8.546	51.22	2.4	1.42E-07
25	1.90	163672444	1.398	8.214	24.71	1.2	1.53E-07
10	1.89	58156561	1.000	7.765	9.22	7.8	1.72E-07
5	1.89	28183099	0.699	7.450	4.63	7.5	1.77E-07
1	1.90	5935843	0.000	6.773	1.05	4.9	1.68E-07
0.5	1.92	2838828	-0.301	6.453	0.52	3.9	1.76E-07
100	1.97	750596460	2.000	8.875	105.40	5.4	1.33E-07
50	1.92	350484618	1.699	8.545	51.03	2.1	1.43E-07
25	1.90	166792324	1.398	8.222	25.16	0.6	1.50E-07
10	1.89	58087354	1.000	7.764	9.21	7.9	1.72E-07
5	1.88	28543971	0.699	7.456	4.68	6.3	1.75E-07
1	1.90	5844200	0.000	6.767	1.03	3.4	1.71E-07
0.5	1.92	2836346	-0.301	6.453	0.52	3.9	1.76E-07

Regression Output:

Constant		6.75154
Std Err of Y Est		0.02535
R Squared		0.99920
No. of Observations		14
Degrees of Freedom		12
X Coefficient(s)	1.04994	
Std Err of Coef.	0.00855	

EXTERNAL CALIBRATION CHECK

CONC (ppm)	RT	AREA	LOG AREA	PREDICTED (ppm)	%DIFF
20.0	1.86	128293994	8.108	19.59	2.0
20.0	1.86	129375831	8.112	19.75	1.2

BLANKS

TYPE	RT	AREA	AVERAGE AREA
H2SO4		ND	
H2SO4		ND	

TLI#44369-CL2
CALIBRATION
09/10-JANUARY/98

CONC (ppm)	RT	AREA	LOG CONC	LOG AREA	PREDICTED (ppm)	%DIFF	RESPONSE (CONC/AREA)
100	2.04	441630829	2.000	8.645	96.60	3.4	2.26E-07
50	2.03	210646738	1.699	8.324	50.33	0.7	2.37E-07
25	2.03	99024234	1.398	7.996	25.89	3.5	2.52E-07
10	2.03	34137811	1.000	7.533	10.13	1.3	2.93E-07
5	2.03	15652645	0.699	7.195	5.10	2.0	3.19E-07
1	2.05	2459514	0.000	6.391	1.00	0.1	4.07E-07
100	2.03	445831770	2.000	8.649	97.41	2.6	2.24E-07
50	2.05	215999081	1.699	8.334	51.45	2.9	2.31E-07
25	2.02	95997059	1.398	7.982	25.19	0.8	2.60E-07
10	2.03	33162847	1.000	7.521	9.88	1.2	3.02E-07
5	2.05	15030202	0.699	7.177	4.92	1.6	3.33E-07
1	2.04	2408845	0.000	6.382	0.98	1.9	4.15E-07

Regression Output:

Constant		6.39139
Std Err of Y Est		0.01142
R Squared		0.99981
No. of Observations		12
Degrees of Freedom		10
X Coefficient(s)	1.13537	
Std Err of Coef.	0.00498	

EXTERNAL CALIBRATION CHECK

CONC (ppm)	RT	AREA	LOG AREA	PREDICTED (ppm)	%DIFF
30.0	2.03	122990563	8.090	31.33	4.4
30.0	2.03	122820922	8.089	31.29	4.3

BLANKS

TYPE	RT	AREA	AVERAGE AREA
NAOH		ND	
NAOH		ND	

Appendix D

Particulate Matter
Laboratory Analysis Data

Project No. COLD ALUMINUM
Book No. _____ TITLE PALLFLEX FILTER TARE WTS.

