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Air

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Hot Mix Asphalt Plants
Kiln Dryer Stack
Manual Methods Testing

Asphalt Plant B
Clayton, North Carolina
Volume 2 of 2

FINAL REPORT

EMISSIONS TEST AT AN ASPHALT CONCRETE PRODUCTION PLANT: ASPHALT PLANT "A" - CLAYTON, NORTH CAROLINA

VOLUME II OF II
APPENDICES C - F

EPA Contract No. 68D70069
Work Assignment No. 2-09

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September 1999
P:\1529\FINRPT\PLANT A

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APPENDIX C

ANALYTICAL DATA

Appendix C.1

Analytical Data

Method 5 Particulate Matter

PACIFIC ENVIRONMENTAL SERVICES, INC.

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Durham, North Carolina 27707
(919) 493-3536
Fax: (919) 493-7779

BLANK ANALYTICAL DATA FORM

Plant ASPHALT PLANT "A"

Sample location —

Relative humidity —

Liquid level marked and container sealed _____

Density of acetone (ρ_a) 0.7899 g/ml g/ml

Blank volume (V_a) 348.2 ml

Date and time of wt 9/23/97 0830 Gross wt 98.5469 mg

Date and time of wt 9/23/97 1515 Gross wt 98.5473 mg

Average gross wt 98.5471 mg

Tare wt 98.5472 mg

Weight of blank (m_{ab}) (0.0001) mg

$$C_a = \frac{m_{ab}}{V_a \rho_a} = \frac{(\ 0\ )}{(348.2)\ (0.7899)} = 0.0000 \text{ mg/g}$$

Note: In no case should a blank residue greater than 0.01 mg/g (or 0.001% of the blank weight) be subtracted from the sample weight.

Filters

Filter number _____

Date and time of wt _____ Gross wt _____ mg

Date and time of wt _____ Gross wt _____ mg

Average gross wt _____ mg

Tare wt _____ mg

Difference wt _____ mg

Note: Average difference must be less than ±5 mg or 2% of total sample weight whichever is greater.

Remarks _____

Signature of analyst _____

Signature of reviewer _____

PACIFIC ENVIRONMENTAL SERVICES, INC.

3708 Mayfair Street, Suite 202
Durham, North Carolina 27707
(919) 493-3536
Fax: (919) 493-7779

SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-29-0-1
Sample location Baghouse Outlet.
Relative humidity —
Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-2	
filter(s)	M97-003 M-1	

Acetone rinse container number Beaker No M-2
Acetone rinse volume (V_{aw}) 139.5 + 50 ml
Acetone blank residue concentration (C_a) 0.0000 mg/g
$W_a = C_a V_{aw} \rho_a$ = (0.0000) (189.5) (0.7899) = 0.0000 mg
Date and time of wt 9/18/97 1420 Gross wt 96.9954 mg
Date and time of wt 9/19/97 1600 Gross wt 96.9958 mg
Average gross wt 96.9956 mg
Tare wt 96.9392 mg
Less acetone blank wt (W_a) 0.0000 mg
Weight of particulate in acetone rinse (m_a) 0.0564 mg
Filter(s) container number M97-003 Beaker No M-1
Date and time of wt 9/22/97 1315 Gross wt 100.3147 mg
Date and time of wt 9/23/97 0830 Gross wt 100.3146 mg
Average gross wt 100.3147 mg
Filter M97-003 & Beaker No M-1 Tare wt 99.9212 mg
Weight of particulate on filter(s) (m_f) 0.3935 mg
Weight of particulate in acetone rinse 0.0564 mg
Total weight of particulate (m_n) 0.4499 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst

Signature of reviewer

PACIFIC ENVIRONMENTAL SERVICES, INC.

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Durham, North Carolina 27707
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Fax: (919) 493-7779

SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-79-O-2

Sample location Baghouse Outlet

Relative humidity —

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-5	
filter(s)	M97-002 M-4	

Acetone rinse container number Becker No. M-5

Acetone rinse volume (V_{aw}) 50 + 103.1 ml

Acetone blank residue concentration (C_a) 0.0000 mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (153.1) (0.7899) = 0.0000 mg

Date and time of wt 9/22/97 1315 Gross wt 96.8543 mg

Date and time of wt 9/23/97 0836 Gross wt 96.8540 mg

Average gross wt 96.8542 mg

Tare wt 96.8488 mg

Less acetone blank wt (W_a) 0.0000 mg

Weight of particulate in acetone rinse (m_a) 0.0054 mg

Filter(s) container number M97-002 Becker No. M-4

Date and time of wt 9/22/97 1315 Gross wt 102.8729 mg

Date and time of wt 9/23/97 0830 Gross wt 102.8729 mg

Average gross wt 102.8729 mg

(M97-002 & M-4) Tare wt 102.8161 mg

Weight of particulate on filter(s) (m_f) 0.0568 mg

Weight of particulate in acetone rinse 0.0054 mg

Total weight of particulate (m_n) 0.0622 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst

Signature of reviewer

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SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-79-0-3

Sample location Baghouse Outlet

Relative humidity —

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-7	
filter(s)	M97-004 M-6	

Acetone rinse container number Beaker No. M-7

Acetone rinse volume (V_{aw}) 66.5 + 50 ml

Acetone blank residue concentration (C_a) 0.0000 mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (116.5) (0.7899) = 0.0000 mg

Date and time of wt 9/22/97 1315 Gross wt 99.5804 mg

Date and time of wt 9/23/97 0830 Gross wt 99.5806 mg

Average gross wt 99.5805 mg

Tare wt 99.5634 mg

Less acetone blank wt (W_a) 0.0000 mg

Weight of particulate in acetone rinse (m_a) 0.0051 mg

Filter(s) container number M97-004 Beaker No. M-6

Date and time of wt 9/22/97 1315 Gross wt 92.2885 mg

Date and time of wt 9/23/97 0830 Gross wt 92.2883 mg

Average gross wt 92.2884 mg

Filter M97-004 + Beaker M-6 Tare wt 92.2661 mg

Weight of particulate on filter(s) (m_f) 0.0223 mg

Weight of particulate in acetone rinse 0.0051 mg

Total weight of particulate (m_n) 0.0274 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks —

Signature of analyst [signature]

Signature of reviewer —

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SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-79-O-4

Sample location Baghouse Outlet

Relative humidity –

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-9	
filter(s)	M97-005 M-8	

Acetone rinse container number Becker No. M9

Acetone rinse volume (V_{aw}) 73.7 + 50 ml

Acetone blank residue concentration (C_a) 0.0000 mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (123.7) (0.7899) = 0.0000 mg

Date and time of wt 9/23/97 1515 Gross wt 96.6792 mg

Date and time of wt 9/23/97 0830 Gross wt 96.6794 mg

Average gross wt 96.6793 mg

Tare wt 96.6740 mg

Less acetone blank wt (W_a) 0.0000 mg

Weight of particulate in acetone rinse (m_a) 0.0053 mg

Filter(s) container number Becker No M-8

Date and time of wt 9/23/97 1515 Gross wt 101.5388 mg

Date and time of wt 9/24/97 0900 Gross wt 101.5392 mg

Average gross wt 101.5390 mg

M97-005 & Becker M-8 Tare wt 101.5310 mg

Weight of particulate on filter(s) (m_f) 0.0080 mg

Weight of particulate in acetone rinse 0.0053 mg

Total weight of particulate (m_n) 0.0133 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks –

Signature of analyst [signature]

Signature of reviewer

PACIFIC ENVIRONMENTAL SERVICES, INC.

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SAMPLE ANALYTICAL DATA FORM

Plant ASPHALT PLANT "A" Run number S-29-I-1

Sample location BAGHOUSE INLET

Relative humidity –

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-11	
filter(s)	MM97-001 M-10	

Acetone rinse container number Beaker No M-11

Acetone rinse volume (V_{aw}) 307.8 + 100 ml

Acetone blank residue concentration (C_a) 0.0000 mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (307.8) (0.7899) = 0.0000 mg

Date and time of wt 9/22/97 1315 Gross wt 133.2250 mg

Date and time of wt 9/23/97 0830 Gross wt 133.2250 mg

Average gross wt 133.2250 mg

Tare wt 100.9631 mg

Less acetone blank wt (W_a) 0.0000 mg

Weight of particulate in acetone rinse (m_a) 32.2619 mg

Filter(s) container number MM97-001 Beaker No M-10

Date and time of wt 9/22/97 1315 Gross wt 112.0534 mg

Date and time of wt 9/23/97 0830 Gross wt 112.0536 mg

Average gross wt 112.0535 mg

Filter No MM97-001 & Beaker M-10 Tare wt 100.9770 mg

Weight of particulate on filter(s) (m_f) 11.0765 mg

Weight of particulate in acetone rinse 32.2619 mg

Total weight of particulate (m_n) 43.3384 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks

Signature of analyst

Signature of reviewer

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SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-79-FB

Sample location —

Relative humidity —

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-15	
filter(s)	M97-006 M-14	

Acetone rinse container number Beaker No M-15

Acetone rinse volume (V_{aw}) 43.7 +50 ml

Acetone blank residue concentration (C_a) 0.0000 mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (93.7) (0.7899) = 0.0000 mg

Date and time of wt 9/22/97 1315 Gross wt 102.5881 mg

Date and time of wt 9/23/97 0830 Gross wt 102.5877 mg

Average gross wt 102.5879 mg

Tare wt 102.5880 mg

Less acetone blank wt (W_a) (0.0001) mg 0.0000 g

Weight of particulate in acetone rinse (m_a) (0.0001) mg

Filter(s) container number Filter No M97-006 Beaker No M-14

Date and time of wt 9/18/97 1420 Gross wt 97.1303 mg

Date and time of wt 9/19/97 1600 Gross wt 97.1308 mg

Average gross wt 97.1306 mg

Filter M97-006 & Beaker M-14 Tare wt 97.1301 mg

Weight of particulate on filter(s) (m_f) 0.0005 mg

Weight of particulate in acetone rinse (0.0001) mg

Total weight of particulate (m_n) 0.0005 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks —

Signature of analyst

Signature of reviewer

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SAMPLE ANALYTICAL DATA FORM

Plant Asphalt Plant "A" Run number S-29-RB

Sample location —

Relative humidity —

Density of acetone (ρ_a) 0.7899 g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse	M-18	
filter(s)	M97-008 M-16	

Acetone rinse container number Becker No M-18

Acetone rinse volume (V_{aw}) 348.3 ± ml

Acetone blank residue concentration (C_a) ~~0.0000~~ mg/g

$W_a = C_a V_{aw} \rho_a$ = (0.0000) (348.3) (0.7899) = _____ mg

Date and time of wt 9/23/97 0830 Gross wt 98.5469 mg

Date and time of wt 9/23/97 1515 Gross wt 98.5473 mg

Average gross wt 98.5471 mg

Tare wt 98.5472 mg

Less acetone blank wt (W_a) — mg

Weight of particulate in acetone rinse (m_a) (0.0001) mg

Filter(s) container number Becker No. M-16

Date and time of wt 9/23/97 1515 Gross wt 97.8642 mg

Date and time of wt 9/24/97 0900 Gross wt 97.8641 mg

Average gross wt 97.8642 mg

Filter M97-008 & Becker No M-16 Tare wt 97.8649 mg

Weight of particulate on filter(s) (m_f) (0.0007) mg

Weight of particulate in acetone rinse (0.0001) mg

Total weight of particulate (m_n) 0.0000 mg

Note: In no case should a blank residue >0.01 mg/g or 0.001% of the weight of acetone used be subtracted from the sample weight.

Remarks _____

Signature of analyst _____

Signature of reviewer _____

METHOD 5
TARE WEIGHT

Project Number: 5413-004 **Item Weighed:** BEAKERS

		0940	1640	1100					
Date		8/25/97	9/11/97	9/12/97					
R.H. (%)									
Temp. (°F)		78							
Std. Wt.			99.9997	100.0000					
Analyst		TAA	MDM	MDM					
ID Number	**Field Sample Number**	**1st**	**2nd**	**3rd**	**4th**	**5th**	**Final Wt. (g)**	**Tare Wt. (g)**	**Difference (mg)**
M-1		99.5284	99.5285					99.5287	
M-2		96.9392	96.9392					96.9392	
M-3		96.7072	96.7078	96.7075				96.7077	
M-4		102.4354	102.4352					102.4353	
M-5		96.8489	96.8487					96.8488	
M-6		91.8831	91.8832					91.8832	
M-7		99.5635	99.5633					99.5634	
M-8		101.1552	101.1548					101.1550	
M-9		96.6742	96.6737					96.6740	
M-10		100.5937	100.5939					100.5938	
M-11		100.9631	100.9630					100.9631	
M-12		103.6085	103.6078	103.6078				103.6078	
M-13		101.0551	101.0541	101.0547				101.0544	
M-14		96.7491	96.7489					96.7490	
M-15		102.5882	102.5877					102.5880	
M-16		97.4828	97.4822					97.4825	
M-17		99.6886	99.6882	99.6883				99.6883	
M-18		98.5474	98.5469					98.5472	
M-19		100.0674	100.0670					100.0672	
M-20		92.3073	92.3072					92.3073	
M-21		102.7994	102.7989					102.7992	
M-22		96.6699	96.6694					96.6697	
M-23		100.1799	100.1792	100.1793				100.1793	
M-24		101.8553	101.8548					101.8551	

PACIFIC ENVIRONMENTAL SERVICES, INC.

METHOD 5
TARE WEIGHT

Project Number: 5413.004 **Item Weighed:** Filters

1100 MF2026

Date		6/17/97	6/17/97						
R.H. (%)									
Temp. (°F)		74°	76°						
Std. Wt.		0.5000	0.5000						
Analyst		MDM	MDM						
ID Number	Field Sample Number	1st	2nd	3rd	4th	5th	Final Wt. (g)	Tare Wt. (g)	Difference (mg)
MM97-001		0.3832	0.3831				0.3832		
MM97-002		0.3809	0.3807				0.3808		
MM97-003		0.3926	0.3923				0.3925		
MM97-004		0.3829	0.3826				0.3829		
MM97-005		0.3761	0.3758				0.3760		
MM97-006		0.3812	0.3810				0.3811		
MM97-007		-	-				-		
MM97-008		0.3825	0.3822				0.3824		
MM97-009		0.3804	0.3804				0.3804		
MM97-010	REA I-MM9-1	0.3801	0.3800				0.3801		
MM97-011	REA I-MM9-1	0.5073	0.5075				0.5074		
MM97-012	REA I-MM9-1	0.5124	0.5126				0.5125		
MM97-013		0.5051	0.5052				0.5052		
MM97-014	REA I-MM9-1	0.5079	0.5082				0.5081		
MM97-015	REA I-MM9-1	0.5175	0.5177				~~0.5175~~	0.5176 CMC	
MM97-016		0.5114	0.5117				0.5116		
MM97-017		0.4470	0.4467				0.4469		
MM97-018		0.4517	0.4516				0.4517		
MM97-019		0.4509	0.4509				0.4509		
MM97-020		0.4526	0.4524				0.4525		
MM97-021		0.4513	0.4512				0.4513		
MM97-022		0.4414	0.4415				0.4415		
MM97-023		0.4524	0.4521				0.4523		
MM97-024		0.4473	0.4470				0.4472		

PACIFIC ENVIRONMENTAL SERVICES, INC.

METHOD 5
TARE WEIGHT

Project Number: 5413-004 **Item Weighed:** Filters

		1100	2026						
Date		6/17/97	6/17/97						
R.H. (%)		-							
Temp. (°F)		74°	76°						
Std. Wt.		0.5000	0.5000						
Analyst		MDM	MDM						
ID Number	**Field Sample Number**	**1st**	**2nd**	**3rd**	**4th**	**5th**	**Final Wt. (g)**	**Tare Wt. (g)**	**Difference (mg)**
MM97-025		0.4493	0.4491				0.4492		
MM97-026		0.4489	0.4487				0.4488		
MM97-027		0.4447	0.4446				0.4447		
MM97-028		0.4556	0.4560				0.4558		
MM97-029		0.4549	0.4551				0.4550		

PACIFIC ENVIRONMENTAL SERVICES, INC.

METHOD 5
FINAL WEIGHT

Project Number: 5413-004 **Item Weighed:** Beakers, Beakers & Filters

		1420	1640	1315	0830	1515			
Date		9/19/97	9/19/97	9/22/97	9/23/97	9/23/97			
R.H. (%)									
Temp. (°F)									
Std. Wt.		99.9997	99.9999	99.9997	99.9998	99.9999			
Analyst		MMM	MMM	MMM	MPM	MMM			
ID Number	**Field Sample Number**	**1st**	**2nd**	**3rd**	**4th**	**5th**	**Final Wt. (g)**	**Tare Wt. (g)**	**Difference (mg)**
M-1	MM97-003 S-29-0-1	100.3139	100.3159	100.3147	100.3146		100.3146	99.5287	0.7859
M-2	FH RINSE S-29-0-1	96.9954	96.9958				96.9952	96.9392	0.0564
M-3	** Multiple Filters ***	18	104.1382	104.1310	104.1315		104.1313	96.7077	7.4236
M-4	MM97-002 S-29-0-2	102.8722	102.8740	102.8729	102.8729		102.8729	102.4353	0.4376
M-5	FH RINSE S-29-0-2	96.8539	96.8551	96.8543	96.8540		96.8542	96.8488	0.0054
M-6	MM97-004 S-29-0-3	92.2880	92.2893	92.2885	92.2883		92.2884	91.8832	~~0.04~~ 0.4052
M-7	FH RINSE S-29-0-3	99.5688	99.5700	99.5684	99.5686		99.5685	99.5634	0.0051
M-8	MM97-005 S-29-0-4	101.5387	101.5399	101.5382	101.5395	101.5388			
M-9	FH RINSE S-29-0-4				96.6794	96.6792	96.6793	96.6740	0.0053
M-10	MM97-001 S-29-I-1	112.0607	112.0578	112.0534	112.0536		112.0535	100.5938	11.4597
M-11	FH RINSE S-29-I-1	133.2376	133.2320	133.2250	133.2250		133.2250	100.9631	32.2619
M-12	FH RINSE R-29-I-1								
M-13		101.0551	101.0554				101.0553	101.0544	0.0009
M-14	MM97-006 S-29-FB	97.1303	97.1308				97.1306	96.7490	0.3816
M-15	FH RINSE S-29-FB	102.5881	102.5884	102.5881	102.5877		102.5879	102.5880	(0.0001)
M-16	MM97-008 S-29-RB	97.8647	97.8658	97.8638	97.8653	97.8642			
M-17	FILTERS R-29-I-2		101.1098	101.1080	101.1080		101.1080	99.6883	1.4197
M-18	Teflon Reagent Blank.				98.5469	98.5473	98.5471	98.5472	(0.0001)
M-19	FH RINSE R-29-I-2								
M-20	Filter R-MM29-I-3		96.9943	96.9907	95.9418	95.9429			
M-21	FH RINSE R-29-I-3				103.6790	103.6787			

PACIFIC ENVIRONMENTAL SERVICES, INC.

METHOD 5
FINAL WEIGHT

Project Number: S413-004 **Item Weighed:** Probes & Filters

			0940	1835	0905	1025	0935			
Date			9/24/97	9/24/97	9/25/97	9/25/97	9/26/97			
R.H. (%)				56	50	50	54			
Temp. (°F)				70.5	68	70.2	68.3			
Std. Wt.			99.9998	99.9996	100.0000	99.9998	100.0000			
Analyst			MDM	MDM	MDM	MDM	MDM			
ID Number	**Field Sample Number**		**1st**	**2nd**	**3rd**	**4th**	**5th**	**Final Wt. (g)**	**Tare Wt. (g)**	**Difference (mg)**
M-8	M97-005	S79-0-4	101.5392					101.5390		
M-16	M97-008	S79-PB	97.8641					97.8642		
~~M-9~~	Fit Rinse	P-79-I-2	~~95.9414~~							
M-20	Filter	P-79-I-3	95.9414	95.9429	95.9428					
M-21	Fit Rinse	P-79-I-3		103.6790	103.6798	103.6787	103.6787			
M-22				~~100.7699~~	96.7004	96.7007		96.7008		
M-23				100.7699	100.7683	100.7684		100.7684		
M-24					101.8786	101.8797	101.8800	101.8799		
W-10					103.8609	103.8617	103.8613			
W-11				103.8076	103.8077					
W-12				108.2100	108.2096					
CHK WT				0.5000	0.5000					
M97-019				0.5244	0.5242					
M97-017				0.4471	0.4468					
M-12 *				~~235~~	235.0	234.8				
M-19 *					369.2	368.8				
These beakers were weighed on an Ohaus Triple-Beam balance because the gross										
weight exceeded the capacity of the Micro-balance										

PACIFIC ENVIRONMENTAL SERVICES, INC.

Appendix C.2

Analytical Data

Method 23 PCDDs/PCDFs

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:	September 11, 1997
Client ID:	Pacific Environmental Services
P.O. Number:	104-98-0019 & -0020
TLI Project Number:	43057

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Rev. 05/08/97

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Overview

Seven M23 samples were received from Pacific Environmental Services at 19 °C in good condition on August 29, 1997 and were stored in a refrigerator at 4°C. One XAD trap for sample O-M23-RB was received without a chain-of-custody from Pacific Environmental Services at ambient temperature in good condition on September 5, 1997 and was stored in a refrigerator at 4°C. The results for sample O-M23-4 are not included in this data package. The remaining M23 samples and any associated QC samples were extracted and analyzed according to procedures described in the Triangle Laboratories' Data User's Manual (Rev. 12/92-HK-2-AH-2/93). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

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 Pacific Environmental Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually 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. Please consult Triangle Laboratories' Data User's Manual for further details. Specific QC issues associated with this particular project are:

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: Sample O-M23-4 was lost during filtration. Therefore, it was scheduled for re-extraction. The results for this sample will be forwarded as soon as they are available.

The percent recoveries of the internal standards in sample O-M23-3 are elevated due to an insufficient amount of recovery standard added to this sample. However, the areas of the internal standards are not affected by the amount of recovery standard in the sample. Therefore, the concentrations of any analytes detected in sample O-M23-3 are not affected because they are calculated based upon the areas of the internal standards.

Other Comments: Any analytes found in the TLI Blank are detected at a level equal to or less than the Target Detection Limit. This level of contamination is acceptable as per TLI guidelines.

Sample Calculations:

Analyte Concentration

The amount of any analyte is calculated using the following expression.

$$Amt_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$Amt_{(\sigma)}$ is the amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume (W = 1 for M23)

The amount is expressed in nanograms (ng) or picograms (pg).

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:

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_{β} is the integrated current of the characteristic ions of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

The detection limit is expressed in nanograms (ng) or picograms (pg).

Other sample calculations may be found in the Triangle Laboratories Data User's Manual.

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports, as discussed in Triangle Laboratories' Method 23 Data User's Manual. 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 will be 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. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples.

If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' 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 quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

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 **'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. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

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.

A 'U' flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount 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.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 23 (6/93) and Triangle Laboratories' Method 23 Data User's Manual. Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Pacific Environmental Services 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

Craig Myrick

Craig Myrick
Report Preparation Chemist

The total number of pages in the data package is : 263 .

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Expires July 31, 1997. 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, Volatiles, Pesticides, PCB's, BNA's, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1997. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1997. 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.

State of California, Department of Health Services. Expires August 31, 1997. 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, 1997. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1997. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1997.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.

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

Idaho Department of Health and Welfare. Expires November 30, 1997. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non potable 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, 1997. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30. 1997. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires March 31, 1997. 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, 1997. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Extended by state. Temporary certificate until June 30, 1997 or sooner. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Expires July 31, 1997. Dioxin in drinking water.

New York State Department of Health. Expires June 30, 1997. 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 December 31, 1997. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 1997. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1997. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Oklahoma Department of Environmental Quality. Expires October 31, 1997. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires June 30, 1997. Certificate number #99040001 (drinking water). Expires August 31, 1997. 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, 2002. Permit No. S-4958. 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. Expires November 30, 1997. 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 13, 1997. Dioxin in drinking water.

State of Utah. Department of Health. Expires December 31, 1997. 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, 1997. 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, 1997. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires June 30, 1997. 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, 1997. Registration number RT01195835. Controlled substance registration for schedules 1,2,3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1997. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires July 1997. 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 Radioactive Materials License. Expires April 30 1998. License No. 032-0954-1. License authorizes the licensee to receive, acquire, own, possess, transfer, import and use such radioactive materials as designated.

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.

TRIANGLE LABS

DOCUMENT CONTROL

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

COPY of 8/29/97

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc.
Address: 5001 S. Miami Blvd.
RTP, NC 27709-2077
Phone #: 919-941-0333

Contact: Mike Maret
Project Name: ASPHALT PLANT "A"
Project Location: Garner, NC
P.O. #:
Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
Inlet	8/19/97	9:15	Composite	I-M23-1-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Inlet	8/19/97	"	Composite	I-M23-1-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Inlet	8.19.97	"	Composite	I-M23-1-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Inlet	8.19.97	"	Composite	I-M23-1-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.19.97	9:15	Composite	O-M23-1-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-1-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet	"	"	Composite	O-M23-1-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-1-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.20.97	8:22	Composite	O-M23-2-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-2-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:
Received for Laboratory By/Signature:		Date/Time: 8/29/97 12:45	Send Samples To:	*Triangle Laboratories, Inc.* 801 Capitola Drive Durham, North Carolina 27713	

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COPY 8/29/97

13

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc. | Contact: Mike Maret

Address: 5001 S. Miami Blvd. | Project Name: ASPHALT PLANT "A"

RTP, NC 27709-2077 | Project Location: Garner, NC

P.O. #:

Phone #: 919-941-0333 | Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
Outlet	8.20.97	8:22	Composite	O-M23-2-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-2-IMP	2	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.20.97	14:05	Composite	O-M23-3-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-3-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet	"	"	Composite	O-M23-3-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-3-IMP	2	Poly-chlorinated Dioxin/Furans	ARCHIVE
OUTLET	8.19.97	1519	Composite	O-M23-FB-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
OUTLET	"	"	Composite	O-M23-FB-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
OUTLET	"	"	Composite	O-M23-FB-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
OUTLET	"	"	Composite	O-M23-FB-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By: [signature]	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:

Received for Laboratory By/Signature: [signature]

Date/Time: 8/29/97 12:45

Send Samples To: ***Triangle Laboratories, Inc.***

801 Capitola Drive

Durham, North Carolina 27713

CJ 8/29/97

COPY

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc.
Address: 5001 S. Miami Blvd.
RTP, NC 27709-2077
Phone #: 919-941-0333

Contact: Mike Maret
Project Name: ASPHALT PLANT "A"
Project Location: Garner, NC
P.O. #:
Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
~~Outlet~~ 100			Composite	~~O-M23-4-HCl~~		~~18 Trace Metals Plus Hg~~	HCl
Outlet	8.21.97	7:41	Composite	O-M23-4-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet			Composite	O-M23-4-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet			Composite	O-M23-4-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet			Composite	O-M23-4-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet							

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:
Received for Laboratory By/Signature:		Date/Time: 8/29/97 12:45	Send Samples To:	Triangle Laboratories, Inc. 801 Capitola Drive Durham, North Carolina 27713	

COPY 8/29/97

15

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc.
Address: 5001 S. Miami Blvd.
RTP, NC 27709-2077
Phone #: 919-941-0333

Contact: Mike Maret
Project Name: ASPHALT PLANT "A"
Project Location: Garner, NC
P.O. #:
Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
			Composite	O-M23-RB-XAD	1	Poly-chlorinated Dioxin/Furans	XAD → NOT Present 8/29/9
			Composite	O-M23-RB-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
			Composite	O-M23-RB-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
			Composite	O-M23-RB-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By: [signature]	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:
Received for Laboratory By/Signature: [signature]	Date/Time: 8/29/97 12:45	Send Samples To:	*Triangle Laboratories, Inc.* 801 Capitola Drive Durham, North Carolina 27713		

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

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

TLI Project Number 43057
Client: PSC01 - PES, Inc.

Date Received 08/29/97 By Kelvin M. Lynch

Carrier and Number FRANK PHOENIX

Book 181 Page 27

Ice Chest/Box ICE Temp 19.0 C

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
181-27-1A	I-M23-1-XAD I-M23-1-XAD	XAD C02			LA 9/6/97						
181-27-1B	I-M23-1-ACE/TOLUENE I-M23-1-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-1C	I-M23-1-FILTER I-M23-1-FILTER	FILTER C02									
181-27-1D	I-M23-1-IMP I-M23-1-IMP	IMP C02									
181-27-2A	O-M23-1-XAD O-M23-1-XAD	XAD C02									
181-27-2B	O-M23-1-ACE/TOLUENE O-M23-1-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-2C	O-M23-1-FILTER O-M23-1-FILTER	FILTER C02									
181-27-2D	O-M23-1-IMP O-M23-1-IMP	IMP C02									
181-27-3A	O-M23-2-XAD O-M23-2-XAD	XAD C02									
181-27-3B	O-M23-2-ACE/TOLUENE O-M23-2-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-3C	O-M23-2-FILTER O-M23-2-FILTER	FILTER C02									
181-27-3D	O-M23-2-IMP O-M23-2-IMP	IMP C02									
181-27-3E	O-M23-2-IMP O-M23-2-IMP	IMP C02									
181-27-4A	O-M23-3-XAD O-M23-3-XAD	XAD C02					USED				

Receiving Remarks: SAMPLES DELIVERED IN 3 BOXES AND 1 COOLER. ICE IN COOLER WAS WATER WHEN RECIEVED. SAMPLE O-M23-RB-XAD WAS NOT WITH SHIPMENT.

Archive Remarks:

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43057
Client: PSC01 - PES, Inc.

Book 181

Date Received 08/29/97 By Kelli M. Lynch

Page 27

Carrier and Number FRANK PHOENIX

Ice Chest/Box ICE Temp 19.0 C

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
181-27-4B	O-M23-3-ACE/TOLUENE O-M23-3-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY	LA 9/6/97	USED					
181-27-4C	O-M23-3-FILTER O-M23-3-FILTER	FILTER C02									
181-27-4D	O-M23-3-IMP O-M23-3-IMP	IMP C02									
181-27-4E	O-M23-3-IMP O-M23-3-IMP	IMP C02									
181-27-5A	O-M23-FB-XAD O-M23-FB-XAD	XAD C02									
181-27-5B	O-M23-FB-ACE/TOLUENE O-M23-FB-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		USED					
181-27-5C	O-M23-FB-FILTER O-M23-FB-FILTER	FILTER C02									
181-27-5D	O-M23-FB-IMP O-M23-FB-IMP	IMP C02									
181-27-6A	O-M23-4-XAD O-M23-4-XAD	XAD C02									
181-27-6B	O-M23-4-ACE/TOLUENE O-M23-4-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		USED					
181-27-6C	O-M23-4-FILTER O-M23-4-FILTER	FILTER C02									
181-27-6D	O-M23-4-IMP O-M23-4-IMP	IMP C02									
181-27-7A	O-M23-RB-ACE/TOLUENE O-M23-RB-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		USED					
181-27-7B	O-M23-RB-FILTER O-M23-RB-FILTER	FILTER C02									

Receiving Remarks: SAMPLES DELIVERED IN 3 BOXES AND 1 COOLER. ICE IN COOLER WAS WATER WHEN RECIEVED. SAMPLE O-M23-RB-XAD WAS NOT WITH SHIPMENT.

Archive Remarks:

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

Book 181 | Page 83

TLI Project Number 43113
Client: PES03 - Pacific Environmental Services

Date Received 09/05/97 By

Carrier and Number DEBBIE HAGE

Custody Seal : Absent
Chain of Custody : Absent
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : Absent

Sample Seals: Absent
Container...: Intact

NO COOLANT

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
181-83-1	Reagent Blank Xad no C.O.C. *	C01	XAD	LA 9/6/97	USED							

Receiving Remarks: Debbie Hage said this was a sample that Belonged to client. No paperwork arrived with samples; CLIENT needs to provide a Chain of Custody with sample IDs matching the sample labels.

Archive Remarks:

TRIANGLE LABORATORIES, INC.
SAMPLE TRACKING AND PROJECT MANAGEMENT FORM

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

TLI Proj#: 43057-	Samples: 7	TurnAround.: 7 Day(s)
Prod Code: D23061	Matrix.: M23Train	Hold Time..: 30 Day(s)
DetectLim: 0.05 ng	Type...: A	Start Date.: 09/05/97
	Recvd..: 08/29/97	Ship By....: 09/11/97
		DWL Due Dt.: 09/09/97

Analyte List.: tetra-octa PCDDs/PCDFs

Method.....: Method 23:Tetra-Octa (Tol Combined)
Client Proj..: ASPHALT PLANT "A"
Client.....: Pacific Environmental Services (PES03)

P.O. No.....: 104-98-0019 & -0020	Collect Dt/Tm: SeeCOC
Contact.....: Mike Maret	Phone.....: 919-941-0333
Proj. Mgr....: Amy J. Boehm	Fax.....: 919-941-0234
	Sample Origin: NC

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

Prep Project: 03804	Prespike Standard: USF-CS
	Prespike Amount..: 4.0ng
	Extraction Exp...: 09/18/97

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

Reporting Format: Report Option II

See MILES for Instructions/Communications.

Completed by: _____ DATE: _____

Reviewed by: _____ DATE: 9/5/97 (PMGT0197)

TRIANGLE LABORATORIES OF RTP, INC.

PROJECT COMMUNICATION TRACKING FORM

TLI Project Number: 43057

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.

ate	Name	Comment / Decision / Resolution / Action / Observation
		XAD - White
		PSC01-PES, Inc. I-M23-1-FILTER Project: 43057 181-27-1C — 1 Filter · white with approx 0.6g of brown ash residue
		PSC01-PES, Inc. I-M23-1-XAD Project: 43057 181-27-1A — gas smell
		XAD - White
		PSC01-PES, Inc. O-M23-1-FILTER Project: 43057 181-27-2C — 1 Filter · white / brown
		PSC01-PES, Inc. O-M23-1-XAD Project: 43057 181-27-2A — gas smell
		XAD - white
		PSC01-PES, Inc. O-M23-2-FILTER Project: 43057 181-27-3C — 1 Filter white / brown
		PSC01-PES, Inc. O-M23-2-XAD Project: 43057 181-27-3A — gas smell

TRIANGLE LABORATORIES OF RTP, INC.

PROJECT COMMUNICATION TRACKING FORM

TLI Project Number: 43057

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.

e	Name	Comment / Decision / Resolution / Action / Observation	
		PSC01-PES, Inc. O-M23-3-XAD Project:43057 181-27-4A	XAD - white
		PSC01-PES, Inc. O-M23-3-FILTER Project:43057 181-27-4C	1 Filter - white/H brown - gas smell
		PSC01-PES, Inc. O-M23-FB-XAD Project:43057 181-27-5A	XAD white
		PSC01-PES, Inc. O-M23-FB-FILTER Project:43057 181-27-5C	1 Filter white
		PSC01-PES, Inc. O-M23-4-XAD Project:43057 181-27-6A	white - XAD
		PSC01-PES, Inc. O-M23-4-FILTER Project:43057 181-27-6C	1 Filter - white with H brown residue
		PES03-Pacific Environmental Services Reagent Blank Xad Project:43113 181-83-1	1 Filter white XAD White
		PSC01-PES, Inc. O-M23-RB-FILTER Project:43057 181-27-7B	

22

Date: 09/06/97
Time: 15:16

TRIANGLE LABORATORIES, INC.
Wet Lab MM5/PUF Observations
Project: 43057

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 M23 Blank	0	WHITE				NONE	03804	ADKINS	09/06	15:14	F
001		181-27-1A-C	I-M23-1	1	WHITE	WHITE/BRWN	WHITE		GAS	03804	ADKINS	09/06	15:14	F
002		181-27-2A-C	O-M23-1	1	WHITE	WHITE/BRWN	WHITE		GAS	03804	ADKINS	09/06	15:14	F
003		181-27-3A-C	O-M23-2	1	WHITE	WHITE/BRWN	WHITE		GAS	03804	ADKINS	09/06	15:14	F
004		181-27-4A-C	O-M23-3	1	WHITE	WHITE/BRWN	WHITE		GAS	03804	ADKINS	09/06	15:14	F
005		181-27-5A-C	O-M23-FB	1	WHITE	WHITE	WHITE		NONE	03804	ADKINS	09/06	15:14	F
006		181-27-6A-C	O-M23-4	1	WHITE	WHITE/BRWN	WHITE		GAS	03804	ADKINS	09/06	15:14	F
007		181-27-7AB&	O-M23-RB	1	WHITE	WHITE	WHITE		NONE	03804	ADKINS	09/06	15:16	F
008		TLI LCS	TLI LCS	0	WHITE				NONE		ADKINS	09/06	15:14	F
009		TLI LCSD	TLI LCSD	0	WHITE				NONE		ADKINS	09/06	15:14	F

*** End of Report ***

TRIANGLE LABORATORIES, INC. PAGE 1 OF 1

Dioxin Sample Preparation Tracking & Management Form

ject: 43057 Client: Pacific Environmental Services (PES03)

vent(s)/Acid(s): Silica / _____ / _____ Method: Method 23:Tetra-Octa (Tcl Combined) Matrix: (2) Solids

Numbers: 57461 / _____ / _____ Extraction Date: 9/16/97

Spike: 40 µl conc: 0.1000 ng/µl

Spike: ____ µl conc: ____ ng/µl

Spike: 0 µl conc: 0.0000 ng/µl

Spike: 0 µl conc: 0.0000 ng/µl

Spike: 20 µl conc: 0.01 ng/µl

crd	TLI / SAMPLE / ID	CLIENT / SAMPLE ID	GROSS WEIGHT Before	GROSS WEIGHT After	SAMPLE SIZE g / ml	LA	LA	GNM		Chemist
						5234I	5233B	5235 E		Spike =
						USF I	USF NW	USF-A		* ID
						7/02/98	12/17/97	07/02/98	__/__/__	* Expir
						9/06/97	9/06/97	9/08/97	__/__/__	* Date
						14:00	12:03	13:45	__:__	* Time
						0.1 ng/µl	0.01 ng/µl	0.1 ng/µl	____ ng/µl	* Conc.
						40 µl	40 µl	40 µl	____ µl	* Vol.
	TLI Blank	TLI M23 Blank				L.C.		MS		Any Left yes/no
	181-27-1A-C	I-M23-1				L.C.		MS		Any Left yes/no
2	181-27-2A-C	O-M23-1				L.C.		MS		Any Left yes/no
3	181-27-3A-C	O-M23-2				L.C.		MS		Any Left yes/no
4	181-27-4A-C	O-M23-3				L.C.		MS		Any Left yes/no
5	181-27-5A-C	O-M23-FB				L.C		MS		Any Left yes/no
6	181-27-6A-C	O-M23-4	sample lost 9/10/97 JDJ			L.C.		MS		Any Left yes/no
7	181-27-7AB& 181-83-1	O-M23-RB				L.C.		MS		Any Left yes/no
8	TLI LCS	TLI LCS				L.C.	L.C. *	MS		Any Left yes/no
9	TLI LCSD	TLI LCSD				L.C.	L.C. *	MS		Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal.

Comments: (1) & (2) Acetone/Toluene Rinses had fine particles - they were filtered through Soft thimbles before Rotovaping 9/5/97

Initials: LA Date: 9/6/97

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.: 43057

Ext S#.crd and TLI Number	1	2	4A	6	3	5A	7	8A	9
000 TLI Blank	LA 9/6/97	40A ms 9.8.97	ms 9.8.97	ms 9.8.97	TMW 9.8.97	TMW 9.8.97	TMW 9.8.97	LA 9/9/97	9/9/97
001 181-27-1A-C									
002 181-27-2A-C									
003 181-27-3A-C									
004 181-27-4A-C									
005 181-27-5A-C									sample lost 40M 9/10/97
006 181-27-6A-C				TMW 9.8.97					
007 181-27-7AB& 181-83-1				ms 9.8.97					
008 TLI LCS				TMW 9.8.97					
009 TLI LCSD									JLE

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	DETAILS (circle)
(1)	EXTRACTION	ON ✓ OFF Soxhlet / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilutio
(2)	SPIKE AFTER EXTRACTION	9/6/97 9/7/97 LA 14:30 06:30
(3)	ADD TRIDECANE	40mL / 10mL A / B Dryness
(4)	ROTOVAP	
5)	COMBINE	
(6)	DIVIDE / LIPID DETERMINATION	20%/80% 50%/50% 5mL/20mL Other_____
(7)	SOLVENT EXCHANGE A	
(8)	CLEANUP/ Double Column	DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
(9)	TRANSFER	
10)	ADDITIONAL CLEANUP	Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
11)	FINAL TRANSFER	

Comments: _____

Rev 06/24/97 (PSTMF 4

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 43057

Transfer From: DWLH5 To: DMS5

	Initials..	Date.....	Time...
Released by:	JDH	09/10/97	12:10
Accepted by:	WG	9/10/97	14:36

MILES.ID.....		TLI_No.....	Cust.Id.....
43057-	-000	TLI Blank	TLI M23 Blank
43057-	-001	181-27-1A-C	I-M23-1
43057-	-002	181-27-2A-C	O-M23-1
43057-	-003	181-27-3A-C	O-M23-2
43057-	-004	181-27-4A-C	O-M23-3
43057-	-005	181-27-5A-C	O-M23-FB
43057-	-007	181-27-7AB&	O-M23-RB
43057-	-008	TLI LCS	TLI LCS
43057-	-009	TLI LCSD	TLI LCSD

XfrCOC (Rev 11/01/94)

Additional comments or instructions:

TRIANGLE LABORATORIES, INC.

HR GC/HRMS ANALYSIS

Method: Method 23:Tetra-Octa (Tol Combined)

Required Detection Limit: 0.05 ng

PROJECT: 43057

RS Conc 20 µl @ 100.0 PG/µl

SAMPLE INFORMATION

S#.crd	TLI SAMPLE ID / CLIENT SAMPLE ID	1ST COLUMN GC/MS FILENAME COLUMN: DB-5	CONFIRM	2ND COLUMN CONFIRM FILENAME COLUMN: DB-225	USF-RS VOLUME SOLN ID	USF-RS INIT. DATE	ANALYSIS COMMENTS
000	TLI Blank / TLI M23 Blank	S975809		1X973081	20ul 5296J	BJG 9/10/97	16:00
001	181-27-1A-C / I-M23-1	S975808	N	82			
002	181-27-2A-C / O-M23-1	S975809	N	83			
003	181-27-3A-C / O-M23-2	S975810	N	P973845			
004	181-27-4A-C / O-M23-3	S975811	N	4C			
005	181-27-5A-C / O-M23-FB	S975816	N	—	20ul 5296J	BJG 9/10/97	
006	181-27-6A-C / O-M23-4	sample lost 40µl 9/10/97			—	—	
007	181-27-7AB& 181-83-1 / O-M23-RB	S975817	N	P973847	20ul 5296J	BJG 9/10/97	
008	TLI LCS / TLI LCS	S975818		—			
009	TLI LCSD / TLI LCSD	S975819		—	20ul 5296J	BJG 9/10/97	

Type: A

Comments:

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
705	DB5	5711413	J02	2.0 µl	EPCWS2	EPCWS

Signature

9/10/97
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
5975787 87	9.10.97	01:01	413036A	181-6-2	1	GN075-SL-087-[illegible]	Auto	2.3 EG	MD 9/9/97	
88	↓	01:41		TH LCS	2	TH LCS		8.8 EG		
89	↓	02:20	↓	TLI LCSD	3	TLI LCSD		1.0 EG		
90		02:59	413096	TLI Blank	0	TLI PUF Blank		6.4 EG		
91		03:39		181-66-3	1	FX DIO 03 970829		1.0 EG		
92	↓	04:18	↓	181-66-4	2	FX DIO 04 970829	↓	1.0 EG	↓	
5975793	9/10/97	5:35	—	4513	—	8290 CCS.0	M-0 #3	7.1 EG	Jmm 9/10/97	Word Ending only Jmm 9/11/97
5975794	9/10/97	6:41	—	4513	—	8290 CC 50	M-0 #3	6.1 EG	Jmm 9/10/97	DSBC Jmm 9/11/97 3rd Chromatography Thanks for column
5975795	9/10/97	9:36	—	5170B	—	RTCHIC	RTCHIC	12%	BJG 9/10/97	Good BJG 9/10/97
5975796	9/10/97	—	—	4514G	—	M23 Concal 50.0	M-0 50.0	—	BJG 9/10/97	NG 3rd Chromatography 9/11
5975797	9/10/97	12:08	—	4514G		M23 Concal 50.0	M-0 50.0	7.8 EG	BJG 9/10/97	Good BJG M23 Cancel 9/10/97
5975798	9/10/97	13:11	—	5170B	—	RTCHIC	RTCHIC	12%	BJG 9/10/97	Good BJG 9/10/97
5975799	9/10/97	14:06	—	5036	—	MITI Concal #4	5036	1.7 EG	BJG 9/10/97	Good BJG 9/10/97

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 6:03 AM
ConCal Due: 00:07 (12:07 A.M.)

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
705	DB5	571413	TQ2	2.0ul	EPCUS2	EBCUS

Signature: Brenda J Blume Date: 9/10/97

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
S975800	9/10/97	15:33	43107	TCI BLANK	0	TCI M23 BLANK	AUTO	5.1 E6	BJG 9/10/97	MITSUBISHI
S975801	"	1614	"	181-77-1-4	1	N-008-1-4=XIP-7027	"	5.6 E6	"	"
S975802	"	1654	"	TCI LCS	2	TCI LCS	"	5.4 E6	"	"
S975803	9/10/97	1733	43107	TCI LCSD	3	TCI LCSD	AUTO	5.4 E6	BJG 9/10/97	
S975804	9/10/97	1830	—	5296J	—	Rs-100	Auto RS-100	4.7 E6	ML 9/10/97	
S975805	"	1913	43107	TCI Blank 4310-7	0	TCI M23 Blank	"	5.6 E6	ML 9/10/97	
S975806	"	1952	"	181-77-1-4	1	N-008-1-4=XIP-7027	"	5.2 E6	"	
S975807	"	2032	43059	TCI Blank 4305-7	0	TCI M23 Blank	"	5.6 E6	"	
S975808	"	2111	"	181-27-1AC	1	J-M23-1	"	5.2 E6	"	
S975809	"	2150	"	181-27-2AC	2	O-M23-1	"	5.1 E6	"	
S975810	"	2229	"	181-27-3A-C	3	O-M23-2	"	4.8 E6	"	
S975811	"	2309	"	181-27-4AC	4	O-M23-3	"	9.4 E6	"	
S975812	9/10/97	23:47	—	5170B	—	RETENTION WINDOW CHECK	RTC11K		KS 9/10/97	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 00:08 (12:08 AM)
ConCal Due: _____

94

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
105	DB5	5711413	T02	2.0 ul	EPCW52	GPCW

Signature: Jennifer McLaughlin Date: 9/11/97

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
5975813	9.11.97	00:59	—	4514G	—	M23 ConCal 50.0	m-0 50	—	Jm 9/11/97	NG OCDD retn Jm 9.11.97
5975814	9/11/97	2:02	—	4514G	—	8260/m23 ConCal 50.0	m-0 50	4	Jm 9/11/97	Cloud Jm 9.11.97
15	↓	3:08	43085	Blank	0	TLI M23 Blank	Auto	38 EG	Jm 9/11/97	qc deflections BJG 9/11/97
16	↓	3:46	43057	191-27-5A C	5	0-m23-FB		40 EG		
17		4:25	↓	191-27-1A5 & B5	7	0-M23-RB		4.4 EG		
18		5:04	↓	LCS	8	LCS		3.5 EG		fixed BJG 9/11/97 RO. OCDD IS 9-9.11.97
19		5:44	43057	LCSD	9	LCSD		4.1 EG		
20		6:23	43085	191-55-1ABE	1	0-M23-1		1.5 EG		Retention time off BJG 9/11/97 (NG)
21		7:02	↓	-2ABE	2	0-M23-2		1.6 EG		Retention time off BJG 9/11/97 (NG)
22		7:42	↓	-3ABE	3	0-M23-3		1.8 EG		Retention time off BJG 9/11/97 (NG)
23			↓	-4ABD	4	0-M23-FB				DID
24			↓	-5ABD	5	I-M23-1				NOT BJG 9/11/97
5975825			43085	191-55-6ABD	6	I-M23-2	Auto		Jm 9/11/97	RUN

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 14:02
ConCal Due: _____

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70X	DB225	6301112	TTL	2.0 µl	X-Conf TT	X-Conf TT

Bernard J Glenn
Signature

9/10/97
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
X973062	9/10/97	9:00	—	4497D	—	TETRA CONCAL 5.0	TETRA 5.0	4.3 E7	BJG 9/10/97	Good for beg BJG 9/10/97
X973063	9/10/97	10:06	—	5296J	—	RS-100	RS100	3.8 E7	BJG 9/10/97	Clean BJG 9/10/97
X973064	9/10/97	12:02	42792r1	TLI BLANK	1	TLI WATER BLANK	x8261	7.6 EC	BJG 9/10/97	SOURCE
X973065	9/10/97	12:51	42792r1	178-59-113	2	G9708067-4	x8261	2.0 E7	BJG 9/10/97	HEATER BJC 9/10/97
X973066	9/10/97	—	42792r1	178-59-313	4	G9708067-9	x8261	—	BJG 9/10/97	BLOWN
X973067	9/10/97	—	42811r3	178-78-6	7	Can-2-003	x8261	—	BJG 9/10/97	RESHOOT
X973068	9-11-97 9-10-97	10:59	—	5170B	—	RTCHK	RTCHK	12%	GB 9-11-97	DSTC Good BJG 9/11/97
X973069	9/11/97	12:00	—	4497D	—	TETRA CONCAL 5.0	TETRA 5.0	3.5 E7	BJG 9/11/97	Good BJG 9/11/97
X973070	9/11/97	12:58	—	5296L	—	RS 100	RS100	2.7 E7	MC 9/11/97	Clean BJG 9/11/97
X973071	9/11/97	13:38	42999 BJG 9/11/97	~~150-68-7~~ ~~42999~~	7	RUN#16 LOCATION 1	x8261	12 E7	BJG 9/11/97	
						GA075-WF-087-00	x8261	8.7 EC	BJG 9/11/97	Added Surr BJG 9/11/97
X973072	9/11/97	14:19	43038B	181-6-HA	1		x8261	6.7 EC	BJG 9/11/97	Added Surr BJG 9/11/97
X973073	9/11/97	15:00	42792r1	TLI BLANK	0	TLI WATER BLANK	x8261	2.4 E7	BJG 9/11/97	Added Surr BJG 9/11/97
X973074	9/11/97	15:42	42792r1	178-59-113 ~~G9708067-4~~	1	G9708067-4				

(TE) BJG 9/11/97

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 21:00 (9:00 PM)
ConCal Due: 00:00 (12:00 AM) Midnight

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70X	DB225	630112	TTI	2µl	X-conf-TT	X-conf-TT

Signature

9/11/97
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
x973075	9/11/97	15:42	42792r1	178-59-3B	4	G9708067-9	X8261	2.4 E7	MS 9/11/97	added Std [illegible] BJG 9/11/97
~~x973076~~	~~9/11/97~~	16:34	42811r3 42792r1	178-~~36~~-6	7	CAR-2-003	X8261	2.8 E7		Not stat overwritten
x973077	9/11/97	17:16	43064	181-34-1A	2	GTEC0897B	X8261	2.4 E7	MS 9/11/97	6µl more added; 3rd solution shot
x973078	9/11/97	18:03	43064	181-34-2A	3	GTEC0897Y	X8261	2.2 E7	MS 9/11/97	
x973079	9/11/97	18:51	43064	Clean-Up Blk	4	Clean-Up Blank	X8261	3.4 E7	MS 9/11/97	
x973079	9/11/97	19:34	43065B	181-35-3	2	90-LAKE 8/28/97	X8261	3.6 E7	MS 9/11/97	
x973080	9/11/97	20:26	43065B	181-35-4	3	90B-QUARRY 8/28/97	X8261	3.6 E7	MS 9/11/97	
x973081	9/11/97	21:07	43057	TLI Blank	0	TLI M23 Blank	X8261	2.9 E7	MS 9/11/97	
x973082	9/11/97	21:48	43057	181-27-1A	1	I-M23-1	X8261	3.7 E6	MS 9/11/97	6µl more added 3rd shot
x973083	9/11/97	22:34	43057	181-27-2A	2	O-M23-1	X8261	2.9 E7	MS 9/11/97	
x973084	9/11/97	23:23	43057	4497D	—	Tetra Cal 5.0	Tetra 5.0	2.9 E7	MS 9/11/97	Good F+B
x973085	9/12/97	00:09	—	5170B	—	Retention Window Check	R2411C	—	Qm 9/12/97	N4 >25% Qm 9.12.97 DS at Qm 9.12.97
x973086	9/12/97	01:03	—	5170B	—	" " "	R2411C	—	Qm 9/12/97	N4 >25% Qm 9.12.97

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: 00:00 (12:00 AM, 24)
ConCal Due: _____

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70X	DB225	6301112	TTI	2.0 µL	X_CONFIG.TT	X_CONFIG.TT

Signature: Glenn Graham Date: 9-12-97

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
X973087	9-12-97	10:59	—	5170B	—	RTCHK	RTCHK	16%	GG 9-12-97	
X973088	9-12-97	13:06	—	41520C	—	TETRA CONCAL 5.0	TETRA 5.0 2 S/VO	4.0 E7	GG 9-12-97	
X973089	9-12-97		—	52961	—	R $100			GG 9-12-97	
X973090	9-12-97		43033	181-3-1A	2	2801-001-3097	X8261		GG 9-12-97	

* 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
70P	DB 225	G360413	TH1	2 µl	DB 225	DB 225

Signature: DB Date: 9/12/97

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P9723842	9/12/97	10:13	—	51708	—	RTCHA	MCH	14%	DB 9/12/97	
143	1	11:04	—	44974	—	TETRA LOW CAL 5.0	TETRA 5.0	1.9 EC	1	Good DB 9/14/97
144	1	11:59	—	52962	—	RS-100	RS-100	1.7 EC	1	
145	1	12:45	43057	181-27-3A	3	O-H23-2	P9081	1.9 EC	1	
146	1	13:32	1	1-4A	4	1 -3	1	3.0 EC	1	
147	1	14:19	1	1-7A 181-83-1	7	1 -RS	1	2.9 EC	1	
148	1									

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

TRIANGLE LABS

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

Data File	S975807	S975808	S975809	S975810
Sample ID	TLI M23 Blank	I-M23-1	O-M23-1	O-M23-2
Units	ng	ng	ng	ng
Extraction Date	09/06/97	09/06/97	09/06/97	09/06/97
Analysis Date	09/10/97	09/10/97	09/10/97	09/10/97
Instrument	S	S	S	S
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDD	(0.003)	{0.004}	(0.003)	(0.006)
12378-PeCDD	(0.004)	0.01	(0.005)	(0.008)
123478-HxCDD	(0.006)	0.02	(0.006)	(0.01)
123678-HxCDD	(0.005)	0.04	0.01	{0.02}
123789-HxCDD	(0.005)	0.05 PR	0.02	(0.01)
1234678-HpCDD	0.03	0.72	0.06 B	{0.04} B
OCDD	{0.02}	44.5	0.53	0.19 B
2378-TCDF	0.007	0.04 B	0.02 B	0.03 B
12378-PeCDF	(0.003)	0.008	{0.006}	(0.006)
23478-PeCDF	0.007	0.02 B	{0.01} B	(0.006)
123478-HxCDF	0.03	0.06 PRB	0.04 PRB	0.04 B
123678-HxCDF	{0.008}	0.02 B	0.01 B	0.01 B
234678-HxCDF	0.01	{0.02} PRB	0.02 PRB	0.02 PRB
123789-HxCDF	(0.004)	0.007	(0.004)	(0.008)
1234678-HpCDF	0.04	0.12 PRB	{0.07} PRB	0.07 PRB
1234789-HpCDF	{0.01}	0.04 B	0.04 B	0.02 B
OCDF	{0.02}	0.16 B	0.04 B	0.06 B
TOTAL TCDD	0.008	0.05	0.007	0.02
TOTAL PeCDD	{0.01}	0.07	{0.04}	0.03
TOTAL HxCDD	0.04	0.45	0.12	0.08
TOTAL HpCDD	0.03	1.6	0.10	0.04
TOTAL TCDF	0.01	0.14	0.03	0.04
TOTAL PeCDF	0.007	0.12	0.05	(0.006)
TOTAL HxCDF	0.05	0.19	0.12	0.11
TOTAL HpCDF	0.06	0.30	0.04	0.12
Other Standards Percent Recovery Summary (% Rec)				
37Cl-TCDD	98.6	97.6	96.1	98.8
13C12-PeCDF 234	93.3	93.2	86.1	85.1
13C12-HxCDF 478	90.4	94.6	87.3	92.1
13C12-HxCDD 478	82.3	88.0	81.0	91.9
13C12-HpCDF 789	75.1	83.6	88.7	84.9
Other Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 789	80.9	91.3	58.1	54.3
13C12-HxCDF 234	95.7	99.0	61.4	62.0
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	90.5	98.5	69.4	62.4
13C12-2378-TCDD	76.0	89.0	63.2	55.6
13C12-PeCDF 123	87.2	95.5	67.1	57.6
13C12-PeCDD 123	93.1	103	68.2	60.5

TRIANGLE LABORATORIES, INC.
Sample Result Summary for Project 43057
Method 23X Full Screen Analyses (DB-5)

Data File	S975807	S975808	S975809	S975810
Sample ID	TLI M23 Blank	I-M23-1	O-M23-1	O-M23-2
Units	ng	ng	ng	ng
Extraction Date	09/06/97	09/06/97	09/06/97	09/06/97
Analysis Date	09/10/97	09/10/97	09/10/97	09/10/97
Instrument	S	S	S	S
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Internal Standards Percent Recovery Summary (% Rec)				
13C12-HxCDF 678	102	102	68.8	65.7
13C12-HxCDD 678	87.2	93.6	65.4	58.8
13C12-HpCDF 678	78.9	71.1	42.3	41.3
13C12-HpCDD 678	80.2	78.3	50.4	44.9
13C12-OCDD	55.7	60.5	36.0	27.5

Data File	S975811	S975816	S975817
Sample ID	O-M23-3	O-M23-FB	O-M23-RB
Units	ng	ng	ng
Extraction Date	09/06/97	09/06/97	09/06/97
Analysis Date	09/10/97	09/11/97	09/11/97
Instrument	S	S	S
Matrix	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet
Analytes			
2378-TCDD	{0.003}	(0.01)	(0.004)
12378-PeCDD	0.005	(0.01)	0.01
123478-HxCDD	0.008	(0.01)	(0.006)
123678-HxCDD	0.02	{0.02}	0.02
123789-HxCDD	{0.01} PR	{0.02} PR	{0.02} PR
1234678-HpCDD	0.06 B	0.06 B	0.08 B
OCDD	0.13 B	0.11 B	0.11 B
2378-TCDF	0.02 B	(0.006)	{0.006}B
12378-PeCDF	0.007	{0.01}	{0.008}
23478-PeCDF	0.01 B	0.03 B	0.02 B
123478-HxCDF	0.06 PRB	0.07 B	0.06 PRB
123678-HxCDF	0.02 B	0.03 B	0.02 B
234678-HxCDF	0.02 PRB	0.03 PRB	0.03 PRB
123789-HxCDF	(0.003)	(0.01)	0.007
1234678-HpCDF	0.09 PRB	{0.09} PRB	0.11 B
1234789-HpCDF	{0.03} B	0.04 B	0.04 B
OCDF	0.06 B	0.07 B	0.06 B
TOTAL TCDD	0.01	{0.02}	{0.01}
TOTAL PeCDD	0.03	0.02	0.05
TOTAL HxCDD	0.15	0.06	0.15
TOTAL HpCDD	0.06	0.06	0.13
TOTAL TCDF	0.03	(0.006)	{0.006}
TOTAL PeCDF	0.06	0.03	0.02
TOTAL HxCDF	0.17	0.13	0.18
TOTAL HpCDF	0.09	0.10	0.17
Other Standards Percent Recovery Summary (% Rec)			
37Cl-TCDD	98.4	123	107
13C12-PeCDF 234	88.6	112	102
13C12-HxCDF 478	98.2	91.1	90.2
13C12-HxCDD 478	87.9	82.4	91.6
13C12-HpCDF 789	91.3	85.4	89.0
Other Standards Percent Recovery Summary (% Rec)			
13C12-HxCDF 789	120	32.2 V	66.8
13C12-HxCDF 234	173	34.1 V	76.9
Internal Standards Percent Recovery Summary (% Rec)			
13C12-2378-TCDF	184	49.5	88.5
13C12-2378-TCDD	163	34.3 V	76.4
13C12-PeCDF 123	161	44.9	89.1
13C12-PeCDD 123	170	54.8	99.3

TRIANGLE LABORATORIES, INC.
Sample Result Summary for Project 43057
Method 23X Full Screen Analyses (DB-5)

Data File	S975811	S975816	S975817
Sample ID	O-M23-3	O-M23-FB	O-M23-RB
Units	ng	ng	ng
Extraction Date	09/06/97	09/06/97	09/06/97
Analysis Date	09/10/97	09/11/97	09/11/97
Instrument	S	S	S
Matrix	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet
Internal Standards Percent Recovery Summary (% Rec)			
13C12-HxCDF 678	187	34.7 V	74.0
13C12-HxCDD 678	173	40.1	78.2
13C12-HpCDF 678	105	32.7	56.7
13C12-HpCDD 678	109	38.2	61.3
13C12-OCDD	65.1	36.9	60.9

{Estimated Maximum Possible Concentration}, (Detection Limit).

Data File	X973081	X973082	X973083	P973845
Sample ID	TLI M23 Blank	I-M23-1	O-M23-1	O-M23-2
Units	ng	ng	ng	ng
Extraction Date	09/06/97	09/06/97	09/06/97	09/06/97
Analysis Date	09/11/97	09/11/97	09/11/97	09/12/97
Instrument	X	X	X	P
Matrix	XAD	M23TRAIN	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet	Soxhlet	Soxhlet
Analytes				
2378-TCDF	0.005 B	{0.02} B	{0.008}B	(0.02)
Internal Standards Percent Recovery Summary (% Rec)				
13C12-2378-TCDF	72.6	73.7	59.8	52.4

TRIANGLE LABORATORIES, INC.
Sample Result Summary for Project 43057
Method 23X (DB-225)

Data File	P973846	P973847
Sample ID	O-M23-3	O-M23-RB
Units	ng	ng
Extraction Date	09/06/97	09/06/97
Analysis Date	09/12/97	09/12/97
Instrument	P	P
Matrix	M23TRAIN	M23TRAIN
Extraction Type	Soxhlet	Soxhlet
Analytes		
2378-TCDF	0.02 B	(0.01)
Internal Standards	Percent Recovery Summary (% Rec)	
13C12-2378-TCDF	148	67.7

{Estimated Maximum Possible Concentration}, (Detection Limit).

Pacific Environmental Services

TLI Project: 43057 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: TLI M23 Blank — Analysis File: S975807

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPX23704
TLI ID:	TLI Blank	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/10/97	ConCal:	S975797
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% 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	0.006				—
1,2,3,6,7,8-HxCDD	ND	0.005				—
1,2,3,7,8,9-HxCDD	ND	0.005				—
1,2,3,4,6,7,8-HpCDD	0.03			1.14	32:02	—
1,2,3,4,6,7,8,9-OCDD	EMPC		0.02			—
2,3,7,8-TCDF	0.007			0.68	20:25	—
1,2,3,7,8-PeCDF	ND	0.003				—
2,3,4,7,8-PeCDF	0.007			1.76	25:30	—
1,2,3,4,7,8-HxCDF	0.03			1.09	28:22	—
1,2,3,6,7,8-HxCDF	EMPC		0.008			—
2,3,4,6,7,8-HxCDF	0.01			1.13	29:00	—
1,2,3,7,8,9-HxCDF	ND	0.004				—
1,2,3,4,6,7,8-HpCDF	0.04			0.96	31:11	—
1,2,3,4,7,8,9-HpCDF	EMPC		0.01			—
1,2,3,4,6,7,8,9-OCDF	EMPC		0.02			—

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.008	1			—
Total PeCDD	EMPC			0.01	—
Total HxCDD	0.04	1		0.06	—
Total HpCDD	0.03	1		0.05	—
Total TCDF	0.01	2			—
Total PeCDF	0.007	1			—
Total HxCDF	0.05	3		0.08	—
Total HpCDF	0.06	3		0.07	—

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Printed: 14:55 09/11/97

TLI Project: 43057
Client Sample: TLI M23 Blank

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975807

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.6	90.5	40%-130%	0.74	20:24	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.0	76.0	40%-130%	0.78	21:13	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.5	87.2	40%-130%	1.44	24:42	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	3.7	93.1	40%-130%	1.52	25:51	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	4.1	102	40%-130%	0.51	28:28	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.5	87.2	40%-130%	1.22	29:12	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.2	78.9	25%-130%	0.44	31:11	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.2	80.2	25%-130%	1.06	32:02	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4.5	55.7	25%-130%	0.89	34:31	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.9	98.6	70%-140%		21:14	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.7	93.3	70%-140%	1.46	25:29	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.6	90.4	70%-140%	0.50	28:22	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.3	82.3	70%-140%	1.21	29:06	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.0	75.1	70%-140%	0.43	32:23	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.2	80.9	40%-130%	0.50	29:41	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.8	95.7	40%-130%	0.50	28:59	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:00	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.24	29:29	—

Data Reviewer: _____ 09/11/97

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Initial ....Date....

Data Review By: CM 9/11/97 Calculated Noise Area: 1.48

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 S975807B.dbf
09/11/97 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						0.823-1.104			
304-306	DC	NL		0:00	RO	0.12	0.16			0.000			
	DC	SN		16:57	RO	1.17	2.16			0.831			
	DC	SN		17:57	RO	1.35	1.31			0.880			
	DC	SN		18:07	RO	0.48	2.92			0.888			
D	D	SN		18:53	RO	1.26	4.16			0.926			
D	D	SN		19:30	RO	1.54	6.27			0.956			
D	D	SN		19:44		0.89	4.72			0.967			
				19:55		0.78	6.92	3.03	3.89	0.976			
				20:25		0.68	13.19	5.36	7.83	1.001	2378-TCDF		AN
D	D	SN		22:20	RO	0.53	5.61			1.095			
	DC	WH		22:44	RO	0.99	2.69			1.114			
304-306			2 Peaks				20.11						
13C12-TCDF				0.65-0.89						0.951-1.049			
316-318	DC	NL		0:00	RO	5.57	0.12			0.000			
	DC	WL		19:11		0.72	37.82			0.940			
				19:33	RO	0.90	6.32	3.23	3.57	0.958			
				19:54		0.73	26.14	11.03	15.11	0.975			
				20:24		0.74	5,711.00	2,422.50	3,288.50	1.000	13C12-2378-TCDF		ISO
				20:54	RO	0.60	21.68	9.43	15.77	1.025			
316-318			4 Peaks				5,765.14						

---------- Above: TCDF / TCDD Follows ----------

TCDD				0.65-0.89						0.857-1.061			
320-322	DC	NL		0:00	RO	1.14	0.12			0.000			
				18:16		0.89	9.47	4.47	5.00	0.861			
D	D	SN		18:44	RO	1.11	5.15			0.883			
	DC	SN		19:15	RO	7.10	0.18			0.907			
	DC	SN		19:55	RO	2.05	2.64			0.939			
	DC	SN		20:21	RO	4.52	1.61			0.959			
	DC	SN		20:36	RO	1.05	1.31			0.971			
	DC	SN		21:01	RO	0.47	0.46			0.991			
	DC	SN		21:16	RO	0.41	3.75			1.002	2378-TCDD		AN
	DC	SN		21:39	RO	0.58	0.57			1.020			
	DC	SN		22:03	RO	1.95	0.35			1.039			
	DC	SN		22:07	RO	1.35	0.55			1.042			
	DC	SN		22:19	RO	0.52	0.74			1.052			
	DC	WH		22:37	RO	2.20	1.13			1.066			
	DC	WH		22:44		0.69	2.25			1.071			
320-322			1 Peak				9.47						

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										0.906-1.094			
328	DC	NL		0:00			0.07			0.000			
				19:40			17.32	17.32		0.927			
				21:14			3,223.15	3,223.15		1.001	37Cl-TCDD		SUR1
328				2 Peaks			3,240.47						
							0.65-0.89			0.906-1.094			
13C12-TCDD										0.000			
332-334	DC	NL		0:00	RO	25.25	0.14			11.00	0.936		
				19:52		0.86	20.47	9.47		2,654.09	0.990	13C12-1234-TCDD	RS1
				21:00		0.80	4,787.66	2,133.57		2,183.10	1.000	13C12-2378-TCDD	IS1
				21:13		0.78	3,879.19	1,696.09		32.50	1.017		
				21:35	RO	0.92	57.53	29.78		2.12	1.052		
				22:19	RO	3.23	3.75	6.85					
332-334				5 Peaks			8,748.60						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF						1.32-1.78				0.909-1.079			
340-342	DC	NL		0:00	RO	0.89	0.13			0.000			
	DC	SN		22:38	RO	1.21	3.54			0.916			
	DC	SN		23:25	RO	0.07	0.10			0.948			
D	D	SN		23:50	RO	1.28	10.18			0.965			
	DC	SN		23:58	RO	3.19	2.14			0.970			
	DC	SN		24:11		1.57	4.19			0.979			
	DC	SN		24:38	RO	2.33	3.72			0.997			
	DC	SN		24:43	RO	2.64	4.11			1.001	12378-PeCDF		AN
	DC	SN		24:53	RO	0.72	1.09			1.007			
	DC	SN		24:56	RO	0.17	0.81			1.009			
				25:30		1.76	9.48	6.04	3.44	1.032	23478-PeCDF		AN
	DC	SN		25:40	RO	2.76	4.21			1.039			
	DC	SN		26:10	RO	0.87	0.95			1.059			
	DC	SN		26:28	RO	1.30	2.88			1.072			
340-342				1 Peak			9.48						
							1.32-1.78			0.838-1.162			
13C12-PeCDF										0.000			
352-354	DC	NL		0:00	RO	1.00	0.13			25.36	0.964		
				23:49		1.46	62.35	36.99		10.60	0.986		
				24:21	RO	1.26	22.00	13.37		1,937.44	1.000	13C12-PeCDF 123	IS2
				24:42		1.44	4,731.50	2,794.06		8.69	1.007		
				24:53		1.34	20.34	11.65		12.08	1.013		
				25:01		1.60	31.38	19.30		1,741.08	1.032	13C12-PeCDF 234	SUR2
				25:29		1.46	4,282.56	2,541.48		4.52	1.072		
				26:28		1.34	10.58	6.06					
352-354				7 Peaks			9,160.71						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD						1.32-1.78				0.921-1.026			
356-358	DC	NL		0:00	RO	1.14	0.13			0.000			
				23:58	RO	1.13	11.57	7.03	6.24	0.927			
D	D	SN		24:44	RO	2.59	7.14			0.957			
	DC	SN		24:54	RO	3.32	0.94			0.963			

ompound/ _Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
										0.970			
D	D	SN		25:04	RO	1.99	6.30			0.982			
	DC	SN		25:23	RO	1.98	2.42			0.988			
	DC	SN		25:33	RO	2.13	3.24			1.001	12378-PeCDD		AN
	DC	SN		25:52		1.48	3.30			1.029			
	DC	WH		26:36	RO	1.85	1.50						
356-358				1 Peak			11.57						
						1.32-1.78				0.845-1.155			
13C12-PeCDD										0.000			
368-370	DC	NL		0:00	RO	1.00	0.12			1.000	13C12-PeCDD 123	IS3	
				25:51		1.52	2,831.82	1,707.75	1,124.07	1.005			
				25:59		1.57	274.19	167.61	106.58				
368-370				2 Peaks			3,106.01						

---------- Above: PeCDD / HxCDF Follows ----------

						1.05-1.43				0.957-1.053			
HxCDF										0.000			
374-376	DC	NL		0:00	RO	1.92	2.37			0.956			
	DC	WL		27:13	RO	1.89	1.77			0.961			
				27:22		1.15	10.70	5.72	4.98	0.967			
				27:32	RO	1.02	20.47	11.33	11.15	0.978			
D	D	SN		27:50	RO	1.45	5.08			0.984			
	DC	SN		28:00	RO	0.62	2.64			0.986			
	DC	SN		28:04		1.20	1.10			0.996	123478-HxCDF		AN
M				28:22		1.09	28.80	15.00	13.80	1.001	123678-HxCDF		AN
M				28:29	RO	1.47	11.42	7.51	5.10	1.005			
D	D	SN		28:36		1.23	4.29			1.019	234678-HxCDF		AN
				29:00		1.13	16.45	8.74	7.71	1.025			
	DC	SN		29:10	RO	0.25	0.51			1.035			
	DC	SN		29:28	RO	0.45	1.10			1.043	123789-HxCDF		AN
	DC	SN		29:42	RO	1.76	2.60			1.047			
D	D	SN		29:48		1.25	8.16			1.050			
	DC	SN		29:53	RO	0.31	0.38			1.053			
	DC	SN		29:58	RO	2.42	2.15			1.056			
	DC	WH		30:03		1.40	2.21			1.059			
	DC	WH		30:08	RO	3.02	2.49			1.064			
	DC	WH		30:17	RO	0.52	0.90						
374-376				5 Peaks			87.84						
						0.43-0.59				0.859-1.141			
13C12-HxCDF										0.000			
384-386	DC	NL		0:00		0.56	4.28			0.961			
				27:22	RO	0.61	8.29	3.37	5.49	0.966			
				27:30		0.49	20.48	6.72	13.76	0.996	13C12-HxCDF 478	SUR3	
				28:22		0.50	3,106.44	1,035.27	2,071.17	1.000	13C12-HxCDF 678	IS4	
				28:28		0.51	3,584.38	1,213.22	2,371.16	1.011			
				28:46	RO	0.62	6.37	2.60	4.22	1.018	13C12-HxCDF 234	ALT2	
				28:59		0.50	3,127.95	1,039.98	2,087.97	1.043	13C12-HxCDF 789	ALT1	
				29:41		0.50	2,300.71	765.04	1,535.67	1.052			
				29:56	RO	0.32	5.66	1.91	6.06				
384-386				8 Peaks			12,160.28						

---------- Above: HxCDF / HxCDD 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.
HxCDD						1.05-1.43				0.951-1.015			
390-392	DC	NL		0:00		1.34	1.94			0.000			
	DC	SN		27:48	RO	0.68	1.63			0.952			
	DC	SN		27:55		1.23	4.12			0.956			
	DC	SN		28:00	RO	1.02	0.79			0.959			
				28:22		1.08	26.87	13.95	12.92	0.971			
	DC	SN		28:28	RO	3.23	2.37			0.975			
				28:36	RO	0.88	12.36	6.84	7.80	0.979			
	DC	SN		28:45		1.41	0.99			0.985			
	DC	SN		28:59	RO	3.64	2.04			0.993			
	DC	SN		29:08	RO	0.44	1.30			0.998	123478-HxCDD		AN
D	D	SN		29:12	RO	0.90	5.40			1.000	123678-HxCDD		AN
	DC	SN		29:23	RO	5.21	0.65			1.006			
D	D	SN		29:30		1.13	9.23			1.010	123789-HxCDD		AN
	DC	SN		29:37		1.11	2.55			1.014			
	DC	SN		29:39	RO	1.66	4.12			1.015			
	DC	WH		29:52	RO	0.78	2.62			1.023			
390-392			2	Peaks			39.23						
13C12-HxCDD						1.05-1.43				0.966-1.034			
402-404	DC	NL		0:00		1.11	4.32			0.000			
				28:35		1.06	14.32	7.37	6.95	0.979			
	DC	SN		28:53	RO	0.30	1.32			0.989			
				29:06		1.21	2,038.12	1,115.09	923.03	0.997	13C12-HxCDD 478		SUR4
				29:12		1.22	2,545.55	1,400.67	1,144.88	1.000	13C12-HxCDD 678		IS5
				29:29		1.24	2,932.97	1,622.47	1,310.50	1.010	13C12-HxCDD 789		RS2
	DC	SN		29:39		1.21	3.76			1.015			
				29:43	RO	0.89	6.39	3.54	3.97	1.018			
				29:48		1.10	7.09	3.71	3.38	1.021			
402-404			6	Peaks			7,544.44						

---------- Above: HxCDD / HpCDF Follows ----------

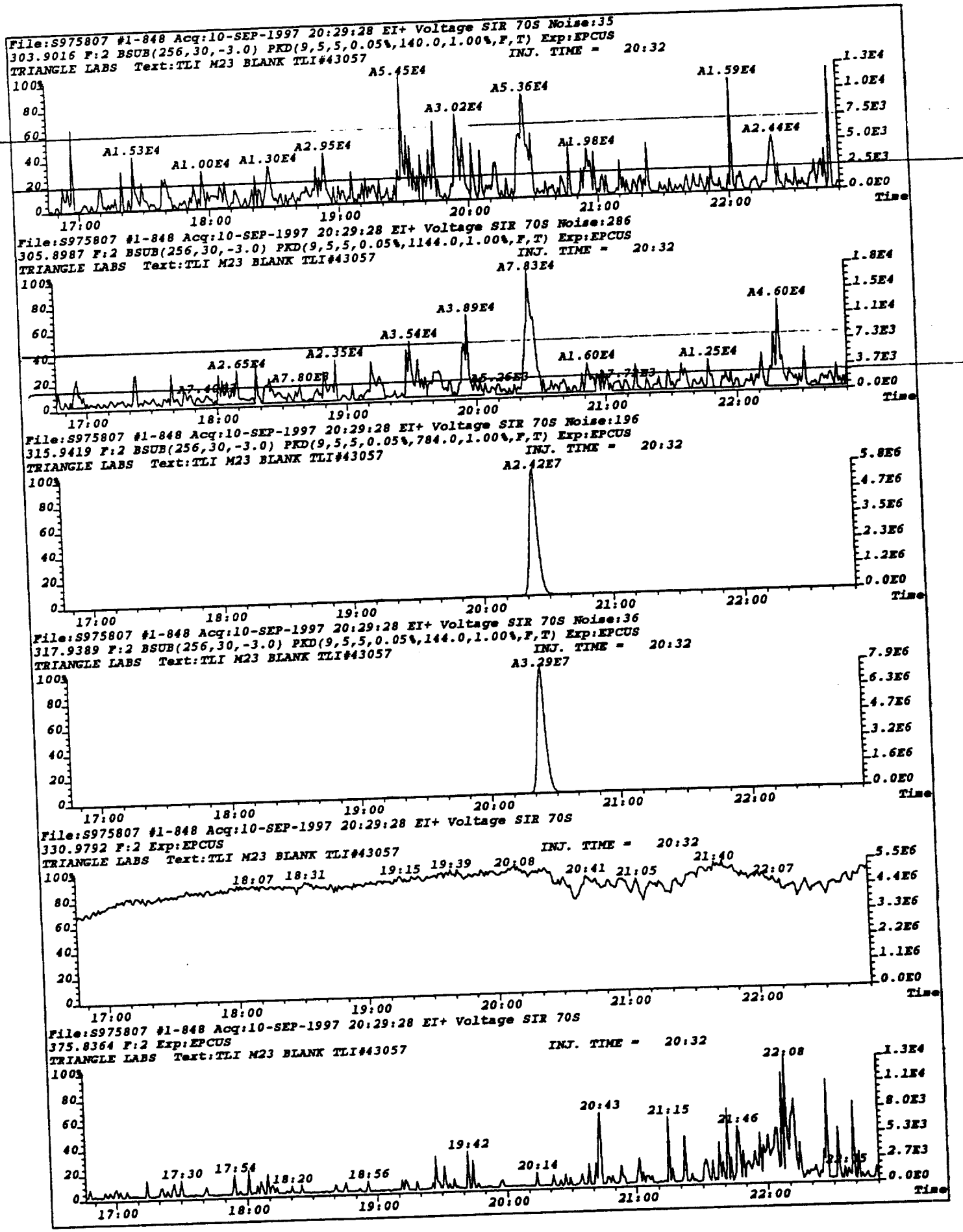
HpCDF						0.88-1.20				0.995-1.045			
408-410	DC	NL		0:00	RO	16.57	0.14			0.000			
				31:11		0.96	31.12	15.23	15.89	1.000	1234678-HpCDF		AN
				31:25		1.02	7.91	4.00	3.91	1.007			
				31:31		1.08	8.66	4.49	4.17	1.011			
	DC	SN		31:41	RO	0.70	1.10			1.016			
	DC	SN		31:51	RO	8.22	0.47			1.021			
	DC	SN		32:03	RO	1.49	1.04			1.028			
M				32:24	RO	1.30	6.04	3.84	2.96	1.039	1234789-HpCDF		AN
	DC	WH		32:43	RO	2.70	1.08			1.049			
	DC	WH		32:52	RO	3.88	0.86			1.054			
408-410			4	Peaks			53.73						
13C12-HpCDF						0.37-0.51				0.936-1.128			
418-420	DC	NL		0:00	RO	0.60	1.83			0.000			
				31:11		0.44	2,053.55	627.33	1,426.22	1.000	13C12-HpCDF 678		IS6
				32:23		0.43	1,189.64	360.12	829.52	1.038	13C12-HpCDF 789		SUR5
418-420			2	Peaks			3,243.19						

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				0.977-1.006			
424-426	DC	NL		0:00	RO	0.19	0.14			0.000			
				31:26	RO	1.39	9.24	6.28	4.53	0.981			
	DC	SN		31:44	RO	0.29	0.35			0.991			
M				32:02		1.14	16.10	8.59	7.51	1.000	1234678-HpCDD	AN	
424-426				2 Peaks			25.34						
13C12-HpCDD						0.88-1.20				0.969-1.031			
436-438	DC	NL		0:00		0.90	3.07			0.000			
				31:26		1.10	6.35	3.32	3.03	0.981			
				32:02		1.06	1,916.64	984.58	932.06	1.000	13C12-HpCDD 678	IS7	
436-438				2 Peaks			1,922.99						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.884-1.116			
442-444	DC	NL		0:00	RO	0.16	0.15			0.000			
	DC	SN		31:11		0.81	0.65			0.903			
	DC	SN		31:13	RO	0.43	0.28			0.904			
	DC	SN		31:20	RO	0.60	0.45			0.908			
	DC	SN		31:49	RO	0.23	0.28			0.922			
	DC	SN		32:04	RO	1.93	0.79			0.929			
	DC	SN		32:12	RO	1.67	0.85			0.933			
	DC	SN		32:19	RO	0.71	0.68			0.936			
	DC	SN		32:27	RO	0.15	0.23			0.940			
	DC	SN		32:59	RO	3.88	0.45			0.956			
	DC	SN		33:12	RO	4.92	0.23			0.962			
	DC	SN		33:37		0.92	0.48			0.974			
	DC	SN		33:40	RO	0.41	0.38			0.975			
	DC	SN		33:49	RO	0.74	0.53			0.980			
	DC	SN		34:05	RO	0.17	0.53			0.987			
	DC	SN		34:23	RO	1.61	0.68			0.996			
	DC	SN		34:27	RO	0.36	0.49			0.998			
M				34:39	RO	1.03	7.09	3.86	3.75	1.004	OCDF	AN	
	DC	SN		34:52	RO	0.13	0.38			1.010			
	DC	SN		35:00	RO	0.58	1.78			1.014			
	DC	SN		35:23	RO	0.67	0.76			1.025			
	DC	SN		35:46	RO	1.13	1.66			1.036			
442-444				1 Peak			7.09						
OCDD						0.76-1.02				0.884-1.116			
458-460	DC	NL		0:00		1.00	0.14			0.000			
M				34:31	RO	0.60	5.52	2.60	4.33	1.000	OCDD	AN	
	DC	SN		34:51	RO	0.44	0.57			1.010			
	DC	SN		34:55	RO	0.09	0.36			1.012			
458-460				1 Peak			5.52						
13C12-OCDD						0.76-1.02				0.996-1.005			
470-472	DC	NL		0:00	RO	1.50	0.11			0.000			
				34:31		0.89	1,696.66	797.67	898.99	1.000	13C12-OCDD	IS8	

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	34:53	RO	1.19	3.08			1.011			
470-472			1 Peak				1,696.66						

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
		E-Ether Interference

*** End of Report ***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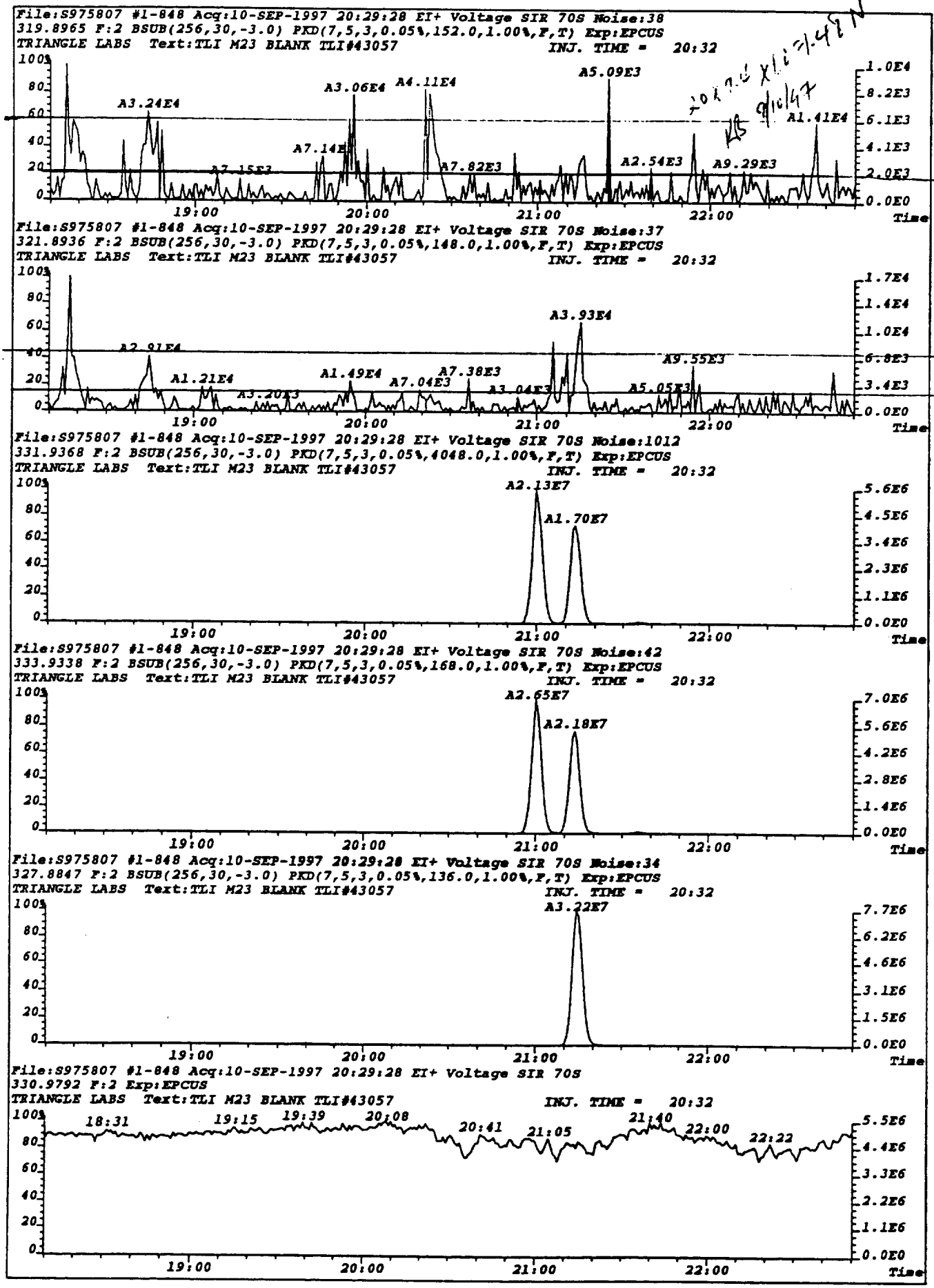
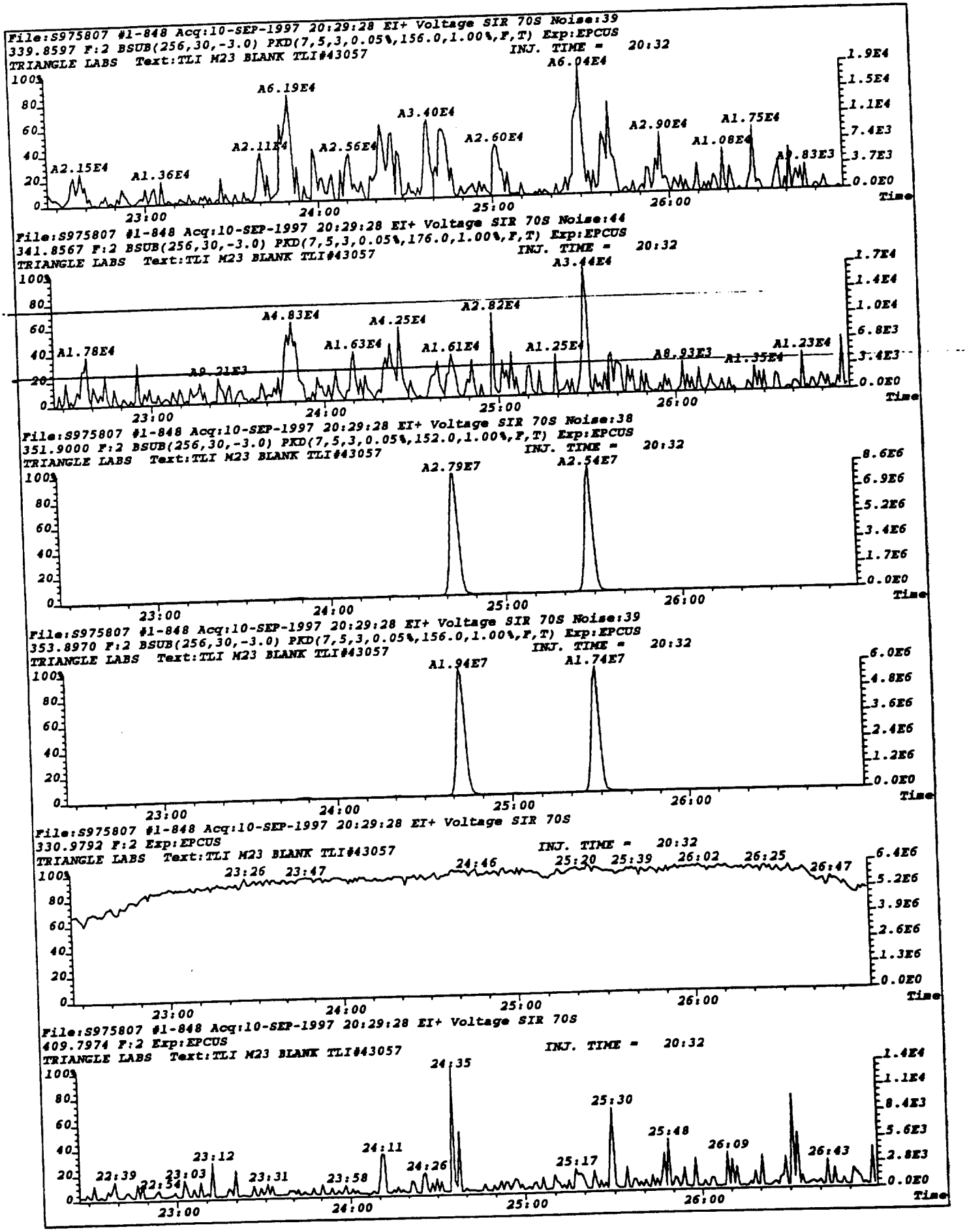
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A5.45E4
A5.36E4
A3.02E4
A1.59E4
A2.44E4
A1.98E4
A2.95E4
A1.53E4
A1.00E4
A1.30E4
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:286
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A7.83E4
A4.60E4
A3.89E4
A3.54E4
A2.35E4
A2.65E4
A7.80E3
A1.60E4
A1.25E4
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:196
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,784.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.42E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:36
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A3.29E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
18:07
18:31
19:15
19:39
20:08
20:41
21:05
21:40
22:07
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
22:08
20:43
21:15
21:46
19:42
20:14
17:30
17:54
18:20
18:56
Time


File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:38
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A3.24E4
A3.06E4
A4.11E4
A5.09E3
A7.14E
A7.15E3
A7.82E3
A2.54E3
A9.29E3
A1.41E4
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:37
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A3.93E4
A2.91E4
A1.21E4
A1.49E4
A7.04E3
A7.38E3
A3.04E3
A9.55E3
A5.05E3
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:1012
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4048.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.13E7
A1.70E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:42
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.65E7
A2.18E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:34
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A3.22E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
18:31
19:15
19:39
20:08
20:41
21:05
21:40
22:00
22:22
19:00
20:00
21:00
22:00
Time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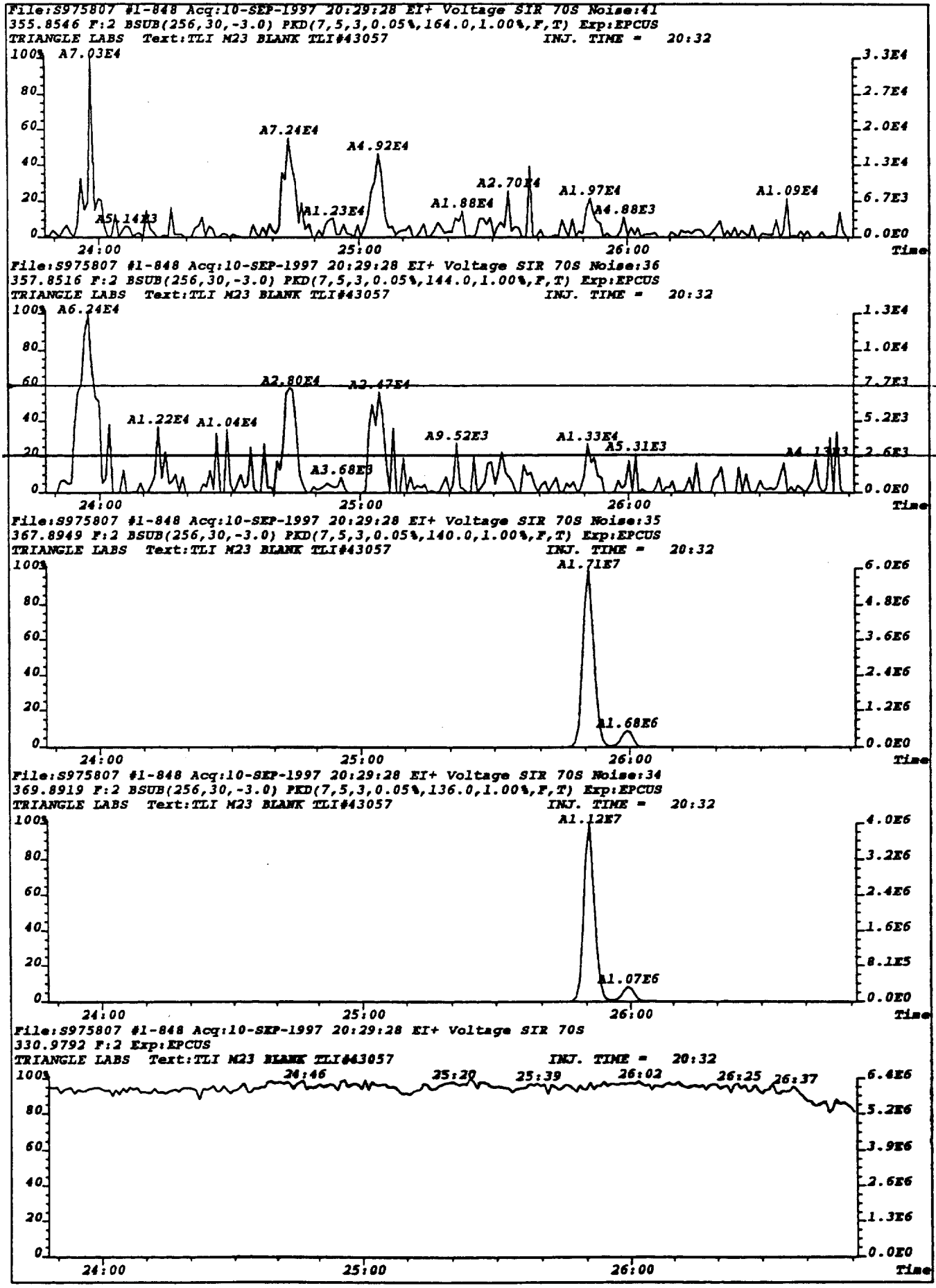
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.15E4
A1.36E4
A6.19E4
A2.11E4
A2.56E4
A3.40E4
A2.60E4
A6.04E4
A2.90E4
A1.08E4
A1.75E4
A1.83E3
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:44
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,176.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.78E4
A9.21E3
A4.83E4
A1.63E4
A4.25E4
A1.61E4
A2.82E4
A3.44E4
A1.25E4
A8.93E3
A1.35E4
A1.23E4
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:38
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.79E7
A2.54E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:39
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.94E7
A1.74E7
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
23:26
23:47
24:46
25:20
25:39
26:02
26:25
26:47
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
22:39
22:54
23:03
23:12
23:31
23:58
24:11
24:26
24:35
25:17
25:30
25:48
26:09
26:43
23:00
24:00
25:00
26:00
Time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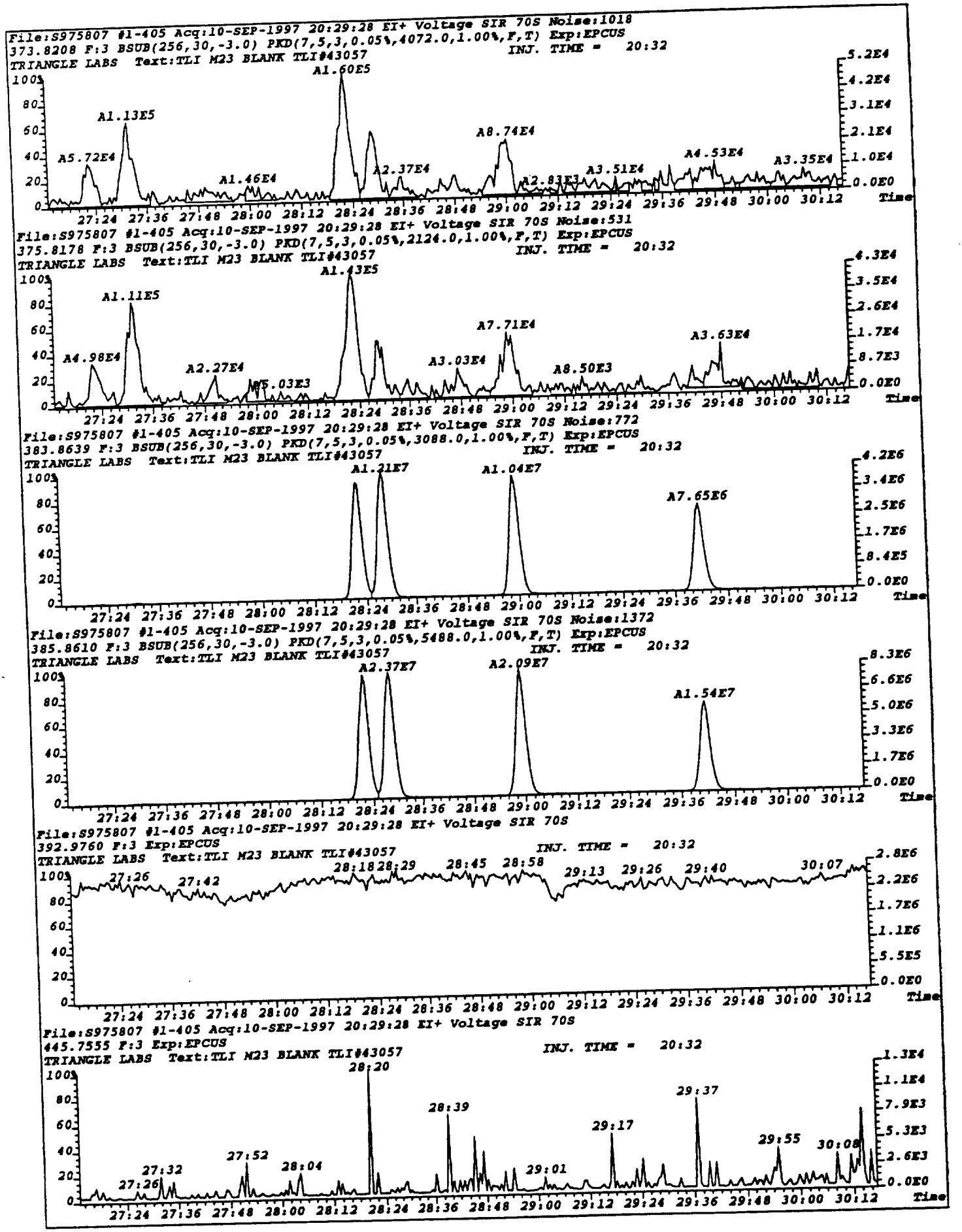
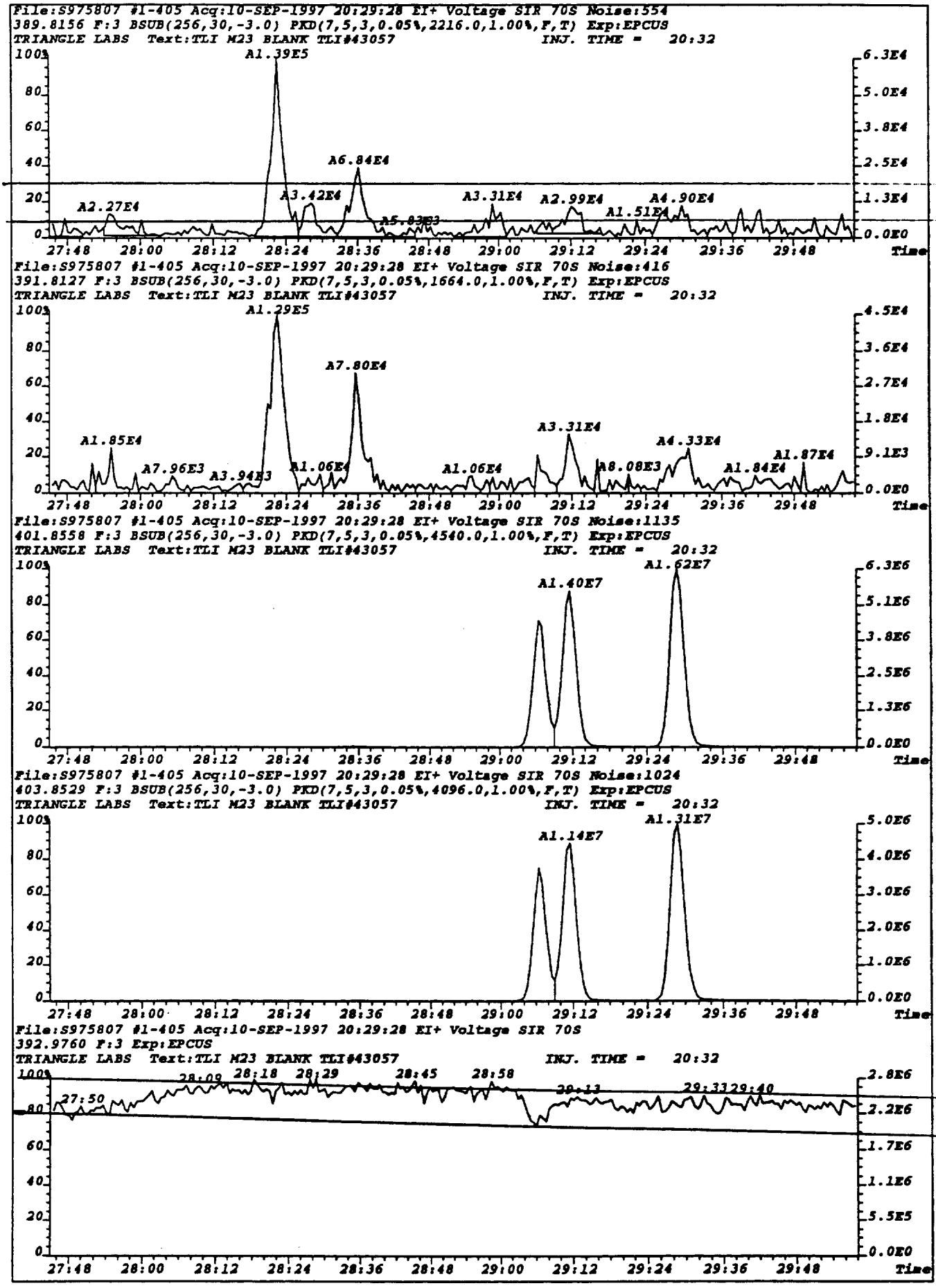
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,164.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A7.03E4
A7.24E4
A4.92E4
A2.70E4
A1.97E4
A1.09E4
A1.88E4
A1.23E4
A4.88E3
A5.14E3
Time
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:36
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A6.24E4
A2.80E4
A2.47E4
A1.22E4
A1.04E4
A9.52E3
A1.33E4
A5.31E3
A3.68E3
Time
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:35
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.71E7
A1.68E6
Time
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:34
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.12E7
A1.07E6
Time
File:S975807 #1-848 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
24:46
25:20
25:39
26:02
26:25
26:37
Time