From Page No. — FILTERS WERE DESSICATED FOR 48 HRS. BEFORE WEIGHING

4" FILTERS

SAMPLE I.D.	11-19-97 TARE WT.	11-20-97 TARE WT.	TARE WT.
111897-1	.7034	.7031	
2	.7059	.7058	
3	.7097	.7097	
4	.6946	.6945	
5	.7060	.7060	
6	.7061	.7060	
7	.6857	.6855	
8	.7024	.7024	
9	.6895	.6894	
10	.7057	.7056	
11	.6904	.6903	
12	.7080	.7080	
13	.6858	.6858	
14	.7051	.7051	
15	.7094	.7094	
16	.6987	.6987	
17	.6892	.6893	
18	.6942	.6943	
19	.6926	.6928	
20	.6967	.6966	
21	.6954	.6953	
22	.7122	.7122	
23	.6996	.6997	
24	.7162	.7162	
25	.6999	.7000	
26	.7010	.7009	
27	.6906	.6906	
28	.6990	.6990	
29	.7059	.7060	
30	.7050	.7051	
TEMP. —	64°F	63°F	
R.H. —	30%	30%	

BALANCE CALIBRATION

11-18-97 mla

	(BEFORE)	(AFTER)
100G	99.9974	
50G	49.9987	
20G	19.9995	
10G	9.9998	
5G	4.9999	
2G	2.0000	2.0000
1G	1.0000	1.0000

11-20-97

	(BEFORE)	(AFTER)
100G	99.9972	
50G	49.9986	
20G	19.9995	
10G	9.9997	
5G	4.9999	
2G	2.0000	2.0000
1G	1.0000	1.0000

To Page No

Witnessed & Understood by me.	Date	Invented by	Date
		Recorded by	11/19/97

TLE PALLFLEX FILTER TARE WTS (CONT) Project No. CULP ALUMINUM Book No.

om Page No.

3" FILTERS

SAMPLE I.D.	11-20-97 TARE WT.	11-21-97 TARE WT	11-23-97 TARE WT.
112097-1	.4010	.4010	
2	.3928	.3929	
3	.3975	.3974	
4	.4025	.4025	
5	.4009	.4010	
6	.4051	.4052	
7	.4100	.4102	
8	.4060	.4060	
9	.4063	.4063	
10	.4104	.4105	
11	.4072	.4073	
12	.4163	.4163	
13	.4052	.4053	
14	.4041	.4042	
15	.3964	.3964	
16	.4016	.4016	
17	.4005	.4005	
18	.3929	.3929	
19	.3995	.3996	
20	.4062	.4062	
21	.4049	.4049	
22	.4021	.4020	
23	.4079	.4079	
24	.4057	.4057	
25	.4038 *		.4038
26	.4150 →		.4149
27	.4005 →		.4005
28	.3979 →		.3979
29	.3989 →		.3989
30	.4001 →		.4001

TEMP	67°F	68°F	68°F
R.H.	31%	45%	49%

11-20-97	(BEFORE)	(AFTER)
	100g - 99.9978	
	50g - 49.9989	
	20g - 19.9996	
	10g - 9.9998	
	5g - 5.0000	
	2g - 2.0000	2.0000
	1g - 1.0000	1.0000
11-21-97	5g - 4.9999	
	2g - 2.0000	2.0000
	1g - 1.0000	1.0000
11-23-97	5g - 5.0000	5.0000
	2g - 2.0000	2.0000
	1g - 1.0000	1.0000

* INITIAL WEIGHINGS FOR #'s 25-30 WERE DONE ON 11-21-97 M.U.

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by M.U.	11/20/97

TEMP = 68K +

Project No. CULP ALUMINUM
Book No. _____ TITLE BALANCE CALIBRATION (SARTORIUS LC 2200

From Page No. ___

12/2/97
100 G — 99.9
200 G — 199.9
300 G — 299.9
500 G — 499.8

12/3/97
100G — 100.0
200G — 199.9
300G — 299.9
500G — 499.9

12/4/97
100G — 100.0
200G — 206.0
300G — 299.9
500G — 499.9

12/5/97
100G — 100.0
200G — 200.0
300G — 299.9
500G — 499.9

12/6/97
100G — 100.0
200G — 200.0
300G — 299.9
500G — 499.9

12/7/97
100G — 100.0
200G — 200.0
300G — 299.9
500G — 500.0

Witnessed & Understood by me.	Date	Invented by	Date 12/1/97

TLE BALANCE CALIBRATION SARTORIUS R-200D Project No. C.O.E.P. A.A.

Book No.

om Page No.

	12/18/97	12/19/97	12/20/97
100G -	99.9966	99.9962	99.9963
50G -	49.9983	49.9981	49.9981
20G -	19.9994	19.9992	19.9992
10G -	9.9996	9.9996	9.9996
5G -	4.9999	4.9998	4.9998
2G -	2.0000	1.9999	1.9998
1G -	1.0000	1.0000	.9999

	12/21/97	12/22/97	1/8/98
100G -	99.9963	100.0009	100.0011
50G -	49.9981	50.0004	50.0006
20G -	19.9993	20.0002	20.0002
10G -	9.9996	10.0000	10.0001
5G -	4.9998	5.0000	5.0000
2G -	2.0000	2.0000	2.0000
1G -	.9999	1.0000	1.0000

* THE BALANCE CALIBRATION DATA SEEMED TO CHANGE MARKEDLY FROM 12-21 TO 12-22. THE DIFFERENCE IN THE READING USING A 100G WEIGHT WAS .0046 GRAMS. SINCE THE BEAKERS I WEIGHED BACK ON 12-22-97 ALL WEIGH AROUND 100G, I SUBTRACTED .0046G FROM ALL THESE MEASUREMENTS MADE ON 12-22 SO THEY WOULD LINE UP WITH WHAT WAS DONE ON PREVIOUS DAYS.

EXAMPLE: REFERENCE BEAKER WT.S:

12-18-97 ⇒ 110.2901
12-19-97 ⇒ 110.2901
12-21-97 ⇒ 110.2900
12-22-97 ⇒ 110.2945 - .0046 = 110.2899

To Page No.

itnessed & Understood by me,	Date	Invented by	Date
		Recorded by	12/19/97

Project No. CULP A.A.

Book No. _____ TITLE GRAVIMETRIC DATA FOR F.H. HCl

From Page No. —

			TEMP. —	68°F	66°F	
			R.H. —	26%	27%	
CAA-I.D.	RUN LOCATION & NUMBER	BEAKER #		12-18-97 TARE WT. BEAKER	12-19-97 TARE WT. BEAKER	TARE WT. BEAKER
		(REFERENCE)	25	110.2901	110.2901	
02	CAB OUT RUN #1		1	108.5127	108.5119	
06	CAB OUT RUN #2		2	110.4438 mil. 29	110.4425 mil. 25	
10	CAB OUT RUN #3		3	109.9884	109.9881 mil. 81	
14	CAB IN RUN #1		4	110.2682	110.2678 mil. 78	
18	CAB IN RUN #2		5	106.3504	106.3497 mil. 97	
22	CAB IN RUN #3		6	121.0311	121.0309	
26	RF OUT RUN #1		7	106.6756	106.6751	
30	RF OUT RUN #2		8	101.0591	101.0591	
34	RF OUT RUN #3		9	109.8379	109.8375	
38	RF OUT RUN #4		10	109.5454	109.5452	
50	RF IN RUN #1		11	109.1761	109.1754	
54	RF IN RUN #2		12	101.4449	101.4447	
58	RF IN RUN #3		13	105.7541	105.7532	
62	RF IN RUN #4		14	109.9198	109.9200	
94	CAB IN FIELD BLANK		15	120.2110	120.2105	
98	RF OUT FIELD BLANK		16	113.5987	113.5984	
102	RF IN FIELD BLANK (REAGENT BLANK) ACETONE 100G		17	102.0910	102.0897	
			18	108.6069	108.6065	

To Page No.

Witnessed & Understood by me,

Date 12/18/97

Invented by

Date

Recorded by

TLE Calp AH.

Project No.

Book No.

om Page No.

AVERAGE TARE WT. BEAKER	69°F 3190 12-21-97 TARE WT. + RESIDUE	68°F 3690 * 12-22-97 TARE WT. + RESIDUE	73°F 6396 * 1-8-98 TARE WT. + RESIDUE	AVERAGE TARE WT. + RESIDUE	AVE. TARE + RESIDUE − AVE. TARE BEAKER
110.2901	110.2900	110.2889	110.2904	110.2900	−.0001
108.5123	108.6687	108.6696		108.6692	.1569
110.4427	110.4988	110.4988		110.4988	.0561
109.9883	110.0307	110.0306		110.0307	.0424
110.2680	113.7918	113.7906		113.7912	3.5232
106.3491	108.6139	108.6133		108.6136	2.2645
121.0310	121.7632	121.7635		121.7634	.7324
106.6751	106.7146	106.7149		106.7148	.0397
101.0591	101.0694	101.0695		101.0695	.0104
109.8377	109.8419	109.8418		109.8419	.0042
109.5453	109.5472	109.5467		109.5470	.0017
109.1758	109.7203	109.7208		109.7206	.5448
101.4448	101.6098	101.6097		101.6098	.1650
105.7537	105.9221	105.9229		105.9225	.1688
109.9199	110.0437	110.0441		110.0439	.1240
120.2108	120.2175	120.2139	120.2161	120.2168	.0060
113.5986	113.6035	113.6033		113.6034	.0048
102.0904	102.0918	102.0915		102.0917	.0013
108.6067	108.6066	108.6068		108.6067	.0000

To Page No.