File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:1018
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4072.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.60E5
A1.13E5
A5.72E4
A1.46E4
A2.37E4
A8.74E4
A2.83E3
A3.51E4
A4.53E4
A3.35E4
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:531
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2124.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.43E5
A1.11E5
A4.98E4
A2.27E4
A5.03E3
A3.03E4
A7.71E4
A8.50E3
A3.63E4
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:772
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3088.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.21E7
A1.04E7
A7.65E6
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:1372
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5488.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A2.37E7
A2.09E7
A1.54E7
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
28:20
28:39
29:17
29:37
29:55
30:08
27:52
28:04
29:01
Time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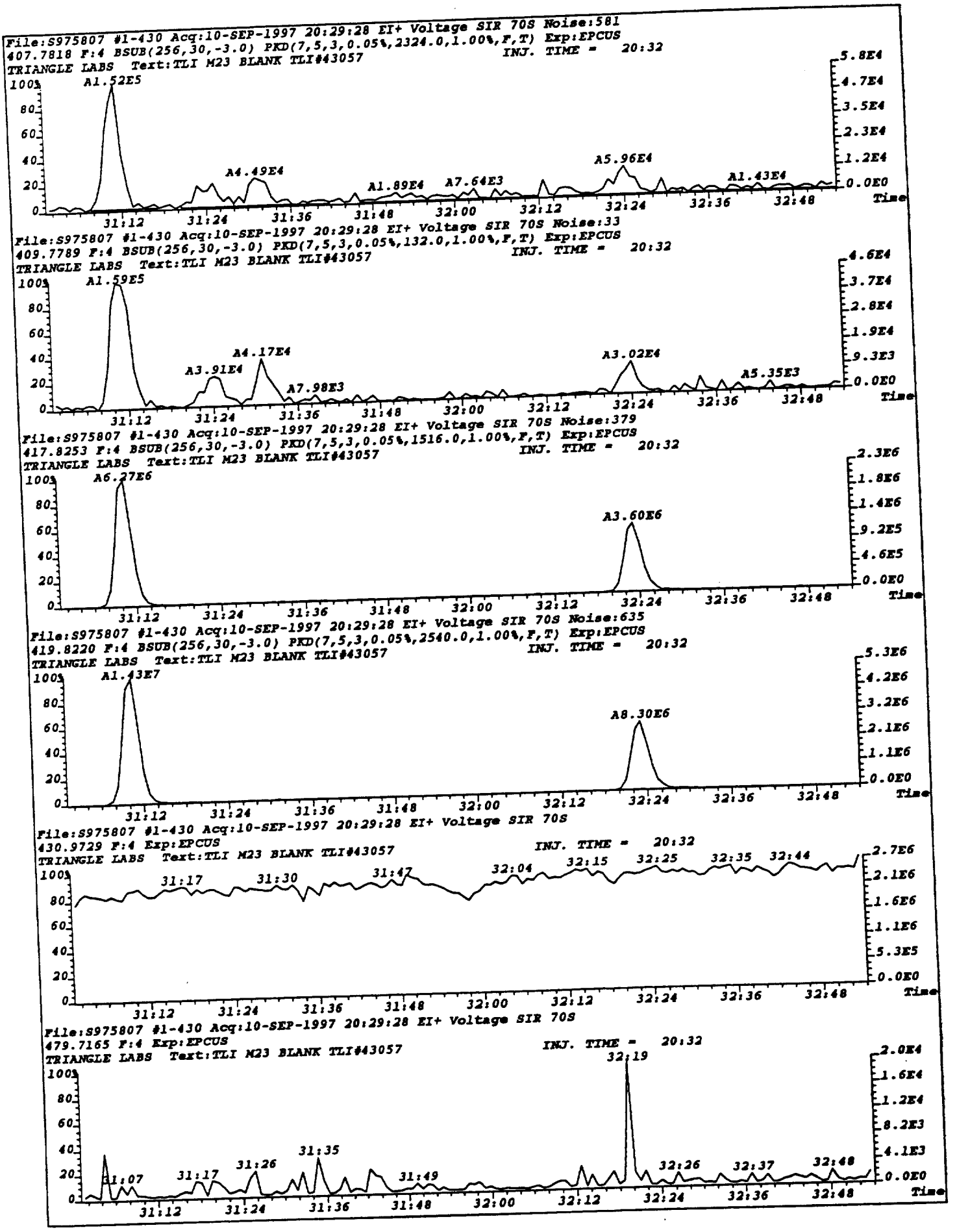
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2216.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.39E5
A6.84E4
A3.42E4
A2.27E4
A3.31E4
A2.99E4
A4.90E4
A1.51E4
A5.83E3
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:416
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1664.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.29E5
A7.80E4
A1.85E4
A7.96E3
A3.94E3
A1.06E4
A1.06E4
A3.31E4
A8.08E3
A4.33E4
A1.84E4
A1.87E4
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:1135
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4540.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.62E7
A1.40E7
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:1024
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4096.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A1.31E7
A1.14E7
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
27:48 28:00 28:12 28:24 28:36 28:48 29:00 29:12 29:24 29:36 29:48 Time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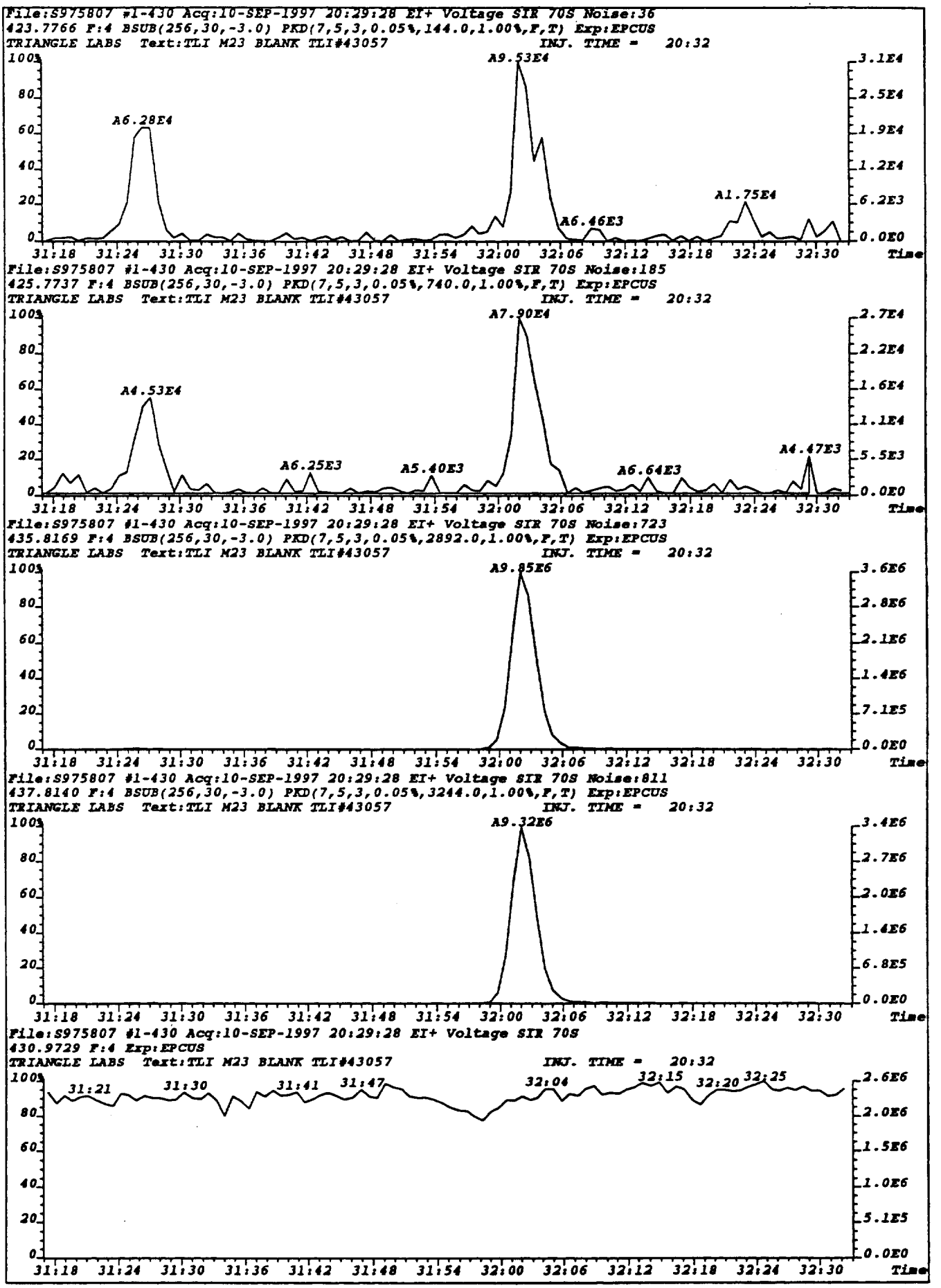
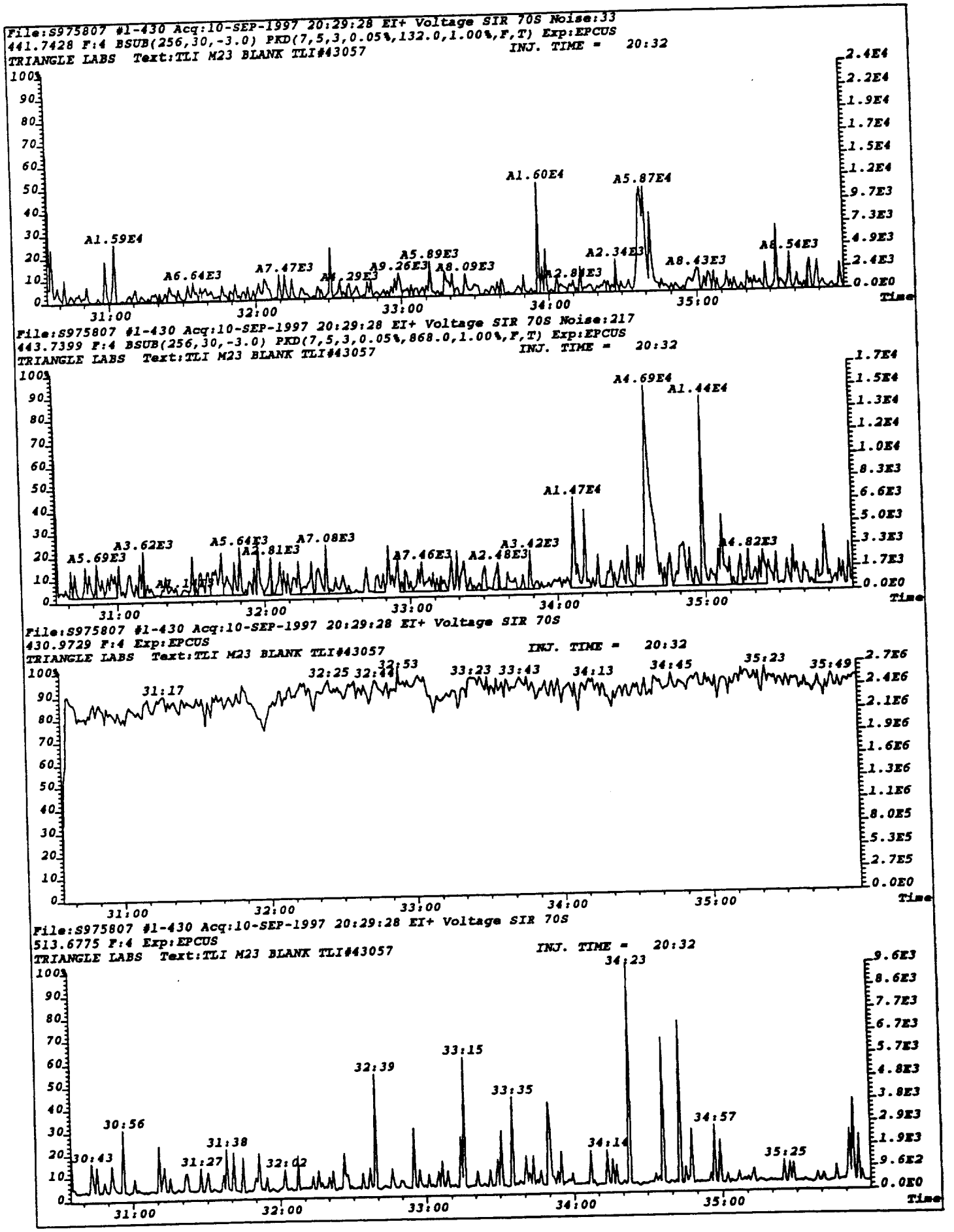
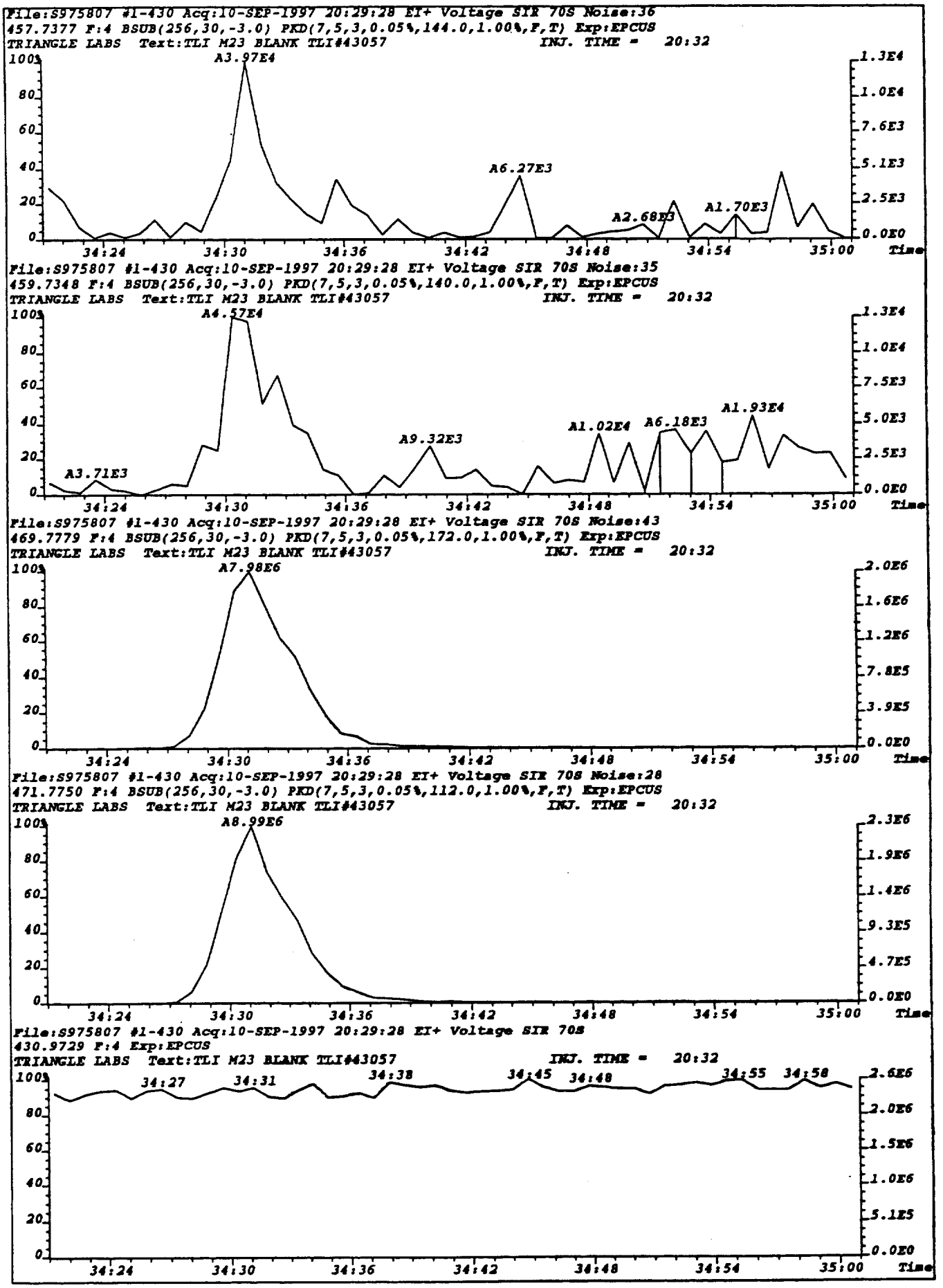
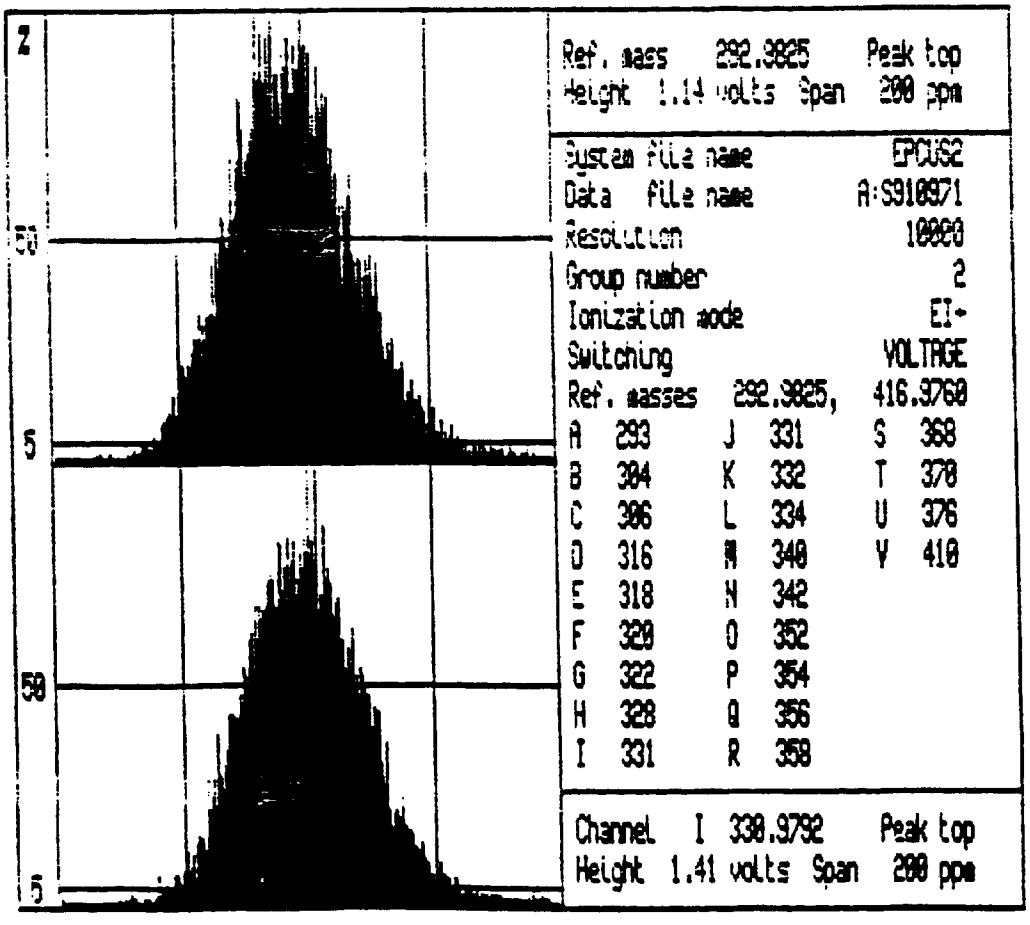
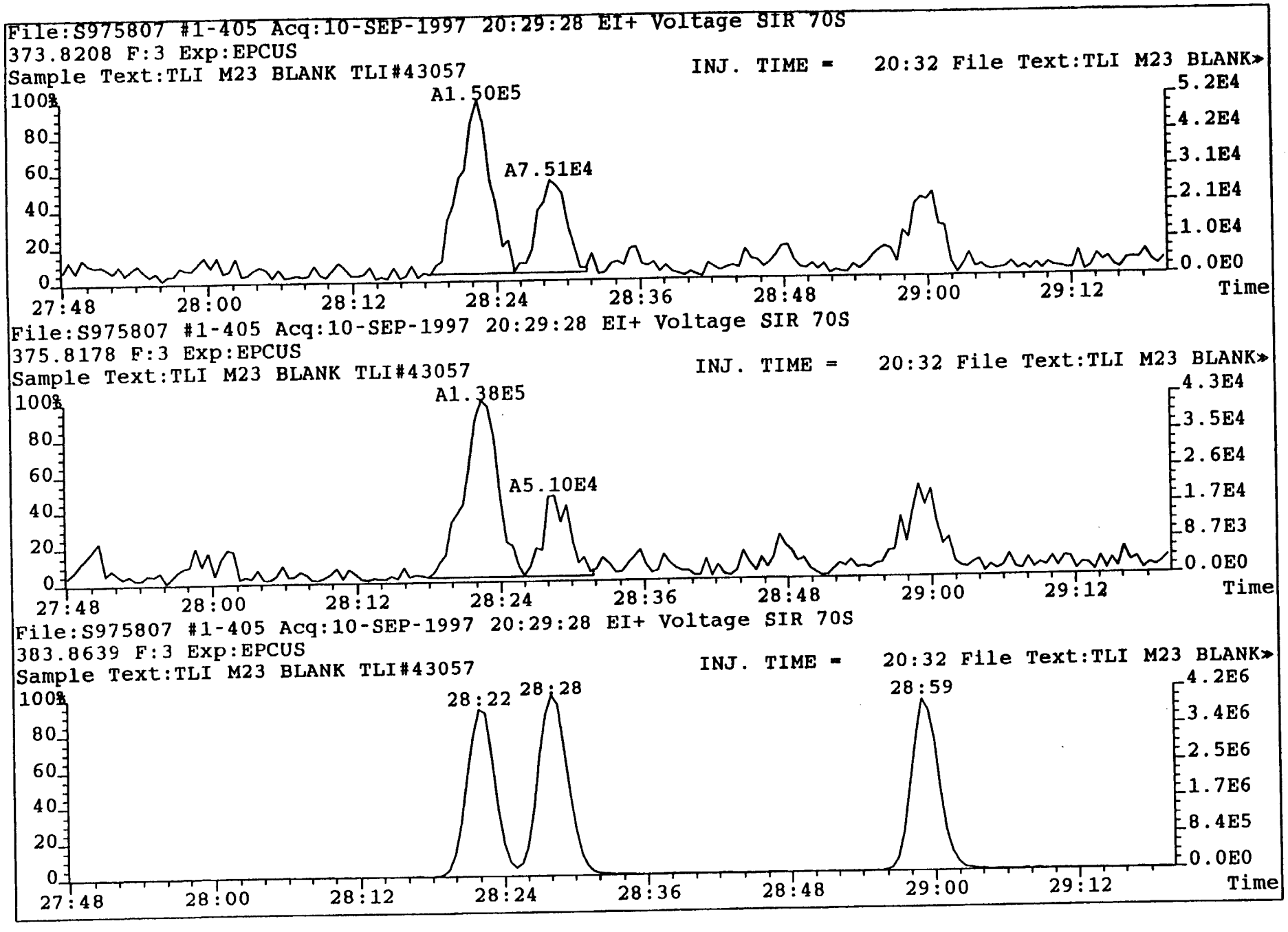
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2324.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.52E5
A4.49E4
A1.89E4
A7.64E3
A5.96E4
A1.43E4
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:33
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.59E5
A3.91E4
A4.17E4
A7.98E3
A3.02E4
A5.35E3
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:379
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1516.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A6.27E6
A3.60E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:635
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2540.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.43E7
A8.30E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
Time

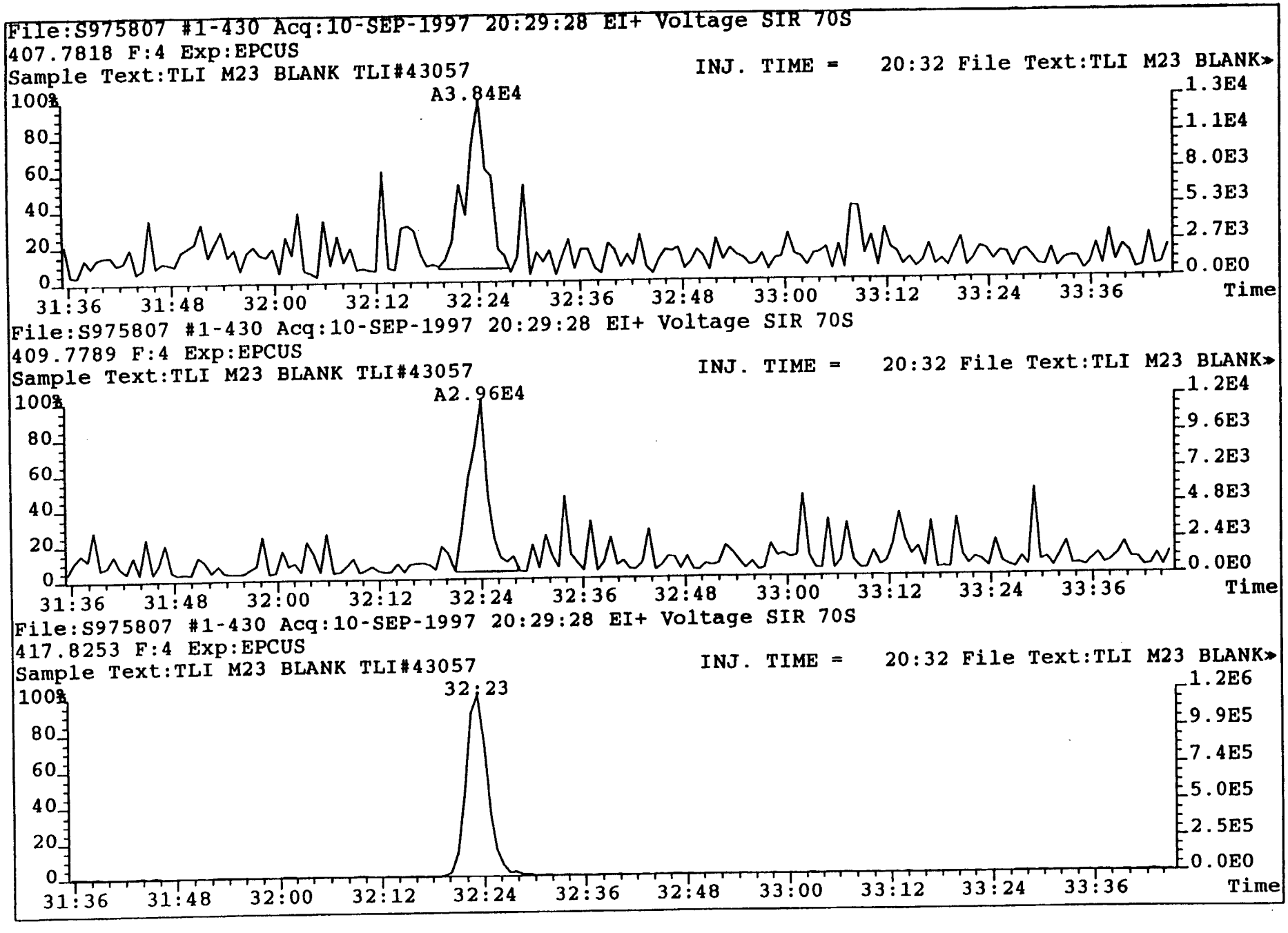

File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:36
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A9.53E4
A6.28E4
A1.75E4
A6.46E3
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:185
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,740.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A7.90E4
A4.53E4
A6.25E3
A5.40E3
A6.64E3
A4.47E3
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:723
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2892.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A9.85E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:811
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3244.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A9.32E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
31:21
31:30
31:41
31:47
32:04
32:15
32:20
32:25
Time

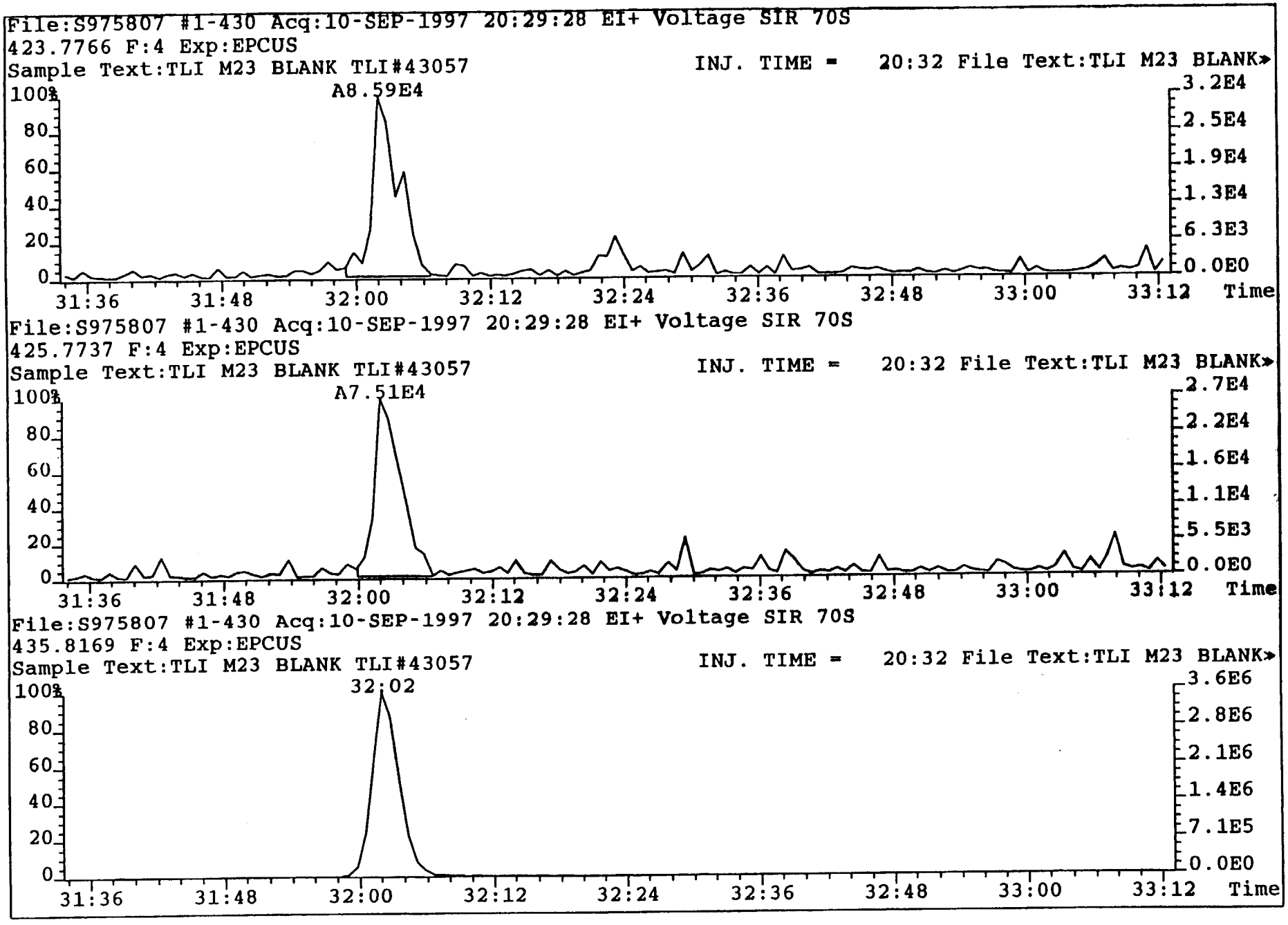

File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:33
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A1.59E4
A6.64E3
A7.47E3
A5.89E3
A9.26E3
A8.09E3
A1.60E4
A5.87E4
A2.34E3
A8.43E3
A8.54E3
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:217
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,868.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
A5.69E3
A3.62E3
A5.64E3
A7.08E3
A7.46E3
A2.48E3
A3.42E3
A1.47E4
A4.69E4
A1.44E4
A4.82E3
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
31:17
32:25
32:44
32:53
33:23
33:43
34:13
34:45
35:23
35:49
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32
30:43
30:56
31:27
31:38
32:02
32:39
33:15
33:35
34:14
34:23
34:57
35:25
Time

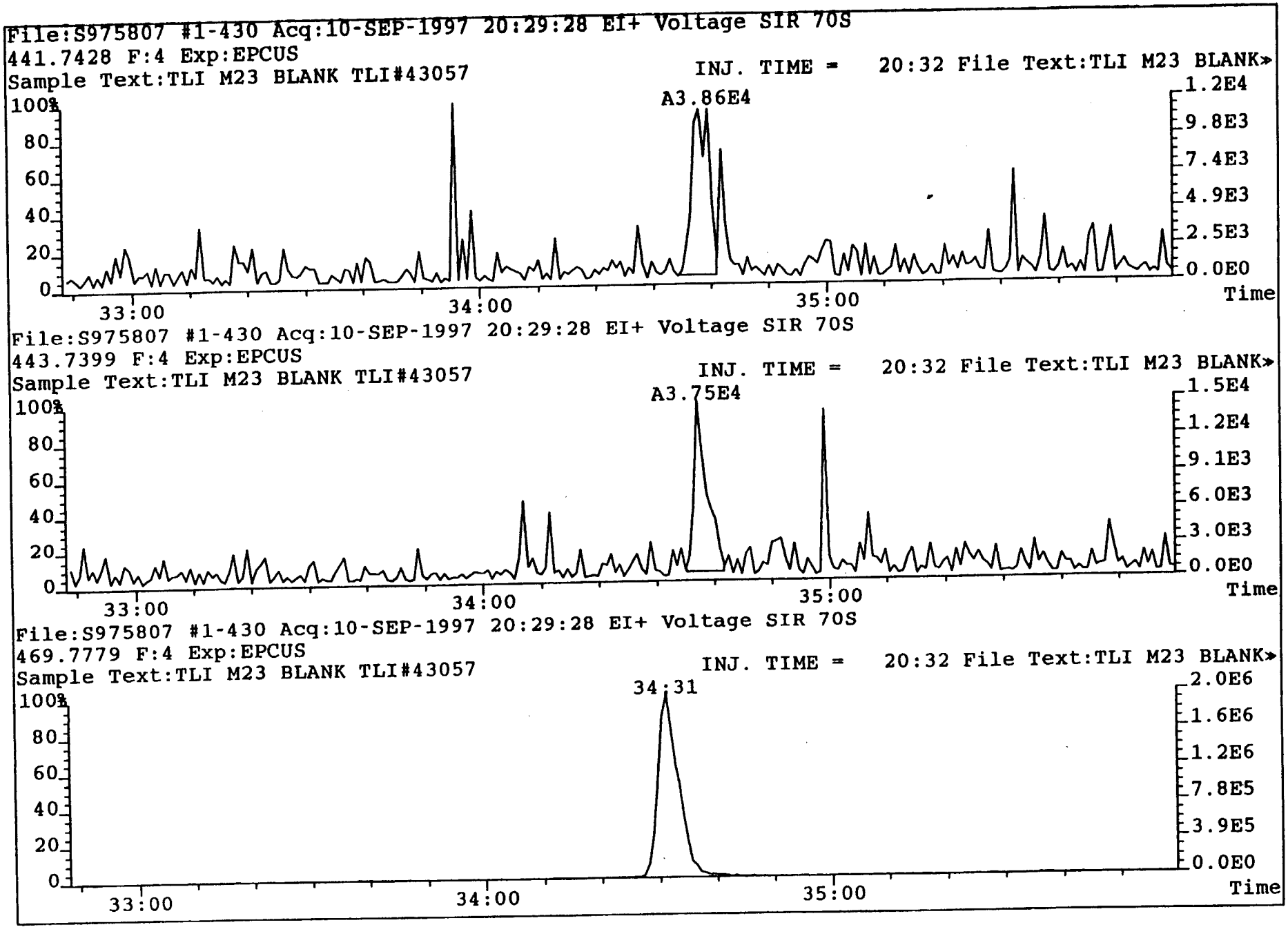

File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:36
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A3.97E4
A6.27E3
A2.68E3
A1.70E3
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:35
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A4.57E4
A3.71E3
A9.32E3
A1.02E4
A6.18E3
A1.93E4
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:43
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,172.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A7.98E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S Noise:28
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
A8.99E6
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057 INJ. TIME = 20:32
34:24
34:30
34:36
34:42
34:48
34:54
35:00
Time

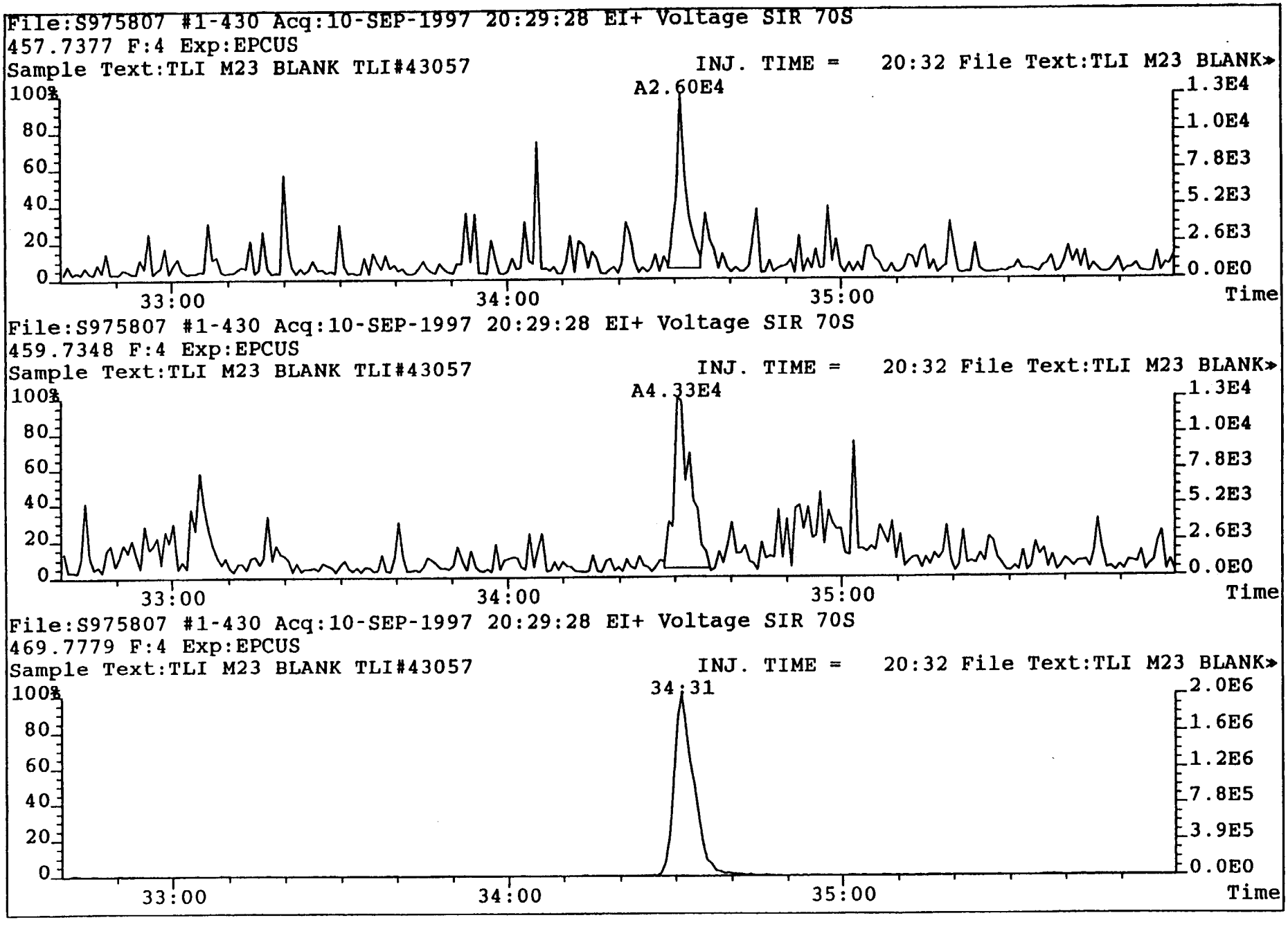

Z
50
5
50
5
Ref. mass 292.3825 Peak top
Height 1.14 volts Span 200 ppm
System file name EPCUS2
Data file name A:S910971
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.3825, 416.3760
A 293 J 331 S 368
B 304 K 332 T 370
C 306 L 334 U 376
D 316 M 340 V 410
E 318 N 342
F 320 O 352
G 322 P 354
H 328 Q 356
I 331 R 358
Channel I 330.9792 Peak top
Height 1.41 volts Span 200 ppm


File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
A1.50E5
A7.51E4
5.2E4
4.2E4
3.1E4
2.1E4
1.0E4
0.0E0
Time
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
A1.38E5
A5.10E4
4.3E4
3.5E4
2.6E4
1.7E4
8.7E3
0.0E0
Time
File:S975807 #1-405 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
383.8639 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
28:22
28:28
28:59
4.2E6
3.4E6
2.5E6
1.7E6
8.4E5
0.0E0
Time
100%
80
60
40
20
0
27:48
28:00
28:12
28:24
28:36
28:48
29:00
29:12


File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A3.84E4
100%
80
60
40
20
0
1.3E4
1.1E4
8.0E3
5.3E3
2.7E3
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A2.96E4
1.2E4
9.6E3
7.2E3
4.8E3
2.4E3
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
32:23
1.2E6
9.9E5
7.4E5
5.0E5
2.5E5
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 Time


File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
A8.59E4
100%
80
60
40
20
0
3.2E4
2.5E4
1.9E4
1.3E4
6.3E3
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
A7.51E4
100%
80
60
40
20
0
2.7E4
2.2E4
1.6E4
1.1E4
5.5E3
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK
32:02
100%
80
60
40
20
0
3.6E6
2.8E6
2.1E6
1.4E6
7.1E5
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
Time


File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
441.7428 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A3.86E4
100%
80
60
40
20
0
1.2E4
9.8E3
7.4E3
4.9E3
2.5E3
0.0E0
Time
33:00
34:00
35:00
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
443.7399 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A3.75E4
100%
80
60
40
20
0
1.5E4
1.2E4
9.1E3
6.0E3
3.0E3
0.0E0
Time
33:00
34:00
35:00
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
34:31
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
Time
33:00
34:00
35:00


File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
457.7377 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A2.60E4
100%
80
60
40
20
0
1.3E4
1.0E4
7.8E3
5.2E3
2.6E3
0.0E0
33:00
34:00
35:00
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
459.7348 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
A4.33E4
100%
80
60
40
20
0
1.3E4
1.0E4
7.8E3
5.2E3
2.6E3
0.0E0
33:00
34:00
35:00
Time
File:S975807 #1-430 Acq:10-SEP-1997 20:29:28 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057
INJ. TIME = 20:32 File Text:TLI M23 BLANK»
34:31
100%
80
60
40
20
0
2.0E6
1.6E6
1.2E6
7.8E5
3.9E5
0.0E0
33:00
34:00
35:00
Time

TLI Project: 43057 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: TLI M23 Blank — Analysis File: X973081

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPC2NF04
TLI ID:	TLI Blank	Date Extracted:	09/06/97	ICal:	XF24087
		Date Analyzed:	09/11/97	ConCal:	X973069
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-225	Analyst:	MS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	0.005			0.83	22:32	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	72.6	40%-130%	0.78	22:31	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:30	___

Data Reviewer: _____ 09/12/97

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801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Initial , ...Date...

Data Review By: [illegible] 9/12/97 Calculated Noise Area: n/a

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

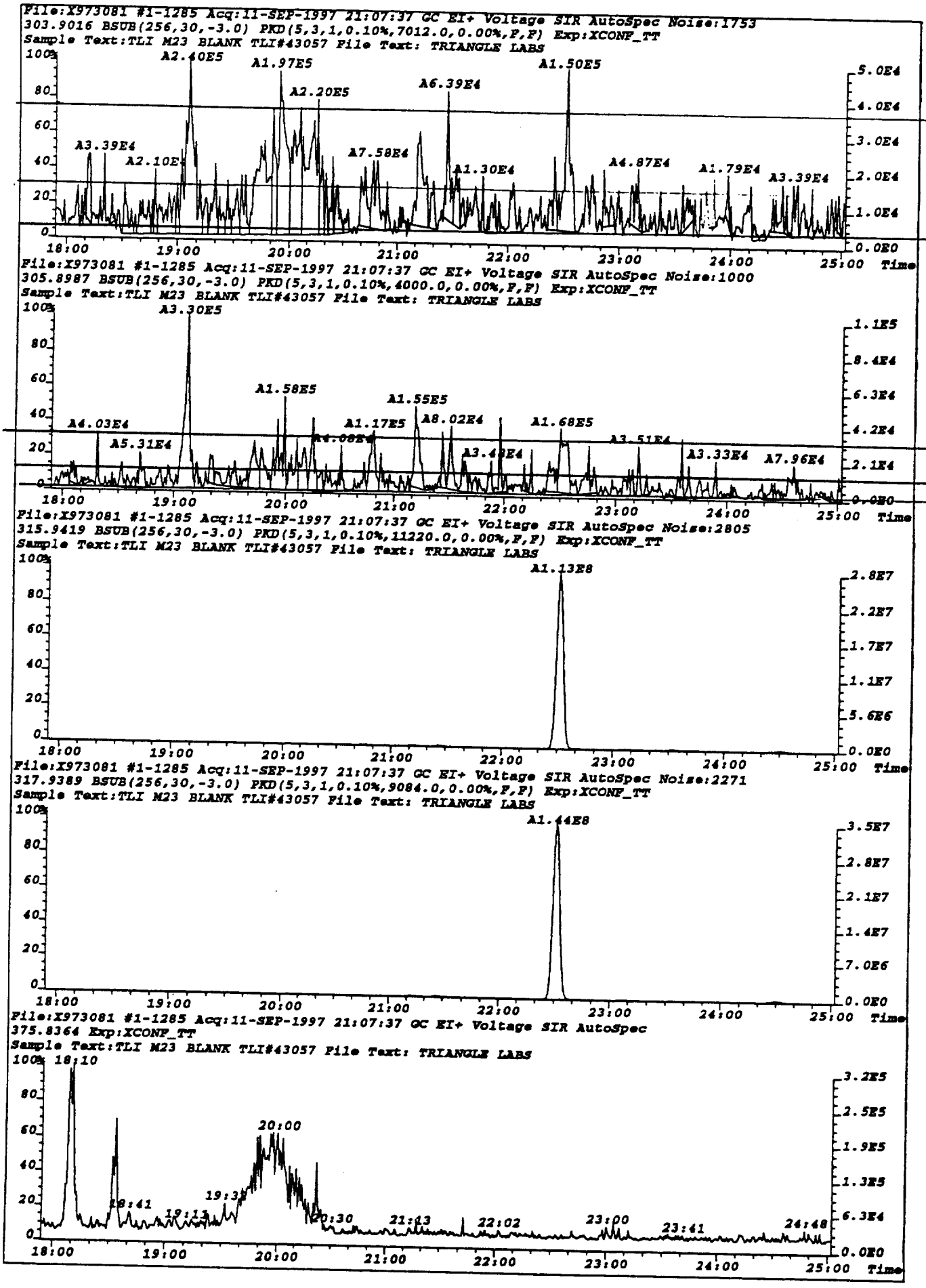
Page No. 1 Listing of X973081B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

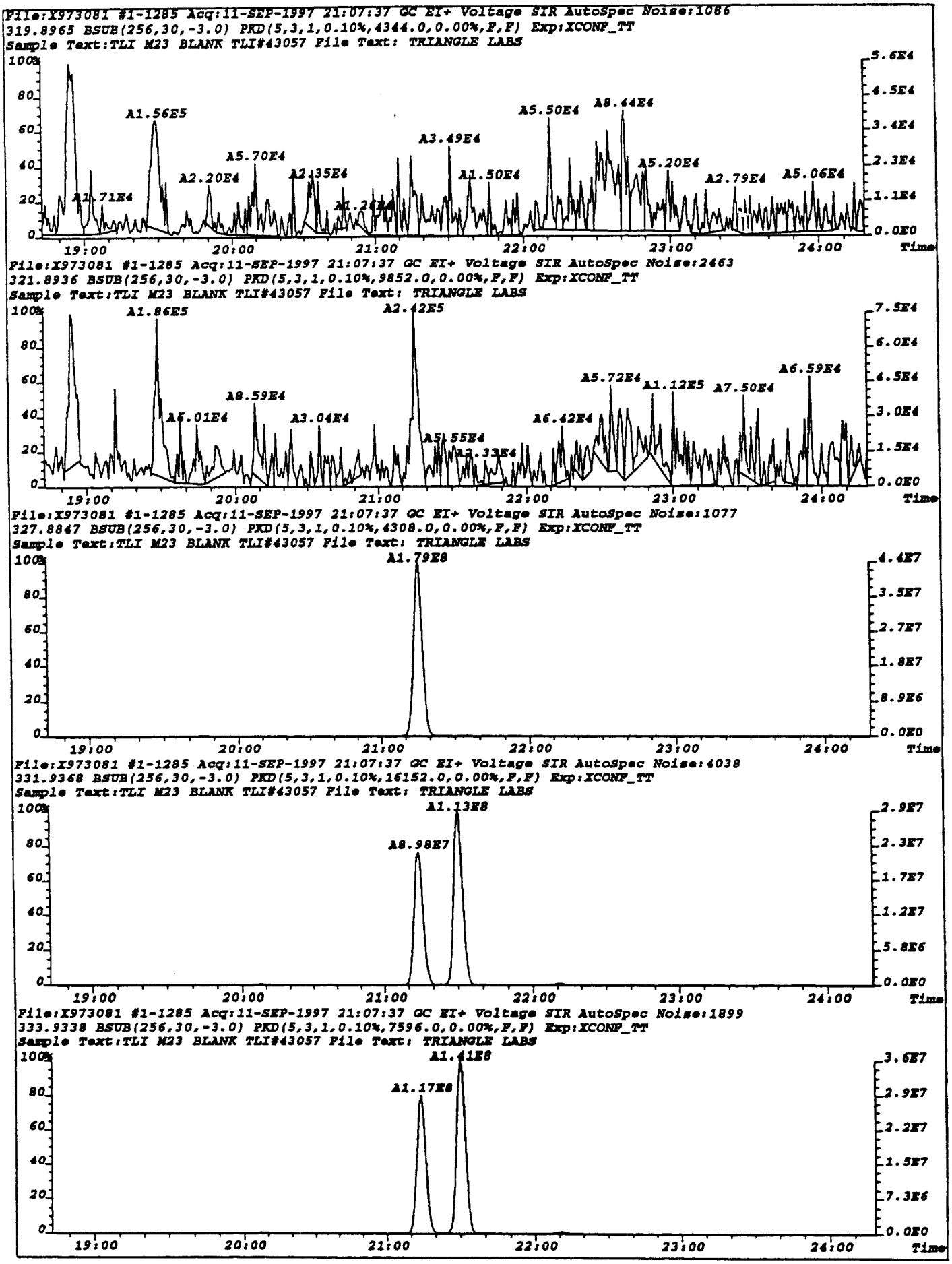
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.797-1.100			
304-306	DC	NL		0:00	RO	1.76	3.54			0.000			
	DC	SN		18:13	RO	5.21	1.49			0.809			
	DC	SN		18:20		0.84	7.42			0.814			
	DC	SN		18:25	RO	2.53	0.60			0.818			
	DC	SN		18:31	RO	1.04	5.82			0.822			
	DC	SN		18:37	RO	0.56	1.20			0.827			
	DC	SN		18:41		0.79	9.48			0.830			
	DC	SN		18:55	RO	2.07	5.61			0.840			
				19:06		0.73	57.04	24.05	32.99	0.848			
	DC	SN		19:20	RO	1.23	6.05			0.859			
	DC	SN		19:32		0.87	6.89			0.868			
	DC	SN		19:47	RO	2.52	13.45			0.879			
	DC	SN		20:06	RO	1.92	15.35			0.893			
				20:16	RO	2.13	18.23	21.97	10.30	0.900			
	DC	SN		20:20	RO	0.61	4.80			0.903			
	DC	SN		20:24	RO	0.57	6.11			0.906			
	DC	SN		20:33	RO	0.33	3.10			0.913			
	DC	SN		20:42	RO	1.39	6.62			0.919			
	DC	SN		20:49		0.65	19.28			0.925			
	DC	SN		20:54	RO	0.36	3.59			0.928			
				21:13		0.76	27.16	11.70	15.46	0.942			
	DC	SN		21:20	RO	3.46	1.50			0.947			
	DC	SN		21:28	RO	1.31	8.66			0.953			
	DC	SN		21:32	RO	0.48	8.92			0.956			
	DC	SN		21:36	RO	0.27	3.03			0.959			
	DC	SN		21:46	RO	0.38	2.99			0.967			
	DC	SN		21:53		0.85	6.44			0.972			
	DC	SN		21:56	RO	0.07	0.87			0.974			
	DC	SN		22:03	RO	2.73	2.99			0.979			
	DC	SN		22:25	RO	0.60	9.47			0.996			
M				22:32		0.83	27.80	12.60	15.20	1.001	2378-TCDF		AN
	DC	SN		23:10	RO	2.16	3.98			1.029			
	DC	SN		23:13	RO	0.20	1.59			1.031			
	DC	SN		23:34	RO	0.60	7.42			1.047			
	DC	SN		23:51	RO	0.57	2.74			1.059			
	DC	SN		24:18	RO	0.40	1.26			1.079			
	DC	SN		24:28	RO	1.64	2.55			1.087			
	DC	SN		24:36	RO	0.43	7.79			1.093			
	DC	SN		24:40	RO	3.60	1.19			1.095			
	DC	WH		24:58	RO	1.94	1.38			1.109			
	DC	WH		25:01		0.68	4.02			1.111			
304-306			4	Peaks			130.23						

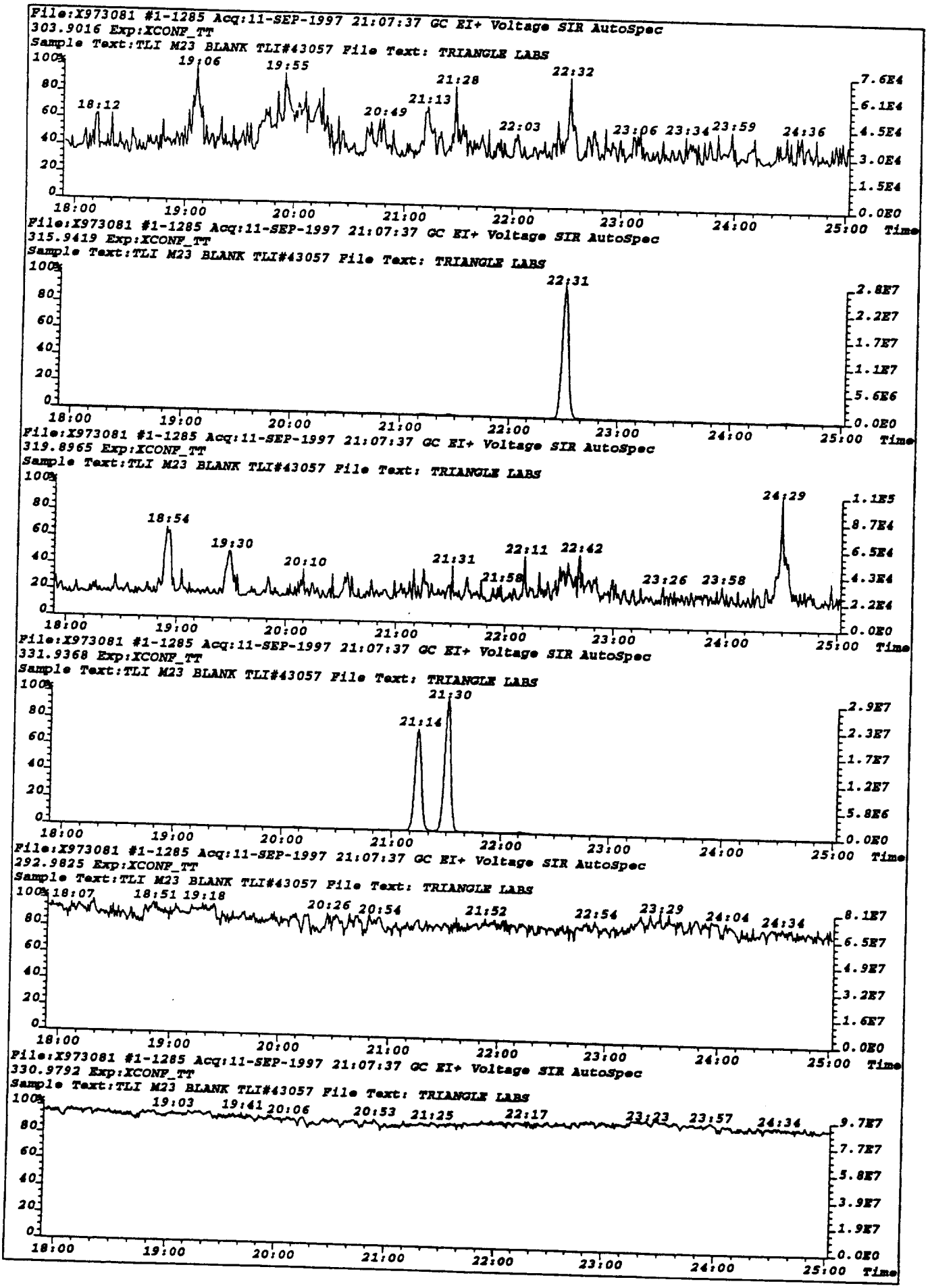
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
										0.955-1.045			
13C12-TCDF						0.65-0.89				0.000			
316-318		DC	NL	0:00	RO	1.24	8.04			0.941			
		DC	WL	21:11	RO	0.92	116.20			0.952			
		DC	WL	21:26		0.76	140.82						
				22:31		0.78	25,717.50	11,307.90	14,409.60	1.000	13C12-2378-TCDF	IS0	
				23:06		0.83	74.32	33.73	40.59	1.026			
		DC	WH	24:31		0.66	263.74			1.089			
316-318				2 Peaks			25,791.82						
	---------- Above: TCDF / TCDD Follows ----------												
										0.906-1.094			
13C12-TCDD						0.65-0.89				0.000			
332-334		DC	NL	0:00	RO	2.13	6.73			0.948			
				20:08	RO	1.01	97.12	55.52	54.87	1.000	13C12-2378-TCDD	IS1	
				21:14		0.77	20,642.36	8,983.46	11,658.90	1.013	13C12-1234-TCDD	RS1	
				21:30		0.80	25,442.00	11,298.80	14,143.20	1.044			
				22:10		0.77	267.84	116.93	150.91	1.122			
		DC	WH	23:50	RO	0.40	35.47						
332-334				4 Peaks			46,449.32						

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
		E-Ether Interference

*** End of Report ***


File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:1753
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,7012.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A2.40E5
A1.97E5
A2.20E5
A6.39E4
A1.50E5
A3.39E4
A2.10E4
A7.58E4
A1.30E4
A4.87E4
A1.79E4
A3.39E4
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:1000
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4000.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A3.30E5
A1.58E5
A1.55E5
A4.03E4
A5.31E4
A1.17E5
A8.02E4
A1.68E5
A3.42E4
A3.33E4
A7.96E4
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:2805
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,11220.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.13E8
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:2271
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,9084.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.44E8
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
18:10
20:00
18:41
19:13
19:30
21:13
22:02
23:00
23:41
24:48
Time


File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:1086
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4344.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.56E5
A5.70E4
A2.20E4
A3.49E4
A5.50E4
A8.44E4
A5.20E4
A2.79E4
A5.06E4
A1.50E4
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:2463
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,9852.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.86E5
A2.42E5
A8.59E4
A6.01E4
A3.04E4
A5.72E4
A1.12E5
A7.50E4
A6.59E4
A6.42E4
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:1077
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4308.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.79E8
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:4038
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,16152.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.13E8
A8.98E7
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec Noise:1899
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,7596.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
A1.41E8
A1.17E8
Time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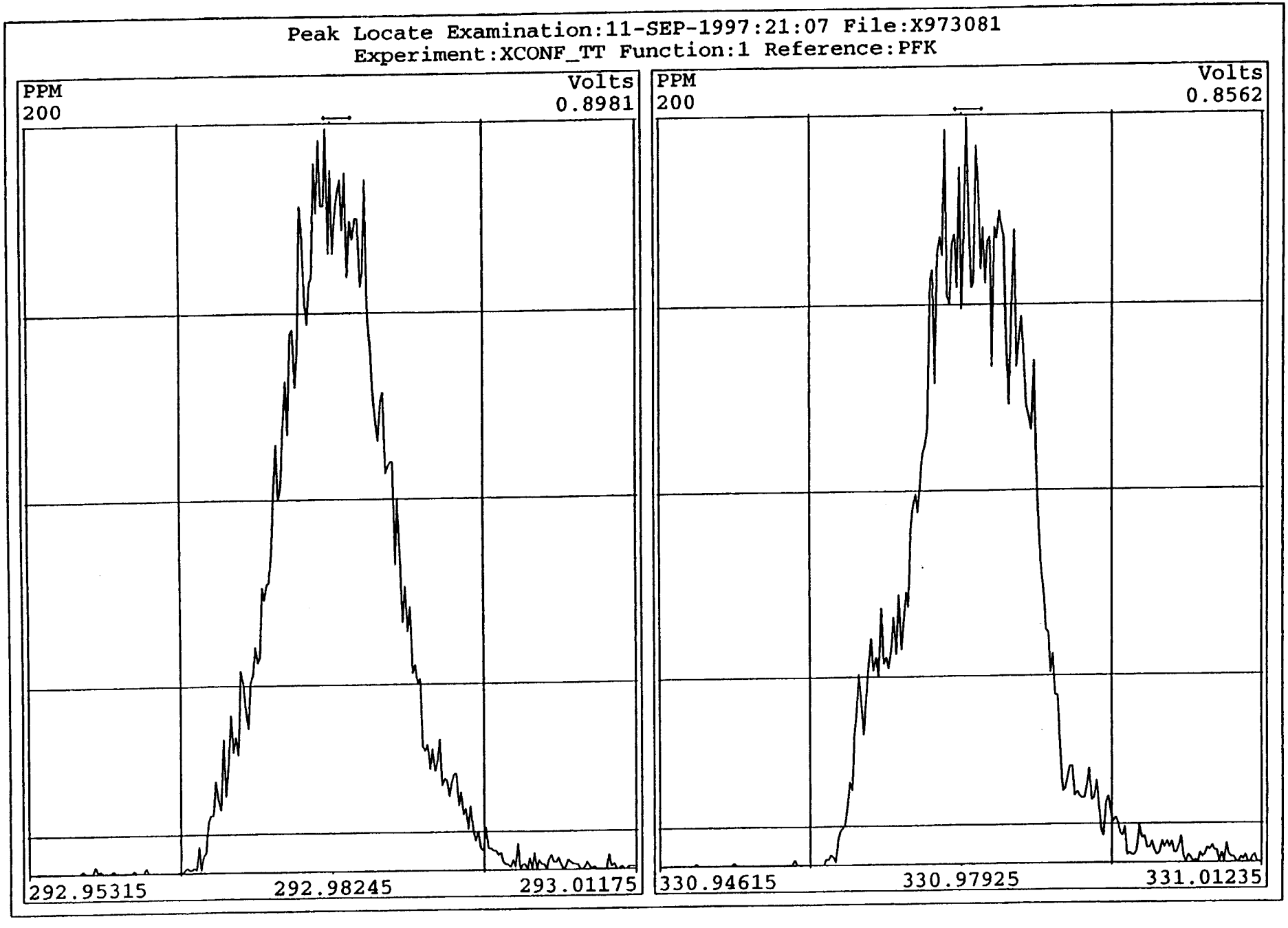
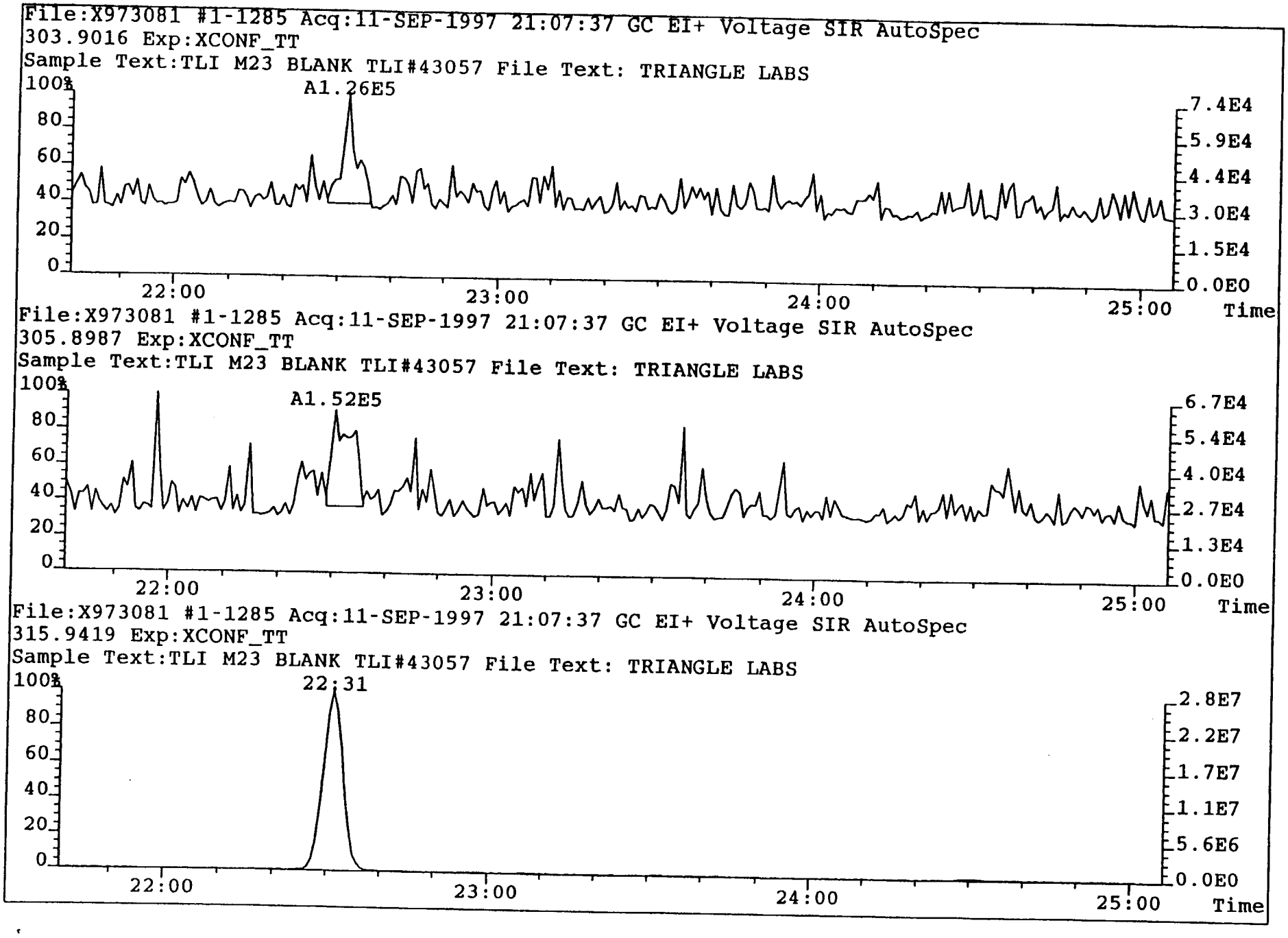
303.9016 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
18:12 19:06 19:55 20:49 21:13 21:28 22:03 22:32 23:06 23:34 23:59 24:36
7.6E4 6.1E4 4.5E4 3.0E4 1.5E4 0.0E0
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
22:31
2.8E7 2.2E7 1.7E7 1.1E7 5.6E6 0.0E0
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
18:54 19:30 20:10 21:31 21:58 22:11 22:42 23:26 23:58 24:29
1.1E5 8.7E4 6.5E4 4.3E4 2.2E4 0.0E0
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
21:14 21:30
2.9E7 2.3E7 1.7E7 1.2E7 5.8E6 0.0E0
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
18:07 18:51 19:18 20:26 20:54 21:52 22:54 23:29 24:04 24:34
8.1E7 6.5E7 4.9E7 3.2E7 1.6E7 0.0E0
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
19:03 19:41 20:06 20:53 21:25 22:17 23:23 23:57 24:34
9.7E7 7.7E7 5.8E7 3.9E7 1.9E7 0.0E0
18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 Time


Peak Locate Examination:11-SEP-1997:21:07 File:X973081
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
0.8981
292.95315
292.98245
293.01175
PPM
200
Volts
0.8562
330.94615
330.97925
331.01235


File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
100%
A1.26E5
80
60
40
20
0
7.4E4
5.9E4
4.4E4
3.0E4
1.5E4
0.0E0
22:00
23:00
24:00
25:00
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
305.8987 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
100%
A1.52E5
80
60
40
20
0
6.7E4
5.4E4
4.0E4
2.7E4
1.3E4
0.0E0
22:00
23:00
24:00
25:00
Time
File:X973081 #1-1285 Acq:11-SEP-1997 21:07:37 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:TLI M23 BLANK TLI#43057 File Text: TRIANGLE LABS
100%
22:31
80
60
40
20
0
2.8E7
2.2E7
1.7E7
1.1E7
5.6E6
0.0E0
22:00
23:00
24:00
25:00
Time

Pacific Environmental Services

LI Project: 43057
lient Sample: I-M23-1

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975808

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPX23704
FLI ID:	181-27-1A-C	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/10/97	ConCal:	S975797
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
,3,7,8-TCDD	EMPC		0.004			
,2,3,7,8-PeCDD	0.01			1.34	25:52	
,2,3,4,7,8-HxCDD	0.02			1.42	29:08	
,2,3,6,7,8-HxCDD	0.04			1.16	29:13	
,2,3,7,8,9-HxCDD	0.05			1.09	29:30	PR_
1,2,3,4,6,7,8-HpCDD	0.72			0.98	32:04	
1,2,3,4,6,7,8,9-OCDD	44.5			0.87	34:33	
2,3,7,8-TCDF	0.04			0.75	20:26	B_
1,2,3,7,8-PeCDF	0.008			1.68	24:44	
2,3,4,7,8-PeCDF	0.02			1.46	25:30	B_
1,2,3,4,7,8-HxCDF	0.06			1.37	28:23	PRB
1,2,3,6,7,8-HxCDF	0.02			1.32	28:29	B_
2,3,4,6,7,8-HxCDF	EMPC		0.02			PRB
1,2,3,7,8,9-HxCDF	0.007			1.40	29:42	
1,2,3,4,6,7,8-HpCDF	0.12			1.13	31:11	PRB
1,2,3,4,7,8,9-HpCDF	0.04			0.97	32:24	B_
1,2,3,4,6,7,8,9-OCDF	0.16			0.90	34:39	B_

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.05	4		0.06	
Total PeCDD	0.07	3		0.21	
Total HxCDD	0.45	7			
Total HpCDD	1.6	2			
Total TCDF	0.14	10		0.17	
Total PeCDF	0.12	5		0.12	
Total HxCDF	0.19	8		0.23	
Total HpCDF	0.30	4			

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Printed: 14:56 09/11/97

TLI Project: 43057
Client Sample: I-M23-1

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975808

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.9	98.5	40%-130%	0.76	20:24	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.6	89.0	40%-130%	0.79	21:13	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.8	95.5	40%-130%	1.42	24:43	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4.1	103	40%-130%	1.49	25:51	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	4.1	102	40%-130%	0.50	28:29	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.7	93.6	40%-130%	1.24	29:12	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.8	71.1	25%-130%	0.45	31:11	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.1	78.3	25%-130%	1.03	32:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4.8	60.5	25%-130%	0.86	34:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.9	97.6	70%-140%		21:14	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.7	93.2	70%-140%	1.45	25:29	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.8	94.6	70%-140%	0.50	28:22	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.5	88.0	70%-140%	1.20	29:07	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.3	83.6	70%-140%	0.41	32:23	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.7	91.3	40%-130%	0.50	29:42	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	4.0	99.0	40%-130%	0.49	28:59	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:01	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	29:29	—

Data Reviewer: _____ 09/11/97

X237_PSR v2.00, LARS 6.10.04

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Printed: 14:56 09/11/97

ata Review By: Initial CM Date 9/11/97 Calculated Noise Area: 2.89

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 S975808B.dbf
09/11/97 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				0.823-1.104			
										0.000			
304-306		DC	NL	0:00	RO	0.15	0.14			3.95	0.830		
K				16:56		0.75	6.90	2.95	3.95	0.830			
K				17:23		0.74	8.43	3.58	4.85	0.852			
				17:40		0.73	10.53	4.46	6.07	0.866			
				18:04	RO	0.98	18.92	10.47	10.69	0.886			
				18:27		0.81	24.57	11.02	13.55	0.904			
				18:54		0.88	30.00	14.00	16.00	0.926			
A				19:14		0.68	25.49	10.35	15.14	0.943			
				19:43		0.88	31.80	14.90	16.90	0.967			
M				19:58		0.71	40.05	16.66	23.39	0.979			
				20:12		0.82	11.18	5.05	6.13	0.990			
				20:26		0.75	75.49	32.29	43.20	1.002	2378-TCDF		AN
				20:55	RO	0.94	15.12	8.07	8.54	1.025			
				21:09	RO	1.07	7.81	4.72	4.41	1.037			
		DC	SN	21:43		0.84	3.50			1.065			
				22:20	RO	0.95	12.27	6.59	6.93	1.095			
304-306				14 Peaks			318.56						
13C12-TCDF						0.65-0.89				0.951-1.049			
										0.000			
316-318		DC	NL	0:00		0.75	2.05			0.941			
		DC	WL	19:12		0.66	21.11			0.964			
				19:40		0.66	32.43	12.88	19.55	0.976			
				19:55	RO	0.50	26.32	11.45	23.12	1.000	13C12-2378-TCDF		ISO
				20:24		0.76	6,033.07	2,601.46	3,431.61	1.025			
				20:54	RO	1.10	22.87	14.24	12.92				
316-318				4 Peaks			6,114.69						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.857-1.061			
										0.000			
320-322		DC	NL	0:00	RO	0.13	0.16			0.856			
		DC	WL	18:10	RO	0.58	0.80			0.863			
				18:18		0.73	27.69	11.72	15.97	0.884			
				18:45		0.66	15.97	6.36	9.61	0.902			
				19:08		0.81	6.74	3.02	3.72	0.910			
K										0.927			
		DC	SN	19:19		0.71	0.82			0.932			
		DC	SN	19:40	RO	0.53	1.36			0.937			
		DC	SN	19:46	RO	0.23	0.46			0.947			
				19:53	RO	0.48	12.96	5.64	11.80	0.979			
A										0.987			
		DC	SN	20:05	RO	1.33	3.56			1.001	2378-TCDD		AN
		DC	SN	20:46		0.88	1.05						
				20:57		0.86	10.21	4.73	5.48				
MK													
M				21:14	RO	0.37	5.63	2.45	6.57				

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		21:24	RO	0.14	1.63			1.009			
K				21:37	RO	0.47	3.24	1.41	2.97	1.019			
	DC	SN		22:03	RO	0.29	0.90			1.039			
	DC	WH		22:39	RO	0.59	1.13			1.068			
320-322			7 Peaks				82.44						
37Cl-TCDD										0.906-1.094			
328	DC	NL		0:00			1.00			0.000			
	DC	WL		18:36			671.91			0.877			
	DC	WL		18:45			146.56			0.884			
				19:41			18,140.50	18,140.50		0.928			
				21:14			3,630.46	3,630.46		1.001	37Cl-TCDD		SUR1
				21:42			183.22	183.22		1.023			
328			3 Peaks				21,954.18						
13C12-TCDD						0.65-0.89				0.906-1.094			
332-334	DC	NL		0:00	RO	17.57	0.12			0.000			
				19:54	RO	0.94	20.87	11.14	11.79	0.938			
				21:01		0.80	4,648.40	2,068.45	2,579.95	0.991	13C12-1234-TCDD		RS1
				21:13		0.79	4,411.05	1,945.04	2,466.01	1.000	13C12-2378-TCDD		IS1
				21:35		0.76	69.35	29.97	39.38	1.017			
332-334			4 Peaks				9,149.67						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.909-1.079			
340-342	DC	NL		0:00	RO	0.78	0.12			0.000			
	DC	SN		22:29	RO	1.04	1.92			0.910			
				22:37		1.56	40.44	24.67	15.77	0.915			
	DC	SN		22:55	RO	0.16	0.54			0.927			
	DC	SN		23:42	RO	1.13	5.05			0.959			
				23:49		1.48	53.70	32.09	21.61	0.964			
	DC	SN		24:00		1.74	8.97			0.971			
D	D	SN		24:09		1.43	9.00			0.977			
A				24:21		1.48	26.50	15.80	10.70	0.985			
	DC	SN		24:38	RO	1.95	8.42			0.997			
M				24:44		1.68	10.65	6.68	3.97	1.001	12378-PeCDF		AN
	DC	SN		24:53		1.39	8.01			1.007			
D	D	SN		25:04	RO	1.81	14.13			1.014			
				25:30		1.46	29.89	17.76	12.13	1.032	23478-PeCDF		AN
	DC	SN		25:57	RO	0.72	2.73			1.050			
				26:21	RO	1.09	11.91	7.24	6.64	1.066			
	DC	SN		26:28		1.60	6.22			1.071			
	DC	SN		26:38	RO	0.42	1.86			1.078			
	DC	WH		26:55		1.36	3.82			1.089			
340-342			6 Peaks				173.09						
13C12-PeCDF						1.32-1.78				0.838-1.162			
352-354	DC	NL		0:00	RO	1.14	0.13			0.000			
				23:49		1.53	39.40	23.80	15.60	0.964			
				24:21		1.42	22.55	13.25	9.30	0.985			
				24:43		1.42	5,030.90	2,953.19	2,077.71	1.000	13C12-PeCDF 123		IS2

Listing of S975808B.dbf
Matched GC Peaks / Ratio / Ret. Time

mpound/ Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				25:02		1.61	34.52	21.28	13.24	1.013			
				25:29		1.45	4,547.45	2,691.90	1,855.55	1.031	13C12-PeCDF	234	SUR2
	DC	SN		26:27	RO	4.31	8.26			1.070			
52-354			5 Peaks				9,674.82						

---------- Above: PeCDF / PeCDD Follows ----------

					1.32-1.78					0.921-1.026			
PeCDD										0.000			
356-358	DC	NL		0:00	RO	0.88	0.12						
				23:58	RO	0.01	55.24	33.58	4,006.77	0.927			
				24:11	RO	0.01	18.79	11.42	846.02	0.936			
				24:27	RO	2.79	24.15	26.39	9.47	0.946			
				24:44	RO	1.98	22.29	17.28	8.74	0.957			
				25:04		1.36	18.58	10.70	7.88	0.970			
				25:18		1.51	38.84	23.37	15.47	0.979			
				25:32	RO	1.27	8.69	5.28	4.15	0.988			
				25:52		1.34	9.59	5.50	4.09	1.001	12378-PeCDD	AN	
356-358			8 Peaks				196.17						

					1.32-1.78					0.845-1.155			
13C12-PeCDD										0.000			
368-370	DC	NL		0:00	RO	1.00	0.12			0.959			
	DC	SN		24:47	RO	0.62	3.88			0.975			
	DC	SN		25:13	RO	0.82	2.81						
				25:51		1.49	3,028.25	1,813.06	1,215.19	1.000	13C12-PeCDD	123	IS3
				26:00		1.52	293.47	177.23	116.24	1.006			
							4.95			1.018			
	DC	SN		26:19	RO	0.73	9.08	5.52	17.44	1.039			
				26:51	RO	0.32	3,330.80						
368-370			3 Peaks										

---------- Above: PeCDD / HxCDF Follows ----------

						1.05-1.43				0.957-1.053				
HxCDF										0.000				
374-376	DC	NL		0:00		1.30	2.00							
				27:23	RO	1.52	19.47	13.20	8.69	0.961				
				27:32		1.37	62.51	36.14	26.37	0.967				
				27:50		1.24	9.10	5.04	4.06	0.977				
				28:00		1.29	31.54	17.77	13.77	0.983				
				28:23		1.37	75.02	43.35	31.67	0.996	123478-HxCDF	AN	PR	
				28:29		1.32	29.20	16.64	12.56	1.000	123678-HxCDF	AN		
				28:36		1.22	7.16	3.93	3.23	1.004				
K				28:46		1.24	9.81	5.43	4.38	1.010				
A				28:57	RO	0.99	7.55	4.18	4.23	1.016				
M				28:59	RO	1.86	19.04	15.80	8.50	1.018	234678-HxCDF	AN	PR	
	DC	SN		29:07	RO	1.45	1.34			1.022				
	DC	SN		29:14	RO	3.90	0.87			1.026				
	DC	SN		29:24	RO	0.57	1.01			1.032				
	DC	SN		29:31	RO	11.93	0.31			1.036				
	DC	SN		29:38	RO	7.38	0.72			1.040				
MK				29:42		1.40	7.57	4.42	3.15	1.043	123789-HxCDF	AN		
M				29:48	RO	1.61	11.47	8.24	5.12	1.046				
	DC	SN		29:55	RO	3.55	1.05			1.050				
	DC	WH		30:02	RO	0.73	1.03			1.054				

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		30:16	RO	1.47	3.43			1.063			
374-376			12 Peaks				289.44						
13C12-HxCDF				0.43-0.59						0.859-1.141			
384-386	DC	NL		0:00	RO	0.98	3.47			0.000			
	DC	SN		27:23		0.53	6.19			0.961			
				27:31		0.51	16.32	5.54	10.78	0.966			
				28:22		0.50	3,532.36	1,175.53	2,356.83	0.996	13C12-HxCDF 478	SUR3	
				28:29		0.50	3,893.18	1,290.86	2,602.32	1.000	13C12-HxCDF 678	IS4	
	DC	SN		28:46	RO	1.19	2.67			1.010			
				28:59		0.49	3,490.34	1,154.25	2,336.09	1.018	13C12-HxCDF 234	ALT2	
	DC	SN		29:14	RO	0.88	2.07			1.026			
				29:23	RO	1.74	7.19	8.30	4.76	1.032			
	DC	SN		29:31	RO	0.89	4.27			1.036			
				29:42		0.50	2,799.07	931.12	1,867.95	1.043	13C12-HxCDF 789	ALT1	
384-386			6 Peaks				13,738.46						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.951-1.015			
390-392	DC	NL		0:00	RO	1.56	2.08			0.000			
				27:55		1.22	75.74	41.58	34.16	0.956			
				28:23		1.29	68.09	38.41	29.68	0.972			
	DC	SN		28:28	RO	3.38	1.75			0.975			
				28:36		1.19	103.06	55.90	47.16	0.979			
				28:45		1.18	17.87	9.67	8.20	0.985			
	DC	SN		28:53	RO	0.75	2.33			0.989			
				29:08		1.42	15.54	9.11	6.43	0.998	123478-HxCDD	AN	
				29:13		1.16	29.95	16.07	13.88	1.001	123678-HxCDD	AN	
				29:30		1.09	42.60	22.25	20.35	1.010	123789-HxCDD	AN	PR
	DC	WH		29:41	RO	0.85	5.18			1.017			
390-392			7 Peaks				352.85						
13C12-HxCDD				1.05-1.43						0.966-1.034			
402-404	DC	NL		0:00	RO	0.82	1.45			0.000			
	DC	WL		27:52	RO	0.66	2.96			0.954			
				28:36		1.23	12.52	6.91	5.61	0.979			
				29:07		1.20	2,521.18	1,375.41	1,145.77	0.997	13C12-HxCDD 478	SUR4	
				29:12		1.24	2,943.73	1,628.34	1,315.39	1.000	13C12-HxCDD 678	IS5	
				29:29		1.23	3,161.62	1,743.31	1,418.31	1.010	13C12-HxCDD 789	RS2	
				29:41		1.36	9.42	5.42	4.00	1.017			
	DC	SN		29:48	RO	2.82	1.39			1.021			
402-404			5 Peaks				8,648.47						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF				0.88-1.20						0.995-1.045			
408-410	DC	NL		0:00	RO	1.64	3.51			0.000			
M				31:11		1.13	94.90	50.40	44.50	1.000	1234678-HpCDF	AN	PR
				31:24		1.10	16.64	8.73	7.91	1.007			
				31:33		1.03	78.61	39.83	38.78	1.012			
	DC	SN		31:51	RO	0.66	1.26			1.021			

mpound/ Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		31:58	RO	2.11	1.65			1.025			
				32:24		0.97	21.27	10.45	10.82	1.039	1234789-HpCDF	AN	
08-410				4 Peaks			211.42						
						0.37-0.51				0.936-1.128			
3C12-HpCDF										0.000			
18-420	DC	NL		0:00	RO	0.82	2.10						
				31:11		0.45	1,994.27	614.76	1,379.51	1.000	13C12-HpCDF 678	IS6	
				32:23		0.41	1,285.52	375.39	910.13	1.038	13C12-HpCDF 789	SUR5	
18-420				2 Peaks			3,279.79						

---------- Above: HpCDF / HpCDD Follows ----------

						0.88-1.20				0.977-1.006			
pCDD										0.000			
24-426	DC	NL		0:00	RO	1.74	3.35						
				31:27		0.96	463.72	227.09	236.63	0.981			
				32:04		0.98	385.95	190.80	195.15	1.001	1234678-HpCDD	AN	
24-426				2 Peaks			849.67						
						0.88-1.20				0.969-1.031			
13C12-HpCDD										0.000			
36-438	DC	NL		0:00	RO	1.22	2.75						
				32:03		1.03	2,016.39	1,023.54	992.85	1.000	13C12-HpCDD 678	IS7	
36-438				1 Peak			2,016.39						

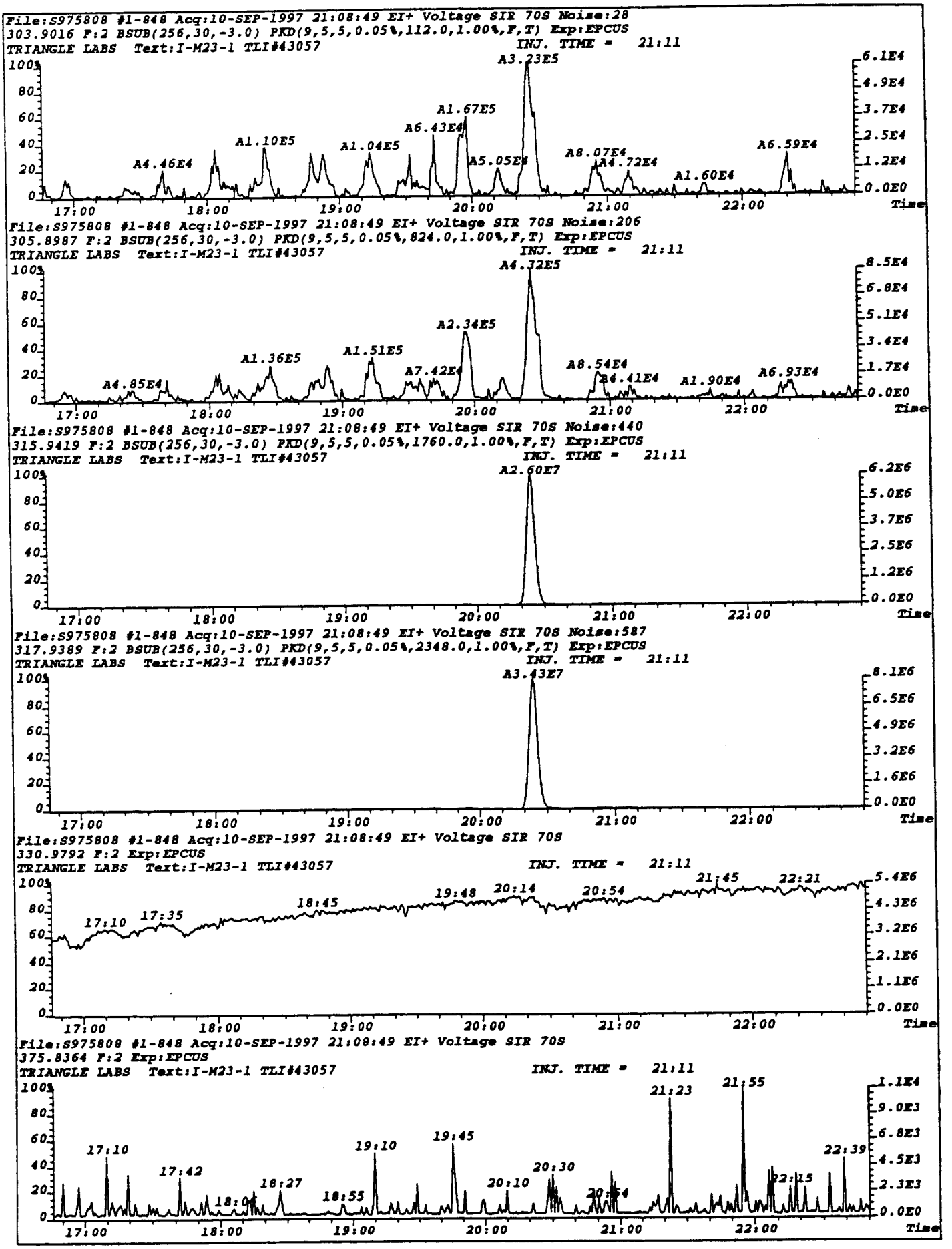
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------

						0.76-1.02				0.884-1.116			
OCDF										0.000			
42-444	DC	NL		0:00		0.86	0.13			0.896			
	DC	SN		30:56	RO	3.00	0.34			0.902			
	DC	SN		31:08	RO	0.36	0.45			0.914			
	DC	SN		31:33	RO	7.31	0.25			0.920			
	DC	SN		31:47	RO	4.29	0.13			0.923			
	DC	SN		31:52	RO	0.52	0.91			0.927			
	DC	SN		32:01	RO	0.38	0.42			0.932			
	DC	SN		32:12	RO	1.04	0.87			0.940			
	DC	SN		32:27	RO	1.41	0.42			0.944			
	DC	SN		32:35	RO	0.23	0.25			0.952			
	DC	SN		32:52	RO	1.16	1.46			0.956			
	DC	SN		33:01		0.97	1.40			0.959			
	DC	SN		33:08	RO	0.13	0.19			0.965			
	DC	SN		33:20	RO	2.16	1.63			0.971			
	DC	SN		33:31	RO	1.15	1.23			0.972			
	DC	SN		33:34	RO	0.58	0.68			0.979			
	DC	SN		33:48	RO	2.41	0.51						
M				34:39		0.90	59.10	28.00	31.10	1.003	OCDF		AN
	DC	SN		34:55		0.80	4.15			1.011			
	DC	SN		35:04	RO	0.35	1.42			1.015			
	DC	SN		35:15		0.85	1.26			1.021			
	DC	SN		35:26	RO	1.53	1.00			1.026			
	DC	SN		35:48	RO	1.05	2.99			1.037			
42-444				1 Peak			59.10						

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				0.884-1.116			
458-460	DC	NL		0:00		0.86	0.13			0.000			
				34:33		0.87	12,207.19	5,681.55	6,525.64	1.000	OCDD		AN
458-460		1	Peak				12,207.19						
13C12-OCDD						0.76-1.02				0.996-1.005			
470-472	DC	NL		0:00	RO	1.17	0.11			0.000			
				34:32		0.86	1,984.37	920.29	1,064.08	1.000	13C12-OCDD		IS8
	DC	WH		34:55		0.76	2.02			1.011			
470-472		1	Peak				1,984.37						

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
		E-Ether Interference

*** End of Report ***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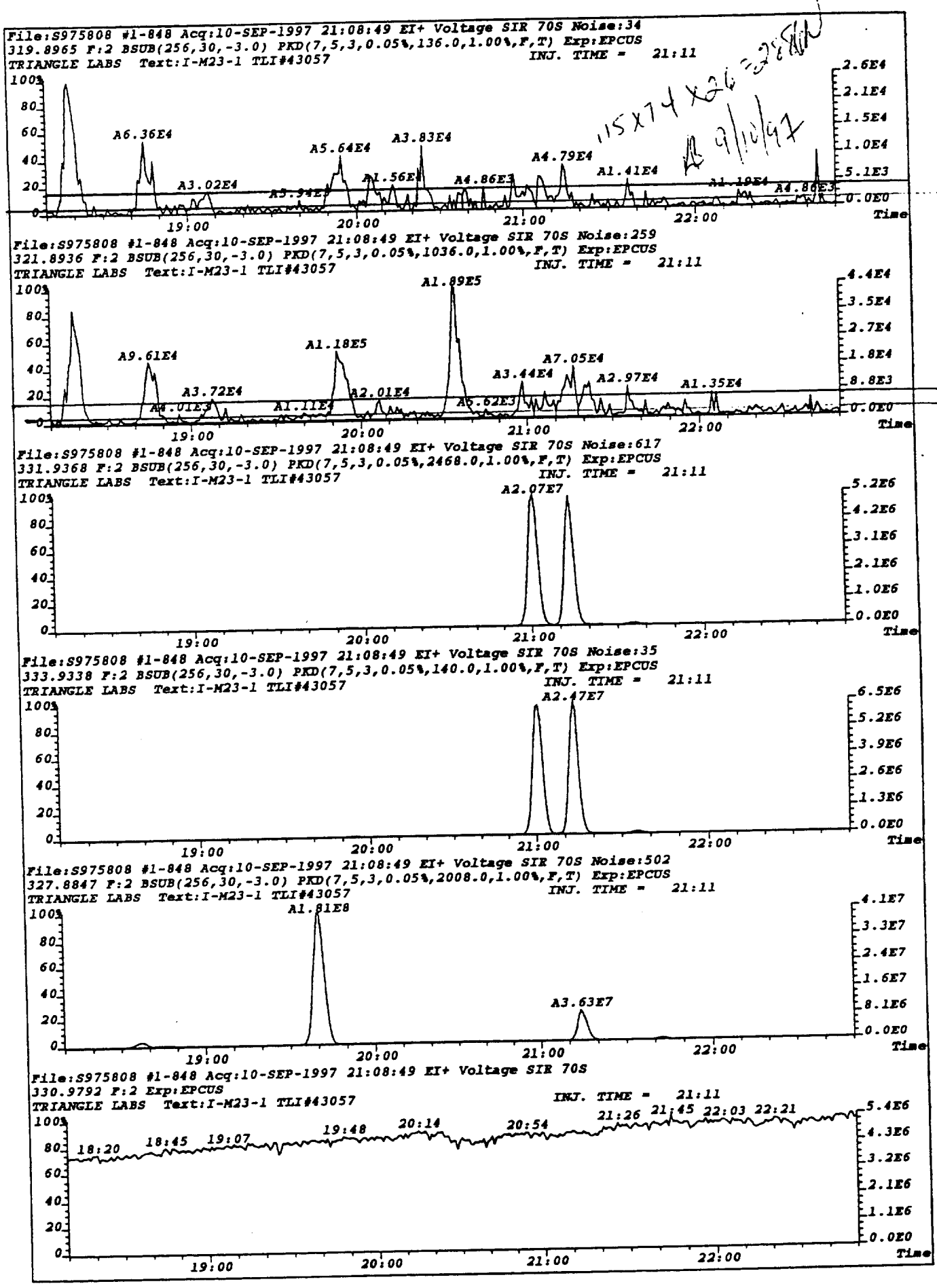
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.23E5
A1.67E5
A6.43E4
A1.10E5
A1.04E5
A4.46E4
A5.05E4
A8.07E4
A4.72E4
A1.60E4
A6.59E4
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:206
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,824.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A4.32E5
A2.34E5
A1.36E5
A1.51E5
A4.85E4
A7.42E4
A8.54E4
A4.41E4
A1.90E4
A6.93E4
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:440
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1760.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.60E7
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:587
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,2348.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.43E7
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
17:10
17:35
18:45
19:48
20:14
20:54
21:45
22:21
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
17:10
17:42
18:27
18:55
19:10
19:45
20:10
20:30
21:23
21:55
22:15
22:39
Time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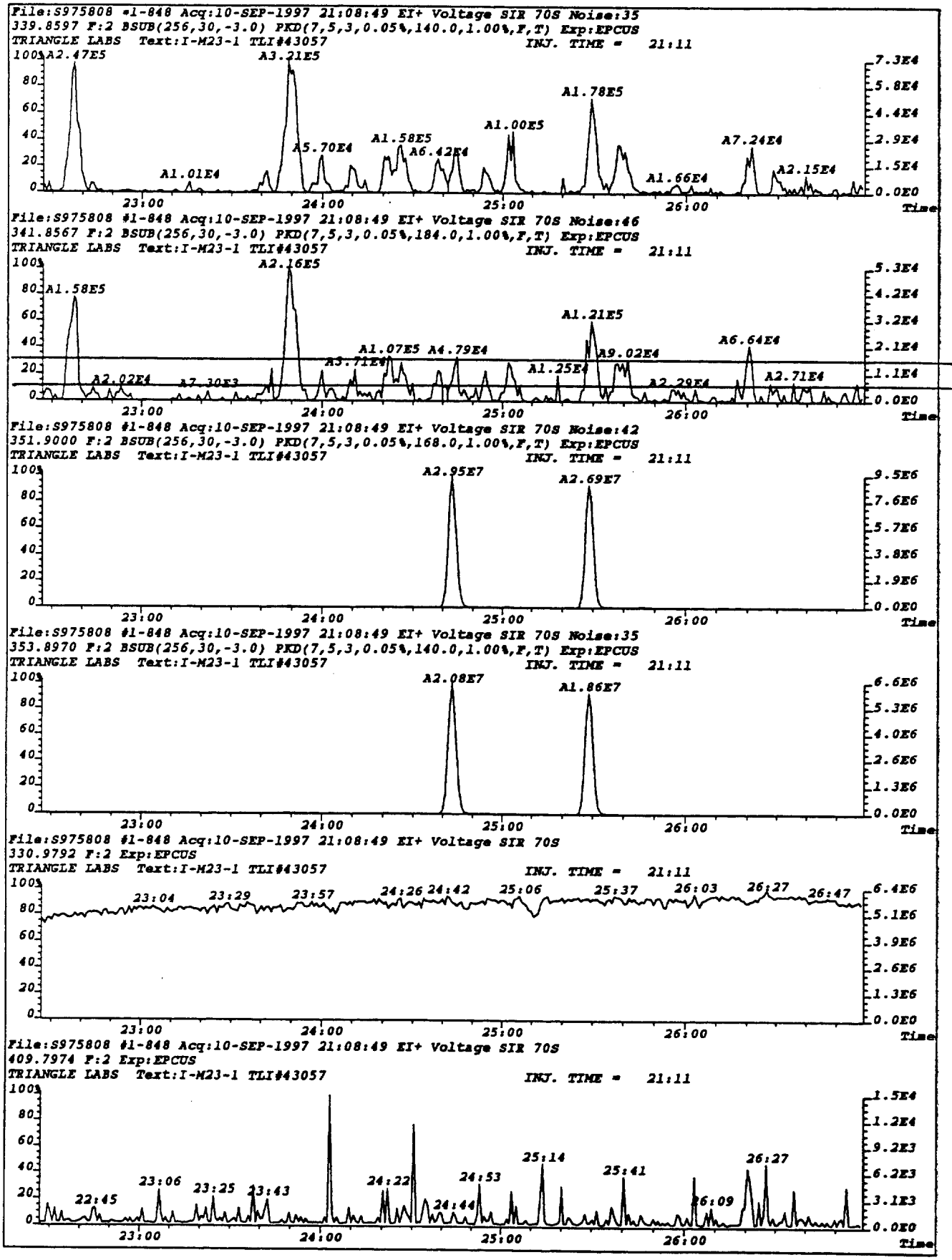
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A6.36E4
A3.02E4
A5.64E4
A3.83E4
A4.79E4
A1.41E4
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:259
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1036.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.89E5
A9.61E4
A1.18E5
A7.05E4
A3.44E4
A2.97E4
A3.72E4
A2.01E4
A1.35E4
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:617
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2468.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.07E7
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:35
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.47E7
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:502
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2008.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.81E8
A3.63E7
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
18:20
18:45
19:07
19:48
20:14
20:54
21:26
21:45
22:03
22:21
19:00
20:00
21:00
22:00
Time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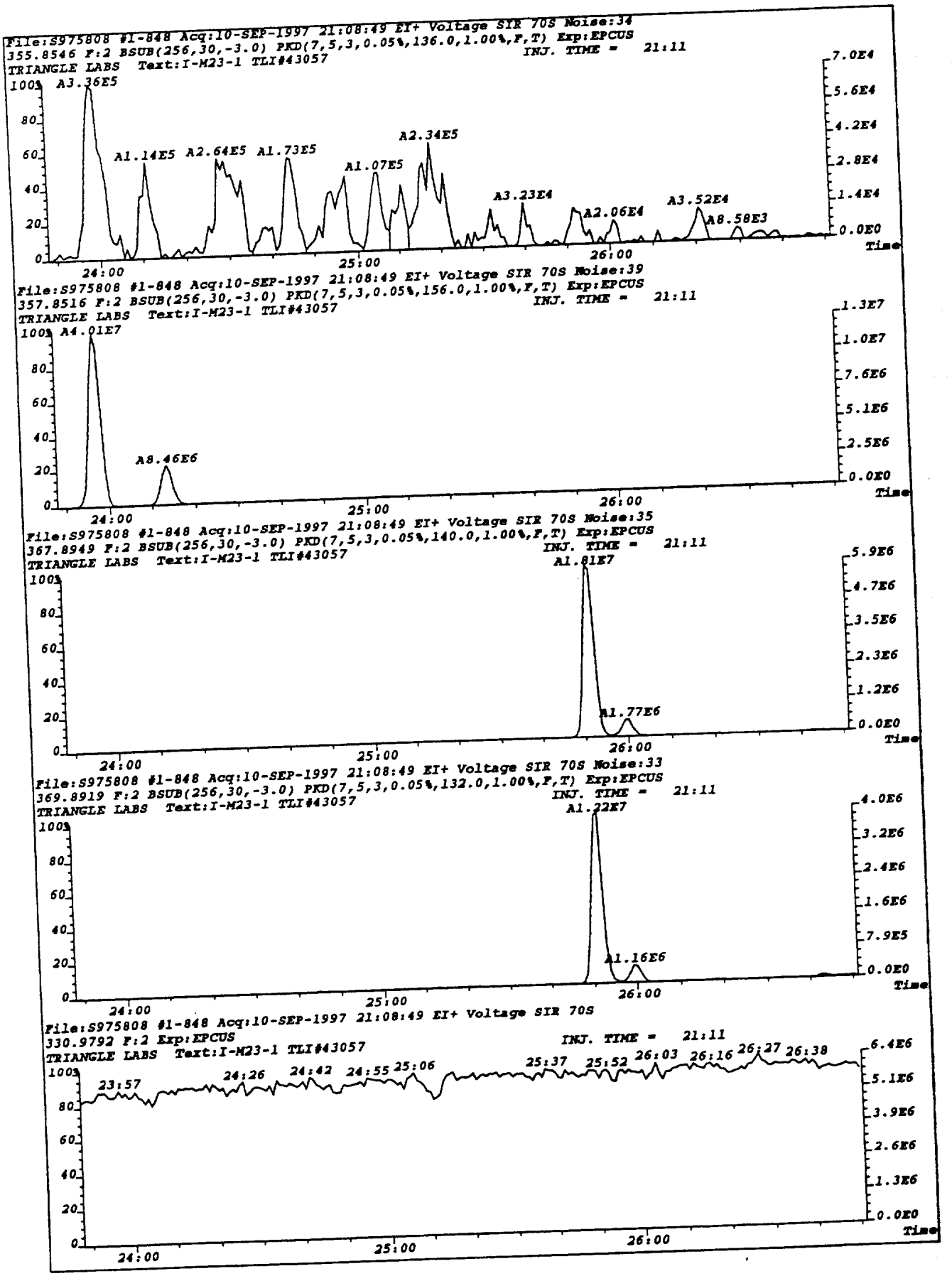
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.47E5
A3.21E5
A1.78E5
A1.00E5
A1.58E5
A5.70E4
A6.42E4
A1.01E4
A1.66E4
A7.24E4
A2.15E4
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:46
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,184.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.16E5
A1.58E5
A1.21E5
A1.07E5
A4.79E4
A3.71E4
A9.02E4
A6.64E4
A1.25E4
A2.02E4
A7.30E3
A2.29E4
A2.71E4
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:42
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.95E7
A2.69E7
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:35
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.08E7
A1.86E7
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
23:04
23:29
23:57
24:26
24:42
25:06
25:37
26:03
26:27
26:47
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
22:45
23:06
23:25
23:43
24:22
24:44
24:53
25:14
25:41
26:09
26:27
Time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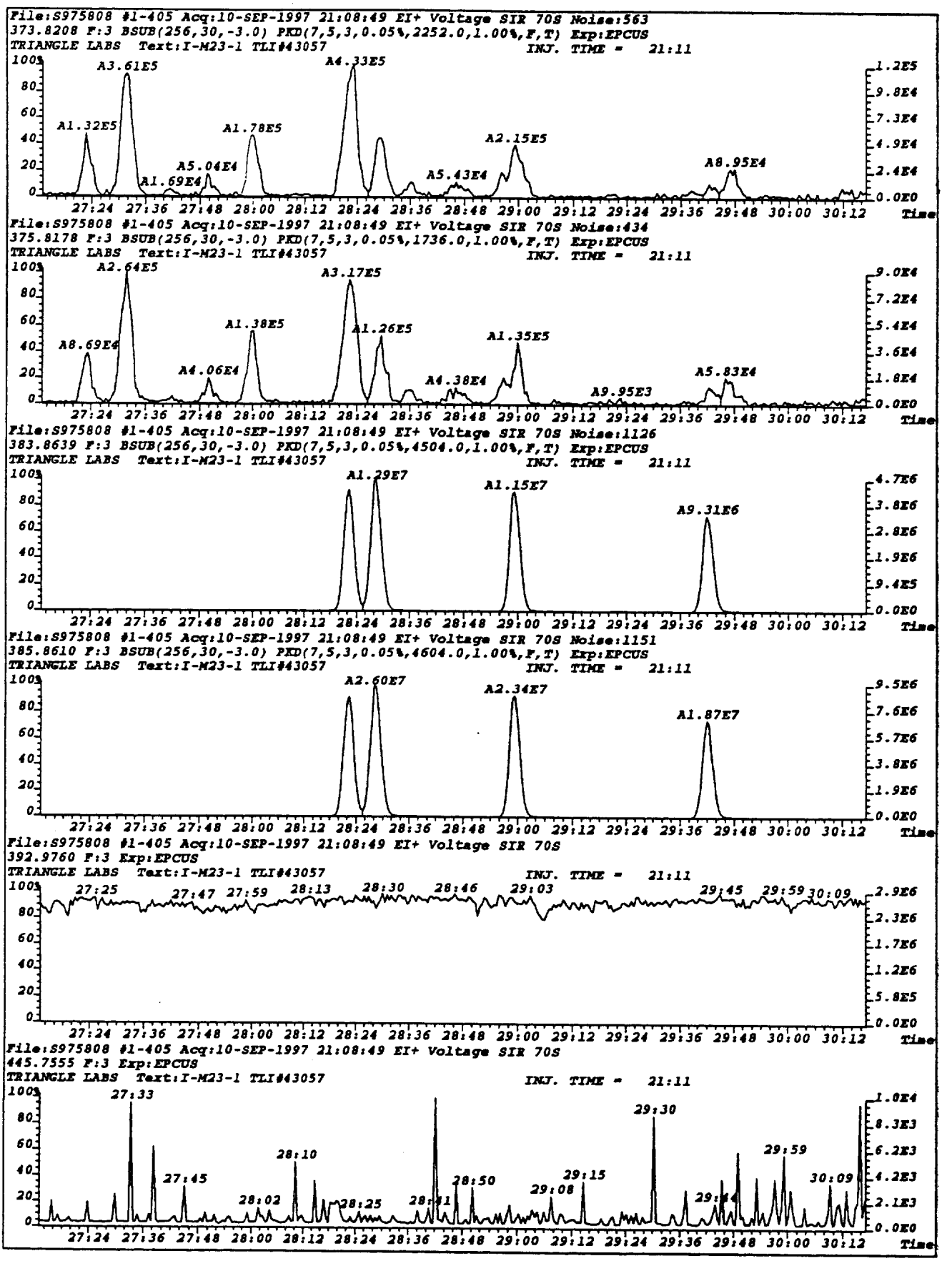
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.36E5
A1.14E5 A2.64E5 A1.73E5
A1.07E5
A2.34E5
A3.23E4
A2.06E4
A3.52E4
A8.58E3
7.0E4
5.6E4
4.2E4
2.8E4
1.4E4
0.0E0
Time
24:00
25:00
26:00
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:39
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A4.01E7
A8.46E6
1.3E7
1.0E7
7.6E6
5.1E6
2.5E6
0.0E0
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:35
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.81E7
A1.77E6
5.9E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:33
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.22E7
A1.16E6
4.0E6
3.2E6
2.4E6
1.6E6
7.9E5
0.0E0
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
23:57
24:26
24:42
24:55
25:06
25:37
25:52
26:03
26:16
26:27
26:38
6.4E6
5.1E6
3.9E6
2.6E6
1.3E6
0.0E0
Time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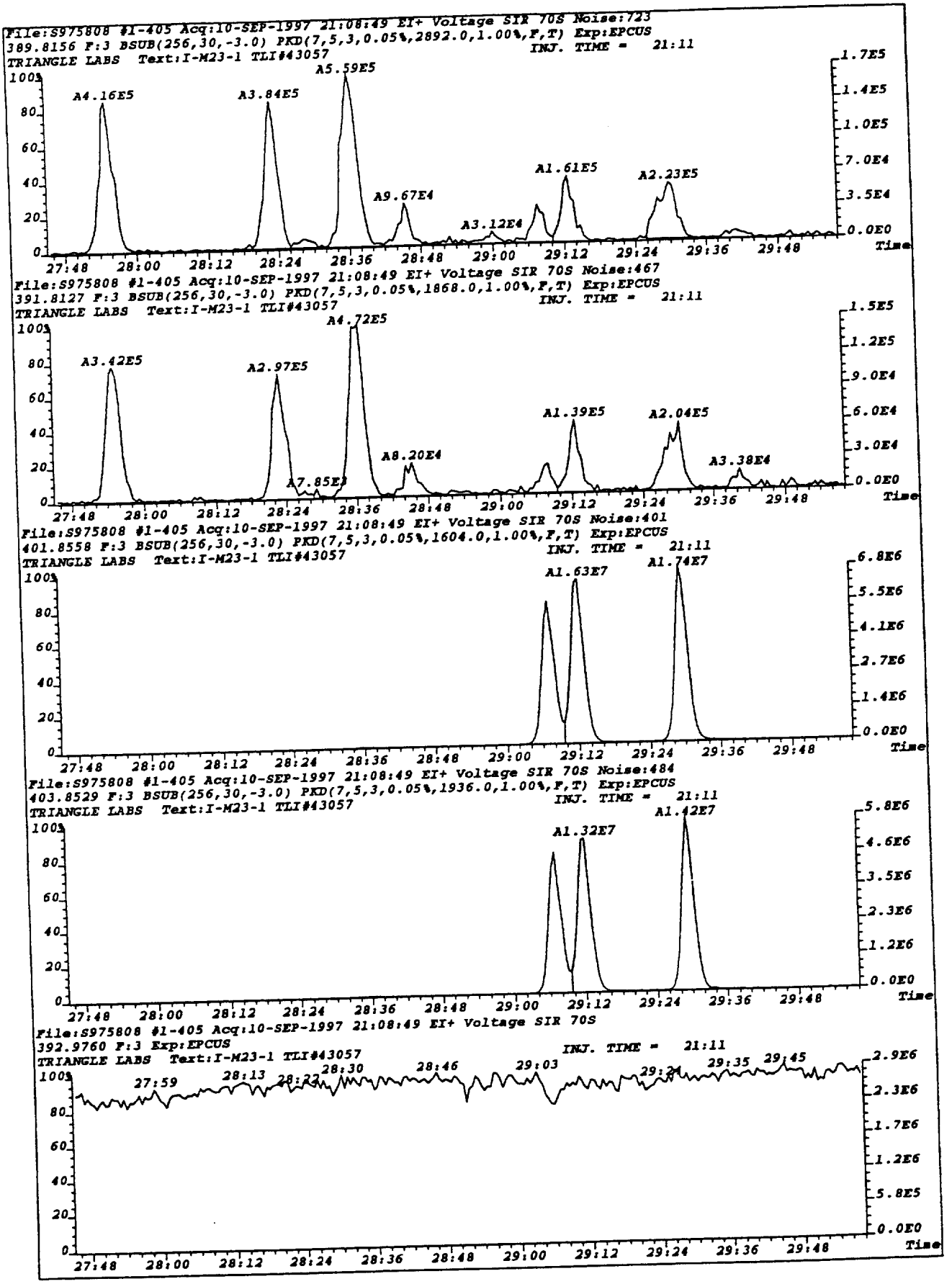
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2252.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.61E5
A4.33E5
A1.32E5
A1.78E5
A2.15E5
A5.04E4
A1.69E4
A5.43E4
A8.95E4
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:434
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1736.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.64E5
A3.17E5
A1.38E5
A1.26E5
A8.69E4
A1.35E5
A4.06E4
A4.38E4
A9.95E3
A5.83E4
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:1126
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4504.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.29E7
A1.15E7
A9.31E6
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:1151
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4604.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.60E7
A2.34E7
A1.87E7
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
27:25
27:47
27:59
28:13
28:30
28:46
29:03
29:45
29:59
30:09
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
27:33
29:30
28:10
27:45
28:50
29:15
29:59
30:09
28:02
28:25
29:08
27:24 27:36 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
Time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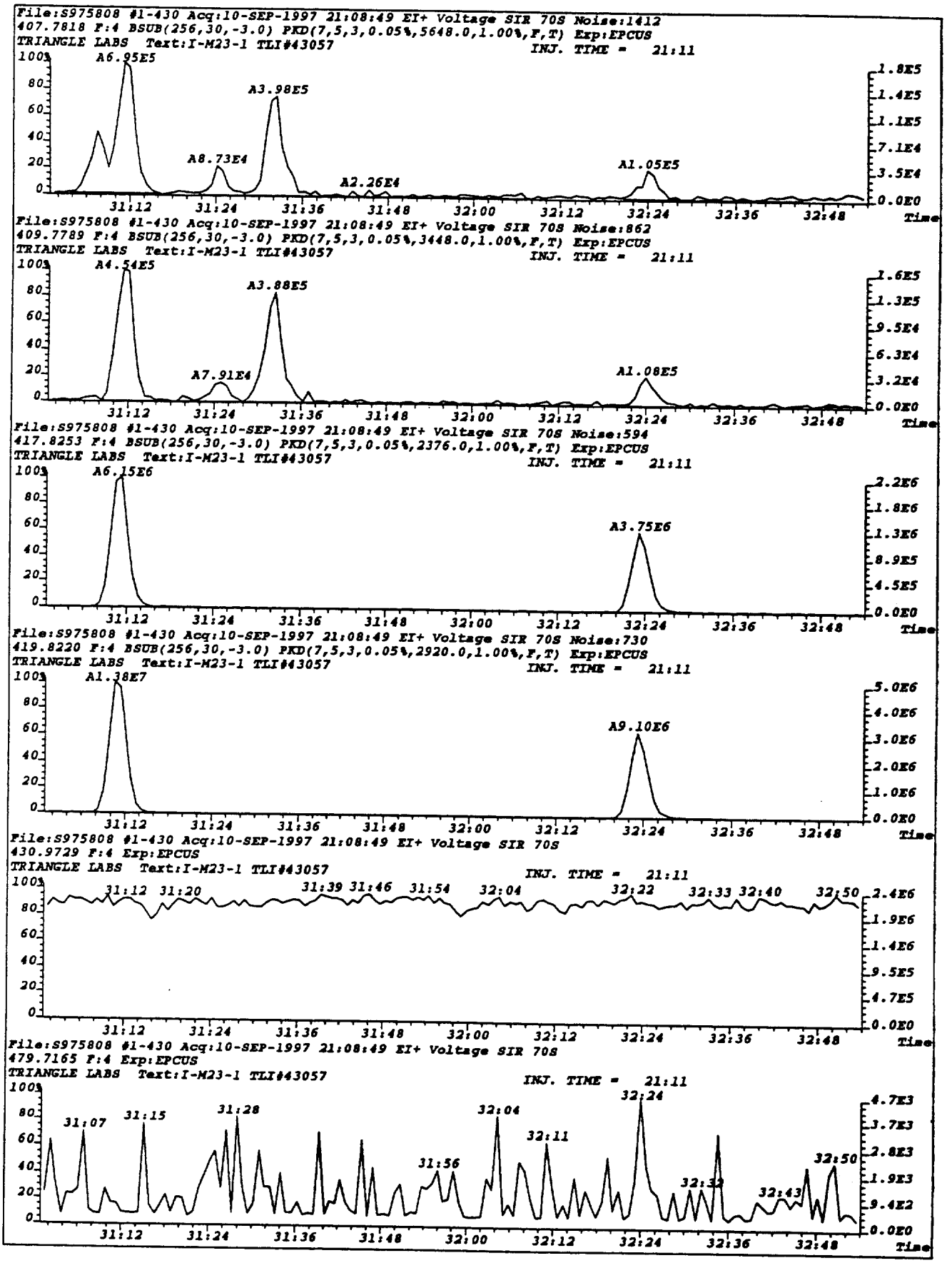
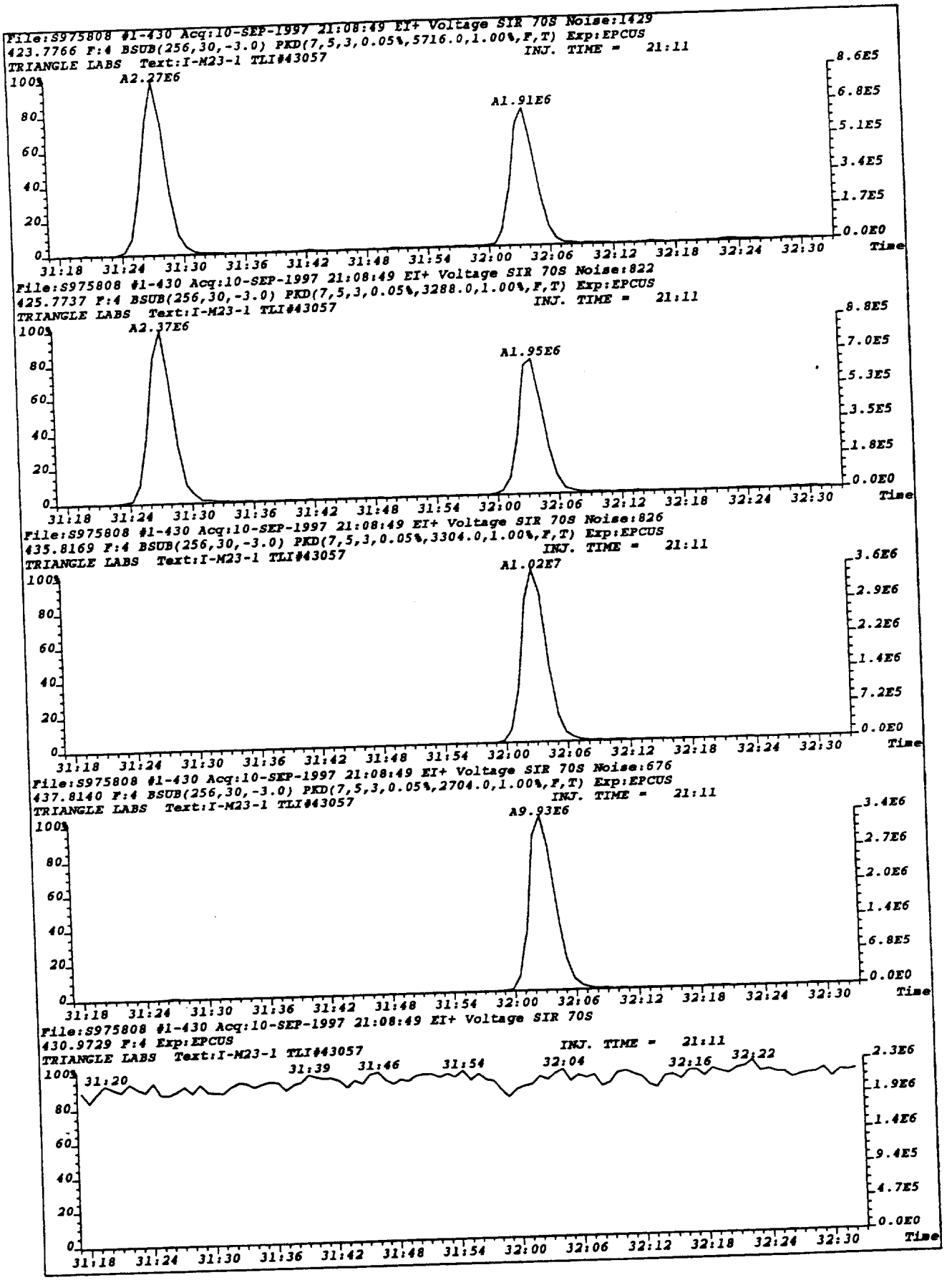
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2892.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A4.16E5
A3.84E5
A5.59E5
A9.67E4
A3.12E4
A1.61E5
A2.23E5
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:467
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1868.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.42E5
A2.97E5
A4.72E5
A8.20E4
A7.85E3
A1.39E5
A2.04E5
A3.38E4
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:401
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1604.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.63E7
A1.74E7
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:484
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1936.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.32E7
A1.42E7
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
27:59
28:13
28:22
28:30
28:46
29:03
29:21
29:35
29:45
Time