Witnessed & Understood by me,

Date

Invented by

Recorded by CMA.

Date 12/18/97

Project No. CULP A.A.
Book No. _____ TITLE GRAVIMETRIC DATA FOR FILTERS I

From Page No. _____ TEMP — 66°F
R.H. — 27%

CAA-I.D.	RUN LOCATION & NUMBER	(FROM PG. 50-51) TARE WT. FILTER	(FROM PG. 50-51) TARE WT. FILTER	AVERAGE TARE WT. FILTER	12-19-97 TARE WT. + RESIDUE
01	CABOUT RUN #1	.7034	.7031	.7033	.9194
05	CABOUT RUN #2	.7059	.7058	.7059	.7549
09	CABOUT RUN #3	.6857	.6855	.6856	.8495
17	CABIN RUN #1	.3928	.3929	.3929	.4405
253	CABIN RUN #2	.7050	.7051	.7051	1.1731
21	CABIN RUN #3	.6996	.6997	.6997	1.9782
25	RFOUT RUN #1	.6895	.6894	.6895	.7169
29	RFOUT RUN #2	.7057	.7056	.7057	.7070
33	RFOUT RUN #3	.7059	.7060	.7060	.7065
37	RFOUT RUN #4	.6990	.6990	.6990	.7002
49	RFIN RUN #1	.7024	.7024	.7024	2.0679
①or② 53	RFIN RUN #2	.6904	.6903	.6904	1.7166
②or① 53	RFIN RUN #2	.7162	.7162	.7162	.8065
57	RFIN RUN #3	.6906	.6906	.6906	1.2985
61	RFIN RUN #4	.6999	.7000	.7000	1.5087
73	REAGENT BLANK 1 3"	.4009	.4010	.4010	.4009
237 ~~97~~	REAGENT BLANK 2 4"	.7080	.7080	.7080	.7079mg
93	CABIN FIELD BLANK	.4100	.4102	.4101	.4101
97	RFOUT FIELD BLANK	.7010	.7009	.7010	.7008
101	RFIN FIELD BLANK	.7122	.7122	.7122	.7122

To Page No. _____

Witnessed & Understood by me, _____ Date 12/18/97

Invented by _____ Date 12/19/97

TLE Culp

Project No.

Book No.

om Page No. 69°C 69°C

29% 31%

12-20-97 TARE WT. + RESIDUE	12-21-97 TARE WT. + RESIDUE	AVERAGE TARE WT. + RESIDUE	AVE. TARE + RESIDUE − AVE TARE FILTER	AVE. F.H. RESIDUE + AVE. FILTER RES. (← Total F½ + Filter)	FILTER #
.9191	.9190	.9191	.2158	.3727	111897-1
.7547	.7549	.7548	.0489	.1050	111897-2
.8490	.8490	.8490	.1634	.2058	111897-7
.4402	.4400	.4401	.0472	3.5704	112097-2
1.1723	1.1717	1.1720	.4669	2.7314	111897-30
1.9758	1.9745	1.9751	1.2754	2.0078	111897-23
.7171	.7172	.7172	.0277	.0674	111897-9
.7071	.7071	.7071	.0014	.0118	111897-10
.7066	.7065	.7065	.0005	.0047	111897-29
.7002	.7002	.7002	.0012	.0029	111897-28
2.0660	2.0650	2.0655	1.3631	1.9079	111897-8
1.7158	1.7153	1.7156	1.0252	1.1902	111897-11
.8064	.8063	.8064	.0902	1.2804 TOTAL=	111897-24
1.2980	1.2978	1.2979	.6073	.7761	111897-27
1.5079	1.5075	1.5077	.8077	.9317	111897-25
.4009	.4009	.4009	−.0001	N/A	112097-5
.7080	.7079	.7080	.0000	N/A	111897-12
.4102	.4102	.4102	.0001	.0061	112097-7
.7009	.7010	.7010	.0000	.0048	111897-26
.7123	.7123	.7123	.0001	.0014	111897-22

To Page No.

itnessed & Understood by me, Date

Invented by

Recorded by M.A.