File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:1412
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5648.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A6.95E5
A3.98E5
A8.73E4
A2.26E4
A1.05E5
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:862
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3448.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A4.54E5
A3.88E5
A7.91E4
A1.08E5
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:594
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2376.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A6.15E6
A3.75E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:730
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2920.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.38E7
A9.10E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
Time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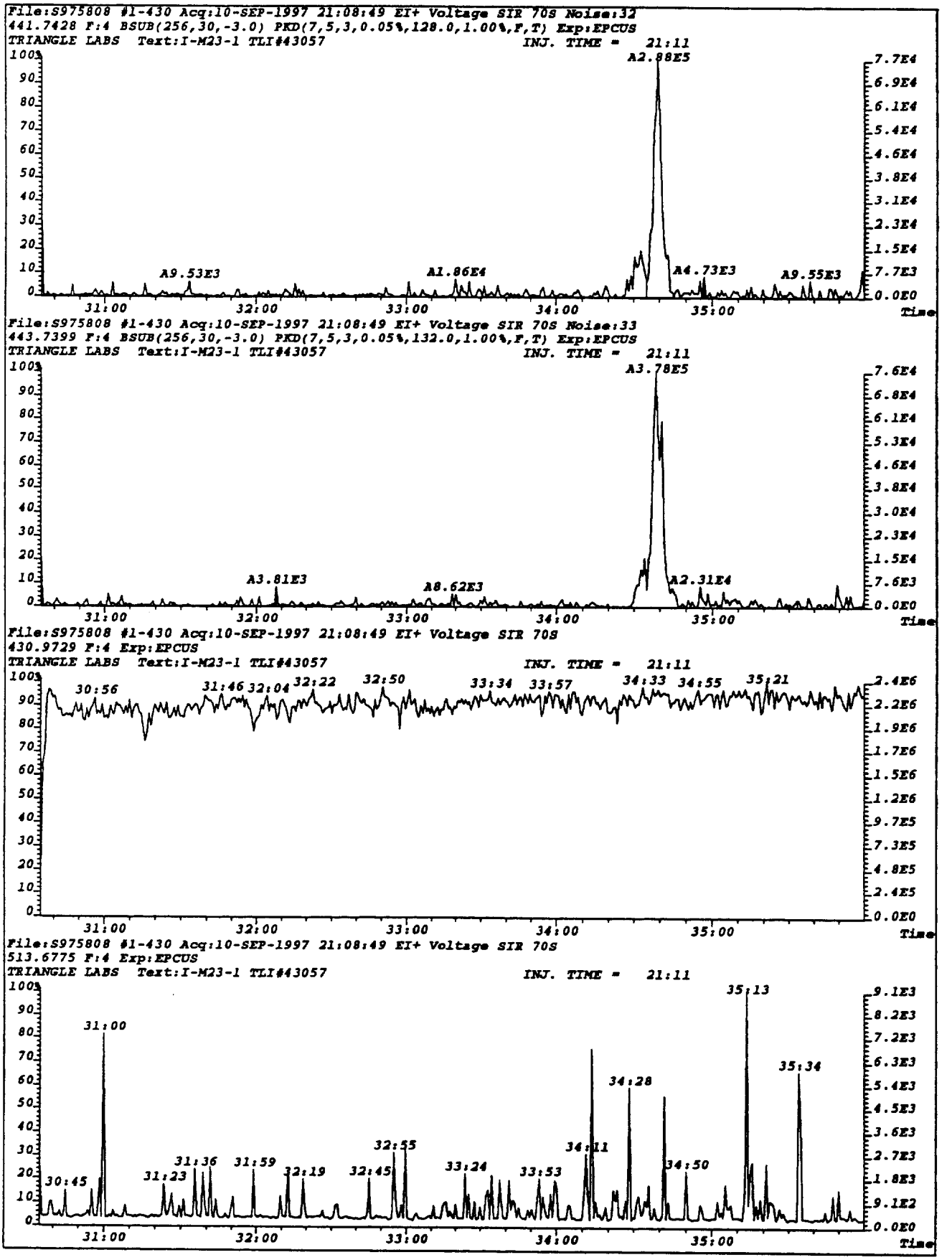
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5716.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.27E6
A1.91E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:822
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3288.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.37E6
A1.95E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:826
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3304.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.02E7
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:676
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2704.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A9.93E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
Time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441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A2.88E5
A9.53E3
A1.86E4
A4.73E3
A9.55E3
Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:33
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A3.78E5
A3.81E3
A8.62E3
A2.31E4
Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
30:56
31:46
32:04
32:22
32:50
33:34
33:57
34:33
34:55
35:21
Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
31:00
35:13
35:34
34:28
34:50
34:11
32:55
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32:45
33:24
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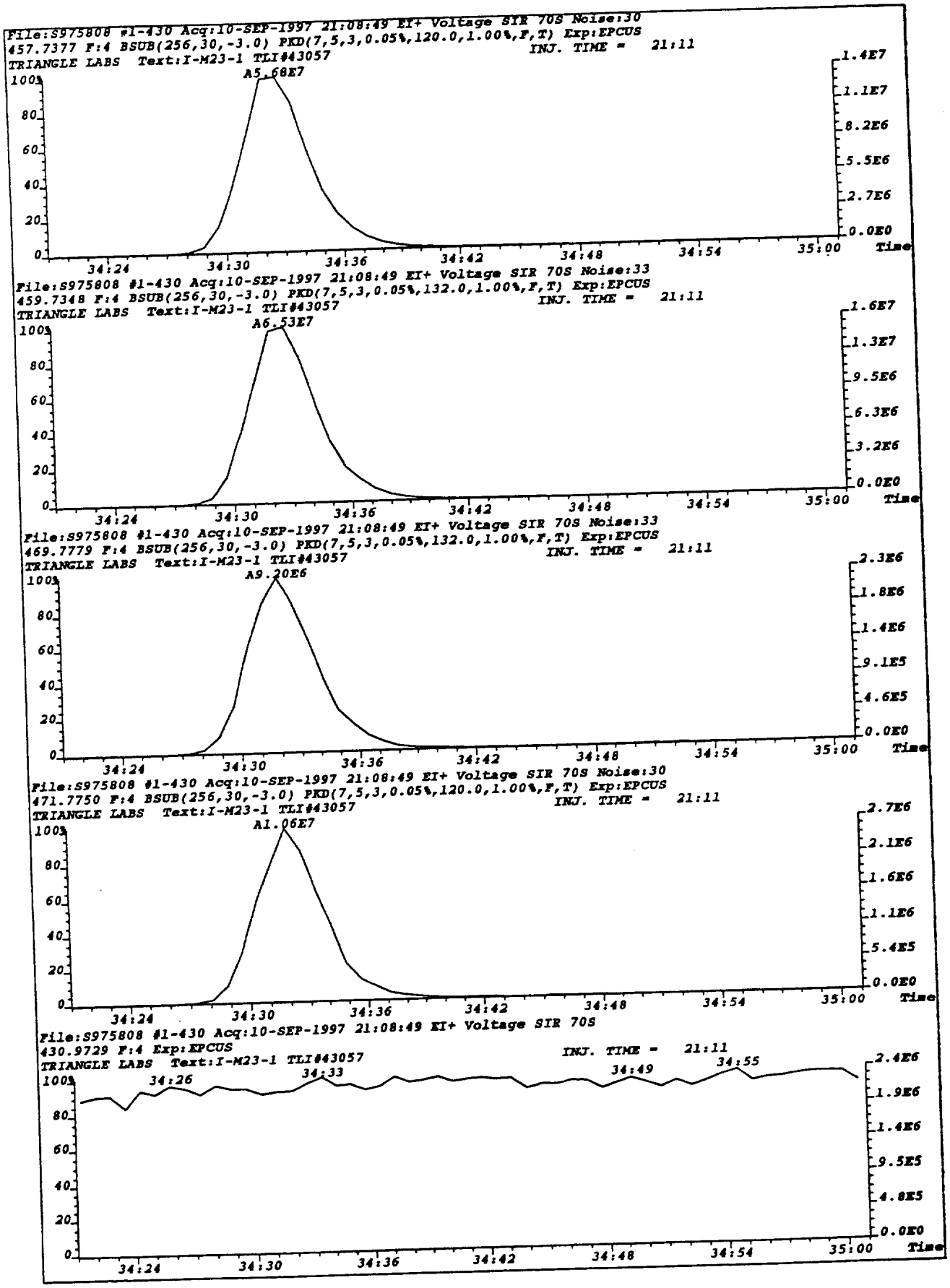
Time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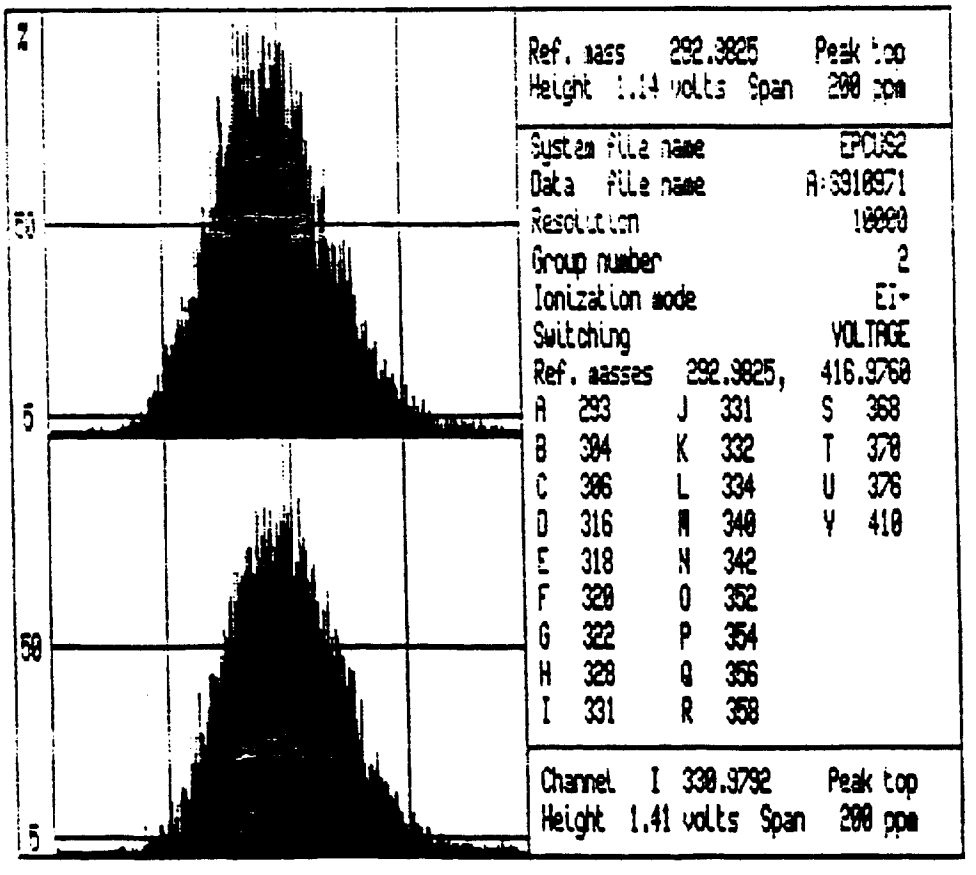
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A5.68E7
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:33
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A6.53E7
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:33
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A9.20E6
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S Noise:30
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
A1.06E7
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:I-M23-1 TLI#43057
INJ. TIME = 21:11
Time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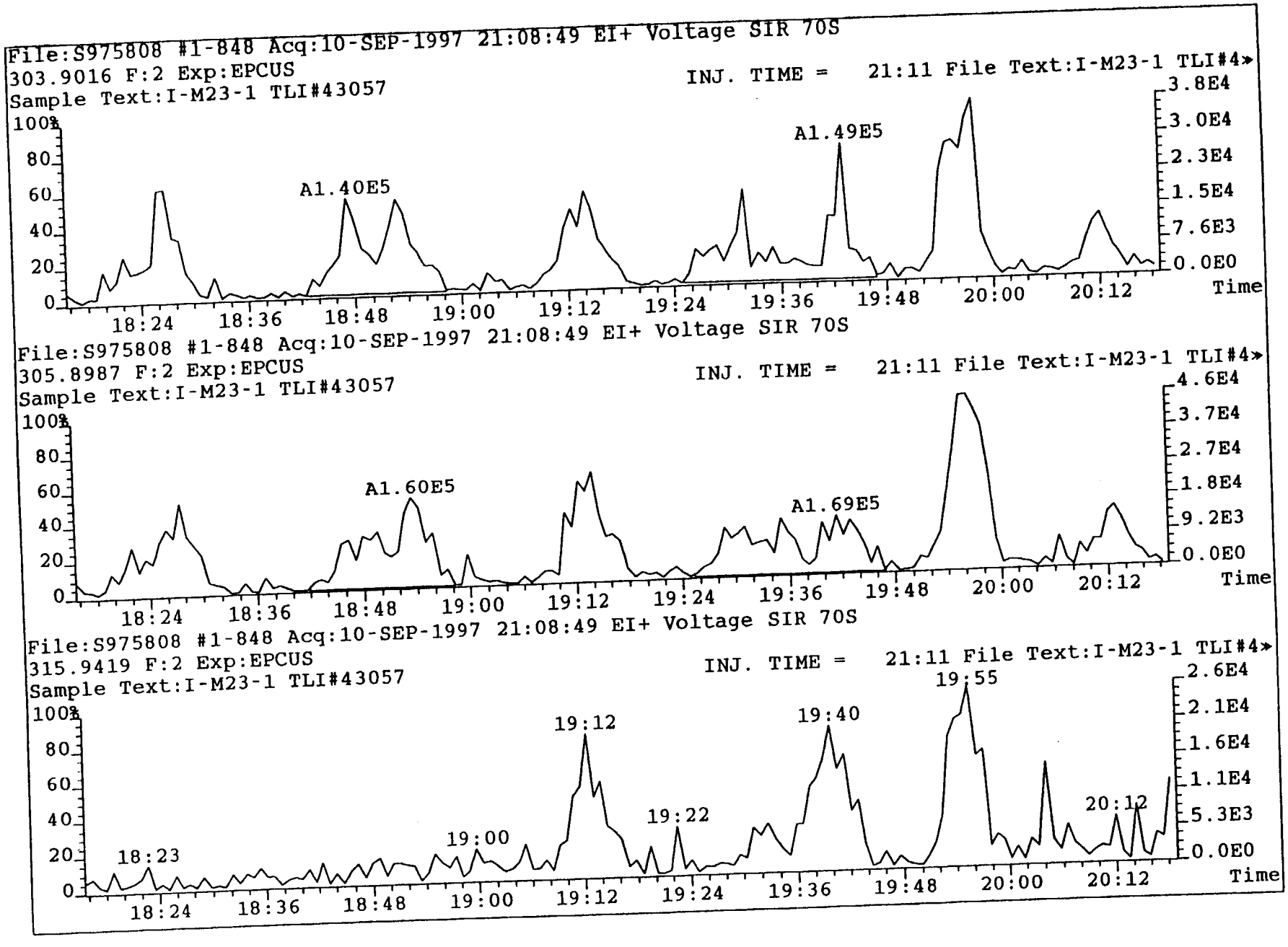
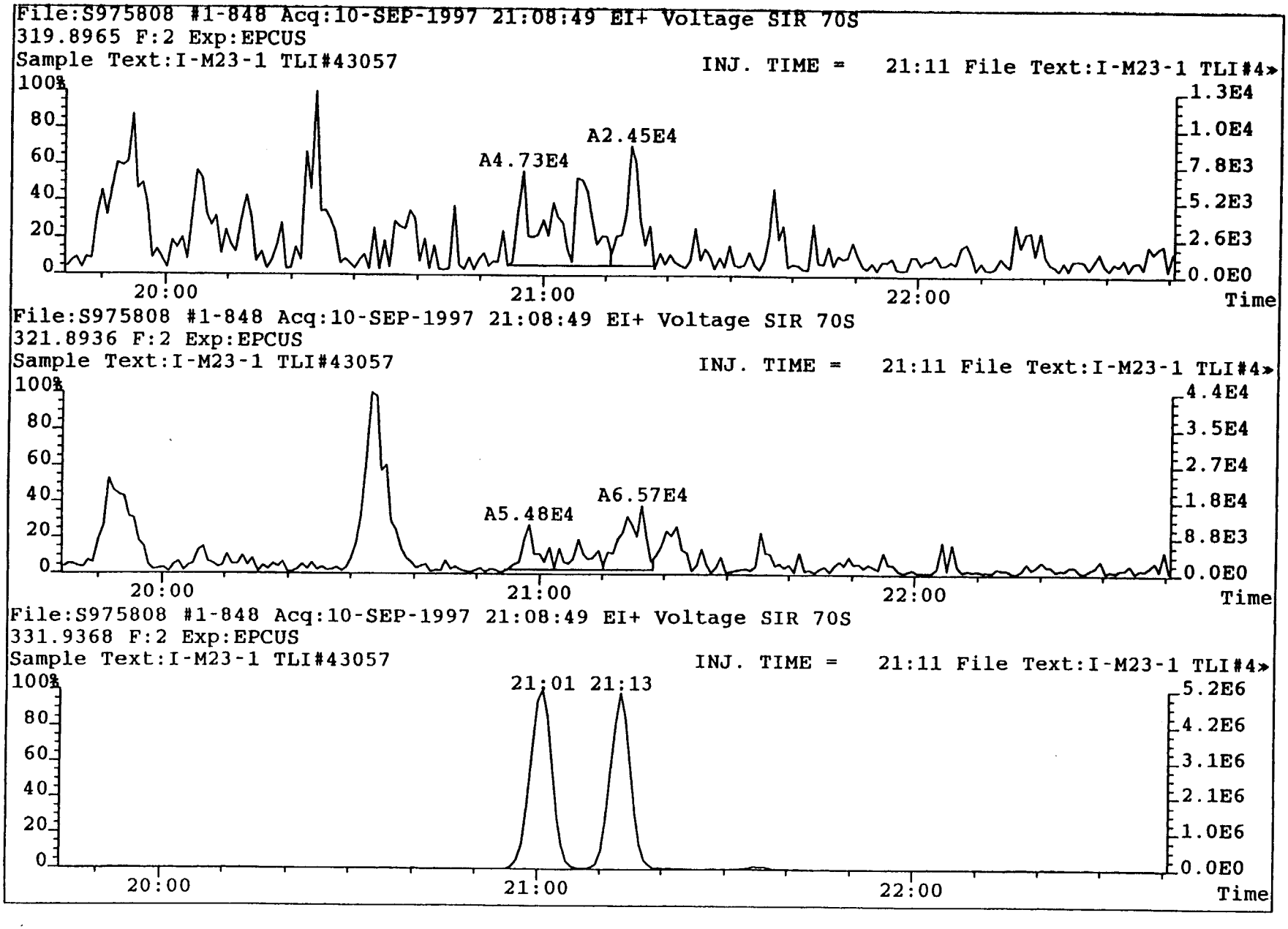
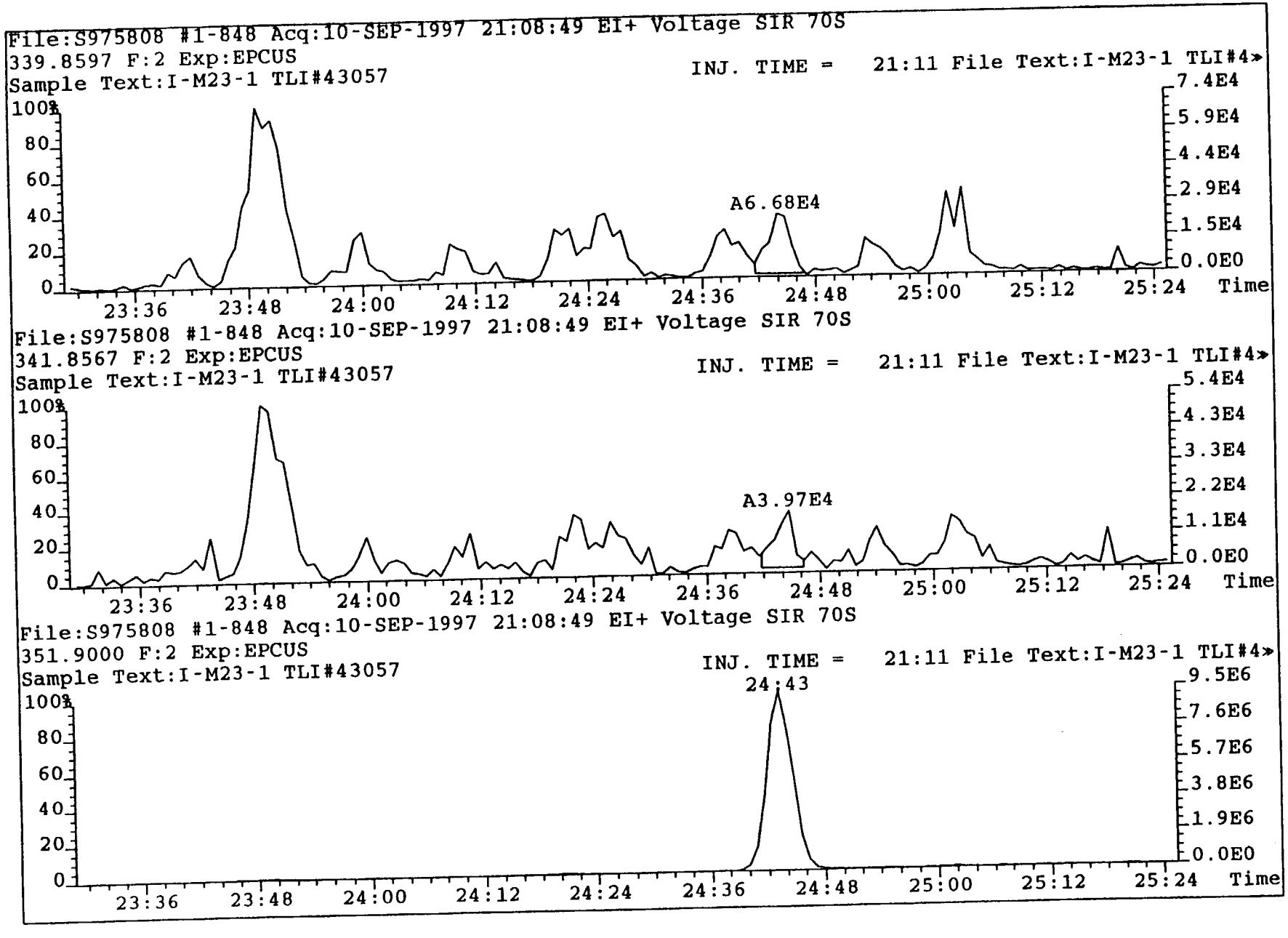
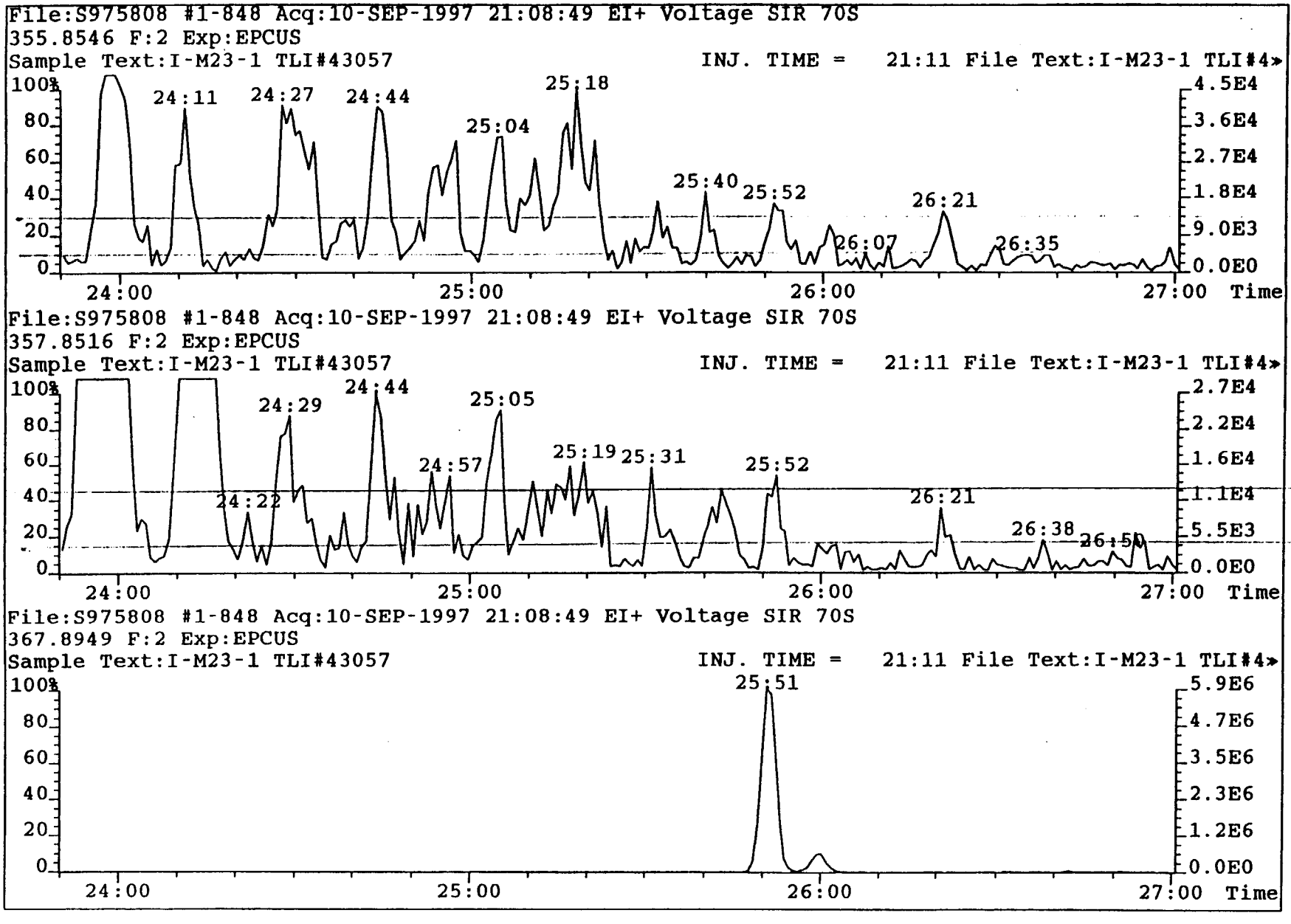
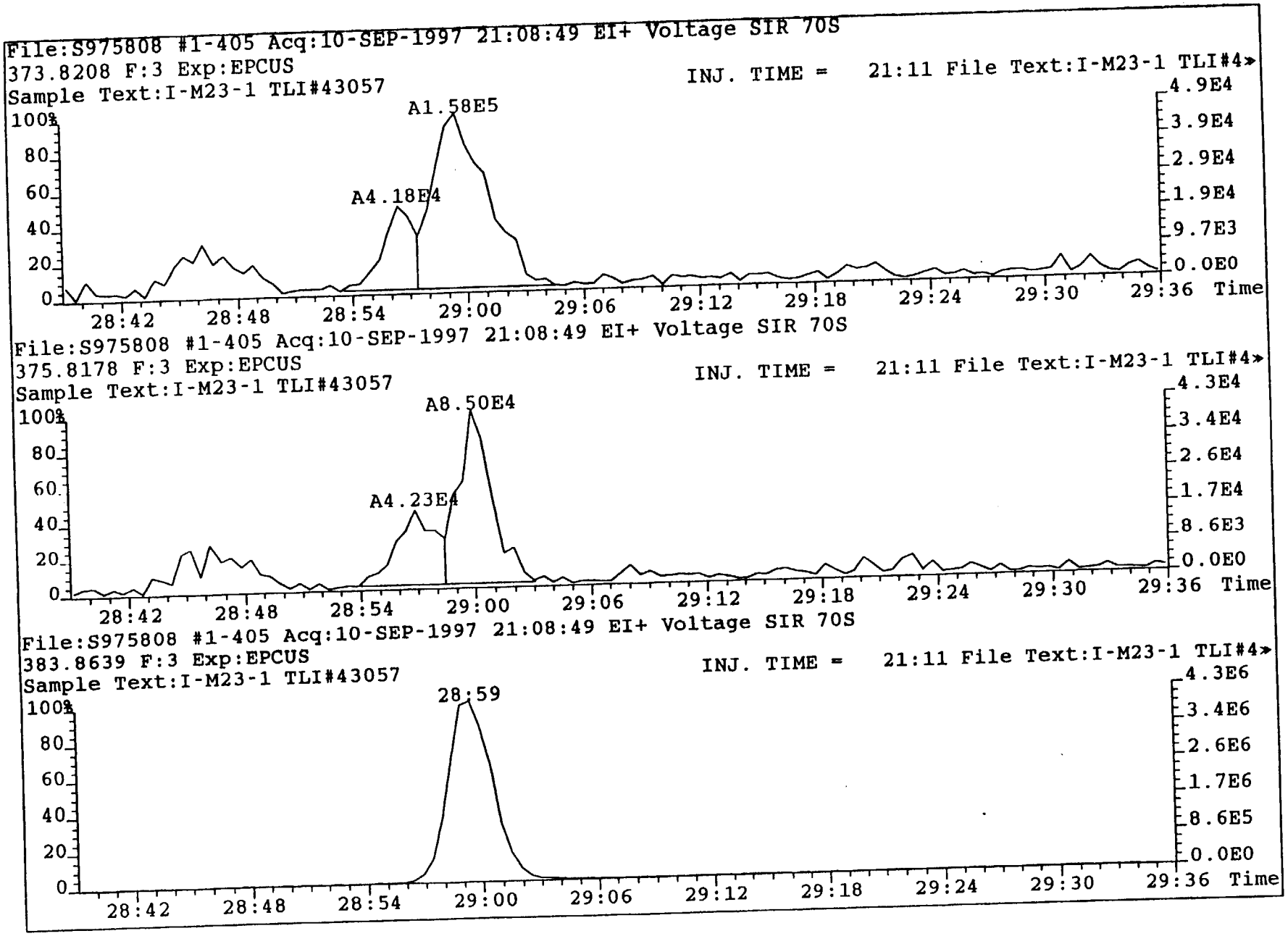
50
5
50
5
Ref. mass 292.3825 Peak top
Height 1.14 volts Span 200 ppm
System file name EPCUS2
Data file name R:3310971
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.3825, 416.3760
A 293 J 331 S 368
B 304 K 332 T 370
C 306 L 334 U 376
D 316 M 340 V 410
E 318 N 342
F 320 O 352
G 322 P 354
H 328 Q 356
I 331 R 358
Channel I 330.3792 Peak top
Height 1.41 volts Span 200 ppm

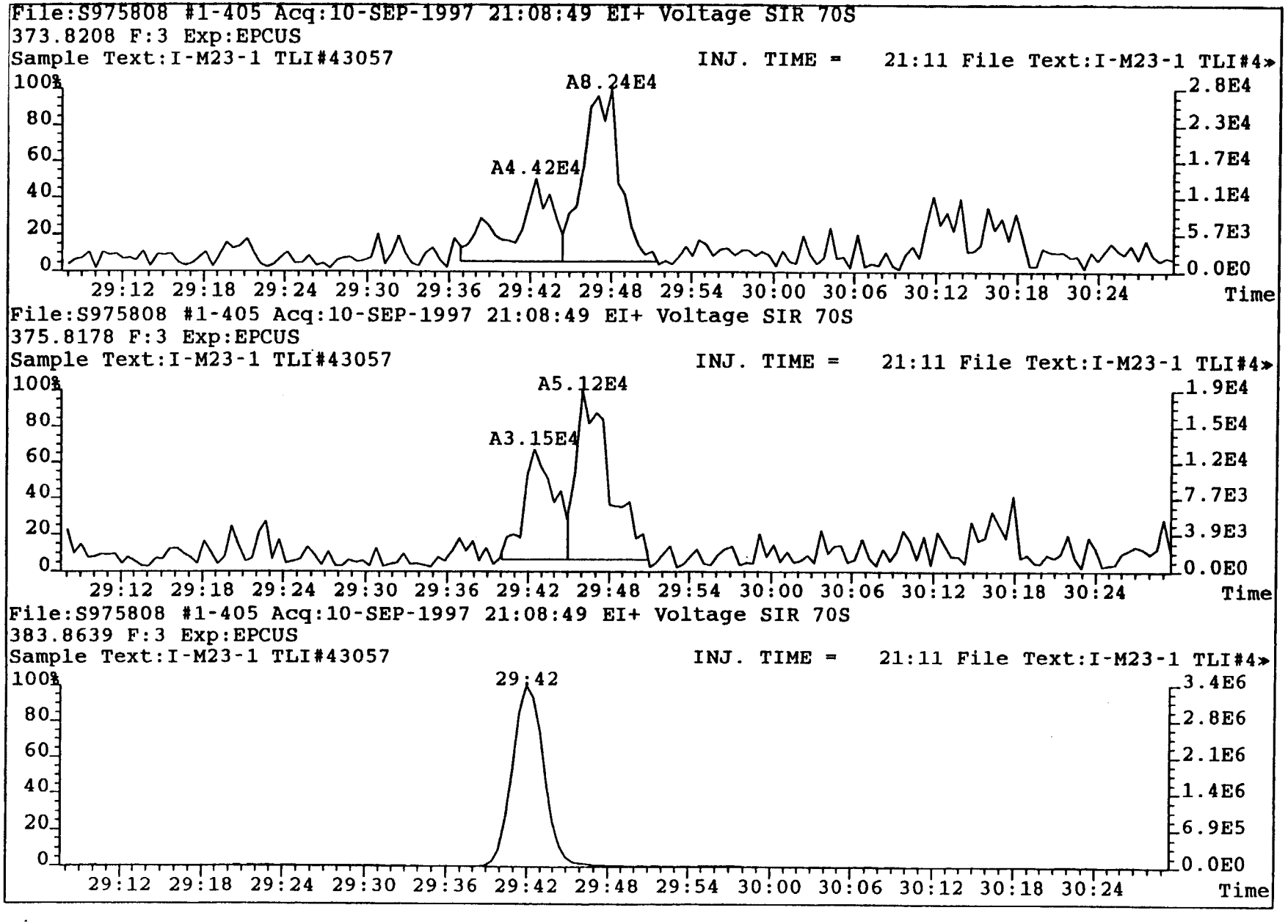

File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
303.9016 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A1.40E5
A1.49E5
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
305.8987 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A1.60E5
A1.69E5
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
315.9419 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
18:23
19:00
19:12
19:22
19:40
19:55
20:12
Time

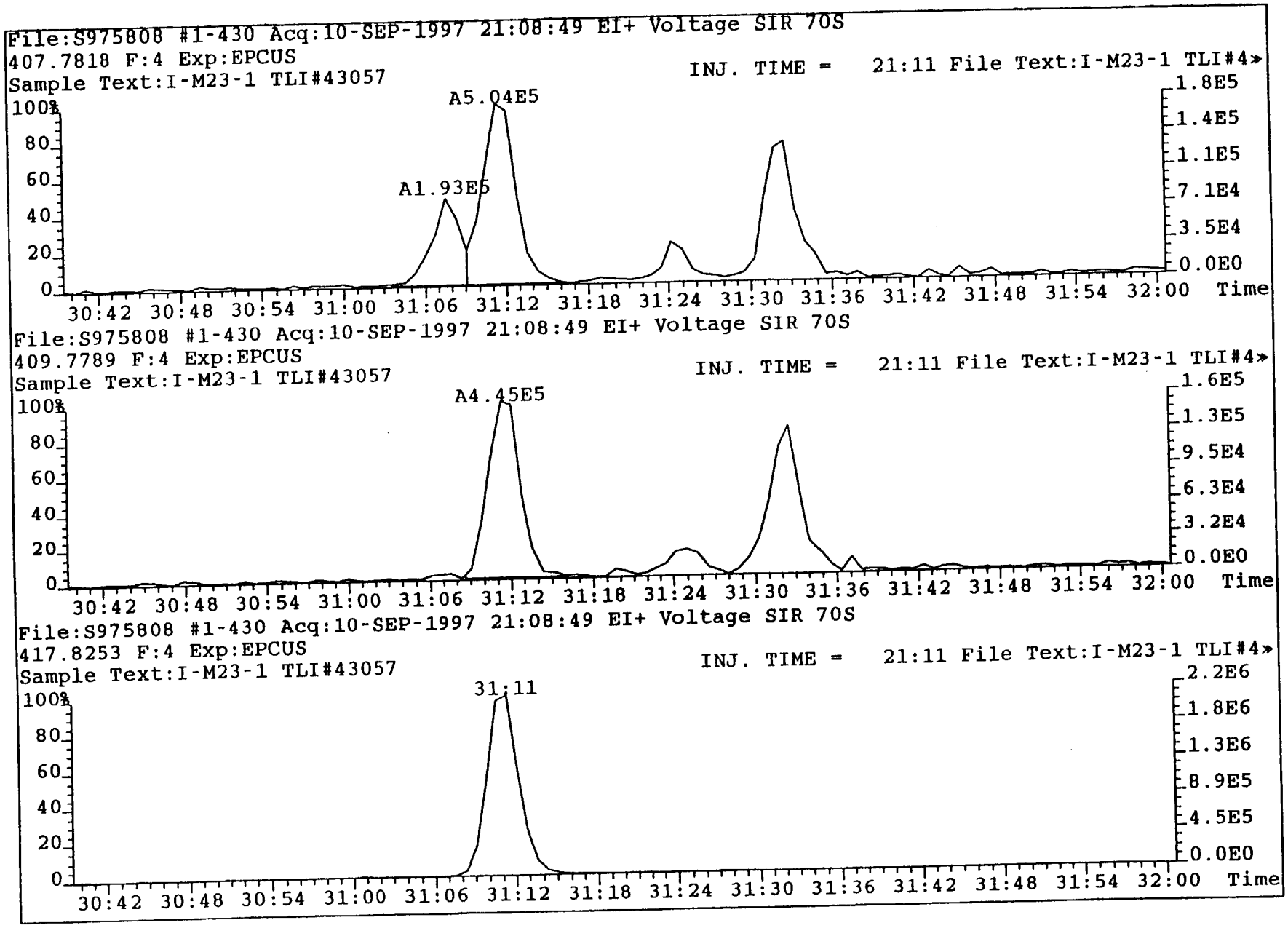

File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
319.8965 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A4.73E4
A2.45E4
1.3E4
1.0E4
7.8E3
5.2E3
2.6E3
0.0E0
20:00
21:00
22:00
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
321.8936 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A5.48E4
A6.57E4
4.4E4
3.5E4
2.7E4
1.8E4
8.8E3
0.0E0
20:00
21:00
22:00
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
331.9368 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
21:01 21:13
5.2E6
4.2E6
3.1E6
2.1E6
1.0E6
0.0E0
20:00
21:00
22:00
Time

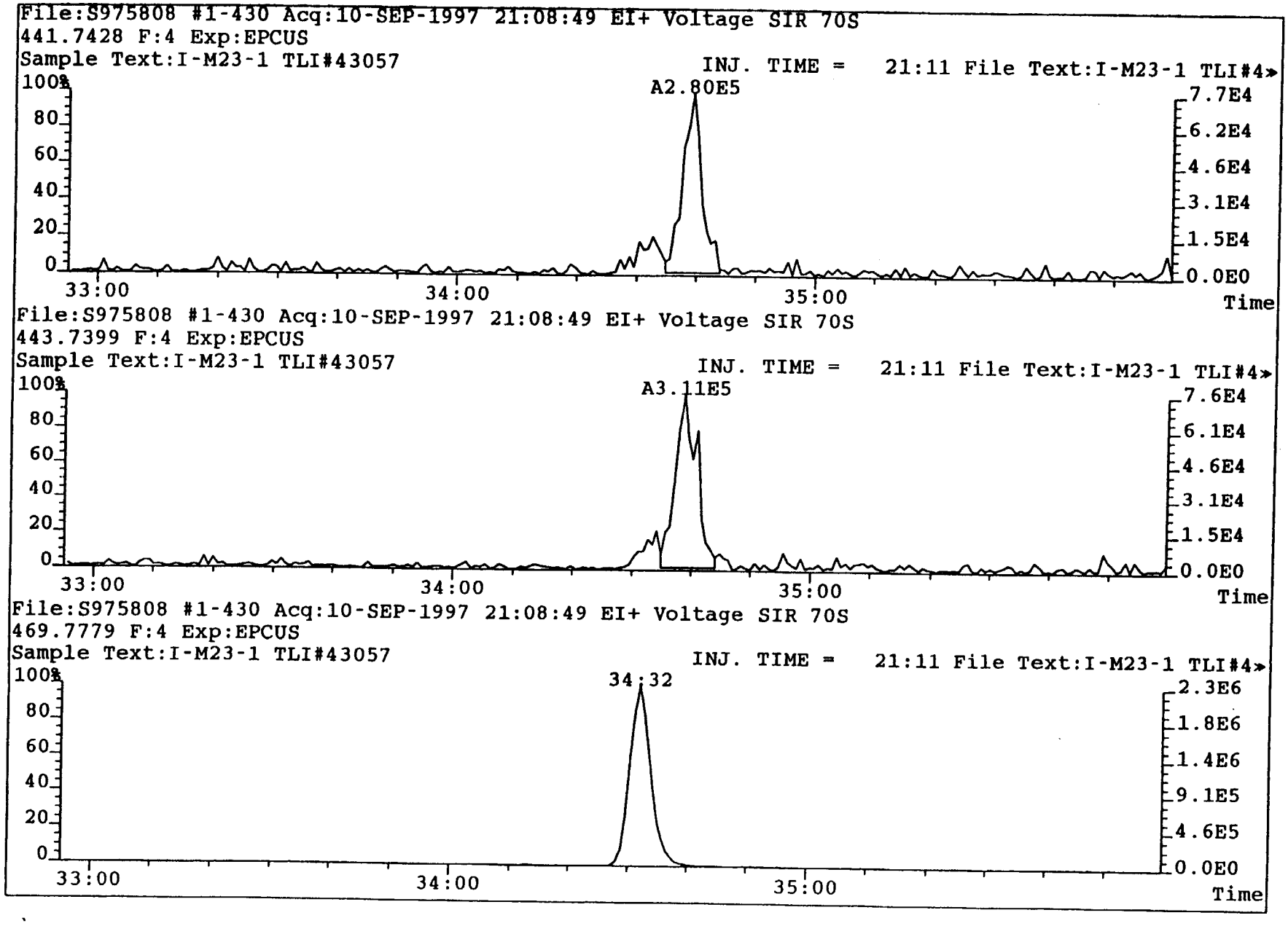

File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A6.68E4
7.4E4
5.9E4
4.4E4
2.9E4
1.5E4
0.0E0
100%
80
60
40
20
0
23:36
23:48
24:00
24:12
24:24
24:36
24:48
25:00
25:12
25:24
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A3.97E4
5.4E4
4.3E4
3.3E4
2.2E4
1.1E4
0.0E0
100%
80
60
40
20
0
23:36
23:48
24:00
24:12
24:24
24:36
24:48
25:00
25:12
25:24
Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
24:43
9.5E6
7.6E6
5.7E6
3.8E6
1.9E6
0.0E0
100%
80
60
40
20
0
23:36
23:48
24:00
24:12
24:24
24:36
24:48
25:00
25:12
25:24
Time


File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
355.8546 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
24:11
24:27
24:44
25:04
25:18
25:40
25:52
26:07
26:21
26:35
4.5E4
3.6E4
2.7E4
1.8E4
9.0E3
0.0E0
24:00
25:00
26:00
27:00 Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
357.8516 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
24:22
24:29
24:44
24:57
25:05
25:19
25:31
25:52
26:21
26:38
26:50
2.7E4
2.2E4
1.6E4
1.1E4
5.5E3
0.0E0
24:00
25:00
26:00
27:00 Time
File:S975808 #1-848 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
367.8949 F:2 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
25:51
5.9E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0
24:00
25:00
26:00
27:00 Time


File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A1.58E5
A4.18E4
100%
80
60
40
20
0
4.9E4
3.9E4
2.9E4
1.9E4
9.7E3
0.0E0
28:42
28:48
28:54
29:00
29:06
29:12
29:18
29:24
29:30
29:36
Time
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A8.50E4
A4.23E4
4.3E4
3.4E4
2.6E4
1.7E4
8.6E3
0.0E0
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
383.8639 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
28:59
4.3E6
3.4E6
2.6E6
1.7E6
8.6E5
0.0E0


File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A8.24E4
A4.42E4
100%
80
60
40
20
0
2.8E4
2.3E4
1.7E4
1.1E4
5.7E3
0.0E0
29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24
Time
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A5.12E4
A3.15E4
100%
80
60
40
20
0
1.9E4
1.5E4
1.2E4
7.7E3
3.9E3
0.0E0
29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24
Time
File:S975808 #1-405 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
383.8639 F:3 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
29:42
100%
80
60
40
20
0
3.4E6
2.8E6
2.1E6
1.4E6
6.9E5
0.0E0
29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24
Time


File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A5.04E5
A1.93E5
100%
80
60
40
20
0
1.8E5
1.4E5
1.1E5
7.1E4
3.5E4
0.0E0
30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 31:30 31:36 31:42 31:48 31:54 32:00 Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A4.45E5
1.6E5
1.3E5
9.5E4
6.3E4
3.2E4
0.0E0
30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 31:30 31:36 31:42 31:48 31:54 32:00 Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
31:11
2.2E6
1.8E6
1.3E6
8.9E5
4.5E5
0.0E0
30:42 30:48 30:54 31:00 31:06 31:12 31:18 31:24 31:30 31:36 31:42 31:48 31:54 32:00 Time


File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
441.7428 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A2.80E5
100%
80
60
40
20
0
7.7E4
6.2E4
4.6E4
3.1E4
1.5E4
0.0E0
33:00
34:00
35:00
Time
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
443.7399 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
A3.11E5
7.6E4
6.1E4
4.6E4
3.1E4
1.5E4
0.0E0
File:S975808 #1-430 Acq:10-SEP-1997 21:08:49 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:I-M23-1 TLI#43057
INJ. TIME = 21:11 File Text:I-M23-1 TLI#4
34:32
2.3E6
1.8E6
1.4E6
9.1E5
4.6E5

Pacific Environmental Services

TLI Project: 43057
Client Sample: I-M23-1

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: X973082

Client Project:	ASPHALT PLANT "A"	Date Received:	08/29/97	Spike File:	SPC2NF04
Sample Matrix:	M23TRAIN	Date Extracted:	09/06/97	ICal:	XF24087
TLI ID:	181-27-1A-C	Date Analyzed:	09/11/97	ConCal:	X973069
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-225	Analyst:	MS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	EMPC		0.02			B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	73.7	40%-130%	0.79	22:31	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.76	21:30	—

Data Reviewer: _____ 09/12/97

C2NF_PSR v2.00, LARS 6.10.04

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 14:58 09/12/97

Initial ....Date...

Data Review By: [illegible] 9/12/97 Calculated Noise Area: n/a

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 X973082B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

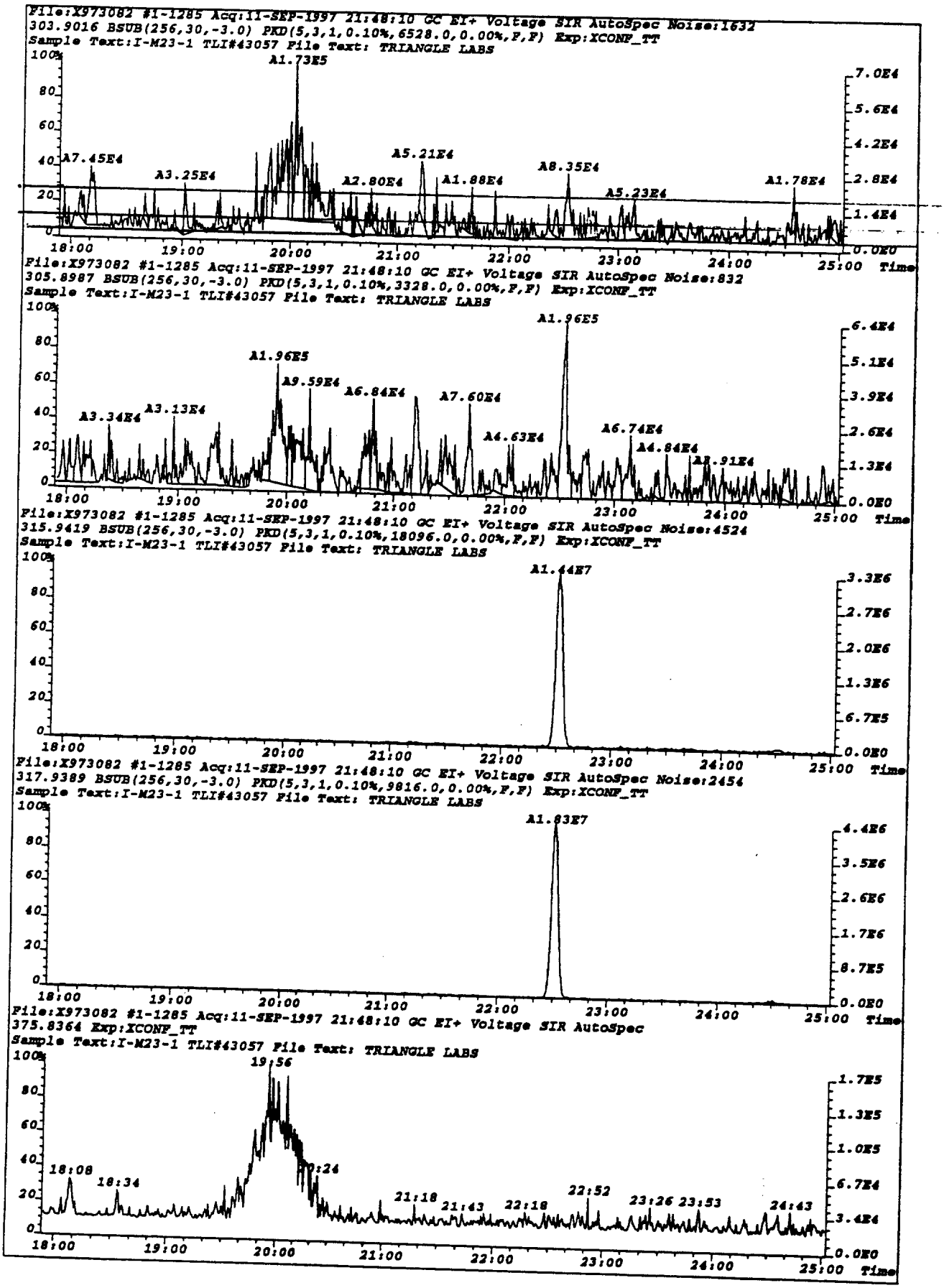
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.797-1.100			
304-306	DC	NL		0:00	RO	1.96	2.94			0.000			
	DC	SN		18:05	RO	0.62	5.98			0.803			
	DC	SN		18:40		0.83	3.32			0.829			
	DC	SN		18:45	RO	3.63	1.13			0.833			
	DC	SN		18:52		0.85	2.26			0.838			
	DC	SN		18:56	RO	0.24	1.72			0.841			
	DC	SN		19:01	RO	0.47	7.47			0.845			
	DC	SN		19:21	RO	0.23	5.56			0.859			
	DC	SN		19:49	RO	1.59	6.14			0.880			
	DC	SN		20:03	RO	3.71	8.25			0.890			
	DC	SN		20:08	RO	0.43	10.67			0.894			
	DC	SN		20:12	RO	0.31	6.74			0.897			
	DC	SN		20:35	RO	5.61	1.45			0.914			
	DC	SN		20:46	RO	0.39	6.44			0.922			
	DC	SN		20:56	RO	0.97	5.08			0.930			
	DC	SN		21:01	RO	0.11	0.92			0.933			
	DC	SN		21:13	RO	0.48	11.98			0.942			
	DC	SN		21:21	RO	4.18	0.97			0.948			
	DC	SN		21:40	RO	0.25	4.32			0.962			
	DC	SN		21:52	RO	3.16	1.24			0.971			
	DC	SN		21:57	RO	0.12	0.64			0.975			
	DC	SN		22:12		0.82	3.63			0.986			
	DC	SN		22:26	RO	0.47	4.71			0.996			
MK				22:32	RO	0.36	14.53	6.32	17.40	1.001	2378-TCDF		AN
	DC	SN		22:39	RO	0.26	1.88			1.006			
	DC	SN		22:43		0.78	11.26			1.009			
	DC	SN		23:02	RO	0.44	6.46			1.023			
	DC	SN		23:09		0.78	11.97			1.028			
	DC	SN		24:35	RO	0.47	4.09			1.092			
	DC	WH		24:58	RO	2.27	1.84			1.109			
304-306			1	Peak			14.53						
13C12-TCDF				0.65-0.89						0.955-1.045			
316-318	DC	NL		0:00	RO	1.84	8.69			0.000			
	DC	WL		18:03	RO	0.26	2.51			0.802			
	DC	WL		18:07	RO	1.89	3.29			0.805			
	DC	WL		18:28	RO	1.07	4.41			0.820			
	DC	WL		18:31	RO	1.11	5.06			0.822			
	DC	WL		19:28	RO	4.82	2.37			0.865			
	DC	WL		21:11	RO	0.59	13.42			0.941			
	DC	SN		21:48	RO	1.25	6.39			0.968			
	DC	SN		22:17		0.76	8.50			0.990			
				22:31		0.79	3,272.27	1,441.48	1,830.79	1.000	13C12-2378-TCDF		ISO

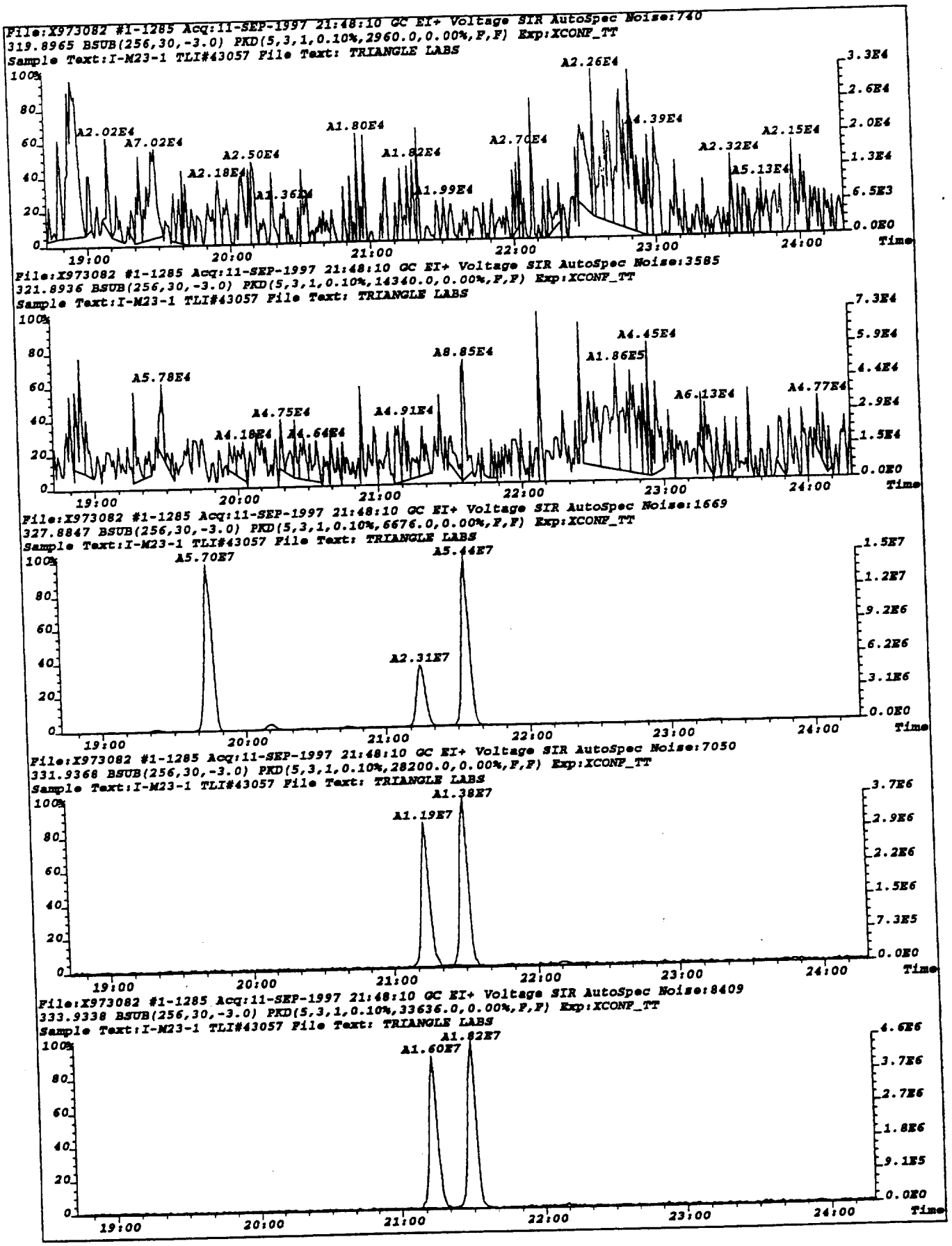
Listing of X973082B.dbf
Matched GC Peaks / Ratio / Ret. Time

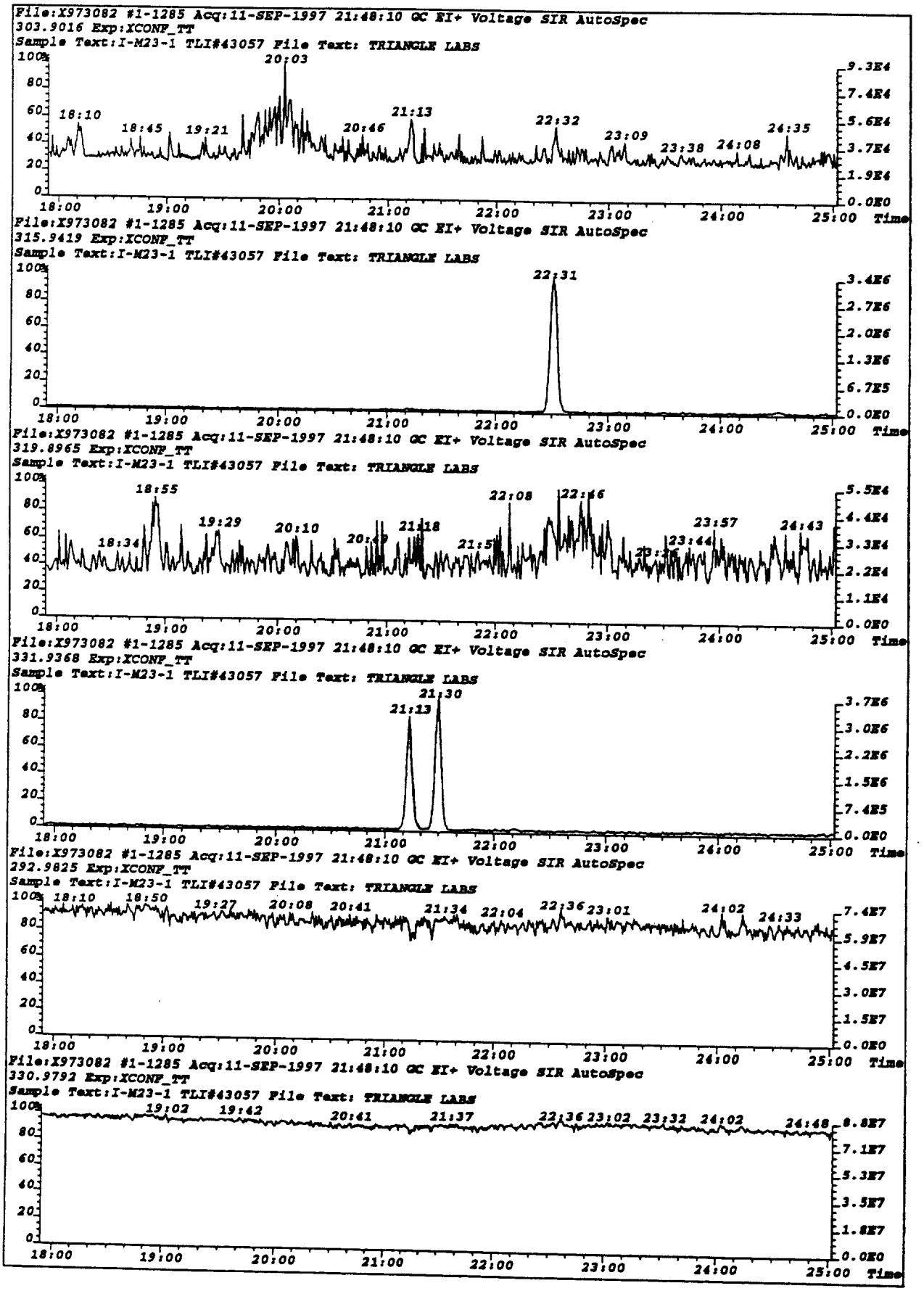
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	SN		22:56	RO	1.45	3.72			1.019			
	DC	SN		23:14	RO	0.45	4.78			1.032			
	DC	WH		23:58	RO	1.51	5.86			1.064			
	DC	WH		24:00	RO	3.94	2.21			1.066			
	DC	WH		24:12	RO	1.21	12.83			1.075			
	DC	WH		24:18		0.87	9.69			1.079			
	DC	WH		24:21		0.87	14.15			1.081			
	DC	WH		24:31	RO	1.39	69.76			1.089			
	DC	WH		24:58	RO	5.37	2.41			1.109			
316-318			1 Peak				3,272.27						
---------- Above: TCDF / TCDD Follows ----------													
						0.65-0.89				0.906-1.094			
13C12-TCDD										0.000			
332-334	DC	NL		0:00		0.84	30.92						
				21:13		0.74	2,790.70	1,190.85	1,599.85	1.000	13C12-2378-TCDD	IS1	
				21:30		0.76	3,190.90	1,375.74	1,815.16	1.013	13C12-1234-TCDD	RS1	
	DC	SN		22:01	RO	1.55	13.81			1.038			
	DC	SN		22:05	RO	1.83	11.47			1.041			
	DC	WH		23:30	RO	1.41	8.87			1.108			
332-334			2 Peaks				5,981.60						

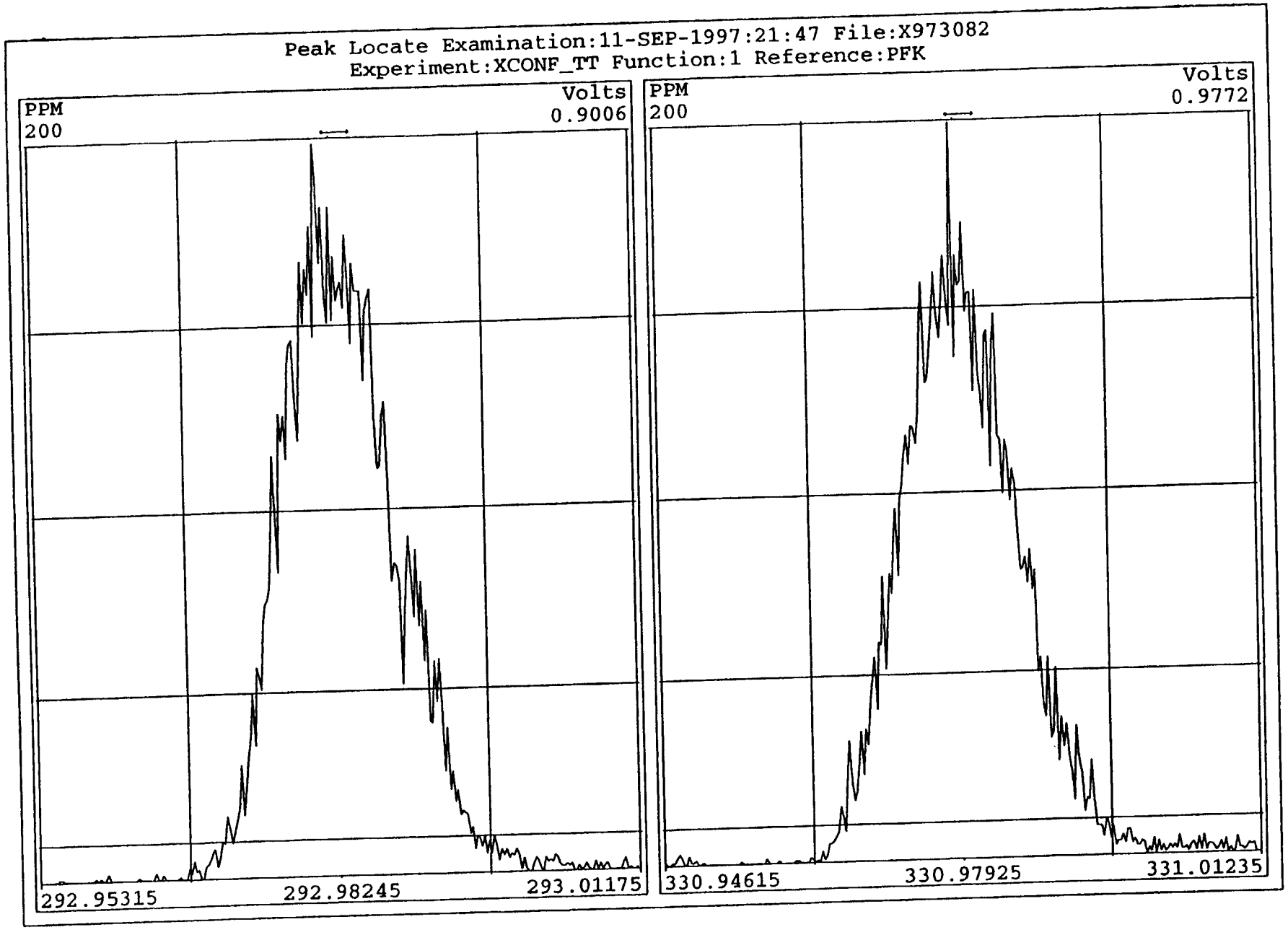
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside 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
		E-Ether Interference

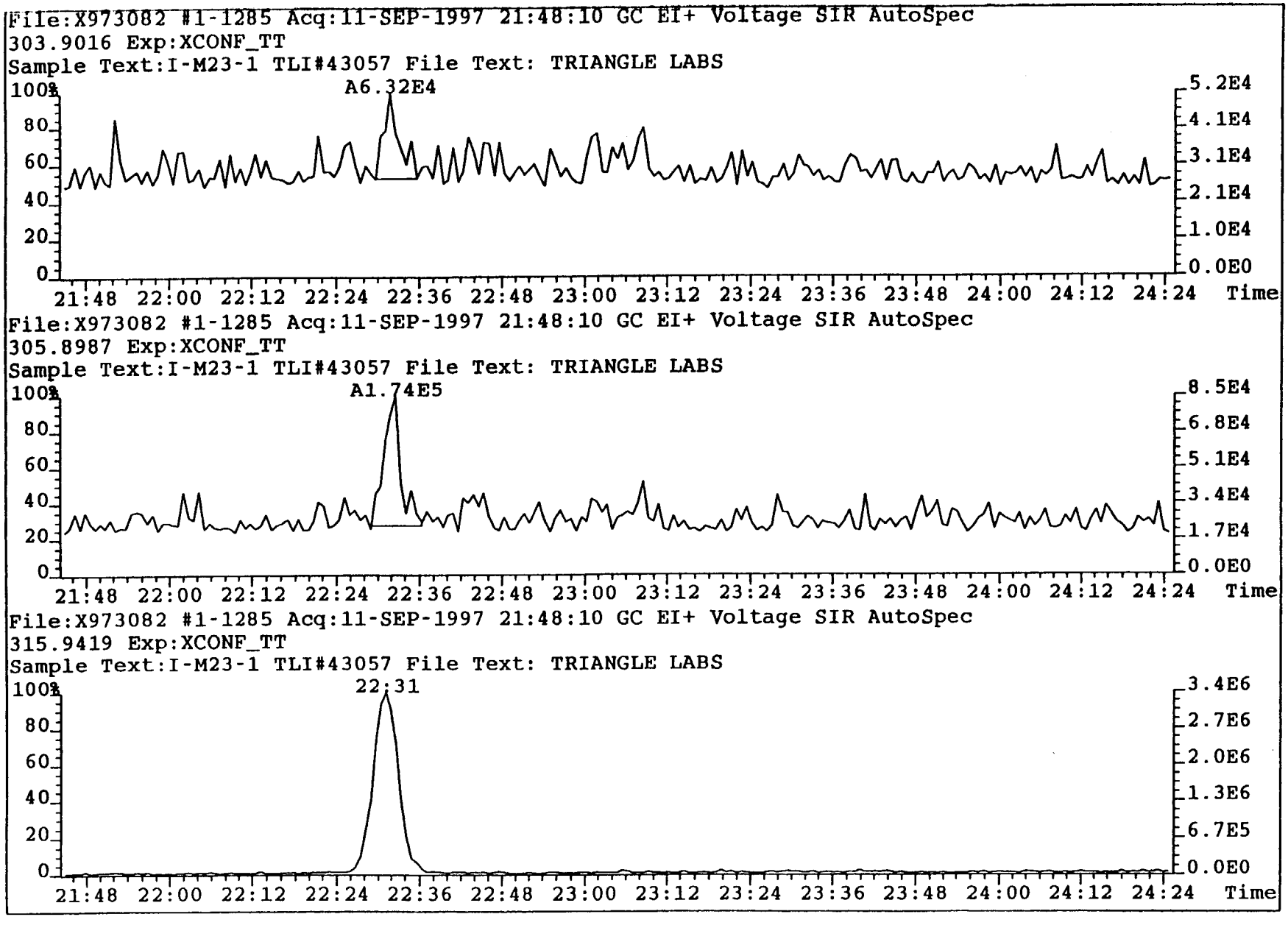
*** End of Report ***


File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:1632
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6528.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.73E5
A7.45E4
A3.25E4
A2.80E4
A5.21E4
A1.88E4
A8.35E4
A5.23E4
A1.78E4
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:832
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3328.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.96E5
A3.34E4
A3.13E4
A1.96E5
A9.59E4
A6.84E4
A7.60E4
A4.63E4
A6.74E4
A4.84E4
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:4524
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,18096.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.44E7
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:2454
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,9816.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.83E7
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
19:56
18:08
18:34
20:24
21:18
21:43
22:18
22:52
23:26
23:53
24:43
Time


File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:740
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2960.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A2.02E4
A7.02E4
A2.18E4
A2.50E4
A1.80E4
A2.26E4
A4.39E4
A2.70E4
A2.32E4
A2.15E4
A5.13E4
Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:3585
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,14340.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A5.78E4
A4.75E4
A4.91E4
A8.85E4
A4.45E4
A1.86E5
A6.13E4
A4.77E4
Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:1669
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6676.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A5.70E7
A5.44E7
A2.31E7
Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:7050
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,28200.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.38E7
A1.19E7
Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec Noise:8409
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,33636.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.62E7
A1.60E7
Time


File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:10
18:45
19:21
20:03
20:46
21:13
22:32
23:09
23:38
24:08
24:35
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
22:31
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:34
18:55
19:29
20:10
21:18
22:08
23:44
23:57
24:43
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
21:13
21:30
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:10
18:50
19:27
20:08
20:41
21:34
22:04
22:36
23:01
24:02
24:33
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
19:02
19:42
20:41
21:37
22:36
23:02
23:32
24:02
24:48
18:00
19:00
20:00
21:00
22:00
23:00
24:00
25:00
Time


Peak Locate Examination:11-SEP-1997:21:47 File:X973082
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
0.9006
292.95315
292.98245
293.01175
PPM
200
Volts
0.9772
330.94615
330.97925
331.01235


File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A6.32E4
100%
80
60
40
20
0
5.2E4
4.1E4
3.1E4
2.1E4
1.0E4
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
305.8987 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.74E5
100%
80
60
40
20
0
8.5E4
6.8E4
5.1E4
3.4E4
1.7E4
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 Time
File:X973082 #1-1285 Acq:11-SEP-1997 21:48:10 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:I-M23-1 TLI#43057 File Text: TRIANGLE LABS
22:31
100%
80
60
40
20
0
3.4E6
2.7E6
2.0E6
1.3E6
6.7E5
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24 Time

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-1

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975809

Client Project:	ASPHALT PLANT "A"	Date Received:	08/29/97	Spike File:	SPX23704
Sample Matrix:	M23TRAIN	Date Extracted:	09/06/97	ICal:	SF56117
TLI ID:	181-27-2A-C	Date Analyzed:	09/10/97	ConCal:	S975797
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% 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	0.005				
1,2,3,4,7,8-HxCDD	ND	0.006				
1,2,3,6,7,8-HxCDD	0.01			1.24	29:13	
1,2,3,7,8,9-HxCDD	0.02			1.29	29:30	
1,2,3,4,6,7,8-HpCDD	0.06			0.99	32:04	B
1,2,3,4,6,7,8,9-OCDD	0.53			0.91	34:33	
2,3,7,8-TCDF	0.02			0.81	20:25	B
1,2,3,7,8-PeCDF	EMPC		0.006			
2,3,4,7,8-PeCDF	EMPC		0.01			B
1,2,3,4,7,8-HxCDF	0.04			1.32	28:23	PRB
1,2,3,6,7,8-HxCDF	0.01			1.36	28:29	B
2,3,4,6,7,8-HxCDF	0.02			1.33	29:00	PRB
1,2,3,7,8,9-HxCDF	ND	0.004				
1,2,3,4,6,7,8-HpCDF	EMPC		0.07			PRB
1,2,3,4,7,8,9-HpCDF	0.04			1.17	32:24	B
1,2,3,4,6,7,8,9-OCDF	0.04			0.80	34:41	B

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.007	1		0.02	
Total PeCDD	EMPC			0.04	
Total HxCDD	0.12	5			
Total HpCDD	0.10	2			
Total TCDF	0.03	3		0.04	
Total PeCDF	0.05	4		0.07	
Total HxCDF	0.12	6			
Total HpCDF	0.04	1		0.15	

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TLI Project: 43057 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: O-M23-1 — Analysis File: S975809

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.8	69.4	40%-130%	0.76	20:24	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.5	63.2	40%-130%	0.78	21:13	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.7	67.1	40%-130%	1.46	24:43	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.7	68.2	40%-130%	1.50	25:52	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.8	68.8	40%-130%	0.50	28:29	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.6	65.4	40%-130%	1.24	29:12	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.7	42.3	25%-130%	0.44	31:11	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.0	50.4	25%-130%	1.05	32:03	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2.9	36.0	25%-130%	0.89	34:33	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.8	96.1	70%-140%		21:14	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.4	86.1	70%-140%	1.45	25:30	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.5	87.3	70%-140%	0.49	28:22	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.2	81.0	70%-140%	1.22	29:07	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.5	88.7	70%-140%	0.42	32:24	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.3	58.1	40%-130%	0.49	29:42	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.5	61.4	40%-130%	0.51	28:59	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:00	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.23	29:30	—

Data Reviewer: _____ 09/11/97

X237_PSR v2.00, LARS 6.10.04

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Printed: 14:56 09/11/97

Data Review By: Initial ..Date.. 9/11/97 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 S975809B.dbf
09/11/97 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				0.823-1.104			
304-306	DC	NL		0:00	RO	1.33	0.11			0.000			
	DC	SN		16:54		0.83	2.95			0.828			
	DC	SN		17:16		0.73	0.57			0.846			
	DC	SN		17:26	RO	0.33	1.03			0.855			
D	D	SN		17:41		0.74	3.67			0.867			
D	D	SN		18:29		0.84	5.69			0.906			
D	D	SN		19:15		0.81	4.60			0.944			
				19:31	RO	1.01	8.58	4.89	4.85	0.957			
				19:57		0.78	13.28	5.82	7.46	0.978			
	DC	SN		20:12	RO	0.57	1.82			0.990			
				20:25		0.81	20.65	9.27	11.38	1.001	2378-TCDF		AN
D	D	SN		20:56	RO	0.64	4.09			1.026			
	DC	SN		21:44	RO	1.09	0.96			1.065			
				22:20		0.72	6.54	2.74	3.80	1.095			
	DC	WH		22:50	RO	1.41	0.69			1.119			
304-306				4 Peaks			49.05						
13C12-TCDF						0.65-0.89				0.951-1.049			
316-318	DC	NL		0:00	RO	1.00	0.12			0.000			
	DC	WL		19:11	RO	0.99	7.19			0.940			
				19:55		0.73	23.80	10.08	13.72	0.976			
				20:24		0.76	4,405.97	1,897.60	2,508.37	1.000	13C12-2378-TCDF		ISO
				20:54		0.67	22.67	9.13	13.54	1.025			
316-318				3 Peaks			4,452.44						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.857-1.061			
320-322	DC	NL		0:00	RO	1.17	0.11			0.000			
A				18:19	RO	0.56	8.99	3.91	6.94	0.863			
				18:48	RO	0.90	6.74	3.43	3.81	0.886			
	DC	SN		19:00	RO	1.14	0.50			0.896			
	DC	SN		19:13	RO	0.51	0.53			0.906			
	DC	SN		19:27		0.87	0.58			0.917			
	DC	SN		19:37	RO	0.51	0.41			0.925			
				19:56		0.78	6.67	2.93	3.74	0.940			
	DC	SN		20:23	RO	3.57	1.43			0.961			
	DC	SN		21:50	RO	1.74	0.41			1.029			
	DC	SN		21:55	RO	2.96	0.46			1.033			
	DC	SN		22:02	RO	8.50	0.07			1.038			
	DC	SN		22:09	RO	1.38	0.28			1.044			
	DC	SN		22:16		0.66	0.48			1.049			
	DC	WH		22:32	RO	2.63	0.48			1.062			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
320-322			3 Peaks				22.40						
37Cl-TCDD										0.906-1.094			
328	DC	NL		0:00			0.07			0.000			
	DC	WL		18:38			1.02			0.878			
				19:41			13.99	13.99		0.928			
				21:14			2,629.87	2,629.87		1.001	37Cl-TCDD		SUR1
				21:26			5.05	5.05		1.010			
				21:33			5.28	5.28		1.016			
	DC	SN		21:41			1.24			1.022			
				21:42			3.65	3.65		1.023			
328			5 Peaks				2,657.84						
13C12-TCDD					0.65-0.89					0.906-1.094			
332-334	DC	NL		0:00	RO	14.00	0.14			0.000			
				19:54		0.79	21.85	9.61	12.24	0.938			
				20:39	RO	1.80	2.89	2.93	1.63	0.973			
				21:00		0.80	4,818.59	2,143.61	2,674.98	0.990	13C12-1234-TCDD		RS1
				21:13		0.78	3,245.44	1,421.01	1,824.43	1.000	13C12-2378-TCDD		IS1
				21:36		0.83	56.81	25.81	31.00	1.018			
	DC	SN		22:22		0.79	3.12			1.054			
332-334			5 Peaks				8,145.58						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF					1.32-1.78					0.909-1.079			
340-342	DC	NL		0:00	RO	1.00	0.12			0.000			
D	D	SN		22:37	RO	1.20	5.43			0.915			
	DC	SN		22:48		1.76	0.47			0.922			
	DC	SN		22:53	RO	4.36	0.36			0.926			
	DC	SN		23:06	RO	0.14	0.23			0.935			
	DC	SN		23:11	RO	0.56	0.31			0.938			
				23:50		1.56	15.18	9.25	5.93	0.964			
				23:59		1.53	7.33	4.43	2.90	0.970			
A				24:27		1.33	14.78	8.45	6.33	0.989			
M				24:44	RO	1.88	6.27	4.62	2.46	1.001	12378-PeCDF		AN
D	D	SN		25:02	RO	1.18	5.89			1.013			
M				25:30	RO	1.11	9.28	5.64	5.06	1.032	23478-PeCDF		AN
				25:39		1.55	9.27	5.64	3.63	1.038			
	DC	SN		25:57		1.44	3.08			1.050			
	DC	SN		26:05	RO	1.23	1.07			1.055			
				26:21	RO	2.19	4.67	4.00	1.83	1.066			
340-342			7 Peaks				66.78						
13C12-PeCDF					1.32-1.78					0.838-1.162			
352-354	DC	NL		0:00	RO	1.14	0.13			0.000			
				23:48		1.33	16.12	9.21	6.91	0.963			
				24:22	RO	1.20	14.05	8.54	7.11	0.986			
				24:43		1.46	3,661.64	2,170.84	1,490.80	1.000	13C12-PeCDF 123		IS2
				25:03		1.40	24.31	14.18	10.13	1.013			
				25:30		1.45	3,058.59	1,808.68	1,249.91	1.032	13C12-PeCDF 234		SUR2
				26:29	RO	2.22	7.85	6.84	3.08	1.071			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
352-354			6 Peaks				6,782.56						
	---------- Above: PeCDF / PeCDD Follows ----------												
PeCDD						1.32-1.78				0.921-1.026			
356-358	DC	NL		0:00	RO	1.00	0.10			0.000			
				23:59	RO	0.54	7.73	4.70	8.71	0.927			
	DC	SN		24:21	RO	2.37	0.89			0.941			
				24:45	RO	1.84	9.72	7.00	3.81	0.957			
				25:04	RO	2.55	5.74	5.74	2.25	0.969			
	DC	SN		25:43	RO	0.24	0.28			0.994			
	DC	SN		25:52		1.41	3.67			1.000	12378-PeCDD	AN	
	DC	SN		26:21	RO	0.62	1.53			1.019			
	DC	WH		26:39	RO	0.08	0.10			1.030			
	DC	WH		26:47	RO	1.81	0.41			1.035			
356-358			3 Peaks				23.19						
13C12-PeCDD						1.32-1.78				0.845-1.155			
368-370	DC	NL		0:00	RO	0.86	0.10			0.000			
				25:52		1.50	2,086.84	1,253.47	833.37	1.000	13C12-PeCDD 123	IS3	
				26:00		1.46	204.01	121.24	82.77	1.005			
368-370			2 Peaks				2,290.85						
	---------- Above: PeCDD / HxCDF Follows ----------												
HxCDF						1.05-1.43				0.957-1.053			
374-376	DC	NL		0:00	RO	2.92	0.85			0.000			
				27:24		1.27	10.74	6.01	4.73	0.962			
				27:32		1.20	21.58	11.75	9.83	0.967			
	DC	SN		27:41	RO	0.89	1.32			0.972			
D	D	SN		27:49		1.35	3.71			0.977			
D	D	SN		27:58	RO	1.60	4.59			0.982			
				28:23		1.32	31.94	18.17	13.77	0.996	123478-HxCDF	AN	PR
				28:29		1.36	15.18	8.76	6.42	1.000	123678-HxCDF	AN	
D	D	SN		28:35		1.22	4.04			1.004			
D	D	SN		28:47	RO	1.77	4.52			1.011			
				29:00		1.33	16.89	9.65	7.24	1.018	234678-HxCDF	AN	PR
	DC	SN		29:07		1.06	0.99			1.022			
	DC	SN		29:17	RO	3.00	0.18			1.028			
	DC	SN		29:32	RO	1.85	1.03			1.037			
	DC	SN		29:38	RO	2.87	0.52			1.040			
	DC	SN		29:42	RO	2.77	1.46			1.043	123789-HxCDF	AN	
				29:49		1.24	6.79	3.76	3.03	1.047			
	DC	WH		30:00	RO	0.18	0.11			1.053			
	DC	WH		30:13	RO	1.45	0.69			1.061			
	DC	WH		30:18		1.26	0.70			1.064			
374-376			6 Peaks				103.12						
13C12-HxCDF						0.43-0.59				0.859-1.141			
384-386	DC	NL		0:00	RO	0.68	2.14			0.000			
	DC	SN		27:31	RO	0.33	4.20			0.966			
				28:22		0.49	2,209.82	722.29	1,487.53	0.996	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.
				28:29		0.50	2,639.14	876.59	1,762.55	1.000	13C12-HxCDF 678	IS4	
	DC	SN		28:45	RO	0.31	2.96			1.009			
				28:59		0.51	2,178.85	734.47	1,444.38	1.018	13C12-HxCDF 234	ALT2	
	DC	SN		29:30	RO	0.80	1.84			1.036			
				29:42		0.49	1,792.82	589.87	1,202.95	1.043	13C12-HxCDF 789	ALT1	
				29:56	RO	1.20	2.61	2.07	1.73	1.051			
	DC	SN		30:17	RO	0.28	0.89			1.063			
384-386		5	Peaks				8,823.24						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.951-1.015			
390-392	DC	NL		0:00	RO	0.19	0.16			0.000			
	DC	WL		27:45	RO	0.29	0.18			0.950			
				27:54		1.21	5.95	3.26	2.69	0.955			
				28:23		1.13	30.36	16.11	14.25	0.972			
	DC	SN		28:27	RO	2.59	1.79			0.974			
				28:36		1.20	14.79	8.06	6.73	0.979			
	DC	SN		28:45	RO	1.94	1.61			0.985			
	DC	SN		29:00	RO	7.03	0.74			0.993			
D	D	SN		29:08		1.22	3.48			0.998	123478-HxCDD	AN	
				29:13		1.24	7.72	4.27	3.45	1.001	123678-HxCDD	AN	
				29:30		1.29	9.13	5.14	3.99	1.010	123789-HxCDD	AN	
	DC	WH		29:59	RO	0.91	3.09			1.027			
390-392		5	Peaks				67.95						
13C12-HxCDD						1.05-1.43				0.966-1.034			
402-404	DC	NL		0:00		1.10	1.72			0.000			
				28:36	RO	1.52	6.74	4.57	3.01	0.979			
				29:07		1.22	1,631.57	897.42	734.15	0.997	13C12-HxCDD 478	SUR4	
				29:12		1.24	2,071.02	1,145.28	925.74	1.000	13C12-HxCDD 678	IS5	
				29:30		1.23	3,184.06	1,756.61	1,427.45	1.010	13C12-HxCDD 789	RS2	
				29:43	RO	1.44	8.98	5.76	4.01	1.018			
	DC	SN		29:58	RO	3.40	2.15			1.026			
402-404		5	Peaks				6,902.37						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.995-1.045			
408-410	DC	NL		0:00	RO	23.14	0.14			0.000			
M				31:12	RO	1.39	31.62	21.60	15.50	1.001	1234678-HpCDF	AN	PR
				31:26	RO	1.47	7.02	5.05	3.44	1.008			
				31:33	RO	1.22	10.02	6.01	4.91	1.012			
	DC	SN		31:44	RO	2.33	0.67			1.018			
	DC	SN		32:14	RO	1.78	0.73			1.034			
				32:24		1.17	12.93	6.98	5.95	1.039	1234789-HpCDF	AN	
	DC	WH		32:42	RO	6.03	0.73			1.049			
	DC	WH		32:51	RO	2.00	1.04			1.053			
408-410		4	Peaks				61.59						
13C12-HpCDF						0.37-0.51				0.936-1.128			
418-420	DC	NL		0:00	RO	0.88	1.40			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.
				31:11		0.44	1,194.47	365.70	828.77	1.000	13C12-HpCDF	678	IS6
										1.010			
	DC	SN		31:29	RO	0.22	2.00						
				32:24		0.42	816.94	240.77	576.17	1.039	13C12-HpCDF	789	SUR5
418-420				2 Peaks			2,011.41						

---------- Above: HpCDF / HpCDD Follows ----------

HpCDD				0.88-1.20						0.977-1.006			
424-426				0:00		1.00	0.14			0.000			
	DC	NL		31:28		1.09	16.15	8.43	7.72	0.982			
				32:04		0.99	19.94	9.90	10.04	1.001	1234678-HpCDD		AN
										1.015			
	DC	WH		32:32	RO	2.00	0.27						
424-426				2 Peaks			36.09						
13C12-HpCDD				0.88-1.20						0.969-1.031			
436-438										0.000			
	DC	NL		0:00	RO	2.00	2.16			0.981			
	DC	SN		31:26	RO	2.97	3.08						
				32:03		1.05	1,307.85	670.48	637.37	1.000	13C12-HpCDD	678	IS7
436-438				1 Peak			1,307.85						

---------- Above: HpCDD / Octa-CDD and CDF Follows ----------

OCDF				0.76-1.02						0.884-1.116			
442-444										0.000			
	DC	NL		0:00	RO	1.40	0.09			0.889			
	DC	SN		30:43	RO	0.27	0.15			0.901			
	DC	SN		31:07	RO	1.06	0.32			0.914			
	DC	SN		31:35		0.83	1.48			0.922			
	DC	SN		31:51	RO	0.24	0.17			0.932			
	DC	SN		32:13	RO	3.44	0.30			0.935			
	DC	SN		32:18	RO	1.76	0.72			0.951			
	DC	SN		32:51	RO	0.74	1.40			0.954			
	DC	SN		32:58	RO	0.38	0.59			0.971			
	DC	SN		33:33	RO	4.78	0.17			0.984			
	DC	SN		33:59	RO	3.53	0.32			0.988			
	DC	SN		34:08	RO	1.15	0.89			0.989			
	DC	SN		34:11	RO	1.40	0.19			0.994			
	DC	SN		34:21	RO	1.18	0.76						
			M	34:41		0.80	9.20	4.10	5.10	1.004	OCDF		AN
	DC	SN		34:59	RO	0.18	0.66			1.013			
	DC	SN		35:10	RO	2.52	0.40			1.018			
	DC	SN		35:23	RO	1.35	1.42			1.024			
	DC	SN		35:31	RO	0.71	0.72			1.028			
	DC	SN		35:49	RO	0.74	0.30			1.037			
442-444				1 Peak			9.20						
OCDD				0.76-1.02						0.884-1.116			
458-460										0.000			
	DC	NL		0:00		0.86	0.13			0.995			
	DC	SN		34:22	RO	2.17	0.45						
				34:33		0.91	86.40	41.23	45.17	1.000	OCDD		AN
	DC	SN		34:49	RO	1.49	0.96			1.008			
458-460				1 Peak			86.40						

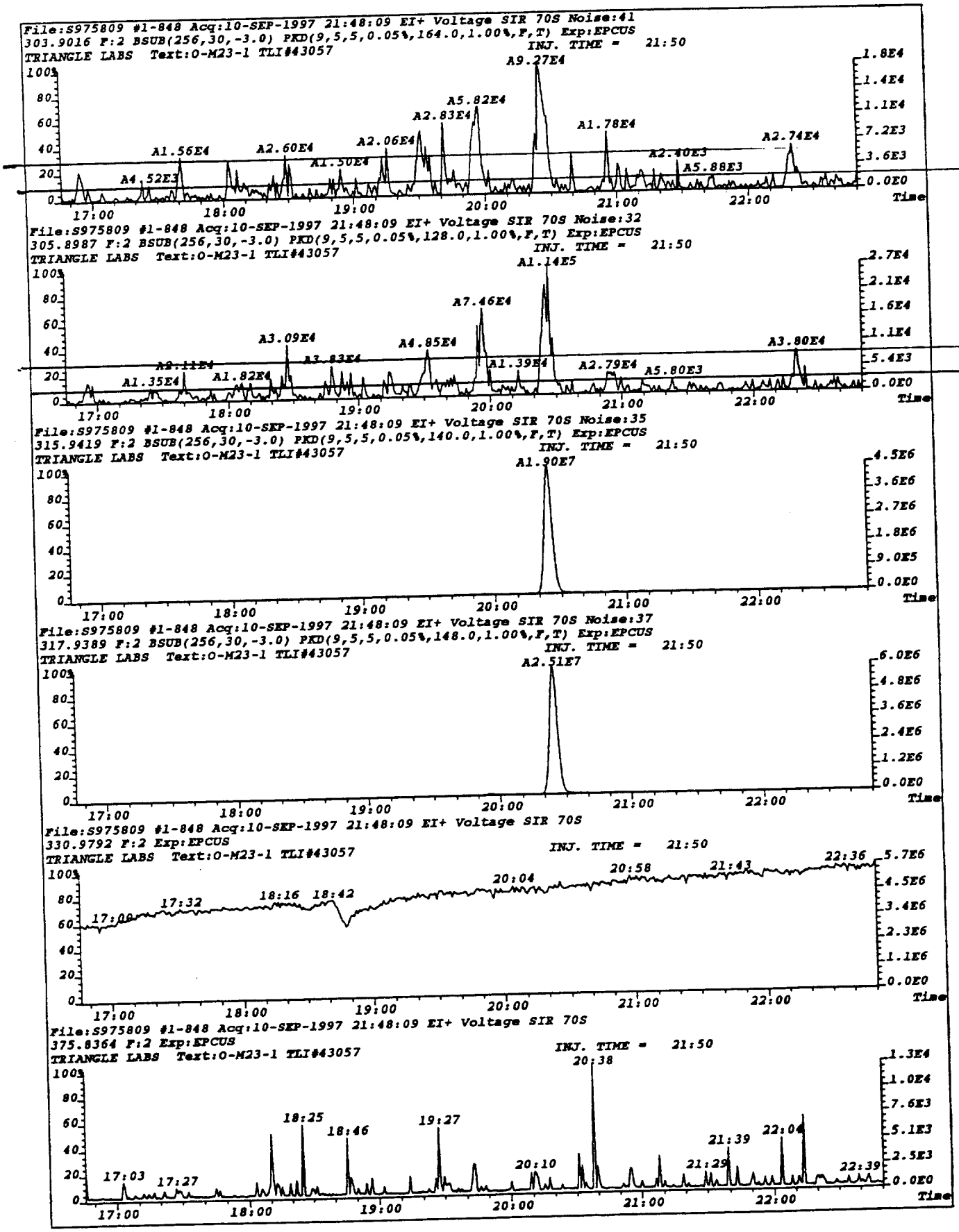
09/11/97

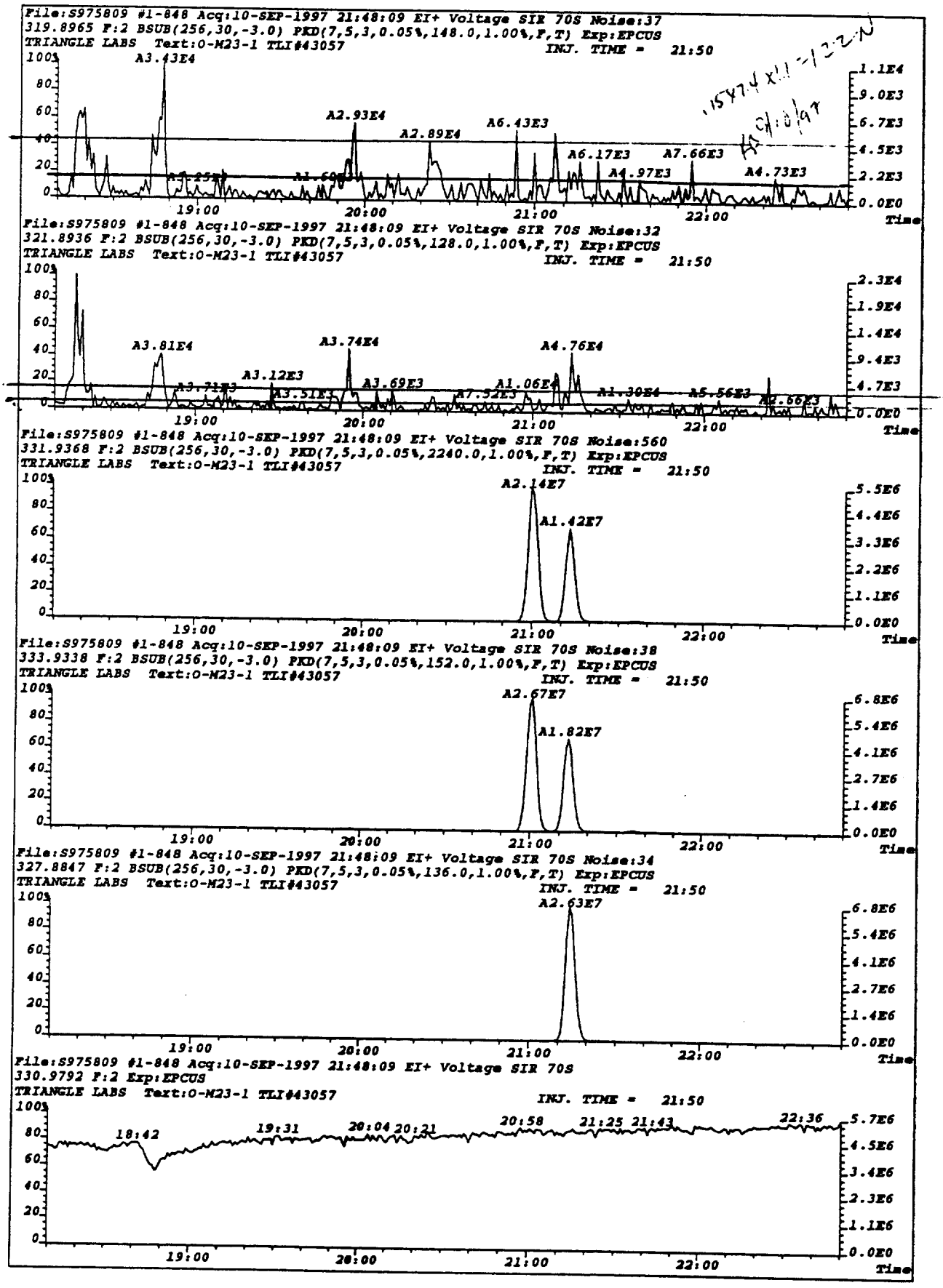
Listing of S975809B.dbf
Matched GC Peaks / Ratio / Ret. Time

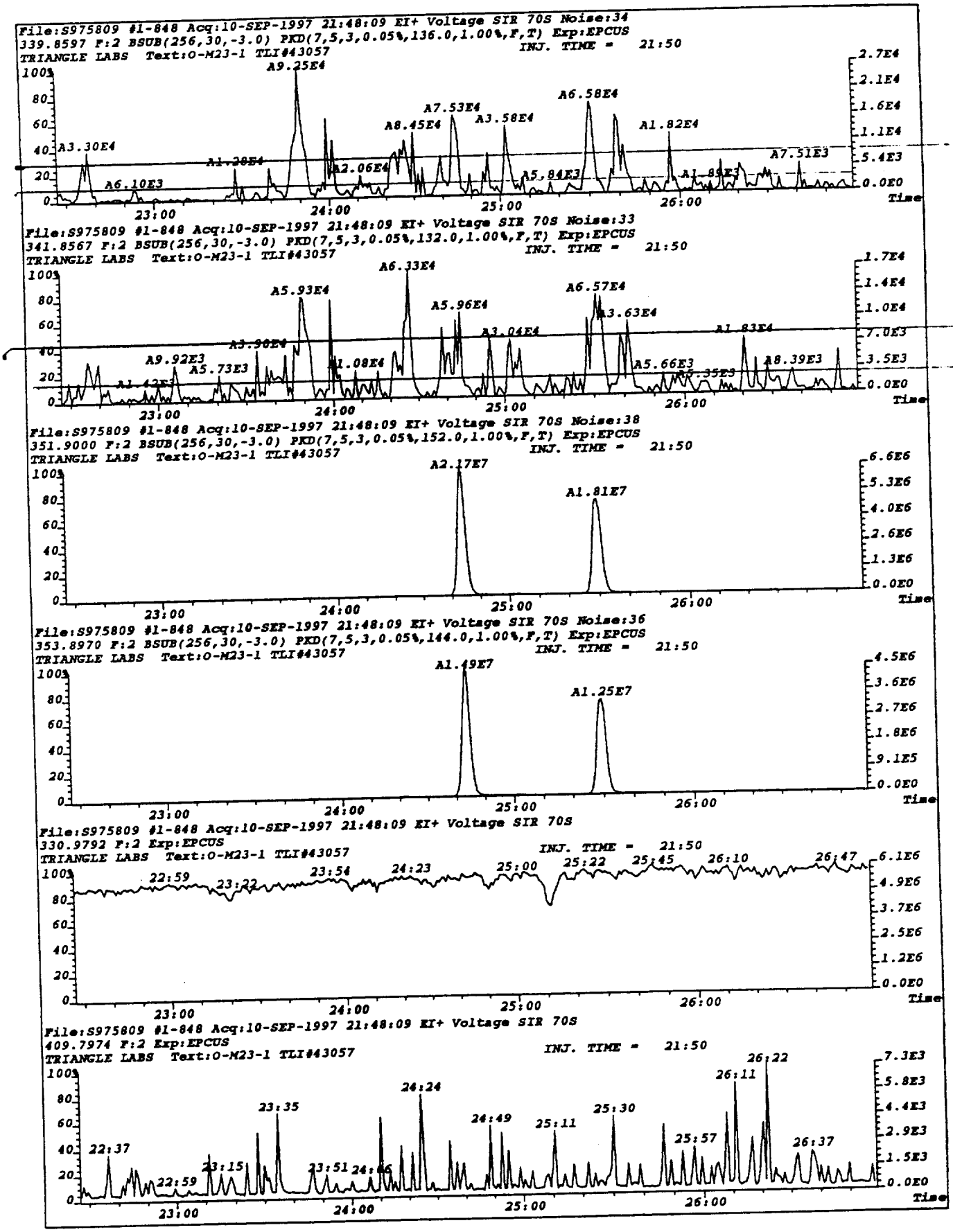
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
13C12-OCDD				0.76-1.02						0.996-1.005			
470-472	DC	NL		0:00	RO	9.50	0.11			0.000			
				34:33		0.89	1,190.52	560.85	629.67	1.000	13C12-OCDD	IS8	
	DC	WH		34:52	RO	0.14	0.53			1.009			
470-472				1 Peak			1,190.52						

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
		E-Ether Interference

*** End of Report ***


File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:41
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,164.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A9.27E4
A5.82E4
A2.83E4
A1.78E4
A2.74E4
A1.56E4
A2.60E4
A2.06E4
A1.50E4
A4.52E3
A2.40E3
A5.88E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:32
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.14E5
A7.46E4
A3.09E4
A4.85E4
A3.80E4
A2.11E4
A3.83E4
A1.39E4
A2.79E4
A1.35E4
A1.82E4
A5.80E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:35
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.90E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:37
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.51E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
17:00
17:32
18:16
18:42
20:04
20:58
21:43
22:36
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
20:38
18:25
18:46
19:27
17:03
17:27
20:10
21:39
21:29
22:04
22:39
Time


File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:37
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A3.43E4
A2.93E4
A2.89E4
A6.43E3
A6.17E3
A7.66E3
A4.97E3
A4.73E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:32
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A3.81E4
A3.74E4
A4.76E4
A3.12E3
A3.69E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:560
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2240.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.14E7
A1.42E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:38
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.67E7
A1.82E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:34
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.63E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
18:42
19:31
20:04
20:21
20:58
21:25
21:43
22:36
19:00
20:00
21:00
22:00
Time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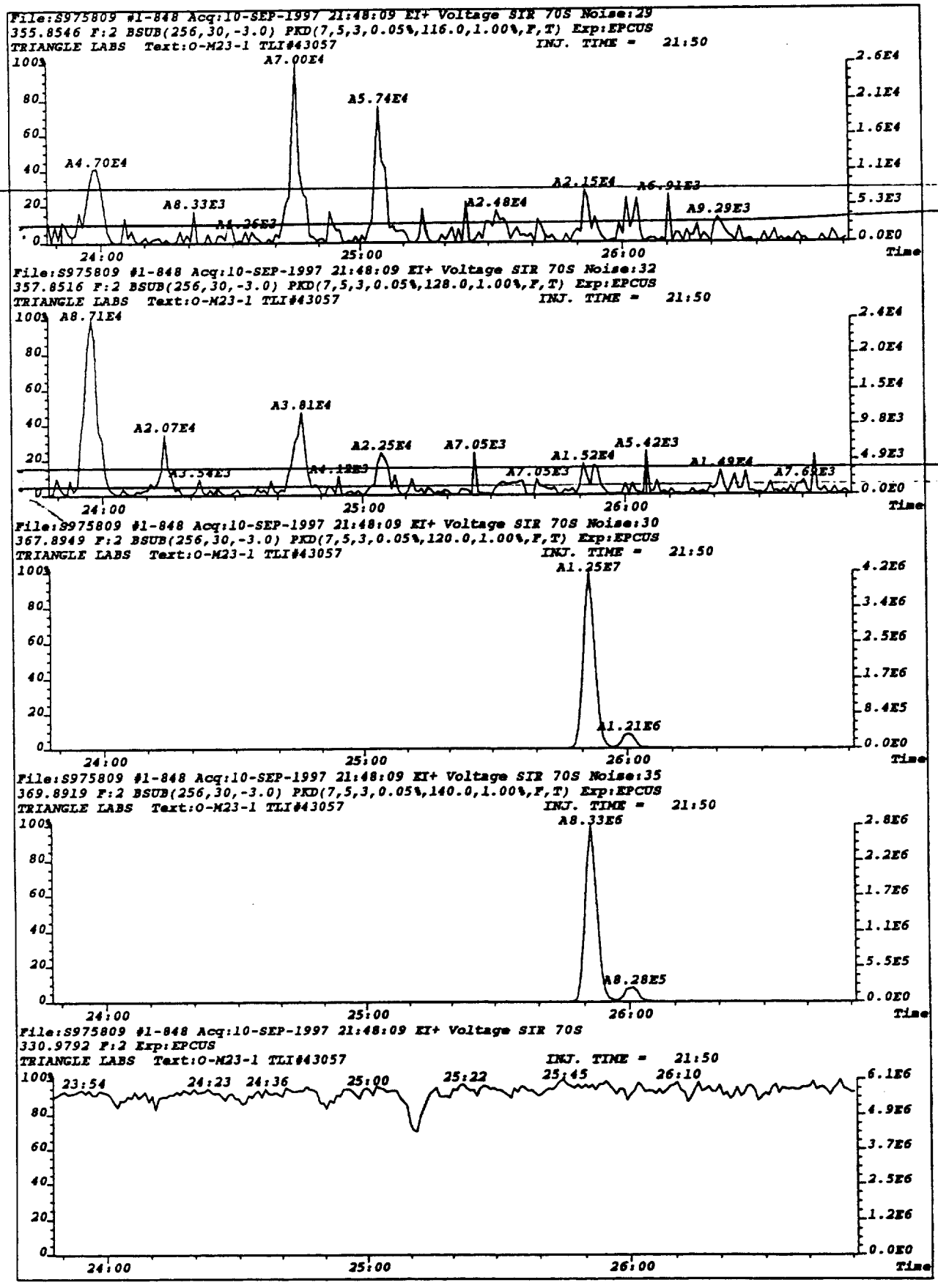
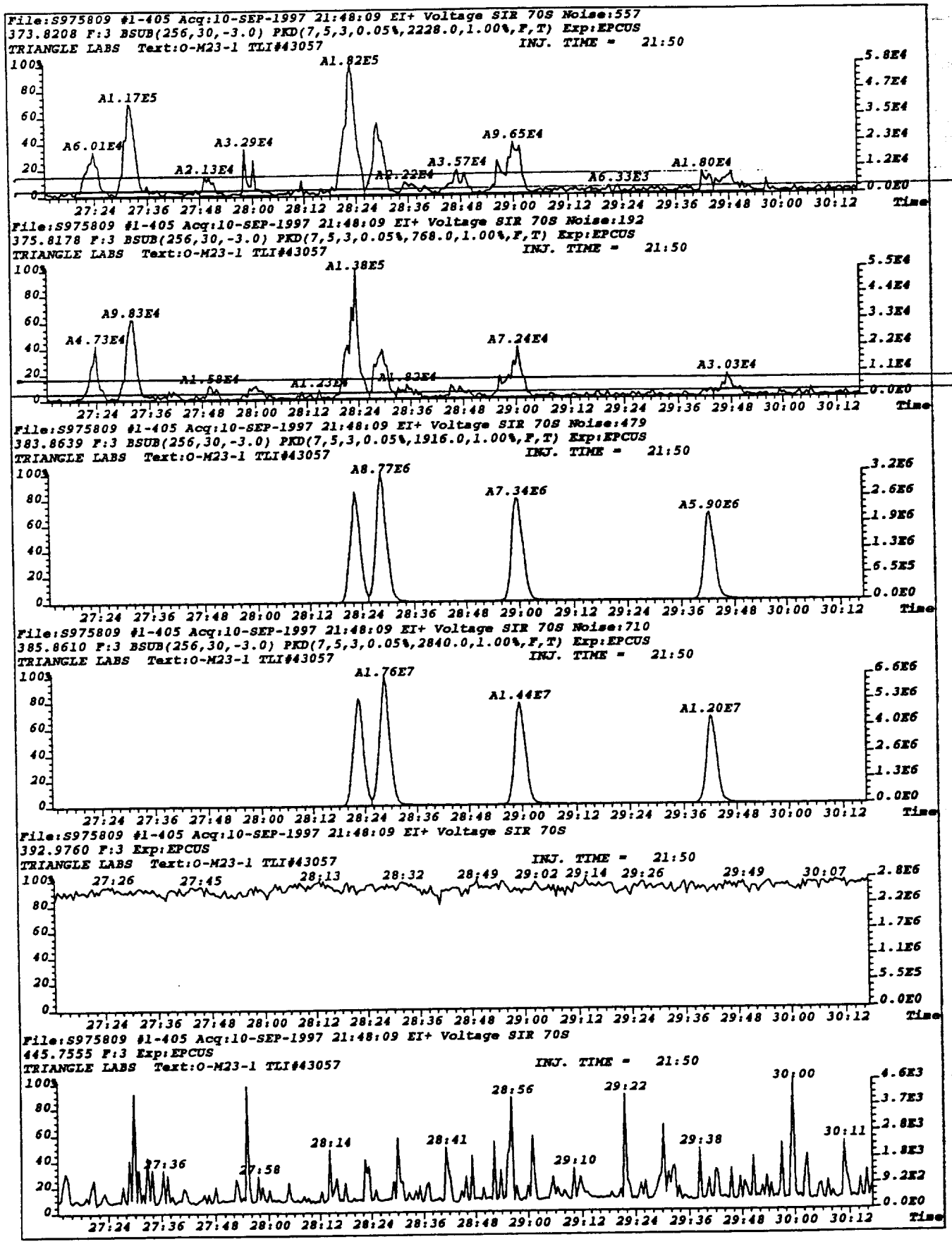
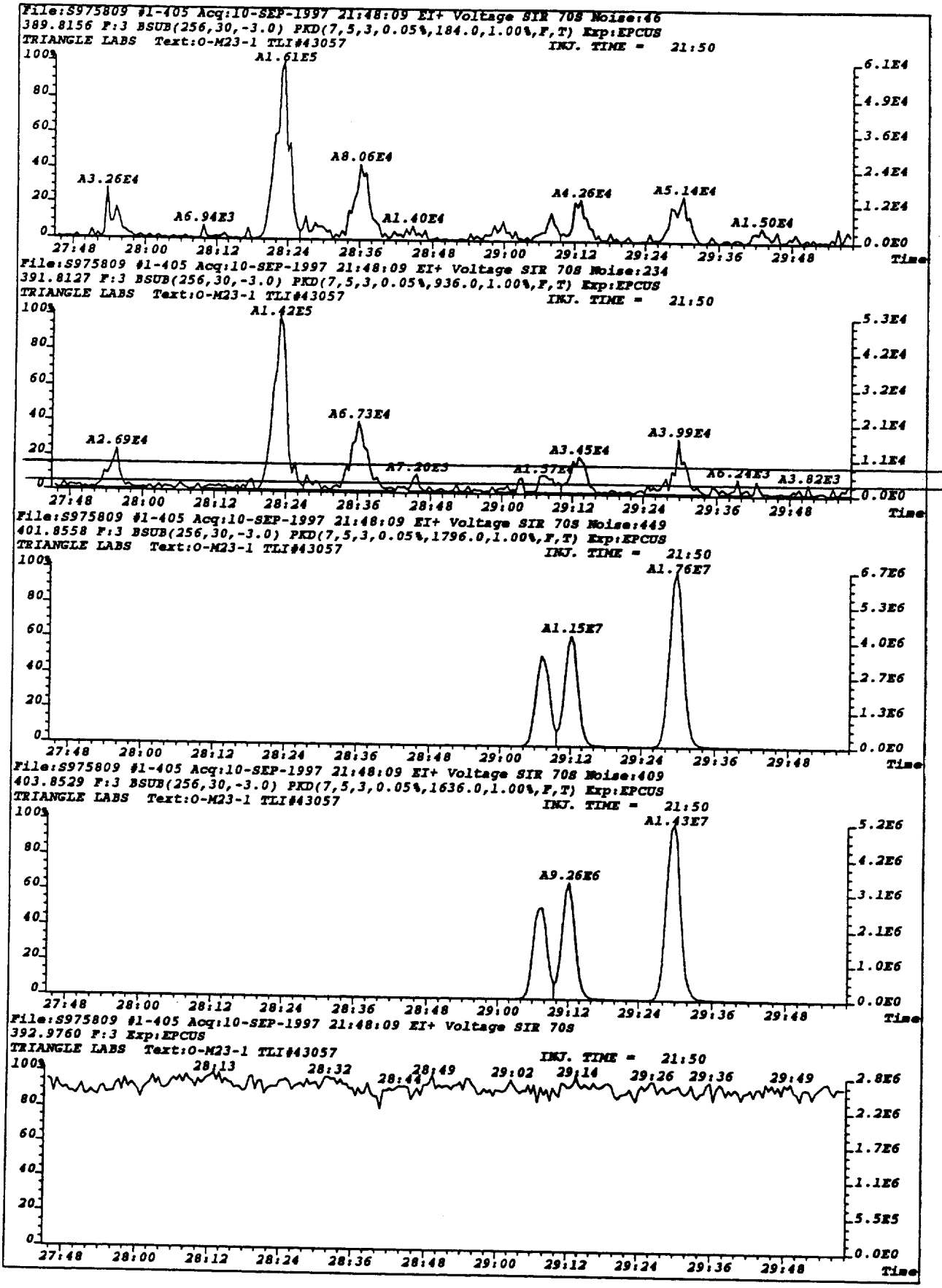
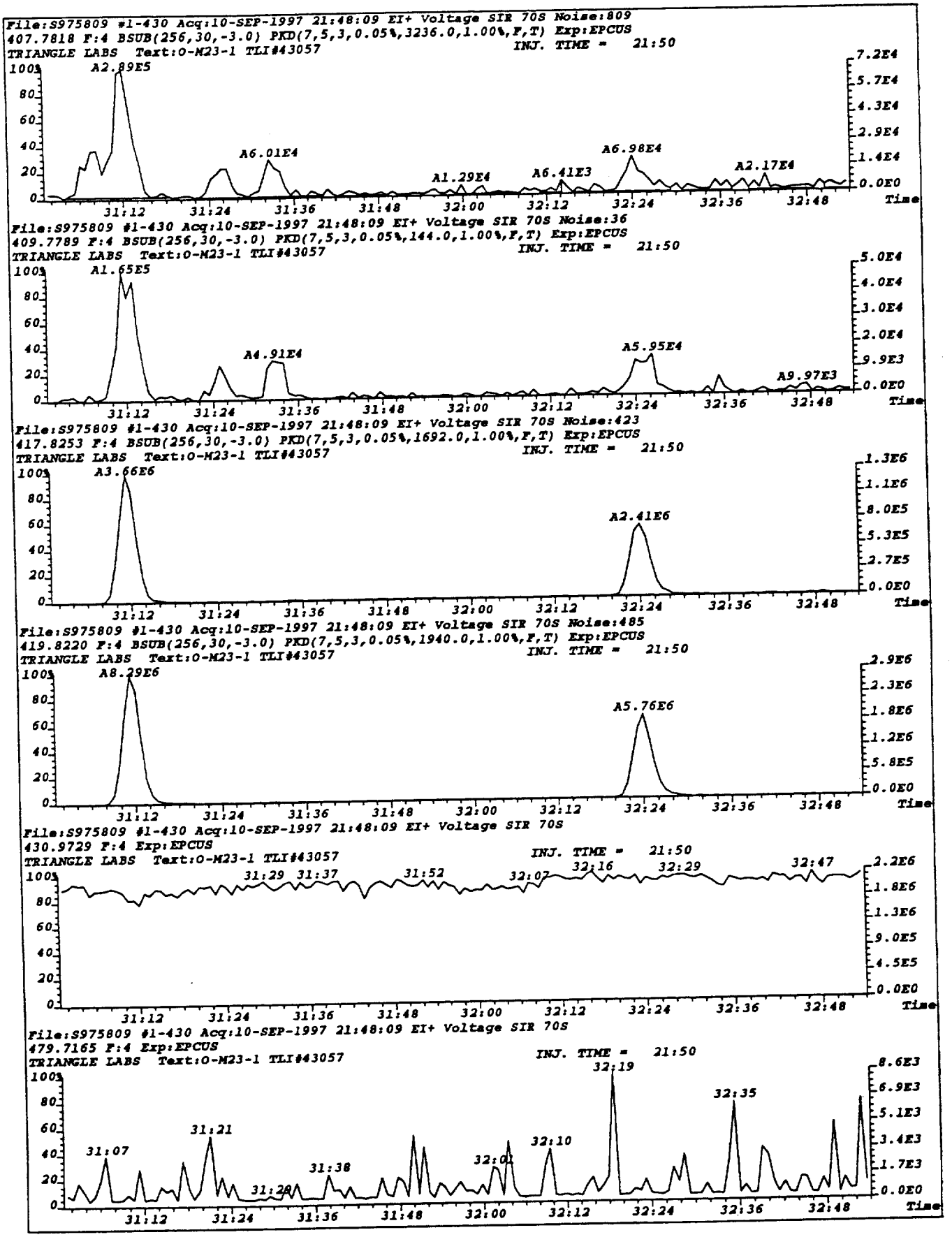
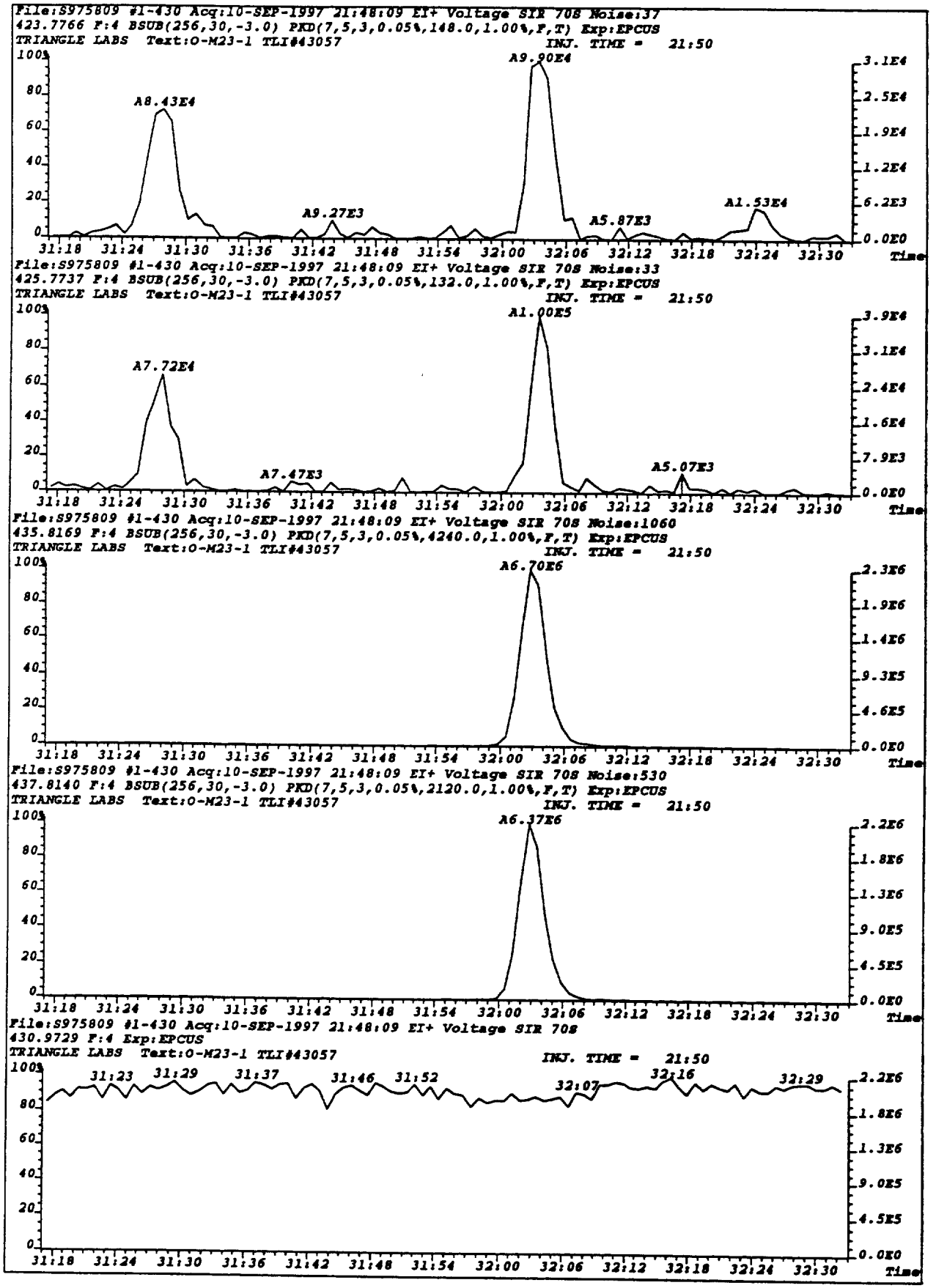
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A9.25E4
A6.58E4
A7.53E4
A8.45E4
A3.58E4
A1.82E4
A3.30E4
A2.06E4
A6.10E3
A5.84E3
A7.51E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:33
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A6.33E4
A5.93E4
A6.57E4
A5.96E4
A3.63E4
A3.04E4
A9.92E3
A5.73E3
A1.08E4
A5.66E3
A8.39E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:38
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.17E7
A1.81E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:36
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.49E7
A1.25E7
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
Time