Date 12/21/97

Appendix E

EPA Method 301
FTIR Validation Results for HCl

E-1

Table X-1. Chip Dryer Baghouse Outlet Validation Results

	VALIDATION OF FTIR FOR THE ANALYSIS OF HYDROGEN CHLORIDE							
Date Conducted: 3 December 1997			**Source: Chip Dryer Outlet**					
ANALYTE SPIKING: QUAD TRAINS								
FEDERAL REGISTER CALCULATION METHOD								
ENTER VALUE OF SPIKED LEVEL (CS)=			9.3					
Dilution Factor for Unspiked Samples =			0.96					
ENTER SPIKED AND UNSPIKED CONCENTRATIONS (COMPARABLE UNITS ASSUMED)								
	CONCENTRATION IN PPM (WET)							
	SPIKED SAMPLES		UNSPIKED SAMPLES					
RUN #	A	B	C	D	A-B	(A-B)^2	C-D	(C-D)^2
1	9.48	9.02	0.43	0.36	0.46	0.21	0.07	0.00
2	7.99	8.92	0.46	0.31	-0.93	0.86	0.15	0.02
3	9.41	9.04	0.30	0.28	0.37	0.14	0.02	0.00
4	9.98	10.37	0.25	0.22	-0.39	0.15	0.03	0.00
5	10.29	10.29	0.36	0.23	0.00	0.00	0.13	0.02
6	10.56	10.99	0.47	0.29	-0.43	0.18	0.18	0.03
VERAGE:	Sm=	9.70	Mm=	0.33				
STANDARD DEVIATION:								
	SPIKED SDs=		0.36					
	UNSPIKED SDu=		0.08					
	RELATIVE STD RSDs		3.7%	(acceptable)				
	RELATIVE STD RSDu		24.4%	(acceptable)				
BIAS:								
	Corrected Unspiked Conc =			0.32				
	B=		0.120					
	STD OF MEAN SDm=		0.368					
	t-VALUE=		0.325					
	CRITICAL t-VALUE=		2.201					
	(n=12, alpha=95%)							
	Bias not statistically significant, CF not needed.							
	CORRECTION FACT		0.987	(Acceptable)				
END OF ANALYTE SPIKING SPREADSHEET. PRESS "HOME"-KEY TO RETURN.								

E-2

Table X-2. Reverbatory Furnace Hood Baghouse Inlet Validation Results

VALIDATION OF FTIR FOR THE ANALYSIS OF HYDROGEN CHLORIDE								
Date Conducted: 7 December 1997			**Source: Baghouse Inlet**					
ANALYTE SPIKING: QUAD TRAINS								
FEDERAL REGISTER CALCULATION METHOD								
ENTER VALUE OF SPIKED LEVEL (CS)=			9.6					
Dilution Factor for Unspiked Samples =			0.96					
ENTER SPIKED AND UNSPIKED CONCENTRATIONS (COMPARABLE UNITS ASSUMED)								
	CONCENTRATION IN PPM (WET)							
	SPIKED SAMPLES		UNSPIKED SAMPLES					
RUN #	A	B	C	D	A-B	(A-B)^2	C-D	(C-D)^2
1	32.77	34.51	17.91	18.89	-1.74	3.03	-0.98	0.96
2	24.91	26.39	8.65	9.33	-1.48	2.19	-0.68	0.46
3	21.37	23.27	9.82	9.15	-1.90	3.61	0.67	0.45
4	26.91	28.19	14.70	15.09	-1.28	1.64	-0.39	0.15
5	23.53	18.48	19.80	20.29	5.05	25.50	-0.49	0.24
6	19.39	19.02	11.61	11.96	0.37	0.14	-0.35	0.12
VERAGE:	Sm=	24.90	Mm=	13.93				
STANDARD DEVIATION:								
	SPIKED SDs=		1.73					
	UNSPIKED SDu=		0.45					
	RELATIVE STD RSDs		7.0%	(acceptable)				
	RELATIVE STD RSDu		3.2%	(acceptable)				
BIAS:								
	Corrected Unspiked Conc =			13.32				
	B=		1.978					
	STD OF MEAN SDm=		1.791					
	t-VALUE=		1.104					
	CRITICAL t-VALUE=		2.201					
	(n=12, alpha=95%)							
	Bias not statistically significant, CF not needed.							
	CORRECTION FACT		0.829	(Acceptable)				
END OF ANALYTE SPIKING SPREADSHEET. PRESS "HOME"-KEY TO RETURN.								