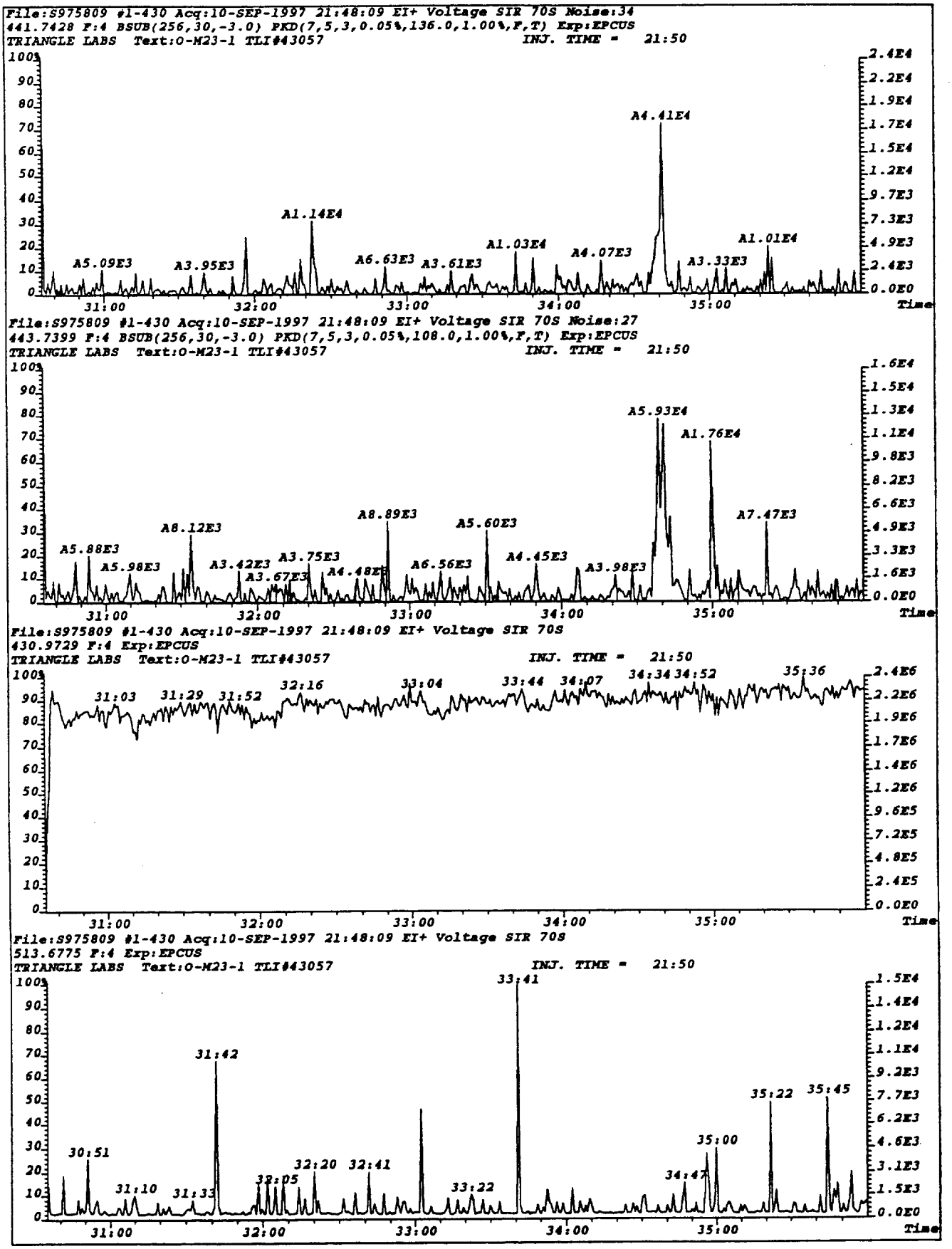

File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:29
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,116.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A7.00E4
A5.74E4
A4.70E4
A8.33E3
A4.26E3
A2.48E4
A2.15E4
A6.91E3
A9.29E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:32
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A8.71E4
A3.81E4
A2.07E4
A2.25E4
A7.05E3
A5.42E3
A1.52E4
A1.49E4
A3.54E3
A4.12E3
A7.05E3
A7.63E3
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:30
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.25E7
A1.21E6
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:35
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A8.33E6
A8.28E5
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
23:54
24:23
24:36
25:00
25:22
25:45
26:10
24:00
25:00
26:00
Time

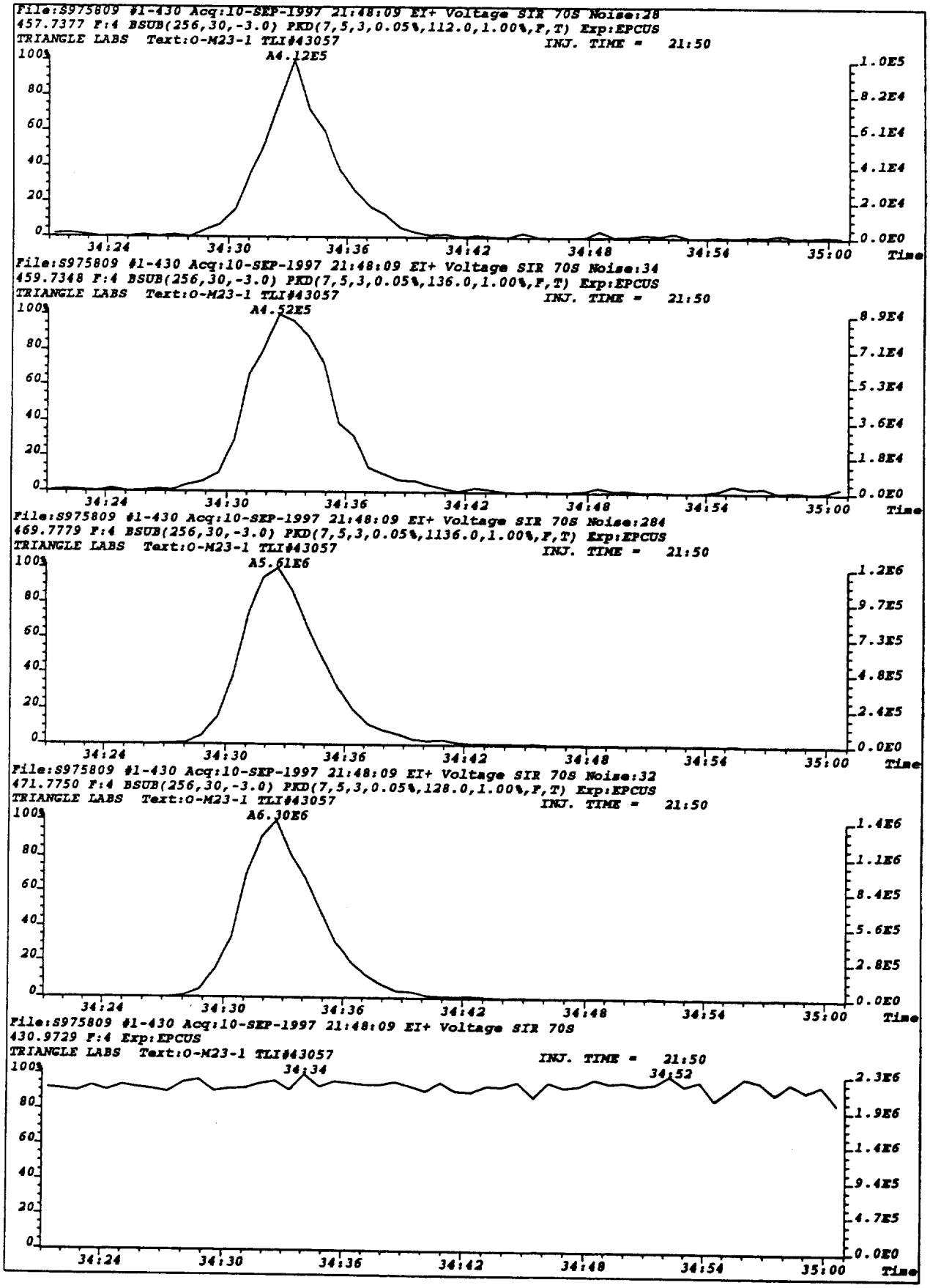

File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:557
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2228.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.82E5
A1.17E5
A6.01E4
A3.29E4
A2.13E4
A9.65E4
A3.57E4
A1.80E4
A6.33E3
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:192
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,768.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.38E5
A9.83E4
A4.73E4
A7.24E4
A3.03E4
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:479
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1916.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A8.77E6
A7.34E6
A5.90E6
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:710
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2840.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.76E7
A1.44E7
A1.20E7
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
28:56
29:22
30:00
28:14
28:41
29:10
29:38
30:11
27:36
27:58
Time

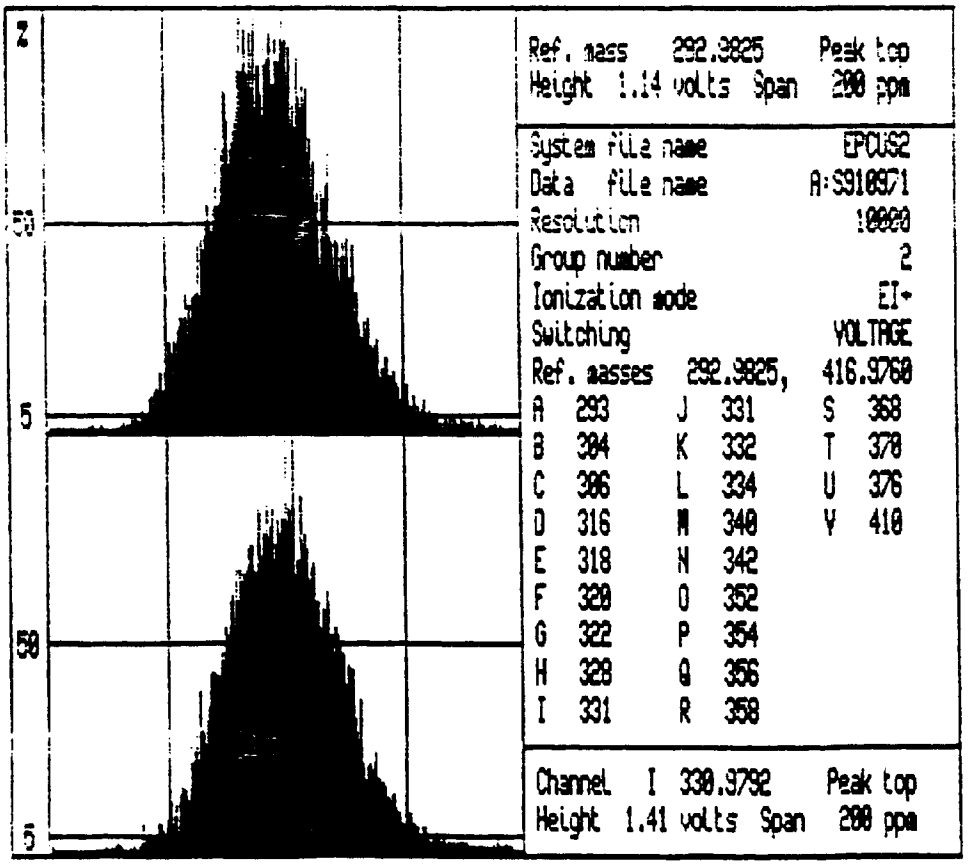

File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:46
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,184.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.61E5
A8.06E4
A3.26E4
A6.94E3
A1.40E4
A4.26E4
A5.14E4
A1.50E4
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:234
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,936.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.42E5
A6.73E4
A2.69E4
A7.20E3
A3.45E4
A3.99E4
A6.24E3
A3.82E3
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:449
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1796.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.76E7
A1.15E7
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:409
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1636.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.43E7
A9.26E6
File:S975809 #1-405 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
Time

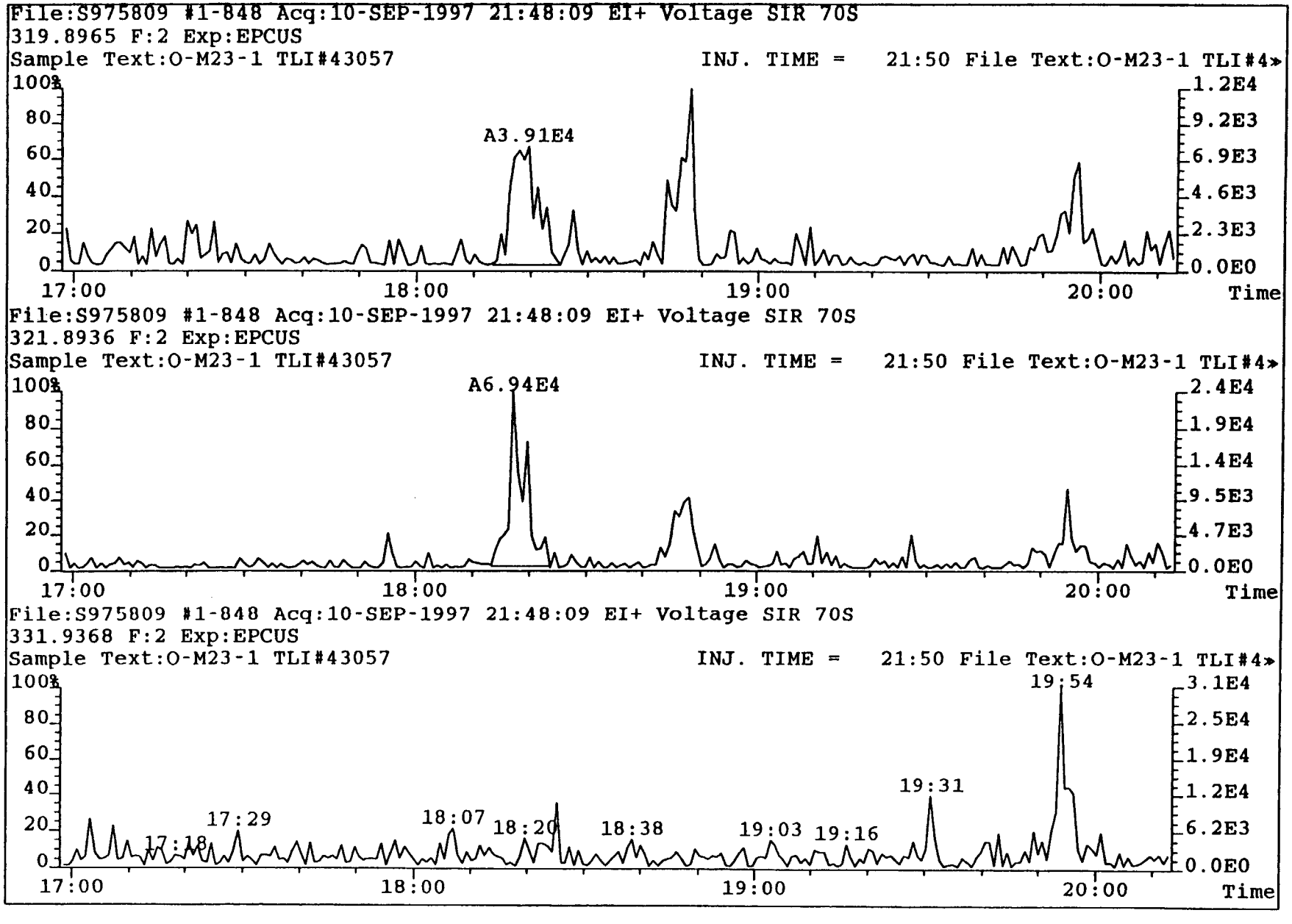

File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:809
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3236.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A2.89E5
A6.01E4
A1.29E4
A6.41E3
A6.98E4
A2.17E4
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:36
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A1.65E5
A4.91E4
A5.95E4
A9.97E3
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:423
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1692.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A3.66E6
A2.41E6
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:485
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1940.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A8.29E6
A5.76E6
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50

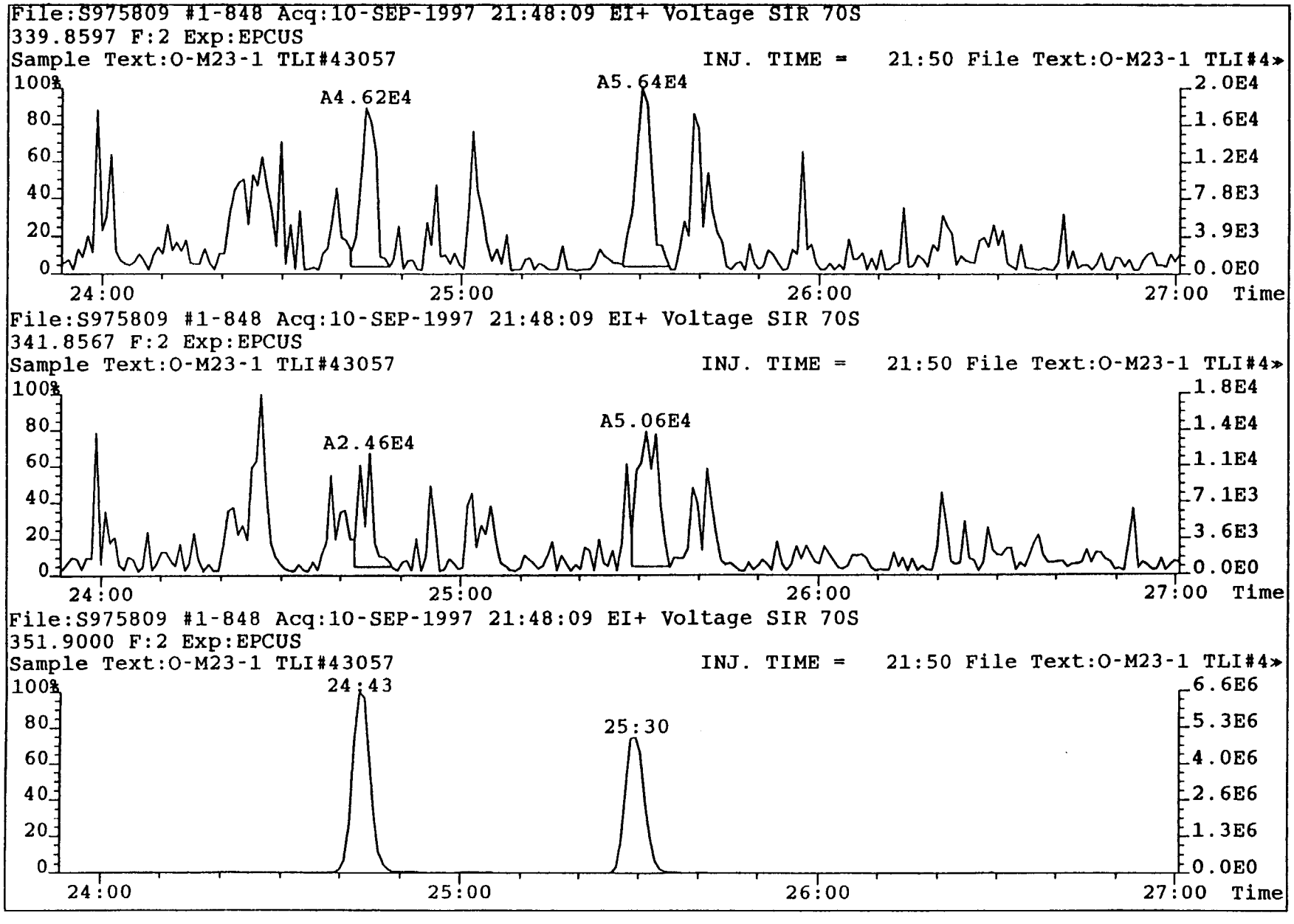

File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:37
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A8.43E4
A9.27E3
A9.90E4
A5.87E3
A1.53E4
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:33
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A7.72E4
A7.47E3
A1.00E5
A5.07E3
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:1060
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4240.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A6.70E6
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708 Noise:530
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A6.37E6
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 708
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
31:23
31:29
31:37
31:46
31:52
32:07
32:16
32:29
Time

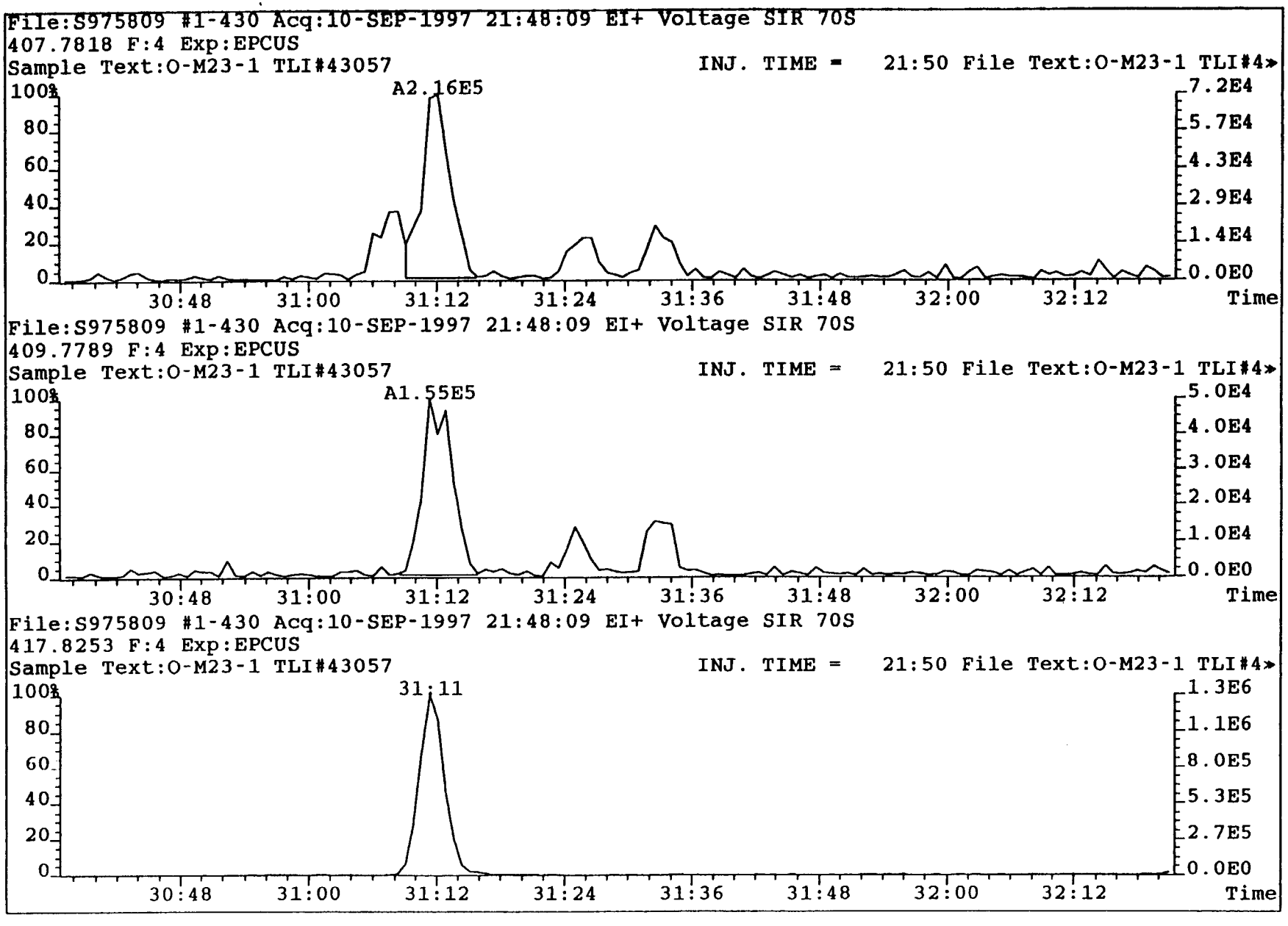

File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:34
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A4.41E4
A1.14E4
A1.03E4
A1.01E4
A5.09E3
A3.95E3
A6.63E3
A3.61E3
A4.07E3
A3.33E3
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:27
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,108.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A5.93E4
A1.76E4
A8.89E3
A8.12E3
A5.60E3
A7.47E3
A5.88E3
A5.98E3
A3.42E3
A3.75E3
A3.67E3
A4.48E3
A6.56E3
A4.45E3
A3.98E3
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
31:03
31:29
31:52
32:16
33:04
33:44
34:07
34:34
34:52
35:36
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
33:41
31:42
35:22
35:45
35:00
30:51
32:20
32:41
31:10
31:33
32:05
33:22
34:47
31:00
32:00
33:00
34:00
35:00
Time

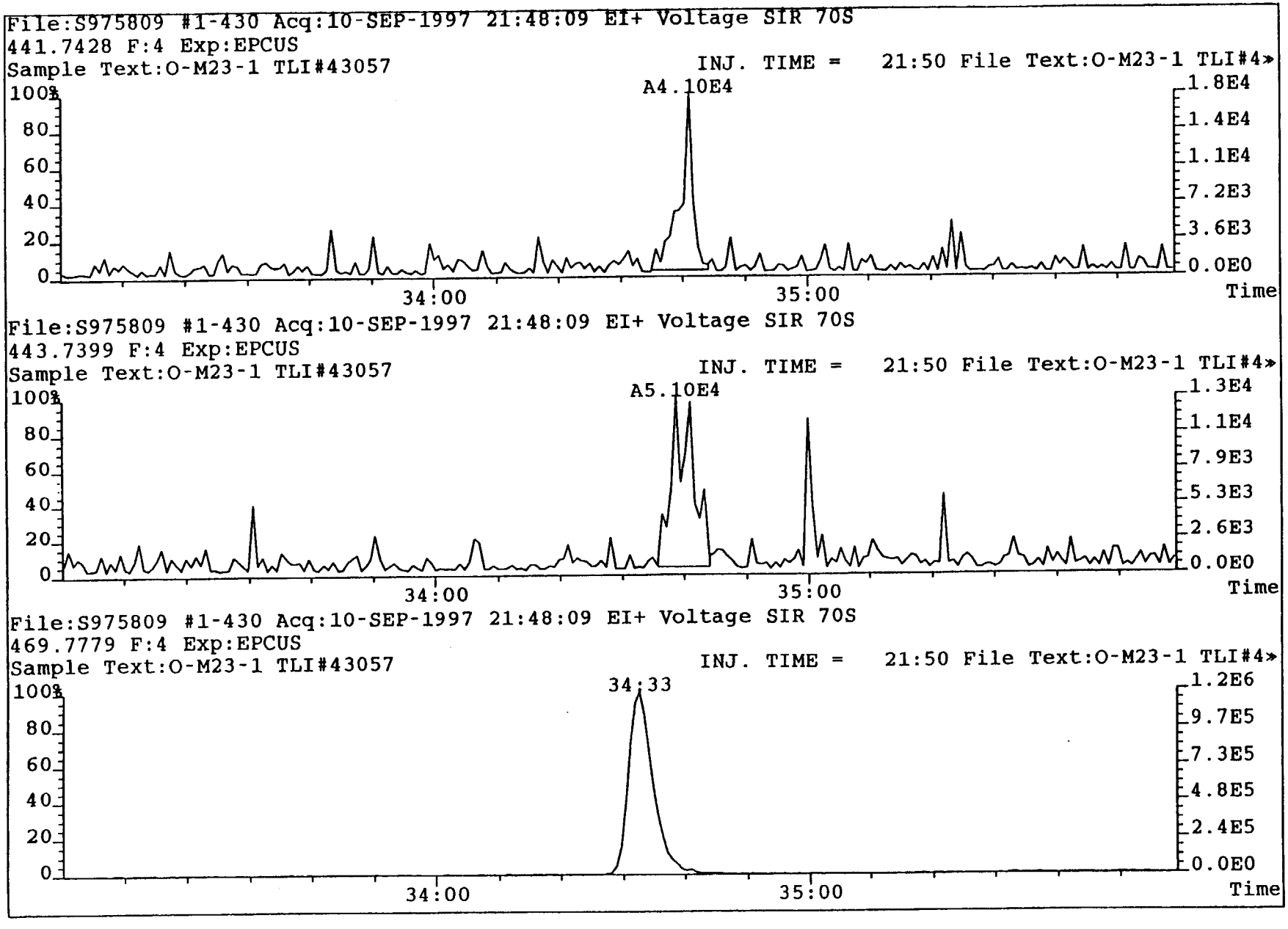

File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:28
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A4.12E5
1.0E5
8.2E4
6.1E4
4.1E4
2.0E4
0.0E0
34:24
34:30
34:36
34:42
34:48
34:54
35:00
Time
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:34
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A4.52E5
8.9E4
7.1E4
5.3E4
3.6E4
1.8E4
0.0E0
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:284
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A5.61E6
1.2E6
9.7E5
7.3E5
4.8E5
2.4E5
0.0E0
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S Noise:32
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
A6.30E6
1.4E6
1.1E6
8.4E5
5.6E5
2.8E5
0.0E0
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-1 TLI#43057
INJ. TIME = 21:50
34:34
34:52
2.3E6
1.9E6
1.4E6
9.4E5
4.7E5
0.0E0


Z
50
5
50
5
Ref. mass 292.3825 Peak top
Height 1.14 volts Span 200 ppm
System file name EPCUS2
Data file name A:S910971
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.3825, 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 1.41 volts Span 200 ppm


File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
319.8965 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4»
100%
80
60
40
20
0
A3.91E4
1.2E4
9.2E3
6.9E3
4.6E3
2.3E3
0.0E0
17:00
18:00
19:00
20:00
Time
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
321.8936 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4»
100%
80
60
40
20
0
A6.94E4
2.4E4
1.9E4
1.4E4
9.5E3
4.7E3
0.0E0
17:00
18:00
19:00
20:00
Time
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
331.9368 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4»
100%
80
60
40
20
0
19:54
19:31
17:29
18:07
18:20
18:38
19:03
19:16
17:18
3.1E4
2.5E4
1.9E4
1.2E4
6.2E3
0.0E0
17:00
18:00
19:00
20:00
Time


File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A4.62E4
A5.64E4
100%
80
60
40
20
0
2.0E4
1.6E4
1.2E4
7.8E3
3.9E3
0.0E0
24:00
25:00
26:00
27:00
Time
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A2.46E4
A5.06E4
100%
80
60
40
20
0
1.8E4
1.4E4
1.1E4
7.1E3
3.6E3
0.0E0
24:00
25:00
26:00
27:00
Time
File:S975809 #1-848 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
24:43
25:30
100%
80
60
40
20
0
6.6E6
5.3E6
4.0E6
2.6E6
1.3E6
0.0E0
24:00
25:00
26:00
27:00
Time


File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A2.16E5
100%
80
60
40
20
0
7.2E4
5.7E4
4.3E4
2.9E4
1.4E4
0.0E0
30:48
31:00
31:12
31:24
31:36
31:48
32:00
32:12
Time
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A1.55E5
100%
80
60
40
20
0
5.0E4
4.0E4
3.0E4
2.0E4
1.0E4
0.0E0
30:48
31:00
31:12
31:24
31:36
31:48
32:00
32:12
Time
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
31:11
100%
80
60
40
20
0
1.3E6
1.1E6
8.0E5
5.3E5
2.7E5
0.0E0
30:48
31:00
31:12
31:24
31:36
31:48
32:00
32:12
Time


File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
441.7428 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A4.10E4
100%
80
60
40
20
0
1.8E4
1.4E4
1.1E4
7.2E3
3.6E3
0.0E0
34:00
35:00
Time
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
443.7399 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
A5.10E4
100%
80
60
40
20
0
1.3E4
1.1E4
7.9E3
5.3E3
2.6E3
0.0E0
34:00
35:00
Time
File:S975809 #1-430 Acq:10-SEP-1997 21:48:09 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:O-M23-1 TLI#43057
INJ. TIME = 21:50 File Text:O-M23-1 TLI#4
34:33
100%
80
60
40
20
0
1.2E6
9.7E5
7.3E5
4.8E5
2.4E5
0.0E0
34:00
35:00
Time

Pacific Environmental Services

TLI Project: 43057 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: O-M23-1 — Analysis File: X973083

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPC2NF04
TLI ID:	181-27-2A-C	Date Extracted:	09/06/97	ICal:	XF24087
		Date Analyzed:	09/11/97	ConCal:	X973069
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-225	Analyst:	MS	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDF	EMPC		0.008			B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.4	59.8	40%-130%	0.79	22:31	___

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.79	21:30	___

Data Reviewer: _____ 09/12/97

C2NF_PSR v2.00, LARS 6.10.04

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Printed: 14:59 09/12/97

Initial ....Date...

Data Review By: [illegible] 9/12/97 Calculated Noise Area: n/a

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

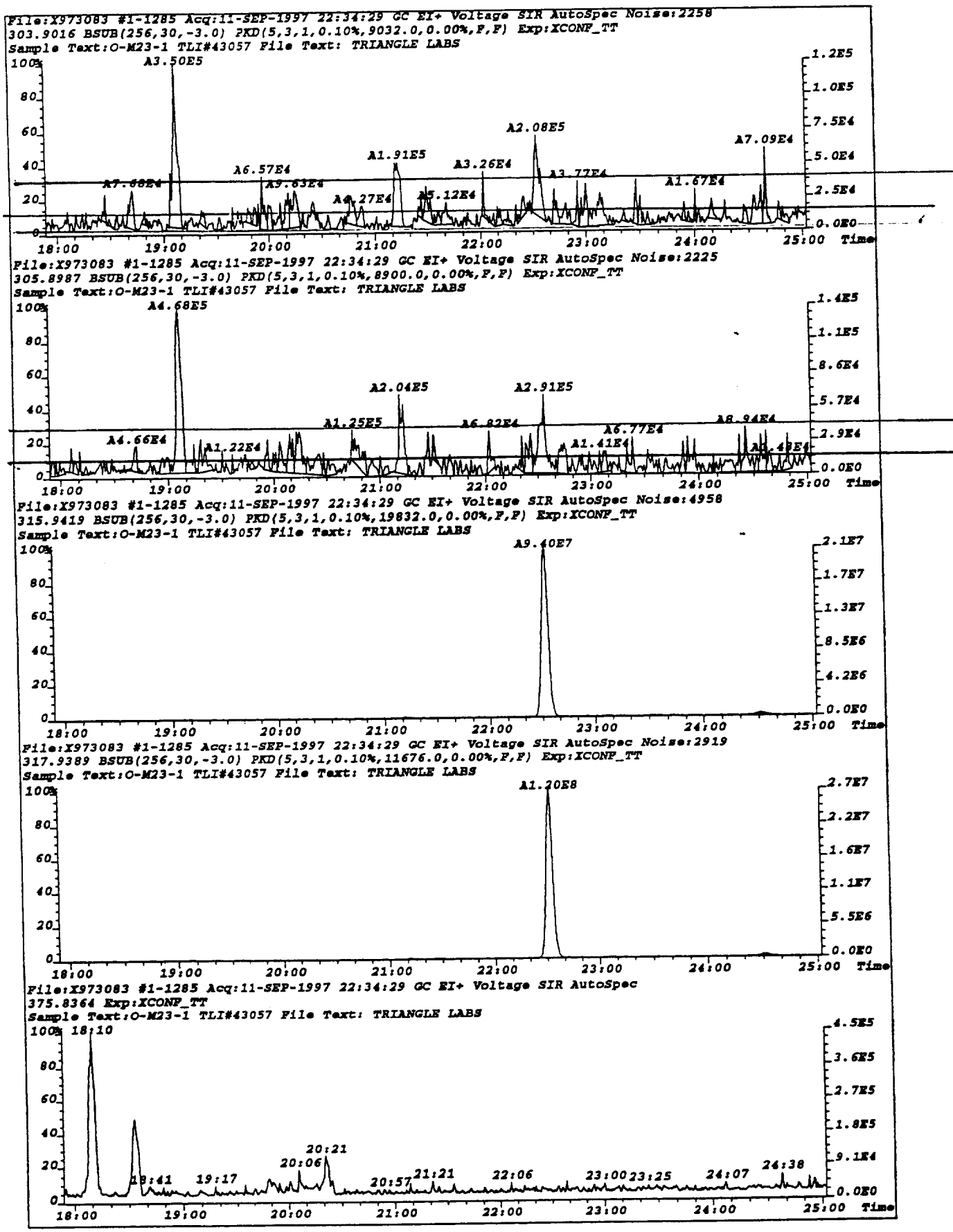
Page No. 1 Listing of X973083B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

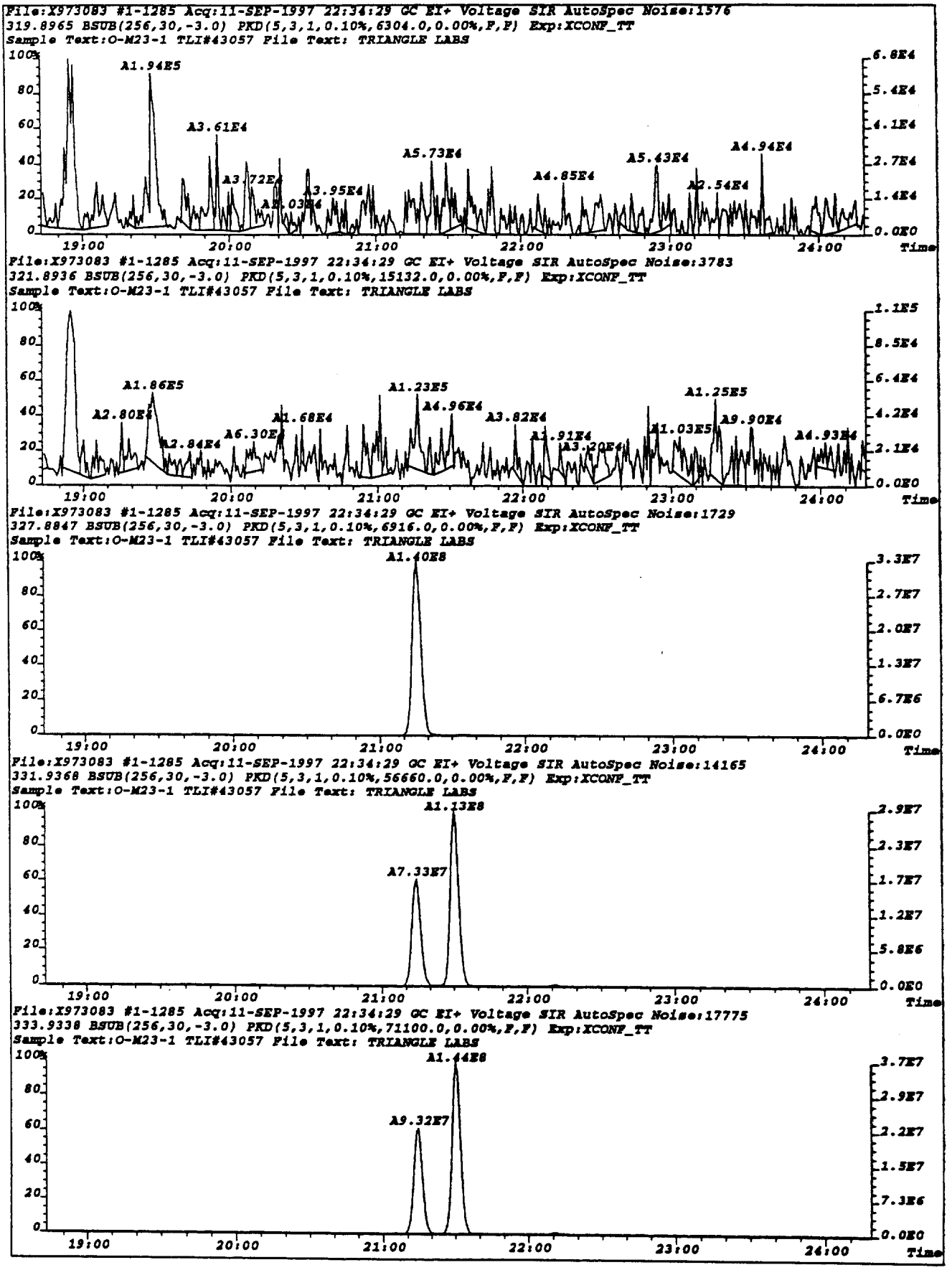
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.797-1.100			
304-306	DC	NL		0:00	RO	1.02	7.88			0.000			
				18:42	RO	1.65	8.25	7.68	4.66	0.830			
				19:07		0.75	81.84	35.02	46.82	0.849			
				19:56	RO	1.59	7.31	6.57	4.13	0.885			
				20:00	RO	1.43	5.31	4.29	3.00	0.888			
				20:11		0.71	14.69	6.11	8.58	0.896			
				20:15		0.75	22.50	9.63	12.87	0.899			
				20:25	RO	0.15	3.31	1.44	9.61	0.907			
				20:33	RO	0.42	4.37	1.90	4.51	0.913			
				20:46	RO	0.58	16.67	7.25	12.50	0.922			
				21:13	RO	0.93	36.16	19.07	20.43	0.942			
				21:29	RO	2.97	4.12	6.93	2.33	0.954			
				22:02	RO	0.48	7.49	3.26	6.82	0.979			
				22:24	RO	0.38	7.93	3.45	9.14	0.995			
	M			22:32	RO	1.02	43.37	25.10	24.50	1.001	2378-TCDF		AN
				22:49	RO	2.09	4.46	5.27	2.52	1.013			
				22:55		0.72	9.03	3.77	5.26	1.018			
				23:00	RO	1.70	8.07	7.76	4.56	1.021			
				23:08	RO	2.59	8.90	13.05	5.03	1.027			
	DC	SN		23:22	RO	0.17	2.64			1.038			
				23:28	RO	1.82	3.54	3.63	2.00	1.042			
				23:31		0.75	11.08	4.74	6.34	1.044			
	DC	SN		23:37	RO	0.33	0.87			1.049			
				23:54	RO	0.23	5.45	2.37	10.22	1.061			
	DC	SN		24:09	RO	4.28	1.13			1.073			
				24:27	RO	0.29	6.05	2.63	8.94	1.086			
				24:37	RO	1.41	12.32	9.82	6.96	1.093			
				24:39	RO	1.31	9.56	7.09	5.40	1.095			
	DC	WH		24:49	RO	0.48	5.20			1.102			
304-306			24 Peaks				341.78						
13C12-TCDF						0.65-0.89				0.955-1.045			
316-318	DC	NL		0:00	RO	1.70	10.34			0.000			
	DC	WL		20:20		0.71	11.53			0.903			
	DC	WL		20:43	RO	3.54	7.50			0.920			
	DC	WL		21:12	RO	1.10	92.73			0.942			
	DC	WL		21:29	RO	0.19	11.36			0.954			
				22:31		0.79	21,370.95	9,401.85	11,969.10	1.000	13C12-2378-TCDF		ISO
				22:42	RO	1.53	18.07	15.64	10.21	1.008			
				23:09	RO	1.19	62.41	42.12	35.26	1.028			
	DC	WH		23:43	RO	2.66	20.90			1.053			
	DC	WH		23:53	RO	1.02	10.87			1.061			
	DC	WH		24:30		0.86	469.56			1.088			

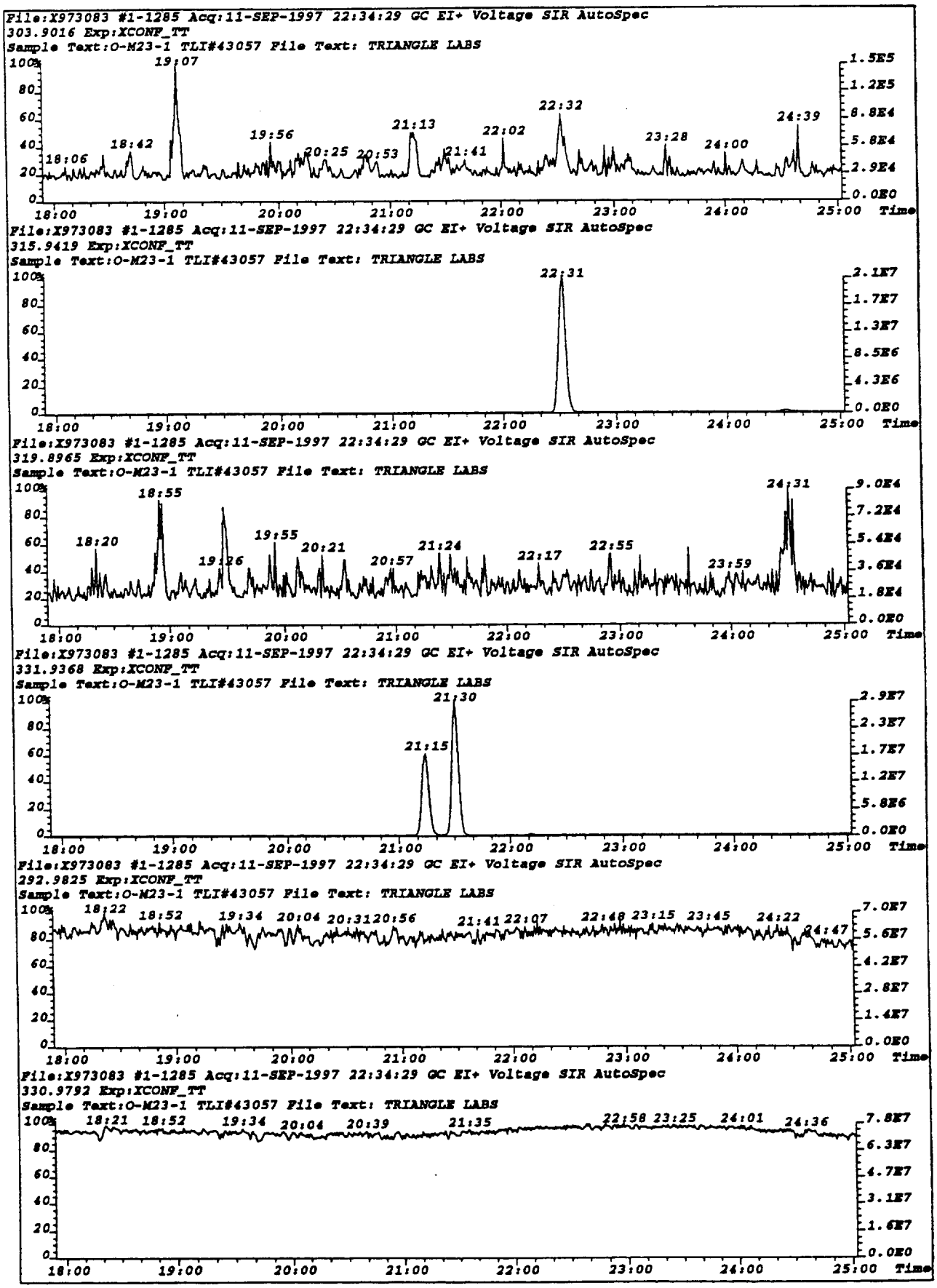
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
316-318		3 Peaks					21,451.43						
	---------- Above: TCDF / TCDD Follows ----------												
13C12-TCDD						0.65-0.89				0.906-1.094			
332-334		DC	NL	0:00		0.80	63.88			0.000			
				20:08	RO	0.96	75.01	40.76	42.38	0.947			
				21:15		0.79	16,649.95	7,331.99	9,317.96	1.000	13C12-2378-TCDD	IS1	
				21:30		0.79	25,684.70	11,297.00	14,387.70	1.012	13C12-1234-TCDD	RS1	
				22:11		0.83	264.89	119.91	144.98	1.044			
				22:28	RO	0.22	22.00	9.57	42.82	1.057			
				22:40	RO	0.37	23.40	10.18	27.77	1.067			
		DC	WH	23:49	RO	0.31	62.55			1.121			
332-334		6 Peaks					42,719.95						

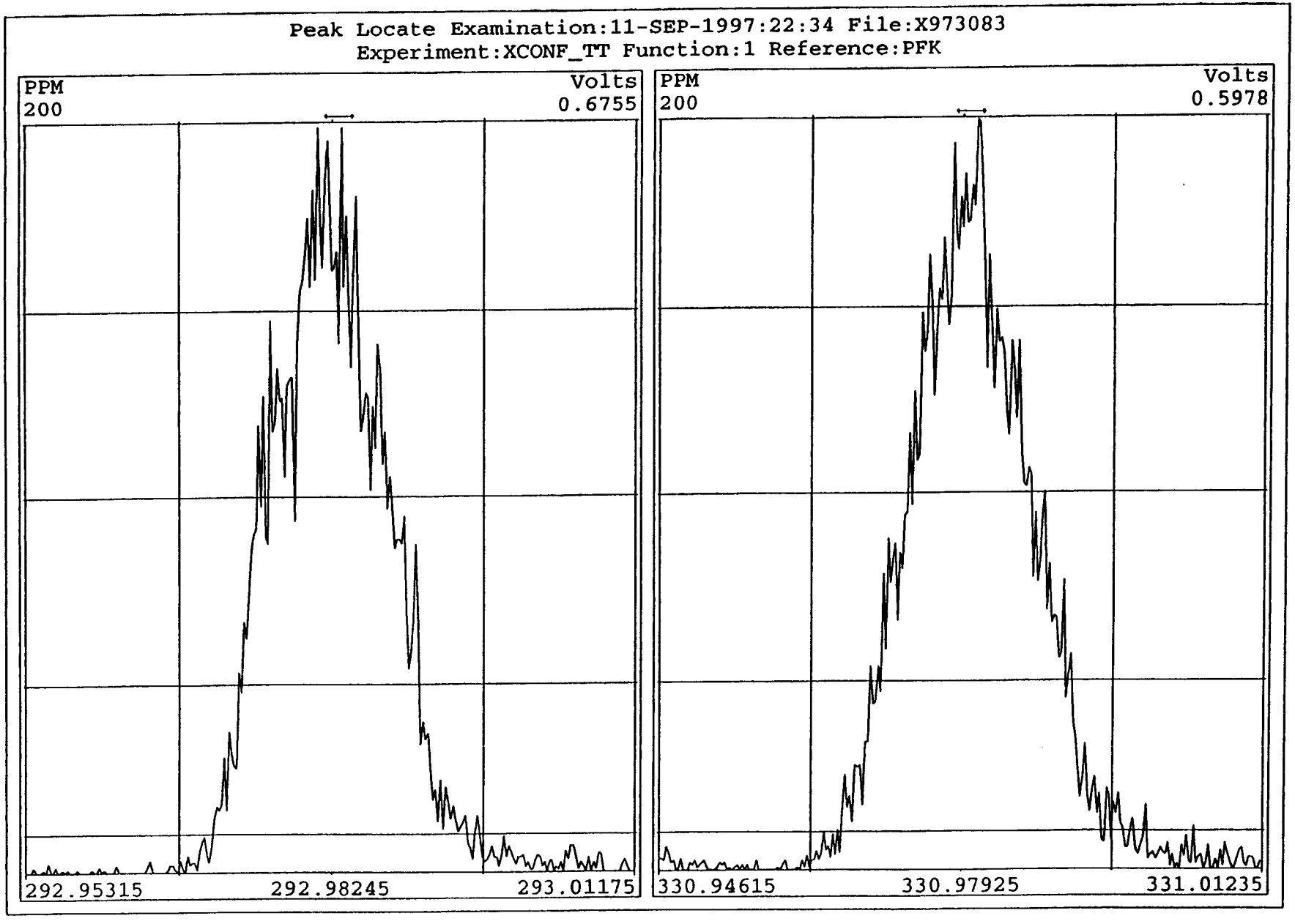
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside 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
		E-Ether Interference

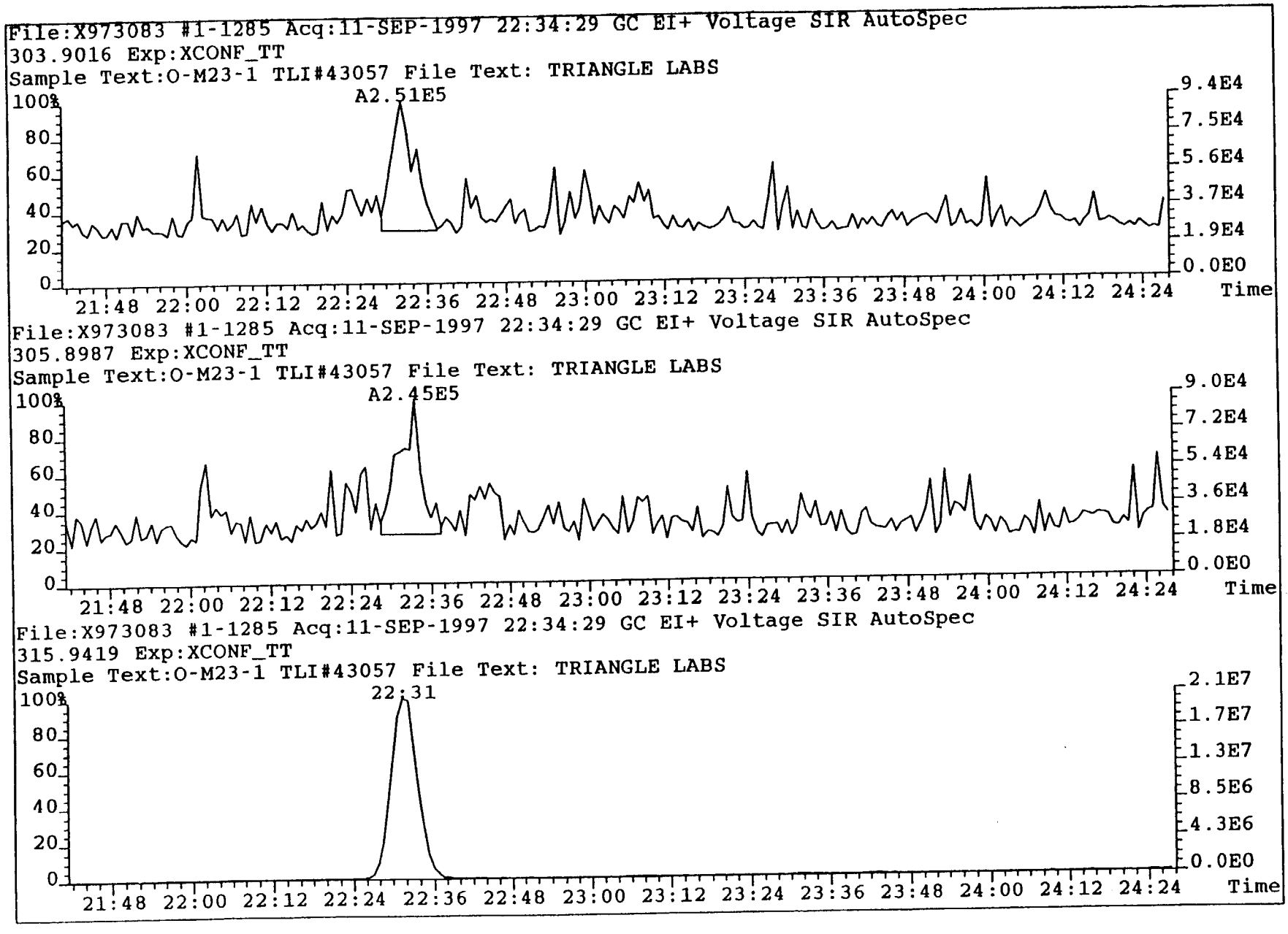
*** End of Report ***


File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:2258
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,9032.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A3.50E5
A2.08E5
A7.09E4
A1.91E5
A6.57E4
A3.26E4
A1.67E4
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:2225
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,8900.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A4.68E5
A2.04E5
A2.91E5
A1.25E5
A4.66E4
A1.22E4
A1.41E4
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:4958
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,19832.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A9.40E7
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:2919
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,11676.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.20E8
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
375.8364 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:10
20:21
20:06
18:41
19:17
20:57
21:21
22:06
23:00
23:25
24:07
24:38
Time


File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:1576
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6304.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.94E5
A3.61E4
A5.73E4
A4.85E4
A5.43E4
A4.94E4
A2.54E4
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:3783
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,15132.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.86E5
A2.80E4
A1.68E4
A1.23E5
A4.96E4
A3.82E4
A1.25E5
A9.90E4
A4.93E4
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:1729
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,6916.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.40E8
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:14165
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,56660.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.13E8
A7.33E7
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec Noise:17775
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,71100.0,0.00%,F,F) Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A1.44E8
A9.32E7
Time


File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:06
18:42
19:07
19:56
20:25
20:53
21:13
21:41
22:02
22:32
23:28
24:00
24:39
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
22:31
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
319.8965 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:20
18:55
19:26
19:55
20:21
20:57
21:24
22:17
22:55
23:59
24:31
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
331.9368 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
21:15
21:30
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
292.9825 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:22
18:52
19:34
20:04
20:31
20:56
21:41
22:07
22:48
23:15
23:45
24:22
24:47
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
330.9792 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
18:21
18:52
19:34
20:04
20:39
21:35
22:58
23:25
24:01
24:36
Time


Peak Locate Examination:11-SEP-1997:22:34 File:X973083
Experiment:XCONF_TT Function:1 Reference:PFK
PPM
200
Volts
0.6755
292.95315
292.98245
293.01175
PPM
200
Volts
0.5978
330.94615
330.97925
331.01235


File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
303.9016 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A2.51E5
100%
80
60
40
20
0
9.4E4
7.5E4
5.6E4
3.7E4
1.9E4
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
305.8987 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
A2.45E5
100%
80
60
40
20
0
9.0E4
7.2E4
5.4E4
3.6E4
1.8E4
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24
Time
File:X973083 #1-1285 Acq:11-SEP-1997 22:34:29 GC EI+ Voltage SIR AutoSpec
315.9419 Exp:XCONF_TT
Sample Text:O-M23-1 TLI#43057 File Text: TRIANGLE LABS
22:31
100%
80
60
40
20
0
2.1E7
1.7E7
1.3E7
8.5E6
4.3E6
0.0E0
21:48 22:00 22:12 22:24 22:36 22:48 23:00 23:12 23:24 23:36 23:48 24:00 24:12 24:24
Time

Pacific Environmental Services

TLI Project: 43057 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: O-M23-2 — Analysis File: S975810

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPX23704
TLI ID:	181-27-3A-C	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/10/97	ConCal:	S975797
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.006				
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	EMPC		0.02			
1,2,3,7,8,9-HxCDD	ND	0.01				
1,2,3,4,6,7,8-HpCDD	EMPC		0.04			B
1,2,3,4,6,7,8,9-OCDD	0.19			0.90	34:34	B
2,3,7,8-TCDF	0.03			0.79	20:27	B
1,2,3,7,8-PeCDF	ND	0.006				
2,3,4,7,8-PeCDF	ND	0.006				
1,2,3,4,7,8-HxCDF	0.04			1.27	28:25	B
1,2,3,6,7,8-HxCDF	0.01			1.21	28:32	B
2,3,4,6,7,8-HxCDF	0.02			1.37	29:02	PRB
1,2,3,7,8,9-HxCDF	ND	0.008				
1,2,3,4,6,7,8-HpCDF	0.07			0.88	31:14	PRB
1,2,3,4,7,8,9-HpCDF	0.02			1.19	32:25	B
1,2,3,4,6,7,8,9-OCDF	0.06			0.95	34:42	B

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.02	1			
Total PeCDD	0.03	1		0.06	
Total HxCDD	0.08	1		0.10	
Total HpCDD	0.04	1		0.08	
Total TCDF	0.04	2			
Total PeCDF	ND		0.006		
Total HxCDF	0.11	5			
Total HpCDF	0.12	3			

X237_PSR v2.00, LABS 6.10.04

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Printed: 14:57 09/11/97

TLI Project: 43057
Client Sample: O-M23-2

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975810

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.5	62.4	40%-130%	0.75	20:26	—
$^{13}C_{12}$-2,3,7,8-TCDD	2.2	55.6	40%-130%	0.81	21:16	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	2.3	57.6	40%-130%	1.45	24:45	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.4	60.5	40%-130%	1.55	25:54	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	2.6	65.7	40%-130%	0.50	28:31	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	2.4	58.8	40%-130%	1.24	29:14	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.7	41.3	25%-130%	0.44	31:13	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1.8	44.9	25%-130%	1.05	32:04	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	2.2	27.5	25%-130%	0.86	34:34	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	4.0	98.8	70%-140%		21:17	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.4	85.1	70%-140%	1.43	25:33	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.7	92.1	70%-140%	0.50	28:24	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.7	91.9	70%-140%	1.23	29:09	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.4	84.9	70%-140%	0.42	32:25	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.2	54.3	40%-130%	0.50	29:44	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	2.5	62.0	40%-130%	0.49	29:01	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	21:02	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.22	29:31	—

Data Reviewer: _____ 09/11/97

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Initial ... Date ...

Data Review By: IM 9/11/97 Calculated Noise Area: 1.67

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 S975810B.dbf
09/11/97 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						0.823-1.104			
304-306	DC	NL		0:00	RO	0.08	0.14			0.000			
D	D	SN		16:59	RO	1.01	5.79			0.831			
D	D	SN		17:28	RO	0.95	4.05			0.855			
D	D	SN		17:43	RO	0.64	8.05			0.867			
D	D	SN		18:09	RO	0.93	10.80			0.888			
D	D	SN		18:31	RO	1.05	7.97			0.906			
D	D	SN		18:56	RO	1.79	4.09			0.927			
D	D	SN		19:16		0.77	11.50			0.943			
D	D	SN		19:36	RO	0.96	16.41			0.959			
D	D	SN		19:44		0.68	11.99			0.966			
A				19:58		0.65	16.82	6.62	10.20	0.977			
				20:27		0.79	31.20	13.81	17.39	1.001	2378-TCDF		AN
D	D	SN		20:57	RO	0.54	4.94			1.025			
	DC	SN		22:09	RO	1.26	1.91			1.084			
304-306			2	Peaks			48.02						
13C12-TCDF				0.65-0.89						0.951-1.049			
316-318	DC	NL		0:00	RO	8.71	0.12			0.000			
	DC	WL		19:16	RO	1.10	5.22			0.943			
				19:57		0.68	23.12	9.34	13.78	0.976			
				20:26		0.75	3,447.55	1,477.22	1,970.33	1.000	13C12-2378-TCDF		ISO
				20:56		0.78	17.22	7.52	9.70	1.024			
316-318			3	Peaks			3,487.89						
---------- Above: TCDF / TCDD Follows ----------													
TCDD				0.65-0.89						0.857-1.061			
320-322	DC	NL		0:00	RO	1.00	0.14			0.000			
	DC	WL		18:10	RO	0.57	0.67			0.854			
				18:21		0.71	14.55	6.05	8.50	0.863			
D	D	SN		18:50		0.67	6.41			0.886			
	DC	SN		19:22		0.82	0.31			0.911			
	DC	SN		19:23	RO	1.41	0.60			0.911			
	DC	SN		19:42	RO	1.28	0.64			0.926			
D	D	SN		20:00	RO	0.98	4.64			0.940			
	DC	SN		20:14		0.78	2.15			0.951			
	DC	SN		20:40	RO	1.32	1.61			0.972			
	DC	SN		20:51	RO	1.20	0.44			0.980			
D	D	SN		21:09	RO	0.93	4.71			0.995			
	DC	SN		21:21	RO	0.26	0.85			1.004			
	DC	SN		21:49	RO	0.30	0.46			1.026			
	DC	SN		22:10	RO	0.31	0.78			1.042			
	DC	WH		22:38		0.85	3.31			1.064			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
320-322			1 Peak				14.55						
										0.906-1.094			
37Cl-TCDD										0.000			
328	DC	NL		0:00			0.07			0.928			
				19:44			11.72	11.72		1.001	37Cl-TCDD		SUR1
				21:17			2,069.93	2,069.93		1.007			
				21:25			8.38	8.38		1.023			
				21:45			3.53	3.53		1.031			
	DC	SN		21:55			1.48			1.051			
	DC	SN		22:21			1.31			1.057			
	DC	SN		22:29			1.57						
328			4 Peaks				2,093.56						
						0.65-0.89				0.906-1.094			
13C12-TCDD										0.000			
332-334	DC	NL		0:00	RO	18.33	0.11			0.937			
				19:56	RO	0.90	11.93	6.08	6.74	0.989	13C12-1234-TCDD		RS1
				21:02		0.82	4,190.27	1,890.11	2,300.16	1.000	13C12-2378-TCDD		IS1
				21:16		0.81	2,484.18	1,109.29	1,374.89	1.010			
	DC	SN		21:29	RO	1.35	3.54			1.017			
				21:38		0.87	33.89	15.79	18.10				
332-334			4 Peaks				6,720.27						
---------- Above: TCDD / PeCDF Follows ----------													
						1.32-1.78				0.909-1.079			
PeCDF										0.000			
340-342	DC	NL		0:00	RO	1.14	0.13			0.916			
D	D	SN		22:40	RO	1.06	8.29			0.920			
	DC	SN		22:46	RO	0.45	1.09			0.958			
	DC	SN		23:43		1.67	3.15			0.964			
D	D	SN		23:51		1.58	14.48			0.976			
D	D	SN		24:10	RO	0.84	3.52			1.000	12378-PeCDF		AN
D	D	SN		24:45		1.55	6.96			1.013			
	DC	SN		25:04	RO	3.28	4.23			1.033	23478-PeCDF		AN
D	D	SN		25:34		1.38	11.74			1.038			
	DC	SN		25:42	RO	1.80	4.31			1.073			
	DC	SN		26:34		1.60	4.24			1.077			
	DC	SN		26:39	RO	1.06	2.75						
340-342			0 Peaks				0.00						
						1.32-1.78				0.838-1.162			
13C12-PeCDF										0.000			
352-354	DC	NL		0:00	RO	1.14	0.13			0.963			
				23:50	RO	1.25	7.65	4.65	3.73	0.985			
				24:23		1.34	11.91	6.83	5.08	1.000	13C12-PeCDF 123		IS2
				24:45		1.45	2,733.22	1,617.73	1,115.49	1.007			
				24:55		1.61	11.42	7.04	4.38	1.013			
				25:04	RO	1.14	14.89	9.05	7.92	1.032	13C12-PeCDF 234		SUR2
				25:33		1.43	2,257.14	1,330.15	926.99	1.044			
	DC	SN		25:50		1.37	3.01			1.047			
	DC	SN		25:55		1.50	3.03			1.071			
	DC	SN		26:31	RO	2.54	4.62			1.077			
	DC	SN		26:39	RO	1.00	1.51						
352-354			6 Peaks				5,036.23						

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: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.921-1.026			
356-358	DC	NL		0:00	RO	0.71	0.08			0.000			
A				24:00	RO	0.72	14.08	8.56	11.90	0.927			
	DC	SN		24:18	RO	0.44	1.43			0.938			
	DC	SN		24:30	RO	2.24	1.94			0.946			
				24:47		1.32	14.76	8.40	6.36	0.957			
	DC	SN		24:57	RO	0.51	1.56			0.963			
D	D	SN		25:06	RO	1.06	5.71			0.969			
	DC	SN		25:19	RO	0.61	1.32			0.977			
	DC	SN		25:56	RO	1.87	2.70			1.001	12378-PeCDD	AN	
	DC	SN		26:24	RO	1.02	2.12			1.019			
	DC	WH		26:46	RO	1.12	2.47			1.033			
356-358				2 Peaks			28.84						
13C12-PeCDD				1.32-1.78						0.845-1.155			
368-370	DC	NL		0:00	RO	1.00	0.12			0.000			
	DC	SN		24:46		1.53	3.04			0.956			
				25:54		1.55	1,608.95	978.75	630.20	1.000	13C12-PeCDD 123	IS3	
				26:03		1.38	161.72	93.83	67.89	1.006			
	DC	SN		26:25	RO	1.23	3.49			1.020			
368-370				2 Peaks			1,770.67						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.957-1.053			
374-376	DC	NL		0:00		1.19	4.49			0.000			
				27:25		1.16	7.59	4.07	3.52	0.961			
				27:34		1.25	16.00	8.88	7.12	0.967			
M				28:25		1.27	20.56	11.50	9.06	0.996	123478-HxCDF	AN	
M				28:32		1.21	9.40	5.14	4.26	1.001	123678-HxCDF	AN	
	DC	SN		28:39		1.18	4.19			1.005			
D	D	SN		28:50	RO	0.72	4.81			1.011			
M				29:02		1.37	9.00	5.21	3.79	1.018	234678-HxCDF	AN	PR
	DC	SN		29:12	RO	3.08	0.85			1.024			
D	D	SN		29:48	RO	0.83	4.43			1.045	123789-HxCDF	AN	
	DC	SN		29:53		1.16	1.97			1.048			
	DC	SN		30:00	RO	0.53	2.67			1.052			
	DC	WH		30:15		1.09	3.47			1.061			
374-376				5 Peaks			62.55						
13C12-HxCDF				0.43-0.59						0.859-1.141			
384-386	DC	NL		0:00	RO	0.89	3.17			0.000			
	DC	SN		28:11	RO	0.96	1.43			0.988			
				28:24		0.50	1,591.97	532.51	1,059.46	0.996	13C12-HxCDF 478	SUR3	
				28:31		0.50	1,801.94	600.54	1,201.40	1.000	13C12-HxCDF 678	IS4	
	DC	SN		28:40	RO	0.28	4.35			1.005			
	DC	SN		28:43	RO	1.72	1.75			1.007			
				29:01		0.49	1,574.02	519.44	1,054.58	1.018	13C12-HxCDF 234	ALT2	
				29:44		0.50	1,197.58	400.47	797.11	1.043	13C12-HxCDF 789	ALT1	
	DC	SN		30:09	RO	0.70	2.31			1.057			

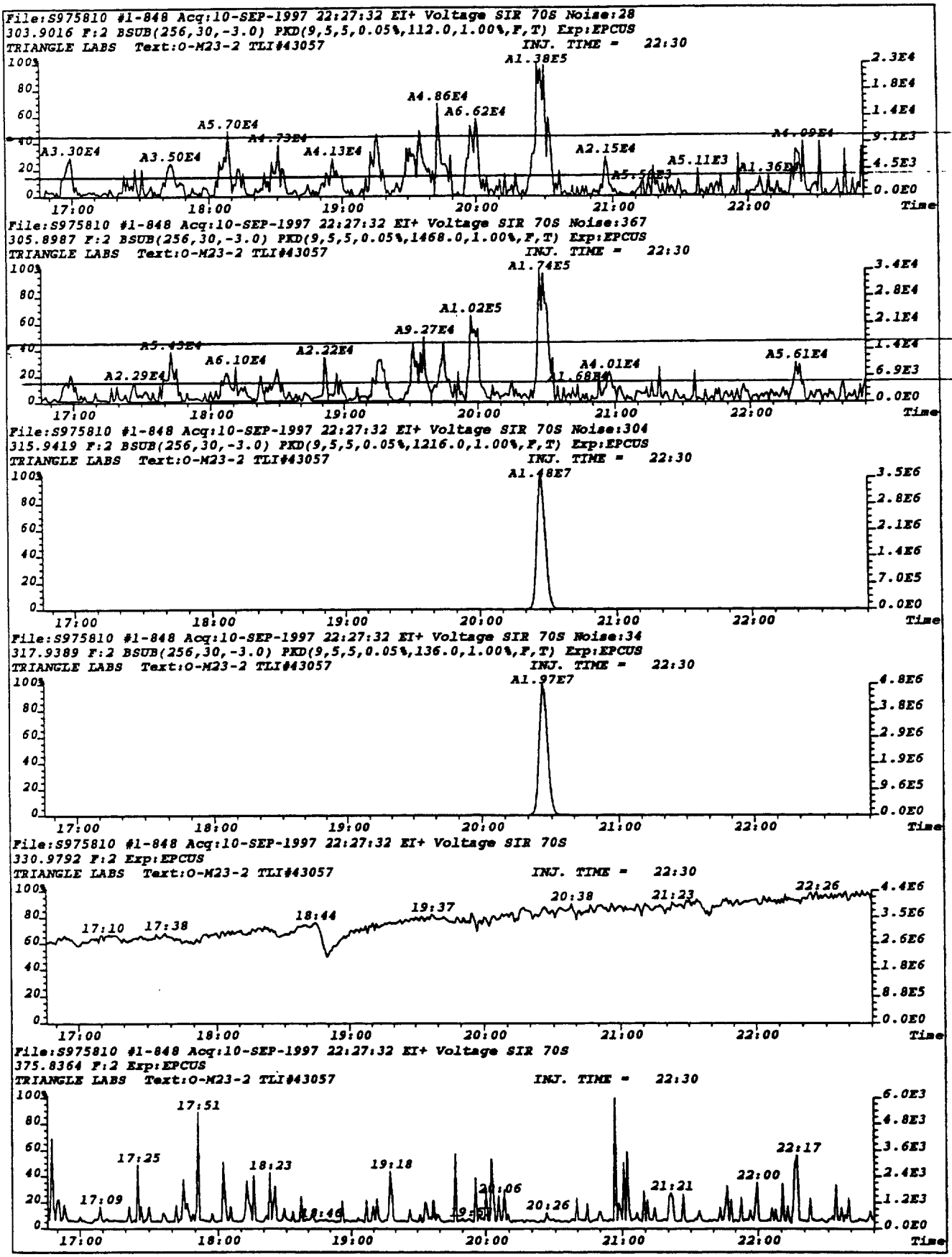
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
384-386				4 Peaks			6,165.51						
	---------- Above: HxCDF / HxCDD Follows ----------												
HxCDD						1.05-1.43				0.951-1.015			
390-392		DC	NL	0:00	RO	1.63	1.50			0.000			
		DC	SN	27:57	RO	1.57	4.03			0.956			
		DC	SN	28:11	RO	4.05	0.43			0.964			
		DC	SN	28:16	RO	0.85	0.63			0.967			
				28:25		1.23	29.72	16.41	13.31	0.972			
	D	D	SN	28:39		1.34	10.90			0.980			
		DC	SN	28:47	RO	1.02	2.11			0.985			
		DC	SN	28:53		1.17	0.91			0.988			
		DC	SN	29:00		1.37	2.58			0.992			
		DC	SN	29:09		1.33	4.06			0.997	123478-HxCDD	AN	
	M			29:14	RO	0.95	6.41	3.55	3.72	1.000	123678-HxCDD	AN	
	D	D	SN	29:32	RO	0.71	5.35			1.010	123789-HxCDD	AN	
		DC	WH	29:42	RO	3.86	1.25			1.016			
		DC	WH	29:50	RO	0.74	1.86			1.021			
390-392				2 Peaks			36.13						
13C12-HxCDD						1.05-1.43				0.966-1.034			
402-404		DC	NL	0:00	RO	0.88	1.26			0.000			
				28:38		1.13	7.89	4.18	3.71	0.979			
		DC	SN	28:50	RO	0.66	1.77			0.986			
				29:09		1.23	1,191.87	657.77	534.10	0.997	13C12-HxCDD	478	SUR4
				29:14		1.24	1,332.37	737.61	594.76	1.000	13C12-HxCDD	678	IS5
				29:31		1.22	2,276.32	1,249.58	1,026.74	1.010	13C12-HxCDD	789	RS2
402-404				4 Peaks			4,808.45						
	---------- Above: HxCDD / HpCDF Follows ----------												
HpCDF						0.88-1.20				0.995-1.045			
408-410		DC	NL	0:00	RO	1.55	1.90			0.000			
	M			31:14		0.88	22.50	10.50	12.00	1.001	1234678-HpCDF	AN	PR
				31:26		1.03	8.11	4.11	4.00	1.007			
	D	D	SN	31:34		1.11	6.87			1.011			
	M			32:25		1.19	4.98	2.71	2.27	1.038	1234789-HpCDF	AN	
		DC	SN	32:34	RO	1.48	1.57			1.043			
		DC	WH	32:39		0.96	1.92			1.046			
		DC	WH	32:52		1.15	4.22			1.053			
408-410				3 Peaks			35.59						
13C12-HpCDF						0.37-0.51				0.936-1.128			
418-420		DC	NL	0:00	RO	0.91	1.47			0.000			
				31:13		0.44	834.38	254.39	579.99	1.000	13C12-HpCDF	678	IS6
		DC	SN	31:33	RO	1.60	1.17			1.011			
				32:25		0.42	546.46	161.53	384.93	1.038	13C12-HpCDF	789	SUR5
		DC	SN	32:51	RO	1.33	1.40			1.052			
418-420				2 Peaks			1,380.84						

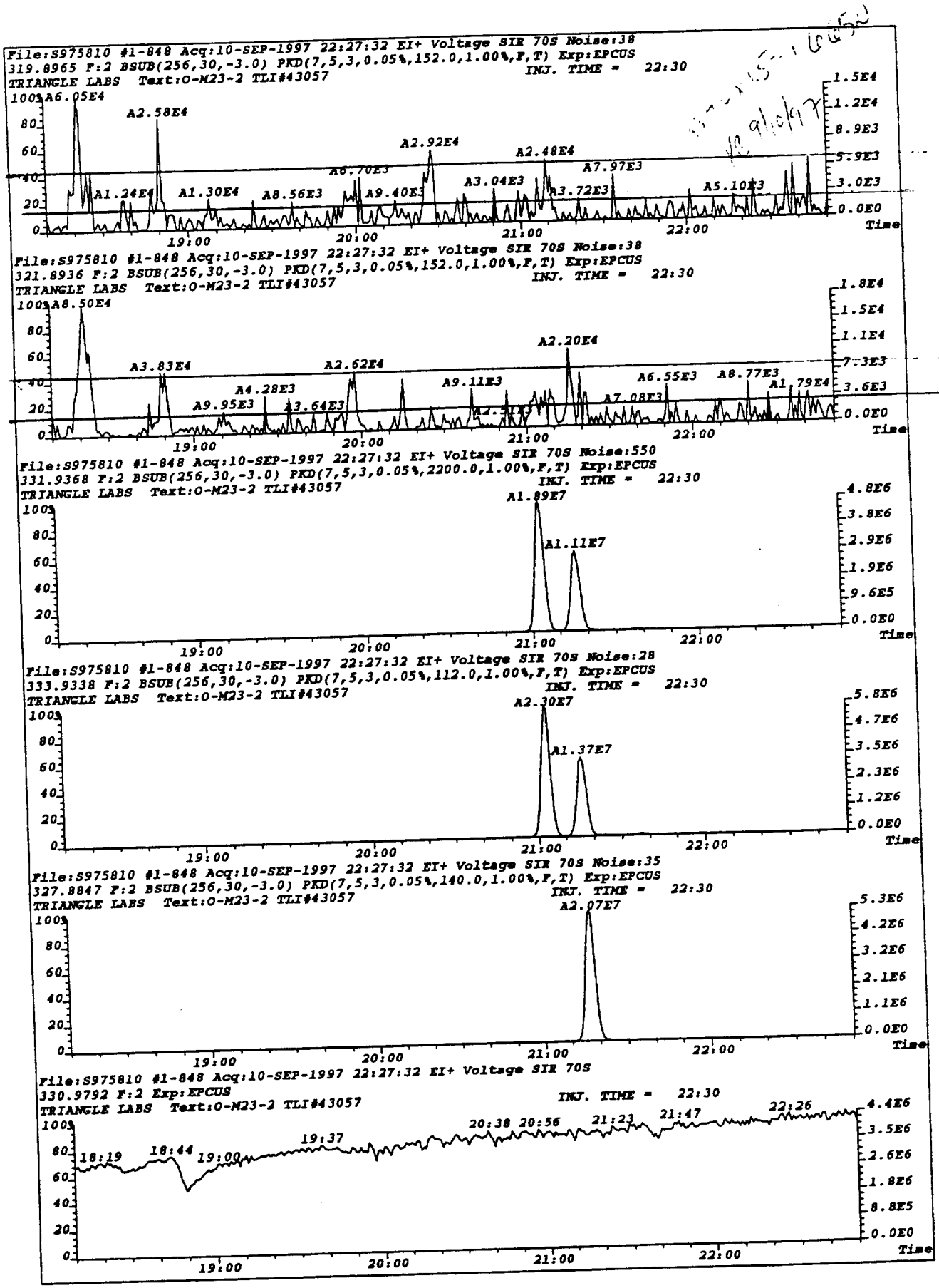
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD				0.88-1.20						0.977-1.006			
424-426	DC	NL		0:00	RO	1.30	1.16			0.000			
				31:29		1.05	9.61	4.92	4.69	0.982			
	DC	SN		31:42	RO	2.92	0.75			0.989			
M				32:05	RO	0.86	8.12	4.14	4.83	1.001	1234678-HpCDD	AN	
	DC	WH		32:17	RO	0.28	0.65			1.007			
	DC	WH		32:29	RO	0.50	1.20			1.013			
424-426		2 Peaks					17.73						
13C12-HpCDD				0.88-1.20						0.969-1.031			
436-438	DC	NL		0:00		1.16	1.38			0.000			
	DC	SN		31:28	RO	0.26	1.04			0.981			
				32:04		1.05	833.58	427.57	406.01	1.000	13C12-HpCDD 678	IS7	
436-438		1 Peak					833.58						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF				0.76-1.02						0.884-1.116			
442-444	DC	NL		0:00	RO	1.29	0.13			0.000			
	DC	SN		31:26		0.93	1.43			0.909			
	DC	SN		31:36	RO	2.06	0.59			0.914			
	DC	SN		31:56	RO	2.40	1.19			0.924			
	DC	SN		32:12	RO	0.18	0.45			0.932			
	DC	SN		32:22	RO	0.57	1.44			0.936			
	DC	SN		32:50	RO	0.59	0.96			0.950			
	DC	SN		33:17	RO	0.04	0.17			0.963			
	DC	SN		33:24	RO	1.71	1.36			0.966			
	DC	SN		33:30	RO	0.64	0.57			0.969			
	DC	SN		33:43	RO	0.58	0.38			0.975			
	DC	SN		34:00	RO	6.26	0.36			0.984			
	DC	SN		34:29	RO	0.41	0.74			0.998			
				34:42		0.95	7.27	3.55	3.72	1.004	OCDF	AN	
	DC	SN		35:01	RO	0.11	0.19			1.013			
	DC	SN		35:25	RO	1.86	1.06			1.025			
	DC	SN		35:34		0.99	2.13			1.029			
	DC	SN		35:55	RO	1.45	0.21			1.039			
442-444		1 Peak					7.27						
OCDD				0.76-1.02						0.884-1.116			
458-460	DC	NL		0:00	RO	1.17	0.11			0.000			
				34:34		0.90	17.03	8.09	8.94	1.000	OCDD	AN	
	DC	SN		34:58	RO	0.16	0.30			1.012			
458-460		1 Peak					17.03						
13C12-OCDD				0.76-1.02						0.996-1.005			
470-472	DC	NL		0:00	RO	0.67	0.08			0.000			
				34:34		0.86	650.55	301.53	349.02	1.000	13C12-OCDD	IS8	
	DC	WH		35:04	RO	2.39	1.74			1.014			
470-472		1 Peak					650.55						

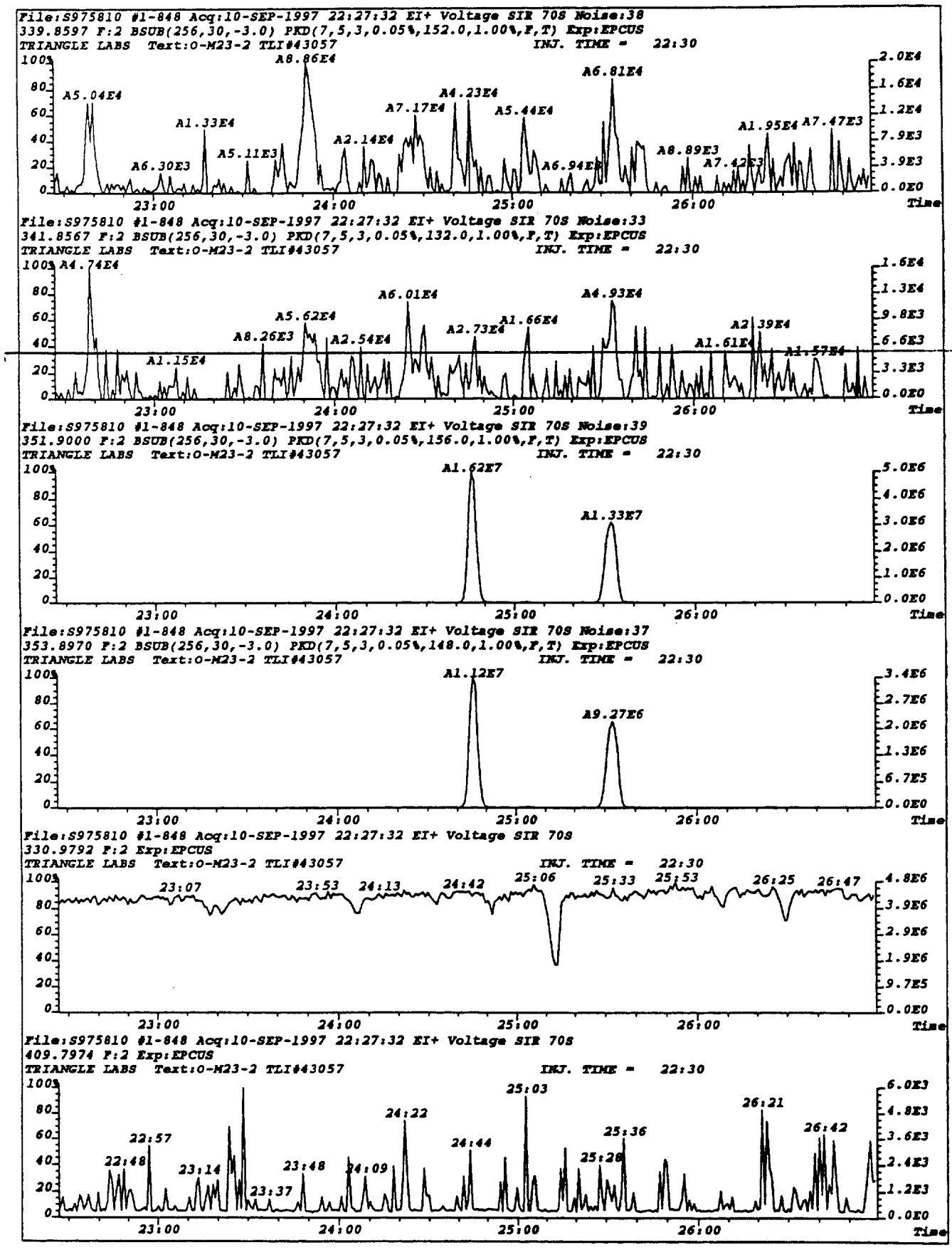
Compound/
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

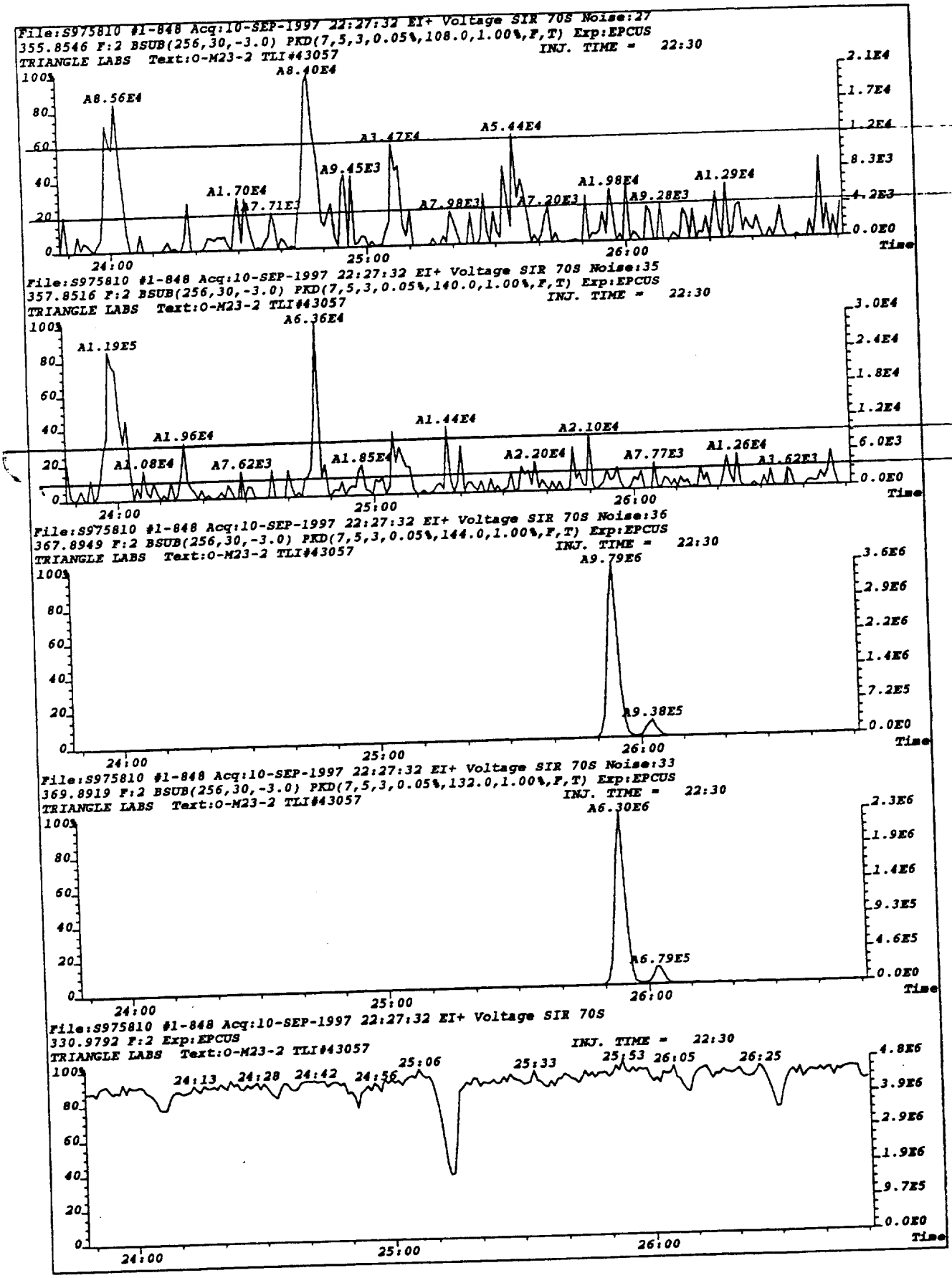
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO-Ratio Outside 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
		E-Ether Interference

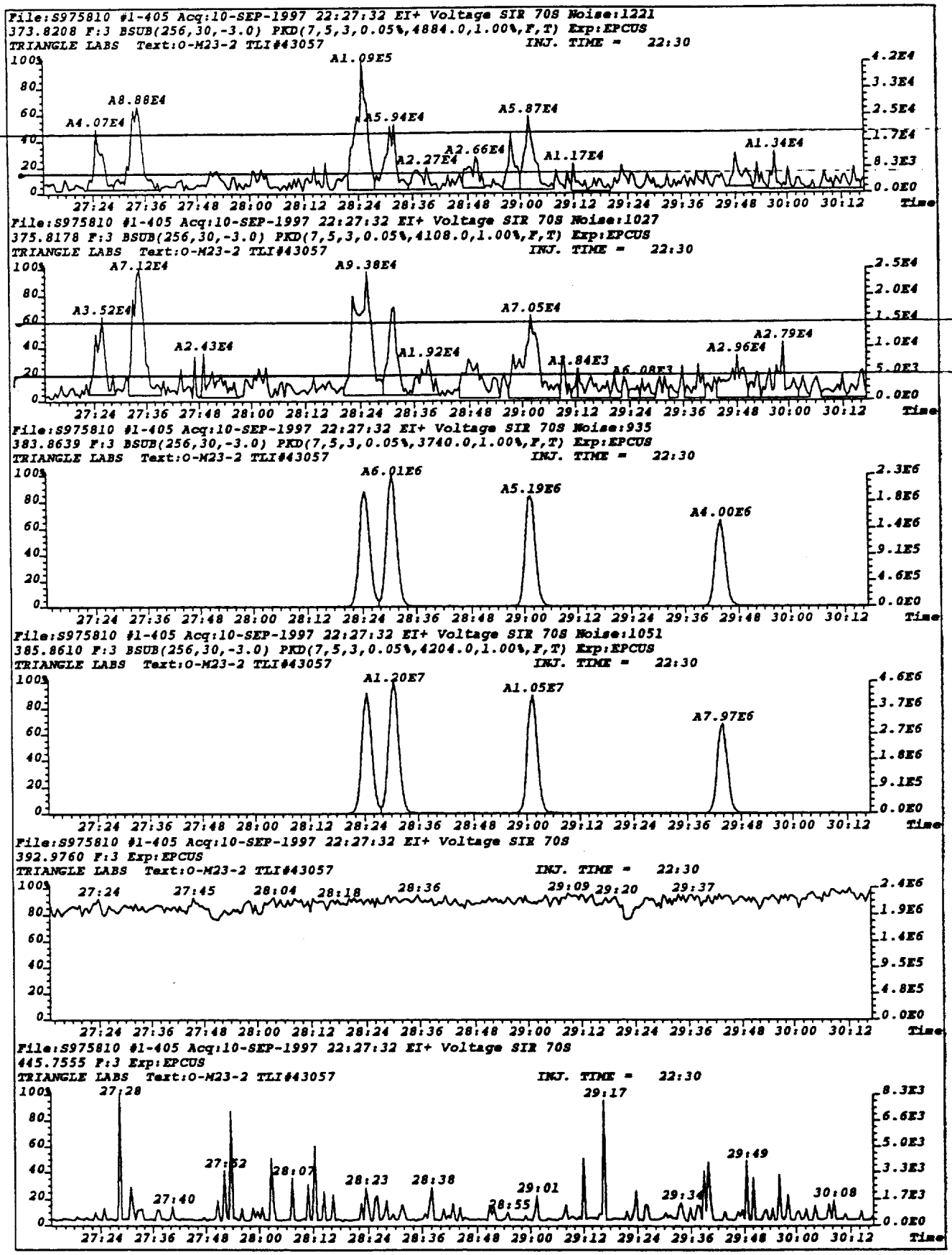
*** End of Report ***

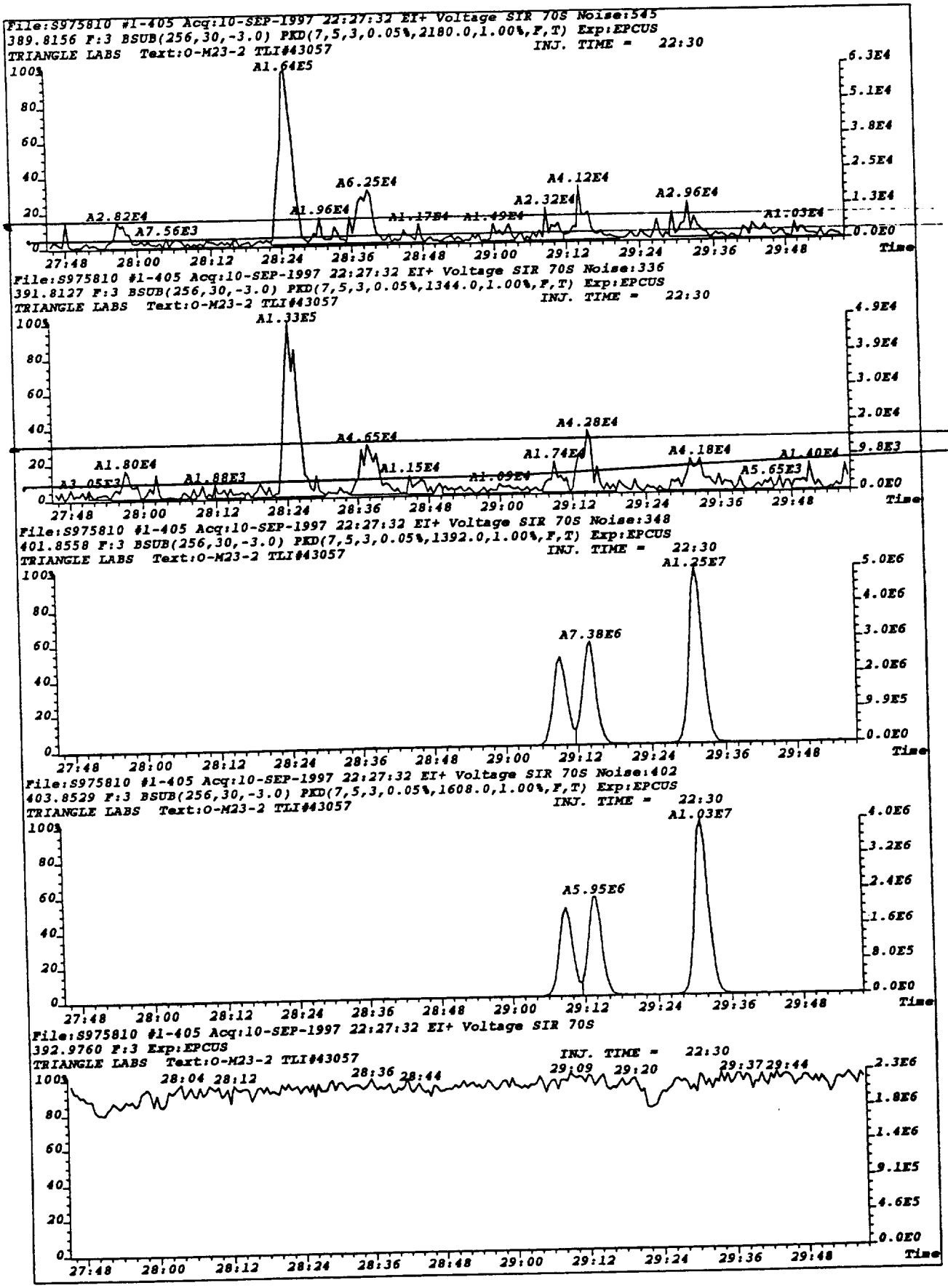

File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:28
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.38E5
A4.86E4
A6.62E4
A5.70E4
A4.73E4
A3.30E4
A3.50E4
A4.13E4
A2.15E4
A4.09E4
A5.11E3
A1.36E4
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:367
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1468.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.74E5
A1.02E5
A9.27E4
A5.43E4
A6.10E4
A2.22E4
A2.29E4
A4.01E4
A5.61E4
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:304
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1216.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.48E7
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:34
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.97E7
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
17:10
17:38
18:44
19:37
20:38
21:23
22:26
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
17:09
17:25
17:51
18:23
19:18
20:06
20:26
21:21
22:00
22:17
17:00
18:00
19:00
20:00
21:00
22:00
Time

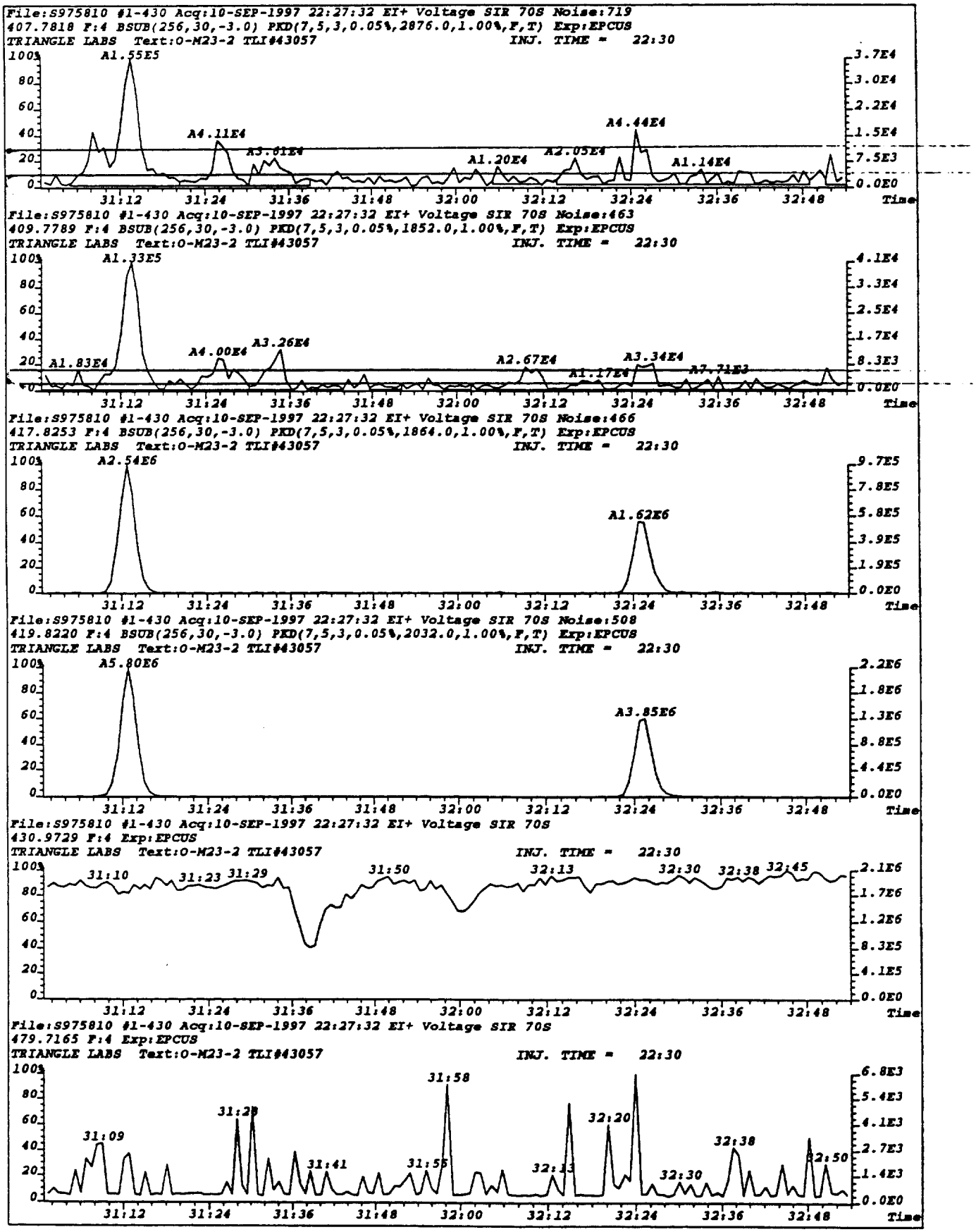

File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:38
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A6.05E4
A2.58E4
A2.92E4
A2.48E4
A7.97E3
A1.24E4
A1.30E4
A8.56E3
A6.70E3
A9.40E3
A3.04E3
A3.72E3
A5.10E3
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:38
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A8.50E4
A3.83E4
A2.62E4
A2.20E4
A4.28E3
A9.95E3
A3.64E3
A9.11E3
A6.55E3
A8.77E3
A1.79E4
A7.08E3
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:550
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2200.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.89E7
A1.11E7
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:28
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A2.30E7
A1.37E7
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:35
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A2.07E7
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
18:19
18:44
19:00
19:37
20:38
20:56
21:23
21:47
22:26
Time


File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:38
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A5.04E4
A6.30E3
A1.33E4
A5.11E3
A8.86E4
A2.14E4
A7.17E4
A4.23E4
A5.44E4
A6.94E3
A6.81E4
A8.89E3
A7.42E3
A1.95E4
A7.47E3
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:33
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A4.74E4
A1.15E4
A8.26E3
A5.62E4
A2.54E4
A6.01E4
A2.73E4
A1.66E4
A4.93E4
A1.61E4
A2.39E4
A1.57E4
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:39
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.62E7
A1.33E7
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:37
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.12E7
A9.27E6
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
23:07
23:53
24:13
24:42
25:06
25:33
25:53
26:25
26:47
Time
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
22:48
22:57
23:14
23:37
23:48
24:09
24:22
24:44
25:03
25:28
25:36
26:21
26:42
Time


File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:27
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,108.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A8.56E4
A8.40E4
A3.47E4
A5.44E4
A9.45E3
A1.70E4
A7.71E3
A7.98E3
A7.20E3
A1.98E4
A9.28E3
A1.29E4
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:35
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A6.36E4
A1.19E5
A1.96E4
A1.08E4
A7.62E3
A1.85E4
A1.44E4
A2.10E4
A2.20E4
A7.77E3
A1.26E4
A3.62E3
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:36
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A9.79E6
A9.38E5
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:33
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A6.30E6
A6.79E5
File:S975810 #1-848 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
24:13
24:28
24:42
24:56
25:06
25:33
25:53
26:05
26:25
24:00
25:00
26:00
Time


File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:1221
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4884.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.09E5
A8.88E4
A4.07E4
A5.94E4
A5.87E4
A2.66E4
A2.27E4
A1.17E4
A1.34E4
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:1027
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4108.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A7.12E4
A9.38E4
A3.52E4
A7.05E4
A2.43E4
A1.92E4
A2.79E4
A2.96E4
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:935
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3740.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A6.01E6
A5.19E6
A4.00E6
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:1051
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4204.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.20E7
A1.05E7
A7.97E6
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
27:24
27:45
28:04
28:18
28:36
29:09
29:20
29:37
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
27:28
27:40
27:52
28:07
28:23
28:38
28:55
29:01
29:17
29:34
29:49
30:08
27:24 27:36 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
Time


File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:545
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2180.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.64E5
A6.25E4
A4.12E4
A2.32E4
A2.96E4
A2.82E4
A1.96E4
A7.56E3
A1.03E4
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:336
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1344.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.33E5
A4.65E4
A4.28E4
A1.74E4
A4.18E4
A1.80E4
A1.88E3
A1.15E4
A5.65E3
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:348
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1392.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.25E7
A7.38E6
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:402
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1608.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.03E7
A5.95E6
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
Time


File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:719
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2876.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
A1.55E5
A4.11E4
A3.61E4
A1.20E4
A2.05E4
A4.44E4
A1.14E4
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:463
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1852.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
A1.33E5
A1.83E4
A4.00E4
A3.26E4
A2.67E4
A1.17E4
A3.34E4
A7.71E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:466
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1864.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
A2.54E6
A1.62E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:508
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2032.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
A5.80E6
A3.85E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
31:10
31:23
31:29
31:50
32:13
32:30
32:38
32:45
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057 INJ. TIME = 22:30
31:09
31:29
31:41
31:55
31:58
32:13
32:20
32:30
32:38
32:50
31:12
31:24
31:36
31:48
32:00
32:12
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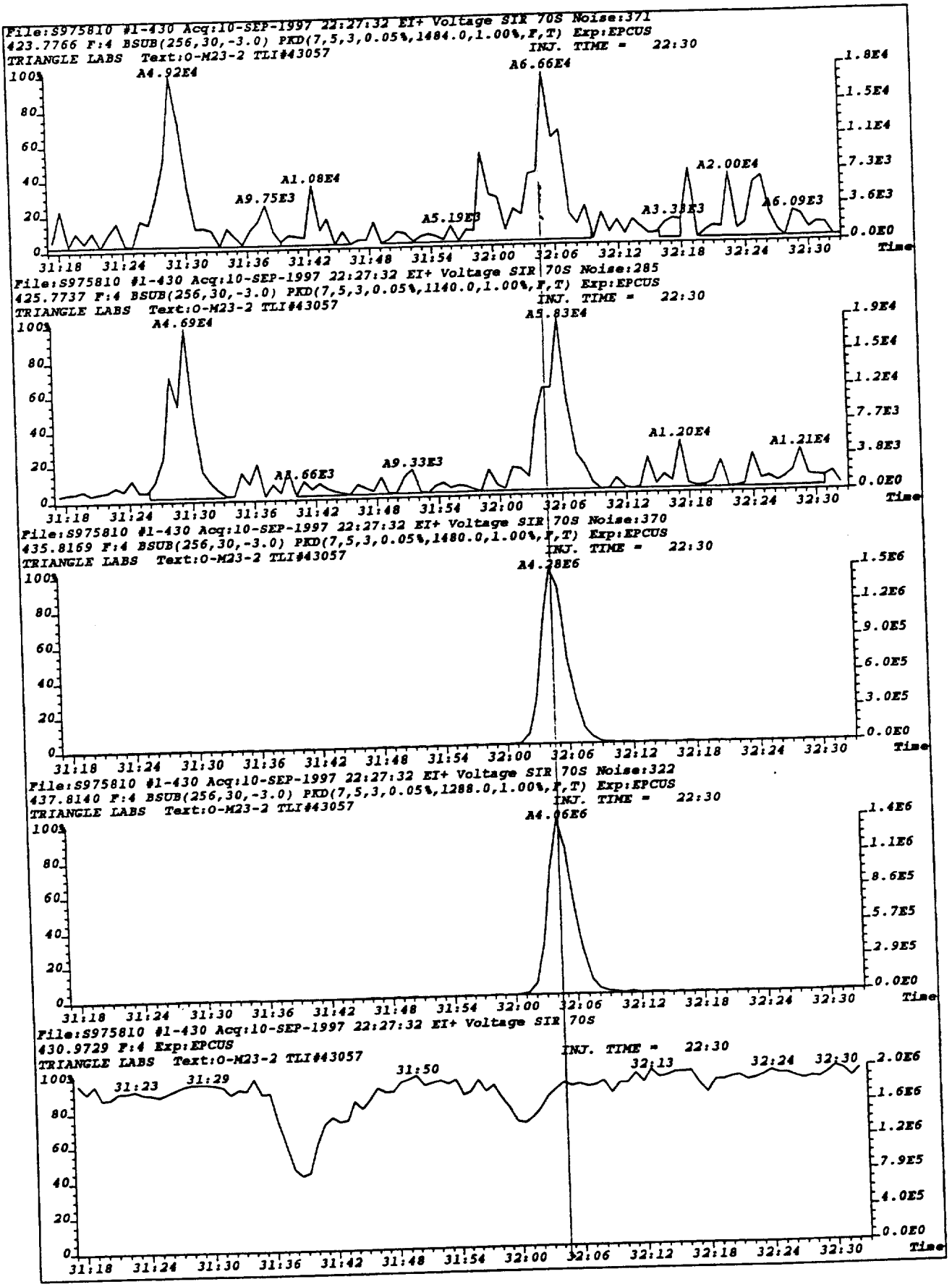
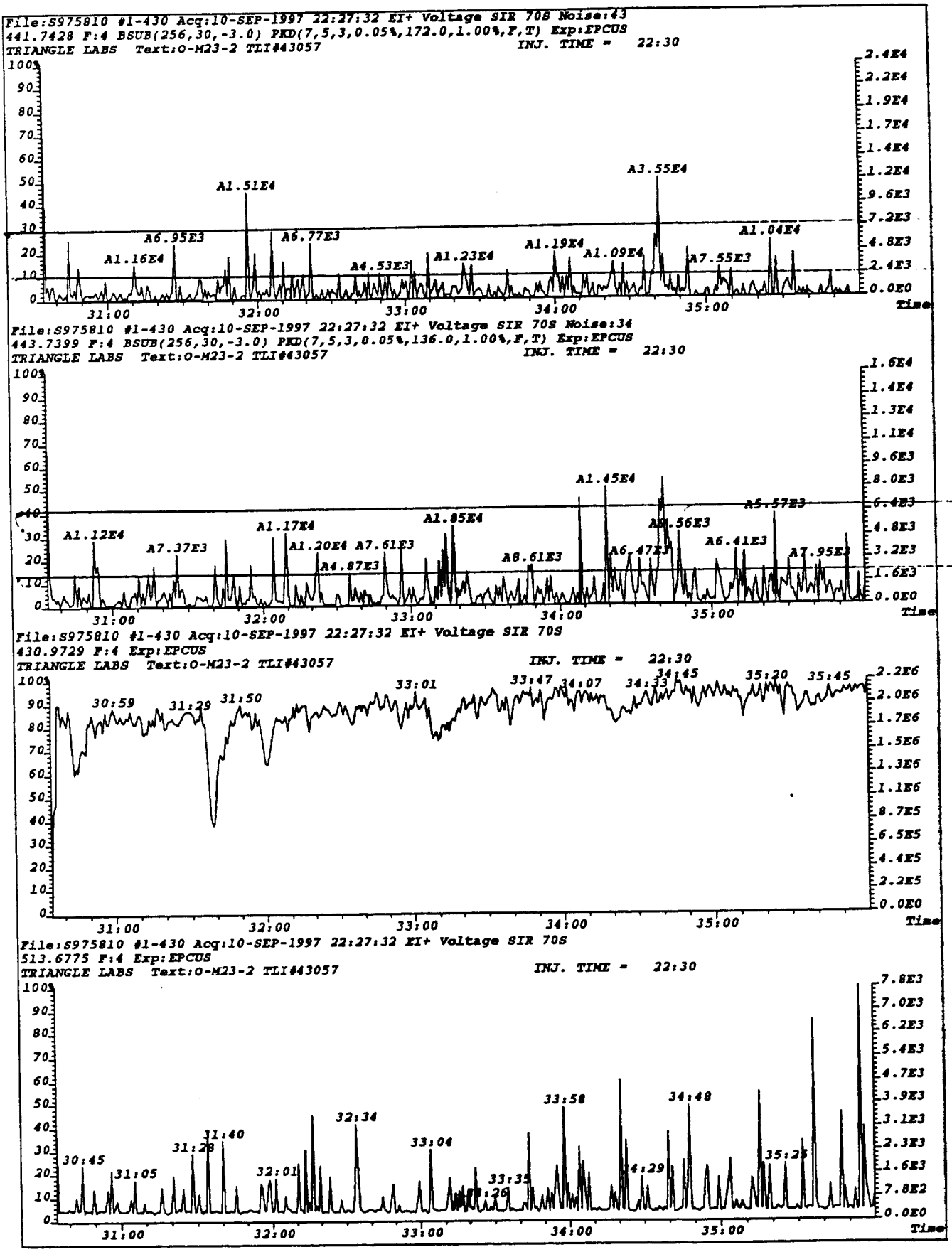
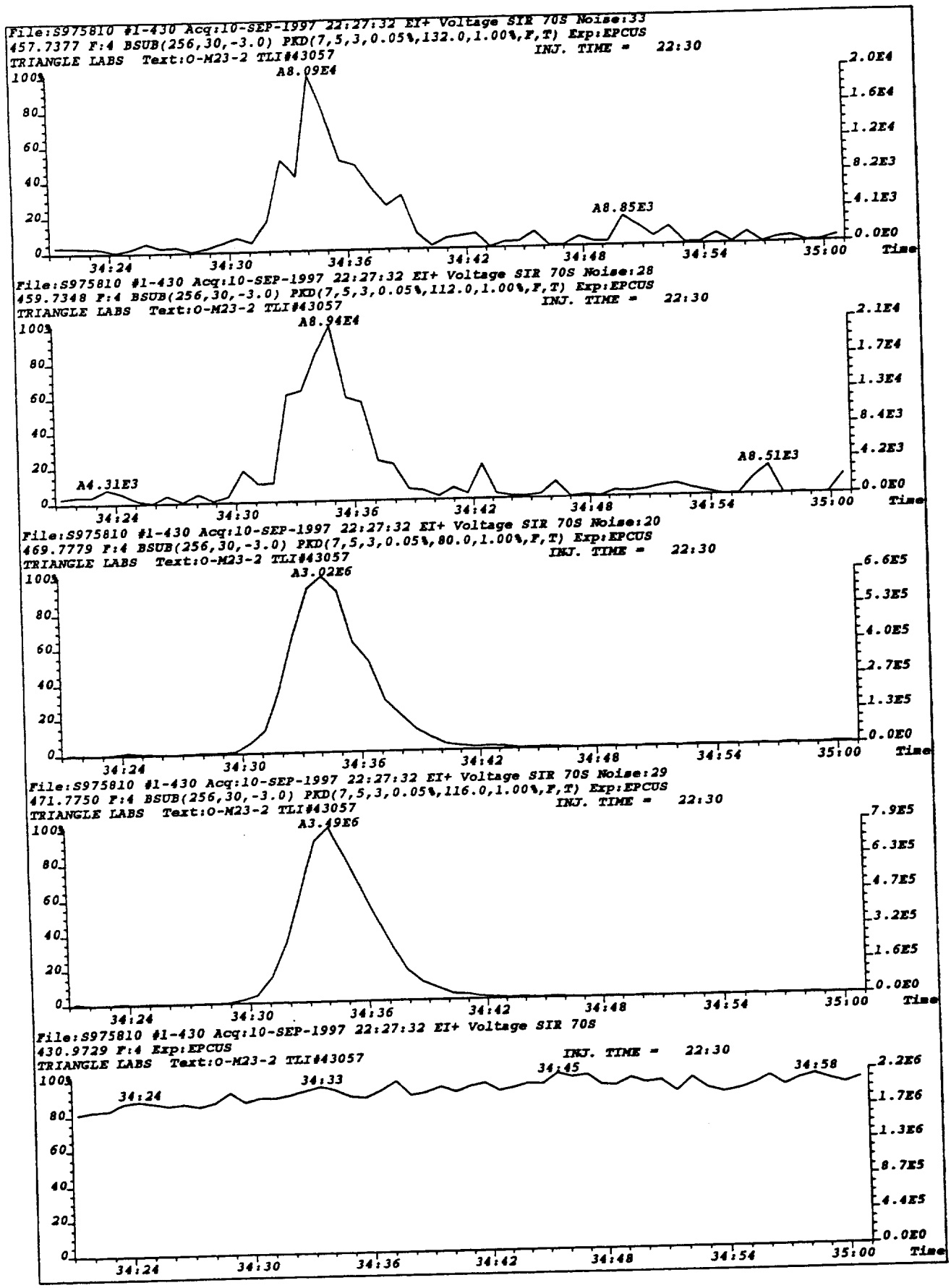
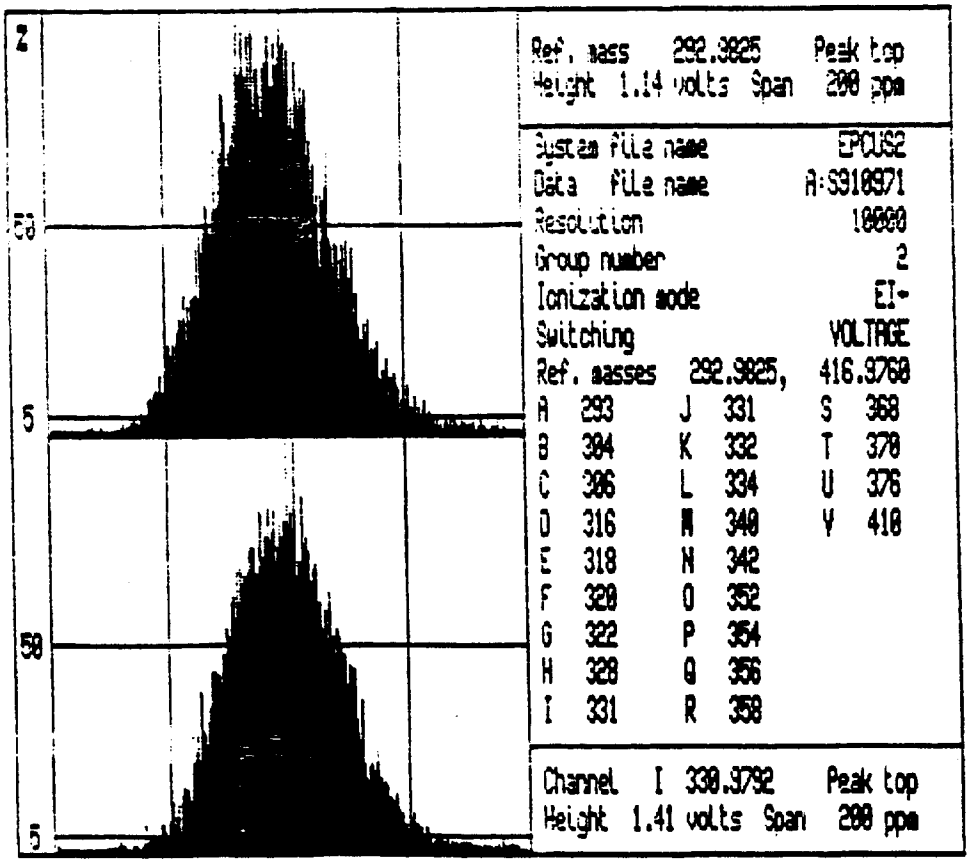
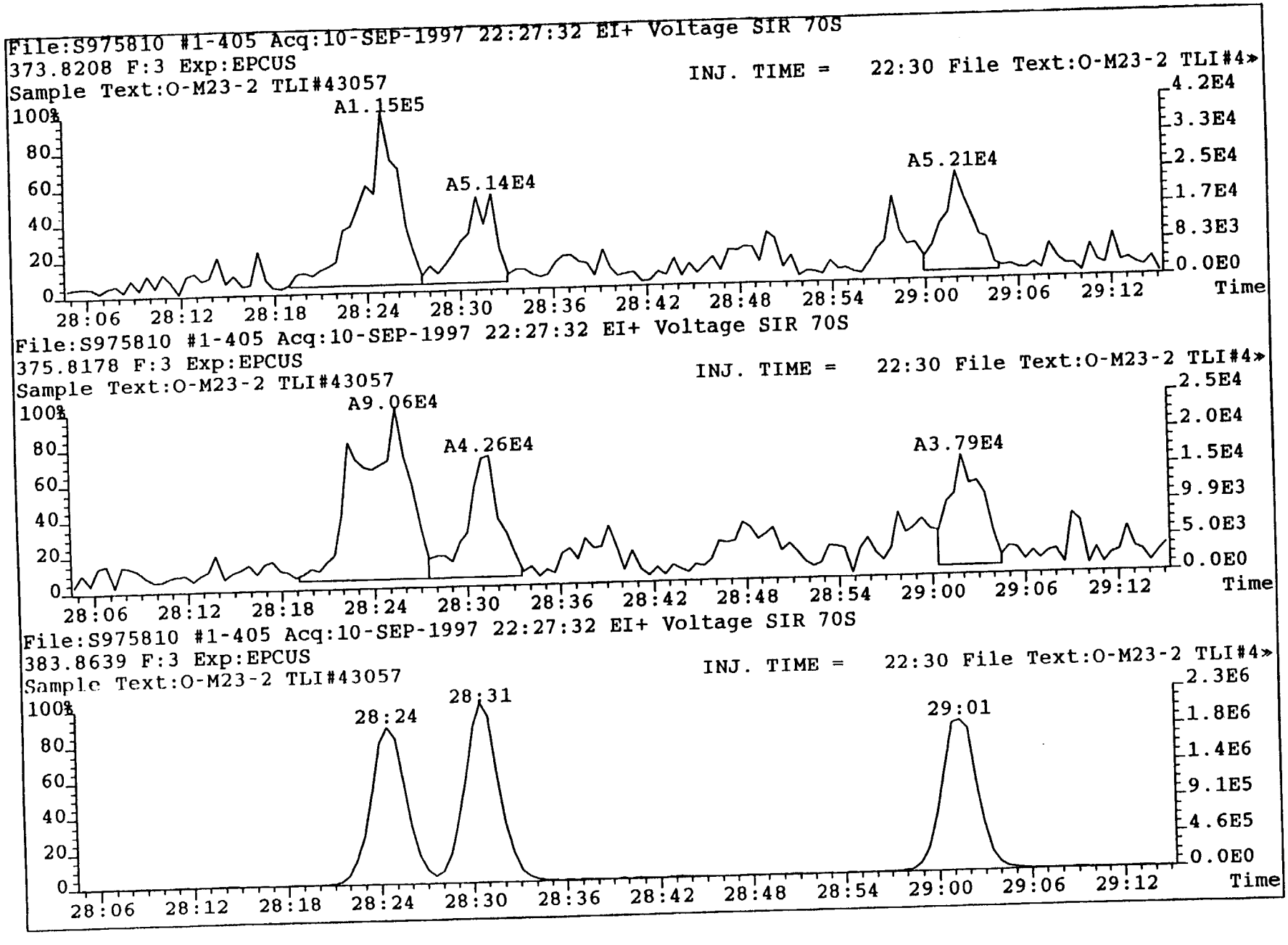
32:48
Time

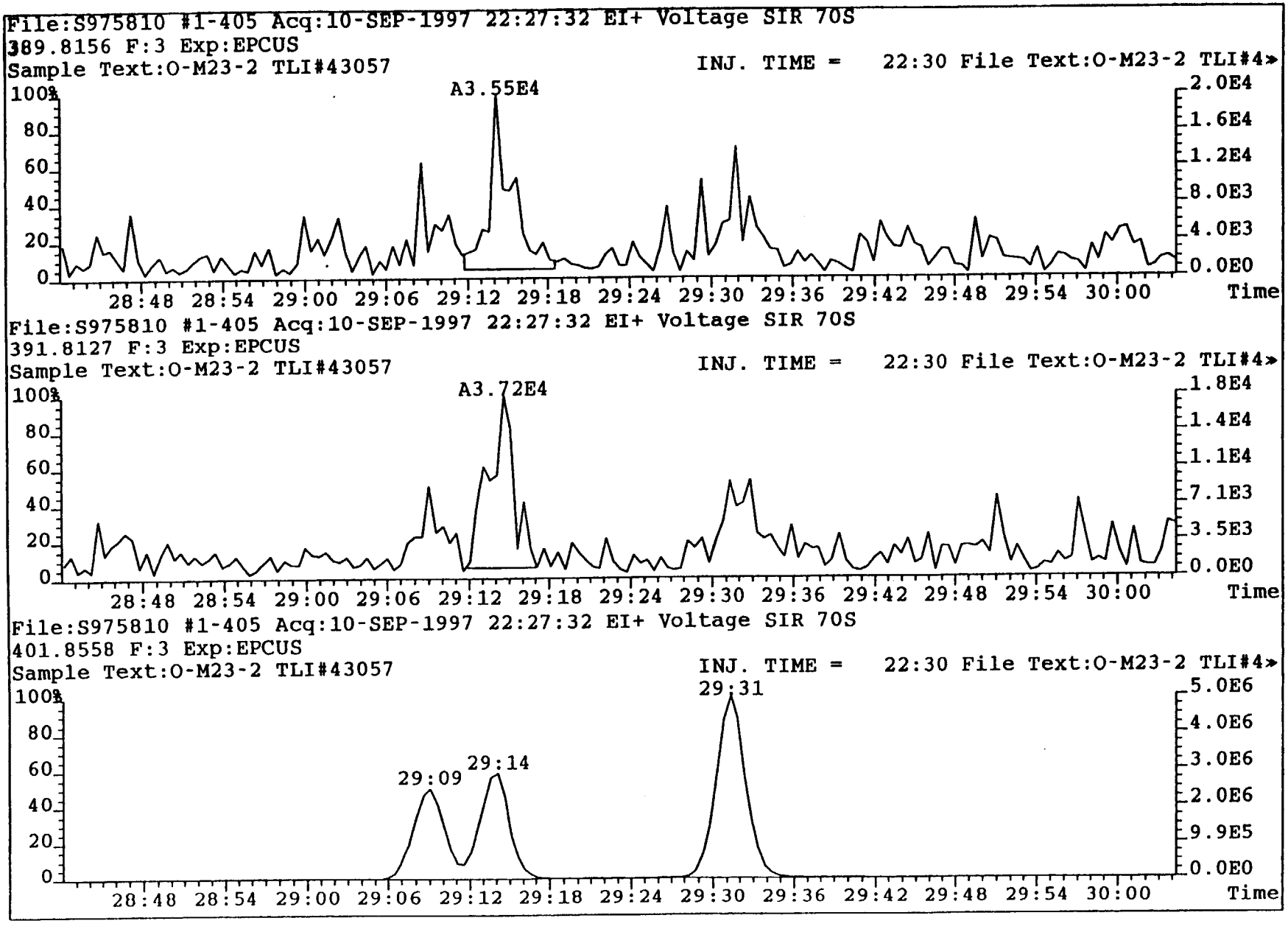

File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:371
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1484.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A4.92E4
A6.66E4
A1.08E4
A9.75E3
A5.19E3
A3.33E3
A2.00E4
A6.09E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:285
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A4.69E4
A5.83E4
A1.20E4
A1.21E4
A8.66E3
A9.33E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:370
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1480.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A4.28E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:322
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1288.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A4.06E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
31:23
31:29
31:50
32:13
32:24
32:30
31:18 31:24 31:30 31:36 31:42 31:48 31:54 32:00 32:06 32:12 32:18 32:24 32:30
Time

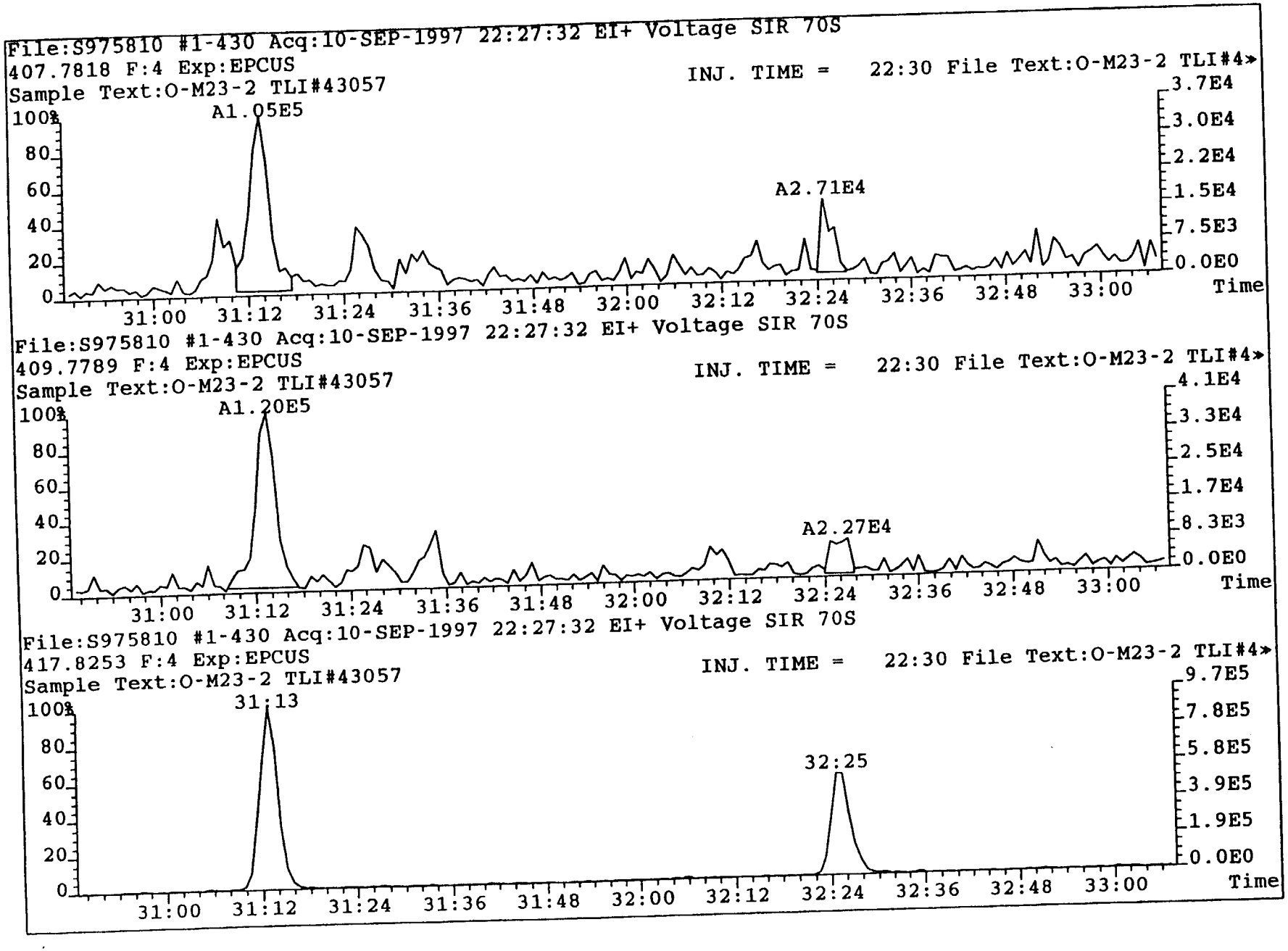

File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:43
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,172.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.51E4
A3.55E4
A6.95E3
A6.77E3
A1.16E4
A4.53E3
A1.23E4
A1.19E4
A1.09E4
A7.55E3
A1.04E4
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:34
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A1.45E4
A1.12E4
A7.37E3
A1.17E4
A1.20E4
A7.61E3
A1.85E4
A4.87E3
A8.61E3
A6.47E3
A6.41E3
A7.95E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
30:59
31:29
31:50
33:01
33:47
34:07
34:33
34:45
35:20
35:45
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
30:45
31:05
31:28
31:40
32:01
32:34
33:04
33:35
33:58
34:29
34:48
35:25
31:00
32:00
33:00
34:00
35:00
Time

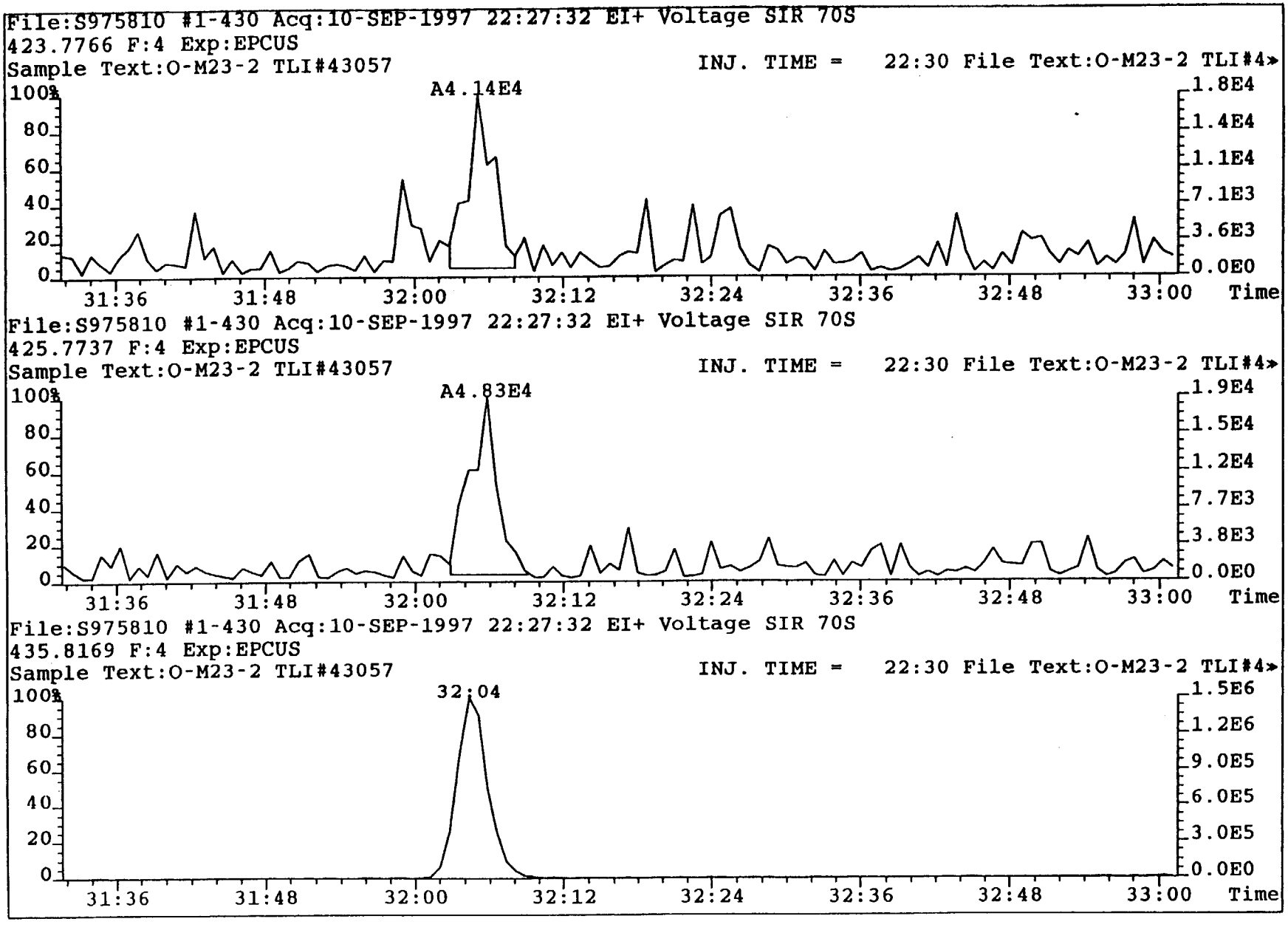

File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:33
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A8.09E4
A8.85E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:28
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A8.94E4
A4.31E3
A8.51E3
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:20
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,80.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A3.02E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S Noise:29
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,116.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
A3.49E6
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-2 TLI#43057
INJ. TIME = 22:30
34:24
34:33
34:45
34:58
Time


Z
Ca
5
50
5
Ref. mass 292.3825 Peak top
Height 1.14 volts Span 200 ppm
System file name EPCUS2
Data file name A:S910971
Resolution 10000
Group number 2
Ionization mode EI-
Switching VOLTAGE
Ref. masses 292.3825, 416.3760
A 293 J 331 S 368
B 304 K 332 T 370
C 306 L 334 U 376
D 316 M 340 Y 418
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 1.41 volts Span 200 ppm


File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A1.15E5
A5.14E4
A5.21E4
100%
80
60
40
20
0
4.2E4
3.3E4
2.5E4
1.7E4
8.3E3
0.0E0
Time
28:06 28:12 28:18 28:24 28:30 28:36 28:42 28:48 28:54 29:00 29:06 29:12
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A9.06E4
A4.26E4
A3.79E4
2.5E4
2.0E4
1.5E4
9.9E3
5.0E3
0.0E0
Time
28:06 28:12 28:18 28:24 28:30 28:36 28:42 28:48 28:54 29:00 29:06 29:12
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
383.8639 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
28:24
28:31
29:01
2.3E6
1.8E6
1.4E6
9.1E5
4.6E5
0.0E0
Time
28:06 28:12 28:18 28:24 28:30 28:36 28:42 28:48 28:54 29:00 29:06 29:12


File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
389.8156 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A3.55E4
100%
80
60
40
20
0
2.0E4
1.6E4
1.2E4
8.0E3
4.0E3
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
391.8127 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A3.72E4
100%
80
60
40
20
0
1.8E4
1.4E4
1.1E4
7.1E3
3.5E3
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00
Time
File:S975810 #1-405 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
401.8558 F:3 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
29:31
29:09
29:14
100%
80
60
40
20
0
5.0E6
4.0E6
3.0E6
2.0E6
9.9E5
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00
Time


File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A1.05E5
A2.71E4
3.7E4
3.0E4
2.2E4
1.5E4
7.5E3
0.0E0
Time
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
A1.20E5
A2.27E4
4.1E4
3.3E4
2.5E4
1.7E4
8.3E3
0.0E0
Time
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4
31:13
32:25
9.7E5
7.8E5
5.8E5
3.9E5
1.9E5
0.0E0
Time
100%
80
60
40
20
0
31:00
31:12
31:24
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00


File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4»
A4.14E4
100%
80
60
40
20
0
1.8E4
1.4E4
1.1E4
7.1E3
3.6E3
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
Time
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4»
A4.83E4
100%
80
60
40
20
0
1.9E4
1.5E4
1.2E4
7.7E3
3.8E3
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
Time
File:S975810 #1-430 Acq:10-SEP-1997 22:27:32 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:O-M23-2 TLI#43057
INJ. TIME = 22:30 File Text:O-M23-2 TLI#4»
32:04
100%
80
60
40
20
0
1.5E6
1.2E6
9.0E5
6.0E5
3.0E5
0.0E0
31:36
31:48
32:00
32:12
32:24
32:36
32:48
33:00
Time

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-2

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: P973845

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPC2NF04
TLI ID:	181-27-3A-C	Date Extracted:	09/06/97	ICal:	PF22206
		Date Analyzed:	09/12/97	ConCal:	P973843
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% 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	ND	0.02				—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.1	52.4	40%-130%	0.76	20:42	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.79	19:44	—

Data Reviewer: _____ 09/12/97

C2NF_PSR v2.00, LARS 6.10.04

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 14:57 09/12/97

Initial ....Date...

Data Review By: [signature] 9/12/97 Calculated Noise Area: 2.11

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 P973845B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

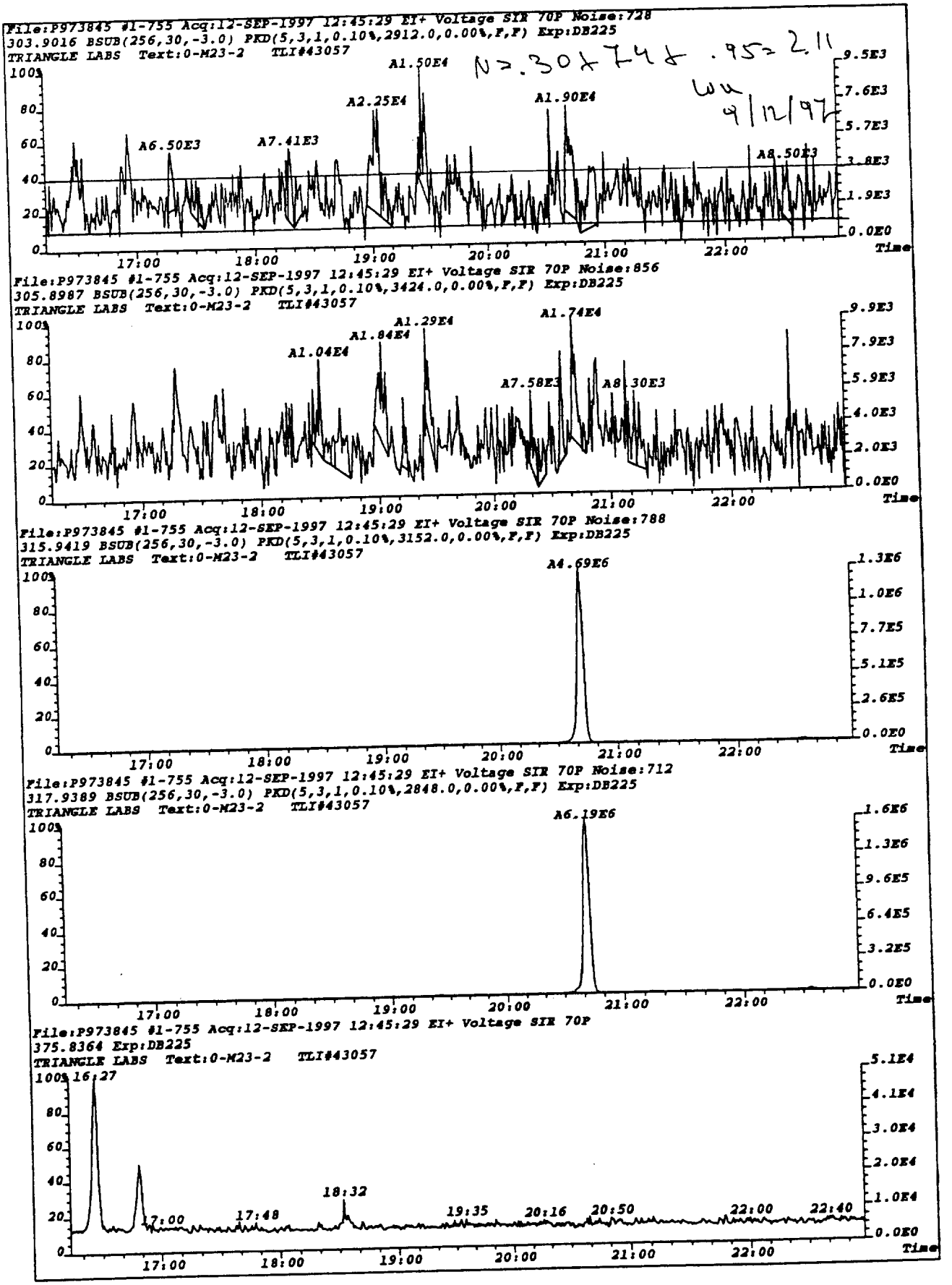
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.786-1.096			
304-306	DC	NL		0:00		0.85	3.17			0.000			
	DC	SN		19:03	RO	1.22	3.26			0.920			
	DC	SN		19:26	RO	1.16	2.28			0.939			
	DC	SN		20:42	RO	1.09	3.08			1.000	2378-TCDF		AN
304-306			0	Peaks			0.00						
13C12-TCDF						0.65-0.89				0.952-1.048			
316-318	DC	NL		0:00	RO	1.11	2.51			0.000			
	DC	WL		19:27	RO	1.01	4.18			0.940			
				20:42		0.76	1,088.09	469.12	618.97	1.000	13C12-2378-TCDF		ISO
	DC	SN		21:38		0.78	1.98			1.045			
	DC	WH		22:34	RO	0.29	3.79			1.090			
316-318			1	Peak			1,088.09						

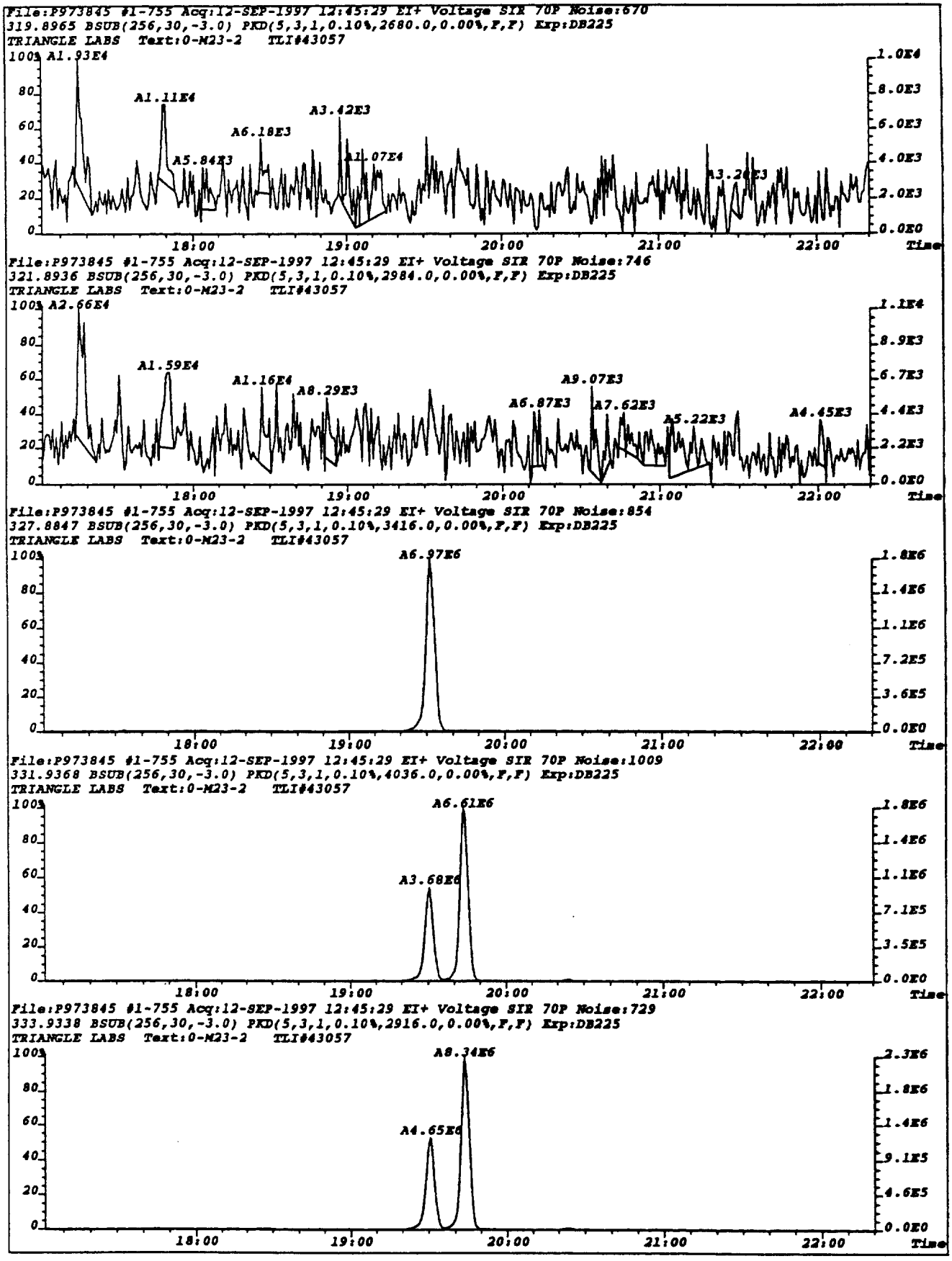
---------- Above: TCDF / TCDD Follows ----------

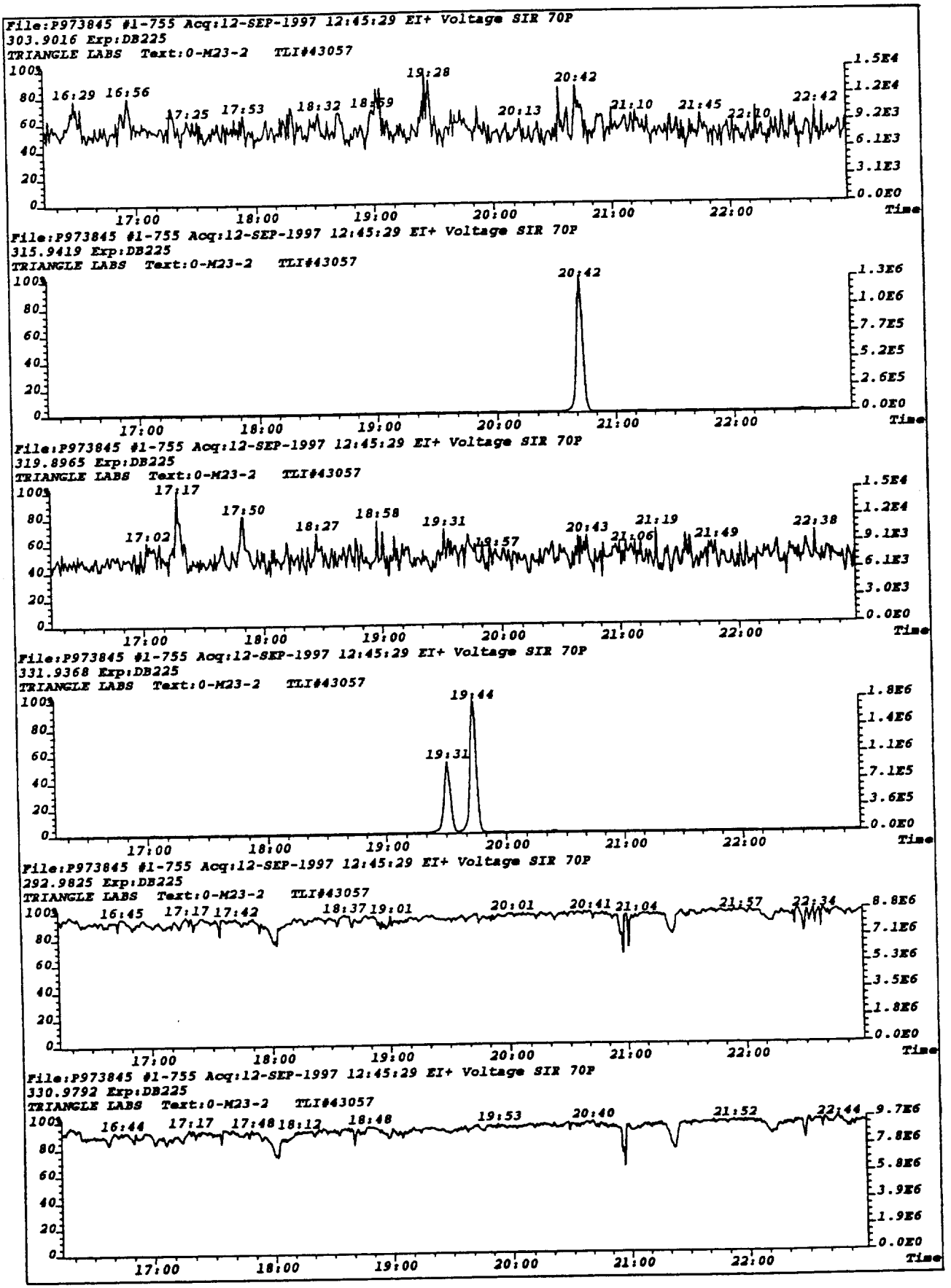
13C12-TCDD						0.65-0.89				0.897-1.103			
332-334	DC	NL		0:00	RO	1.38	2.58			0.000			
	DC	SN		19:01	RO	1.48	1.95			0.974			
				19:31		0.79	832.51	367.79	464.72	1.000	13C12-2378-TCDD		IS1
				19:44		0.79	1,495.20	661.22	833.98	1.011	13C12-1234-TCDD		RS1
				20:24		0.82	11.35	5.10	6.25	1.045			
	DC	SN		20:29	RO	2.62	0.65			1.050			
	DC	SN		20:58	RO	0.22	0.71			1.074			
	DC	WH		21:45	RO	2.27	1.91			1.114			
332-334			3	Peaks			2,339.06						

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
		E-Ether Interference

*** End of Report ***


File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:728
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2912.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A1.50E4
A2.25E4
A1.90E4
A6.50E3
A7.41E3
A8.50E3
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:856
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3424.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A1.74E4
A1.29E4
A1.84E4
A1.04E4
A7.58E3
A8.30E3
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:788
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3152.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A4.69E6
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:712
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2848.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A6.19E6
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
16:27
18:32
17:00
17:48
19:35
20:16
20:50
22:00
22:40
Time


File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:670
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2680.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A1.93E4
A1.11E4
A6.18E3
A3.42E3
A5.84E3
A1.07E4
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:746
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2984.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A2.66E4
A1.59E4
A1.16E4
A8.29E3
A9.07E3
A6.87E3
A7.62E3
A5.22E3
A4.45E3
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:854
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3416.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A6.97E6
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:1009
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,4036.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A6.61E6
A3.68E6
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P Noise:729
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2916.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
A8.34E6
A4.65E6
Time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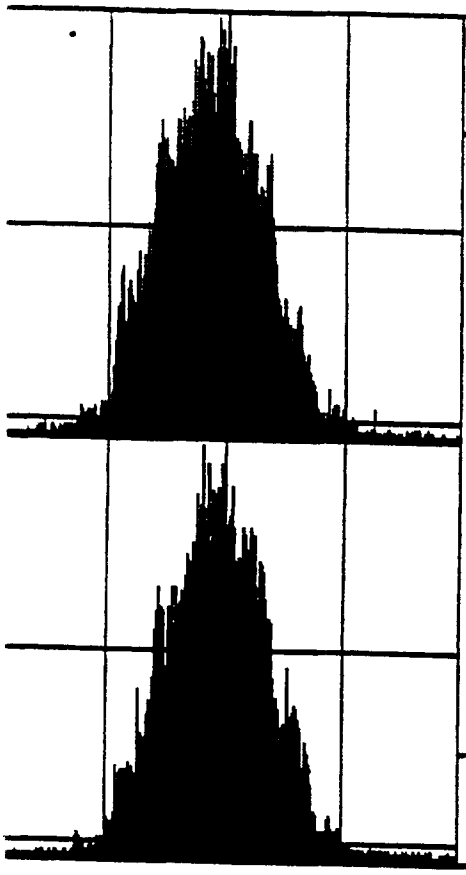
303.9016 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
16:29 16:56 17:25 17:53 18:32 18:59 19:28 20:13 20:42 21:10 21:45 22:10 22:42
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
20:42
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
17:02 17:17 17:50 18:27 18:58 19:31 19:57 20:43 21:06 21:19 21:49 22:38
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
19:31 19:44
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
16:45 17:17 17:42 18:37 19:01 20:01 20:41 21:04 21:57 22:34
Time
File:P973845 #1-755 Acq:12-SEP-1997 12:45:29 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:0-M23-2 TLI#43057
16:44 17:17 17:48 18:12 18:48 19:53 20:40 21:52 22:44
Time



Ref. mass 292.9825 Peak top
Height 1.33 volts Span 200 ppm

System file name	D8225
Data file name	A:P973845
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		

Channel I 330.9792 Peak top
Height 1.41 volts Span 200 ppm

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-3

Method 23 PCDD/PCDF Analysis (a)
Analysis File: **S975811**

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPX23704
TLI ID:	181-27-4A-C	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/10/97	ConCal:	S975797
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	EMPC		0.003			—
1,2,3,7,8-PeCDD	0.005			1.49	25:55	—
1,2,3,4,7,8-HxCDD	0.008			1.10	29:11	—
1,2,3,6,7,8-HxCDD	0.02			1.41	29:16	—
1,2,3,7,8,9-HxCDD	EMPC		0.01			PR_
1,2,3,4,6,7,8-HpCDD	0.06			1.05	32:07	B_
1,2,3,4,6,7,8,9-OCDD	0.13			0.80	34:36	B_
2,3,7,8-TCDF	0.02			0.73	20:28	B_
1,2,3,7,8-PeCDF	0.007			1.61	24:45	—
2,3,4,7,8-PeCDF	0.01			1.32	25:31	B_
1,2,3,4,7,8-HxCDF	0.06			1.20	28:25	PRB
1,2,3,6,7,8-HxCDF	0.02			1.14	28:32	B_
2,3,4,6,7,8-HxCDF	0.02			1.09	29:02	PRB
1,2,3,7,8,9-HxCDF	ND	0.003				—
1,2,3,4,6,7,8-HpCDF	0.09			1.00	31:16	PRB
1,2,3,4,7,8,9-HpCDF	EMPC		0.03			B_
1,2,3,4,6,7,8,9-OCDF	0.06			0.82	34:42	B_

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.01	2		0.02	—
Total PeCDD	0.03	3		0.05	—
Total HxCDD	0.15	5		0.16	—
Total HpCDD	0.06	1		0.11	—
Total TCDF	0.03	3		0.04	—
Total PeCDF	0.06	6		0.07	—
Total HxCDF	0.17	7			—
Total HpCDF	0.09	1		0.17	—

Triangle Laboratories, Inc.®
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TLI Project: 43057
Client Sample: O-M23-3

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975811

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	7.4	184	40%-130%	0.76	20:25	—
$^{13}C_{12}$-2,3,7,8-TCDD	6.5	163	40%-130%	0.80	21:15	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	6.4	161	40%-130%	1.45	24:45	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	6.8	170	40%-130%	1.50	25:53	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	7.5	187	40%-130%	0.50	28:31	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	6.9	173	40%-130%	1.22	29:14	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	4.2	105	25%-130%	0.43	31:15	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	4.4	109	25%-130%	1.08	32:07	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.2	65.1	25%-130%	0.88	34:35	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	3.9	98.4	70%-140%		21:16	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.5	88.6	70%-140%	1.45	25:31	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.9	98.2	70%-140%	0.50	28:24	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.5	87.9	70%-140%	1.25	29:10	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.7	91.3	70%-140%	0.40	32:27	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	4.8	120	40%-130%	0.50	29:44	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	6.9	173	40%-130%	0.50	29:02	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	21:02	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.21	29:32	—

Data Reviewer: CM 09/12/97

X237_PSR v2.00, LABS 6.10.04

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Printed: 08:18 09/12/97

Initial ....Date...

Data Review By: CA 9/12/97 Calculated Noise Area: 1.55

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 S975811B.dbf
09/12/97 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				0.823-1.104			
304-306	DC	NL		0:00	RO	1.14	0.12			0.000			
	DC	SN		17:24	RO	1.84	0.80			0.852			
	DC	SN		17:26	RO	2.19	2.00			0.854			
	DC	SN		17:43	RO	0.48	4.71			0.868			
D	D	SN		18:07		0.89	7.30			0.887			
D	D	SN		18:27	RO	1.01	12.55			0.904			
D	D	SN		19:17		0.68	14.25			0.944			
A				19:34		0.81	17.93	8.01	9.92	0.958			
M				19:44		0.72	10.72	4.47	6.25	0.967			
				19:58	RO	0.95	35.86	19.29	20.26	0.978			
	DC	SN		20:15		0.77	6.36			0.992			
				20:28		0.73	65.40	27.55	37.85	1.002	2378-TCDF		AN
D	D	SN		20:56	RO	1.00	9.77			1.025			
				22:21	RO	0.90	17.13	8.67	9.68	1.095			
	DC	WH		22:38		0.88	2.76			1.109			
304-306				5 Peaks			147.04						
13C12-TCDF						0.65-0.89				0.951-1.049			
316-318	DC	NL		0:00	RO	5.88	0.14			0.000			
	DC	WL		19:15		0.84	17.19			0.943			
				19:57		0.89	48.30	22.68	25.62	0.977			
				20:25		0.76	11,230.27	4,833.79	6,396.48	1.000	13C12-2378-TCDF		IS0
				20:55	RO	1.11	35.82	22.46	20.24	1.024			
316-318				3 Peaks			11,314.39						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.857-1.061			
320-322	DC	NL		0:00	RO	1.17	0.11			0.000			
	DC	WL		18:08	RO	1.00	0.37			0.853			
				18:22		0.84	20.83	9.48	11.35	0.864			
	DC	SN		18:40	RO	1.17	0.94			0.878			
				18:51		0.68	9.52	3.85	5.67	0.887			
D	D	SN		19:55		0.84	7.63			0.937			
	DC	SN		20:14	RO	1.01	1.79			0.952			
	DC	SN		20:26	RO	2.69	3.40			0.962			
	DC	SN		20:40	RO	0.63	2.46			0.973			
	DC	SN		20:47		0.67	1.10			0.978			
	DC	SN		21:00		0.74	2.56			0.988			
	DC	SN		21:08	RO	2.10	2.53			0.995			
MK				21:17	RO	0.38	5.98	2.60	6.81	1.002	2378-TCDD		AN
	DC	SN		21:36	RO	0.49	1.06			1.016			
	DC	SN		22:24	RO	0.98	1.03			1.054			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
320-322			3 Peaks				36.33						
37Cl-TCDD										0.906-1.094			
328	DC	NL		0:00			0.06			0.000			
				19:42			12.62	12.62		0.927			
				21:16			6,682.06	6,682.06		1.001	37Cl-TCDD		SUR1
328			2 Peaks				6,694.68						
13C12-TCDD					0.65-0.89					0.906-1.094			
332-334	DC	NL		0:00	RO	11.11	0.16			0.000			
				19:55	RO	0.90	38.25	19.55	21.61	0.937			
				21:02		0.80	4,631.87	2,054.00	2,577.87	0.990	13C12-1234-TCDD		RS1
				21:15		0.80	8,057.34	3,572.72	4,484.62	1.000	13C12-2378-TCDD		IS1
				21:38	RO	0.93	115.35	60.39	65.17	1.018			
332-334			4 Peaks				12,842.81						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF					1.32-1.78					0.909-1.079			
340-342	DC	NL		0:00	RO	0.89	0.13			0.000			
	DC	SN		22:30	RO	0.68	1.84			0.909			
				22:39		1.64	15.92	9.89	6.03	0.915			
	DC	SN		22:53	RO	0.30	0.41			0.925			
	DC	SN		23:18	RO	0.61	0.72			0.941			
D	D	SN		23:43	RO	1.25	8.67			0.958			
				23:51		1.34	41.00	23.45	17.55	0.964			
D	D	SN		24:02		1.40	8.29			0.971			
D	D	SN		24:12		1.36	7.91			0.978			
A				24:25		1.39	36.10	21.00	15.10	0.987			
A				24:40	RO	1.92	13.92	10.50	5.46	0.997			
AN				24:45		1.61	16.68	10.30	6.38	1.000	12378-PeCDF		AN
	DC	SN		24:57	RO	1.18	5.00			1.008			
				25:04		1.36	14.32	8.25	6.07	1.013			
				25:31		1.32	28.52	16.23	12.29	1.031	23478-PeCDF		AN
D	D	SN		25:41		1.51	15.93			1.038			
	DC	SN		25:59	RO	0.67	3.69			1.050			
D	D	SN		26:31	RO	2.18	8.13			1.071			
	DC	SN		26:38	RO	1.04	1.25			1.076			
340-342			7 Peaks				166.46						
13C12-PeCDF					1.32-1.78					0.838-1.162			
352-354	DC	NL		0:00	RO	1.00	0.12			0.000			
				23:51		1.61	36.62	22.57	14.05	0.964			
				24:23		1.33	42.06	23.97	18.09	0.985			
				24:45		1.45	8,446.74	5,005.88	3,440.86	1.000	13C12-PeCDF 123		IS2
				24:56	RO	0.93	27.98	17.01	18.20	1.007			
				25:04		1.36	55.81	32.18	23.63	1.013			
				25:31		1.45	7,255.87	4,294.07	2,961.80	1.031	13C12-PeCDF 234		SUR2
				26:30		1.49	15.15	9.06	6.09	1.071			
352-354			7 Peaks				15,880.23						

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: PeCDF / PeCDD Follows ----------													
PeCDD						1.32-1.78				0.921-1.026			
356-358		DC	NL	0:00		1.33	0.14			0.000			
				24:00	RO	0.75	18.34	11.15	14.78	0.927			
		DC	SN	24:12		1.41	1.66			0.935			
		DC	SN	24:31	RO	2.13	1.58			0.947			
				24:47		1.51	26.98	16.21	10.77	0.958			
		DC	SN	24:54	RO	1.04	2.47			0.962			
				25:06		1.59	19.78	12.15	7.63	0.970			
	K			25:55		1.49	7.06	4.22	2.84	1.001	12378-PeCDD	AN	
		DC	SN	26:03	RO	0.90	2.29			1.006			
		DC	SN	26:22	RO	0.96	3.24			1.019			
356-358				4 Peaks			72.16						
13C12-PeCDD						1.32-1.78				0.845-1.155			
368-370		DC	NL	0:00	RO	1.17	0.12			0.000			
		DC	SN	24:48		1.38	5.26			0.958			
				25:53		1.50	4,994.81	2,999.63	1,995.18	1.000	13C12-PeCDD 123	IS3	
				26:02		1.52	457.99	276.47	181.52	1.006			
368-370				2 Peaks			5,452.80						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF						1.05-1.43				0.957-1.053			
374-376		DC	NL	0:00	RO	1.87	2.60			0.000			
				27:25		1.18	29.45	15.93	13.52	0.961			
				27:34		1.15	60.86	32.57	28.29	0.967			
				27:53		1.31	12.18	6.91	5.27	0.978			
				28:03		1.31	9.11	5.17	3.94	0.984			
				28:25		1.20	87.48	47.75	39.73	0.996	123478-HxCDF	AN	PR
				28:32		1.14	37.44	19.94	17.50	1.001	123678-HxCDF	AN	
	D	D	SN	28:38		1.42	9.37			1.004			
	D	D	SN	28:51		1.19	11.62			1.012			
				29:02		1.09	38.17	19.94	18.23	1.018	234678-HxCDF	AN	PR
		DC	SN	29:10	RO	0.39	1.07			1.023			
	D	D	SN	29:51	RO	0.97	14.22			1.047			
		DC	WH	30:10	RO	1.54	0.87			1.058			
		DC	WH	30:12	RO	0.55	0.74			1.059			
		DC	WH	30:17	RO	1.44	2.67			1.062			
374-376				7 Peaks			274.69						
13C12-HxCDF						0.43-0.59				0.859-1.141			
384-386		DC	NL	0:00	RO	0.29	1.66			0.000			
				27:35		0.47	11.85	3.79	8.06	0.967			
				28:24		0.50	4,748.79	1,587.75	3,161.04	0.996	13C12-HxCDF 478	SUR3	
				28:31		0.50	5,041.60	1,680.96	3,360.64	1.000	13C12-HxCDF 678	IS4	
				29:02		0.50	4,322.80	1,442.18	2,880.62	1.018	13C12-HxCDF 234	ALT2	
				29:44		0.50	2,605.10	863.60	1,741.50	1.043	13C12-HxCDF 789	ALT1	
384-386				5 Peaks			16,730.14						

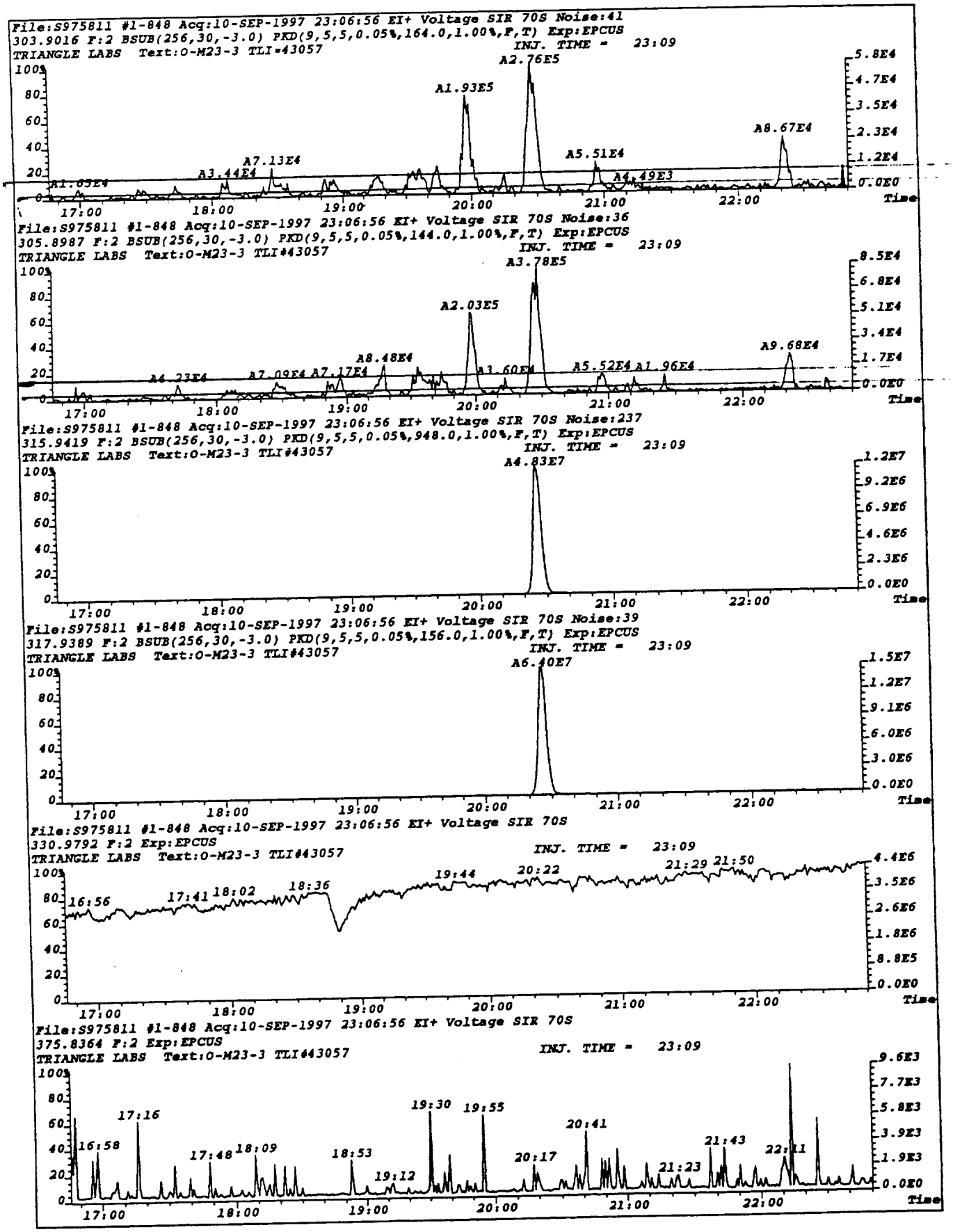
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD						1.05-1.43				0.951-1.015			
390-392	DC	NL		0:00	RO	1.69	1.68			0.000			
	DC	SN		27:49	RO	1.92	1.12			0.952			
				27:57		1.12	11.13	5.87	5.26	0.956			
	DC	SN		28:05	RO	0.80	1.08			0.961			
	DC	SN		28:14	RO	1.02	1.07			0.966			
				28:25		1.34	81.45	46.69	34.76	0.972			
				28:39		1.06	34.17	17.62	16.55	0.980			
				29:11		1.10	7.34	3.85	3.49	0.998	123478-HxCDD	AN	
				29:16		1.41	18.22	10.65	7.57	1.001	123678-HxCDD	AN	
	M			29:32	RO	0.93	15.50	8.58	9.20	1.010	123789-HxCDD	AN	PR
	DC	WH		29:51		1.06	0.74			1.021			
	DC	WH		29:56	RO	2.27	0.83			1.024			
390-392			6	Peaks			167.81						
13C12-HxCDD						1.05-1.43				0.966-1.034			
402-404	DC	NL		0:00	RO	0.76	1.55			0.000			
				28:38		1.32	15.50	8.83	6.67	0.979			
				29:10		1.25	3,306.01	1,838.10	1,467.91	0.998	13C12-HxCDD 478	SUR4	
				29:14		1.22	3,863.39	2,122.72	1,740.67	1.000	13C12-HxCDD 678	IS5	
				29:32		1.21	2,240.36	1,225.15	1,015.21	1.010	13C12-HxCDD 789	RS2	
	DC	SN		29:45	RO	0.21	0.83			1.018			
	DC	SN		29:45		1.07	3.39			1.018			
402-404			4	Peaks			9,425.26						
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.995-1.045			
408-410	DC	NL		0:00	RO	1.94	1.67			0.000			
	M			31:16		1.00	70.60	35.30	35.30	1.001	1234678-HpCDF	AN	PR
				31:29	RO	1.30	14.99	9.52	7.35	1.007			
				31:37	RO	1.21	22.73	13.53	11.14	1.012			
	DC	SN		31:53	RO	1.22	1.29			1.020			
	M			32:29	RO	1.37	15.81	10.60	7.75	1.039	1234789-HpCDF	AN	
408-410			4	Peaks			124.13						
13C12-HpCDF						0.37-0.51				0.936-1.128			
418-420	DC	NL		0:00	RO	1.14	1.31			0.000			
				31:15		0.43	2,076.79	620.98	1,455.81	1.000	13C12-HpCDF 678	IS6	
	DC	SN		31:34	RO	0.94	1.89			1.010			
				32:27		0.40	1,462.44	417.67	1,044.77	1.038	13C12-HpCDF 789	SUR5	
418-420			2	Peaks			3,539.23						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.977-1.006			
424-426	DC	NL		0:00		1.00	0.12			0.000			
	DC	WL		31:15	RO	2.83	3.28			0.973			
	DC	SN		31:23		1.00	1.52			0.977			
				31:31	RO	0.78	24.26	12.37	15.89	0.981			

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		31:49		0.89	1.08			0.991			
M				32:07		1.05	33.60	17.20	16.40	1.000	1234678-HpCDD	AN	
	DC	WH		32:27	RO	2.44	3.12			1.010			
424-426				2 Peaks			57.86						
13C12-HpCDD						0.88-1.20				0.969-1.031			
436-438	DC	NL		0:00	RO	1.33	2.18			0.000			
	DC	SN		31:31		1.11	4.93			0.981			
				32:07		1.08	1,993.23	1,032.68	960.55	1.000	13C12-HpCDD 678	IS7	
	DC	SN		32:19	RO	0.79	3.02			1.006			
436-438				1 Peak			1,993.23						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.884-1.116			
442-444	DC	NL		0:00	RO	0.25	0.15			0.000			
	DC	SN		30:45	RO	3.21	0.45			0.889			
	DC	SN		31:01	RO	1.25	0.68			0.897			
	DC	SN		31:16	RO	1.78	0.87			0.904			
	DC	SN		31:40		0.93	2.26			0.916			
	DC	SN		31:49	RO	0.14	0.21			0.920			
	DC	SN		32:00	RO	0.15	0.30			0.925			
	DC	SN		32:16	RO	0.32	0.47			0.933			
	DC	SN		32:44	RO	10.86	0.13			0.947			
	DC	SN		33:01	RO	1.81	0.59			0.955			
	DC	SN		33:17	RO	1.39	1.34			0.962			
	DC	SN		33:59	RO	0.74	0.49			0.983			
	DC	SN		34:24	RO	0.55	0.59			0.995			
	DC	SN		34:29	RO	1.76	0.85			0.997			
				34:42		0.82	18.35	8.27	10.08	1.003	OCDF	AN	
	DC	SN		34:56	RO	1.20	1.34			1.010			
	DC	SN		35:20	RO	0.46	1.13			1.022			
	DC	SN		35:35	RO	0.33	0.81			1.029			
442-444				1 Peak			18.35						
OCDD						0.76-1.02				0.884-1.116			
458-460	DC	NL		0:00	RO	1.17	0.11			0.000			
	DC	SN		34:24	RO	1.34	1.06			0.995			
				34:36		0.80	26.24	11.70	14.54	1.000	OCDD	AN	
	DC	SN		34:54	RO	2.15	0.25			1.009			
458-460				1 Peak			26.24						
13C12-OCDD						0.76-1.02				0.996-1.005			
470-472	DC	NL		0:00	RO	1.33	0.11			0.000			
				34:35		0.88	1,514.41	708.89	805.52	1.000	13C12-OCDD	IS8	
	DC	WH		34:55	RO	0.51	1.44			1.010			
470-472				1 Peak			1,514.41						

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
		E-Ether Interference

*** End of Report ***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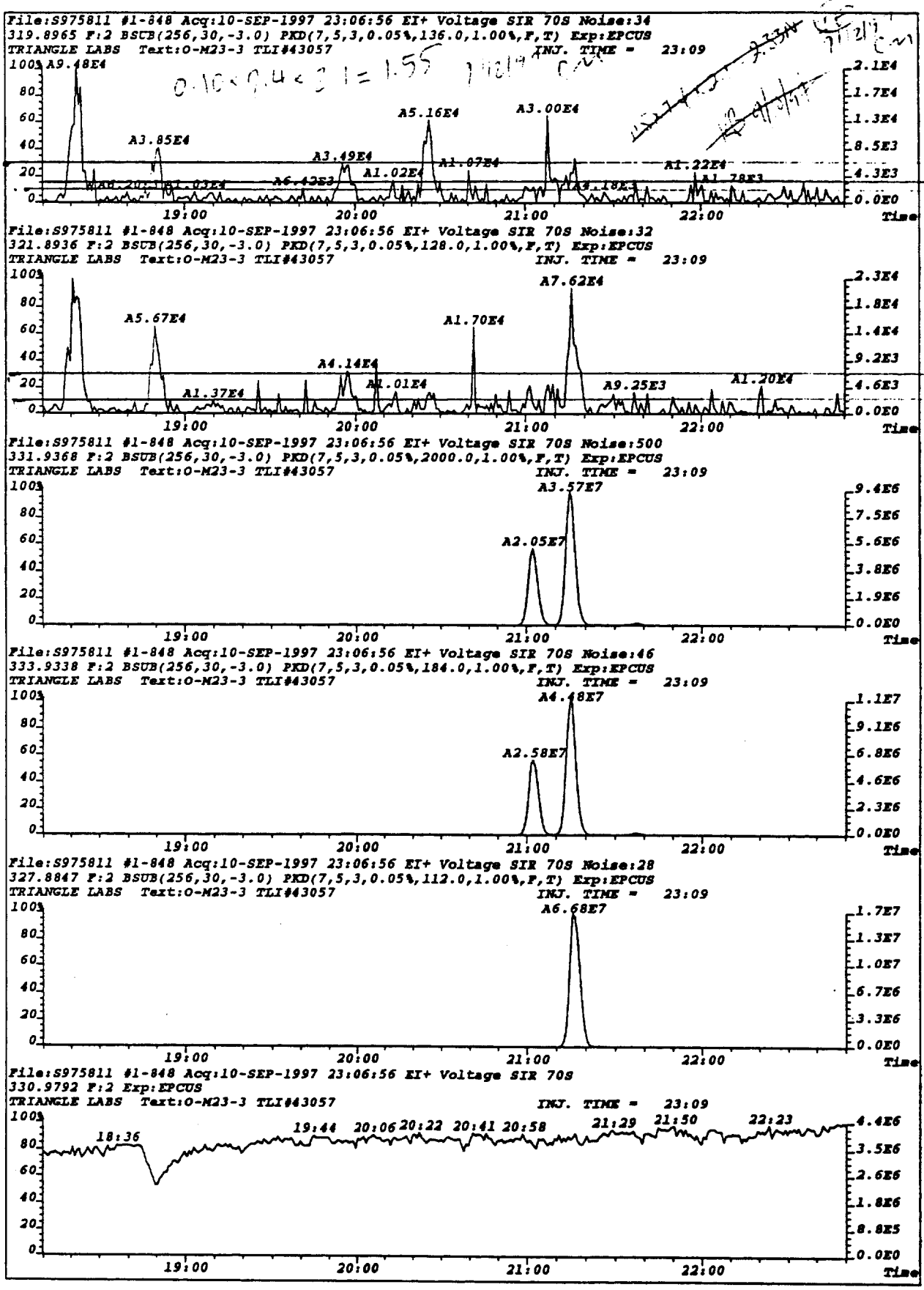
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,164.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A2.76E5
A1.93E5
A8.67E4
A7.13E4
A5.51E4
A3.44E4
A4.49E3
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:36
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.78E5
A2.03E5
A9.68E4
A8.48E4
A5.52E4
A1.96E4
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:237
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,948.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A4.83E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:39
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A6.40E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
16:56
17:41
18:02
18:36
19:44
20:22
21:29
21:50
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
16:58
17:16
17:48
18:09
18:53
19:12
19:30
19:55
20:17
20:41
21:23
21:43
22:11
Time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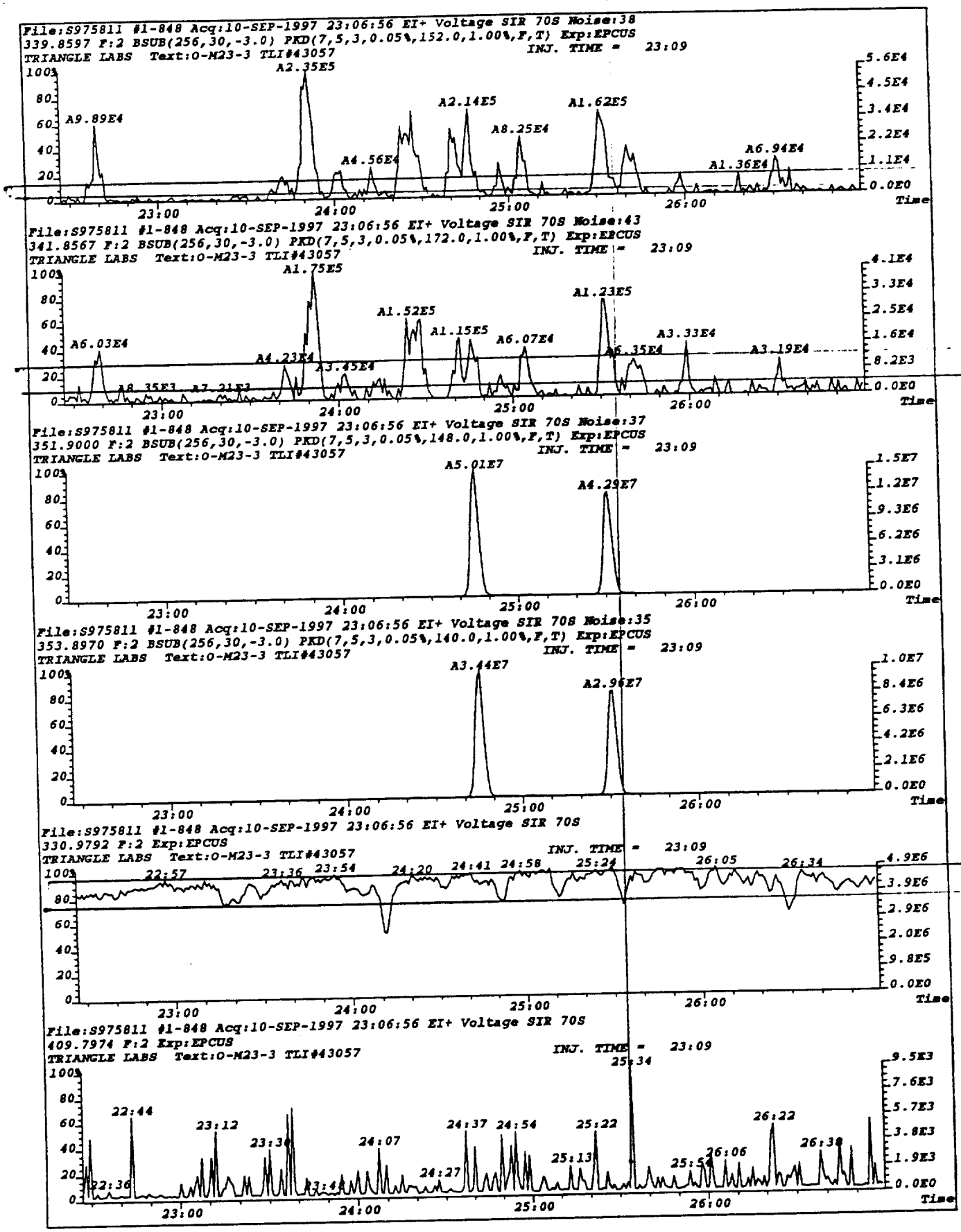
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A9.48E4
A3.85E4
A5.16E4
A3.00E4
A3.49E4
A1.02E4
A1.07E4
A1.22E4
A6.42E3
19:00
20:00
21:00
22:00
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:32
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A7.62E4
A5.67E4
A1.70E4
A4.14E4
A1.37E4
A1.01E4
A9.25E3
A1.20E4
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:500
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2000.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.57E7
A2.05E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:46
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,184.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A4.48E7
A2.58E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:28
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A6.68E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
18:36
19:44
20:06
20:22
20:41
20:58
21:29
21:50
22:23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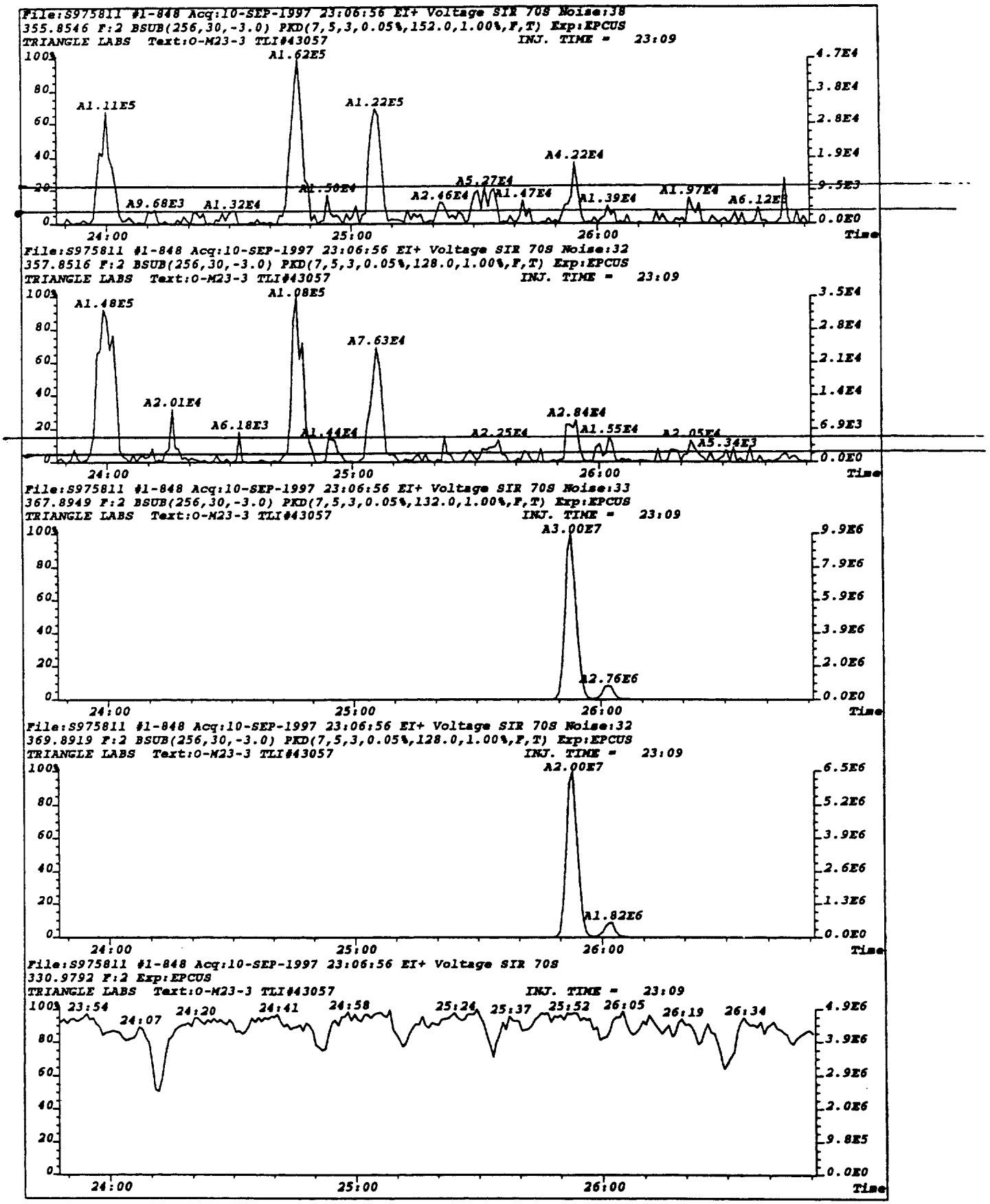
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A2.35E5
A2.14E5
A1.62E5
A9.89E4
A8.25E4
A6.94E4
A4.56E4
A1.36E4
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:43
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,172.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.75E5
A1.52E5
A1.23E5
A1.15E5
A6.07E4
A6.03E4
A4.23E4
A3.45E4
A3.33E4
A3.19E4
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:37
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A5.01E7
A4.29E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:35
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.44E7
A2.96E7
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
Time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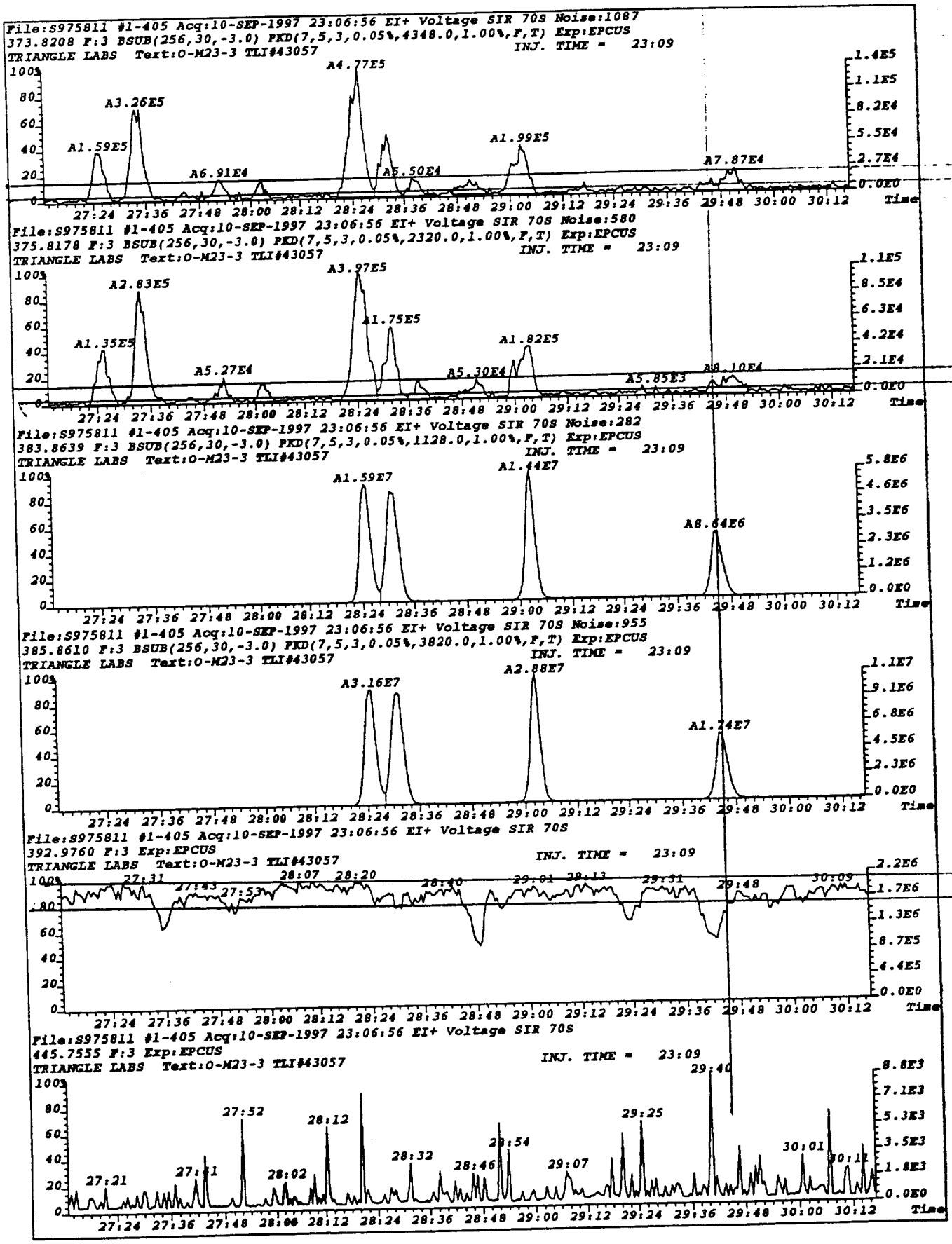
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.62E5
A1.11E5
A1.22E5
A4.22E4
A5.27E4
A9.68E3
A1.32E4
A1.50E4
A2.46E4
A1.47E4
A1.39E4
A1.97E4
A6.12E3
24:00
25:00
26:00
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:32
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.08E5
A1.48E5
A7.63E4
A2.01E4
A6.18E3
A1.44E4
A2.25E4
A2.84E4
A1.55E4
A5.34E3
24:00
25:00
26:00
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:33
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.00E7
A2.76E6
24:00
25:00
26:00
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:32
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A2.00E7
A1.82E6
24:00
25:00
26:00
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
23:54
24:07
24:20
24:41
24:58
25:24
25:37
25:52
26:05
26:19
26:34
24:00
25:00
26:00
Time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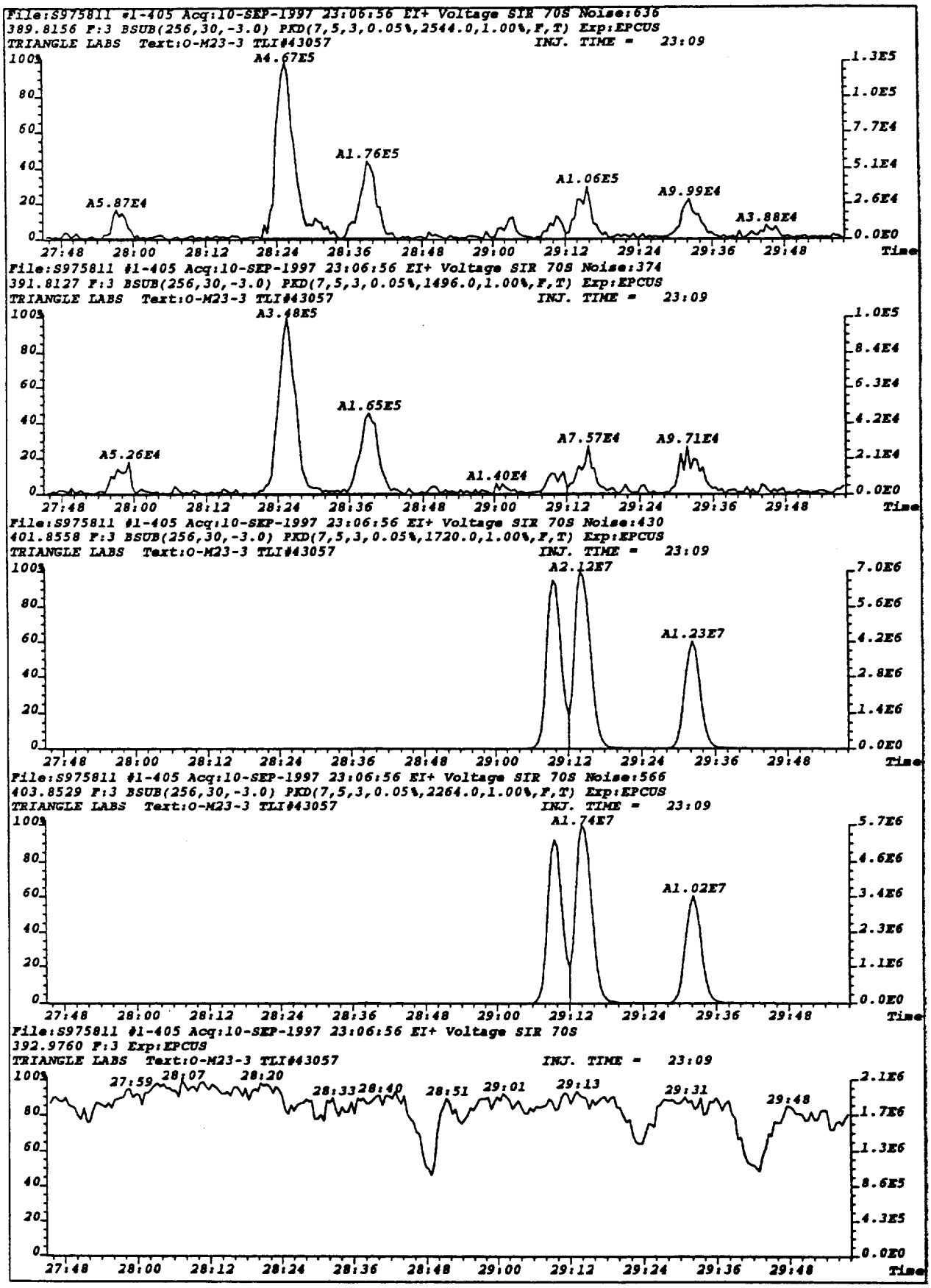
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4348.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.59E5
A3.26E5
A6.91E4
A4.77E5
A5.50E4
A1.99E5
A7.87E4
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:580
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2320.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.35E5
A2.83E5
A5.27E4
A3.97E5
A1.75E5
A5.30E4
A1.82E5
A5.85E3
A8.10E4
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:282
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.59E7
A1.44E7
A8.64E6
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:955
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3820.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.16E7
A2.88E7
A1.24E7
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
27:21
27:52
28:12
28:02
28:32
28:46
29:07
29:25
30:01
Time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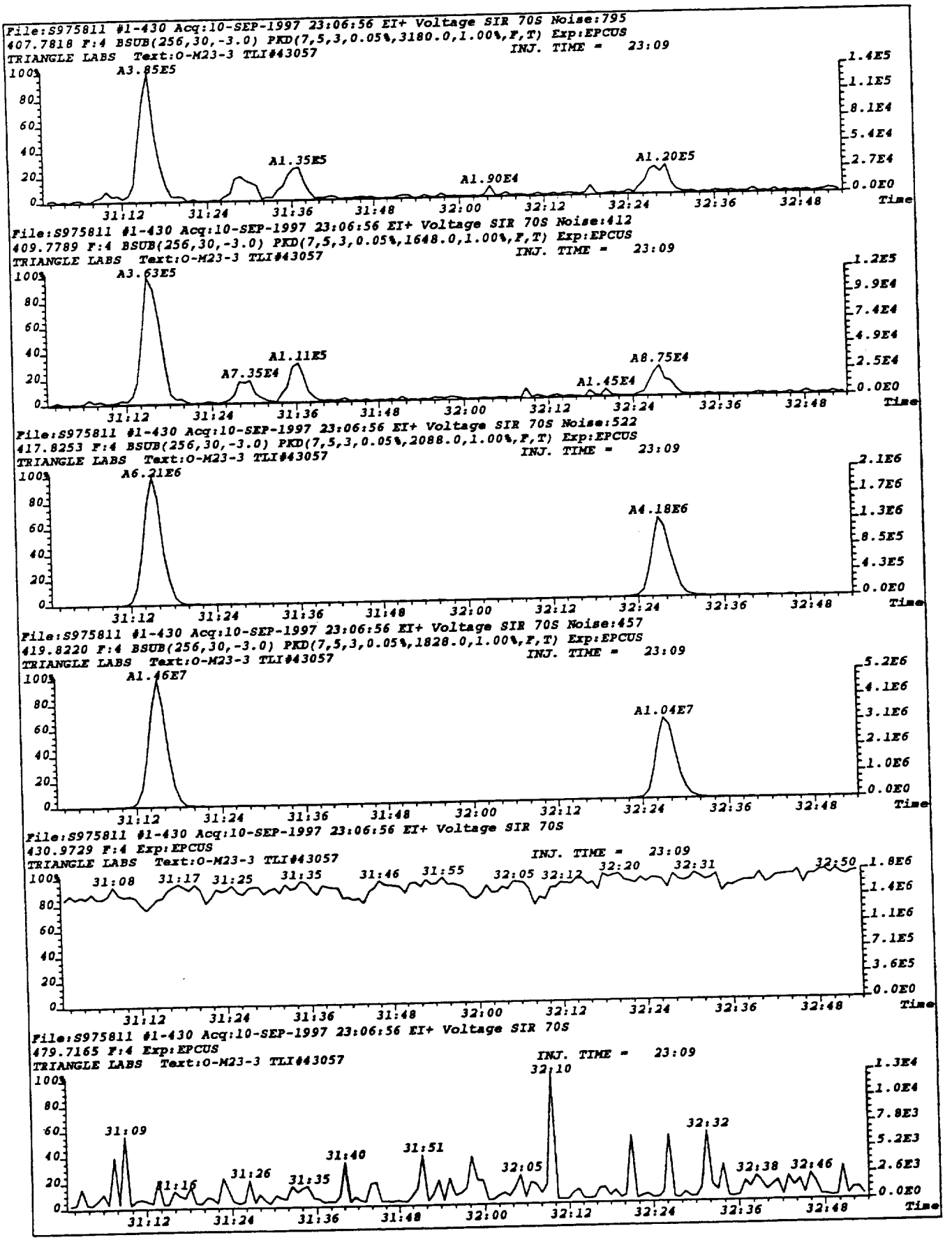
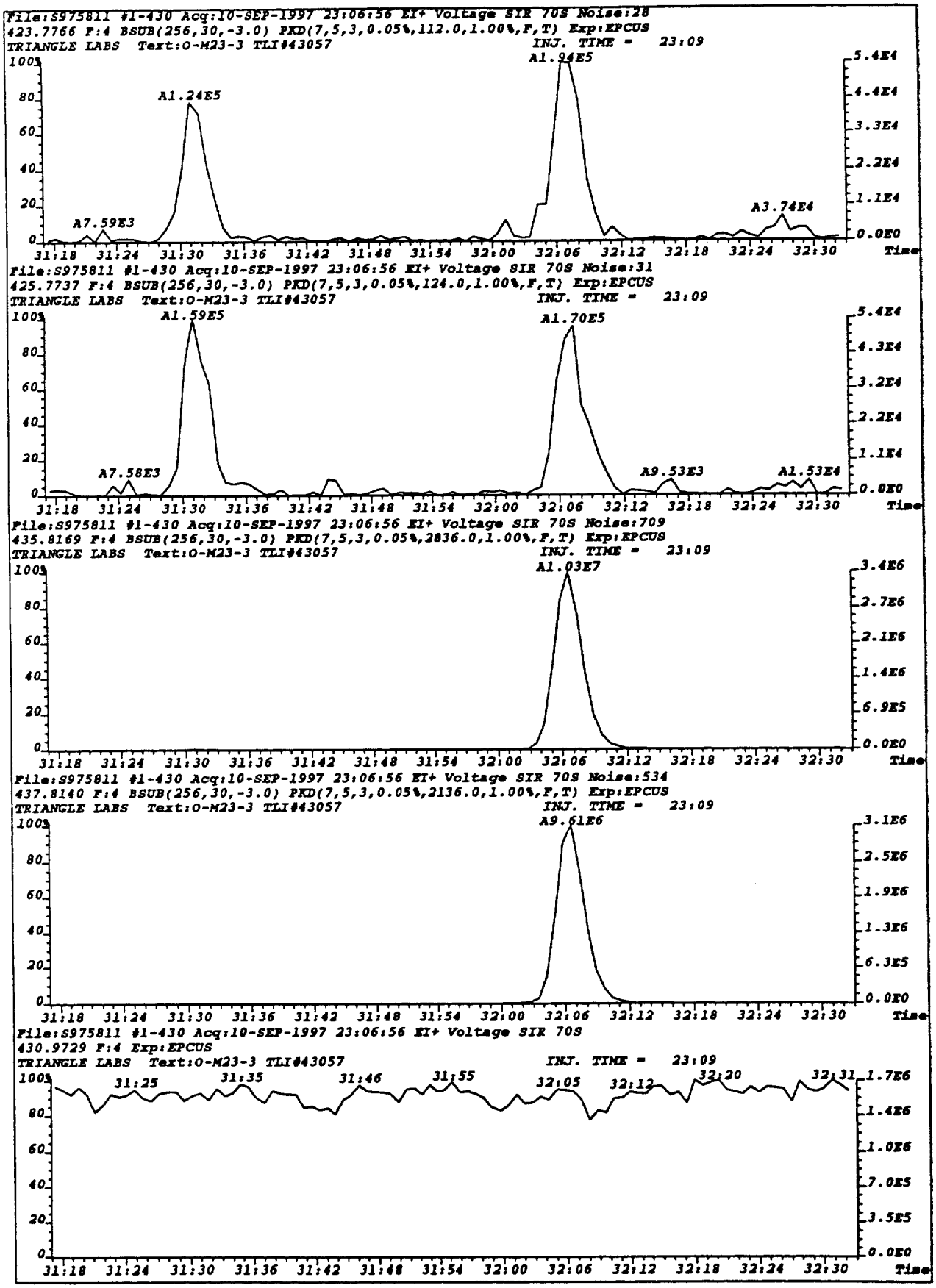
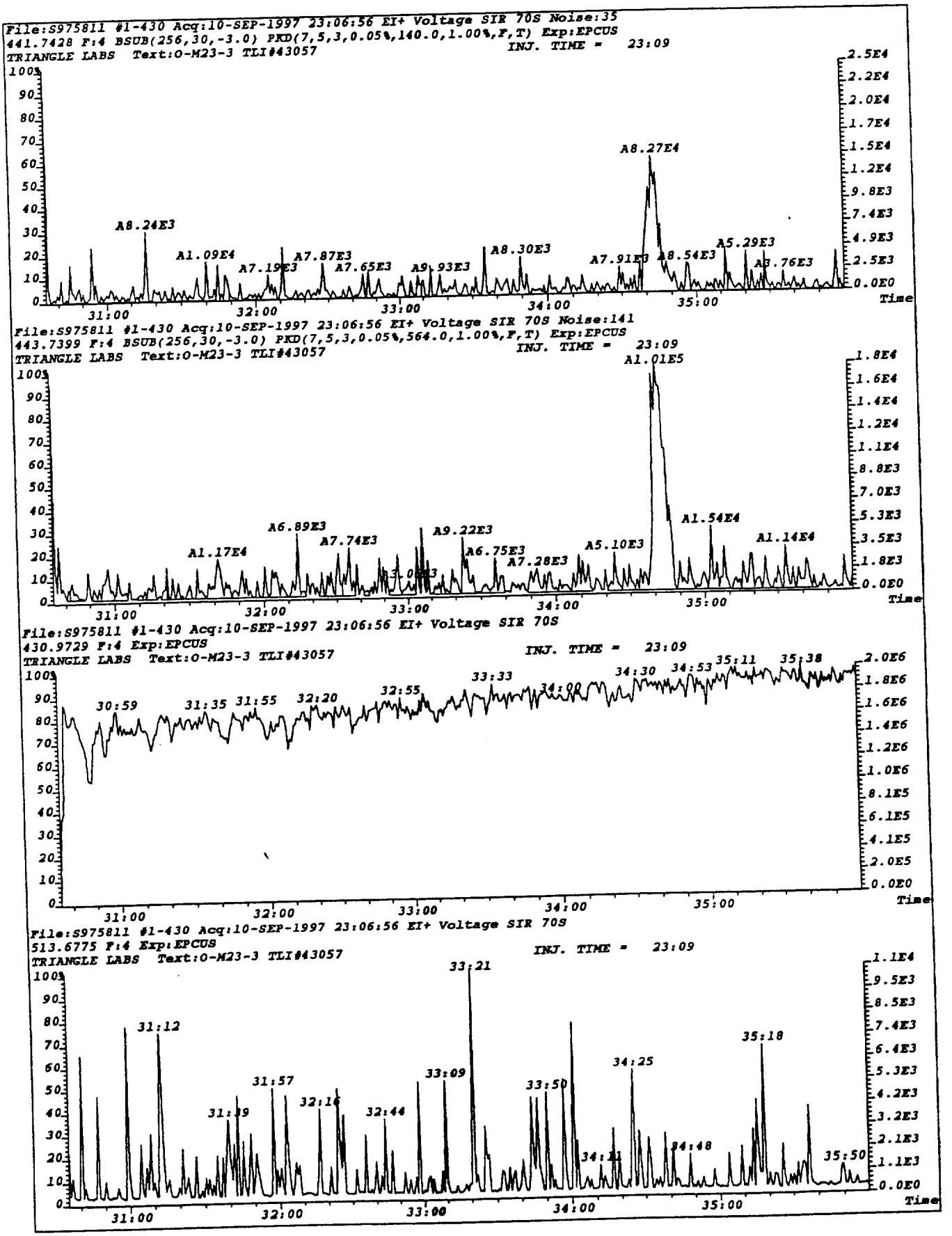
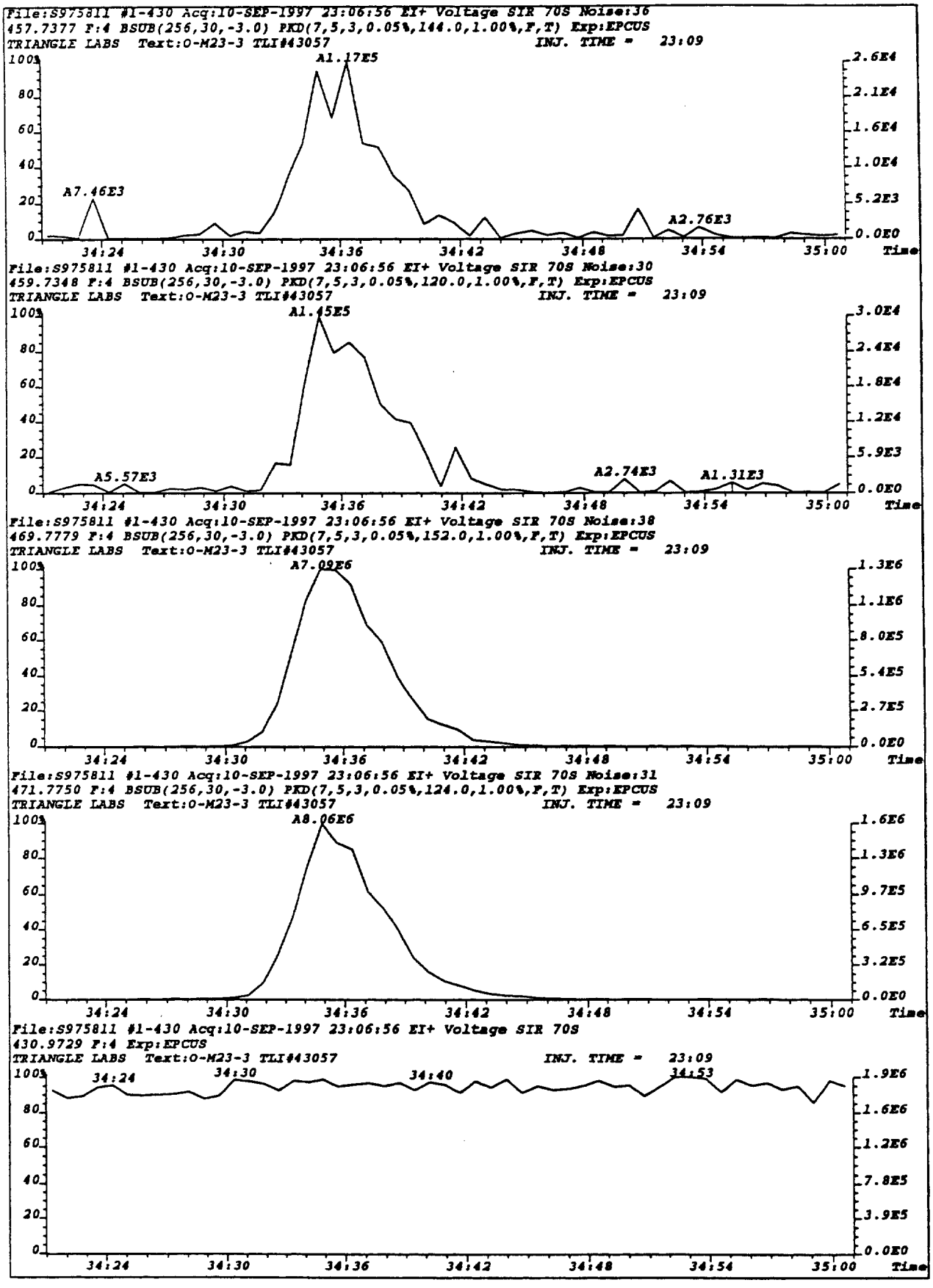
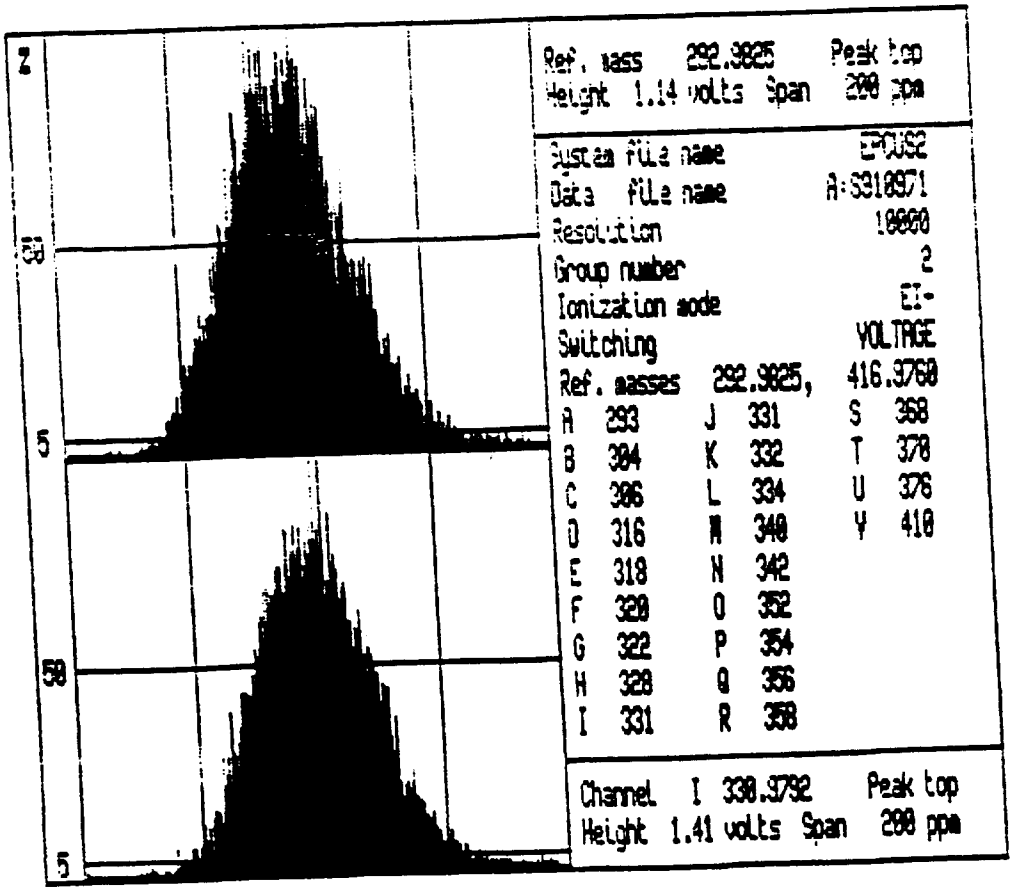
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2544.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A4.67E5
A1.76E5
A1.06E5
A9.99E4
A5.87E4
A3.88E4
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:374
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1496.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.48E5
A1.65E5
A7.57E4
A9.71E4
A5.26E4
A1.40E4
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:430
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1720.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A2.12E7
A1.23E7
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:566
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2264.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.74E7
A1.02E7
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
27:59
28:07
28:20
28:33
28:40
28:51
29:01
29:13
29:31
29:48
27:48
28:00
28:12
28:24
28:36
28:48
29:00
29:12
29:24
29:36
29:48
Time

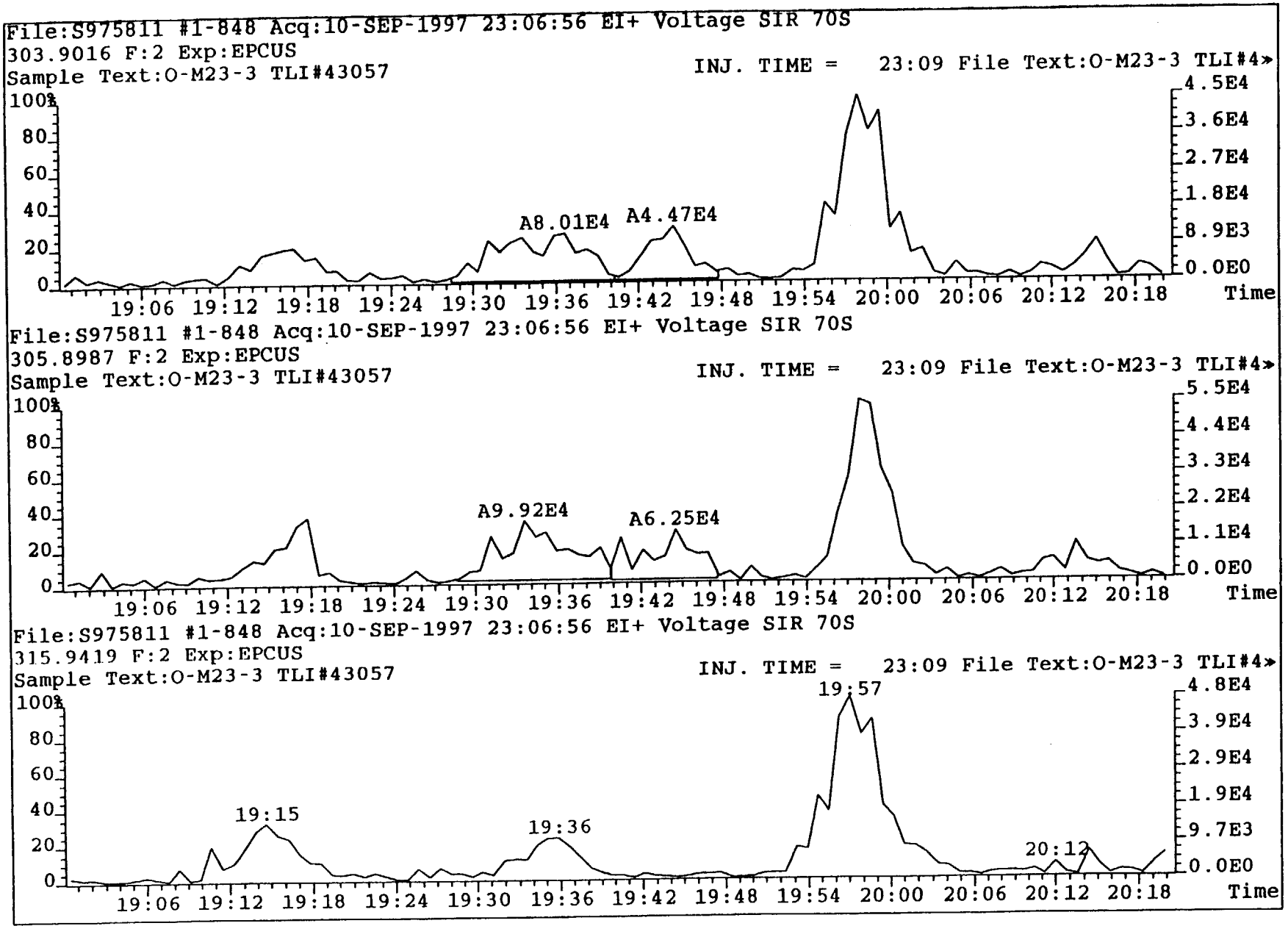

File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:795
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3180.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.85E5
A1.35E5
A1.90E4
A1.20E5
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:412
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1648.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A3.63E5
A1.11E5
A7.35E4
A1.45E4
A8.75E4
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:522
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2088.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A6.21E6
A4.18E6
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:457
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1828.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.46E7
A1.04E7
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
Time

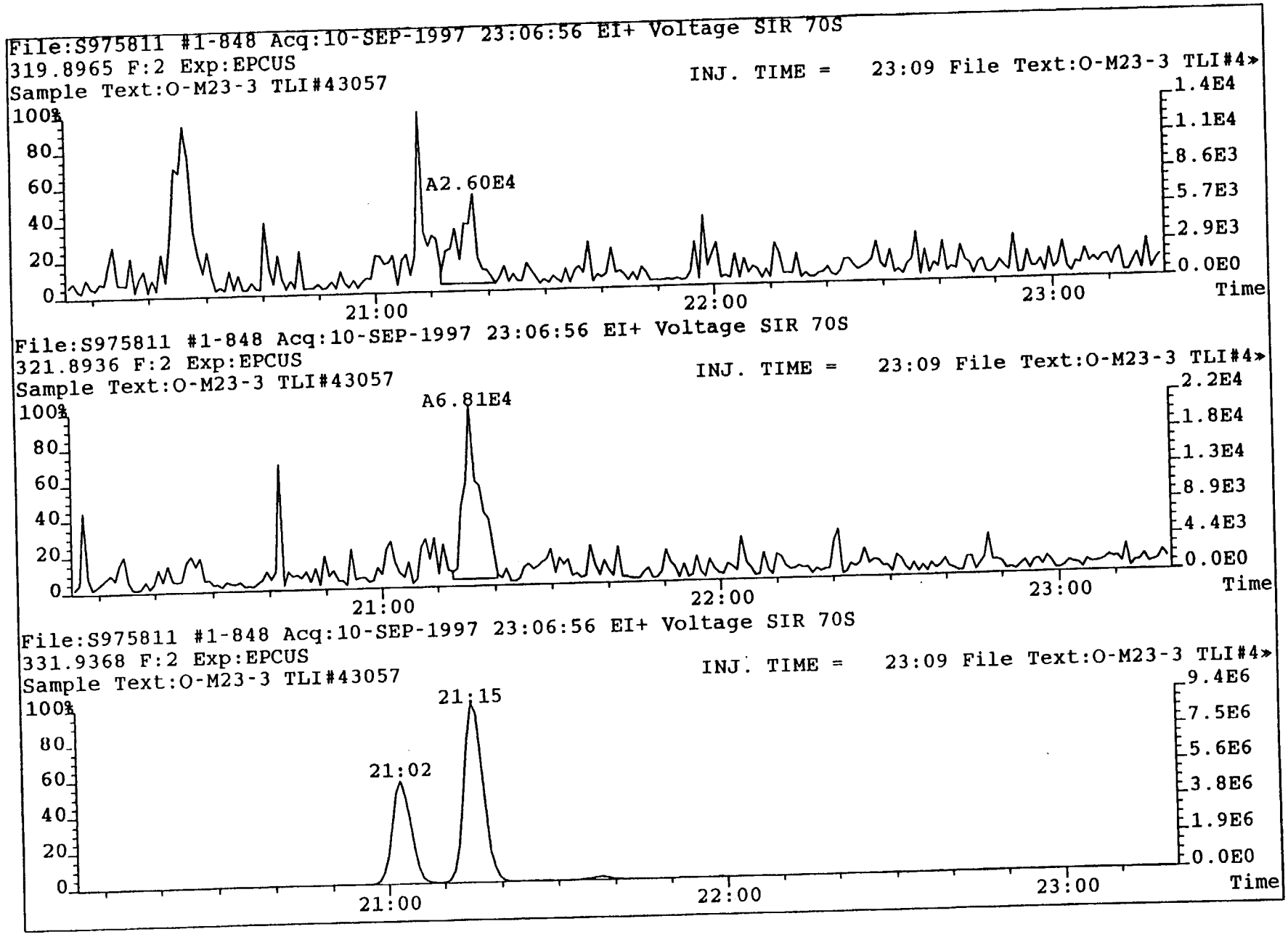

File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:28
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.24E5
A1.24E5
A7.59E3
A3.74E4
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:31
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,124.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.59E5
A1.70E5
A7.58E3
A9.53E3
A1.53E4
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:709
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2836.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.03E7
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:534
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A9.61E6
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
31:25
31:35
31:46
31:55
32:05
32:12
32:20
32:31
Time

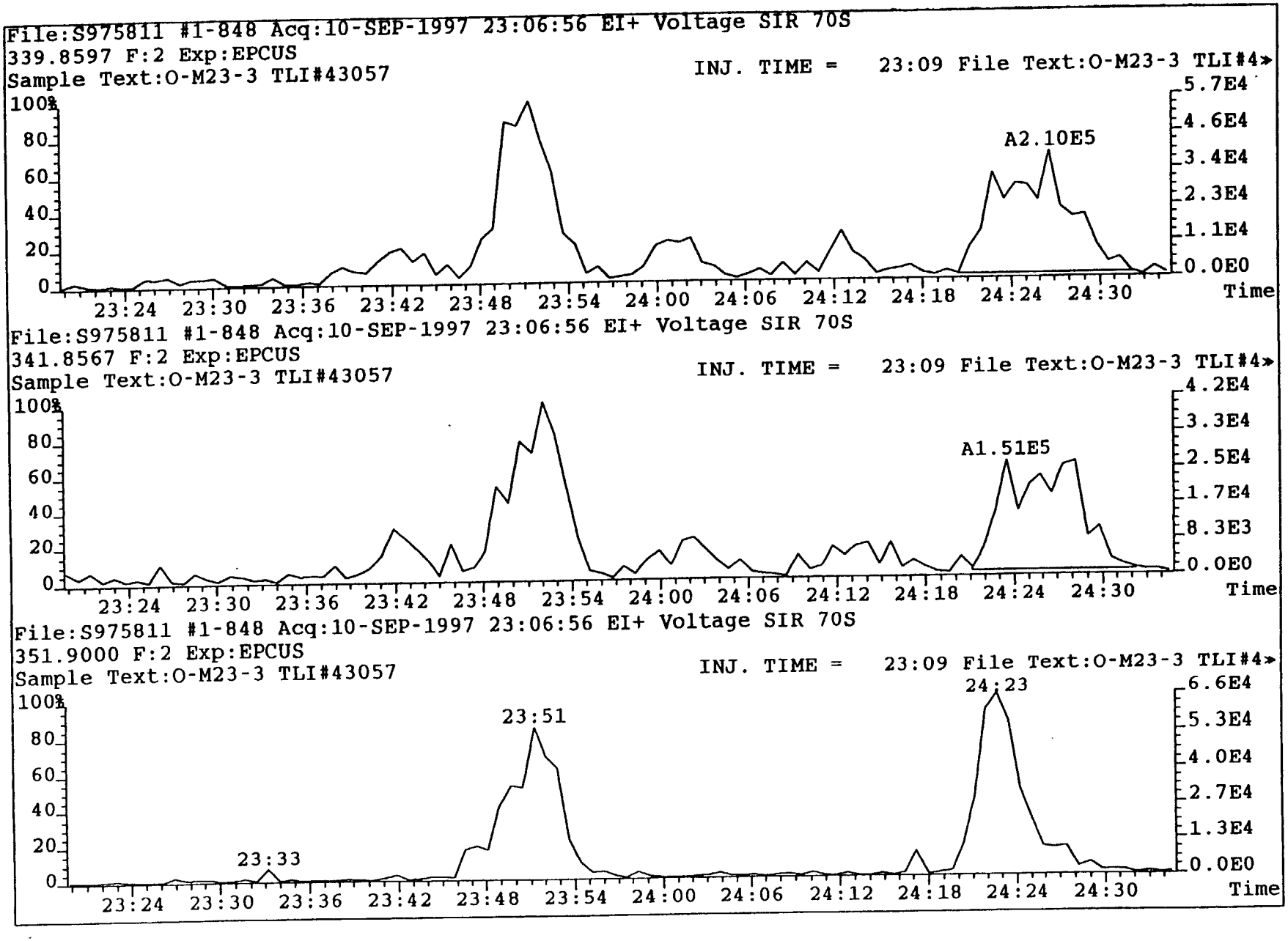

File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:35
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A8.27E4
A8.24E3
A1.09E4
A7.87E3
A7.19E3
A7.65E3
A9.93E3
A8.30E3
A7.91E3
A8.54E3
A5.29E3
A8.76E3
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:141
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,564.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.01E5
A6.89E3
A7.74E3
A9.22E3
A1.17E4
A6.75E3
A7.28E3
A5.10E3
A1.54E4
A1.14E4
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
30:59
31:35
31:55
32:20
32:55
33:33
34:00
34:30
34:53
35:11
35:38
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
33:21
31:12
31:57
31:39
32:16
32:44
33:09
33:50
34:25
35:18
34:48
35:50
Time

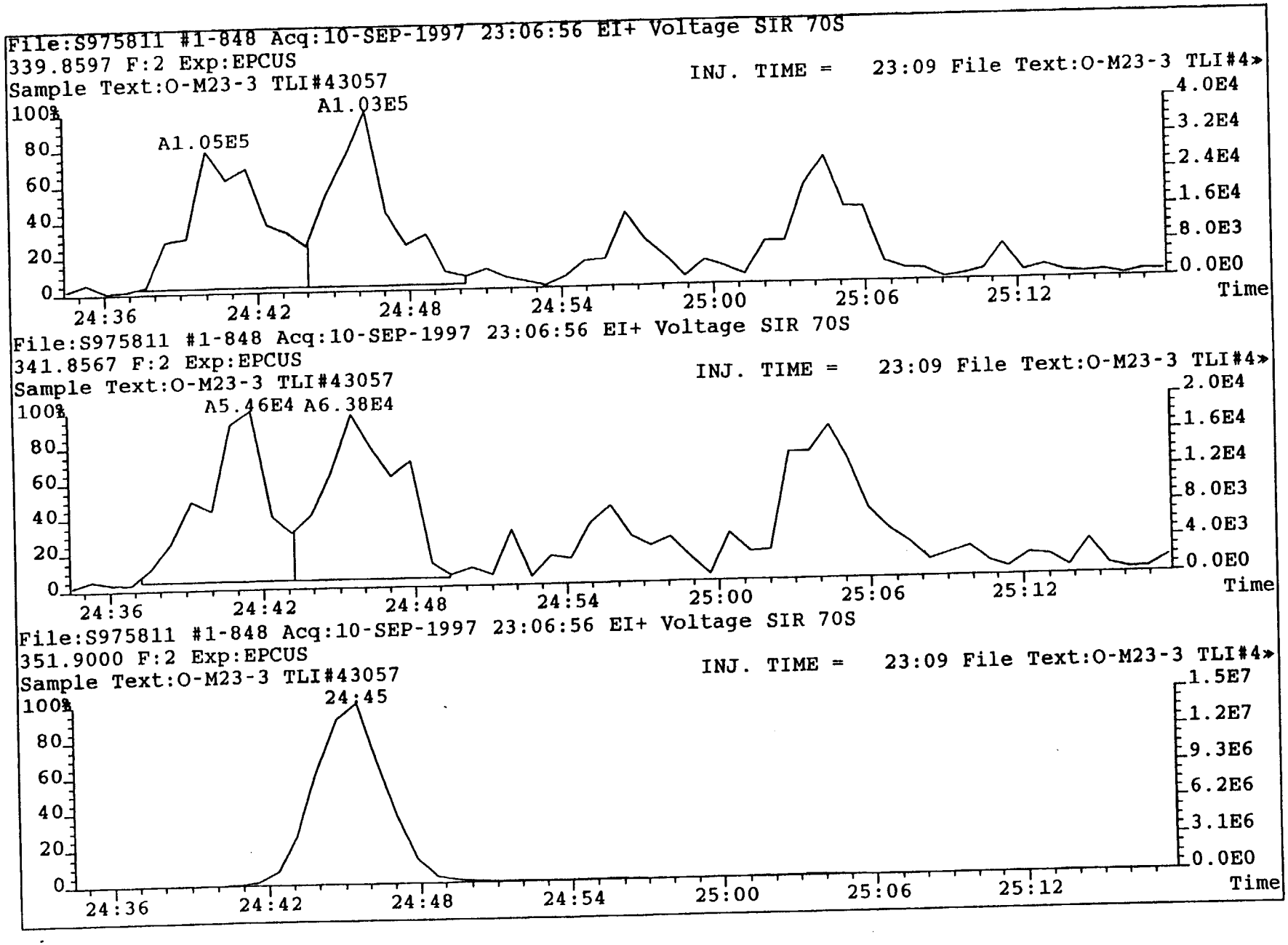

File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:36
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.17E5
A7.46E3
A2.76E3
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:30
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A1.45E5
A5.57E3
A2.74E3
A1.31E3
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:38
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A7.09E6
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S Noise:31
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,124.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
A8.06E6
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-3 TLI#43057
INJ. TIME = 23:09
34:24
34:30
34:40
34:53
34:24 34:30 34:36 34:42 34:48 34:54 35:00 Time

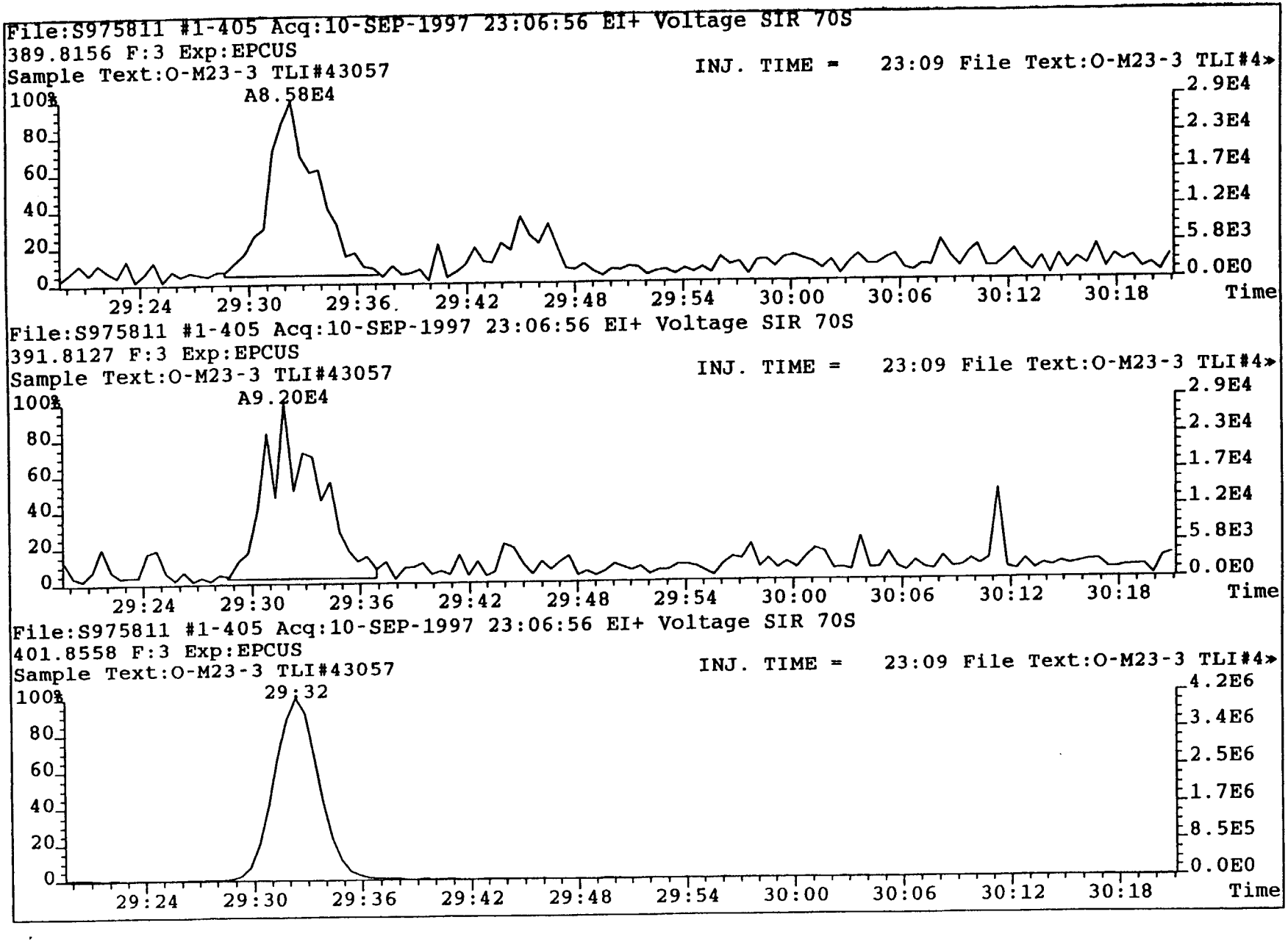

Z
50
5
50
5
Ref. mass 292.3825 Peak top
Height 1.14 volts Span 200 ppm
System file name EPOUS2
Data file name A:S310571
Resolution 10000
Group number 2
Ionization mode EI-
Switching VOLTAGE
Ref. masses 292.3825, 416.3760
A 293 J 331 S 368
B 304 K 332 T 378
C 306 L 334 U 376
D 316 M 340 Y 410
E 318 N 342
F 320 O 352
G 322 P 354
H 328 Q 356
I 331 R 358
Channel I 330.3792 Peak top
Height 1.41 volts Span 200 ppm

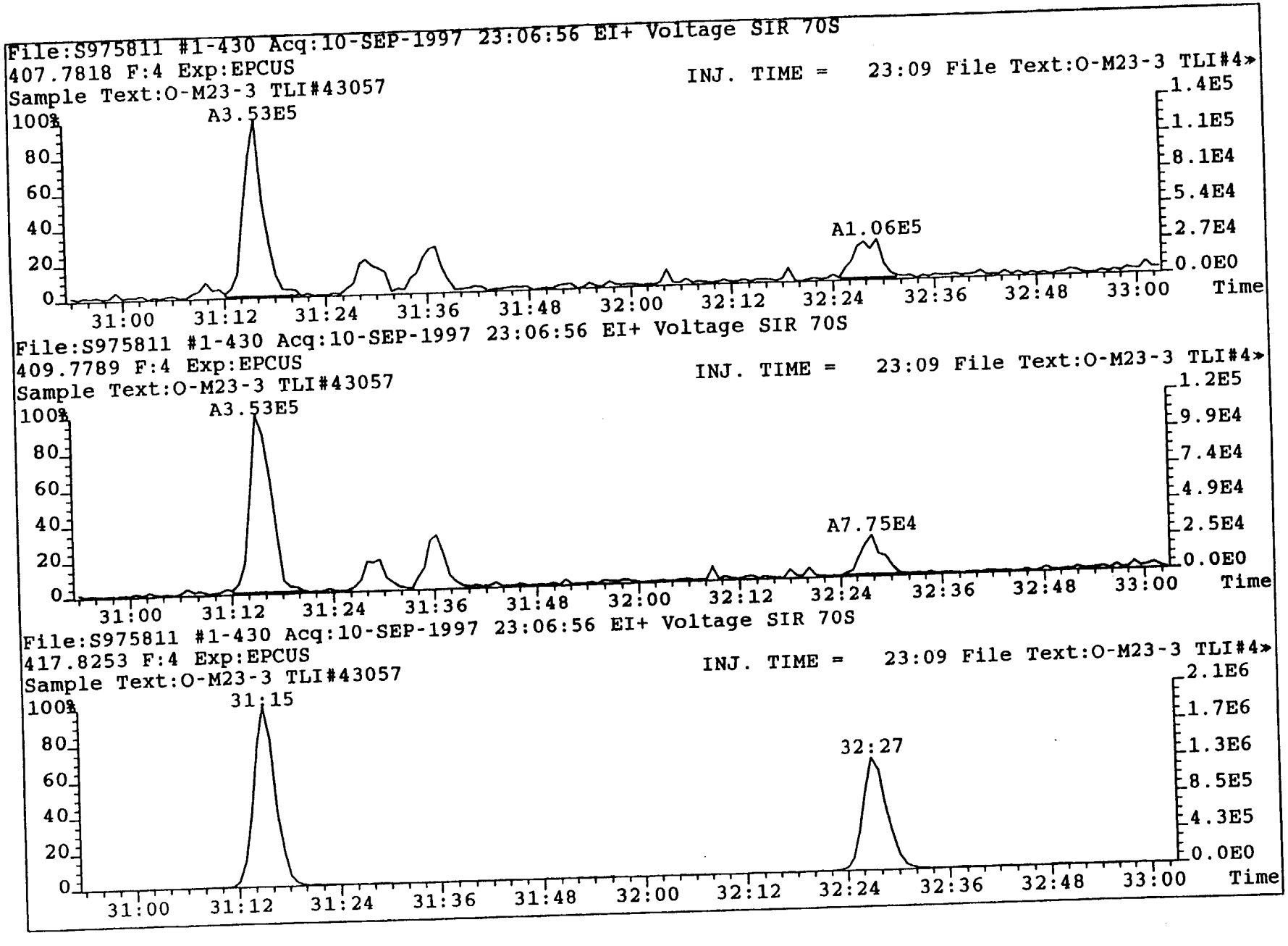

File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
303.9016 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A8.01E4
A4.47E4
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
305.8987 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A9.92E4
A6.25E4
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
315.9419 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
19:57
19:15
19:36
20:12
Time

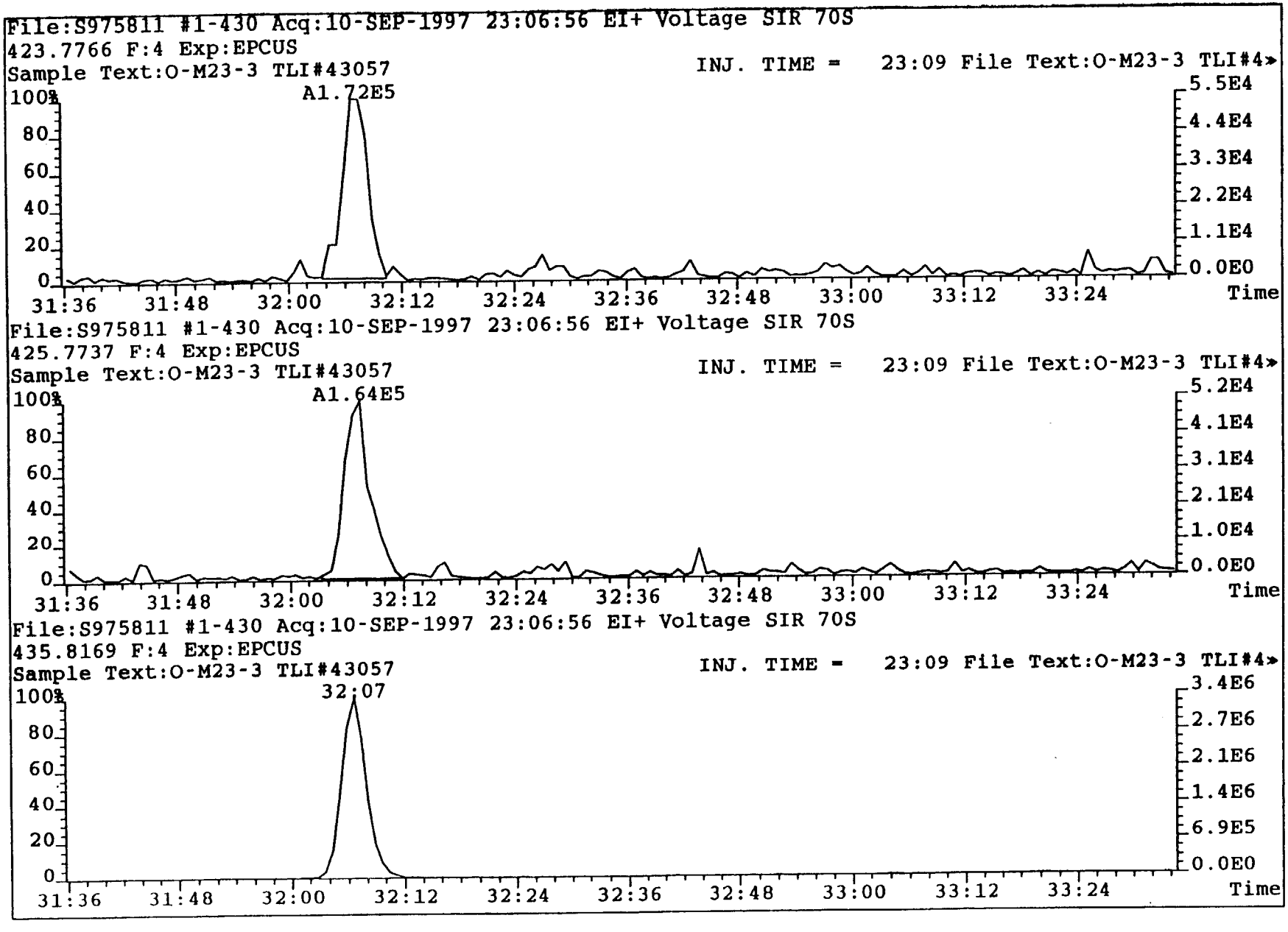

File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
319.8965 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A2.60E4
1.4E4
1.1E4
8.6E3
5.7E3
2.9E3
0.0E0
Time
21:00
22:00
23:00
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
321.8936 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A6.81E4
2.2E4
1.8E4
1.3E4
8.9E3
4.4E3
0.0E0
Time
21:00
22:00
23:00
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
331.9368 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
21:15
21:02
9.4E6
7.5E6
5.6E6
3.8E6
1.9E6
0.0E0
Time
21:00
22:00
23:00


File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A2.10E5
5.7E4
4.6E4
3.4E4
2.3E4
1.1E4
0.0E0
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A1.51E5
4.2E4
3.3E4
2.5E4
1.7E4
8.3E3
0.0E0
Time
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
23:51
24:23
23:33
6.6E4
5.3E4
4.0E4
2.7E4
1.3E4
0.0E0
Time
100%
80
60
40
20
0
23:24 23:30 23:36 23:42 23:48 23:54 24:00 24:06 24:12 24:18 24:24 24:30


File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A1.05E5
A1.03E5
100%
80
60
40
20
0
4.0E4
3.2E4
2.4E4
1.6E4
8.0E3
0.0E0
Time
24:36
24:42
24:48
24:54
25:00
25:06
25:12
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A5.46E4
A6.38E4
2.0E4
1.6E4
1.2E4
8.0E3
4.0E3
0.0E0
File:S975811 #1-848 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
24:45
1.5E7
1.2E7
9.3E6
6.2E6
3.1E6
0.0E0


File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
389.8156 F:3 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A8.58E4
100%
80
60
40
20
0
2.9E4
2.3E4
1.7E4
1.2E4
5.8E3
0.0E0
29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 Time
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
391.8127 F:3 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A9.20E4
100%
80
60
40
20
0
2.9E4
2.3E4
1.7E4
1.2E4
5.8E3
0.0E0
29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 Time
File:S975811 #1-405 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
401.8558 F:3 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
29:32
100%
80
60
40
20
0
4.2E6
3.4E6
2.5E6
1.7E6
8.5E5
0.0E0
29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 Time


File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A3.53E5
A1.06E5
1.4E5
1.1E5
8.1E4
5.4E4
2.7E4
0.0E0
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A3.53E5
A7.75E4
1.2E5
9.9E4
7.4E4
4.9E4
2.5E4
0.0E0
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
31:15
32:27
2.1E6
1.7E6
1.3E6
8.5E5
4.3E5
0.0E0
Time


File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A1.72E5
100%
80
60
40
20
0
5.5E4
4.4E4
3.3E4
2.2E4
1.1E4
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
A1.64E5
100%
80
60
40
20
0
5.2E4
4.1E4
3.1E4
2.1E4
1.0E4
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24
Time
File:S975811 #1-430 Acq:10-SEP-1997 23:06:56 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:O-M23-3 TLI#43057
INJ. TIME = 23:09 File Text:O-M23-3 TLI#4
32:07
100%
80
60
40
20
0
3.4E6
2.7E6
2.1E6
1.4E6
6.9E5
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24
Time

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-3

Method 23 TCDD/TCDF Analysis (DB-225)
Analysis File: P973846

Client Project:	ASPHALT PLANT "A"			Spike File:	SPC2NF04
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	ICal:	PF22206
TLI ID:	181-27-4A-C	Date Extracted:	09/06/97	ConCal:	P973843
		Date Analyzed:	09/12/97		
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% 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	0.02			0.85	20:42	B__

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	5.9	148	40%-130%	0.77	20:40	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	19:44	—

Data Reviewer: _____ 09/12/97

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Initial , ...Date...