E-3

Table X-3. Reverbatory Furnace Hood Baghouse Outlet Validation Results

	VALIDATION OF FTIR FOR THE ANALYSIS OF HYDROGEN CHLORIDE							
Date Conducted: 7 December 1997			**Source: Baghouse Outlet**					
ANALYTE SPIKING: QUAD TRAINS								
FEDERAL REGISTER CALCULATION METHOD								
ENTER VALUE OF SPIKED LEVEL (CS)=			11.3					
Dilution Factor for Unspiked Samples =			0.94					
ENTER SPIKED AND UNSPIKED CONCENTRATIONS (COMPARABLE UNITS ASSUMED)								
	CONCENTRATION IN PPM (WET)							
	SPIKED SAMPLES		UNSPIKED SAMPLES					
RUN #	A	B	C	D	A-B	(A-B)^2	C-D	(C-D)^2
1	12.11	12.75	1.08	1.33	-0.64	0.41	-0.25	0.06
2	11.94	13.16	2.79	1.90	-1.22	1.49	0.89	0.79
3	12.63	13.50	2.72	2.10	-0.87	0.76	0.62	0.38
4	12.79	13.84	2.29	1.92	-1.05	1.10	0.37	0.14
5	11.99	13.18	1.54	1.10	-1.19	1.42	0.44	0.19
6	12.53	13.34	2.22	1.37	-0.81	0.66	0.85	0.72
VERAGE:	Sm=	12.81	Mm=	1.86				
STANDARD DEVIATION:								
	SPIKED SDs=		0.70					
	UNSPIKED SDu=		0.44					
	RELATIVE STD RSDs		5.4%	(acceptable)				
	RELATIVE STD RSDu		23.5%	(acceptable)				
BIAS:								
	Corrected Unspiked Conc =			1.76				
	B=		-0.246					
	STD OF MEAN SDm=		0.823					
	t-VALUE=		0.299					
	CRITICAL t-VALUE=		2.201					
	(n=12, alpha=95%)							
	Bias not statistically significant, CF not needed.							
	CORRECTION FACT		1.022	(Acceptable)				
END OF ANALYTE SPIKING SPREADSHEET. PRESS "HOME"-KEY TO RETURN.								