Data Review By: RJT 9/12/97 Calculated Noise Area: n/a

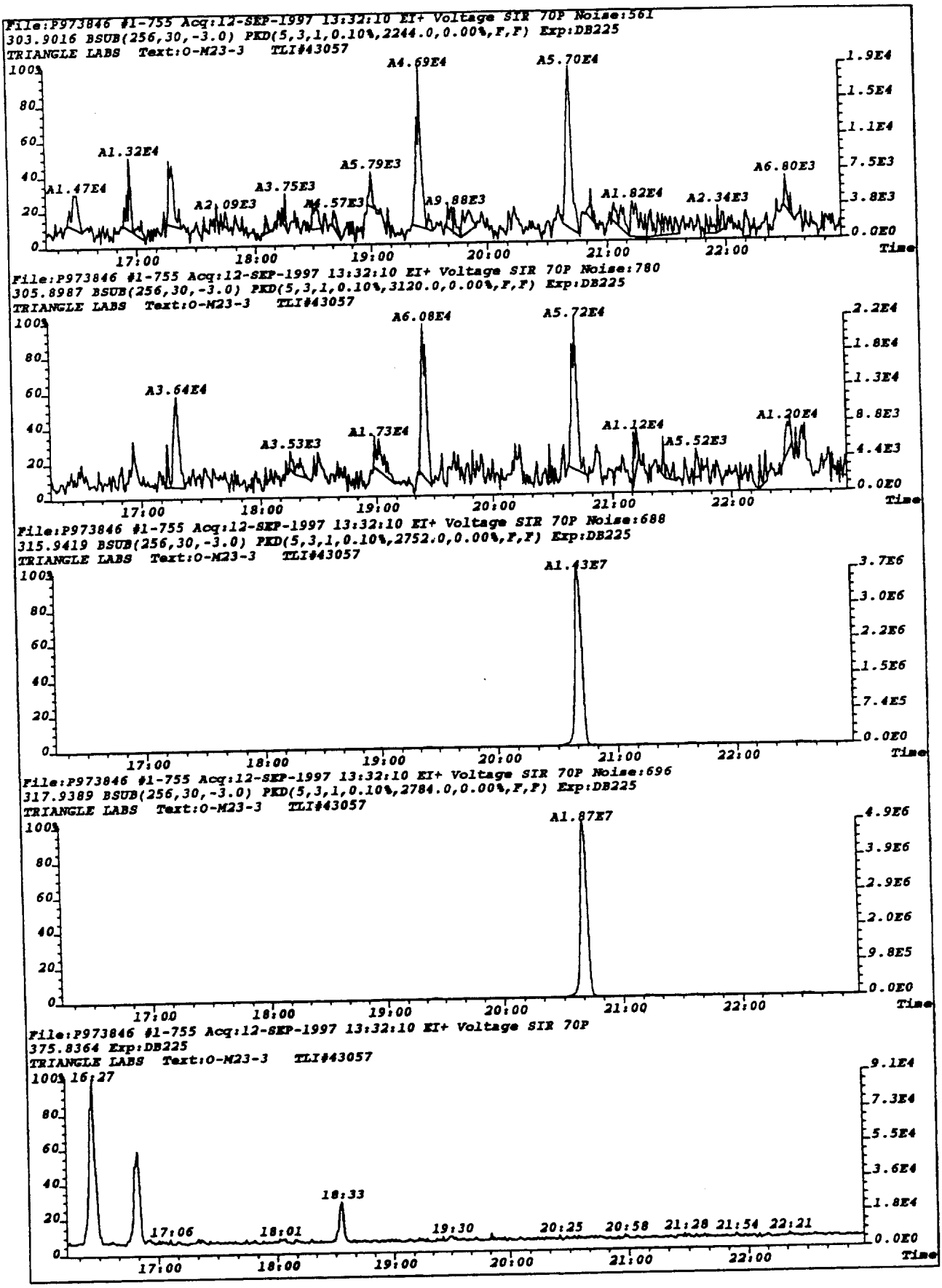
The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

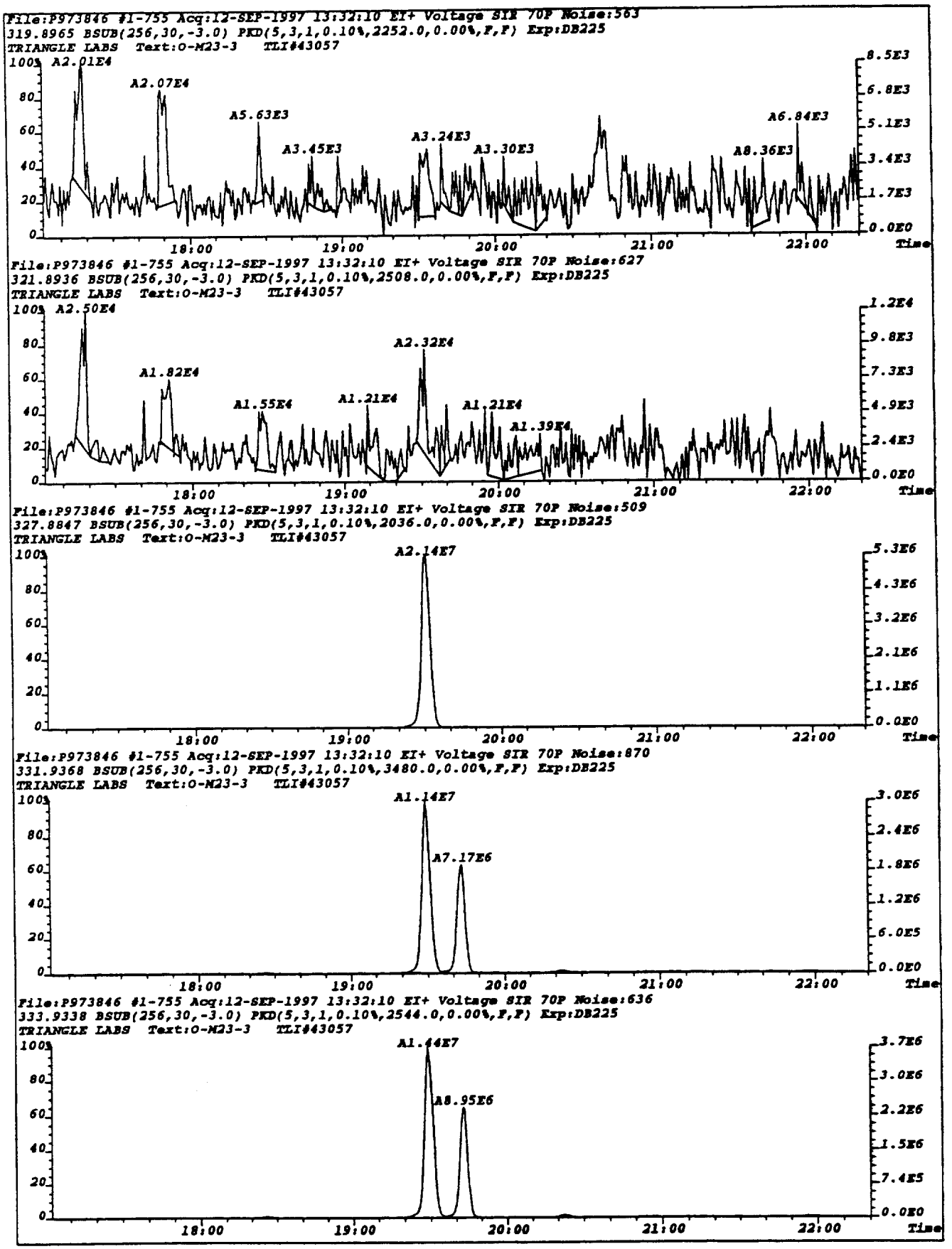
Page No. 1 Listing of P973846B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

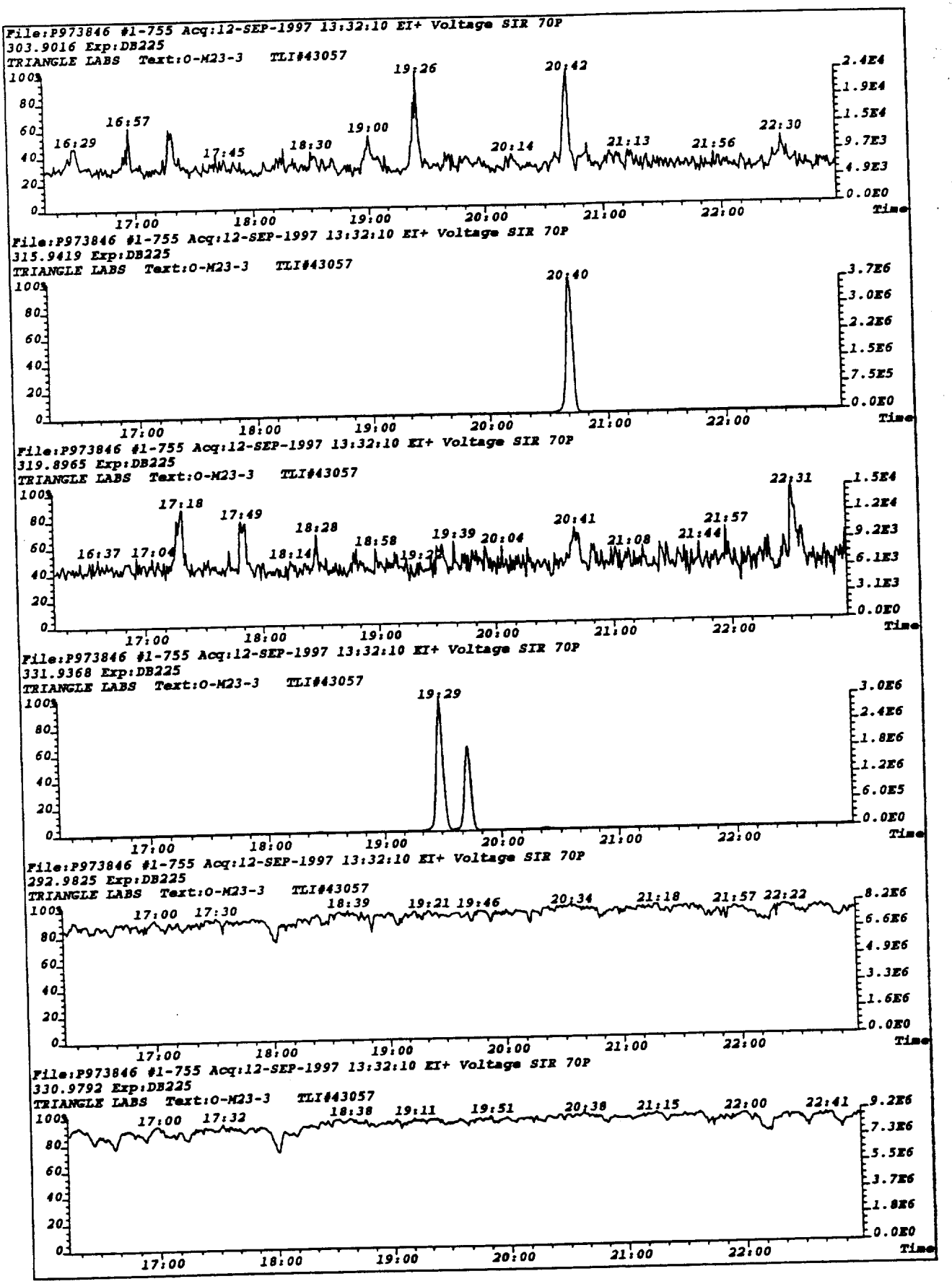
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.786-1.096			
304-306	DC	NL		0:00		0.72	2.68			0.000			
	DC	SN		17:17	RO	0.58	4.85			0.836			
	DC	SN		18:15	RO	1.06	0.62			0.883			
	DC	SN		19:00	RO	0.34	1.33			0.919			
	DC	SN		19:26		0.77	10.77			0.940			
MK				20:42		0.85	13.00	5.98	7.02	1.002	2378-TCDF		AN
	DC	SN		21:09		0.71	1.92			1.023			
	DC	SN		21:26	RO	0.92	0.69			1.037			
	DC	SN		22:30	RO	0.57	1.56			1.089			
304-306			1	Peak			13.00						
13C12-TCDF				0.65-0.89						0.952-1.048			
316-318	DC	NL		0:00	RO	0.99	2.46			0.000			
	DC	WL		19:24		0.85	15.86			0.939			
				20:40		0.77	3,307.74	1,434.55	1,873.19	1.000	13C12-2378-TCDF		IS0
	DC	SN		21:13		0.73	9.13			1.027			
	DC	SN		21:37	RO	2.39	5.42			1.046			
	DC	WH		22:31	RO	0.48	16.64			1.090			
316-318			1	Peak			3,307.74						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.897-1.103			
332-334	DC	NL		0:00	RO	1.37	2.25			0.000			
	DC	SN		18:26		0.74	12.45			0.946			
				19:29		0.79	2,580.19	1,135.41	1,444.78	1.000	13C12-2378-TCDD		IS1
				19:44		0.80	1,612.66	717.25	895.41	1.013	13C12-1234-TCDD		RS1
	DC	SN		20:23		0.81	34.52			1.046			
	DC	WH		21:30	RO	0.60	1.70			1.104			
	DC	WH		21:56	RO	0.94	16.37			1.126			
332-334			2	Peaks			4,192.85						

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
		E-Ether Interference

*** End of Report ***


File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:561
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2244.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A1.47E4
A1.32E4
A2.09E3
A3.75E3
A4.57E3
A4.69E4
A5.79E3
A9.88E3
A5.70E4
A1.82E4
A2.34E3
A6.80E3
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:780
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3120.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A3.64E4
A3.53E3
A1.73E4
A6.08E4
A1.12E4
A5.52E3
A5.72E4
A1.20E4
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:688
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2752.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A1.43E7
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:696
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2784.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A1.87E7
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
16:27
17:06
18:01
18:33
19:30
20:25
20:58
21:28
21:54
22:21
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:563
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2252.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A2.01E4
A2.07E4
A5.63E3
A3.45E3
A3.24E3
A3.30E3
A8.36E3
A6.84E3
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:627
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2508.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A2.50E4
A1.82E4
A1.55E4
A1.21E4
A2.32E4
A1.21E4
A1.39E4
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:509
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2036.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A2.14E7
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:870
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3480.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A1.14E7
A7.17E6
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P Noise:636
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2544.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
A1.44E7
A8.95E6
18:00
19:00
20:00
21:00
22:00
Time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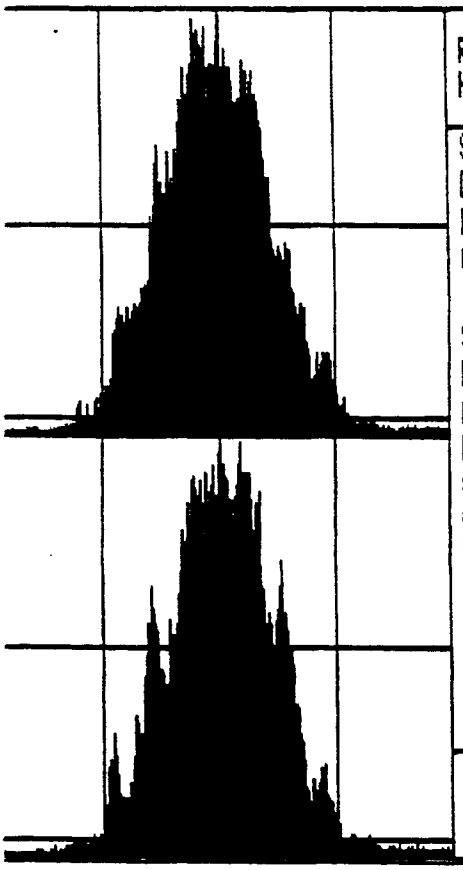
303.9016 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
16:29 16:57 17:45 18:30 19:00 19:26 20:14 20:42 21:13 21:56 22:30
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
20:40
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
16:37 17:04 17:18 17:49 18:14 18:28 18:58 19:39 20:04 20:41 21:08 21:44 21:57 22:31
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
19:29
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
17:00 17:30 18:39 19:21 19:46 20:34 21:18 21:57 22:22
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:O-M23-3 TLI#43057
17:00 17:32 18:38 19:11 19:51 20:38 21:15 22:00 22:41
17:00 18:00 19:00 20:00 21:00 22:00 Time

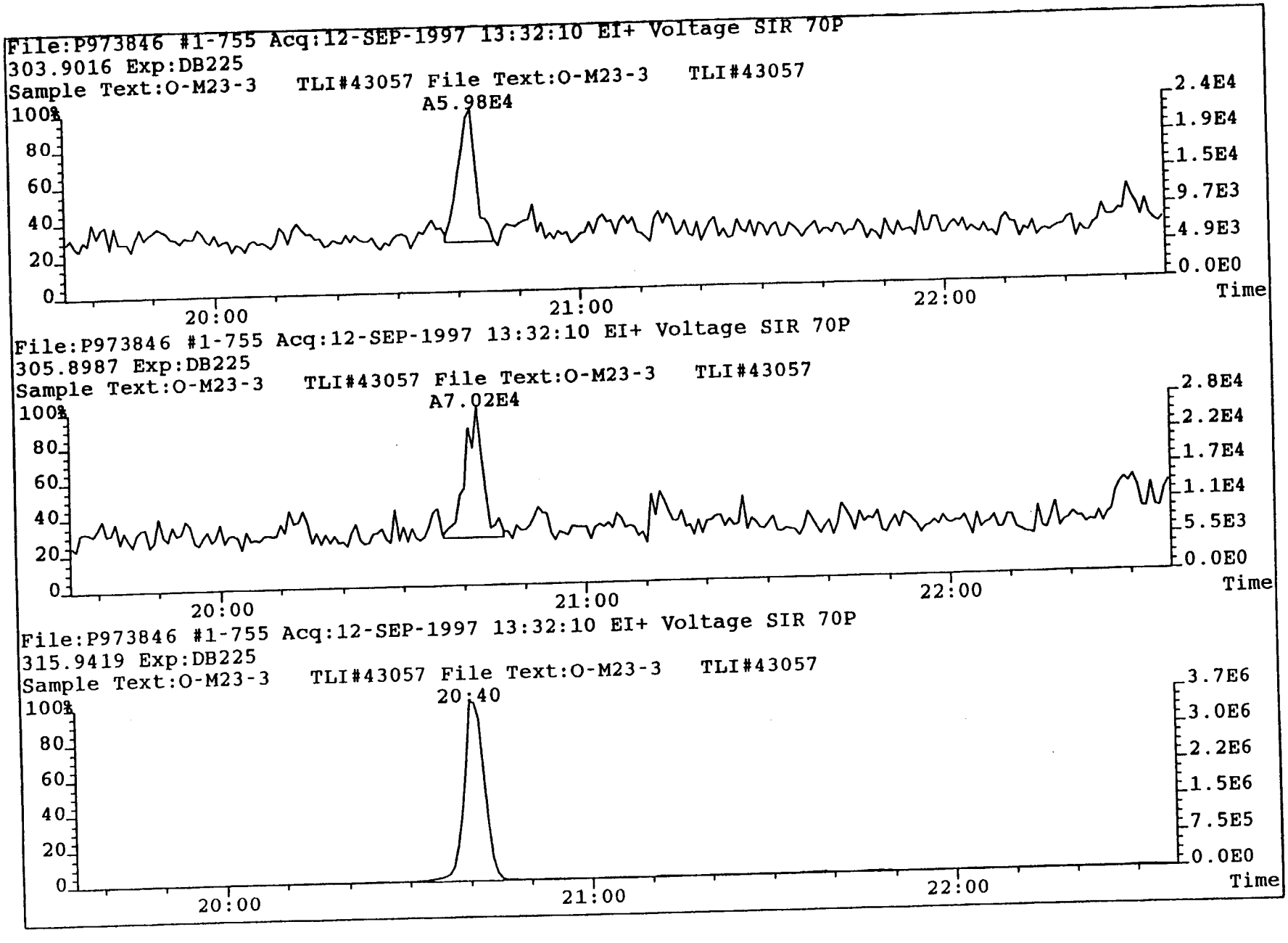


Ref. mass 292.9825 Peak top
Height 1.92 volts Span 200 ppm

System file name	D8225
Data file name	A:P973846
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 1.94 volts Span 200 ppm


File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
303.9016 Exp:DB225
Sample Text:O-M23-3 TLI#43057 File Text:O-M23-3 TLI#43057
A5.98E4
100%
80
60
40
20
0
2.4E4
1.9E4
1.5E4
9.7E3
4.9E3
0.0E0
Time
20:00
21:00
22:00
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
305.8987 Exp:DB225
Sample Text:O-M23-3 TLI#43057 File Text:O-M23-3 TLI#43057
A7.02E4
100%
80
60
40
20
0
2.8E4
2.2E4
1.7E4
1.1E4
5.5E3
0.0E0
Time
20:00
21:00
22:00
File:P973846 #1-755 Acq:12-SEP-1997 13:32:10 EI+ Voltage SIR 70P
315.9419 Exp:DB225
Sample Text:O-M23-3 TLI#43057 File Text:O-M23-3 TLI#43057
20:40
100%
80
60
40
20
0
3.7E6
3.0E6
2.2E6
1.5E6
7.5E5
0.0E0
Time
20:00
21:00
22:00

TLI Project: 43057 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: O-M23-FB — Analysis File: S975816

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPX23704
TLI ID:	181-27-5A-C	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/11/97	ConCal:	S975814
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	HLM	% Solids:	n/a

Analytes	Amt. (ng)	DL	EMPC	Ratio	RT	Flags
2,3,7,8-TCDD	ND	0.01				___
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	EMPC		0.02			___
1,2,3,7,8,9-HxCDD	EMPC		0.02			PR_
1,2,3,4,6,7,8-HpCDD	0.06			1.02	32:03	B__
1,2,3,4,6,7,8,9-OCDD	0.11			0.86	34:33	B__
2,3,7,8-TCDF	ND	0.006				___
1,2,3,7,8-PeCDF	EMPC		0.01			___
2,3,4,7,8-PeCDF	0.03			1.49	25:28	B__
1,2,3,4,7,8-HxCDF	0.07			1.43	28:21	B__
1,2,3,6,7,8-HxCDF	0.03			1.10	28:28	B__
2,3,4,6,7,8-HxCDF	0.03			1.21	28:59	PRB
1,2,3,7,8,9-HxCDF	ND	0.01				___
1,2,3,4,6,7,8-HpCDF	EMPC		0.09			PRB
1,2,3,4,7,8,9-HpCDF	0.04			1.02	32:24	B__
1,2,3,4,6,7,8,9-OCDF	0.07			0.88	34:39	B__

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	EMPC			0.02	___
Total PeCDD	0.02	1		0.07	___
Total HxCDD	0.06	1		0.13	___
Total HpCDD	0.06	1		0.11	___
Total TCDF	ND		0.006		___
Total PeCDF	0.03	1		0.04	___
Total HxCDF	0.13	3		0.18	___
Total HpCDF	0.10	3		0.18	___

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Printed: 14:58 09/11/97

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-FB

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975816

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.0	49.5	40%-130%	0.75	20:22	___
$^{13}C_{12}$-2,3,7,8-TCDD	1.4	34.3	40%-130%	0.80	21:11	V___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.8	44.9	40%-130%	1.65	24:42	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	2.2	54.8	40%-130%	1.45	25:50	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.4	34.7	40%-130%	0.48	28:28	V___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.6	40.1	40%-130%	1.14	29:11	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.3	32.7	25%-130%	0.42	31:10	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	1.5	38.2	25%-130%	0.98	32:02	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	3.0	36.9	25%-130%	0.81	34:32	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	4.9	123	70%-140%		21:13	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.5	112	70%-140%	1.49	25:27	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.6	91.1	70%-140%	0.48	28:21	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.3	82.4	70%-140%	1.24	29:06	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.4	85.4	70%-140%	0.43	32:22	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.3	32.2	40%-130%	0.49	29:41	V___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.4	34.1	40%-130%	0.49	28:58	V___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.86	20:58	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.18	29:28	___

Data Reviewer: _____ 09/11/97

X237_PSR v2.00, LARS 6.10.04

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Printed: 14:58 09/11/97

Data Review By: Initial ... Date ... Calculated Noise Area: 1.67

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 S975816B.dbf
09/11/97 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				0.820-1.101			
304-306		DC	NL	0:00		0.67	1.12			0.000			
		DC	SN	16:53	RO	0.63	1.59			0.829			
		DC	SN	17:47	RO	0.46	0.83			0.873			
		DC	SN	18:44	RO	1.58	1.38			0.920			
		DC	SN	19:11	RO	1.03	3.65			0.942			
		DC	SN	19:53	RO	0.55	3.03			0.976			
	D	D	SN	20:24		0.77	6.03			1.002	2378-TCDF		AN
		DC	SN	21:54		0.65	2.58			1.075			
304-306			0	Peaks			0.00						
13C12-TCDF						0.65-0.89				0.951-1.049			
316-318		DC	NL	0:00	RO	0.14	0.16			0.000			
		DC	WL	18:02	RO	0.23	1.06			0.885			
		DC	WL	19:10	RO	0.58	7.36			0.941			
		DC	WL	19:20	RO	0.58	2.41			0.949			
		DC	SN	19:30		0.69	3.05			0.957			
				19:51		0.76	12.39	5.36	7.03	0.975			
				20:22		0.75	2,231.29	953.97	1,277.32	1.000	13C12-2378-TCDF		ISO
		DC	WH	21:41	RO	1.36	3.03			1.065			
		DC	WH	22:40	RO	0.94	3.82			1.113			
316-318			2	Peaks			2,243.68						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.853-1.059			
320-322		DC	NL	0:00	RO	5.25	0.14			0.000			
				18:16	RO	0.90	5.93	3.02	3.35	0.862			
		DC	SN	18:27	RO	0.36	0.62			0.871			
		DC	SN	18:55	RO	0.23	0.32			0.893			
		DC	SN	19:03	RO	0.91	2.12			0.899			
		DC	SN	19:22		0.66	1.11			0.914			
		DC	SN	19:39	RO	3.07	0.50			0.928			
		DC	SN	19:52	RO	0.57	1.93			0.938			
		DC	SN	20:07	RO	1.95	1.12			0.950			
		DC	SN	20:37	RO	0.98	1.06			0.973			
		DC	SN	20:51	RO	0.59	0.39			0.984			
		DC	SN	21:12	RO	0.33	1.75			1.001	2378-TCDD		AN
		DC	SN	21:36	RO	0.50	1.40			1.020			
		DC	SN	21:58	RO	0.52	0.90			1.037			
		DC	SN	22:07	RO	1.16	0.34			1.044			
		DC	SN	22:09	RO	1.98	0.99			1.046			
320-322			1	Peak			5.93						

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										0.906-1.094			
328	DC	NL		0:00			0.09			0.000			
	DC	WL		18:08			0.75			0.856			
	DC	WL		18:35			2.67			0.877			
	DC	WL		18:44			2.10			0.884			
				19:39			70.71	70.71		0.928			
	DC	SN		20:14			0.59			0.955			
	DC	SN		20:55			0.84			0.987			
				21:13			1,299.45	1,299.45		1.002	37Cl-TCDD		SUR1
	DC	SN		21:27			1.92			1.013			
	DC	SN		21:32			1.97			1.017			
				21:41			2.23	2.23		1.024			
	DC	SN		21:48			1.30			1.029			
	DC	SN		22:05			1.38			1.042			
	DC	SN		22:12			0.90			1.048			
	DC	SN		22:31			1.27			1.063			
	DC	SN		22:44			1.21			1.073			
328			3	Peaks			1,372.39						
13C12-TCDD					0.65-0.89					0.906-1.094			
332-334	DC	NL		0:00	RO	22.13	0.14			0.000			
				19:52	RO	0.90	6.97	3.53	3.94	0.938			
				20:58		0.86	3,420.53	1,580.25	1,840.28	0.990	13C12-1234-TCDD		RS1
				21:11		0.80	1,251.49	555.65	695.84	1.000	13C12-2378-TCDD		IS1
				21:35	RO	1.06	22.05	13.26	12.46	1.019			
332-334			4	Peaks			4,701.04						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF					1.32-1.78					0.907-1.078			
340-342	DC	NL		0:00	RO	0.16	0.10			0.000			
	DC	SN		22:35	RO	0.93	2.83			0.914			
	DC	SN		22:42	RO	0.24	0.41			0.919			
	DC	SN		23:11	RO	0.36	0.72			0.939			
	DC	SN		23:58	RO	1.87	2.40			0.970			
	DC	SN		24:11	RO	10.79	0.48			0.979			
M				24:42	RO	0.95	5.45	3.31	3.49	1.000	12378-PeCDF		AN
	DC	SN		24:53	RO	1.10	3.47			1.007			
D	D	SN		25:02	RO	1.15	5.35			1.013			
	DC	SN		25:15	RO	0.25	0.72			1.022			
				25:28		1.49	14.41	8.62	5.79	1.031	23478-PeCDF		AN
	DC	SN		25:37	RO	1.95	5.10			1.037			
	DC	SN		25:55	RO	3.02	1.43			1.049			
	DC	SN		26:15	RO	3.90	1.22			1.063			
	DC	SN		26:28	RO	0.77	2.37			1.072			
	DC	WH		26:50	RO	0.70	1.66			1.086			
	DC	WH		27:00	RO	1.15	1.55			1.093			
340-342			2	Peaks			19.86						
13C12-PeCDF					1.32-1.78					0.838-1.162			
352-354	DC	NL		0:00	RO	0.88	0.12			0.000			
				23:48		1.51	9.61	5.78	3.83	0.964			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				24:20		1.38	6.69	3.88	2.81	0.985			
				24:42		1.65	1,740.67	1,084.59	656.08	1.000	13C12-PeCDF 123	IS2	
				24:53	RO	1.81	12.93	9.18	5.07	1.007			
				25:00		1.55	13.81	8.39	5.42	1.012			
				25:27		1.49	1,897.18	1,135.82	761.36	1.030	13C12-PeCDF 234	SUR2	
	DC	SN		25:44	RO	2.86	3.75			1.042			
	DC	SN		25:51	RO	1.16	3.04			1.047			
				26:28	RO	0.92	5.71	3.47	3.79	1.072			
352-354			7	Peaks			3,686.60						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD				1.32-1.78						0.921-1.026			
356-358	DC	NL		0:00	RO	13.80	0.13			0.000			
				23:58	RO	0.31	9.94	6.04	19.68	0.928			
	DC	SN		24:27	RO	7.11	0.46			0.946			
				24:44		1.36	8.65	4.98	3.67	0.957			
	DC	SN		24:50	RO	3.34	0.97			0.961			
				25:04	RO	1.23	6.27	3.81	3.09	0.970			
	DC	SN		25:17		1.62	2.80			0.979			
	DC	SN		25:31	RO	3.38	2.70			0.988			
	DC	SN		25:50	RO	2.49	4.82			1.000	12378-PeCDD	AN	
	DC	SN		25:59	RO	3.11	0.94			1.006			
	DC	SN		26:10	RO	0.88	0.86			1.013			
	DC	WH		26:40	RO	1.01	1.45			1.032			
356-358			3	Peaks			24.86						
13C12-PeCDD				1.32-1.78						0.845-1.155			
368-370	DC	NL		0:00	RO	1.29	0.15			0.000			
	DC	SN		24:13	RO	1.95	1.50			0.937			
	DC	SN		25:03	RO	0.62	1.63			0.970			
				25:50		1.45	1,189.98	703.40	486.58	1.000	13C12-PeCDD 123	IS3	
				25:59		1.58	119.39	73.12	46.27	1.006			
	DC	SN		26:08	RO	0.93	1.74			1.012			
	DC	SN		26:14	RO	3.75	0.61			1.015			
	DC	SN		26:23	RO	2.91	1.38			1.021			
368-370			2	Peaks			1,309.37						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.955-1.052			
374-376	DC	NL		0:00	RO	1.86	1.57			0.000			
				27:21	RO	1.48	8.49	5.60	3.79	0.961			
				27:32	RO	1.46	18.66	12.19	8.33	0.967			
	DC	SN		27:40	RO	1.04	1.73			0.972			
D	D	SN		27:49		1.31	5.06			0.977			
	DC	SN		27:58		1.32	4.36			0.982			
				28:21		1.43	32.67	19.24	13.43	0.996	123478-HxCDF	AN	
				28:28		1.10	15.58	8.16	7.42	1.000	123678-HxCDF	AN	
D	D	SN		28:34		1.18	4.65			1.004			
D	D	SN		28:47	RO	0.79	4.17			1.011			
				28:59		1.21	16.81	9.22	7.59	1.018	234678-HxCDF	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.
		DC	SN	29:10		1.14	1.39			1.025			
		DC	SN	29:23	RO	6.40	0.67			1.032			
		DC	SN	29:29	RO	3.24	0.47			1.036			
		DC	SN	29:33	RO	3.42	0.27			1.038			
	D	D	SN	29:41		1.24	6.64			1.043	123789-HxCDF	AN	
	D	D	SN	29:46	RO	1.56	4.88			1.046			
		DC	WH	30:02	RO	2.87	0.67			1.055			
		DC	WH	30:05	RO	0.70	0.47			1.057			
		DC	WH	30:09	RO	2.30	0.60			1.059			
374-376				5 Peaks			92.21						
					0.43-0.59					0.859-1.141			
13C12-HxCDF										0.000			
384-386		DC	NL	0:00	RO	0.37	2.78			0.966			
		DC	SN	27:30	RO	0.41	4.91						
				28:21		0.48	1,360.71	441.73	918.98	0.996	13C12-HxCDF 478	SUR3	
				28:28		0.48	1,558.16	506.87	1,051.29	1.000	13C12-HxCDF 678	IS4	
		DC	SN	28:43	RO	0.94	2.22			1.009			
		DC	SN	28:50	RO	0.38	1.69			1.013			
				28:58		0.49	1,420.56	467.71	952.85	1.018	13C12-HxCDF 234	ALT2	
		DC	SN	29:10	RO	1.35	1.65			1.025			
				29:41		0.49	1,164.20	383.10	781.10	1.043	13C12-HxCDF 789	ALT1	
		DC	SN	29:54	RO	1.00	2.49			1.050			
		DC	SN	29:58	RO	2.07	1.56			1.053			
		DC	SN	30:08		0.58	2.27			1.059			
384-386				4 Peaks			5,503.63						

---------- Above: HxCDF / HxCDD Follows ----------

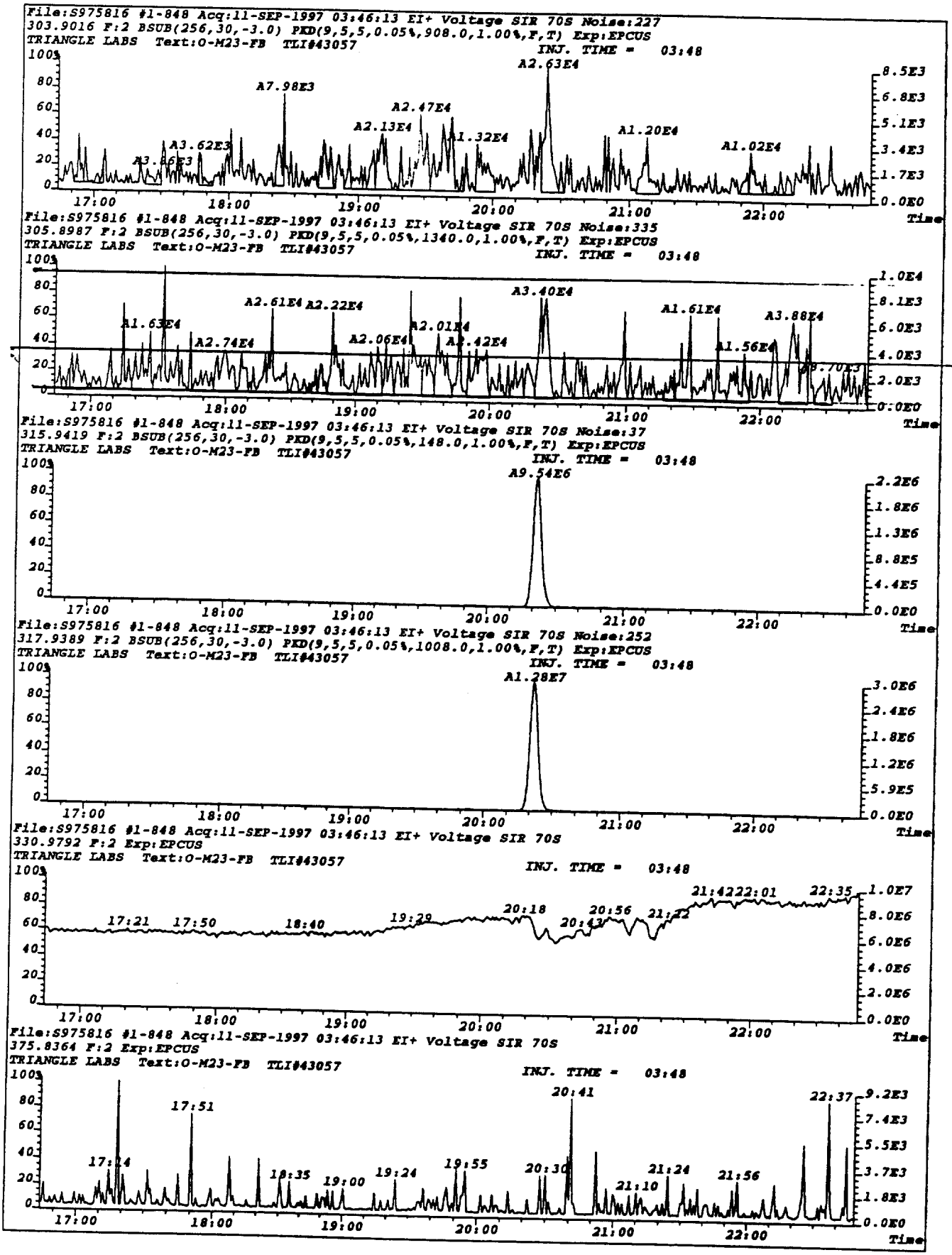
					1.05-1.43					0.950-1.015			
HxCDD										0.000			
390-392		DC	NL	0:00	RO	0.63	0.65			0.957			
	D	D	SN	27:55		1.06	4.81			0.959			
		DC	SN	28:00	RO	0.38	0.45			0.961			
		DC	SN	28:03		1.37	0.45			0.964			
		DC	SN	28:08	RO	0.66	0.52			0.968			
		DC	SN	28:15	RO	0.23	0.27						
				28:21		1.26	24.46	13.65	10.81	0.971			
		DC	SN	28:26		1.16	2.03			0.974			
				28:35	RO	0.97	10.06	5.57	5.76	0.979			
		DC	SN	28:43	RO	2.02	1.01			0.984			
		DC	SN	28:51	RO	0.77	0.36			0.989			
		DC	SN	28:54	RO	0.38	0.70			0.990			
		DC	SN	29:06	RO	0.62	2.85			0.997	123478-HxCDD	AN	
	M			29:11	RO	1.48	7.53	4.97	3.36	1.000	123678-HxCDD	AN	
		DC	SN	29:20	RO	0.06	0.07			1.005			
	M			29:29	RO	0.95	8.13	4.50	4.74	1.010	123789-HxCDD	AN	PR
		DC	WH	29:57	RO	3.29	0.63			1.026			
390-392				4 Peaks			50.18						
					1.05-1.43					0.966-1.034			
13C12-HxCDD										0.000			
402-404		DC	NL	0:00	RO	0.52	0.79						
				28:35		1.35	5.84	3.36	2.48	0.979			
				29:06		1.24	1,192.66	659.69	532.97	0.997	13C12-HxCDD 478	SUR4	

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				29:11		1.14	1,488.29	794.20	694.09	1.000	13C12-HxCDD 678	IS5	
				29:28		1.18	3,734.26	2,022.59	1,711.67	1.010	13C12-HxCDD 789	RS2	
	DC	SN	29:43	RO	0.63	3.74				1.018			
402-404			4 Peaks			6,421.05							
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF					0.88-1.20					0.995-1.044			
408-410	DC	NL	0:00	RO	2.52	0.67				0.000			
M			31:11	RO	1.32	35.70	23.10	17.50	1.001	1234678-HpCDF	AN	PR	
			31:24		1.14	10.15	5.41	4.74	1.007				
			31:31		1.00	10.97	5.48	5.49	1.011				
	DC	SN	32:08	RO	3.45	0.45			1.031				
			32:24		1.02	13.14	6.62	6.52	1.040	1234789-HpCDF	AN		
	DC	WH	32:39	RO	3.94	0.71			1.048				
408-410			4 Peaks			69.96							
13C12-HpCDF					0.37-0.51					0.936-1.128			
418-420	DC	NL	0:00	RO	1.42	0.96				0.000			
			31:10		0.42	1,082.87	322.74	760.13	1.000	13C12-HpCDF 678	IS6		
	DC	SN	32:02	RO	0.83	1.41				1.028			
			32:22		0.43	712.92	212.82	500.10	1.039	13C12-HpCDF 789	SUR5		
	DC	SN	32:39	RO	1.71	1.68				1.048			
	DC	SN	32:48		0.47	2.77				1.052			
418-420			2 Peaks			1,795.79							
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD					0.88-1.20					0.976-1.006			
424-426	DC	NL	0:00	RO	0.81	0.69				0.000			
	DC	SN	31:17	RO	0.32	0.57				0.977			
			31:26	RO	1.29	13.16	8.29	6.45	0.981				
	DC	SN	31:51	RO	3.44	0.51				0.994			
M			32:03		1.02	20.03	10.10	9.93	1.001	1234678-HpCDD	AN		
424-426			2 Peaks			33.19							
13C12-HpCDD					0.88-1.20					0.969-1.031			
436-438	DC	NL	0:00		1.00	3.24				0.000			
			32:02		0.98	1,162.82	574.07	588.75	1.000	13C12-HpCDD 678	IS7		
436-438			1 Peak			1,162.82							
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF					0.76-1.02					0.884-1.116			
442-444	DC	NL	0:00		1.00	0.12				0.000			
	DC	SN	30:55	RO	0.22	0.47				0.895			
	DC	SN	31:13	RO	0.22	0.68				0.904			
	DC	SN	31:17	RO	3.50	0.45				0.906			
	DC	SN	31:29	RO	1.63	1.17				0.912			
	DC	SN	31:48	RO	1.89	1.02				0.921			
	DC	SN	32:16	RO	2.46	1.30				0.934			
	DC	SN	32:25		1.00	0.84				0.939			

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		32:36	RO	0.54	0.28			0.944			
	DC	SN		32:52		0.96	1.37			0.952			
	DC	SN		33:00	RO	0.71	0.74			0.956			
	DC	SN		33:04	RO	0.74	1.23			0.958			
	DC	SN		33:10	RO	0.40	1.04			0.960			
	DC	SN		33:47	RO	0.38	0.79			0.978			
	DC	SN		34:15	RO	1.49	1.19			0.992			
				34:39		0.88	19.66	9.19	10.47	1.003	OCDF		AN
	DC	SN		34:55	RO	8.43	0.57			1.011			
	DC	SN		35:13	RO	0.23	0.30			1.020			
	DC	SN		35:30	RO	1.65	0.49			1.028			
442-444			1 Peak				19.66						
OCDD						0.76-1.02				0.884-1.116			
458-460	DC	NL		0:00	RO	1.17	0.11			0.000			
				34:33		0.86	22.70	10.48	12.22	1.000	OCDD		AN
	DC	SN		34:59	RO	0.48	1.78			1.013			
458-460			1 Peak				22.70						
13C12-OCDD						0.76-1.02				0.995-1.005			
470-472	DC	NL		0:00		1.00	0.16			0.000			
				34:32		0.81	1,430.19	638.80	791.39	1.000	13C12-OCDD		IS8
470-472			1 Peak				1,430.19						

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
		E-Ether Interference

*** End of Report ***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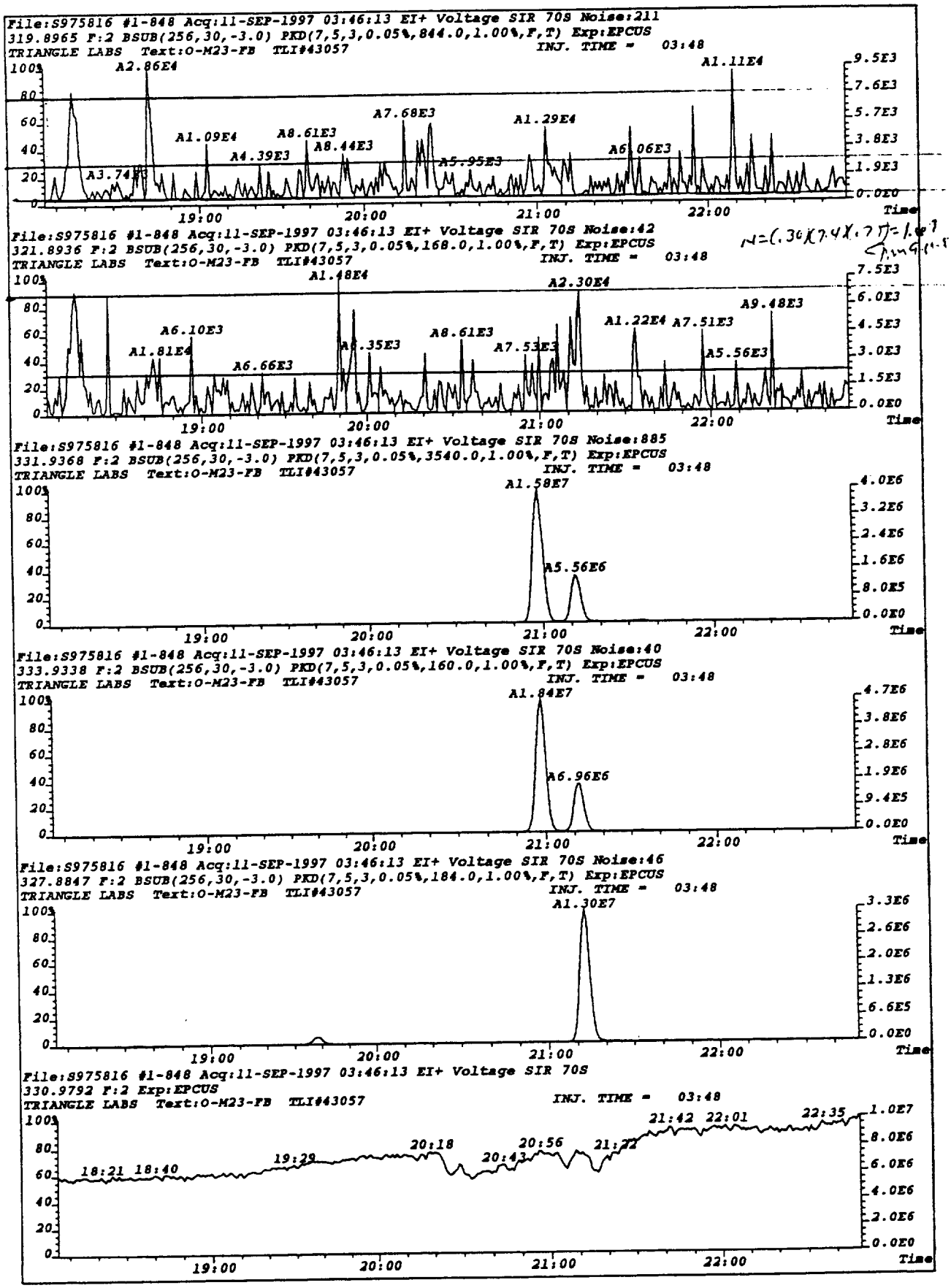
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,908.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A7.98E3
A3.62E3
A2.47E4
A2.13E4
A2.63E4
A1.32E4
A1.20E4
A1.02E4
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:335
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1340.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.63E4
A2.74E4
A2.61E4
A2.22E4
A2.06E4
A2.01E4
A2.42E4
A3.40E4
A1.61E4
A1.56E4
A3.88E4
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:37
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A9.54E6
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:252
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1008.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.28E7
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
17:21
17:50
18:40
19:29
20:18
20:43
20:56
21:42
22:01
22:35
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
17:14
17:51
18:35
19:00
19:24
19:55
20:30
20:41
21:10
21:24
21:56
22:37
Time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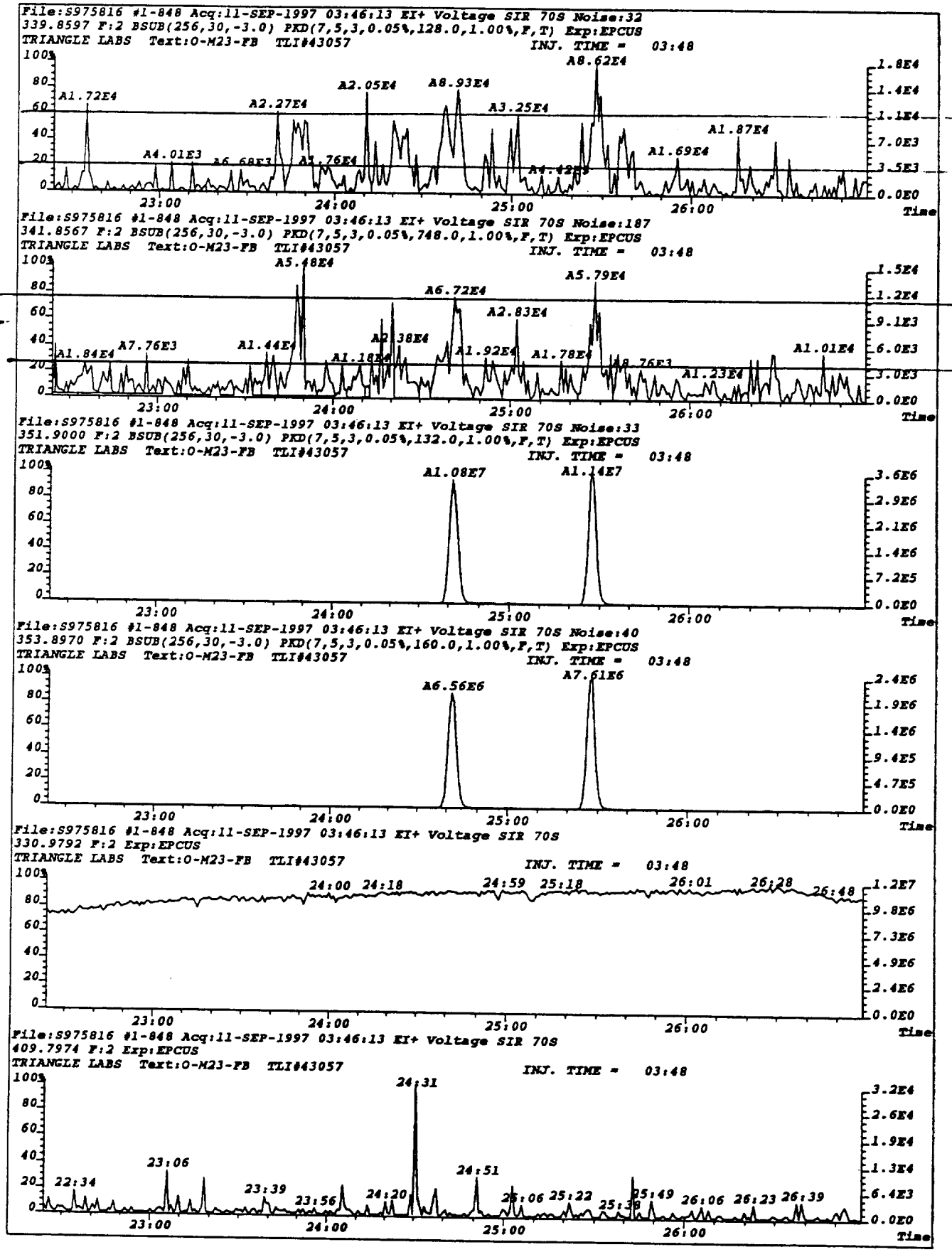
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,844.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A2.86E4
A1.09E4
A8.61E3
A8.44E3
A4.39E3
A7.68E3
A1.29E4
A1.11E4
A6.06E3
A5.95E3
A3.74E3
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:42
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.48E4
A2.30E4
A6.10E3
A1.81E4
A6.66E3
A8.61E3
A7.53E3
A1.22E4
A7.51E3
A9.48E3
A5.56E3
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:885
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3540.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.58E7
A5.56E6
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:40
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,160.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.84E7
A6.96E6
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:46
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,184.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.30E7
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
18:21 18:40
19:29
20:18
20:43
20:56
21:22
21:42 22:01
22:35
19:00
20:00
21:00
22:00
Time


File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:32
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.72E4
A4.01E3
A2.27E4
A2.05E4
A8.93E4
A3.25E4
A8.62E4
A1.87E4
A1.69E4
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:187
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,748.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.84E4
A7.76E3
A1.44E4
A5.48E4
A6.72E4
A2.83E4
A5.79E4
A1.01E4
A1.23E4
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:33
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.08E7
A1.14E7
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:40
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,160.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A6.56E6
A7.61E6
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
24:00 24:18 24:59 25:18 26:01 26:28 26:48
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
24:31
23:06
22:34
23:39
23:56
24:20
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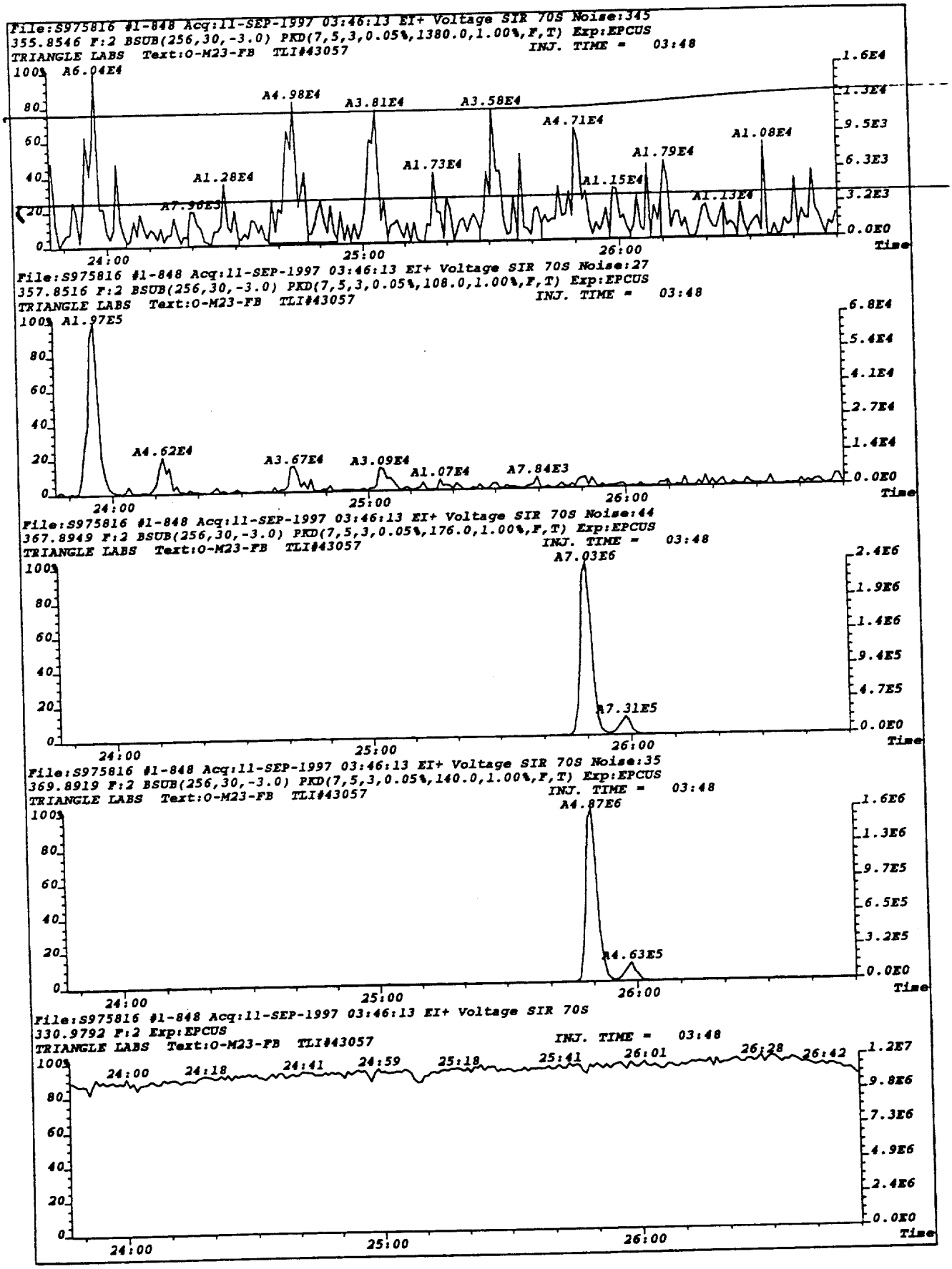
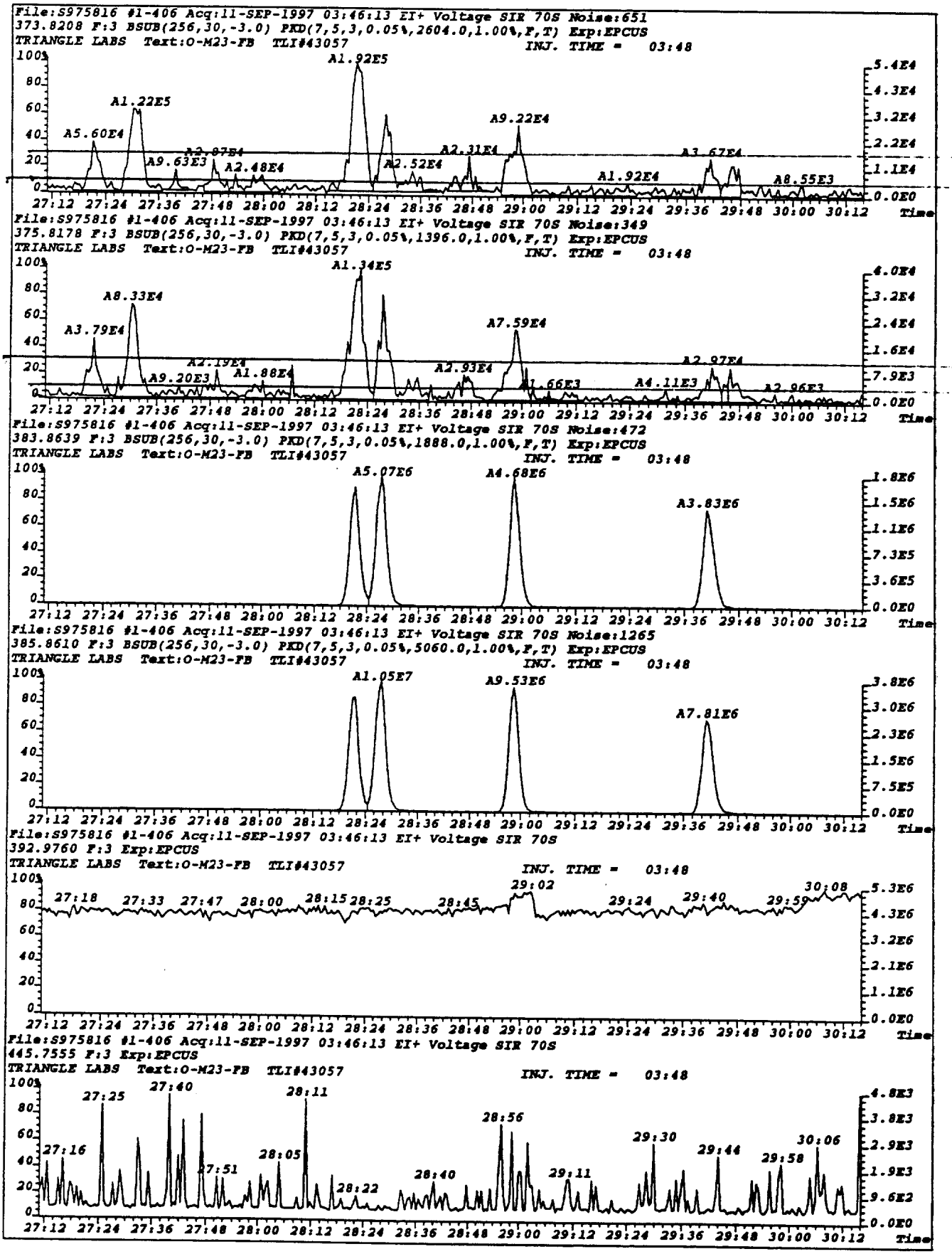
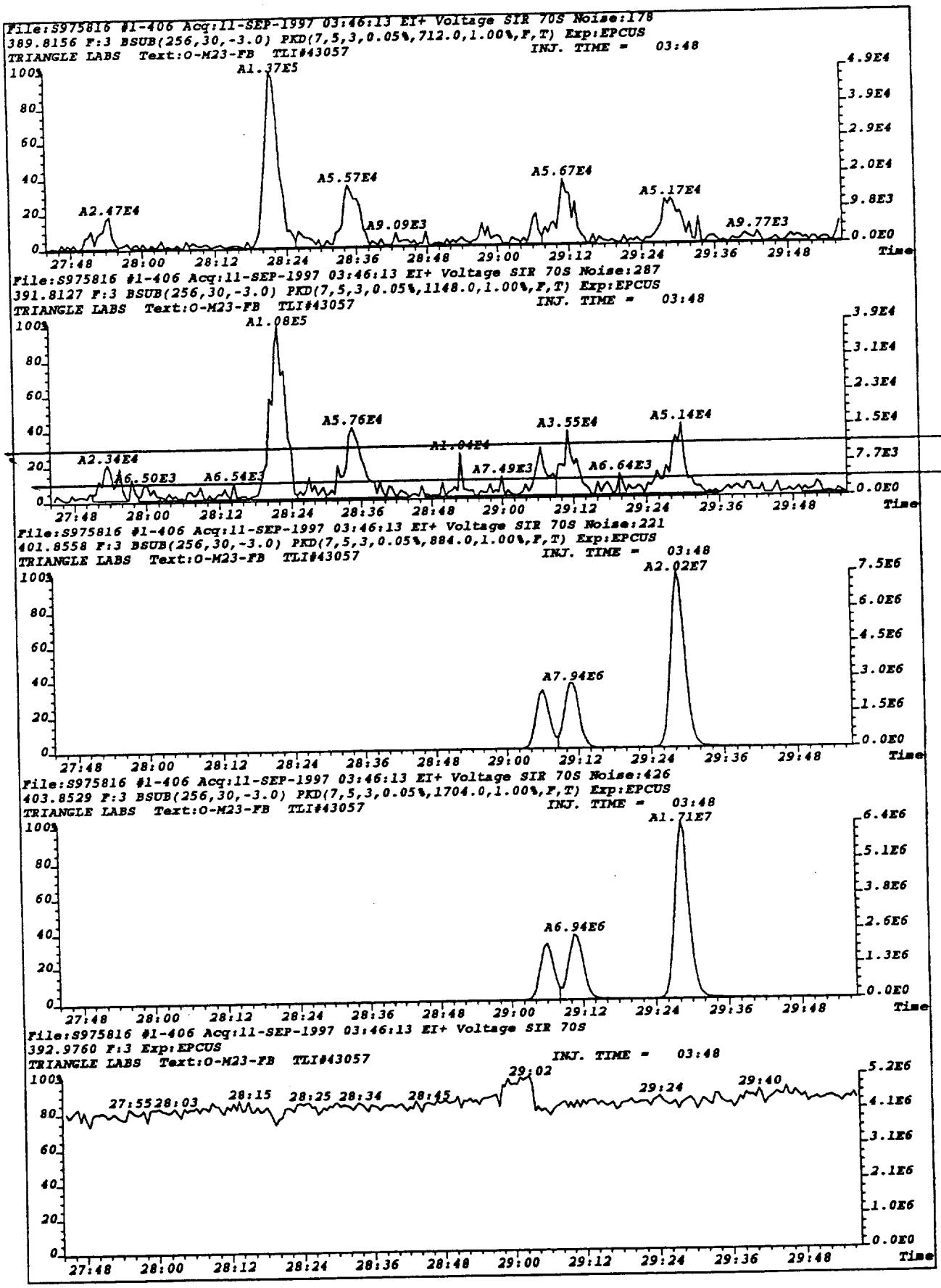
25:06 25:22 25:38 25:49 26:06 26:23 26:39
Time


File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:345
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1380.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A6.04E4
A4.98E4
A3.81E4
A3.58E4
A4.71E4
A1.79E4
A1.08E4
A1.28E4
A1.73E4
A1.15E4
A1.13E4
A7.90E3
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:27
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,108.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.97E5
A4.62E4
A3.67E4
A3.09E4
A1.07E4
A7.84E3
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:44
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,176.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A7.03E6
A7.31E5
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:35
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A4.87E6
A4.63E5
Time
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
24:00
24:18
24:41
24:59
25:18
25:41
26:01
26:28
26:42
Time


File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:651
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2604.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.92E5
A1.22E5
A5.60E4
A9.22E4
A9.63E3
A2.48E4
A2.52E4
A2.31E4
A1.92E4
A8.55E3
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:349
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1396.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.34E5
A8.33E4
A3.79E4
A7.59E4
A9.20E3
A1.88E4
A2.93E4
A4.11E3
A2.96E3
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:472
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1888.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A5.07E6
A4.68E6
A3.83E6
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:1265
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5060.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.05E7
A9.53E6
A7.81E6
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
27:18
27:33
27:47
28:00
28:15
28:25
28:45
29:02
29:24
29:40
29:59
30:08
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
27:16
27:25
27:40
27:51
28:05
28:11
28:22
28:40
28:56
29:11
29:30
29:44
29:58
30:06
27:12 27:24 27:36 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
Time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389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,712.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.37E5
A2.47E4
A5.57E4
A9.09E3
A5.67E4
A5.17E4
A9.77E3
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:287
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1148.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.08E5
A2.34E4
A6.50E3
A6.54E3
A5.76E4
A1.04E4
A7.49E3
A3.55E4
A6.64E3
A5.14E4
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:221
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,884.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A2.02E7
A7.94E6
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:426
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1704.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.71E7
A6.94E6
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
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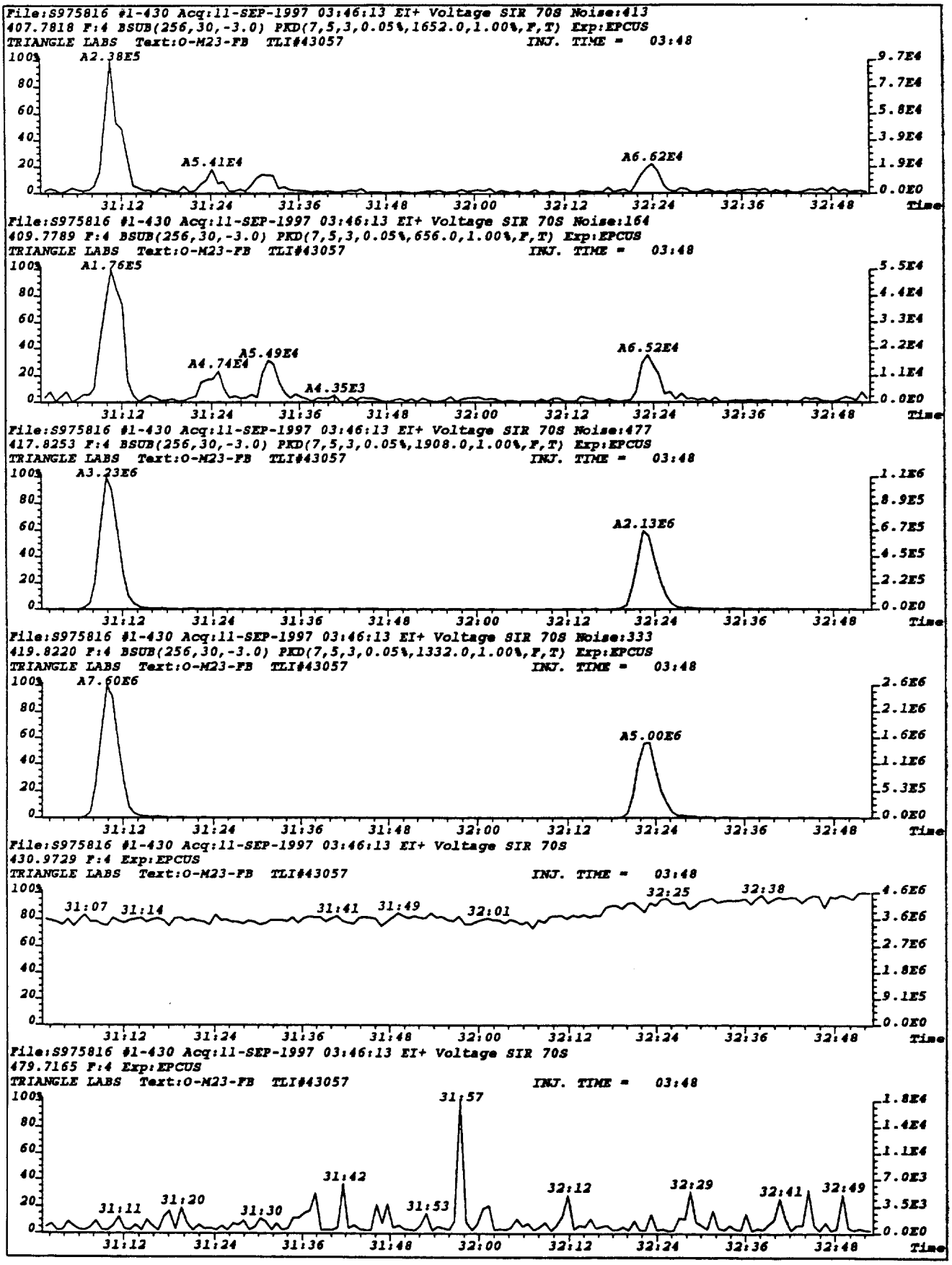
Time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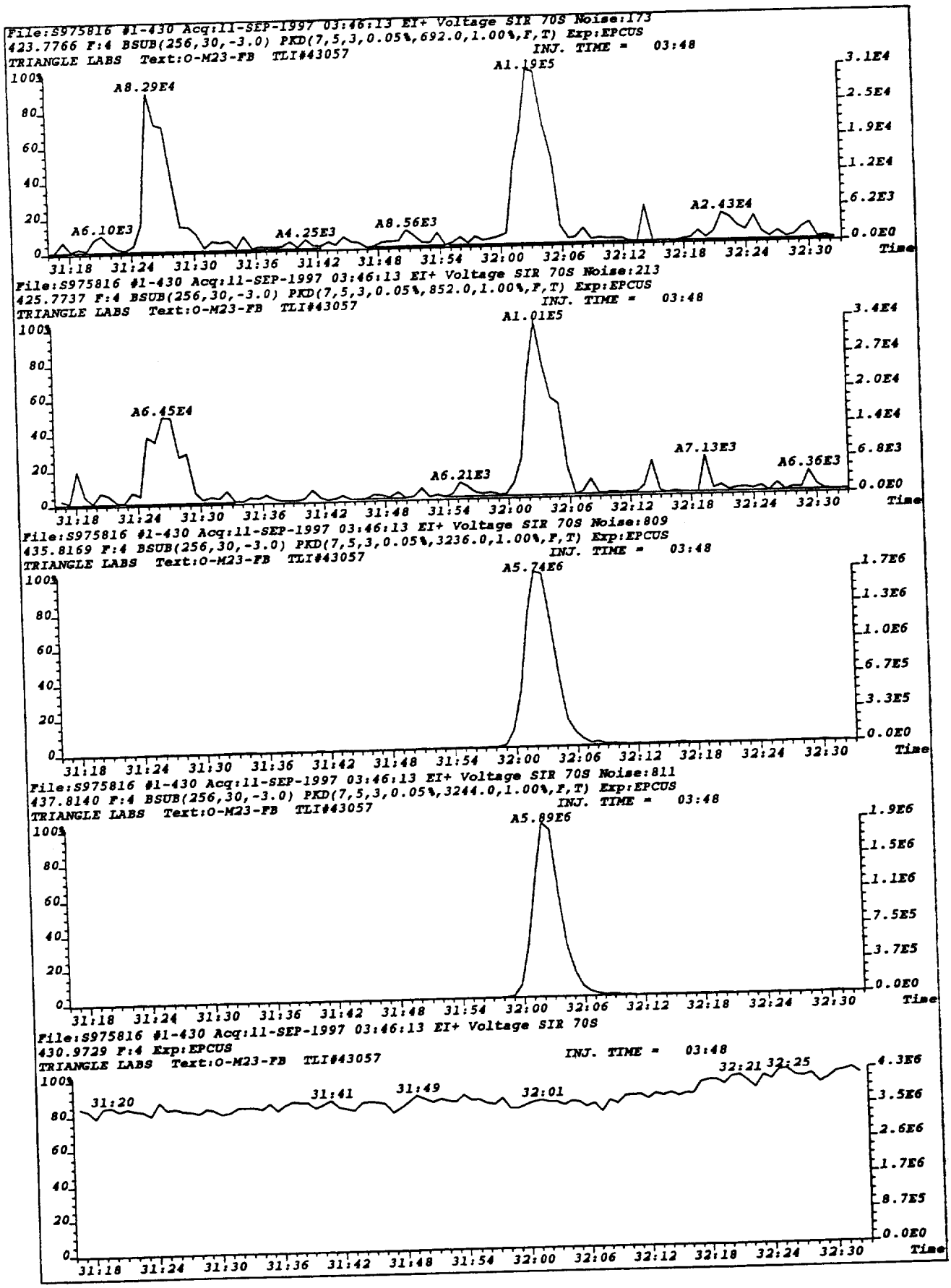
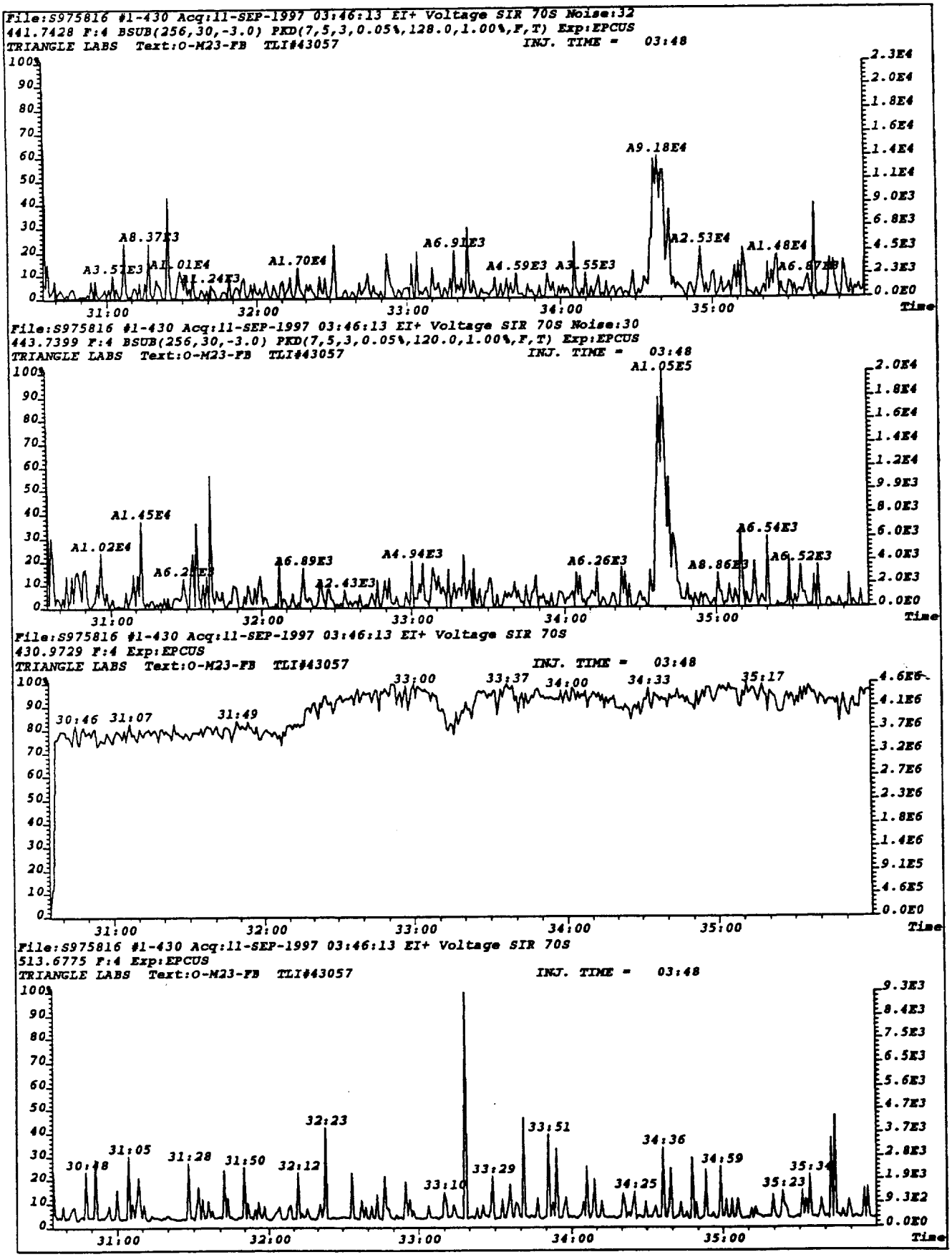
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1652.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
A2.38E5
A5.41E4
A6.62E4
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:164
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,656.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
A1.76E5
A4.74E4
A5.49E4
A4.35E3
A6.52E4
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:477
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1908.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
A3.23E6
A2.13E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:333
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1332.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
A7.60E6
A5.00E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
31:07
31:14
31:41
31:49
32:01
32:25
32:38
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057 INJ. TIME = 03:48
31:11
31:20
31:30
31:42
31:53
31:57
32:12
32:29
32:41
32:49
Time


File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:173
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,692.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A8.29E4
A1.19E5
A6.10E3
A4.25E3
A8.56E3
A2.43E4
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:213
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,852.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.01E5
A6.45E4
A6.21E3
A7.13E3
A6.36E3
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:809
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3236.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A5.74E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:811
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3244.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A5.89E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
31:20
31:41
31:49
32:01
32:21
32:25
Time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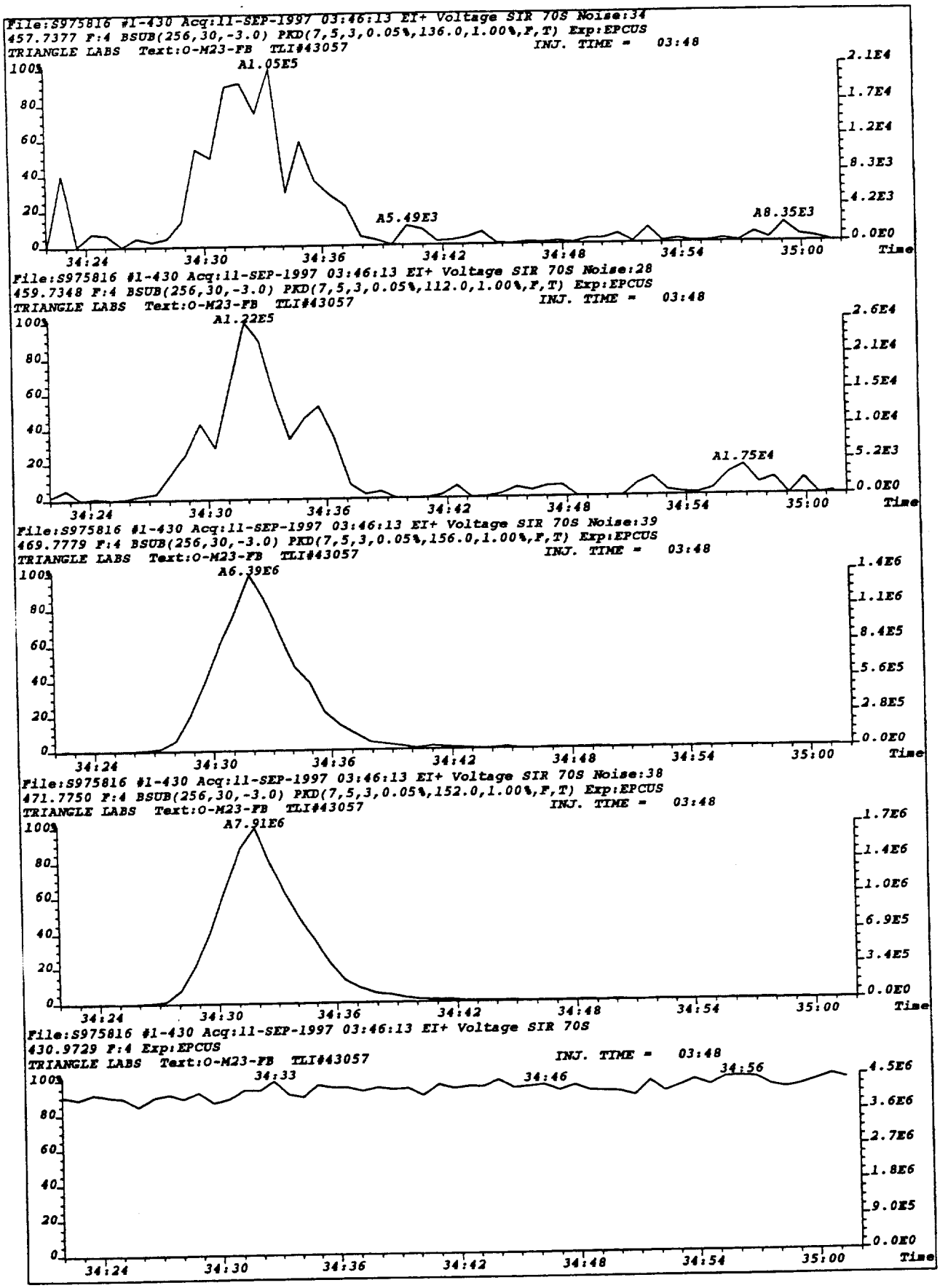
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A9.18E4
A8.37E3
A3.51E3
A1.01E4
A1.24E3
A1.70E4
A6.91E3
A4.59E3
A3.55E3
A2.53E4
A1.48E4
A6.87E3
Time
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:30
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.05E5
A1.45E4
A1.02E4
A6.89E3
A4.94E3
A6.26E3
A8.86E3
A6.54E3
A6.52E3
Time
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
30:46
31:07
31:49
33:00
33:37
34:00
34:33
35:17
Time
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
30:48
31:05
31:28
31:50
32:12
32:23
33:10
33:29
33:51
34:25
34:36
34:59
35:23
35:34
Time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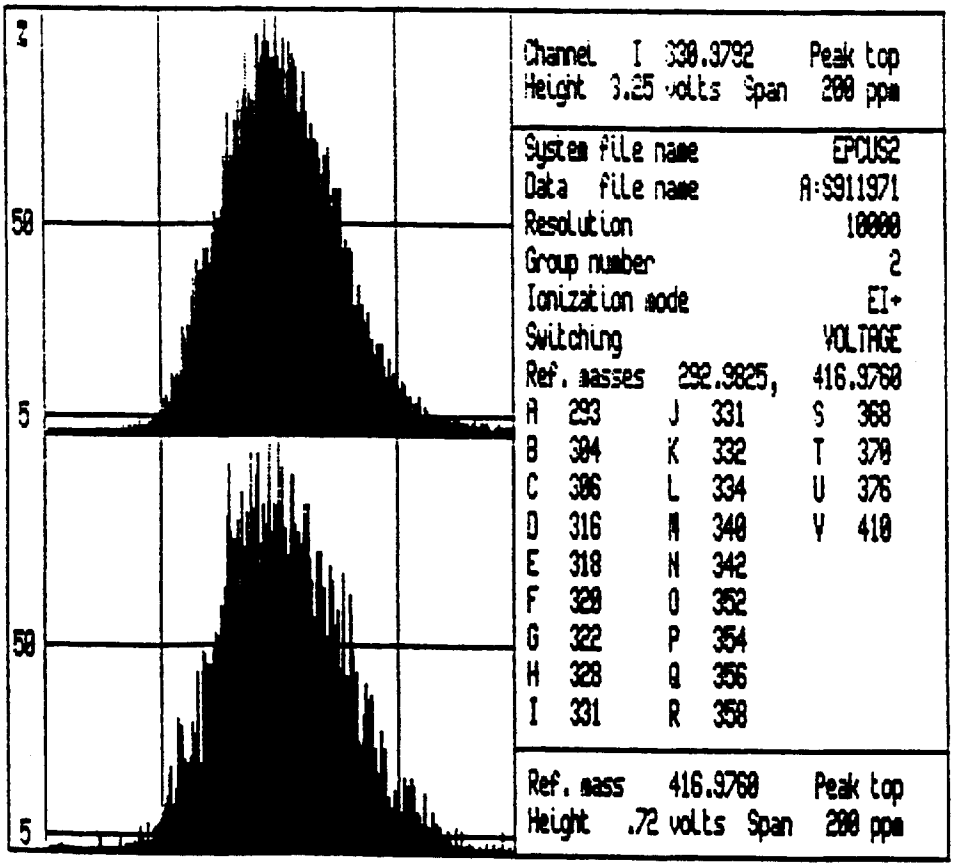
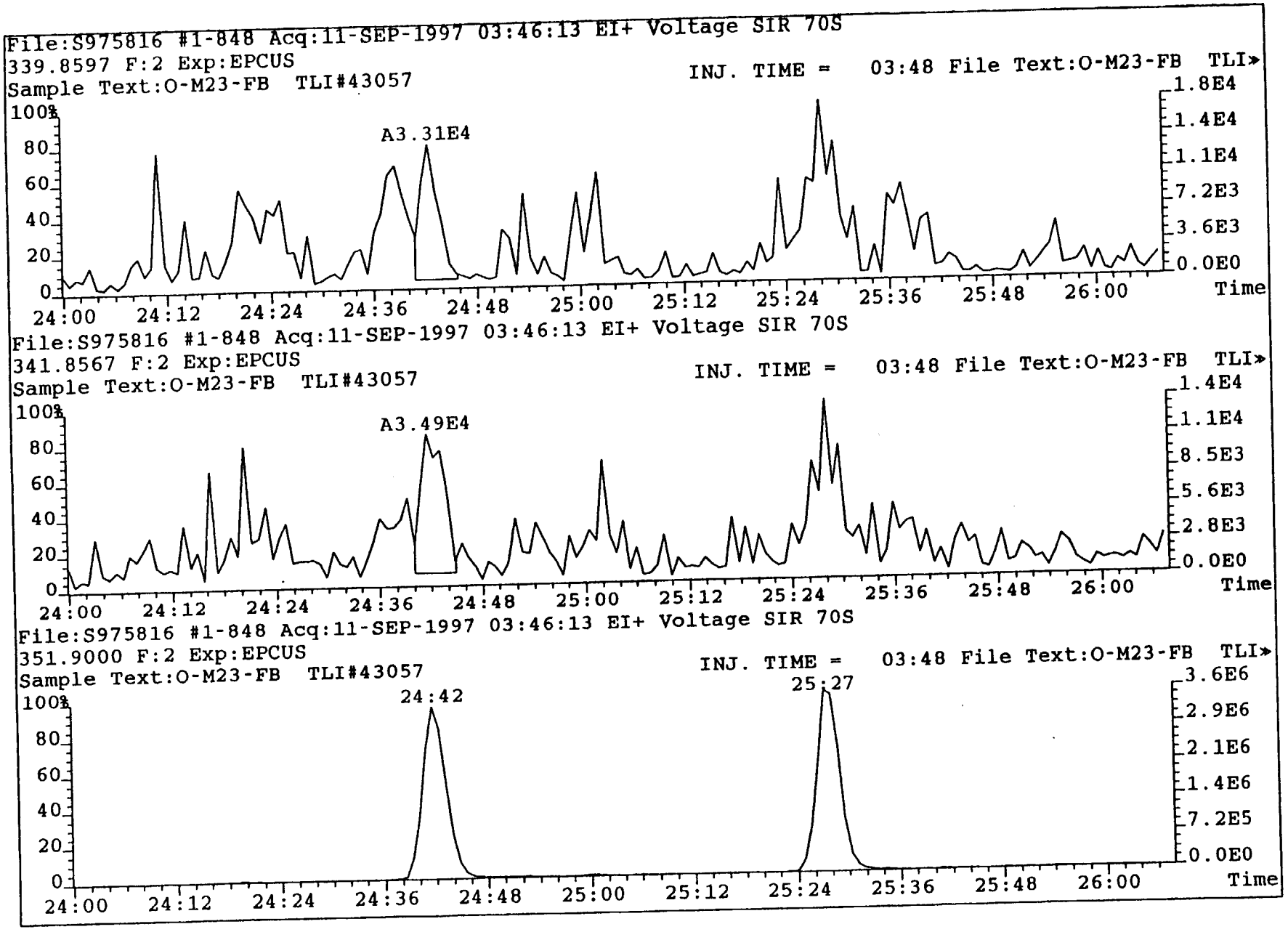
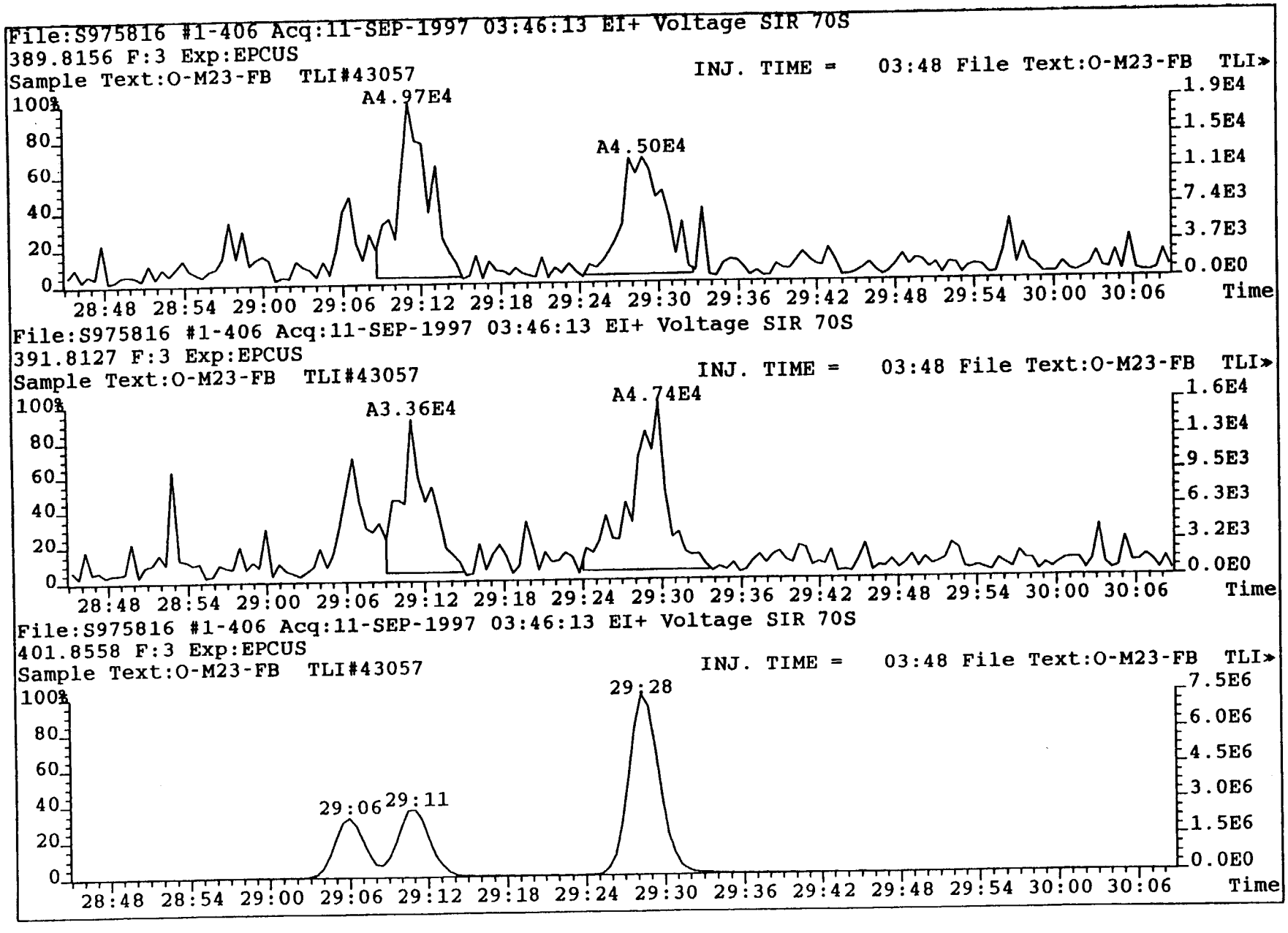
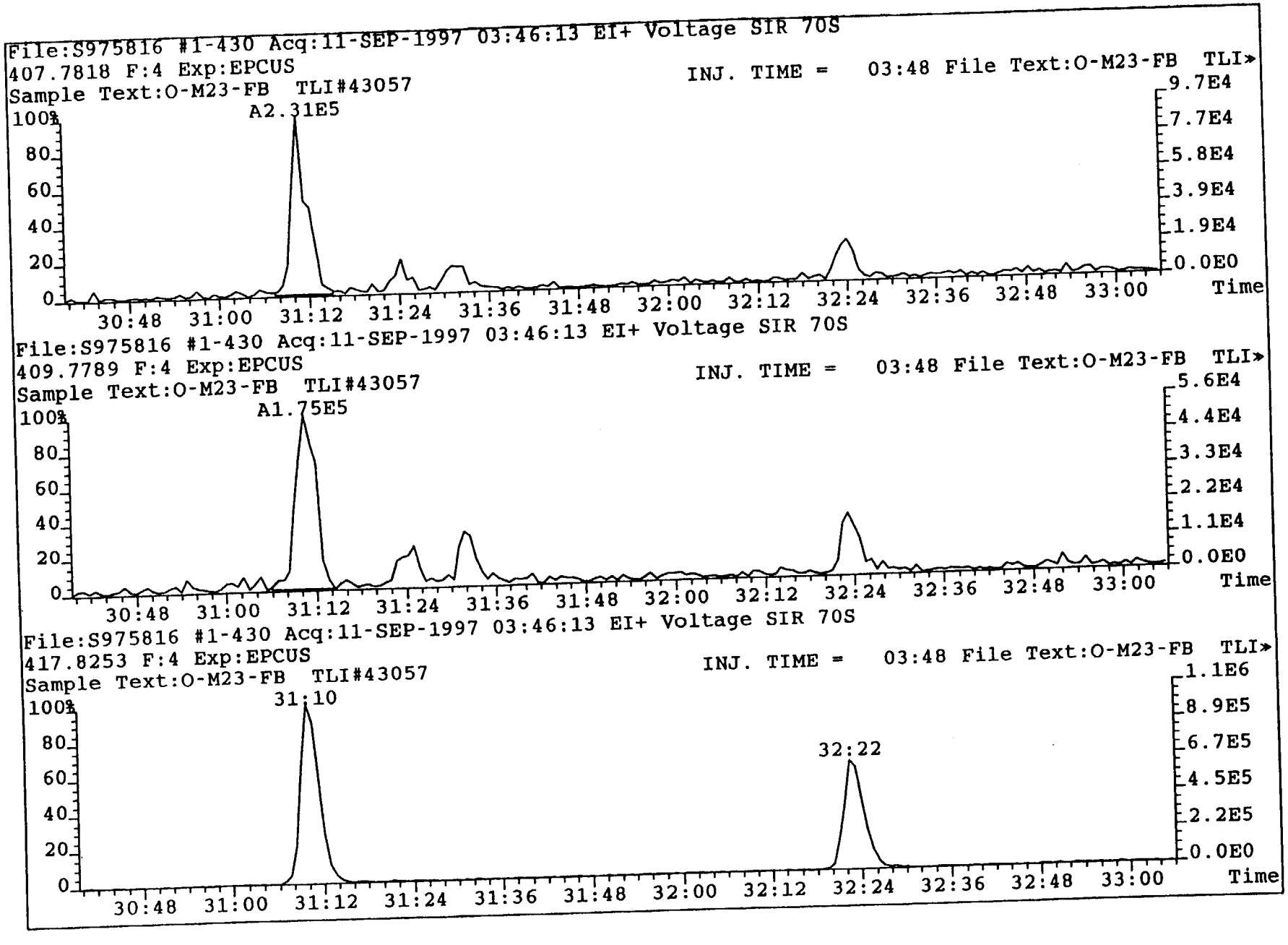
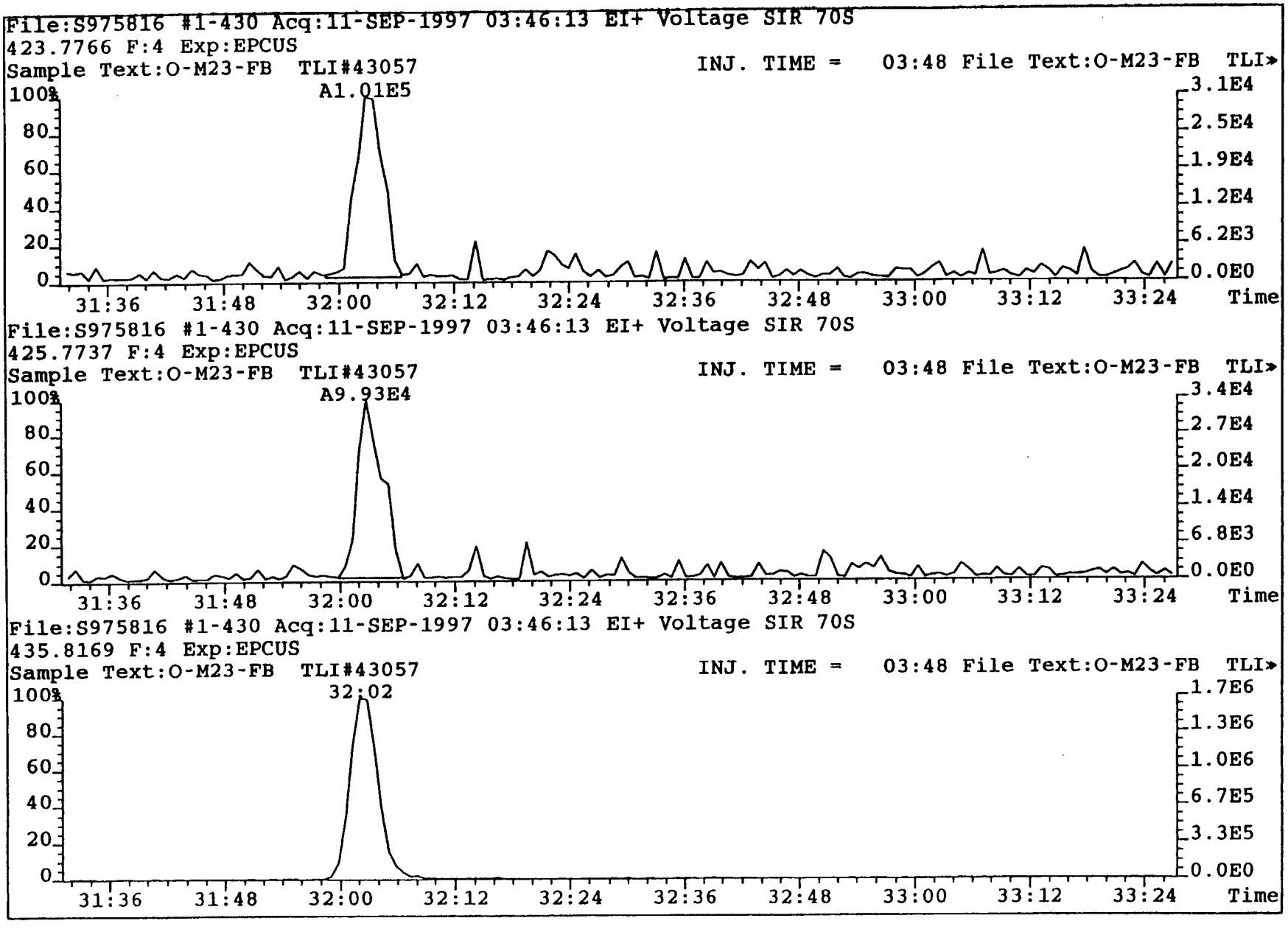
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.05E5
A5.49E3
A8.35E3
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:28
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,112.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A1.22E5
A1.75E4
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:39
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A6.39E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S Noise:38
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
A7.91E6
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-FB TLI#43057
INJ. TIME = 03:48
34:33
34:46
34:56
Time


%
50
5
50
5
Channel I 330.3792 Peak top
Height 3.25 volts Span 200 ppm
System file name EPCUS2
Data file name A:S911971
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 .72 volts Span 200 ppm


File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A3.31E4
100%
80
60
40
20
0
1.8E4
1.4E4
1.1E4
7.2E3
3.6E3
0.0E0
Time
24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A3.49E4
100%
80
60
40
20
0
1.4E4
1.1E4
8.5E3
5.6E3
2.8E3
0.0E0
Time
24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00
File:S975816 #1-848 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
24:42
25:27
100%
80
60
40
20
0
3.6E6
2.9E6
2.1E6
1.4E6
7.2E5
0.0E0
Time
24:00 24:12 24:24 24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00


File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
389.8156 F:3 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A4.97E4
A4.50E4
100%
80
60
40
20
0
1.9E4
1.5E4
1.1E4
7.4E3
3.7E3
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
391.8127 F:3 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A3.36E4
A4.74E4
100%
80
60
40
20
0
1.6E4
1.3E4
9.5E3
6.3E3
3.2E3
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06
Time
File:S975816 #1-406 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
401.8558 F:3 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
29:28
29:06
29:11
100%
80
60
40
20
0
7.5E6
6.0E6
4.5E6
3.0E6
1.5E6
0.0E0
28:48 28:54 29:00 29:06 29:12 29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06
Time


File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A2.31E5
100%
80
60
40
20
0
9.7E4
7.7E4
5.8E4
3.9E4
1.9E4
0.0E0
Time
30:48 31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A1.75E5
100%
80
60
40
20
0
5.6E4
4.4E4
3.3E4
2.2E4
1.1E4
0.0E0
Time
30:48 31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
31:10
32:22
100%
80
60
40
20
0
1.1E6
8.9E5
6.7E5
4.5E5
2.2E5
0.0E0
Time
30:48 31:00 31:12 31:24 31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00


File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A1.01E5
100%
80
60
40
20
0
3.1E4
2.5E4
1.9E4
1.2E4
6.2E3
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 Time
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
A9.93E4
100%
80
60
40
20
0
3.4E4
2.7E4
2.0E4
1.4E4
6.8E3
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 Time
File:S975816 #1-430 Acq:11-SEP-1997 03:46:13 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:O-M23-FB TLI#43057
INJ. TIME = 03:48 File Text:O-M23-FB TLI
32:02
100%
80
60
40
20
0
1.7E6
1.3E6
1.0E6
6.7E5
3.3E5
0.0E0
31:36 31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 Time

Pacific Environmental Services

TLI Project: 43057
Client Sample: O-M23-RB

Method 23 PCDD/PCDF Analysis (a)
Analysis File: S975817

Client Project:	ASPHALT PLANT "A"	Date Received:	08/29/97	Spike File:	SPX23704
Sample Matrix:	M23TRAIN	Date Extracted:	09/06/97	ICal:	SF56117
TLI ID:	181-27-7AB&*	Date Analyzed:	09/11/97	ConCal:	S975814
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% Lipid:	n/a
GC Column:	DB-5	Analyst:	HLM	% 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	0.01			1.70	25:51	
1,2,3,4,7,8-HxCDD	ND	0.006				
1,2,3,6,7,8-HxCDD	0.02			1.16	29:11	
1,2,3,7,8,9-HxCDD	EMPC		0.02			PR_
1,2,3,4,6,7,8-HpCDD	0.08			1.09	32:02	B_
1,2,3,4,6,7,8,9-OCDD	0.11			0.94	34:32	B_
2,3,7,8-TCDF	EMPC		0.006			B_
1,2,3,7,8-PeCDF	EMPC		0.008			
2,3,4,7,8-PeCDF	0.02			1.54	25:27	B_
1,2,3,4,7,8-HxCDF	0.06			1.25	28:20	PRB
1,2,3,6,7,8-HxCDF	0.02			1.19	28:28	B_
2,3,4,6,7,8-HxCDF	0.03			1.20	28:58	PRB
1,2,3,7,8,9-HxCDF	0.007			1.33	29:41	
1,2,3,4,6,7,8-HpCDF	0.11			0.99	31:11	B_
1,2,3,4,7,8,9-HpCDF	0.04			1.03	32:22	B_
1,2,3,4,6,7,8,9-OCDF	0.06			0.83	34:40	B_

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	EMPC			0.01	
Total PeCDD	0.05	3		0.06	
Total HxCDD	0.15	4		0.16	
Total HpCDD	0.13	2			
Total TCDF	EMPC			0.006	
Total PeCDF	0.02	1		0.05	
Total HxCDF	0.18	6		0.20	
Total HpCDF	0.17	3		0.20	

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TLI Project: 43057 — Method 23 PCDD/PCDF Analysis (a)
Client Sample: O-M23-RB — Analysis File: S975817

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.5	88.5	40%-130%	0.75	20:21	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.1	76.4	40%-130%	0.82	21:10	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.6	89.1	40%-130%	1.46	24:41	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4.0	99.3	40%-130%	1.55	25:49	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.0	74.0	40%-130%	0.46	28:27	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.1	78.2	40%-130%	1.22	29:11	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.3	56.7	25%-130%	0.43	31:10	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	2.5	61.3	25%-130%	1.01	32:01	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	4.9	60.9	25%-130%	0.79	34:32	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	4.3	107	70%-140%		21:12	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	4.1	102	70%-140%	1.49	25:27	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.6	90.2	70%-140%	0.48	28:20	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.7	91.6	70%-140%	1.22	29:05	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.6	89.0	70%-140%	0.44	32:22	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	2.7	66.8	40%-130%	0.46	29:40	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.1	76.9	40%-130%	0.48	28:58	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.88	20:58	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.20	29:28	—

Quality Control Notes:
* 181-83-1

Date Received (181-83-1): 09/05/97

Data Reviewer: _____ 09/12/97

X237_PSR v2.00, LARS 6.10.04

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Printed: 08:18 09/12/97

Initial ....Date...