Appendix F

FTIR QC Spike Results

Run	Date	Time	Inlet/outlet	Spiked	Avg Spiked	Unspiked	Avg Unspiked	Dilution	avg dil
1	12/5/97		AM outlet	10.88		0.58		0.05	
1	12/5/97		AM outlet	10.88		0.44		0.05	
1	12/5/97		AM outlet	10.12	10.63	0.35	0.46	0.05	0
1	12/5/97		AM inlet	15.25		4.97		0.04	
1	12/5/97		AM inlet	15.10		5.04		0.04	
1	12/5/97		AM inlet	16.89	15.75	4.89	4.97	0.04	0
2	12/5/97		PM outlet	17.32		4.03		0.06	
2	12/5/97		PM outlet	15.25		3.66		0.06	
2	12/5/97		PM outlet	13.15	15.24	3.28	3.66	0.06	0
2	12/5/97		PM inlet	13.10		2.90		0.06	
2	12/5/97		PM inlet	12.62		2.78		0.06	
2	12/5/97		PM inlet	12.49	12.74	2.87	2.85	0.06	0
3	12/6/97		AM inlet	25.86		4.06		0.11	
3	12/6/97		AM inlet	24.35		2.90		0.10	
3	12/6/97		AM inlet	23.83	24.68	2.46	3.14	0.10	0
3	12/6/97		AM outlet	28.59		6.31		0.09	
3	12/6/97		AM outlet	25.74		4.27		0.09	
3	12/6/97		AM outlet	24.74	26.36	3.37	4.65	0.09	0
4	12/6/97		PM outlet	16.93		0.83		0.08	
4	12/6/97		PM outlet	17.28		0.75		0.07	
4	12/6/97		PM outlet	17.23	17.15	1.53	1.04	0.07	0
5	12/6/97		PM inlet	13.62		3.83		0.06	
5	12/6/97		PM inlet	13.87		2.95		0.06	
5	12/6/97		PM inlet	13.62	13.70	2.48	3.09	0.06	0
6	12/8/97		AM outlet	18.49		0.83		0.09	
6	12/8/97		AM outlet	20.84		2.23		0.09	
6	12/8/97		AM outlet	21.02	20.12	1.53	1.53	0.09	0
6	12/8/97		AM inlet	15.88		3.26		0.08	
6	12/8/97		AM inlet	16.93		1.86		0.08	
6	12/8/97		AM inlet	17.23	16.68	3.64	2.92	0.07	0
7	12/8/97		PM outlet	8.96		1.15		0.04	
7	12/8/97		PM outlet	9.08		1.81		0.04	
7	12/8/97		PM outlet	9.33	9.12	1.84	1.60	0.04	0
7	12/8/97		PM inlet	14.62		4.82		0.05	
7	12/8/97		PM inlet	14.07		4.88		0.05	
7	12/8/97		PM inlet	13.88	14.19	4.91	4.87	0.05	0
8	12/9/97		AM inlet	16.52		2.10		0.06	
8	12/9/97		AM inlet	14.94		2.02		0.06	
8	12/9/97		AM inlet	14.22	15.23	1.82	1.98	0.06	0
8	12/9/97		AM outlet	19.75		3.47		0.09	
8	12/9/97		AM outlet	20.83		2.17		0.09	
8	12/9/97		AM outlet	21.62	20.73	1.75	2.46	0.09	0
9	12/9/97		PM inlet	13.52		3.10		0.06	
9	12/9/97		PM inlet	14.81		2.25		0.06	
9	12/9/97		PM inlet	14.79	14.37	1.40	2.25	0.06	0
9	12/9/97		PM outlet	11.07		1.40		0.05	
9	12/9/97		PM outlet	11.41		1.18		0.05	
9	12/9/97		PM outlet	11.57	11.35	1.90	1.49	0.05	0

Run	Date	Time	Inlet/outlet	Spiked	Avg Spiked	Unspiked	Avg Unspiked	Dilution	avg dil
10	12/10/97	AM inlet	7.22			3.56		0.05	
10	12/10/97	AM inlet	14.12			2.06		0.07	
10	12/10/97	AM inlet	14.92		12.09	1.74	2.45	0.07	0
10	12/10/97	AM outlet	15.28			3.73		0.07	
10	12/10/97	AM outlet	15.14			2.48		0.07	
10	12/10/97	AM outlet	9.27		13.23	2.02	2.74	0.02	0
11	12/10/97	PM inlet	22.19			9.20		0.11	
11	12/10/97	PM inlet	26.70			6.85		0.11	
11	12/10/97	PM inlet	27.73		25.54	5.71	7.25	0.11	0
12	12/10/97	PM outlet	17.24			2.21		0.07	
12	12/10/97	PM outlet	17.47			1.81		0.07	
12	12/10/97	PM outlet	17.58		17.43	1.48	1.83	0.07	0
13	12/11/97	AM inlet	10.14			0.21		0.05	
13	12/11/97	AM inlet	10.84			1.68		0.05	
13	12/11/97	AM inlet	11.16		10.71	1.38	1.09	0.05	0
13	12/11/97	AM outlet	12.30			1.72		0.06	
13	12/11/97	AM outlet	12.84			1.12		0.06	
13	12/11/97	AM outlet	13.38		12.84	0.98	1.27	0.06	0
14	12/11/97	PM inlet	14.67			3.21		0.05	
14	12/11/97	PM inlet	14.33			2.34		0.04	
14	12/11/97	PM inlet	14.49		14.50	2.01	2.52	0.04	0
14	12/11/97	PM outlet	10.04			2.78		0.05	
14	12/11/97	PM outlet	16.02			1.86		0.06	
14	12/11/97	PM outlet	17.44		14.50	1.72	2.12	0.06	0