Data Review By: CM 9/12/97 Calculated Noise Area: 1.44

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 S975817B.dbf
09/12/97 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				0.820-1.101			
304-306	DC	NL		0:00	RO	0.11	0.18			0.000			
	DC	SN		16:51	RO	4.04	0.48			0.828			
	DC	SN		18:00	RO	0.18	0.94			0.885			
	DC	SN		18:26	RO	1.27	3.29			0.906			
	DC	SN		19:13	RO	0.57	3.13			0.944			
	D	D	SN	19:31		0.80	5.63			0.959			
	M			20:23	RO	0.61	8.94	3.89	6.42	1.002	2378-TCDF		AN
	DC	SN		20:36	RO	0.13	0.25			1.012			
	DC	SN		20:52	RO	0.18	0.85			1.025			
	DC	SN		21:07	RO	0.36	2.87			1.038			
	DC	SN		22:18	RO	1.58	2.34			1.096			
304-306				1 Peak			8.94						
						0.65-0.89				0.951-1.049			
13C12-TCDF										0.000			
316-318	DC	NL		0:00	RO	0.13	0.21			0.942			
	DC	WL		19:10		0.88	25.07						
				19:30		0.65	6.98	2.74	4.24	0.958			
				19:53		0.81	20.74	9.29	11.45	0.977			
				20:21		0.75	4,446.87	1,900.95	2,545.92	1.000	13C12-2378-TCDF		IS0
				20:51		0.78	26.08	11.39	14.69	1.025			
316-318				4 Peaks			4,500.67						

---------- Above: TCDF / TCDD Follows ----------

TCDD						0.65-0.89				0.853-1.059			
320-322	DC	NL		0:00	RO	1.50	0.11			0.000			
				18:16	RO	1.02	10.51	6.08	5.94	0.863			
	DC	SN		18:24		0.66	0.83			0.869			
	D	D	SN	18:43		0.83	7.86			0.884			
	DC	SN		18:59	RO	1.80	0.71			0.897			
	DC	SN		19:03	RO	1.55	0.90			0.900			
	DC	SN		19:10	RO	0.24	0.44			0.906			
	DC	SN		19:16	RO	2.40	0.44			0.910			
	DC	SN		19:26		0.78	0.48			0.918			
	DC	SN		19:36	RO	0.27	0.48			0.926			
	DC	SN		19:52		0.87	4.08			0.939			
	DC	SN		20:06	RO	2.69	0.74			0.950			
	DC	SN		20:37	RO	4.22	0.41			0.974			
	DC	SN		20:42	RO	1.32	1.36			0.978			
	DC	SN		20:54	RO	0.44	1.13			0.987			
	DC	SN		21:05	RO	1.38	2.41			0.996			
	DC	SN		21:13	RO	0.42	3.49			1.002	2378-TCDD		AN
	DC	SN		21:24	RO	2.04	0.80			1.011			

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		21:30	RO	1.00	0.50			1.016			
	DC	SN		21:56		0.84	1.23			1.036			
	DC	SN		22:22	RO	0.33	0.57			1.057			
	DC	WH		22:34	RO	1.11	0.94			1.066			
320-322			1 Peak				10.51						
37Cl-TCDD										0.906-1.094			
328	DC	NL		0:00			0.06			0.000			
				19:38			9.52	9.52		0.928			
				21:12			2,813.25	2,813.25		1.002	37Cl-TCDD		SUR1
				21:31			2.95	2.95		1.017			
	DC	SN		21:38			1.79			1.022			
	DC	SN		22:01			1.15			1.040			
328			3 Peaks				2,825.72						
13C12-TCDD						0.65-0.89				0.906-1.094			
332-334	DC	NL		0:00	RO	25.00	0.12			0.000			
				19:52		0.75	18.99	8.11	10.88	0.939			
				20:58		0.88	3,814.33	1,789.34	2,024.99	0.991	13C12-1234-TCDD		RS1
				21:10		0.82	3,105.96	1,398.93	1,707.03	1.000	13C12-2378-TCDD		IS1
				21:32	RO	1.25	49.12	34.58	27.75	1.017			
332-334			4 Peaks				6,988.40						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF						1.32-1.78				0.907-1.078			
340-342	DC	NL		0:00	RO	0.14	0.13			0.000			
	DC	SN		22:35	RO	1.96	5.10			0.915			
	DC	SN		22:48	RO	0.31	0.36			0.924			
	DC	SN		23:00	RO	0.60	1.96			0.932			
	DC	SN		23:16	RO	0.43	0.94			0.943			
D	D	SN		23:39	RO	0.81	5.05			0.958			
A				23:48	RO	1.81	17.44	12.40	6.84	0.964			
D	D	SN		23:57	RO	1.16	4.80			0.970			
	DC	SN		24:09	RO	3.34	1.20			0.978			
M				24:42	RO	1.23	8.46	5.14	4.17	1.001	12378-PeCDF		AN
	DC	SN		24:54	RO	0.75	2.80			1.009			
D	D	SN		25:00		1.32	11.43			1.013			
				25:27		1.54	21.27	12.91	8.36	1.031	23478-PeCDF		AN
				25:38	RO	1.05	9.84	5.98	5.70	1.038			
	DC	SN		25:48	RO	0.58	0.79			1.045			
	DC	SN		25:55	RO	0.58	2.68			1.050			
	DC	SN		26:06	RO	0.89	1.12			1.057			
D	D	SN		26:28	RO	0.95	5.68			1.072			
	DC	WH		26:54		1.38	1.38			1.090			
340-342			4 Peaks				57.01						
13C12-PeCDF						1.32-1.78				0.838-1.162			
352-354	DC	NL		0:00	RO	1.13	0.15			0.000			
				23:47	RO	1.29	39.27	23.87	18.48	0.964			
				24:20		1.75	20.78	13.23	7.55	0.986			
				24:41		1.46	3,850.99	2,284.48	1,566.51	1.000	13C12-PeCDF 123		IS2

Compound/ M_Z....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				24:59		1.38	34.61	20.09	14.52	1.012			
				25:27		1.49	3,791.96	2,267.29	1,524.67	1.031	13C12-PeCDF 234	SUR2	
				25:49	RO	0.82	5.73	3.48	4.25	1.046			
	DC	SN		25:55	RO	1.89	4.69			1.050			
	DC	SN		26:06	RO	1.09	3.64			1.057			
				26:27	RO	0.89	10.53	6.40	7.23	1.072			
352-354				7 Peaks			7,753.87						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD				1.32-1.78						0.921-1.026			
356-358	DC	NL		0:00	RO	14.29	0.18			0.000			
				23:57		1.41	13.85	8.11	5.74	0.928			
	DC	SN		24:08	RO	9.81	0.41			0.935			
	DC	SN		24:17	RO	3.21	0.61			0.941			
				24:42		1.47	15.46	9.21	6.25	0.957			
	DC	SN		24:52	RO	1.21	2.78			0.963			
				25:04	RO	2.22	9.44	8.23	3.70	0.971			
	DC	SN		25:13	RO	8.85	0.69			0.977			
	DC	SN		25:22		1.35	2.37			0.983			
	DC	SN		25:31	RO	2.80	2.98			0.988			
	DC	SN		25:39	RO	1.12	2.39			0.994			
				25:51		1.70	7.21	4.54	2.67	1.001	12378-PeCDD	AN	
	DC	SN		26:05	RO	0.51	1.35			1.010			
	DC	WH		26:47	RO	4.84	0.79			1.037			
356-358				4 Peaks			45.96						
13C12-PeCDD				1.32-1.78						0.845-1.155			
368-370	DC	NL		0:00		1.43	0.17			0.000			
	DC	SN		24:41	RO	0.78	2.24			0.956			
				25:49		1.55	2,405.29	1,463.62	941.67	1.000	13C12-PeCDD 123	IS3	
				25:58		1.60	228.84	140.66	88.18	1.006			
	DC	SN		26:08	RO	2.39	4.82			1.012			
368-370				2 Peaks			2,634.13						

---------- Above: PeCDD / HxCDF Follows ----------

HxCDF				1.05-1.43						0.955-1.052			
374-376	DC	NL		0:00	RO	2.82	1.34			0.000			
				27:21		1.10	19.50	10.20	9.30	0.961			
				27:30		1.21	40.31	22.07	18.24	0.967			
	DC	SN		27:38	RO	0.93	2.69			0.971			
D	D	SN		27:49		1.15	8.35			0.978			
	DC	SN		27:59	RO	0.40	1.90			0.984			
				28:20		1.25	60.57	33.66	26.91	0.996	123478-HxCDF	AN	PR
				28:28		1.19	30.75	16.69	14.06	1.001	123678-HxCDF	AN	
D	D	SN		28:34		1.26	8.31			1.004			
D	D	SN		28:47		1.32	10.54			1.012			
				28:58		1.20	28.41	15.50	12.91	1.018	234678-HxCDF	AN	PR
	DC	SN		29:06	RO	3.03	0.69			1.023			
	DC	SN		29:10	RO	2.41	0.87			1.025			
	DC	SN		29:17	RO	0.40	0.45			1.029			

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		29:28	RO	0.82	0.76			1.036			
				29:41		1.33	6.37	3.64	2.73	1.043	123789-HxCDF	AN	
				29:46	RO	1.49	13.08	8.70	5.84	1.046			
	DC	SN		29:53	RO	2.29	1.01			1.050			
	DC	WH		30:01	RO	0.80	0.72			1.055			
	DC	WH		30:12	RO	1.62	0.65			1.062			
374-376			7	Peaks			198.99						
13C12-HxCDF				0.43-0.59						0.859-1.141			
384-386	DC	NL		0:00	RO	1.22	1.86			0.000			
	DC	SN		27:20	RO	0.40	6.01			0.961			
				27:28	RO	0.66	15.89	6.94	10.52	0.965			
				28:20		0.48	2,718.04	884.25	1,833.79	0.996	13C12-HxCDF 478	SUR3	
				28:27		0.46	3,143.19	997.30	2,145.89	1.000	13C12-HxCDF 678	IS4	
	DC	SN		28:41	RO	0.71	4.79			1.008			
	DC	SN		28:44	RO	0.26	4.47			1.010			
				28:58		0.48	3,022.43	985.40	2,037.03	1.018	13C12-HxCDF 234	ALT2	
				29:40		0.46	2,284.00	715.21	1,568.79	1.043	13C12-HxCDF 789	ALT1	
	DC	SN		29:57	RO	0.26	0.89			1.053			
384-386			5	Peaks			11,183.55						

---------- Above: HxCDF / HxCDD Follows ----------

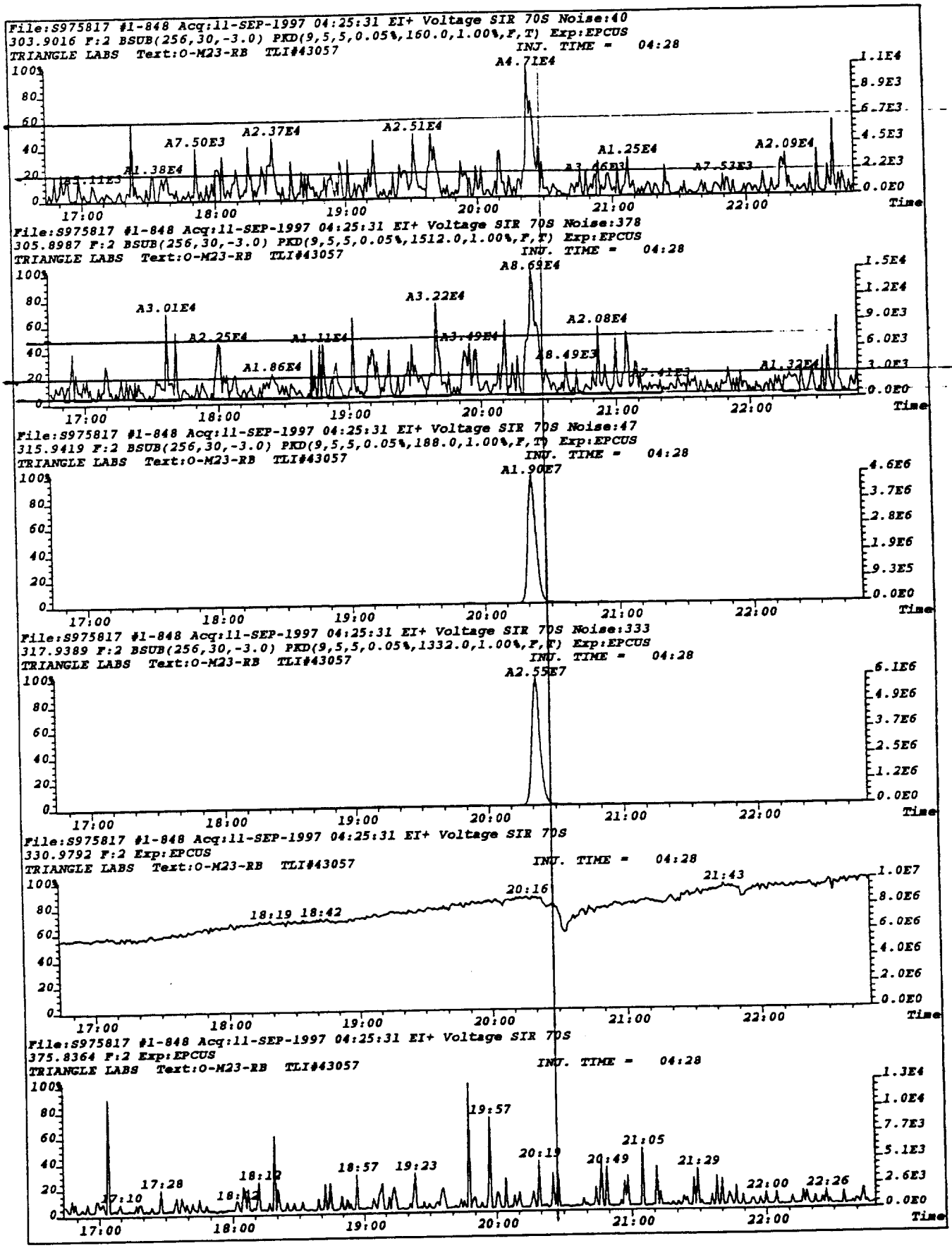
HxCDD				1.05-1.43						0.950-1.015			
390-392	DC	NL		0:00	RO	0.64	0.78			0.000			
	DC	SN		27:46	RO	1.48	0.56			0.951			
				27:53		1.15	8.05	4.30	3.75	0.955			
	DC	SN		28:04	RO	0.88	0.63			0.962			
	DC	SN		28:09	RO	1.00	0.49			0.965			
				28:21		1.21	56.45	30.92	25.53	0.971			
				28:35		1.23	26.65	14.70	11.95	0.979			
	DC	SN		28:57	RO	1.49	2.60			0.992			
D	D	SN		29:06	RO	0.91	5.08			0.997	123478-HxCDD	AN	
				29:11		1.16	16.17	8.67	7.50	1.000	123678-HxCDD	AN	
	DC	SN		29:18	RO	0.89	1.01			1.004			
M				29:28	RO	0.92	12.14	6.72	7.32	1.010	123789-HxCDD	AN	PR
	DC	SN		29:35	RO	0.26	0.36			1.014			
	DC	WH		29:40	RO	1.71	1.86			1.017			
	DC	WH		29:50	RO	0.22	0.25			1.022			
	DC	WH		29:52	RO	0.17	0.34			1.023			
390-392			5	Peaks			119.46						
13C12-HxCDD				1.05-1.43						0.966-1.034			
402-404	DC	NL		0:00	RO	0.92	1.19			0.000			
				28:35		1.11	11.12	5.84	5.28	0.979			
				29:05		1.22	2,448.25	1,343.08	1,105.17	0.997	13C12-HxCDD 478	SUR4	
				29:11		1.22	2,745.61	1,511.31	1,234.30	1.000	13C12-HxCDD 678	IS5	
				29:28		1.20	3,527.42	1,926.48	1,600.94	1.010	13C12-HxCDD 789	RS2	
				29:39	RO	0.77	6.34	3.51	4.56	1.016			
	DC	SN		29:43		1.10	4.63			1.018			
	DC	SN		29:46	RO	2.32	2.49			1.020			
402-404			5	Peaks			8,738.74						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
---------- Above: HxCDD / HpCDF Follows ----------													
HpCDF						0.88-1.20				0.995-1.044			
408-410										0.000			
	DC	NL		0:00	RO	1.47	1.16			0.996			
	DC	SN		31:02	RO	0.32	1.22						
				31:11		0.99	73.54	36.50	37.04	1.001	1234678-HpCDF	AN	
				31:23		1.02	13.17	6.64	6.53	1.007			
				31:32	RO	1.30	17.75	11.35	8.70	1.012			
				32:22		1.03	20.51	10.43	10.08	1.039	1234789-HpCDF	AN	
408-410				4 Peaks			124.97						
13C12-HpCDF						0.37-0.51				0.936-1.128			
418-420										0.000			
	DC	NL		0:00	RO	1.37	1.12						
				31:10		0.43	1,772.47	535.60	1,236.87	1.000	13C12-HpCDF 678	IS6	
				31:27	RO	0.90	4.18	2.60	2.90	1.009			
	DC	SN		32:03	RO	0.94	2.45			1.028			
				32:22		0.44	1,215.65	370.55	845.10	1.039	13C12-HpCDF 789	SUR5	
	DC	SN		32:46	RO	0.24	1.41			1.051			
418-420				3 Peaks			2,992.30						
---------- Above: HpCDF / HpCDD Follows ----------													
HpCDD						0.88-1.20				0.976-1.006			
424-426										0.000			
	DC	NL		0:00		1.00	0.14						
				31:26		1.10	21.45	11.22	10.23	0.982			
	DC	SN		31:38	RO	4.08	0.27			0.988			
	DC	SN		31:48	RO	2.07	0.31			0.993			
				32:02		1.09	39.68	20.66	19.02	1.001	1234678-HpCDD	AN	
	DC	WH		32:16	RO	1.59	0.55			1.008			
	DC	WH		32:22	RO	2.29	1.43			1.011			
424-426				2 Peaks			61.13						
13C12-HpCDD						0.88-1.20				0.969-1.031			
436-438										0.000			
	DC	NL		0:00	RO	1.69	3.06						
				31:26	RO	1.29	5.41	3.42	2.65	0.982			
				32:01		1.01	1,762.45	884.29	878.16	1.000	13C12-HpCDD 678	IS7	
436-438				2 Peaks			1,767.86						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.884-1.116			
442-444										0.000			
	DC	NL		0:00	RO	0.18	0.17			0.893			
	DC	SN		30:50	RO	1.59	1.49			0.900			
	DC	SN		31:05	RO	0.51	0.59			0.906			
	DC	SN		31:18	RO	2.16	0.36			0.928			
	DC	SN		32:02		0.85	0.87			0.931			
	DC	SN		32:10	RO	1.30	0.70			0.975			
	DC	SN		33:40	RO	1.62	0.85			0.984			
	DC	SN		33:59	RO	0.67	1.38			0.997			
	DC	SN		34:25	RO	0.08	0.42						
				34:40		0.83	24.70	11.18	13.52	1.004	OCDF	AN	
	DC	SN		35:33	RO	1.77	1.15			1.029			

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		35:52	RO	0.65	1.21			1.039			
442-444		1	Peak				24.70						
OCDD						0.76-1.02				0.884-1.116			
458-460	DC	NL		0:00		1.00	0.14			0.000			
				34:32		0.94	33.29	16.12	17.17	1.000	OCDD		AN
	DC	SN		34:59	RO	1.25	1.00			1.013			
458-460		1	Peak				33.29						
13C12-OCDD						0.76-1.02				0.995-1.005			
470-472	DC	NL		0:00	RO	1.17	0.11			0.000			
				34:32		0.79	2,228.58	986.97	1,241.61	1.000	13C12-OCDD		IS8
	DC	WH		34:52	RO	0.36	2.19			1.010			
470-472		1	Peak				2,228.58						

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
		E-Ether Interference

*** End of Report ***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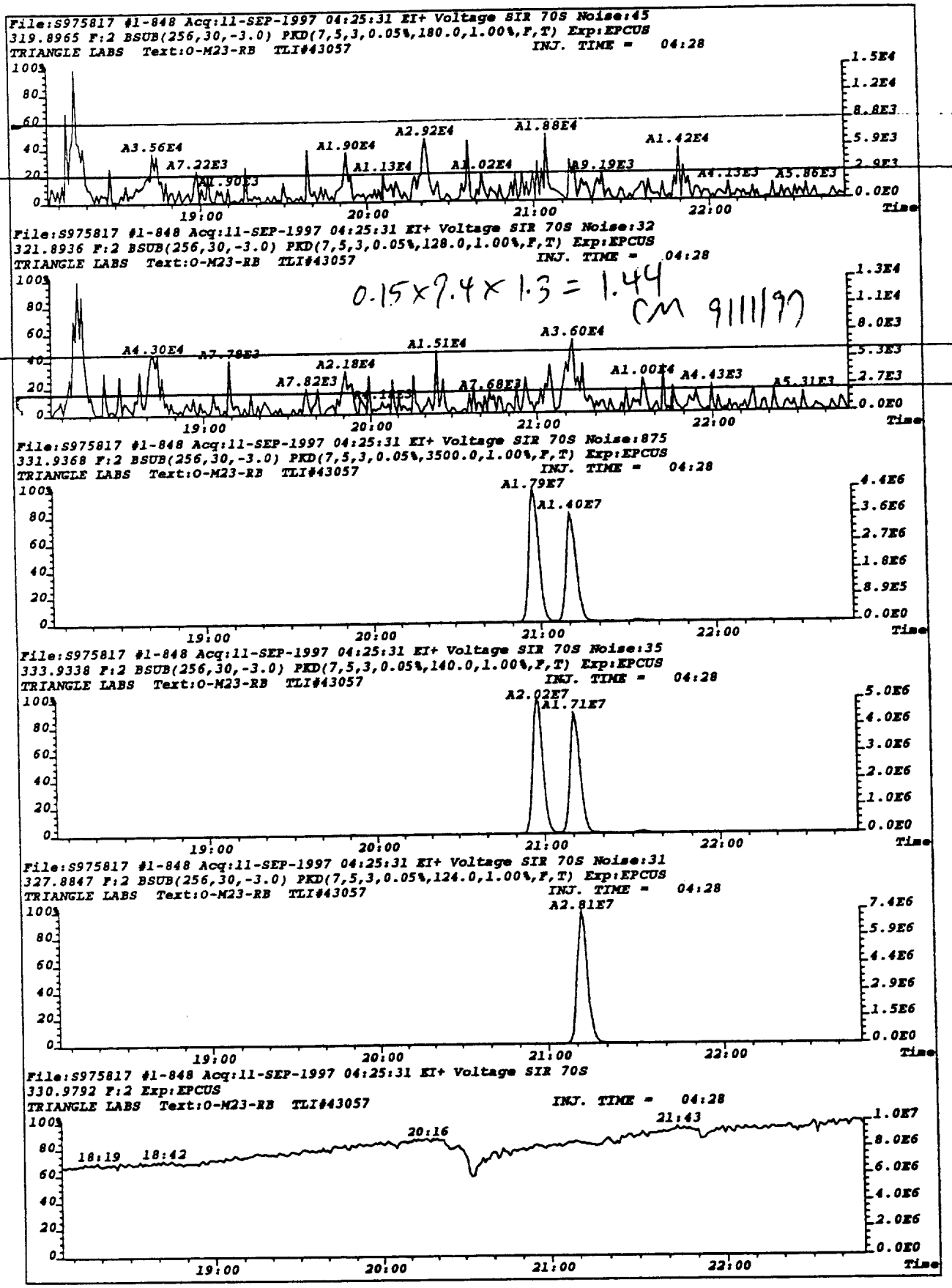
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,160.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A4.71E4
A7.50E3
A2.37E4
A2.51E4
A1.25E4
A2.09E4
A1.38E4
A7.53E3
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:378
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1512.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A8.69E4
A3.01E4
A3.22E4
A2.08E4
A2.25E4
A1.11E4
A3.49E4
A1.86E4
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:47
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,188.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.90E7
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:333
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1332.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.55E7
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
18:19
18:42
20:16
21:43
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
17:10
17:28
18:12
18:57
19:23
19:57
20:19
20:49
21:05
21:29
22:00
22:26
17:00
18:00
19:00
20:00
21:00
22:00
Time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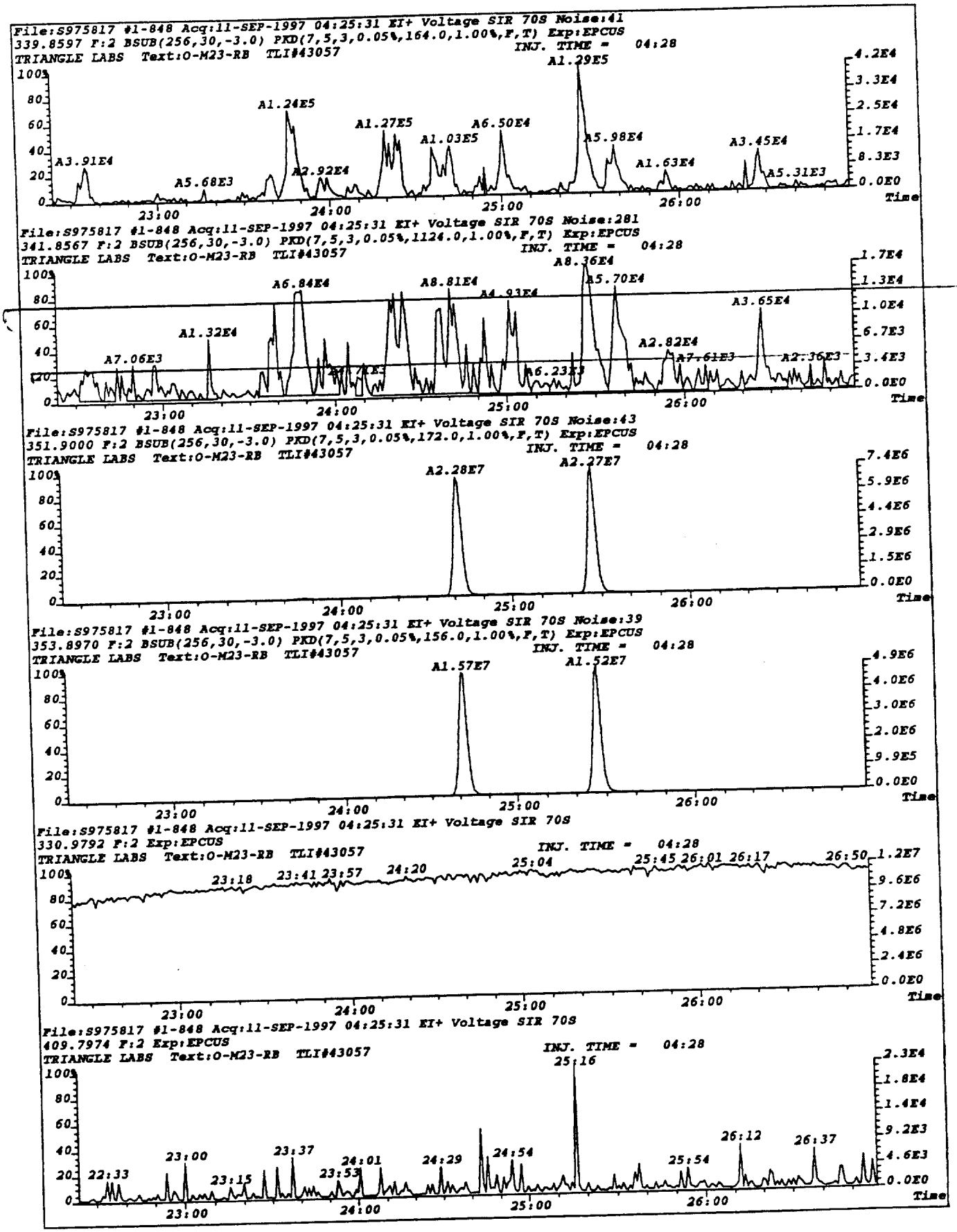
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,180.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.56E4
A7.22E3
A1.90E4
A1.13E4
A2.92E4
A1.88E4
A1.42E4
A9.19E3
A4.13E3
A5.86E3
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:32
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,128.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
0.15×9.4×1.3 = 1.44
CM 9/11/97
A4.30E4
A7.78E3
A2.18E4
A7.82E3
A1.51E4
A7.68E3
A3.60E4
A1.00E4
A4.43E3
A5.31E3
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:875
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3500.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.79E7
A1.40E7
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:35
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.02E7
A1.71E7
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:31
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,124.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.81E7
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
18:19
18:42
20:16
21:43
19:00
20:00
21:00
22:00
Time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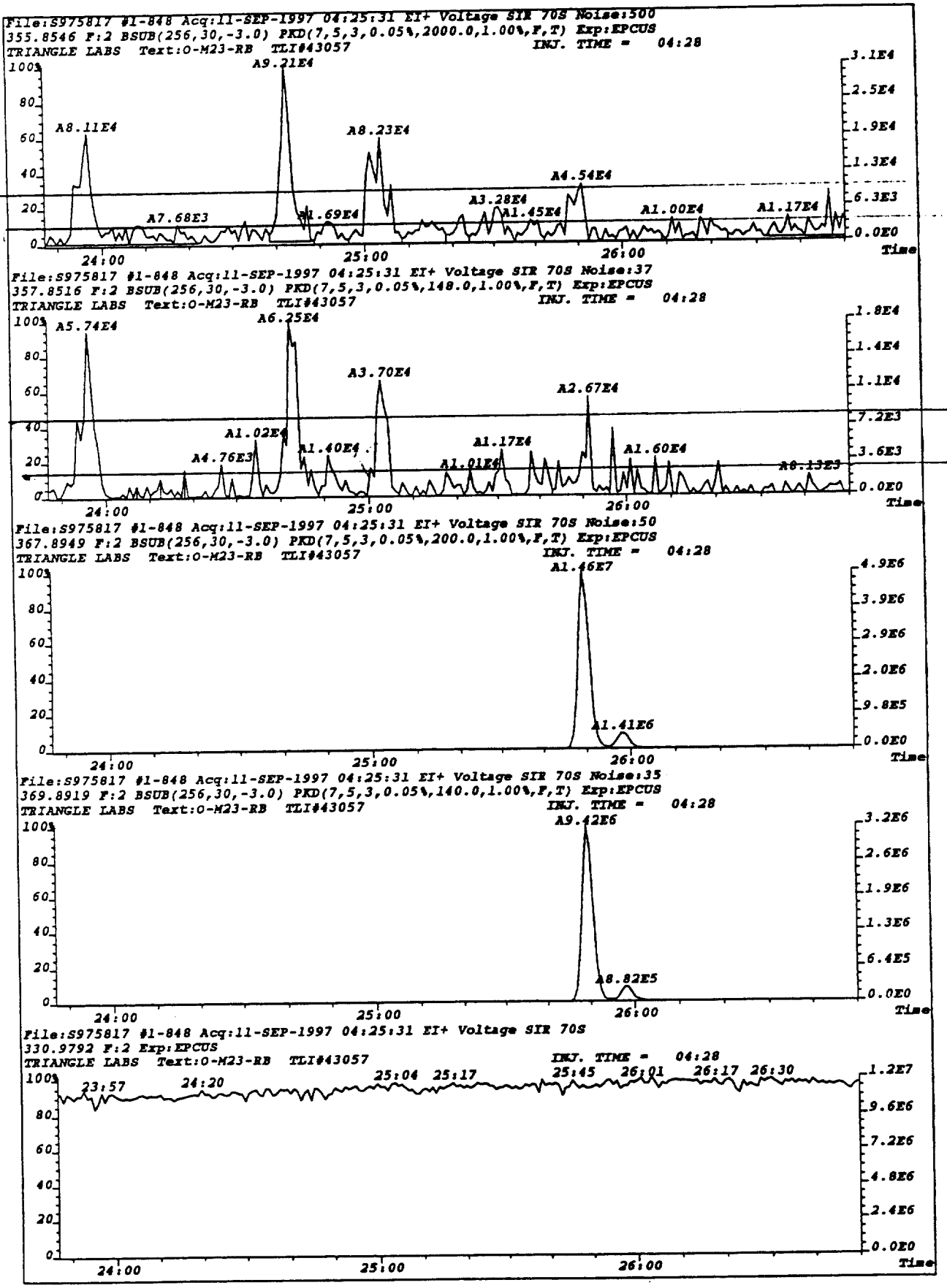
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,164.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.91E4
A5.68E3
A1.24E5
A2.92E4
A1.27E5
A1.03E5
A6.50E4
A1.29E5
A5.98E4
A1.63E4
A3.45E4
A5.31E3
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:281
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1124.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A7.06E3
A1.32E4
A6.84E4
A8.81E4
A4.93E4
A8.36E4
A5.70E4
A2.82E4
A3.65E4
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:43
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,172.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.28E7
A2.27E7
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:39
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,156.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.57E7
A1.52E7
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
23:18
23:41
23:57
24:20
25:04
25:45
26:01
26:17
26:50
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
25:16
22:33
23:00
23:15
23:37
23:53
24:01
24:29
24:54
25:54
26:12
26:37
Time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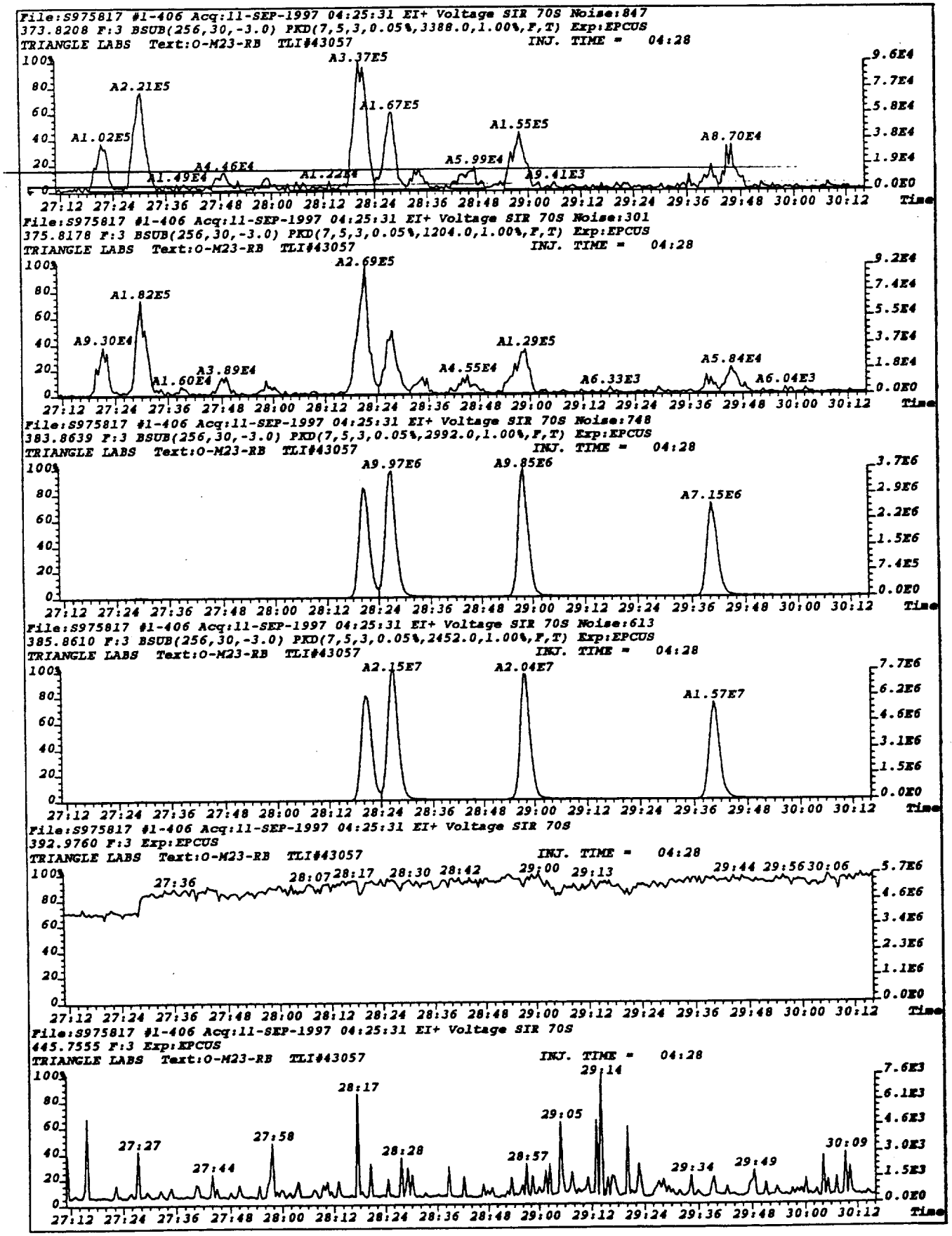
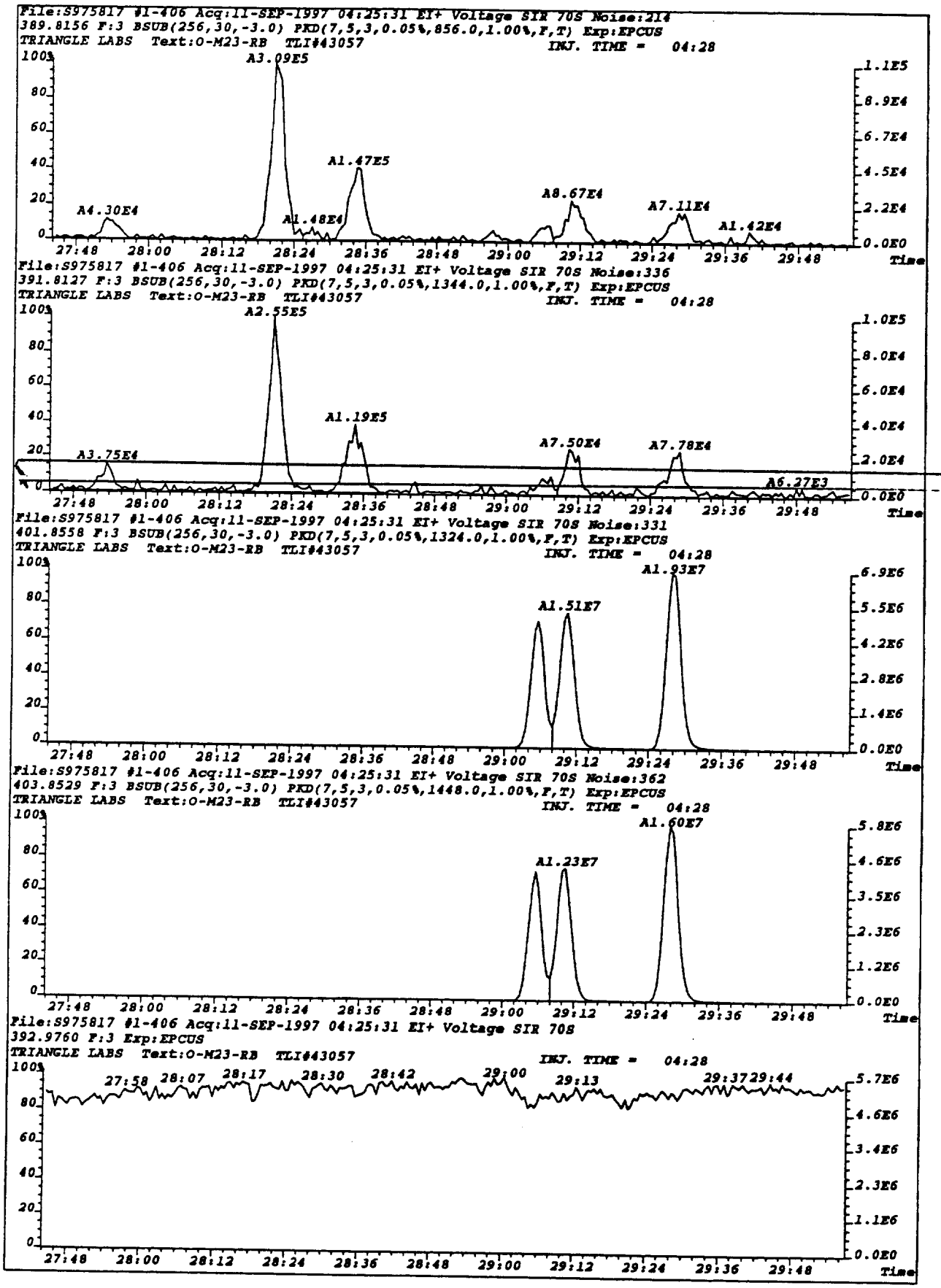
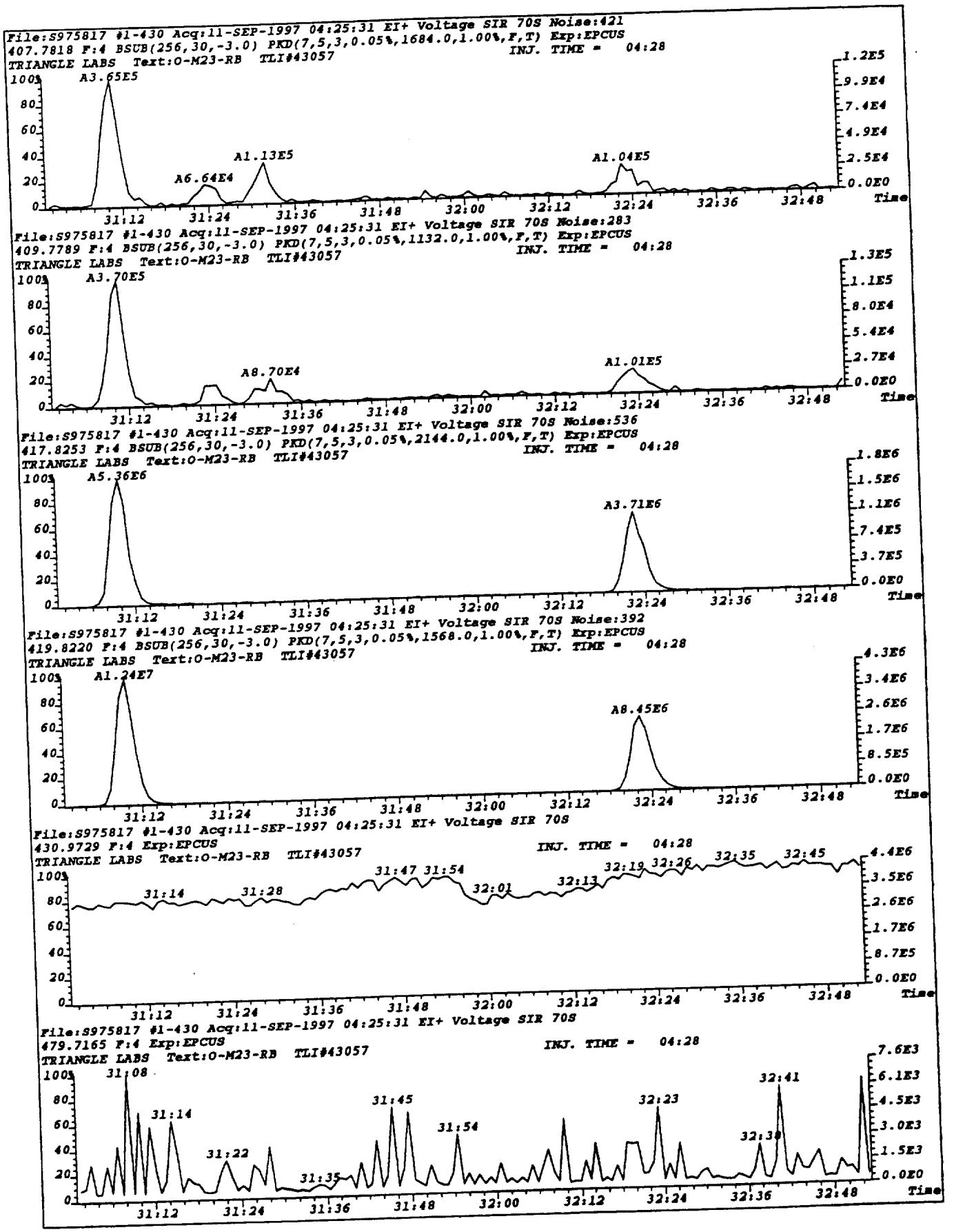
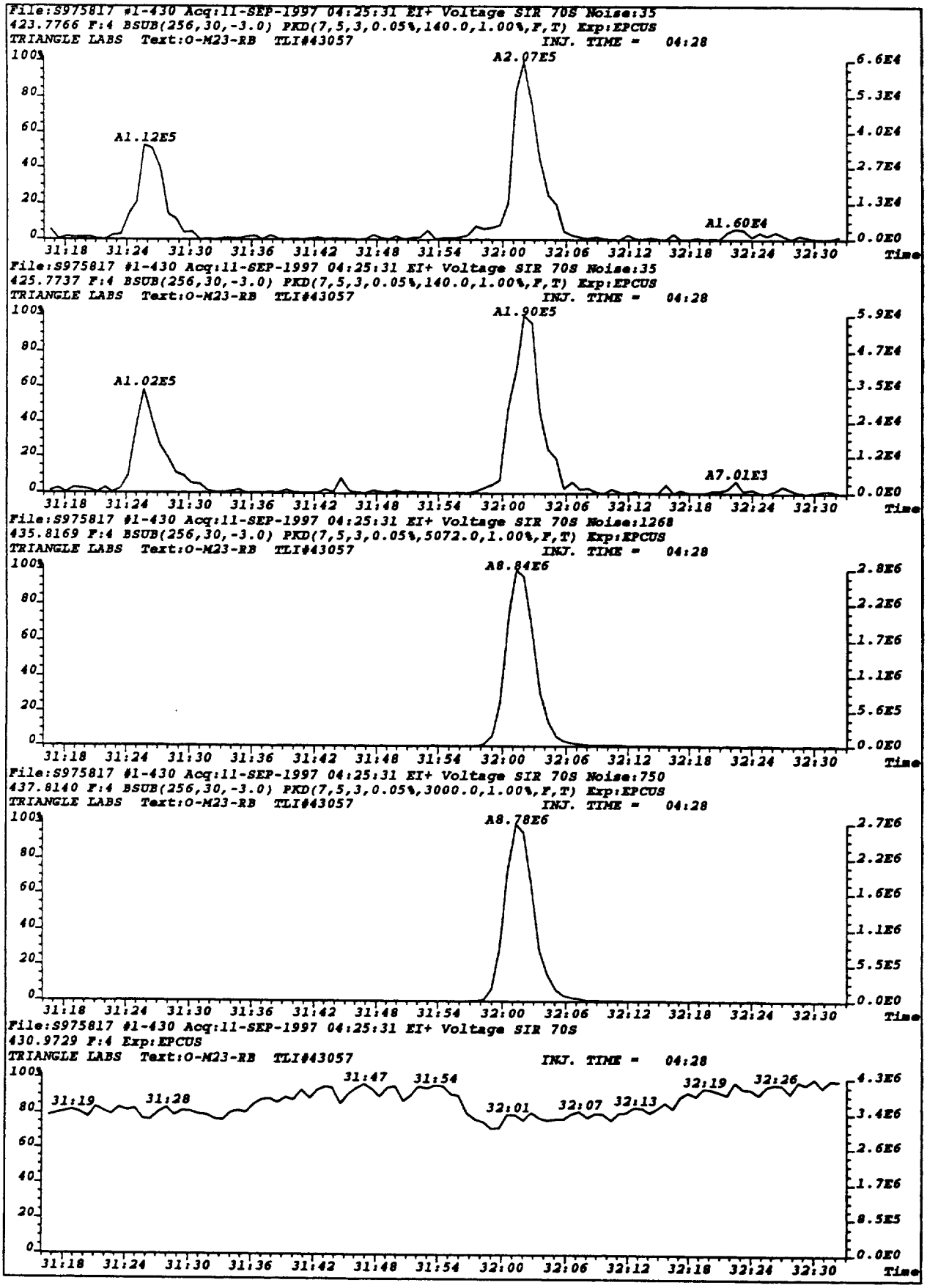
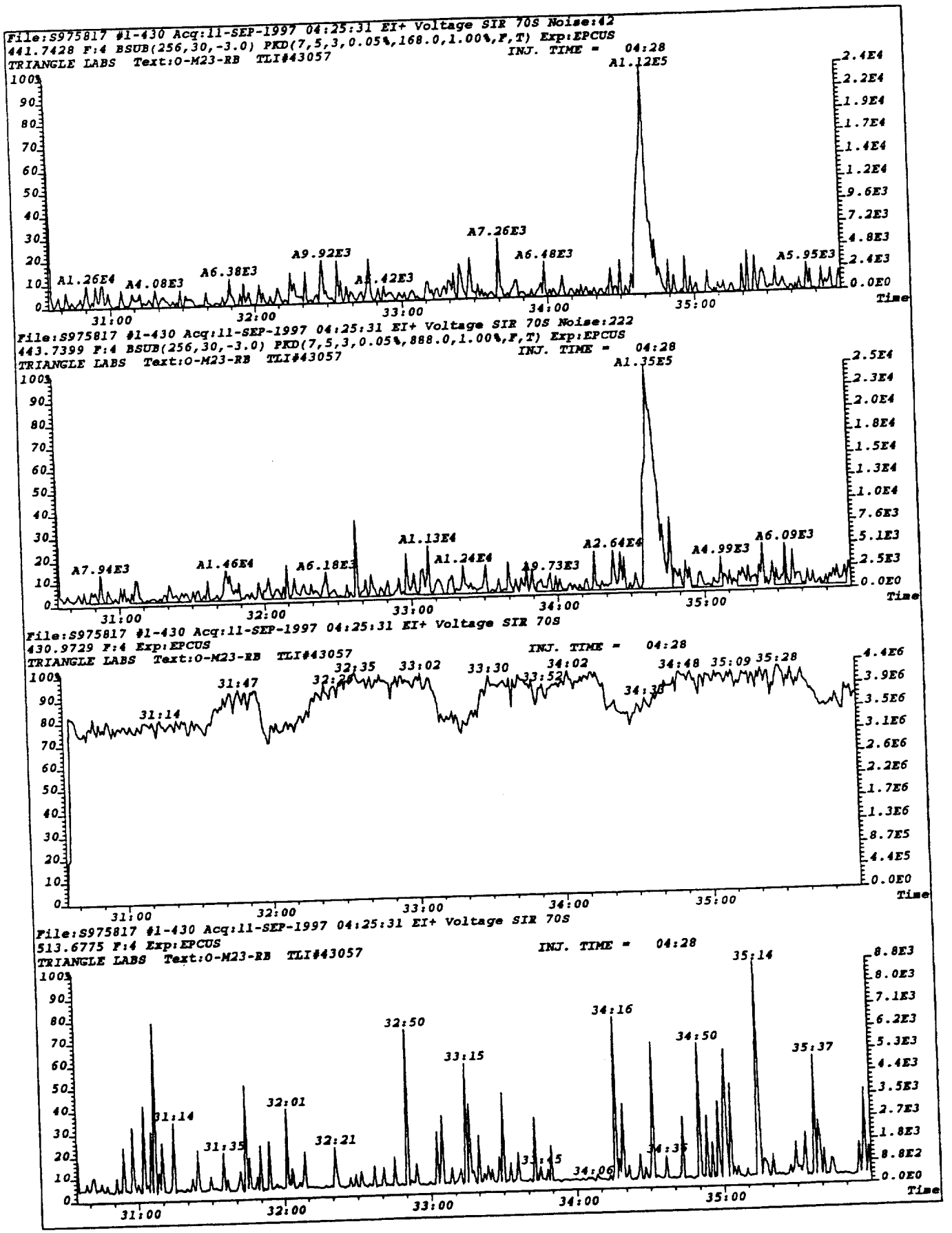
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2000.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A9.21E4
A8.11E4
A8.23E4
A4.54E4
A3.28E4
A1.45E4
A7.68E3
A1.69E4
A1.00E4
A1.17E4
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:37
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A6.25E4
A5.74E4
A3.70E4
A2.67E4
A1.02E4
A1.40E4
A4.76E3
A1.17E4
A1.01E4
A1.60E4
A8.13E3
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:50
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,200.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.46E7
A1.41E6
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:35
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A9.42E6
A8.82E5
Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
23:57
24:20
25:04
25:17
25:45
26:01
26:17
26:30
Time

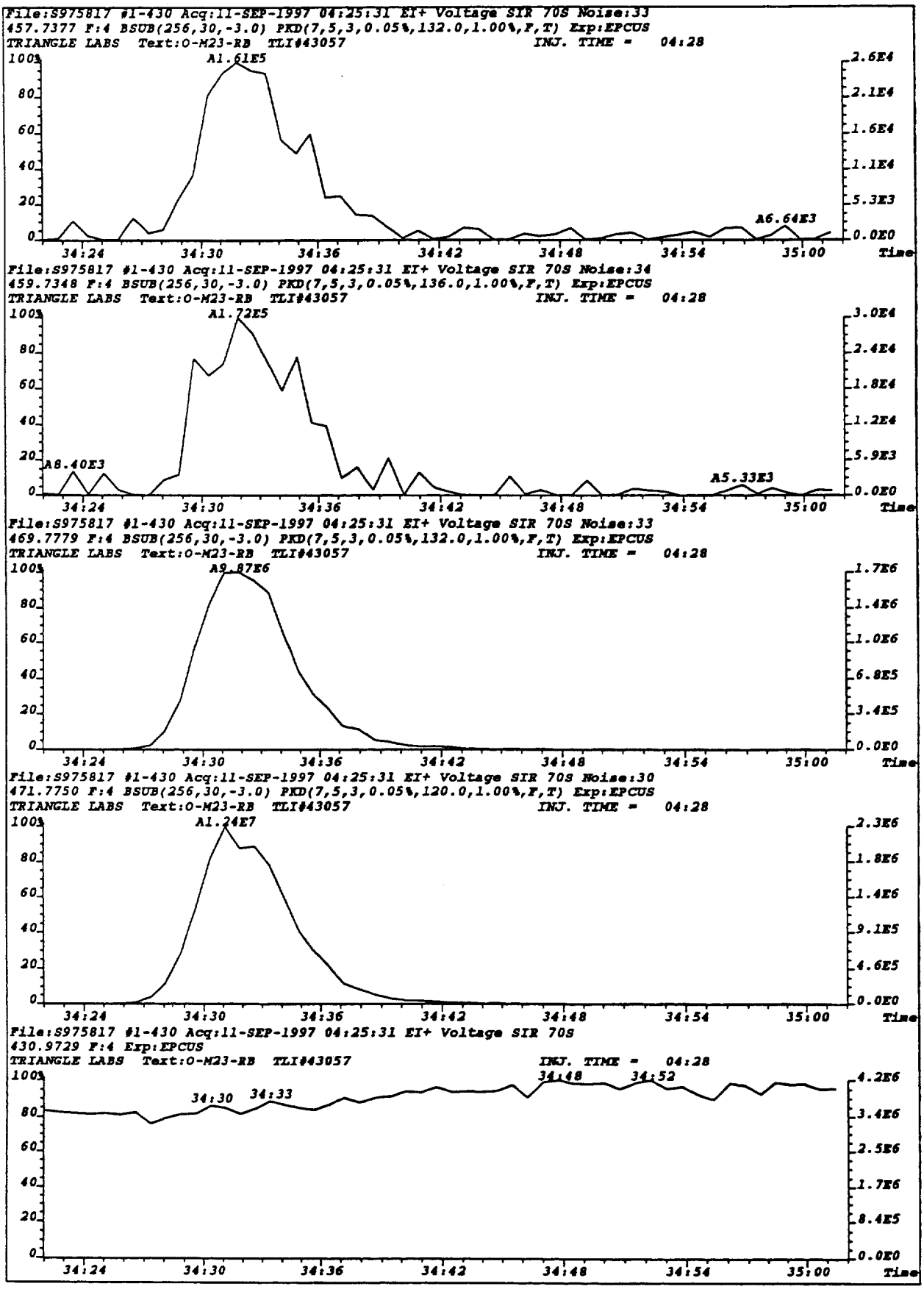

File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:847
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3388.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.37E5
A2.21E5
A1.67E5
A1.55E5
A1.02E5
A8.70E4
A5.99E4
A4.46E4
A1.49E4
A1.22E4
A9.41E3
9.6E4
7.7E4
5.8E4
3.8E4
1.9E4
0.0E0
27:12 27:24 27:36 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 Time
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:301
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1204.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.69E5
A1.82E5
A9.30E4
A1.29E5
A5.84E4
A3.89E4
A4.55E4
A1.60E4
A6.33E3
A6.04E3
9.2E4
7.4E4
5.5E4
3.7E4
1.8E4
0.0E0
27:12 27:24 27:36 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 Time
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:748
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2992.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A9.97E6
A9.85E6
A7.15E6
3.7E6
2.9E6
2.2E6
1.5E6
7.4E5
0.0E0
27:12 27:24 27:36 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 Time
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:613
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2452.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.15E7
A2.04E7
A1.57E7
7.7E6
6.2E6
4.6E6
3.1E6
1.5E6
0.0E0
27:12 27:24 27:36 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 Time
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
27:36
28:07
28:17
28:30
28:42
29:00
29:13
29:44
29:56
30:06
5.7E6
4.6E6
3.4E6
2.3E6
1.1E6
0.0E0
27:12 27:24 27:36 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 Time
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
29:14
28:17
29:05
27:27
27:58
27:44
28:28
28:57
29:34
29:49
30:09
7.6E3
6.1E3
4.6E3
3.0E3
1.5E3
0.0E0
27:12 27:24 27:36 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 Time

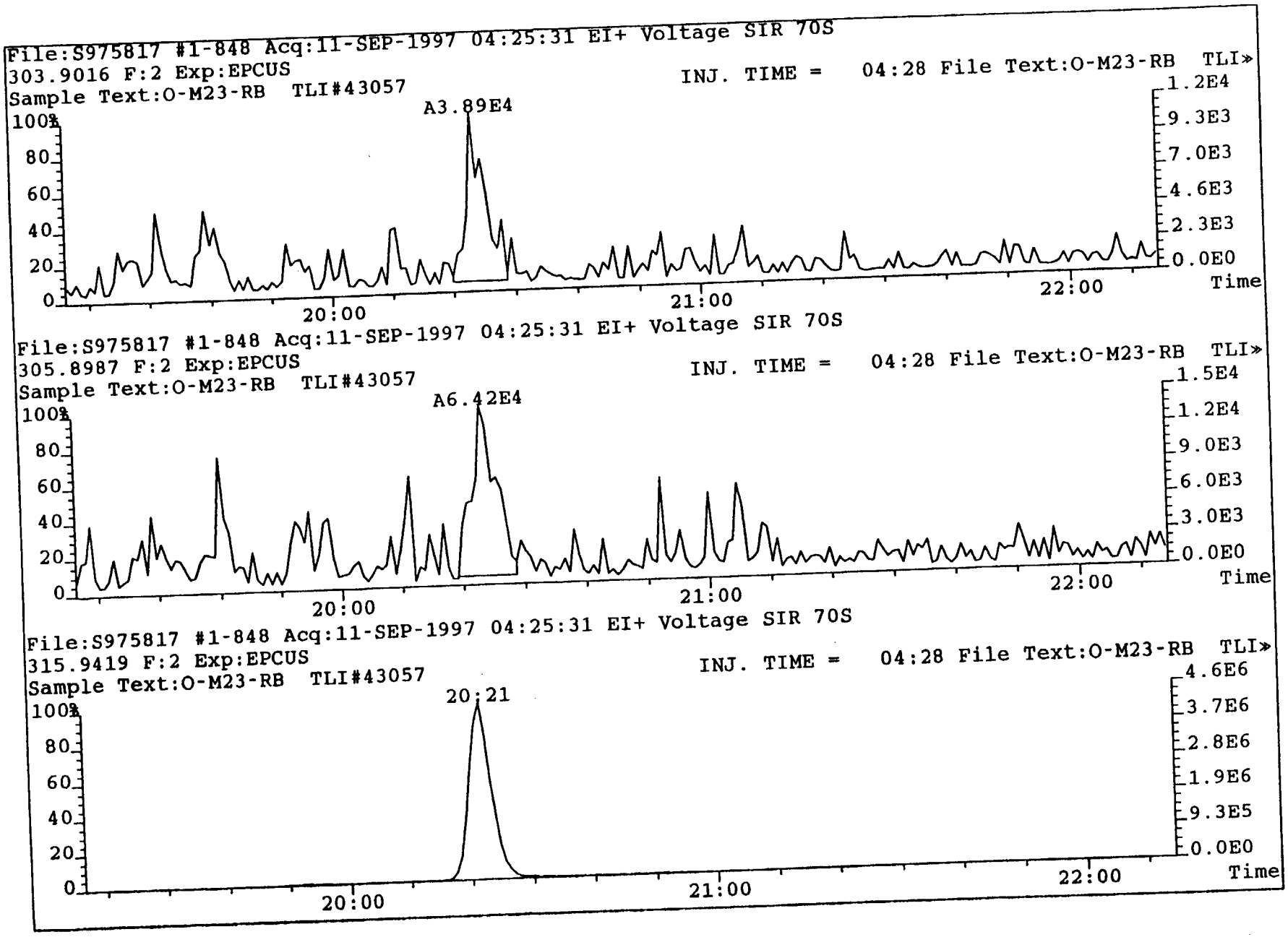

File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:214
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,856.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.09E5
A1.47E5
A4.30E4
A1.48E4
A8.67E4
A7.11E4
A1.42E4
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:336
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1344.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.55E5
A1.19E5
A3.75E4
A7.50E4
A7.78E4
A6.27E3
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:331
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1324.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.93E7
A1.51E7
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:362
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1448.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.60E7
A1.23E7
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
Time

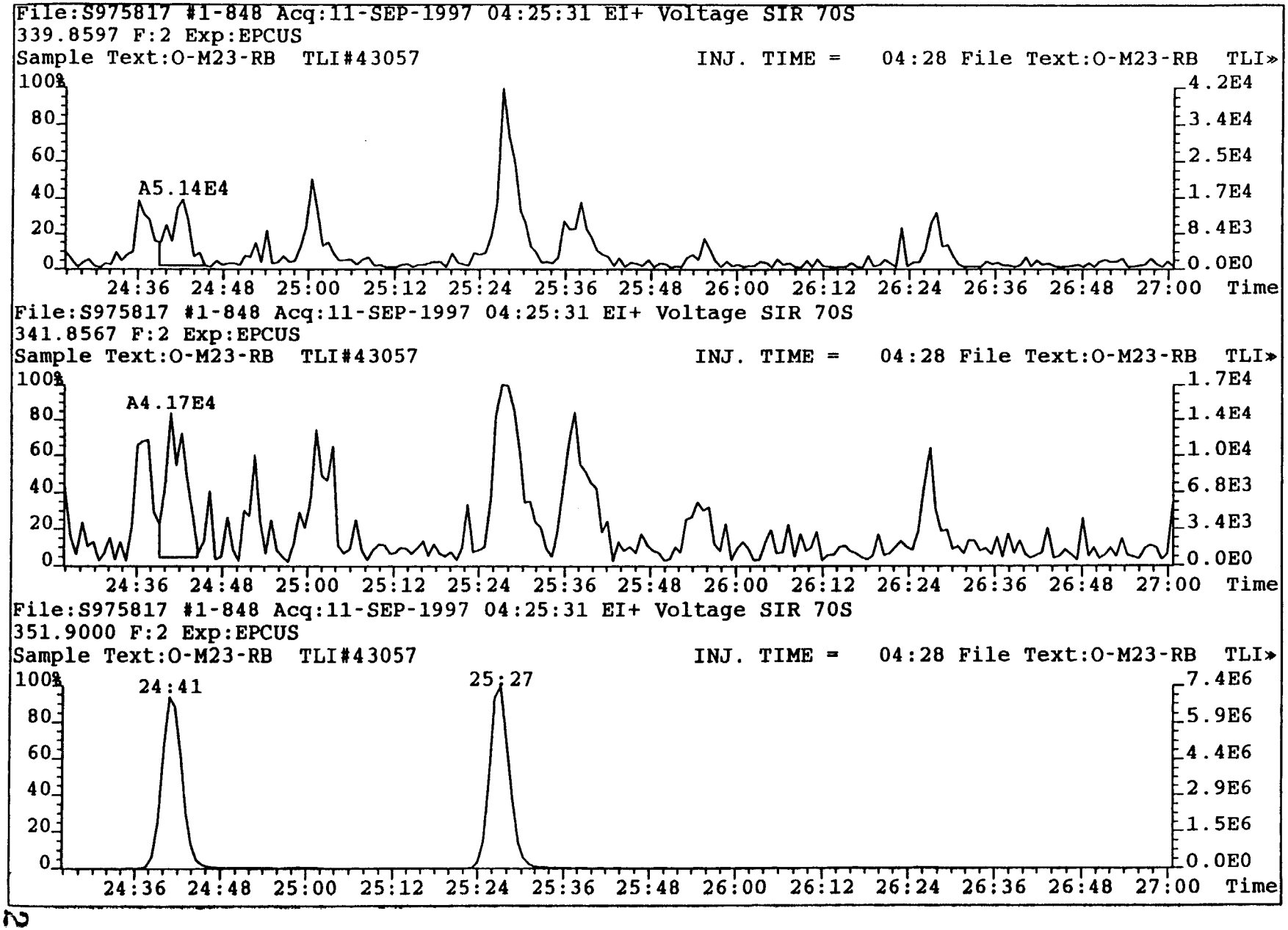

File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:421
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1684.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.65E5
A6.64E4
A1.13E5
A1.04E5
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:283
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A3.70E5
A8.70E4
A1.01E5
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:536
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2144.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A5.36E6
A3.71E6
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:392
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1568.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.24E7
A8.45E6
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
31:14
31:28
31:47 31:54
32:01
32:13
32:19 32:26
32:35
32:45
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
31:08
31:14
31:22
31:35
31:45
31:54
32:23
32:38
32:41
Time

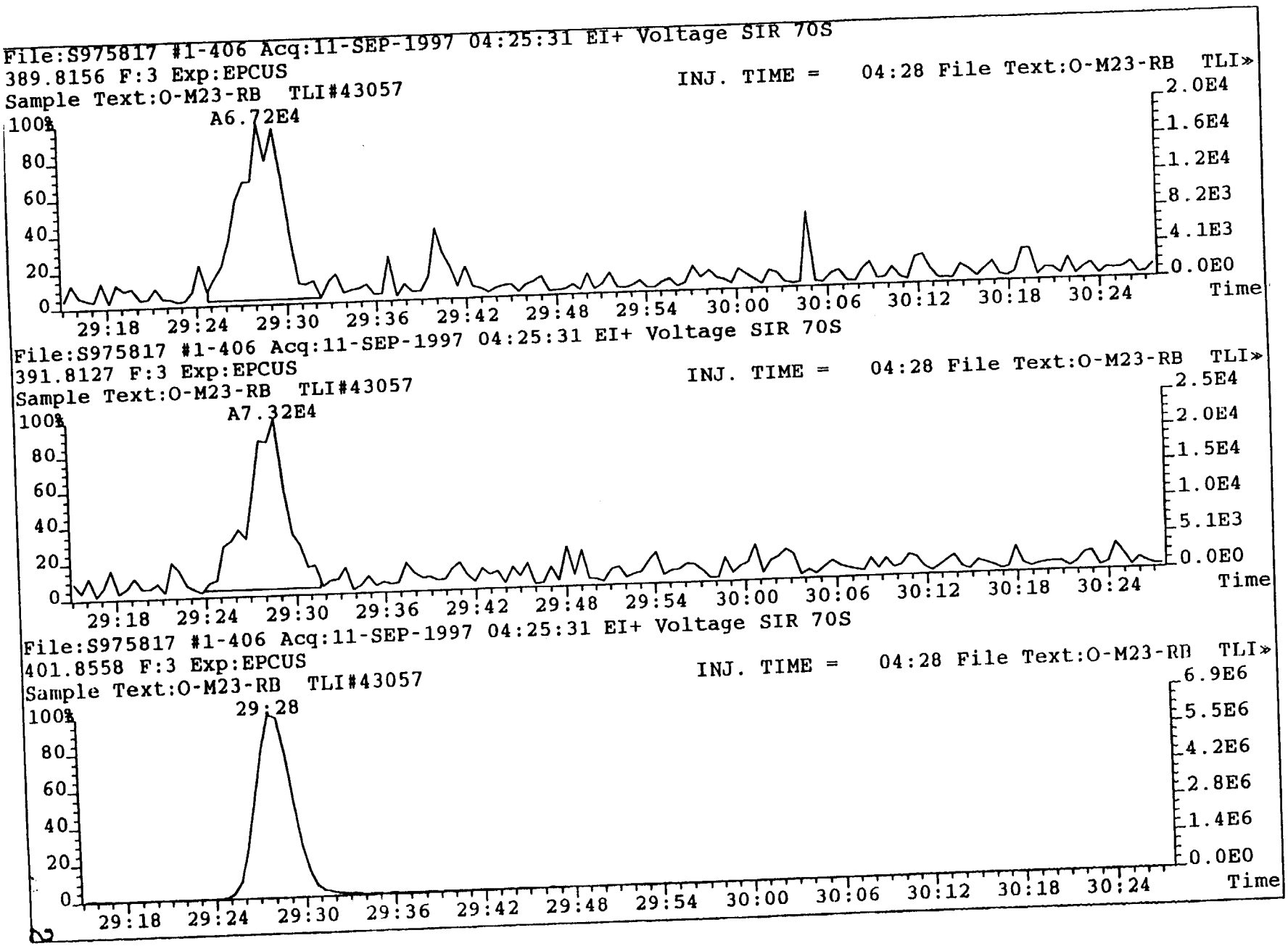

File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:35
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A2.07E5
A1.12E5
A1.60E4
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:35
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.90E5
A1.02E5
A7.01E3
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:1268
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,5072.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A8.84E6
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:750
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3000.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A8.78E6
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
31:19
31:28
31:47
31:54
32:01
32:07
32:13
32:19
32:26
31:18 31:24 31:30 31:36 31:42 31:48 31:54 32:00 32:06 32:12 32:18 32:24 32:30
Time


File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:42
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.12E5
A1.26E4
A4.08E3
A6.38E3
A9.92E3
A7.26E3
A6.48E3
A5.95E3
Time
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:222
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,888.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
A1.35E5
A7.94E3
A1.46E4
A6.18E3
A1.13E4
A1.24E4
A2.64E4
A4.99E3
A6.09E3
Time
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
Time
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057
INJ. TIME = 04:28
Time


File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:33
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057 INJ. TIME = 04:28
A1.61E5
A6.64E3
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:34
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,136.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057 INJ. TIME = 04:28
A1.72E5
A8.40E3
A5.33E3
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:33
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057 INJ. TIME = 04:28
A9.87E6
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S Noise:30
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,120.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057 INJ. TIME = 04:28
A1.24E7
File:S975817 #1-430 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-RB TLI#43057 INJ. TIME = 04:28
34:30
34:33
34:48
34:52
34:24
34:30
34:36
34:42
34:48
34:54
35:00
Time


File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
303.9016 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A3.89E4
100%
80
60
40
20
0
20:00
21:00
22:00
Time
1.2E4
9.3E3
7.0E3
4.6E3
2.3E3
0.0E0
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
305.8987 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A6.42E4
100%
80
60
40
20
0
20:00
21:00
22:00
Time
1.5E4
1.2E4
9.0E3
6.0E3
3.0E3
0.0E0
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
315.9419 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
20:21
100%
80
60
40
20
0
20:00
21:00
22:00
Time
4.6E6
3.7E6
2.8E6
1.9E6
9.3E5
0.0E0


File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A5.14E4
4.2E4
3.4E4
2.5E4
1.7E4
8.4E3
0.0E0
24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 26:12 26:24 26:36 26:48 27:00 Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A4.17E4
1.7E4
1.4E4
1.0E4
6.8E3
3.4E3
0.0E0
24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 26:12 26:24 26:36 26:48 27:00 Time
File:S975817 #1-848 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
24:41
25:27
7.4E6
5.9E6
4.4E6
2.9E6
1.5E6
0.0E0
24:36 24:48 25:00 25:12 25:24 25:36 25:48 26:00 26:12 26:24 26:36 26:48 27:00 Time


File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
389.8156 F:3 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A6.72E4
100%
80
60
40
20
0
2.0E4
1.6E4
1.2E4
8.2E3
4.1E3
0.0E0
Time
29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
391.8127 F:3 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
A7.32E4
100%
80
60
40
20
0
2.5E4
2.0E4
1.5E4
1.0E4
5.1E3
0.0E0
Time
29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24
File:S975817 #1-406 Acq:11-SEP-1997 04:25:31 EI+ Voltage SIR 70S
401.8558 F:3 Exp:EPCUS
Sample Text:O-M23-RB TLI#43057
INJ. TIME = 04:28 File Text:O-M23-RB TLI»
29:28
100%
80
60
40
20
0
6.9E6
5.5E6
4.2E6
2.8E6
1.4E6
0.0E0
Time
29:18 29:24 29:30 29:36 29:42 29:48 29:54 30:00 30:06 30:12 30:18 30:24

Pacific Environmental Services

TLI Project: 43057 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: O-M23-RB — Analysis File: P973847

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPC2NF04
TLI ID:	181-27-7AB&*	Date Extracted:	09/06/97	ICal:	PF22206
		Date Analyzed:	09/12/97	ConCal:	P973843
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975807	% 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	ND	0.01				—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.7	67.7	40%-130%	0.76	20:39	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.80	19:41	—

Quality Control Notes:
* 181-83-1

Date Received (181-83-1): 09/05/97

Data Reviewer: _____ 09/12/97

C2NF_PSR v2.00, LARS 6.10.04

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Printed: 15:07 09/12/97

Initial ....Date...

Data Review By: AJH 9/12/97 Calculated Noise Area: 2.07

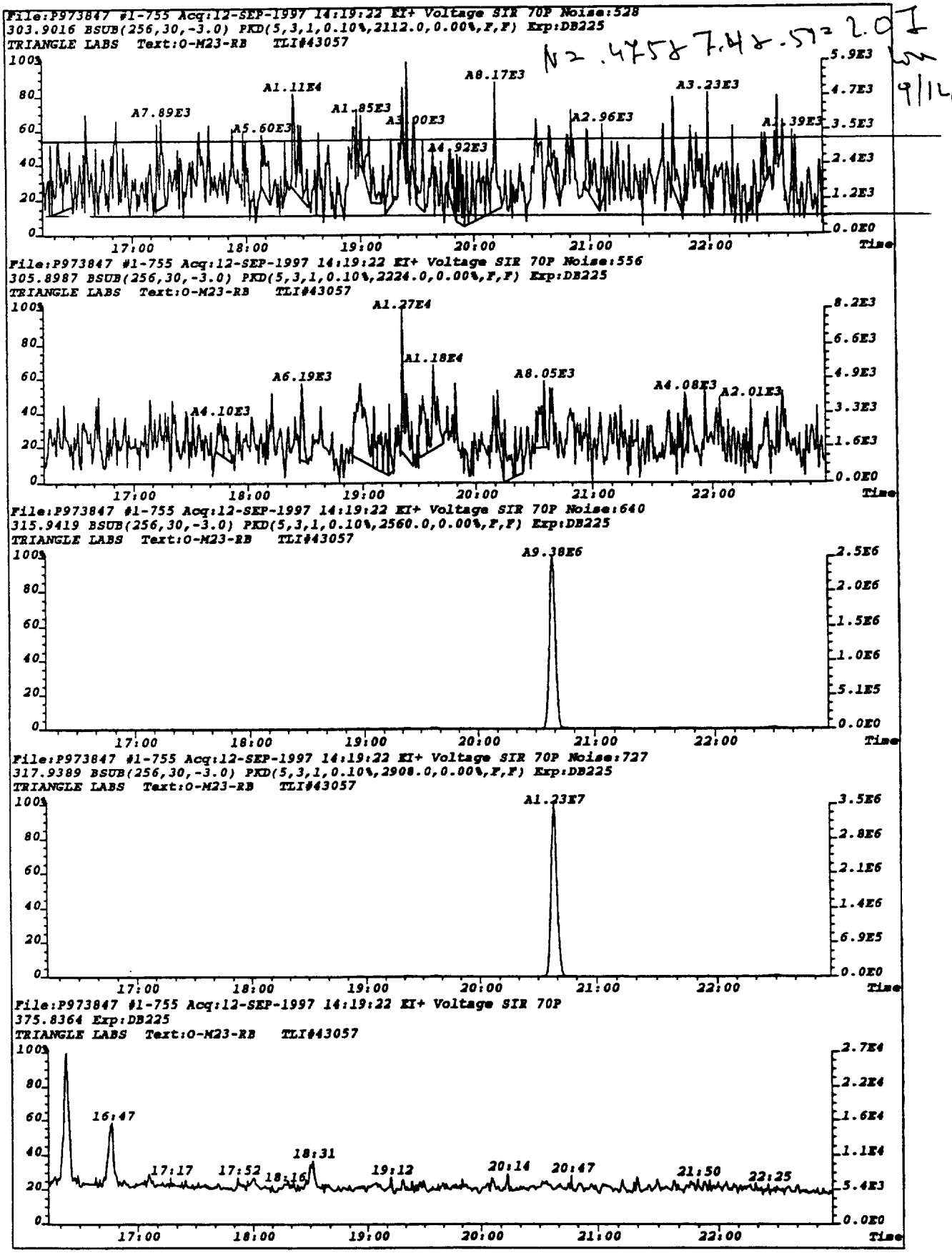
The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

Page No. 1 Listing of P973847B.dbf
09/12/97 Matched GC Peaks / Ratio / Ret. Time

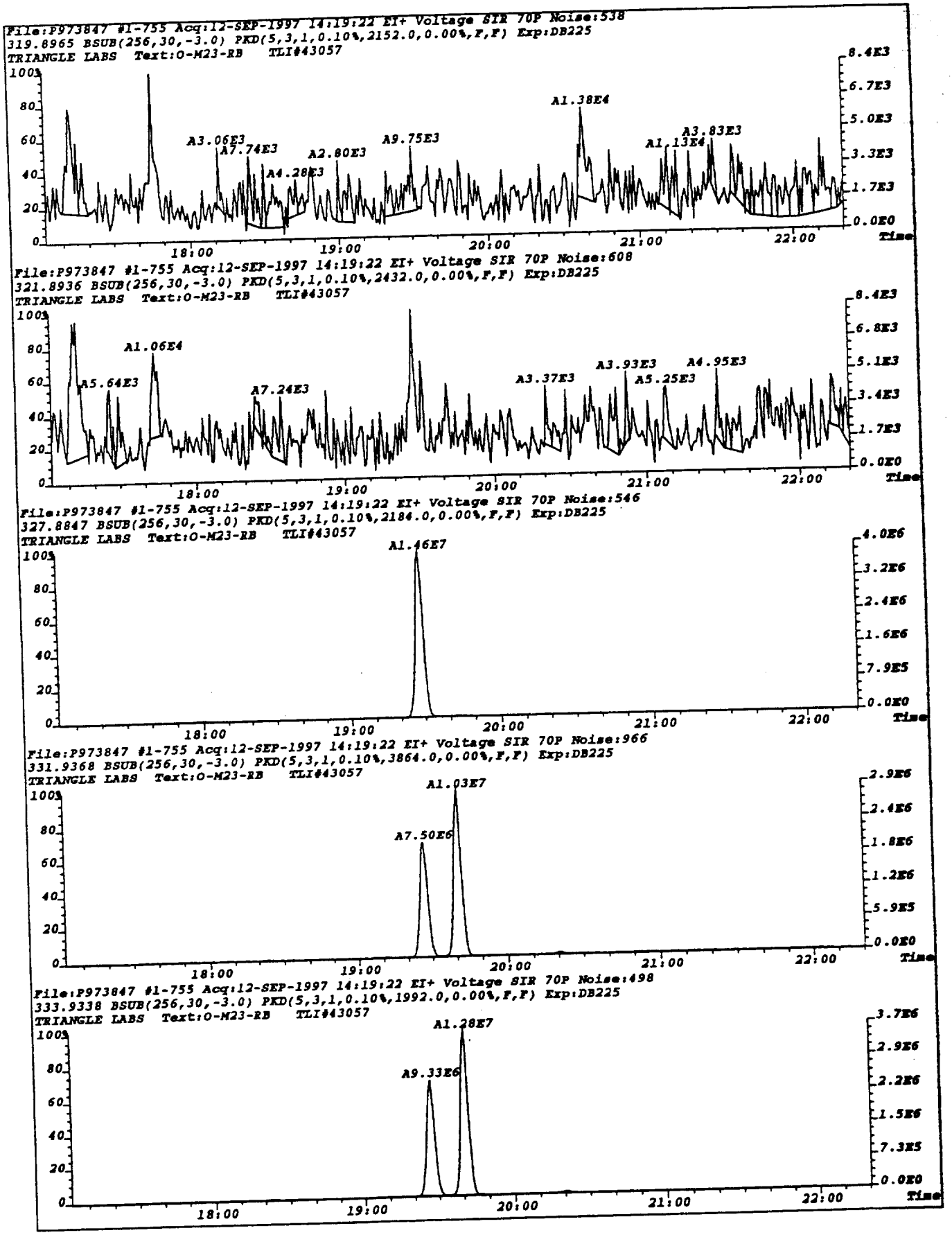
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF						0.65-0.89				0.786-1.096			
304-306	DC	NL		0:00	RO	0.95	1.96			0.000			
	DC	SN		19:01	RO	0.09	0.44			0.921			
	DC	SN		19:05	RO	1.12	0.58			0.924			
	DC	SN		19:16	RO	1.09	0.60			0.933			
	DC	SN		19:33	RO	0.47	0.83			0.947			
	DC	SN		20:11	RO	1.95	0.74			0.977			
304-306				0 Peaks			0.00						
13C12-TCDF						0.65-0.89				0.952-1.048			
316-318	DC	NL		0:00		0.88	2.73			0.000			
	DC	WL		19:22		0.69	9.53			0.938			
	DC	WL		19:38		0.69	13.11			0.951			
				20:39		0.76	2,170.73	937.74	1,232.99	1.000	13C12-2378-TCDF	ISO	
	DC	SN		21:11	RO	2.07	3.82			1.026			
	DC	WH		22:31		0.78	18.93			1.090			
316-318				1 Peak			2,170.73						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD						0.65-0.89				0.897-1.103			
332-334	DC	NL		0:00	RO	1.93	1.77			0.000			
				18:23	RO	0.62	7.54	3.28	5.25	0.945			
				19:27		0.80	1,683.09	749.83	933.26	1.000	13C12-2378-TCDD	IS1	
				19:41		0.80	2,308.84	1,029.03	1,279.81	1.012	13C12-1234-TCDD	RS1	
				20:20		0.85	21.44	9.82	11.62	1.045			
	DC	WH		21:54	RO	2.40	2.14			1.126			
332-334				4 Peaks			4,020.91						

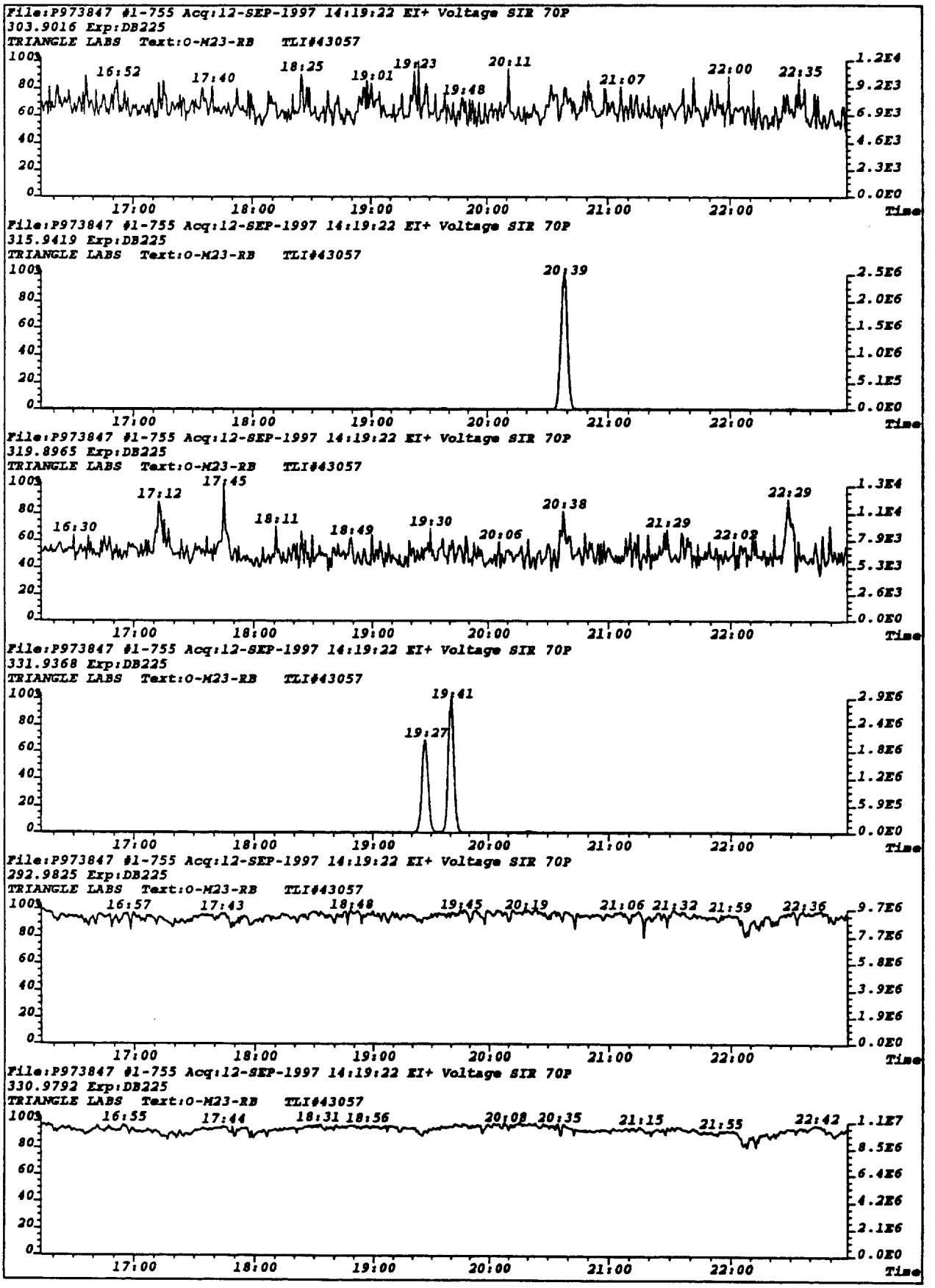
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside 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
		E-Ether Interference

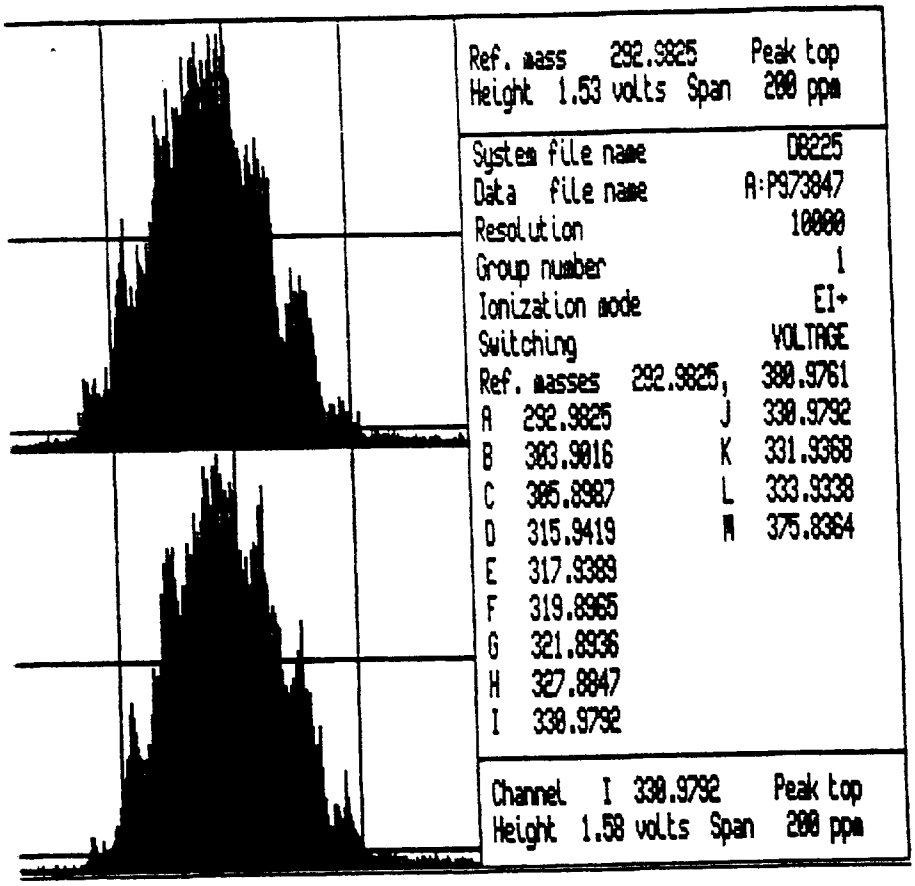
*** End of Report ***



N2 .4758 7.48 -57 2.0 I
9/14/97


File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P Noise:538
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2152.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
A3.06E3
A7.74E3
A4.28E3
A2.80E3
A9.75E3
A1.38E4
A1.13E4
A3.83E3
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P Noise:608
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2432.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
A1.06E4
A5.64E3
A7.24E3
A3.37E3
A3.93E3
A5.25E3
A4.95E3
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P Noise:546
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2184.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
A1.46E7
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P Noise:966
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3864.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
A1.03E7
A7.50E6
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P Noise:498
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1992.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
A1.28E7
A9.33E6
18:00
19:00
20:00
21:00
22:00
Time


File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
16:52
17:40
18:25
19:01
19:23
19:48
20:11
21:07
22:00
22:35
1.2E4
9.2E3
6.9E3
4.6E3
2.3E3
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
20:39
2.5E6
2.0E6
1.5E6
1.0E6
5.1E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
16:30
17:12
17:45
18:11
18:49
19:30
20:06
20:38
21:29
22:02
22:29
1.3E4
1.1E4
7.9E3
5.3E3
2.6E3
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
19:27
19:41
2.9E6
2.4E6
1.8E6
1.2E6
5.9E5
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
16:57
17:43
18:48
19:45
20:19
21:06
21:32
21:59
22:36
9.7E6
7.7E6
5.8E6
3.9E6
1.9E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time
File:P973847 #1-755 Acq:12-SEP-1997 14:19:22 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:O-M23-RB TLI#43057
16:55
17:44
18:31
18:56
20:08
20:35
21:15
21:55
22:42
1.1E7
8.5E6
6.4E6
4.2E6
2.1E6
0.0E0
17:00
18:00
19:00
20:00
21:00
22:00
Time



Ref. mass 292.9825 Peak top
Height 1.53 volts Span 200 ppm

System file name	DB225
Data file name	A:P973847
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 1.58 volts Span 200 ppm

TRIANGLE LABS

CALIBRATION DATA

Triangle Laboratories, Inc.
801 Capitola Drive
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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
Instrument.....: P

Method.....: C2NF
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 ***

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TRIANGLE LABORATORIES, INC. Date: 06/10/97
Initial Calibration Summary for SFS-11

Analysis Date.....: 06/10/97 Method.....: M23
Instrument.....: S

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total HpCDF	2.087	0.000	0%	8:15	0:01	13:43	2.931		1
Total HpCDD	1.625	0.000	0%	8:42	0:34	14:34	2.827		1
Total HxCDF	0.687	0.000	0%	10:38	6:43	14:43	5.965		1
Total HxCDD	1.326	0.000	0%	11:09	7:34	15:34	1.609		1
Total TriCDF	1.082	0.000	0%	13:59	10:43	17:43	1.025		1
Total TriCDD	0.933	0.000	0%	14:03	12:34	18:34	1.064		1
2378-TCDF	1.251	0.116	9%	19:43	15:43	23:43	0.799		5
TOTAL TCDF	1.251	0.116	9%				0.799		5
2378-TCDD	1.191	0.231	19%	20:36	16:34	24:34	0.772		5
TOTAL TCDD	1.191	0.231	19%				0.772		5
12378-PeCDF	1.111	0.082	7%	24:12	20:11	28:11	1.552		5
23478-PeCDF	1.115	0.061	5%	24:59			1.470		5
TOTAL PeCDF	1.113	0.069	6%				1.509		5
12378-PeCDD	1.256	0.113	9%	25:22	21:21	29:21	1.526		5
TOTAL PeCDD	1.256	0.113	9%				1.526		5
123478-HxCDF	1.215	0.064	5%	27:55	24:01	32:01	1.247		5
123678-HxCDF	1.574	0.099	6%	28:01			1.260		5
234678-HxCDF	1.247	0.069	6%	28:32			1.243		5
123789-HxCDF	1.105	0.060	5%	29:15			1.246		5
TOTAL HxCDF	1.285	0.062	5%				1.249		5
123478-HxCDD	0.953	0.067	7%	28:41	24:45	32:45	1.265		5
123678-HxCDD	1.133	0.070	6%	28:46			1.251		5
123789-HxCDD	1.091	0.067	6%	29:03			1.233		5
TOTAL HxCDD	1.059	0.067	6%				1.249		5
1234678-HpCDF	1.543	0.103	7%	30:45	26:45	34:45	1.034		5
1234789-HpCDF	1.184	0.100	8%	31:57			1.080		5
TOTAL HpCDF	1.363	0.095	7%				1.053		5
1234678-HpCDD	1.068	0.089	8%	31:37	27:36	35:36	0.993		5
TOTAL HpCDD	1.068	0.089	8%				0.993		5
OCDF	1.493	0.131	9%	34:09	30:02	38:02	0.876		5
OCDD	1.105	0.066	6%	34:03	30:02	38:02	0.902		5

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	0.843	0.038	5%	20:36	18:34	22:34			5
13C12-PeCDF 234	0.970	0.030	3%	24:58	22:11	26:11	1.470		5
13C12-HxCDF 478	0.959	0.042	4%	27:55			0.518		5
13C12-HxCDF 234	0.926	0.021	2%	28:32			0.517		5
13C12-HxCDF 789	0.805	0.044	5%	29:15			0.519		5
13C12-HxCDD 478	0.973	0.027	3%	28:40			1.241		5
13C12-HpCDF 789	0.771	0.049	6%	31:57	28:45	34:45	0.424		5

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.318	0.065	5%	19:43	18:43	20:43	0.734		5
13C12-2378-TCDD	1.066	0.020	2%	20:34	18:34	22:34	0.802		5
13C12-PeCDF 123	1.133	0.051	5%	24:11	20:11	28:11	1.447		5

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TRIANGLE LABORATORIES, INC. Date: 06/10/97

Initial Calibration Summary for SF56117

13C12-PeCDD 123	0.635	0.082	13%	25:21	21:21	29:21	1.461		5
13C12-HxCDF 678	1.204	0.073	6%	28:01	24:01	32:01	1.522		5
13C12-HxCDD 678	0.995	0.017	2%	28:45	27:45	29:45	1.240		5
13C12-HpCDF 678	0.887	0.046	5%	30:45	28:45	34:45	1.429		5
13C12-HpCDD 678	0.815	0.077	9%	31:36	30:36	32:36	1.019		5
13C12-OCDD	0.519	0.080	15%	34:02	32:02	36:02	1.866		5

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	20:21			0.811		5
13C12-HxCDD 789	1.000	0.000	0%	29:02			1.231		5

*** End of Report ***

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TRIANGLE LABORATORIES, INC. Date: 04/09/97

Initial Calibration Summary for XF24087

Analysis Date....: 04/08/97 Method.....: CLNF

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 ***

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Date: 09/12/97 TRIANGLE LABORATORIES OF RTP, INC.

Continuing Calibration for P9703843

Analysis Date....: 09/12/97
Operator.....: WK
Init Calibration.: PF22206
ICal Date.....: 02/20/96
Analysis Time....: 11:04

Method.....: CONF
Instrument..: P
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	0.964	0.76	16:14 22:38	20:40	1.0008	1.040	-0.076	-7.3%
TOTAL TCDF	0.964	0.76				1.040	-0.076	-7.3%
2378-TCDD	1.001	0.75	17:03 22:00	19:28	1.0009	0.992	0.009	0.9%
TOTAL TCDD	1.001	0.75				0.992	0.009	0.9%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.937		17:27 21:27	19:28	1.0009	1.014	-0.077	-7.6%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.201	0.77	19:39 21:39	20:39	1.0000	1.388	-0.187	-13.5%
13C12-2378-TCDD	1.006	0.79	17:27 21:27	19:27	1.0000	1.067	-0.061	-5.7%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.82		19:41	1.0120	1.000	0.000	0.0%

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Date: 9/10/97 TRIANGLE LABORATORIES, INC.

Continuing Calibration for S975?97

Analysis Date.....: 09/10/97 Method.....: M23?

Operator.....: BJG Instrument...: S

Init Calibration..: SF56117 Std.Conc.....: 50.00

ICal Date.....: 06/10/97

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total HCDF	0.000		0:23 14:23			2.087	-2.087	100.0%
Total HCDD	0.000		1:12 15:12			1.625	-1.625	100.0%
Total OCDF	0.000		7:23 15:23			0.687	-0.687	100.0%
Total OCDD	0.000		8:12 16:12			1.326	-1.326	100.0%
Total TriCDF	0.000		11:23 18:23			1.082	-1.082	100.0%
Total TriCDD	0.000		13:12 19:12			0.933	-0.933	100.0%
2378-TCDF	1.150	0.81	16:46 22:30	20:24	1.0008	1.251	-0.101	-8.1%
TOTAL TCDF	1.150	0.81				1.251	-0.101	-8.1%
2378-TCDD	1.191	0.78	18:10 22:30	21:13	1.0008	1.191	0.000	0.0%
TOTAL TCDD	1.191	0.78				1.191	0.000	0.0%
12378-PeCDF	1.091	1.54	22:27 26:39	24:43	1.0007	1.111	-0.020	-1.8%
23478-PeCDF	1.133	1.52		25:29	1.0317	1.115	0.018	1.7%
TOTAL PeCDF	1.112	1.53				1.113	-0.001	-0.1%
12378-PeCDD	1.229	1.58	23:48 26:31	25:52	1.0006	1.256	-0.027	-2.2%
TOTAL PeCDD	1.229	1.58				1.256	-0.027	-2.2%
123478-HxCDF	0.997	1.25	27:13 29:57	28:22	0.9971	1.215	-0.218	-17.9%
123678-HxCDF	1.240	1.26		28:28	1.0006	1.574	-0.334	-21.2%
234678-HxCDF	0.966	1.28		28:59	1.0187	1.247	-0.281	-22.5%
123789-HxCDF	0.889	1.26		29:42	1.0439	1.105	-0.216	-19.6%
TOTAL HxCDF	1.023	1.26				1.285	-0.262	-20.4%
123478-HxCDD	0.942	1.21	27:45 29:38	29:07	0.9977	0.953	-0.011	-1.1%
123678-HxCDD	1.080	1.20		29:12	1.0006	1.133	-0.053	-4.7%

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Printed: 14:20 09/10/97

123789-HxCDD	1.062	1.19		29:33	1.0109	1.091	-0.029	-2.6%
TOTAL HxCDD	1.028	1.20				1.059	-0.031	-2.9%
1234678-HpCDF	1.504	1.08	31:11 32:34	31:10	1.0000	1.543	-0.039	-2.5%
1234789-HpCDF	1.157	1.06		32:33	1.0390	1.184	-0.027	-2.3%
TOTAL HpCDF	1.331	1.07				1.363	-0.032	-2.4%
1234678-HpCDD	0.992	1.01	31:17 32:13	32:02	1.0000	1.068	-0.076	-7.1%
TOTAL HpCDD	0.992	1.01				1.068	-0.076	-7.1%
OCDF	1.433	0.93	30:30 38:30	34:38	1.0039	1.493	-0.060	-4.0%
OCDD	1.042	0.84	30:30 38:30	34:31	1.0005	1.105	-0.063	-5.7%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.955		19:12 23:12	21:13	1.0008	0.843	0.112	13.2%
13C12-PeCDF 234	0.992	1.47	20:42 28:42	25:28	1.0310	0.970	0.022	2.3%
13C12-HxCDF 478	0.982	0.46		28:21	0.9965	0.959	0.023	2.4%
13C12-HxCDF 234	0.906	0.47		28:58	1.0182	0.926	-0.020	-2.1%
13C12-HxCDF 789	0.776	0.44		29:41	1.0434	0.805	-0.029	-3.7%
13C12-HxCDD 478	1.010	1.20		29:06	0.9971	0.973	0.037	3.8%
13C12-HpCDF 789	0.811	0.42	29:10 35:10	32:22	1.0385	0.771	0.040	5.2%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.464	0.76	19:23 21:23	20:23	1.0000	1.318	0.146	11.1%
13C12-2378-TCDD	1.086	0.81	19:12 23:12	21:12	1.0000	1.066	0.020	1.9%
13C12-PeCDF 123	1.228	1.44	20:42 28:42	24:42	1.0000	1.133	0.095	8.4%
13C12-PeCDD 123	0.746	1.51	21:51 29:51	25:51	1.0000	0.635	0.111	17.6%
13C12-HxCDF 678	1.243	0.47	24:27 32:27	28:27	1.0000	1.204	0.039	3.3%
13C12-HxCDD 678	0.970	1.20	28:11 30:11	29:11	1.0000	0.995	-0.025	-2.5%

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13C12-HpCDF 678	0.750	0.44	29:10 35:10	31:10	1.0000	0.887	-0.137	-15.5%
13C12-HpCDD 678	0.736	1.02	31:02 33:02	32:02	1.0000	0.815	-0.029	-3.5%
13C12-OCDD	0.446	0.89	34:21 34:41	34:30	1.0000	0.519	-0.073	-14.0%

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		20:59	0.9898	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.22		29:29	1.0103	1.000	0.000	0.0%

QC Front End Check: 1.5494

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Date: 09/11/97

TRIANGLE LABORATORIES, INC.
Continuing Calibration for S975814

Analysis Date....: 09/11/97
Operator.....: JM
Init Calibration.: SF56117
ICal Date.....: 06/10/97

Method.....: M237
Instrument..: S
Std.Conc....: 50.00
Related CCal: S975778

Analyte Summary Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		0:24 14:24			2.087	-2.087	100.0%
Total MCDD	0.000		1:13 15:13			1.625	-1.625	100.0%
Total DCDF	0.000		7:24 15:24			0.687	-0.687	100.0%
Total DCDD	0.000		8:13 16:13			1.326	-1.326	100.0%
Total TriCDF	0.000		11:24 18:24			1.082	-1.082	100.0%
Total TriCDD	0.000		13:13 19:13			0.933	-0.933	100.0%
2378-TCDF	1.118	0.80	16:44 22:28	20:25	1.0008	1.251	-0.133	-10.6%
TOTAL TCDF	1.118	0.80				1.251	-0.133	-10.6%
2378-TCDD	1.146	0.80	18:06 22:28	21:14	1.0008	1.191	-0.045	-3.8%
TOTAL TCDD	1.146	0.80				1.191	-0.045	-3.8%
12378-PeCDF	1.093	1.53	22:24 26:38	24:43	1.0007	1.111	-0.018	-1.6%
23478-PeCDF	1.143	1.50		25:29	1.0317	1.115	0.028	2.5%
TOTAL PeCDF	1.118	1.51				1.113	0.005	0.5%
12378-PeCDD	1.209	1.59	23:47 26:30	25:52	1.0013	1.256	-0.047	-3.7%
TOTAL PeCDD	1.209	1.59				1.256	-0.047	-3.7%
123478-HxCDF	1.097	1.28	27:11 29:56	28:22	0.9965	1.215	-0.118	-9.7%
123678-HxCDF	1.379	1.29		28:28	1.0000	1.574	-0.195	-12.4%
234678-HxCDF	1.073	1.27		28:59	1.0181	1.247	-0.174	-13.9%
123789-HxCDF	0.977	1.29		29:41	1.0427	1.105	-0.128	-11.6%
TOTAL HxCDF	1.132	1.28				1.285	-0.153	-11.9%
123478-HxCDD	0.855	1.23	27:44 29:37	29:07	0.9977	0.953	-0.098	-10.3%
123678-HxCDD	1.058	1.24		29:12	1.0006	1.133	-0.075	-6.6%

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123789-HxCDD	1.052	1.24		29:29	1.0103	1.091	-0.039	-3.5%
TOTAL HxCDD	0.989	1.24				1.059	-0.070	-6.7%
1234678-HpCDF	1.384	1.04	31:01 32:33	31:11	1.0000	1.543	-0.159	-10.3%
1234789-HpCDF	1.094	1.05		32:23	1.0385	1.184	-0.090	-7.6%
TOTAL HpCDF	1.239	1.04				1.363	-0.124	-9.1%
1234678-HpCDD	1.001	1.03	31:16 32:13	32:03	1.0005	1.068	-0.067	-6.3%
TOTAL HpCDD	1.001	1.03				1.068	-0.067	-6.3%
OCDF	1.470	0.88	30:32 38:32	34:39	1.0034	1.493	-0.023	-1.5%
OCDD	1.049	0.90	30:32 38:32	34:32	1.0000	1.105	-0.056	-5.1%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.972		19:13 23:13	21:13	1.0000	0.843	0.129	15.3%
13C12-PeCDF 234	1.014	1.54	20:42 28:42	25:28	1.0310	0.970	0.044	4.5%
13C12-HxCDF 478	0.955	0.50		28:21	0.9959	0.959	-0.004	-0.4%
13C12-HxCDF 234	0.886	0.49		28:58	1.0176	0.926	-0.040	-4.3%
13C12-HxCDF 789	0.798	0.49		29:41	1.0427	0.805	-0.007	-0.8%
13C12-HxCDD 478	0.897	1.22		29:06	0.9971	0.973	-0.076	-7.8%
13C12-HpCDF 789	0.787	0.43	29:11 35:11	32:22	1.0379	0.771	0.016	2.1%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.554	0.74	19:24 21:24	20:24	1.0000	1.318	0.236	17.9%
13C12-2378-TCDD	1.110	0.78	19:13 23:13	21:13	1.0000	1.066	0.044	4.2%
13C12-PeCDF 123	1.243	1.52	20:42 28:42	24:42	1.0000	1.133	0.110	9.7%
13C12-PeCDD 123	0.713	1.58	21:50 29:50	25:50	1.0000	0.635	0.078	12.3%
13C12-HxCDF 678	1.294	0.50	24:28 32:28	28:28	1.0000	1.204	0.090	7.5%
13C12-HxCDD 678	0.964	1.22	28:11 30:11	29:11	1.0000	0.995	-0.031	-3.1%

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Date: 09/11/97

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Continuing Calibration for S975814

13C12-HpCDF 678	0.876	0.45	29:11 35:11	31:11	1.0000	0.887	-0.011	-1.3%
13C12-HpCDD 678	0.782	1.06	31:02 33:02	32:02	1.0000	0.815	-0.033	-4.1%
13C12-OCDD	0.434	0.84	34:22 34:42	34:32	1.0000	0.519	-0.085	-16.3%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.83		21:00	0.9898	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.22		29:29	1.0103	1.000	0.000	0.0%

QC Front End Check: 1.6171

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Date: 09/11/97 TRIANGLE LABORATORIES, INC.

Continuing Calibration for X973069

Analysis Date....: 09/11/97 Method.....: C2NF
Operator.....: BJG Instrument..: X
Init Calibration.: XF24087 Std.Conc....: 5.00
ICal Date.....: 04/08/97
Analysis Time....: 12:00 GC Column...: DB-225

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
2378-TCDF	1.051	0.81	17:54 24:42	22:29	1.0015	0.967	0.084	8.7%
TOTAL TCDF	1.051	0.81				0.967	0.084	8.7%
2378-TCDD	1.079	0.78	18:43 23:58	21:12	1.0016	1.095	-0.016	-1.4%
TOTAL TCDD	1.079	0.78				1.095	-0.016	-1.4%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.967		19:10 23:10	21:12	1.0016	1.018	-0.051	-5.0%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.285	0.80	21:27 23:27	22:27	1.0000	1.392	-0.107	-7.7%
13C12-2378-TCDD	1.000	0.78	19:10 23:10	21:10	1.0000	1.105	-0.105	-9.5%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.78		21:27	1.0134	1.000	0.000	0.0%

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Printed: 13:18 09/11/97

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:	September 11, 1997
Client ID:	Pacific Environmental Services
P.O. Number:	104-98-0019 & -0020
TLI Project Number:	43057r1

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Rev. 05/08/97

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Overview

Seven M23 samples were received from Pacific Environmental Services in good condition on August 29, 1997 at 19 °C. One XAD trap for sample O-M23-RB was received from Pacific Environmental Services without a chain-of-custody in good condition on September 5, 1997 at ambient temperature. The samples were stored in a refrigerator at 4°C until the time of extraction. The M23 samples and associated QC sample were extracted and analyzed according to procedures described in the Triangle Laboratories' Data User's Manual (Rev. 12/92-HK-2-AH-2/93). Any particular difficulties encountered during the samples' handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI M23 Blank, was prepared along with the samples.

Quality Control Remarks

This release of this particular set of Pacific Environmental Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually 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. Please consult Triangle Laboratories' Data User's Manual for further details. Specific QC issues associated with this particular project are:

Sample Preparation Laboratory: None

Mass Spectrometry: The archived extracts of samples O-M23-4 and the method blank were processed through normal cleanup procedures because sample O-M23-4 was destroyed in the wet laboratory during filtration.

Data Review: None

Other Comments: Any analytes found in the TLI M23 Blank are detected at a level equal to or less than the Target Detection Limit. This level of contamination is acceptable as per TLI guidelines.

Sample Calculations:

Analyte Concentration

The amount of any analyte is calculated using the following expression.

$$Amt_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$Amt_{(\sigma)}$ is the amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume (W = 1 for M23)

The amount is expressed in nanograms (ng) or picograms (pg).

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:

3A JMH 9/15/97

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_{β} is the integrated current of the characteristic ions of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

The detection limit is expressed in nanograms (ng) or picograms (pg).

Other sample calculations may be found in the Triangle Laboratories Data User's Manual.

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports, as discussed in Triangle Laboratories' Method 23 Data User's Manual. 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 will be 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. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples. If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should

be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' 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 quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

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 **'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. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

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.

A **'U'** flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount 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.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 23 (6/93) and Triangle Laboratories' Method 23 Data User's Manual. Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Pacific Environmental Services 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 Final Quality Control Chemist

Sheila A. Lee-Lewis
Report Preparation Chemist

The total number of pages in the data package is : 163

105 enc 9/18/97

TRIANGLE LABORATORIES, INC.

LIST OF CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

American Association for Laboratory Accreditation. Expires July 31, 1997. 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, Volatiles, Pesticides, PCB's, BNA's, and Dioxin/Furan. Method 1613 for Drinking Water.

State of Alabama, Department of Environmental Management. Expires December 31, 1997. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1997. 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.

State of California, Department of Health Services. Expires August 31, 1997. 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, 1997. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1997. Certificate #NC 140. Dioxin in drinking water.

Florida Department of Health and Rehabilitative Services. Expires June 30, 1997.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 November 30, 1997. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non potable 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, 1997. ID#90060. Dioxin in drinking water.

Maryland Department of Health and Mental Hygiene. Expires September 30, 1997. Certification #235. Drinking water by Method 1613A.

State of Michigan, Department of Public Health. Expires March 31, 1997. 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, 1997. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Extended by state. Temporary certificate until June 30, 1997 or sooner. ID #67851. BNAs and Volatiles. Dioxin in drinking water.

State of New Mexico, Environment Department. Expires July 31, 1997. Dioxin in drinking water.

New York State Department of Health. Expires June 30, 1997. 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 December 31, 1997. Certificate # 37751. Dioxin in drinking water.

State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management. Expires December 31, 1997. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1997. Certificate # R-076. Effective October 4, 1993. Dioxin in drinking water.

Oklahoma Department of Environmental Quality. Expires October 31, 1997. Laboratory #9612. Dioxin by 1613A, 8290 and 8280.

State of South Carolina, Department of Health and Environmental Control. Expires June 30, 1997. Certificate number #99040001 (drinking water). Expires August 31, 1997. 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, 2002. Permit No. S-4958. 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. Expires November 30, 1997. 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 13, 1997. Dioxin in drinking water.

State of Utah, Department of Health. Expires December 31, 1997. 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, 1997. 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, 1997. Certificate No. 9923(C). Dioxin in drinking water.

State of Wisconsin, Department of Natural Resources. Expires June 30, 1997. 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, 1997. Registration number RT01195835. Controlled substance registration for schedules 1,2.3,3N,4,5.

N.C. Department of Human Resources. Expires October 31, 1997. Registration number NC-PT 0000 0031. North Carolina controlled substances registration. Application submitted for renewal.

Food & Drug Administration (FDA) Registration. Expires July 1997. 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 Radioactive Materials License. Expires April 30 1998. License No. 032-0954-1. License authorizes the licensee to receive, acquire, own, possess, transfer, import and use such radioactive materials as designated.

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.

TRIANGLE LABS

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

COPY of 8/29/97

11

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc. | Contact: Mike Maret

Address: 5001 S. Miami Blvd. | Project Name: ASPHALT PLANT "A"

RTP, NC 27709-2077 | Project Location: Garner, NC

P.O. #:

Phone #: 919-941-0333 | Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
Inlet	8/19/97	9:15	Composite	I-M23-1-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Inlet	8/19/97	"	Composite	I-M23-1-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Inlet	8.19.97	"	Composite	I-M23-1-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Inlet	8.19.97	"	Composite	I-M23-1-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.19.97	9:15	Composite	O-M23-1-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-1-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet	"	"	Composite	O-M23-1-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-1-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.20.97	8:22	Composite	O-M23-2-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-2-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:
Received for Laboratory By/Signature:	Date/Time: 8/29/97 12:45	Send Samples To:	Triangle Laboratories, Inc. 801 Capitola Drive Durham, North Carolina 27713		

COPY 8/29/97

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc. Contact: Mike Maret

Address: 5001 S. Miami Blvd. Project Name: ASPHALT PLANT "A"

RTP, NC 27709-2077 Project Location: Garner, NC

P.O. #:

Phone #: 919-941-0333 Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
Outlet	8.20.97	8:22	Composite	O-M23-2-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-2-IMP	2	Poly-chlorinated Dioxin/Furans	ARCHIVE
Outlet	8.20.97	14:05	Composite	O-M23-3-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-3-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet	"	"	Composite	O-M23-3-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-3-IMP	2	Poly-chlorinated Dioxin/Furans	ARCHIVE
OUTLET	8.19.97	1519	Composite	O-M23-FB-XAD	1	Poly-chlorinated Dioxin/Furans	XAD
OUTLET	"	"	Composite	O-M23-FB-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
OUTLET	"	"	Composite	O-M23-FB-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
OUTLET	"	"	Composite	O-M23-FB-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
[signature]	8/29/97 12:45				

Received for Laboratory By/Signature:

[signature]

Date/Time: 8/29/97 12:45

Send Samples To: *Triangle Laboratories, Inc.*
801 Capitola Drive
Durham, North Carolina 27713

COPY 8/29/97

13

CHAIN OF CUSTODY — **Sampler's Signature:**

Company: PES, Inc. — Contact: Mike Maret

Address: 5001 S. Miami Blvd. — Project Name: ASPHALT PLANT "A"

RTP, NC 27709-2077 — Project Location: Garner, NC

P.O. #:

Phone #: 919-941-0333 — Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
~~Outlet~~			~~Composite~~	~~O-M23-4-HCl~~		~~16 Trace Metals Plus Hg~~	~~HCl~~
Outlet	8-21-97	7:41	Composite	O-M23-4-XAD	1 -	Poly-chlorinated Dioxin/Furans	XAD
Outlet	"	"	Composite	O-M23-4-Ace/Toluene	1 -	Poly-chlorinated Dioxin/Furans	Ace/Toluene
Outlet	"	"	Composite	O-M23-4-Filter	1 -	Poly-chlorinated Dioxin/Furans	Filter
Outlet	"	"	Composite	O-M23-4-IMP	1 -	Poly-chlorinated Dioxin/Furans	ARCHIVE

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:

Received for Laboratory By/Signature:

Date/Time: 8/29/97 12:45

Send Samples To: ***Triangle Laboratories, Inc.***
801 Capitola Drive
Durham, North Carolina 27713

COPY 8/29/97

14

CHAIN OF CUSTODY

Sampler's Signature:

Company: PES, Inc.
Address: 5001 S. Miami Blvd.
RTP, NC 27709-2077
Phone #: 919-941-0333

Contact: Mike Maret
Project Name: ASPHALT PLANT "A"
Project Location: Garner, NC
P.O. #:
Fax #: 919-941-0234

Comments:

Location Sampled:	Date:	Time:	Grab or Comp.:	Field Sample I.D.#:	# of Cont.	Analysis Required:	Remarks:
			Composite	O-M23-RB-XAD	1	Poly-chlorinated Dioxin/Furans	XAD → NOT Present
			Composite	O-M23-RB-Ace/Toluene	1	Poly-chlorinated Dioxin/Furans	Ace/Toluene
			Composite	O-M23-RB-Filter	1	Poly-chlorinated Dioxin/Furans	Filter
			Composite	O-M23-RB-IMP	1	Poly-chlorinated Dioxin/Furans	ARCHIVE

Relinquished By:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
Relinquished By:	Date/Time: 8/29/97 12:45	Received By:	Relinquished By:	Date/Time:	Received By:
Received for Laboratory By/Signature:	Date/Time: 8/29/97 12:45	Send Samples To:	Triangle Laboratories, Inc. 801 Capitola Drive Durham, North Carolina 27713		

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43057
Client: PSC01 - PES, Inc.

Book 181
Page 27

Date Received 08/29/97 By Kelvin M. Lynch

Carrier and Number FRANK PHOENIX

Ice Chest/Box ICE Temp 19.0 C

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
181-27-1A	I-M23-1-XAD I-M23-1-XAD	XAD C02			LA 9/6/97						
181-27-1B	I-M23-1-ACE/TOLUENE I-M23-1-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-1C	I-M23-1-FILTER I-M23-1-FILTER	FILTER C02									
181-27-1D	I-M23-1-IMP I-M23-1-IMP	IMP C02									
181-27-2A	O-M23-1-XAD O-M23-1-XAD	XAD C02									
181-27-2B	O-M23-1-ACE/TOLUENE O-M23-1-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-2C	O-M23-1-FILTER O-M23-1-FILTER	FILTER C02									
181-27-2D	O-M23-1-IMP O-M23-1-IMP	IMP C02									
181-27-3A	O-M23-2-XAD O-M23-2-XAD	XAD C02									
181-27-3B	O-M23-2-ACE/TOLUENE O-M23-2-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY			USED				
181-27-3C	O-M23-2-FILTER O-M23-2-FILTER	FILTER C02									
181-27-3D	O-M23-2-IMP O-M23-2-IMP	IMP C02									
181-27-3E	O-M23-2-IMP O-M23-2-IMP	IMP C02									
181-27-4A	O-M23-3-XAD O-M23-3-XAD	XAD C02					USED				

Receiving Remarks: SAMPLES DELIVERED IN 3 BOXES AND 1 COOLER. ICE IN COOLER WAS WATER WHEN RECIEVED. SAMPLE O-M23-RB-XAD WAS NOT WITH SHIPMENT.

Archive Remarks:

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

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

TLI Project Number 43057
Client: PSC01 - PES, Inc.

Book 181 Page 27

Date Received 08/29/97 By Kathie M. Lynch

Carrier and Number FRANK PHOENIX

Ice Chest/Box ICE Temp 19.0 C

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
181-27-4B	O-M23-3-ACE/TOLUENE O-M23-3-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY	LA 9/6/97	>USED					
181-27-4C	O-M23-3-FILTER O-M23-3-FILTER	FILTER C02									
181-27-4D	O-M23-3-IMP O-M23-3-IMP	IMP C02									
181-27-4E	O-M23-3-IMP O-M23-3-IMP	IMP C02									
181-27-5A	O-M23-FB-XAD O-M23-FB-XAD	XAD C02									
181-27-5B	O-M23-FB-ACE/TOLUENE O-M23-FB-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		>USED					
181-27-5C	O-M23-FB-FILTER O-M23-FB-FILTER	FILTER C02									
181-27-5D	O-M23-FB-IMP O-M23-FB-IMP	IMP C02									
181-27-6A	O-M23-4-XAD O-M23-4-XAD	XAD C02									
181-27-6B	O-M23-4-ACE/TOLUENE O-M23-4-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		>USED					
181-27-6C	O-M23-4-FILTER O-M23-4-FILTER	FILTER C02									
181-27-6D	O-M23-4-IMP O-M23-4-IMP	IMP C02									
181-27-7A	O-M23-RB-ACE/TOLUENE O-M23-RB-ACE/TOLUENE	ACE/TOLUENE C02	9-5-97 JSY	9-5-97 JSY		>USED					
181-27-7B	O-M23-RB-FILTER O-M23-RB-FILTER	FILTER C02									

Receiving Remarks: SAMPLES DELIVERED IN 3 BOXES AND 1 COOLER. ICE IN COOLER WAS WATER WHEN RECIEVED. SAMPLE O-M23-RB-XAD WAS NOT WITH SHIPMENT.

Archive Remarks:

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

Custody Seal : Absent
Chain of Custody : Absent
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : Absent

Sample Seals: Absent
Container...: Intact

TLI Project Number 43113
Client: PES03 - Pacific Environmental Services

Book 181

Date Received 09/05/97 By

Page 83

NO COOLANT

Carrier and Number DEBBIE HAGE

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
181-83-1	Reagent Blank Xad no C.O.C. *	XAD C01	LA 9/6/97	USED							

Receiving Remarks: Debbie Hage said this was a sample that Belonged to client.
No paperwork arrived with samples; CLIENT needs to provide a Chain of Custody with sample IDs matching the sample labels.

Archive Remarks:

TRIANGLE LABORATORIES, INC.
SAMPLE TRACKING AND PROJECT MANAGEMENT FORM

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

TLI Proj#: 43057-r1	Samples: 1	TurnAround.: 7 Day(s)
Prod Code: D23061	Matrix.: M23Train	Hold Time..: 30 Day(s)
DetectLim: 0.05 ng	Type...: A	Start Date.: 09/05/97
	Recvd..: 08/29/97	Ship By....: 09/11/97 lm 9/10/97
		DWL Due Dt.: ~~09/09/97~~ ASAP

Analyte List.: tetra-octa PCDDs/PCDFs

Method.....: Method 23:Tetra-Octa (Tol Combined)
Client Proj..: ASPHALT PLANT "A"
Client.....: Pacific Environmental Services (PES03)
P.O. No.....: 104-98-0019 & -0020
Contact.....: Mike Maret
Proj. Mgr....: Amy J. Boehm
Collect Dt/Tm: SeeCOC
Phone.....: 919-941-0333
Fax.....: 919-941-0234
Sample Origin: NC

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

Prep Project: 03804
Prespike Standard: USF-CS
Prespike Amount..: 4.0ng
Extraction Exp...: 09/18/97

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

Reporting Format: Report Option II

See MILES for Instructions/Communications.

Completed by: lm DATE: 9/10/97

Reviewed by: Walter Mays DATE: 9/10/97 (PMGT0197)

TLI Project Number: 43057

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.

te	Name	Comment / Decision / Resolution / Action / Observation
		XAD-White
		PSC01-PES, Inc. I-M23-1-FILTER Project:43057 181-27-1C 1 Filter white with approx 60g of brown ash residue
		PSC01-PES, Inc. I-M23-1-XAD Project:43057 181-27-1A gas smell
		XAD-White
		PSC01-PES, Inc. O-M23-1-FILTER Project:43057 181-27-2C 1 Filter - white/brown
		PSC01-PES, Inc. O-M23-1-XAD Project:43057 181-27-2A gas smell
		XAD-white
		PSC01-PES, Inc. O-M23-2-FILTER Project:43057 181-27-3C 1 Filter white/brown
		PSC01-PES, Inc. O-M23-2-XAD Project:43057 181-27-3A gas smell

PROJECT COMMUNICATION TRACKING FORM

TLI Project Number: 43057

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.

ate	Name	Comment / Decision / Resolution / Action / Observation	
		PSC01-PES, Inc. O-M23-3-XAD Project:43057 181-27-4A	XAD - White
		PSC01-PES, Inc. O-M23-3-FILTER Project:43057 181-27-4C	1 Filter - white/lt brown - gas smell
		PSC01-PES, Inc. O-M23-FB-XAD Project:43057 181-27-5A	XAD White
		PSC01-PES, Inc. O-M23-FB-FILTER Project:43057 181-27-5C	1 Filter white
		PSC01-PES, Inc. O-M23-4-XAD Project:43057 181-27-6A	White - XAD
		PSC01-PES, Inc. O-M23-4-FILTER Project:43057 181-27-6C	1 Filter - white with lt brown residue
		PES03-Pacific Environmental Services Reagent Blank Xad Project:43113 181-83-1	1 Filter white XAD White
		PSC01-PES, Inc. O-M23-RB-FILTER Project:43057 181-27-7B	

TRIANGLE LABORATORIES, INC. PAGE 1 OF 1

Dioxin Sample Preparation Tracking & Management Form

Project: 43057 Client: Pacific Environmental Services (PES03)

Solvent(s)/Acid(s): Toluene / _____ / _____ Method: Method 23:Tetra-Octa (Tol Combined) Matrix: XAD Filters

Lot Numbers: 974861 / _____ / _____ Extraction Date: 9/6/97

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 5234I USF I 7/02/98 9/06/97 14:00 0.1 ng/µl 40 µl	LA 5233B USF MX 12/17/97 9/06/97 14:03 0.01 ng/µl 40 µl	QDM 5235 E USF-A 07/02/98 9/08/97 13:45 0.1 ng/µl 40 µl	_____ Chemist / Spike # / * ID / * Expir / * Date / * Time / * Conc. / * Vol.	
000	TLI Blank / TLI M23 Blank	—			L.C.		MS		Any Left yes/no
001	181-27-1A-C / I-M23-1	—			L.C.		MS		Any Left yes/no
002	181-27-2A-C / O-M23-1	—			L.C.		MS		Any Left yes/no
003	181-27-3A-C / O-M23-2	—			L.C.		MS		Any Left yes/no
004	181-27-4A-C / O-M23-3	—			L.C.		MS		Any Left yes/no
005	181-27-5A-C / O-M23-FB	—			L.C.		MS		Any Left yes/no
006	181-27-6A-C / O-M23-4	—			L.C.		MS		Any Left yes/no
007	181-27-7AB& 181-83-1 / O-M23-RB	—			L.C.		MS		Any Left yes/no
008	TLI LCS / TLI LCS	—			L.C.	L.C. *	MS		Any Left yes/no
009	TLI LCSD / TLI LCSD	—			L.C.	L.C. *	MS		Any Left yes/no

Gross weight of sample container + sample before/after aliquot removal.

Comments: (1) & (2) Acetone/Toluene Rinses had fine particles - they were filtered through soxthimbles before RotoVaping 9/9/97

Initials: LA Date: 9/6/97

Initials of both SPIKER AND OBSERVER must be entered. XXXXX = Gross Weight not provided for WATER Samples.

REV 05/27/97 (PSTMP 7)

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 43057

Ext S#.crd and TLI Number	1	2	4A	6	3	7A	7	8A	9
000 TLI Blank	LA 9/6/97	9.8.97	MS 9.8.97	MS 9.8.97	TMW 9.8.97	TMW 9.8.97	TMW 9.8.97	LA 9/9/97	9/9/97
001 181-27-1A-C									
002 181-27-2A-C									
003 181-27-3A-C									
004 181-27-4A-C									
005 181-27-5A-C									
006 181-27-6A-C				TMW 9.8.97					
007 181-27-7AB& 181-83-1				MS 9.8.97					
008 TLI LCS				TMW 9.8.97					
009 TLI LCSD									JLB

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.....	DETAILS (circle)
(1)	EXTRACTION	ON ✓ OFF Soxhlet / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
(2)	SPIKE AFTER EXTRACTION	9/6/97 14:30 9/7/97 06:30 LA
(3)	ADD TRIDECANE	
(4)	ROTOVAP	40mL / 10mL / Dryness
5)	COMBINE	
(6)	DIVIDE / LIPID DETERMINATION	20%/80% 50%/50% 5mL/20mL Other_____
(7)	SOLVENT EXCHANGE	
(8)	CLEANUP/ Double Column	DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
(9)	TRANSFER	
10)	ADDITIONAL CLEANUP	Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
11)	FINAL TRANSFER	

Comments: _____

Rev 06/24/97 (PSTMF 4)

TRIANGLE LABORATORIES, INC.

DIOXIN SAMPLE EXTRACTION and CLEANUP TRACKING FORM

TLI Project No.: 43057 r1

Ext S#.crd and TLI Number	3	4	7	3A	9
r1 000 TLI Blank	L.C 9-10-97	J.L.	J.L.	MH 9/11/97	9/11/97
r1 006 181-27-6A-C	↓	↓	↓	↓	↓
	9/10/97	9/10/97	9/10/97	9/11/97	

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	DETAILS (circle)
1)	EXTRACTION	ON__ OFF__ Soxhlet / Jar / Sep Funnel / Steam Dist / Cont LL / ASE / Waste Dilution
2)	SPIKE AFTER EXTRACTION	
3)	ADD TRIDECANE	
4)	ROTOVAP	40mL / 10mL / Dryness
5)	COMBINE	
6)	DIVIDE / LIPID DETERMINATION	20%/80% 50%/50% 5mL/20mL Other_____
7)	SOLVENT EXCHANGE	
8)	CLEANUP (A Doubk Column)	(DSP 260) / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
9)	TRANSFER	
10)	ADDITIONAL CLEANUP	Mod. DSP 260 / DSP 225 / DSP 115 / DSP 215 / DSP 267 / Other _____
11)	FINAL TRANSFER	

Comments: _____

Rev 06/24/97 (PSTMF 4)

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 43057-r1

Transfer From: DWLH5 To: DMS5

	Initials..	Date.....	Time...
Released by:	[signature]	9/11/97	11:45
Accepted by:	[signature]	9/12/97	12:35

MILES.ID.....	TLI_No.....	Cust.Id.....
43057-r1 -000	TLI Blank	TLI M23 Blank
43057-r1 -006	181-27-6A-C	O-M23-4

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: 0.05 ng

PROJECT: 43057r1

SAMPLE INFORMATION

RS Conc 20 µl @ 100.0 PG/µl

3#.crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	1ST COLUMN GC/MS FILENAME COLUMN: DB-5	CONFIRM	2ND COLUMN CONFIRM FILENAME COLUMN: DB225	USF-RS VOLUME 10 µl SOLN ID 57464	USF-RS INIT. MMP DATE 9/14/94	ANALYSIS COMMENTS
c1	TLI Blank						
000	TLI M23 Blank	9975364		P973646	↓	↓	
c1	181-27-6A-C						
006	O-M23-4	9975365	Y	149	↓	↓	

Comments: _____

Type: A

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
705	DB5	7458551	TD2	2.0 µl	EPCUS2	EPC45

Glenn Graham — Signature
ic 9-12-97 — Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
S975858	9-12-97		—	5170B	—	RTCHK	RTCHK		GG 9-12-97	
S975859	9-12-97	1937	—	4514G	—	Concal 50.0	M045	4.4 EG	BG 9-12-97	NG
S975860	9-11-97	2003	—	5170B	—	RTCHK	RTCHK	8%	ML 9-12-97	SE ML 9/12/97 Good
S975861	9-12-97	2120	—	5414G	—	Concal 50 M23	M-0 50	6.8 EG	ML 9-12-97	Good
S975862	9-12-97	2220	—	5413	—	8290 Concal 5.0	M-0 83	6.2 EG	ML 9/12/97	Good
S975863	9-11-97	2306	4297911	TLi Blank	0	TLi M23 Blank	S9121	4.9 EG	ML 9/12/97	
S975864	9-13-97	00:14	43057r1	TLi Blank	0	TLi M23 Blank	Auto	6.0 GG	ML 9/13/97	
S975865		00:54	↓	181-27-61-C	6	D-M23-4		6.2 GC		
S975866		01:33	43085	181-55-1ABE	1	D-M23-1		2.7 GC		
S975867		02:12		181-55-2ABE	2	D-M23-2		2.4 GC		10µl of nonane added.
S975868		02:52	↓	181-55-3ABE	3	D-M23-3		1.1 GC		
S975869		03:31	43054A	TLi Blank	0	TLi Solid Blank		8.1 GC		
S975870	↓	04:11	↓	181-24-1	1	ME050-SL-087-TRIM.SL	↓	83 GC	↓	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: M23 out at 9:20 9/13/97
ConCal Due: 8290 out at 10:20 9/13/97

Triangle Laboratories, Inc.
Run Log

Instrument ID	Column Type	Column ID	Plot Name	Inj. Vol.	Acquisition	G/C
70P	DB 225	G360413	TT1	2.0 ul	DB 225	DB 225

LDu
Signature

9/12/97
Date

Filename	Date*	Time*	Project #	Sample#	No.	Client Sample ID	Syr	332	Operator/Date	Comments**
P9736 42	9/12/97	10:13	—	51708	-	RTCHK	MOCH	141	DL 9/12/97	
1 43	1	11:04	—	44984	—	TETRA CONCH 5.0	TETRA 5.0	1.9 EC	1	GOOD LDu 9/12/97
1 44	1	11:59	—	52961	-	RB-100	RB-100	1.7 EC	1	clean LDu 9/12/97
1 45	1	12:45	43057	181-27-3AC	3	O-M23-2	P9081	1.9 EC	1	
1 46	1	13:32	1	1 -4AC	4	1 -3	1	3.0 EC	1	
1 47	1	14:19	1	1 -7AC 181-83-1	7	1 -RB	1	2.9 EC	1	
1 48	1	15:06	43057 rv 1	TU BLANK	0	TU M23 BLANK	1	2.0 EC	1	
1 49	1	1553	1	181-27-6AC	6	O-M23-4	1	1.5 EC	1	
P97 38 50	9/12/97	1642	43 85	181-55	3	O-M23-3	↓	2.1 EC	BB 9/12/97	
P973851	9/12/97	1731	43085	181-55-4ABD	4	O-M23-FB	↓	2.4 EC	ML 9/12/97	
P973852	9/12/97		43085	TU Blank	0	TU M23 Blank	↓		ML 9/12/97	

* Transcribed from chromatographic data
** Dated initials required

ConCal Due: _____
ConCal Due: _____

srvr1/qa/forms/hrrunlog.doc (02/05/97)

TRIANGLE LABS

SAMPLE 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

Data File	S975864	S975865
Sample ID	TLI M23 Blank	O-M23-4
Units	ng	ng
Extraction Date	09/06/97	09/06/97
Analysis Date	09/13/97	09/13/97
Instrument	S	S
Matrix	XAD	M23TRAIN
Extraction Type		
Analytes		
2378-TCDD	(0.004)	(0.004)
12378-PeCDD	(0.005)	(0.005)
123478-HxCDD	(0.006)	(0.006)
123678-HxCDD	(0.005)	0.01
123789-HxCDD	(0.005)	(0.005)
1234678-HpCDD	0.03	{0.04} B
OCDD	0.04	0.09 B
2378-TCDF	0.008	0.02 B
12378-PeCDF	(0.004)	(0.003)
23478-PeCDF	{0.007}	{0.01} B
123478-HxCDF	0.03	0.03 B
123678-HxCDF	0.01	0.01 B
234678-HxCDF	0.02	0.02 B
123789-HxCDF	(0.004)	(0.004)
1234678-HpCDF	0.05	0.05 B
1234789-HpCDF	0.02	0.02 B
OCDF	0.03	0.05 B
TOTAL TCDD	0.009	{0.007}
TOTAL PeCDD	{0.03}	0.01
TOTAL HxCDD	0.05	0.07
TOTAL HpCDD	0.06	{0.07}
TOTAL TCDF	0.008	0.03
TOTAL PeCDF	{0.007}	0.01
TOTAL HxCDF	0.08	0.09
TOTAL HpCDF	0.08	0.09
Other Standards Percent Recovery Summary (% Rec)		
37Cl-TCDD	105	106
13C12-PeCDF 234	87.7	93.4
13C12-HxCDF 478	93.9	97.6
13C12-HxCDD 478	89.6	85.9
13C12-HpCDF 789	107	98.7
Other Standards Percent Recovery Summary (% Rec)		
13C12-HxCDF 789	97.3	117
13C12-HxCDF 234	84.8	107
Internal Standards Percent Recovery Summary (% Rec)		
13C12-2378-TCDF	92.5	120
13C12-2378-TCDD	80.9	98.7
13C12-PeCDF 123	92.4	107
13C12-PeCDD 123	100	112

Data File	S975864	S975865
Sample ID	TLI M23 Blank	O-M23-4
Units	ng	ng
Extraction Date	09/06/97	09/06/97
Analysis Date	09/13/97	09/13/97
Instrument	S	S
Matrix	XAD	M23TRAIN
Extraction Type		

Internal Standards	Percent Recovery	Summary (% Rec)
13C12-HxCDF 678	92.8	113
13C12-HxCDD 678	83.6	103
13C12-HpCDF 678	72.2	88.5
13C12-HpCDD 678	85.0	90.1
13C12-OCDD	67.5	68.8

{Estimated Maximum Possible Concentration}, (Detection Limit).

Data File	P973848	P973849
Sample ID	TLI M23 Blank	O-M23-4
Units	ng	ng
Extraction Date	09/06/97	09/06/97
Analysis Date	09/12/97	09/12/97
Instrument	P	P
Matrix	XAD	M23TRAIN
Extraction Type		
Analytes		
2378-TCDF	(0.008)	(0.01)
Internal Standards Percent Recovery Summary (% Rec)		
13C12-2378-TCDF	72.7	104

(Detection Limit).

Pacific Environmental Services

TLI Project: **43057r1** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **TLI M23 Blank** — Analysis File: **S975864**

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	XAD	Date Received:	/ /	Spike File:	SPX23704
TLI ID:	TLI Blank	Date Extracted:	09/06/97	ICal:	SF56117
		Date Analyzed:	09/13/97	ConCal:	S975861
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	S975864	% Lipid:	n/a
GC Column:	DB-5	Analyst:	ML	% 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	0.005				—
1,2,3,4,7,8-HxCDD	ND	0.006				—
1,2,3,6,7,8-HxCDD	ND	0.005				—
1,2,3,7,8,9-HxCDD	ND	0.005				—
1,2,3,4,6,7,8-HpCDD	0.03			1.08	32:45	—
1,2,3,4,6,7,8,9-OCDD	0.04			0.93	35:18	—
2,3,7,8-TCDF	0.008			0.78	21:35	—
1,2,3,7,8-PeCDF	ND	0.004				—
2,3,4,7,8-PeCDF	EMPC		0.007			—
1,2,3,4,7,8-HxCDF	0.03			1.25	29:11	—
1,2,3,6,7,8-HxCDF	0.01			1.22	29:16	—
2,3,4,6,7,8-HxCDF	0.02			1.18	29:46	PR
1,2,3,7,8,9-HxCDF	ND	0.004				—
1,2,3,4,6,7,8-HpCDF	0.05			1.12	31:55	—
1,2,3,4,7,8,9-HpCDF	0.02			1.14	33:06	—
1,2,3,4,6,7,8,9-OCDF	0.03			0.88	35:25	—

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	0.009	1			—
Total PeCDD	EMPC			0.03	—
Total HxCDD	0.05	2			—
Total HpCDD	0.06	2			—
Total TCDF	0.008	1			—
Total PeCDF	EMPC			0.007	—
Total HxCDF	0.08	6			—
Total HpCDF	0.08	3		0.10	—

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

TLI Project: **43057r1** Method 23 PCDD/PCDF Analysis (a)
Client Sample: **TLI M23 Blank** Analysis File: **S975864**

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	3.7	92.5	40%-130%	0.77	21:35	___
$^{13}C_{12}$-2,3,7,8-TCDD	3.2	80.9	40%-130%	0.78	22:20	___
$^{13}C_{12}$-1,2,3,7,8-PeCDF	3.7	92.4	40%-130%	1.44	25:40	___
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4.0	100	40%-130%	1.48	26:44	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	3.7	92.8	40%-130%	0.51	29:16	___
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	3.3	83.6	40%-130%	1.23	29:58	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	2.9	72.2	25%-130%	0.44	31:54	___
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.4	85.0	25%-130%	1.02	32:44	___
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.4	67.5	25%-130%	0.92	35:17	___

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	4.2	105	70%-140%		22:22	___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.5	87.7	70%-140%	1.42	26:23	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.8	93.9	70%-140%	0.51	29:10	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.6	89.6	70%-140%	1.21	29:53	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	4.3	107	70%-140%	0.41	33:05	___

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	3.9	97.3	40%-130%	0.51	30:28	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	3.4	84.8	40%-130%	0.50	29:46	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	22:09	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.22	30:15	___

Data Reviewer: _____ 09/14/97

X237_PSR v2.00, LARS 6.10.04

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:42 09/14/97

Initial ....Date.../

Data Review By: VC 9/14/97 Calculated Noise Area: 2.04

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 S975864B.dbf
09/14/97 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				0.838-1.092			
304-306		DC	NL	0:00	RO	0.31	0.37			0.000			
		DC	SN	19:27	RO	0.60	3.86			0.901			
		DC	SN	19:49	RO	0.64	3.70			0.918			
		DC	SN	20:07	RO	1.80	1.63			0.932			
		DC	SN	20:31	RO	0.63	4.25			0.951			
	D	d	SN	20:47		0.87	6.05			0.963			
	D	d	SN	21:09		0.71	7.79			0.980			
		DC	SN	21:25	RO	0.36	1.72			0.992			
				21:35		0.78	14.82	6.50	8.32	1.000	2378-TCDF		AN
		DC	SN	23:22	RO	0.42	4.46			1.083			
304-306			1	Peak			14.82						
13C12-TCDF						0.65-0.89				0.954-1.046			
316-318		DC	NL	0:00	RO	0.91	1.13			0.000			
		DC	WL	20:31		0.65	35.70			0.951			
				21:09		0.72	26.06	10.91	15.15	0.980			
				21:35		0.77	5,889.86	2,569.27	3,320.59	1.000	13C12-2378-TCDF		ISO
				22:03	RO	1.13	19.45	12.38	10.99	1.022			
316-318			3	Peaks			5,935.37						
---------- Above: TCDF / TCDD Follows ----------													
TCDD						0.65-0.89				0.875-1.055			
320-322		DC	NL	0:00	RO	1.13	0.27			0.000			
				19:41		0.85	10.98	5.06	5.92	0.881			
	D	d	SN	20:05		0.83	8.33			0.899			
		DC	SN	20:36	RO	1.90	0.69			0.922			
		DC	SN	21:23	RO	1.78	1.15			0.957			
		DC	SN	22:09	RO	1.74	1.49			0.992			
		DC	SN	22:14		0.88	3.32			0.996			
		DC	SN	22:23	RO	0.35	2.67			1.002	2378-TCDD		AN
		DC	SN	22:37	RO	0.92	1.95			1.013			
		DC	SN	22:48	RO	1.24	0.60			1.021			
		DC	SN	22:59		0.82	2.02			1.029			
		DC	SN	23:10	RO	0.62	0.71			1.037			
		DC	SN	23:18		0.70	2.29			1.043			
		DC	WH	23:36	RO	0.32	0.46			1.057			
		DC	WH	23:36	RO	1.54	0.50			1.057			
320-322			1	Peak			10.98						
37Cl-TCDD										0.910-1.090			
328		DC	NL	0:00			0.43			0.000			
				20:57			7.76	7.76		0.938			

Compound. M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
				22:22			3,679.73	3,679.73		1.001	37Cl-TCDD		SUR1
328			2	Peaks			3,687.49						
13C12-TCDD					0.65-0.89					0.911-1.090			
332-334		DC	NL	0:00	RO	3.15	0.73			1.000			
				21:07	RO	1.00	22.53	12.71	12.73	0.946			
				22:09		0.81	4,831.26	2,158.80	2,672.46	0.992	13C12-1234-TCDD		RS1
				22:20		0.78	4,164.20	1,825.02	2,339.18	1.000	13C12-2378-TCDD		IS1
				22:41	RO	0.94	53.79	28.64	30.39	1.016			
332-334			4	Peaks			9,071.78						
---------- Above: TCDD / PeCDF Follows ----------													
PeCDF					1.32-1.78					0.915-1.074			
340-342		DC	NL	0:00	RO	0.59	0.33			1.000			
		DC	SN	23:39	RO	0.61	2.01			0.921			
		DC	SN	24:20		1.47	4.70			0.948			
		DC	SN	24:40	RO	0.57	1.84			0.961			
	D	d	SN	25:17		1.66	10.94			0.985			
		DC	SN	25:41		1.64	5.20			1.001	12378-PeCDF		AN
		DC	SN	25:58	RO	0.49	2.70			1.012			
	D	d	SN	26:13		1.71	7.66			1.021			
	M			26:23	RO	1.12	10.28	6.25	5.60	1.028	23478-PeCDF		AN
		DC	SN	26:51		1.47	3.06			1.046			
		DC	SN	27:21	RO	0.70	2.88			1.066			
		DC	WH	27:49	RO	0.28	0.39			1.084			
340-342			1	Peak			10.28						
13C12-PeCDF					1.32-1.78					0.844-1.156			
352-354		DC	NL	0:00	RO	0.82	0.23			0.000			
				24:47		1.61	61.90	38.19	23.71	0.966			
				25:17		1.45	27.10	16.06	11.04	0.985			
				25:40		1.44	5,059.33	2,983.33	2,076.00	1.000	13C12-PeCDF 123		IS2
				25:49		1.35	16.10	9.25	6.85	1.006			
				25:57		1.43	29.14	17.16	11.98	1.011			
				26:13		1.64	27.67	17.20	10.47	1.021			
				26:23		1.42	4,305.66	2,528.87	1,776.79	1.028	13C12-PeCDF 234		SUR2
				27:20		1.33	17.65	10.09	7.56	1.065			
352-354			8	Peaks			9,544.55						
---------- Above: PeCDF / PeCDD Follows ----------													
PeCDD					1.32-1.78					0.926-1.024			
356-358		DC	NL	0:00	RO	1.10	0.18			0.000			
				24:56	RO	1.26	7.77	4.72	3.76	0.933			
				25:40	RO	1.15	8.87	5.39	4.68	0.960			
				25:59	RO	1.89	7.91	5.87	3.10	0.972			
				26:13	RO	3.65	8.98	12.84	3.52	0.981			
		DC	SN	26:46	RO	0.78	2.98			1.001	12378-PeCDD		AN
		DC	SN	26:58	RO	1.10	0.92			1.009			
		DC	SN	27:12	RO	0.62	1.15			1.017			
		DC	SN	27:23		1.35	1.08			1.024			

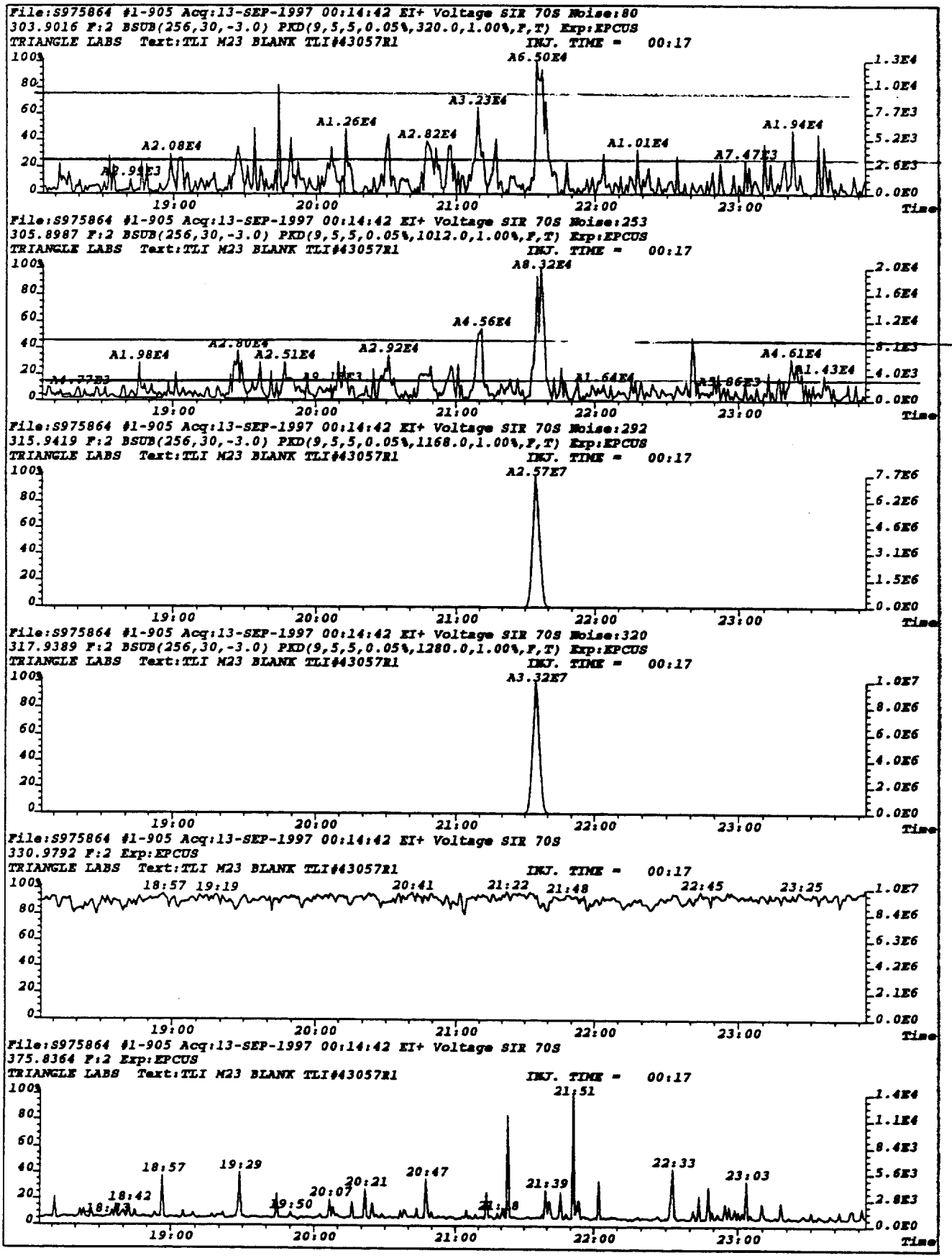
Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
	DC	NH		27:40	RO	2.61	0.97			1.035			
356-358			4 Peaks				33.53						
13C12-PeCDD				1.32-1.78						0.850-1.150			
368-370	DC	NL		0:00	RO	1.00	0.21			0.000			
	DC	SN		25:27	RO	2.73	3.16			0.952			
				25:39	RO	1.01	4.77	2.90	2.86	0.959			
				26:13	RO	4.16	14.31	23.32	5.61	0.981			
				26:44		1.48	3,079.17	1,839.82	1,239.35	1.000	13C12-PeCDD 123	IS3	
				26:52		1.53	269.84	162.99	106.85	1.005			
368-370			4 Peaks				3,368.09						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF				1.05-1.43						0.959-1.050			
374-376	DC	NL		0:00		1.32	2.20			0.000			
				28:12		1.13	10.81	5.73	5.08	0.964			
				28:21		1.34	23.59	13.52	10.07	0.969			
D	d	SN		28:39		1.23	5.75			0.979			
	DC	SN		28:49	RO	0.99	3.20			0.985			
				29:11		1.25	40.06	22.27	17.79	0.997	123478-HxCDF	AN	
				29:16		1.22	17.32	9.53	7.79	1.000	123678-HxCDF	AN	
	DC	SN		29:22		1.26	5.15			1.003			
D	d	SN		29:36	RO	0.92	7.33			1.011			
				29:46		1.18	23.53	12.73	10.80	1.017	234678-HxCDF	AN	
	DC	SN		30:27	RO	0.94	3.40			1.040			
				30:33		1.07	8.69	4.50	4.19	1.044			
	DC	SN		30:38	RO	0.48	0.54			1.047			
374-376			6 Peaks				124.00						
13C12-HxCDF				0.43-0.59						0.863-1.137			
384-386	DC	NL		0:00	RO	0.78	2.64			0.000			
				28:11	RO	0.92	7.23	4.39	4.79	0.963			
				28:20		0.50	25.63	8.56	17.07	0.968			
				29:10		0.51	4,188.09	1,409.02	2,779.07	0.997	13C12-HxCDF 478	SUR3	
				29:16		0.51	4,653.33	1,563.55	3,089.78	1.000	13C12-HxCDF 678	IS4	
				29:46		0.50	3,937.59	1,315.35	2,622.24	1.017	13C12-HxCDF 234	ALT2	
	DC	SN		29:53		0.54	4.56			1.021			
				30:28		0.51	3,926.39	1,322.93	2,603.46	1.041	13C12-HxCDF 789	ALT1	
384-386			6 Peaks				16,738.26						
---------- Above: HxCDF / HxCDD Follows ----------													
HxCDD				1.05-1.43						0.953-1.014			
390-392	DC	NL		0:00	RO	0.74	1.32			0.000			
	DC	SN		28:38	RO	0.40	0.52			0.956			
D	d	SN		28:43		1.06	6.20			0.958			
				29:10		1.39	34.81	20.22	14.59	0.973			
				29:22		1.25	15.31	8.51	6.80	0.980			
	DC	SN		29:29	RO	0.31	0.69			0.984			
	DC	SN		29:45		1.40	4.83			0.993			
	DC	SN		29:54	RO	0.83	3.69			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
	D	d	SN		29:58	RO	1.50	8.27			1.000	123678-HxCDD	AN	
	DC		SN		30:08	RO	0.57	0.81			1.006			
	D	d	SN		30:15	RO	1.00	8.00			1.009	123789-HxCDD	AN	
	DC		WH		30:40	RO	0.68	1.07			1.023			
390-392				2	Peaks			50.12						
13C12-HxCDD					1.05-1.43						0.967-1.033			
402-404	DC		NL		0:00	RO	1.68	3.18			0.000			
					29:23		1.20	21.19	11.58	9.61	0.981			
					29:53		1.21	3,018.32	1,655.53	1,362.79	0.997	13C12-HxCDD 478		SUR4
					29:58		1.23	3,463.09	1,908.78	1,554.31	1.000	13C12-HxCDD 678		IS5
					30:15		1.22	4,165.65	2,290.18	1,875.47	1.009	13C12-HxCDD 789		RS2
402-404				4	Peaks			10,668.25						
---------- Above: HxCDD / HpCDF Follows ----------														
HpCDF					0.88-1.20						0.995-1.042			
408-410	DC		NL		0:00	RO	0.73	2.10			0.000			
					31:55		1.12	51.95	27.50	24.45	1.001	1234678-HpCDF		AN
					32:08		0.95	15.04	7.32	7.72	1.007			
					32:15	RO	0.79	18.32	9.34	11.76	1.011			
	D	d	nh		32:26	RO	1.66	5.37			1.017			
	DC		SN		32:50	RO	2.45	1.67			1.029			
	M				33:06		1.14	12.40	6.60	5.80	1.038	1234789-HpCDF		AN
	DC		WH		33:23		1.05	0.88			1.046			
	DC		WH		33:35	RO	1.29	3.10			1.053			
408-410				4	Peaks			97.71						
13C12-HpCDF					0.37-0.51						0.937-1.125			
418-420	DC		NL		0:00	RO	1.31	1.44			0.000			
					31:54		0.44	2,668.37	811.03	1,857.34	1.000	13C12-HpCDF 678		IS6
					32:05	RO	0.30	8.28	2.53	8.41	1.006			
					32:15		0.46	22.93	7.19	15.74	1.011			
					32:19		0.39	18.35	5.19	13.16	1.013			
					33:05		0.41	2,205.62	645.09	1,560.53	1.037	13C12-HpCDF 789		SUR5
418-420				5	Peaks			4,923.55						
---------- Above: HpCDF / HpCDD Follows ----------														
HpCDD					0.88-1.20						0.977-1.005			
424-426	DC		NL		0:00	RO	1.88	1.49			0.000			
	M				32:09		1.14	18.75	10.00	8.75	0.982			
	D	d	nh		32:17	RO	1.76	8.51			0.986			
	M				32:45		1.08	25.60	13.30	12.30	1.001	1234678-HpCDD		AN
	DC		WH		33:05	RO	1.63	4.06			1.011			
424-426				2	Peaks			44.35						
13C12-HpCDD					0.88-1.20						0.969-1.031			
436-438	DC		NL		0:00	RO	0.61	2.37			0.000			
					32:09	RO	1.28	26.07	16.32	12.78	0.982			
					32:44		1.02	2,884.79	1,457.94	1,426.85	1.000	13C12-HpCDD 678		IS7
436-438				2	Peaks			2,910.86						

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				0.887-1.113			
442-444	DC	NL		0:00		0.88	1.24			0.000			
	DC	SN		31:50	RO	0.37	0.89			0.902			
	DC	SN		32:07	RO	1.05	1.98			0.910			
	DC	SN		32:18	RO	3.65	0.59			0.915			
	DC	SN		33:40	RO	1.03	1.97			0.954			
	DC	SN		33:55	RO	1.38	1.23			0.961			
	DC	SN		33:58		0.80	1.42			0.963			
	DC	SN		34:23	RO	1.12	1.30			0.974			
	DC	SN		34:52	RO	0.10	2.06			0.988			
M				35:25		0.88	18.00	8.44	9.56	1.004	OCDF		AN
442-444			1	Peak			18.00						
OCDD						0.76-1.02				0.887-1.113			
458-460	DC	NL		0:00	RO	0.19	0.28			0.000			
M				35:18		0.93	16.45	7.91	8.54	1.000	OCDD		AN
	DC	SN		35:39	RO	0.52	0.91			1.010			
458-460			1	Peak			16.45						
13C12-OCDD						0.76-1.02				0.996-1.005			
470-472	DC	NL		0:00		0.92	0.25			0.000			
				35:17		0.92	2,916.92	1,399.27	1,517.65	1.000	13C12-OCDD		IS8
470-472			1	Peak			2,916.92						

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
		E-Ether Interference

*** End of Report ***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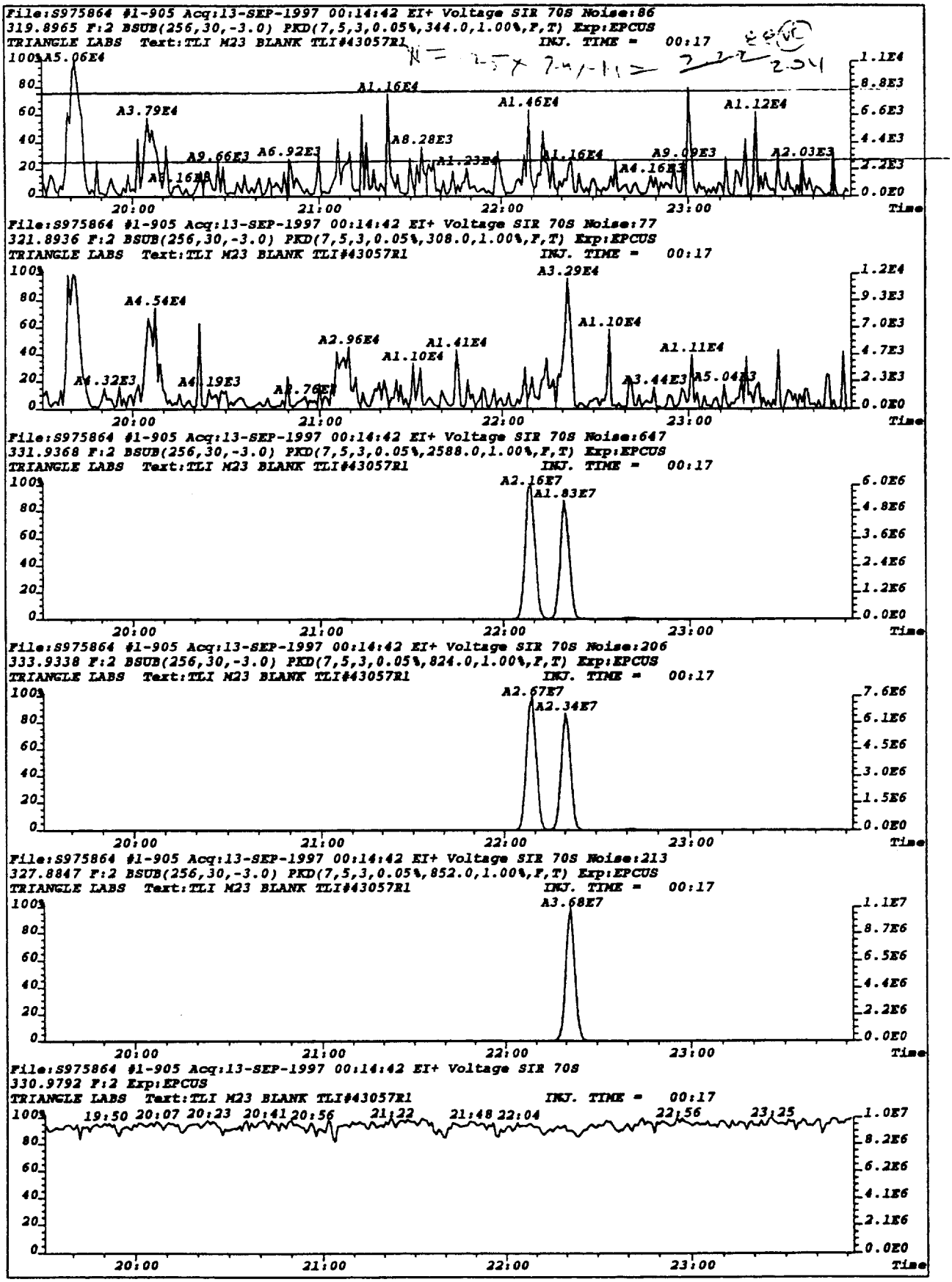
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,320.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A6.50E4
A3.23E4
A1.26E4
A2.82E4
A2.08E4
A1.01E4
A7.47E3
A1.94E4
19:00
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:253
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1012.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A8.32E4
A4.56E4
A1.98E4
A2.51E4
A2.92E4
A1.64E4
A4.61E4
A1.43E4
19:00
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:292
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.57E7
19:00
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:320
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,1280.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A3.32E7
19:00
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
18:57 19:19
20:41
21:22
21:48
22:45
23:25
19:00
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
21:51
18:57
19:29
18:42
20:07
20:21
20:47
19:50
21:39
22:33
23:03
19:00
20:00
21:00
22:00
23:00
Time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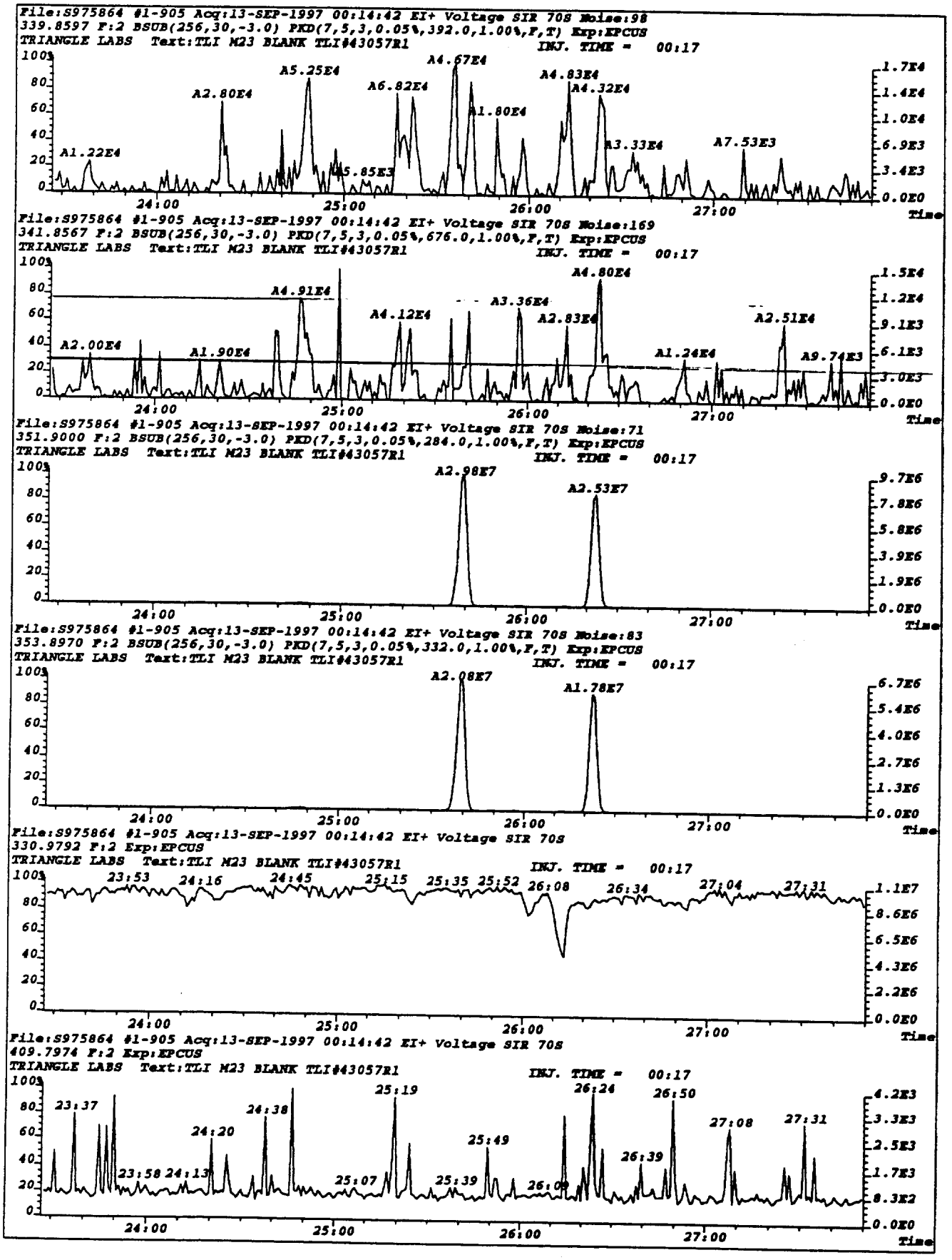
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,344.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A5.06E4
A3.79E4
A1.16E4
A1.46E4
A1.12E4
A9.66E3
A6.92E3
A8.28E3
A1.16E4
A9.09E3
A2.03E3
A4.16E3
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:77
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,308.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A3.29E4
A4.54E4
A1.10E4
A2.96E4
A1.41E4
A1.10E4
A1.11E4
A3.44E3
A5.04E3
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:647
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2588.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A2.16E7
A1.83E7
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:206
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,824.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A2.67E7
A2.34E7
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:213
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,852.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A3.68E7
20:00
21:00
22:00
23:00
Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
19:50 20:07 20:23 20:41 20:56 21:22 21:48 22:04 22:56 23:25
20:00
21:00
22:00
23:00
Time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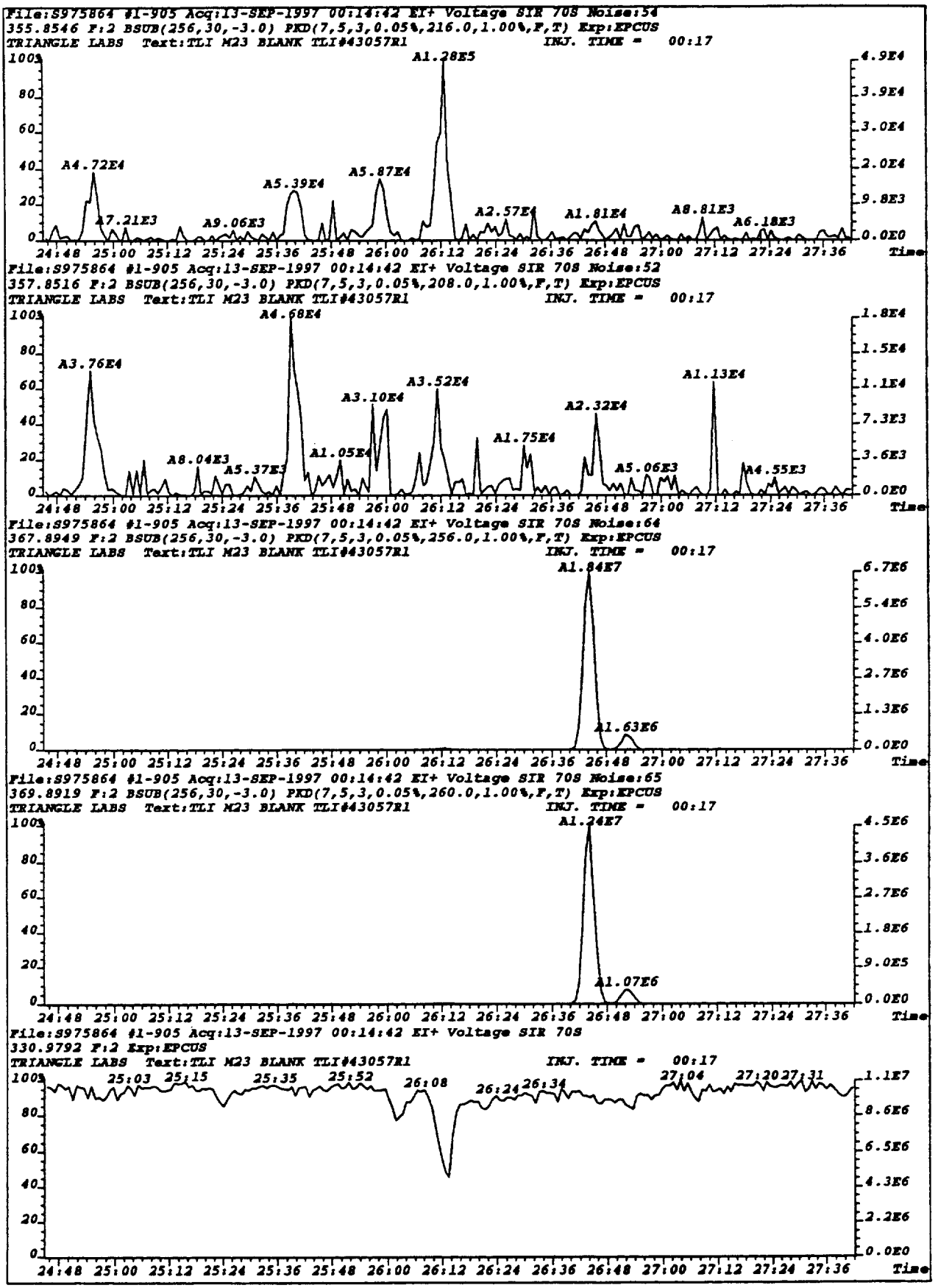
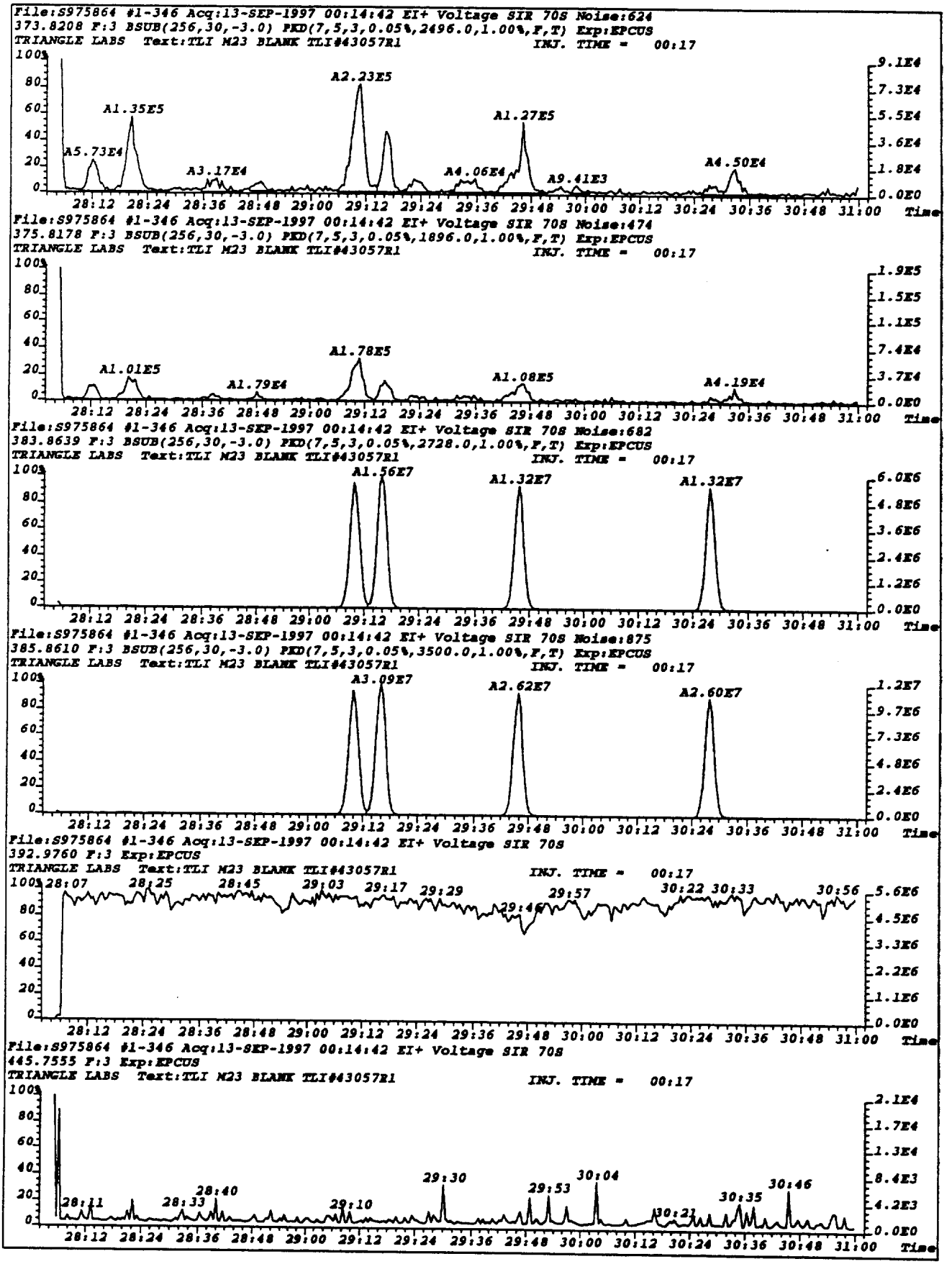
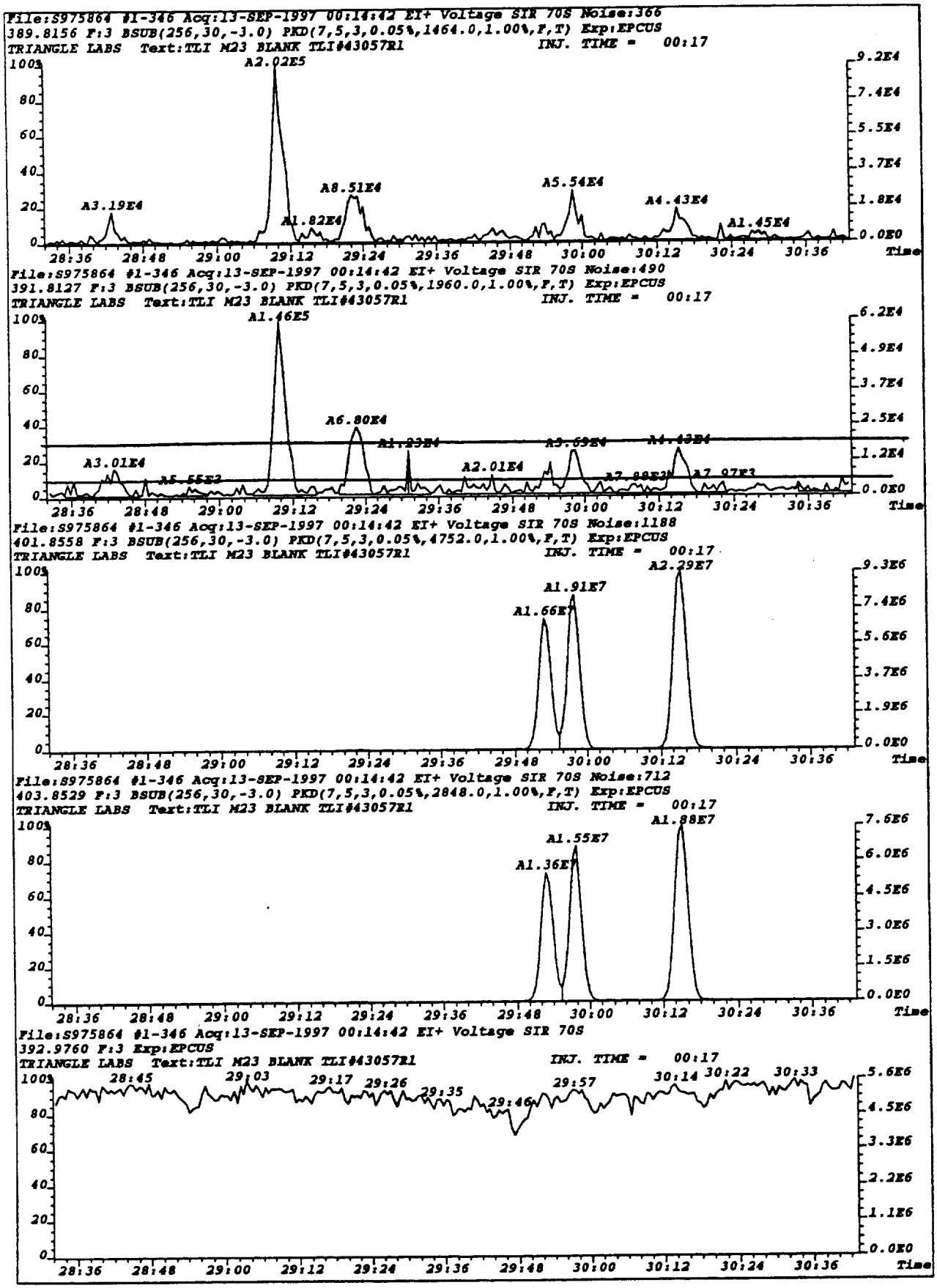
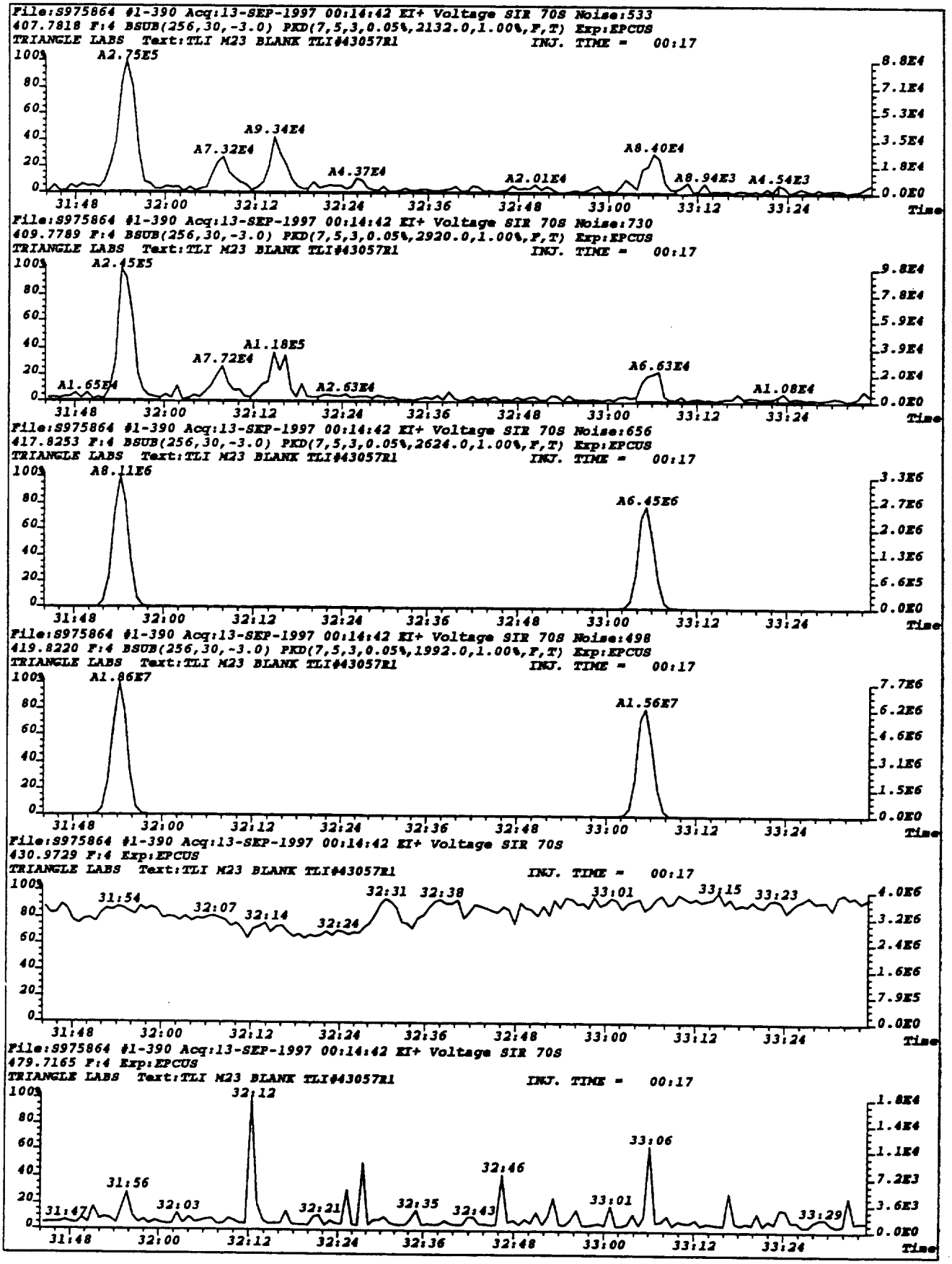
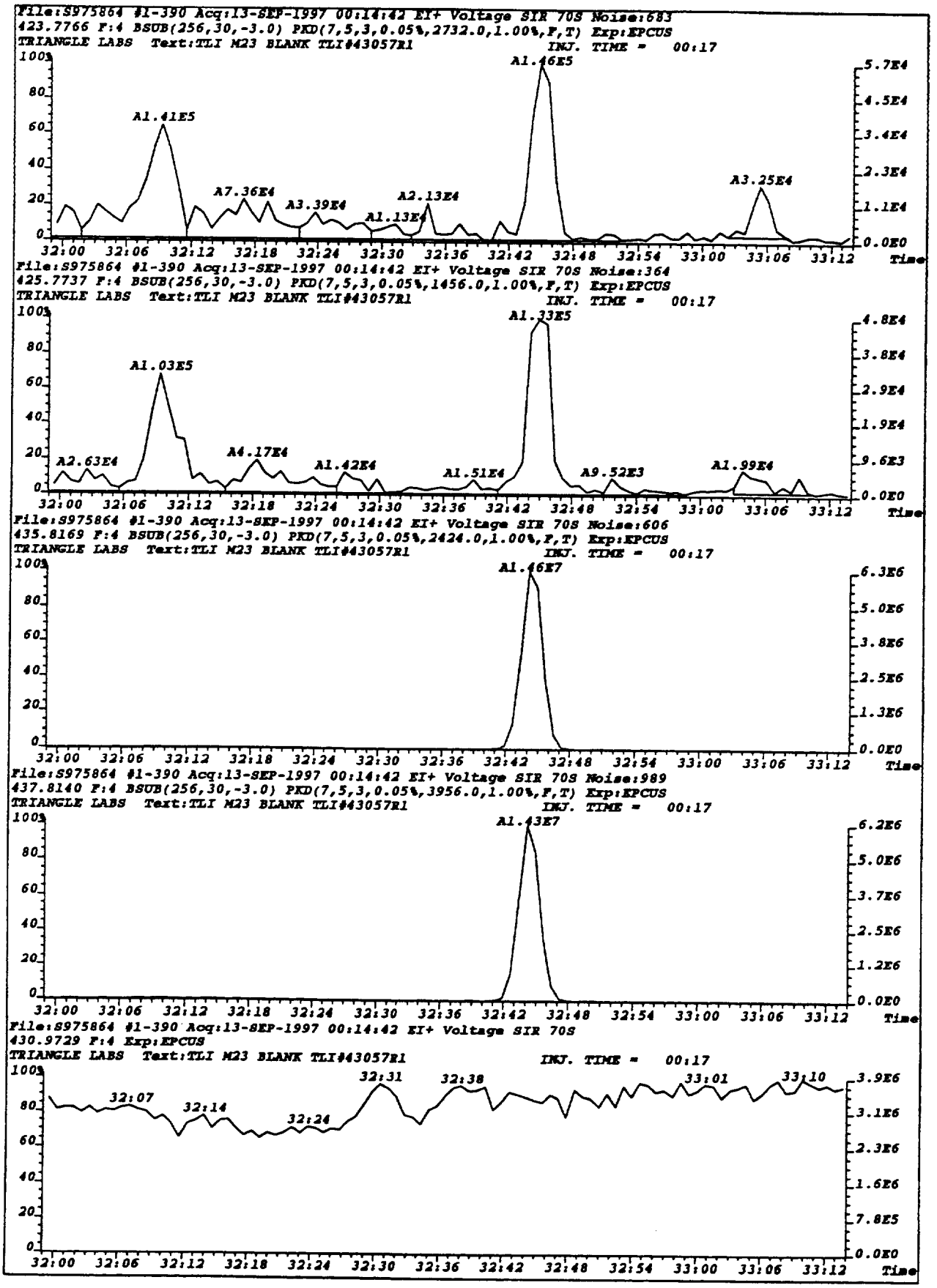
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,392.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.22E4
A2.80E4
A5.25E4
A6.82E4
A4.67E4
A1.80E4
A4.83E4
A4.32E4
A3.33E4
A7.53E3
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:169
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,676.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.00E4
A4.91E4
A4.12E4
A3.36E4
A4.80E4
A2.83E4
A2.51E4
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:71
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,284.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.98E7
A2.53E7
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:83
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,332.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.08E7
A1.78E7
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
Time

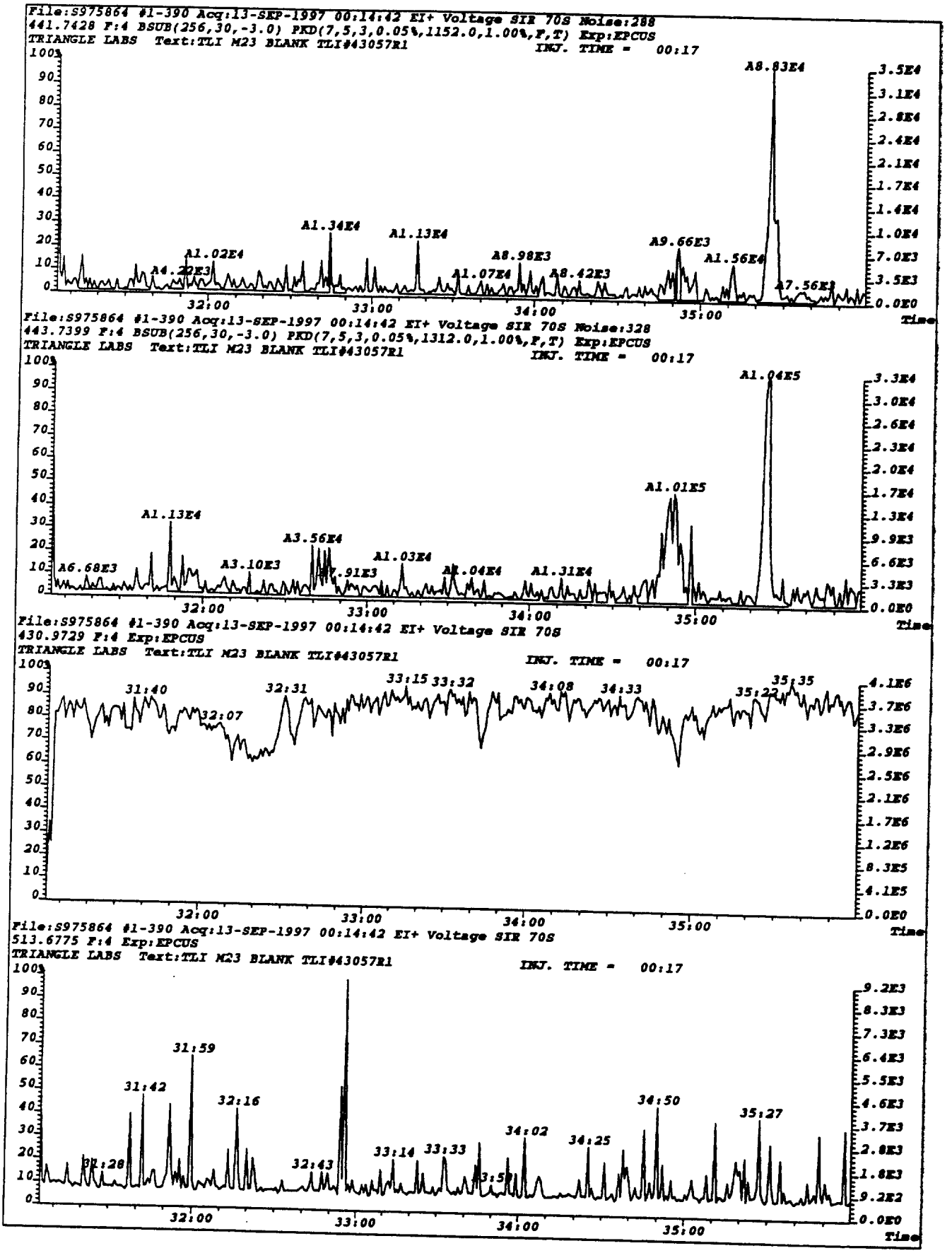

File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:54
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,216.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.28E5
A4.72E4
A5.87E4
A5.39E4
A2.57E4
A1.81E4
A8.81E3
A6.18E3
A7.21E3
A9.06E3
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:52
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,208.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A4.68E4
A3.76E4
A3.52E4
A3.10E4
A2.32E4
A1.75E4
A1.13E4
A1.05E4
A8.04E3
A5.37E3
A5.06E3
A4.55E3
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:64
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,256.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.84E7
A1.63E6
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:65
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,260.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.24E7
A1.07E6
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
25:03
25:15
25:35
25:52
26:08
26:24
26:34
27:04
27:20
27:31
24:48 25:00 25:12 25:24 25:36 25:48 26:00 26:12 26:24 26:36 26:48 27:00 27:12 27:24 27:36
Time

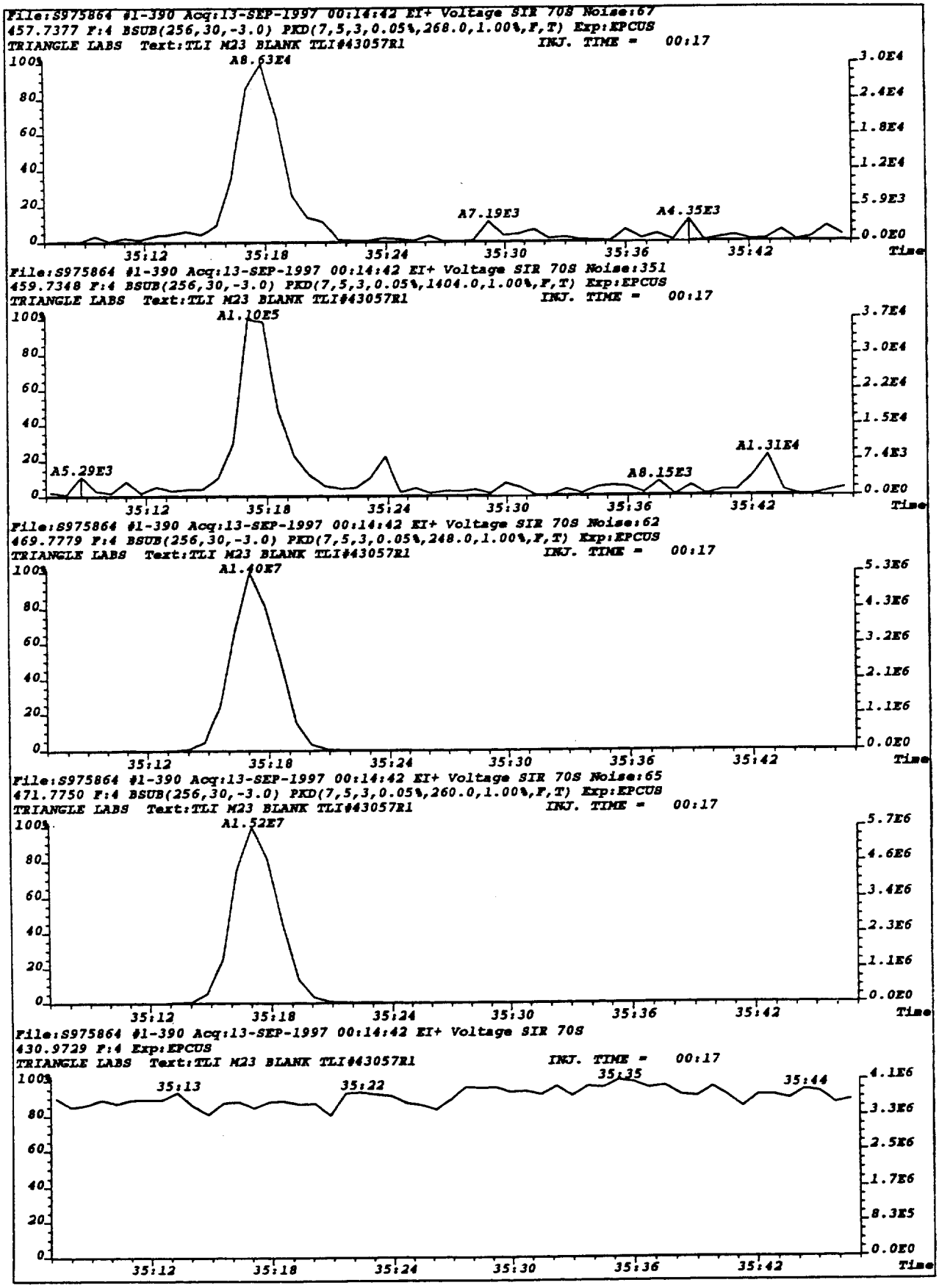

File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:624
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2496.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A5.73E4
A1.35E5
A3.17E4
A2.23E5
A4.06E4
A1.27E5
A9.41E3
A4.50E4
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:474
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1896.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.01E5
A1.79E4
A1.78E5
A1.08E5
A4.19E4
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:682
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2728.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.56E7
A1.32E7
A1.32E7
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:875
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3500.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A3.09E7
A2.62E7
A2.60E7
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
28:07
28:25
28:45
29:03
29:17
29:29
29:46
29:57
30:22
30:33
30:56
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
28:11
28:33
28:40
29:10
29:30
29:53
30:04
30:21
30:35
30:46
28:12 28:24 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
Time

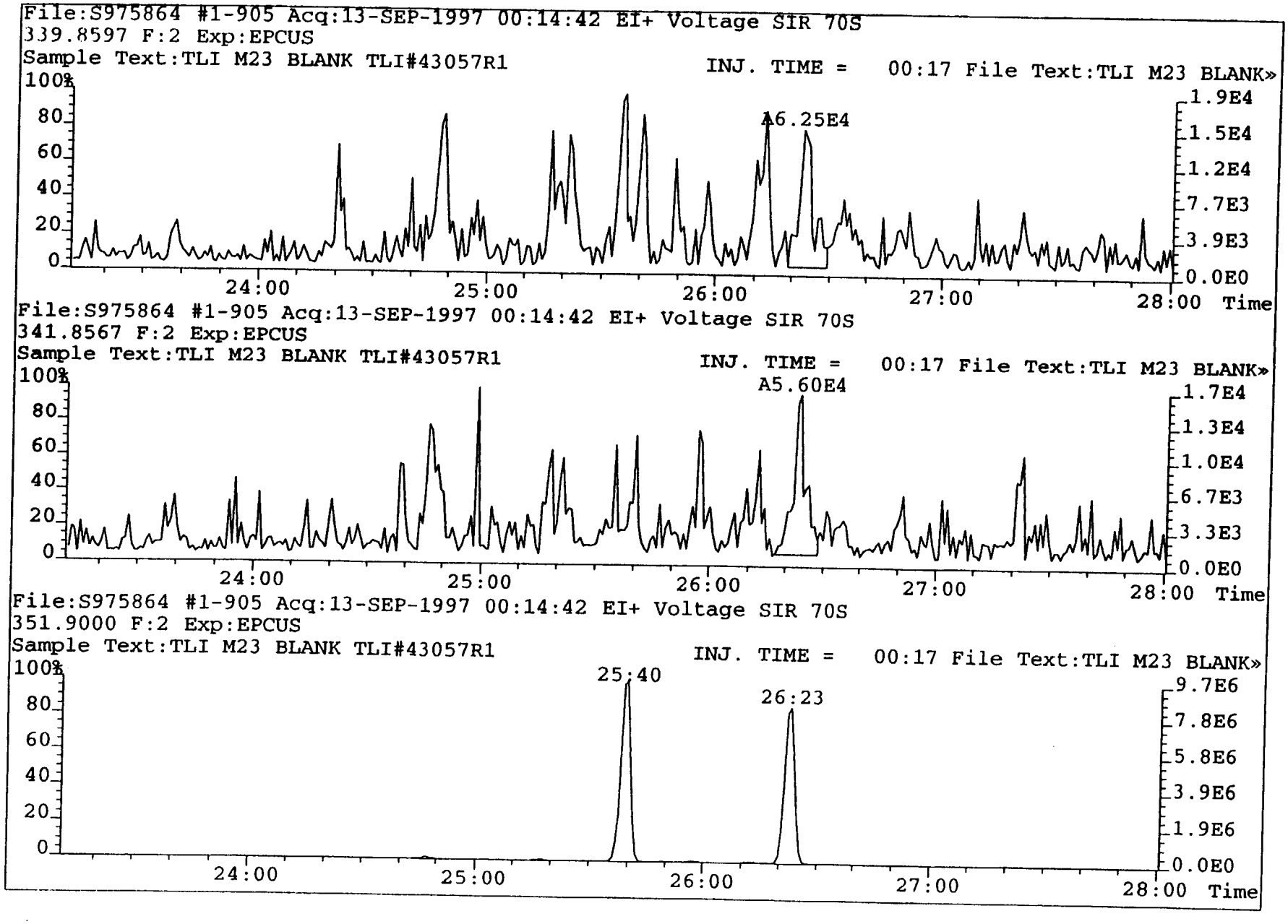

File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:366
389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1464.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.02E5
A3.19E4
A1.82E4
A8.51E4
A5.54E4
A4.43E4
A1.45E4
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:490
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1960.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.46E5
A6.80E4
A3.01E4
A2.01E4
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:1188
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4752.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A2.29E7
A1.91E7
A1.66E7
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:712
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2848.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.88E7
A1.55E7
A1.36E7
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
28:45
29:03
29:17
29:26
29:35
29:46
29:57
30:14
30:22
30:33
28:36
28:48
29:00
29:12
29:24
29:36
29:48
30:00
30:12
30:24
30:36
Time

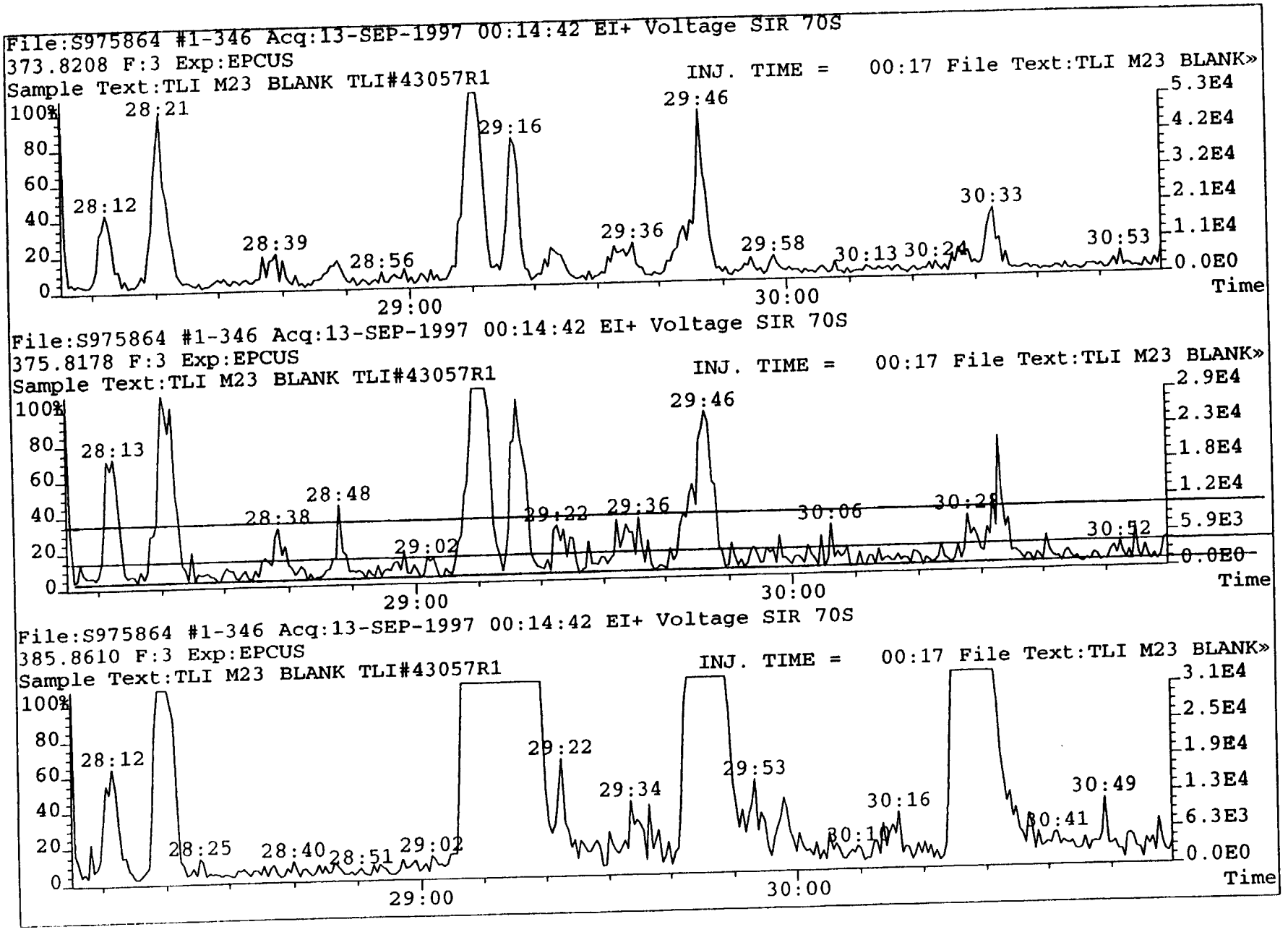

File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:533
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2132.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A2.75E5
A9.34E4
A7.32E4
A4.37E4
A2.01E4
A8.40E4
A8.94E3
A4.54E3
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:730
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2920.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A2.45E5
A1.18E5
A7.72E4
A1.65E4
A2.63E4
A6.63E4
A1.08E4
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:656
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2624.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A8.11E6
A6.45E6
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:498
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1992.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.86E7
A1.56E7
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
31:54
32:07
32:14
32:24
32:31
32:38
33:01
33:15
33:23
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
32:12
31:56
32:03
31:47
32:21
32:35
32:43
32:46
33:01
33:06
33:29
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
Time

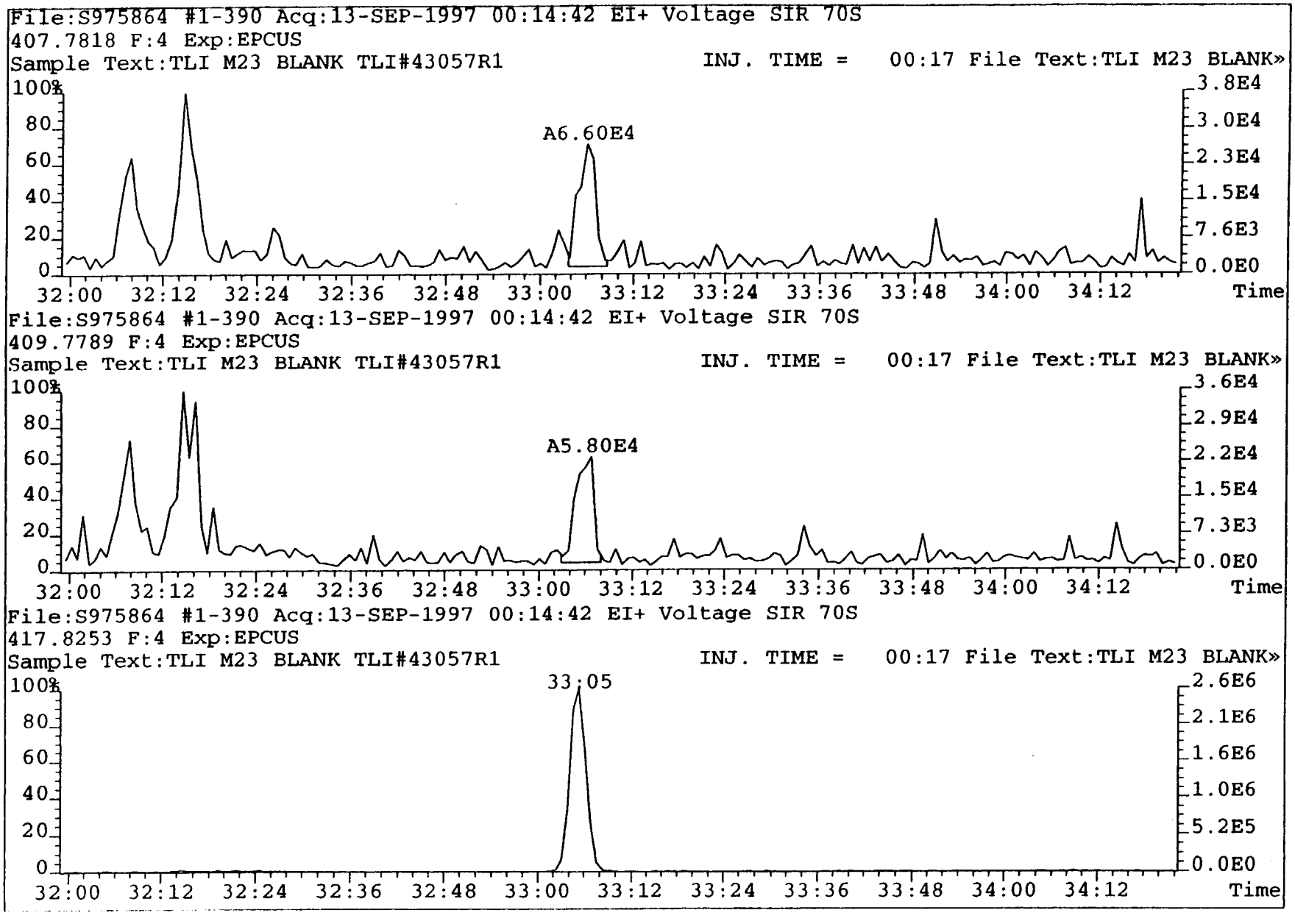

File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:683
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2732.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.46E5
A1.41E5
A7.36E4
A3.39E4
A2.13E4
A1.13E4
A3.25E4
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:364
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1456.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.33E5
A1.03E5
A2.63E4
A4.17E4
A1.42E4
A1.51E4
A9.52E3
A1.99E4
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:606
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2424.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.46E7
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:989
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3956.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.43E7
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
32:07
32:14
32:24
32:31
32:38
33:01
33:10
Time

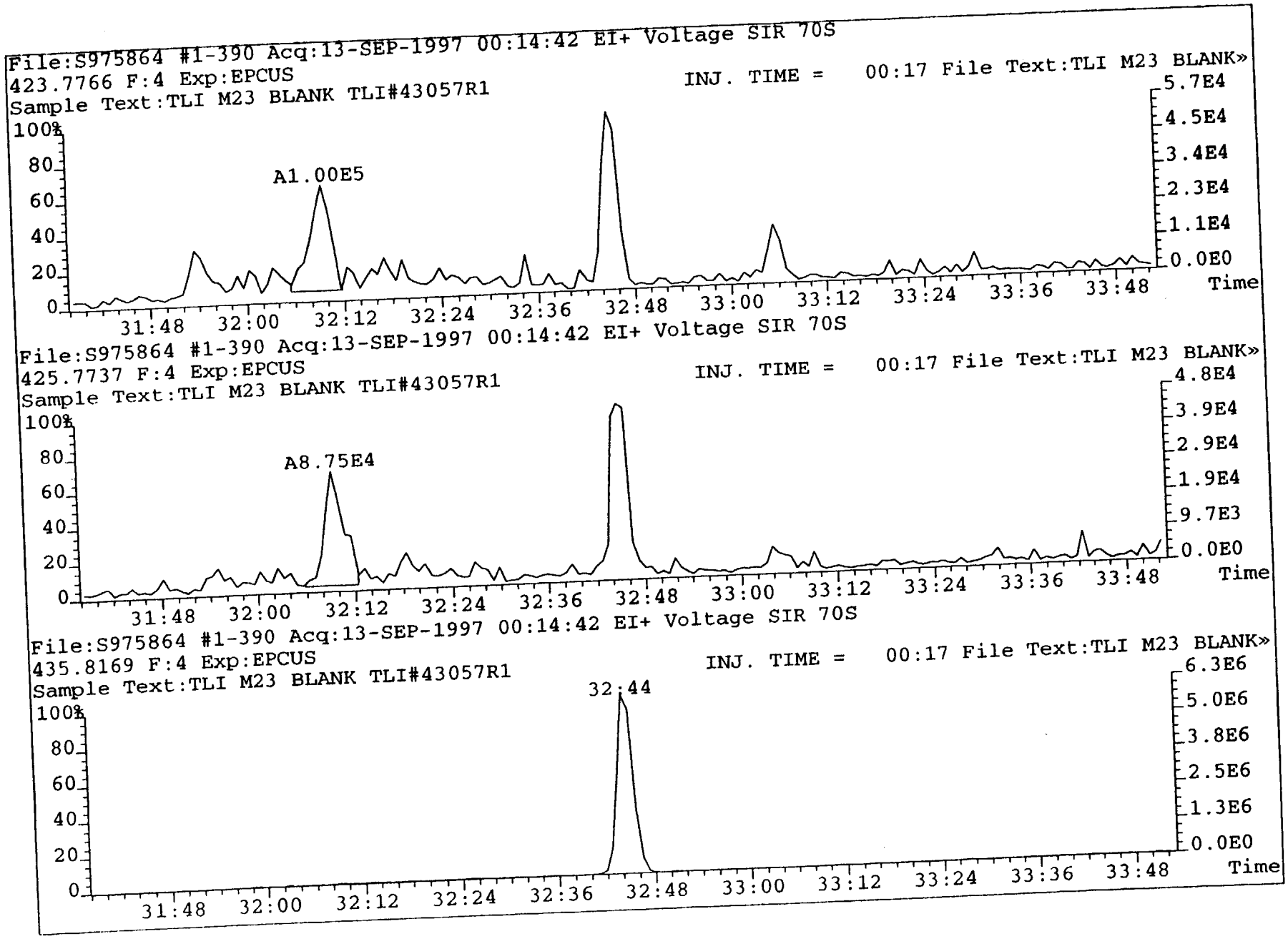

File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:288
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A8.83E4
A1.34E4
A1.13E4
A1.02E4
A9.66E3
A8.98E3
A1.56E4
A1.07E4
A8.42E3
A7.56E3
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:328
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1312.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
A1.04E5
A1.01E5
A1.13E4
A3.56E4
A1.03E4
A6.68E3
A3.10E3
A1.31E4
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
31:40
32:31
33:15
33:32
34:08
34:33
35:35
32:07
35:22
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17
31:59
31:42
32:16
34:50
35:27
34:02
34:25
33:14
33:33
32:43
32:00
33:00
34:00
35:00
Time

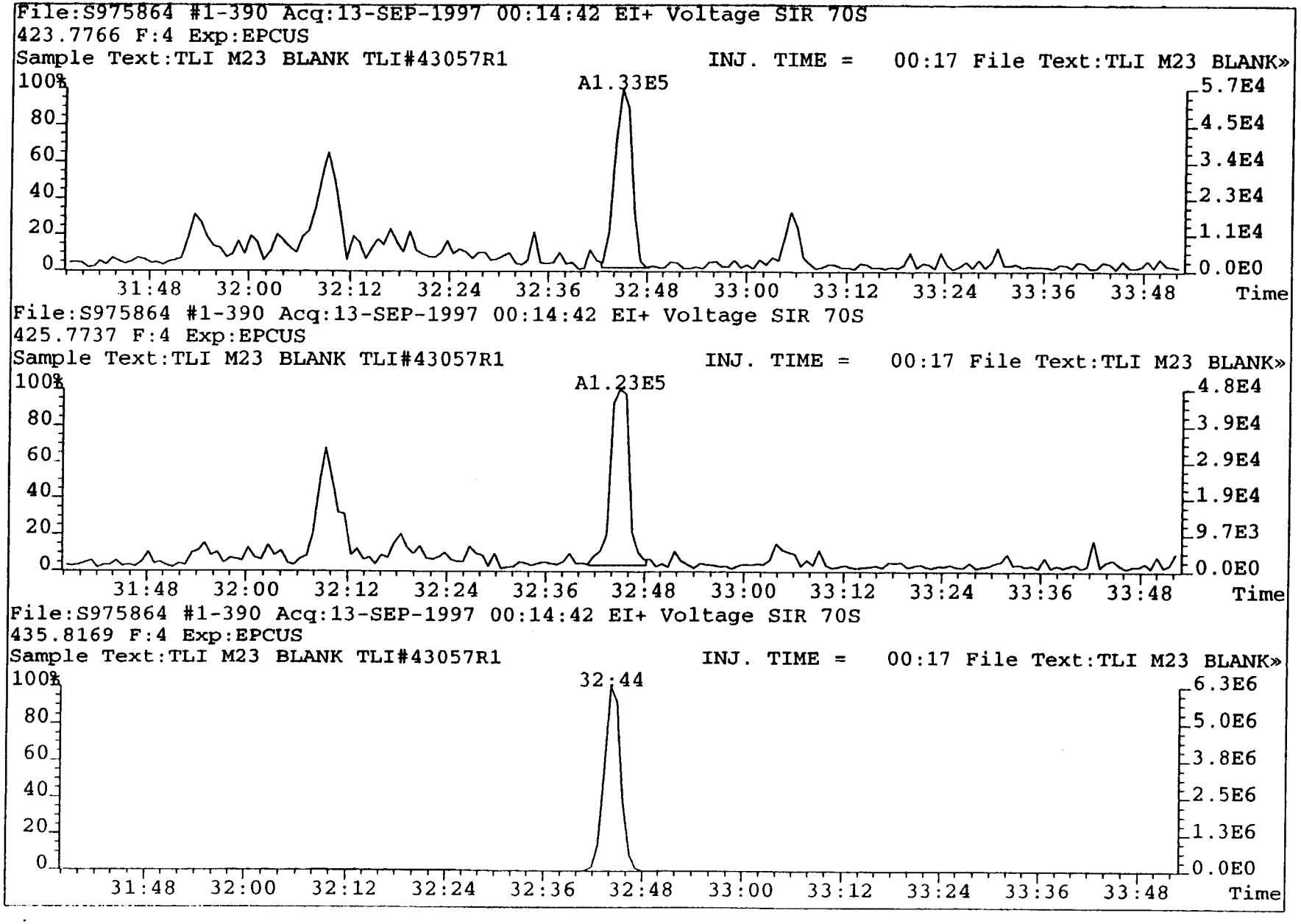

File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:67
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,268.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A8.63E4
A7.19E3
A4.35E3
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:351
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1404.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.10E5
A5.29E3
A8.15E3
A1.31E4
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:62
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,248.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.40E7
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S Noise:65
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,260.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
A1.52E7
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1 INJ. TIME = 00:17
35:13
35:22
35:35
35:44
35:12
35:18
35:24
35:30
35:36
35:42
Time

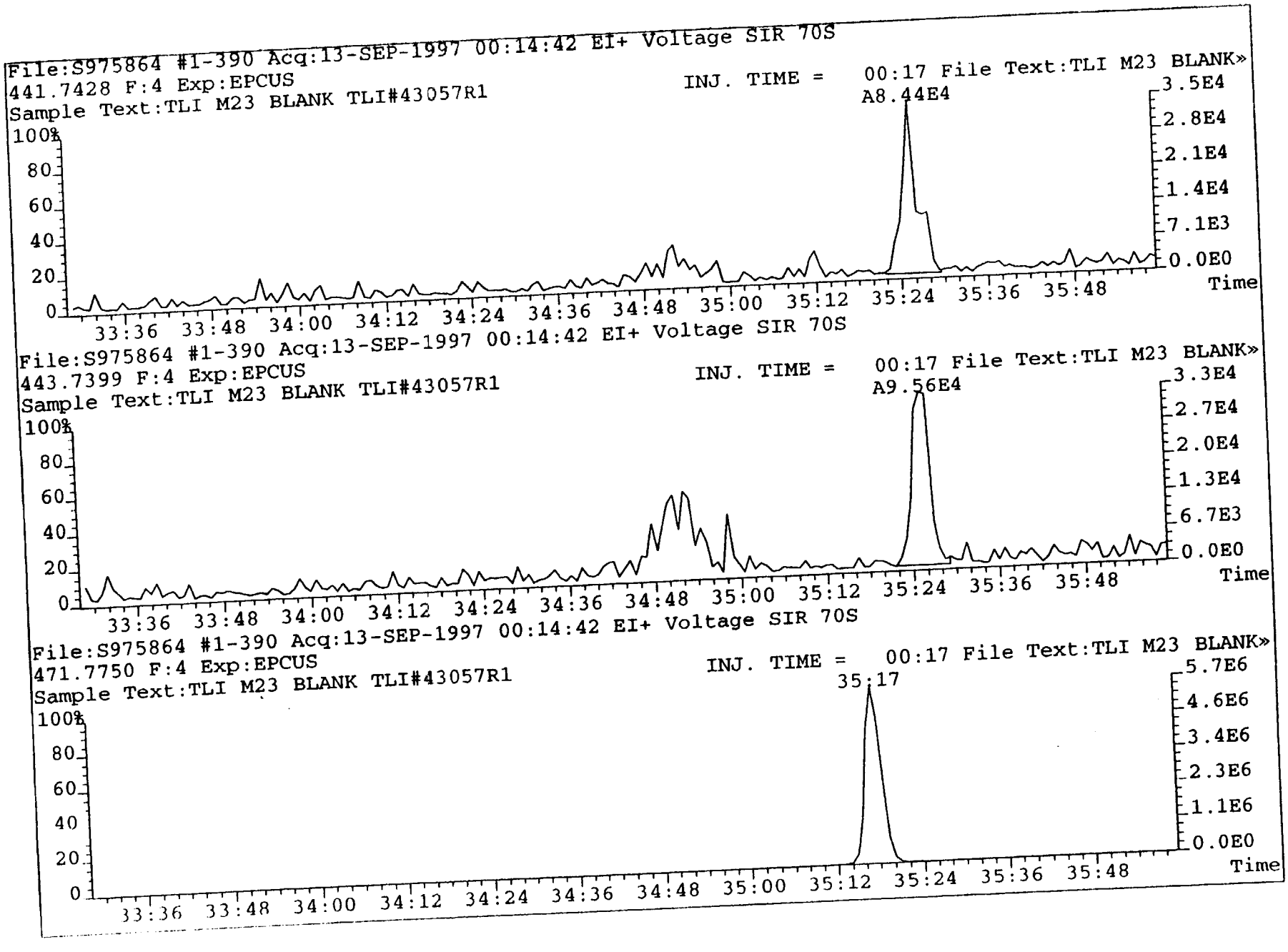

File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A6.25E4
1.9E4
1.5E4
1.2E4
7.7E3
3.9E3
0.0E0
100%
80
60
40
20
0
24:00
25:00
26:00
27:00
28:00 Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A5.60E4
1.7E4
1.3E4
1.0E4
6.7E3
3.3E3
0.0E0
100%
80
60
40
20
0
24:00
25:00
26:00
27:00
28:00 Time
File:S975864 #1-905 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
25:40
26:23
9.7E6
7.8E6
5.8E6
3.9E6
1.9E6
0.0E0
100%
80
60
40
20
0
24:00
25:00
26:00
27:00
28:00 Time

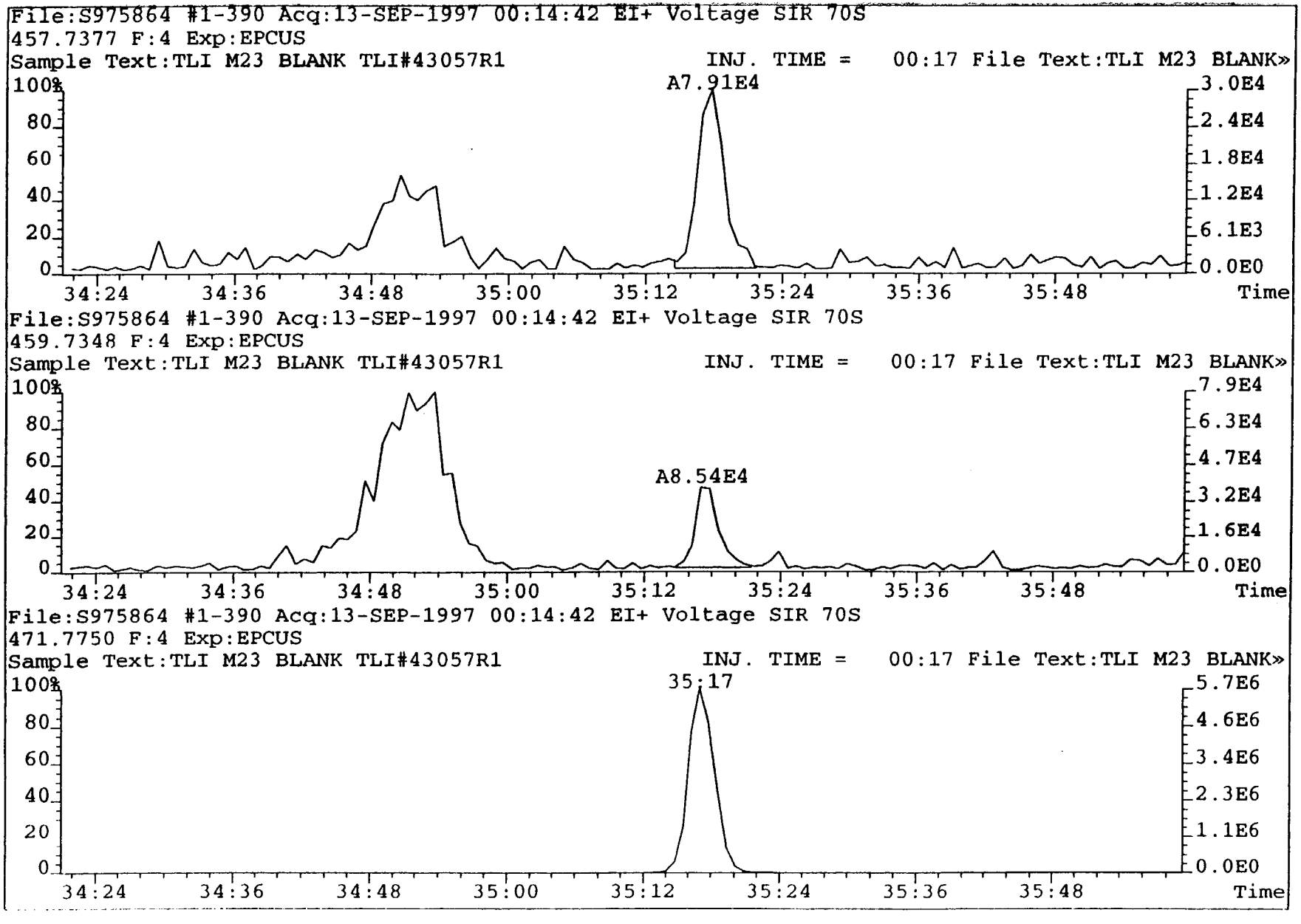

File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
28:12
28:21
28:39
28:56
29:16
29:36
29:46
29:58
30:13
30:24
30:33
30:53
29:00
30:00
Time
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
28:13
28:38
28:48
29:02
29:22
29:36
29:46
30:06
30:28
30:52
29:00
30:00
Time
File:S975864 #1-346 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
385.8610 F:3 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
28:12
28:25
28:40
28:51
29:02
29:22
29:34
29:53
30:16
30:41
30:49
29:00
30:00
Time


File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A6.60E4
100%
80
60
40
20
0
3.8E4
3.0E4
2.3E4
1.5E4
7.6E3
0.0E0
32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A5.80E4
100%
80
60
40
20
0
3.6E4
2.9E4
2.2E4
1.5E4
7.3E3
0.0E0
32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
33:05
100%
80
60
40
20
0
2.6E6
2.1E6
1.6E6
1.0E6
5.2E5
0.0E0
32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12
Time


File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A1.00E5
5.7E4
4.5E4
3.4E4
2.3E4
1.1E4
0.0E0
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A8.75E4
4.8E4
3.9E4
2.9E4
1.9E4
9.7E3
0.0E0
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
32:44
6.3E6
5.0E6
3.8E6
2.5E6
1.3E6
0.0E0
Time
100%
80
60
40
20
0
31:48
32:00
32:12
32:24
32:36
32:48
33:00
33:12
33:24
33:36
33:48


File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A1.33E5
100%
80
60
40
20
0
5.7E4
4.5E4
3.4E4
2.3E4
1.1E4
0.0E0
31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A1.23E5
100%
80
60
40
20
0
4.8E4
3.9E4
2.9E4
1.9E4
9.7E3
0.0E0
31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
32:44
100%
80
60
40
20
0
6.3E6
5.0E6
3.8E6
2.5E6
1.3E6
0.0E0
31:48 32:00 32:12 32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 Time


File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
441.7428 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A8.44E4
100%
80
60
40
20
0
3.5E4
2.8E4
2.1E4
1.4E4
7.1E3
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
443.7399 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A9.56E4
100%
80
60
40
20
0
3.3E4
2.7E4
2.0E4
1.3E4
6.7E3
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
471.7750 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
35:17
100%
80
60
40
20
0
5.7E6
4.6E6
3.4E6
2.3E6
1.1E6
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48


File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
457.7377 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A7.91E4
100%
80
60
40
20
0
3.0E4
2.4E4
1.8E4
1.2E4
6.1E3
0.0E0
34:24
34:36
34:48
35:00
35:12
35:24
35:36
35:48
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
459.7348 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
A8.54E4
100%
80
60
40
20
0
7.9E4
6.3E4
4.7E4
3.2E4
1.6E4
0.0E0
34:24
34:36
34:48
35:00
35:12
35:24
35:36
35:48
Time
File:S975864 #1-390 Acq:13-SEP-1997 00:14:42 EI+ Voltage SIR 70S
471.7750 F:4 Exp:EPCUS
Sample Text:TLI M23 BLANK TLI#43057R1
INJ. TIME = 00:17 File Text:TLI M23 BLANK»
35:17
100%
80
60
40
20
0
5.7E6
4.6E6
3.4E6
2.3E6
1.1E6
0.0E0
34:24
34:36
34:48
35:00
35:12
35:24
35:36
35:48
Time

Pacific Environmental Services

TLI Project: 43057r1 — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: TLI M23 Blank — Analysis File: P973848

Client Project:	ASPHALT PLANT "A"	Date Received:	/ /	Spike File:	SPC2NF04
Sample Matrix:	XAD	Date Extracted:	09/06/97	ICal:	PF22206
TLI ID:	TLI Blank	Date Analyzed:	09/12/97	ConCal:	P973843
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P973848	% 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	ND	0.008				—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	2.9	72.7	40%-130%	0.76	20:40	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	19:44	—

Data Reviewer: VC 09/14/97

C2NF_PSR v2.00, LARS 6.10.04

Triangle Laboratories, Inc.
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:54 09/14/97

Initial ....Date...

Data Review By: NC 9/14/97 Calculated Noise Area: 1.37

The Total Area for each peak with an ion abundance ratio outside ratio limits has been recalculated according to method requirements.

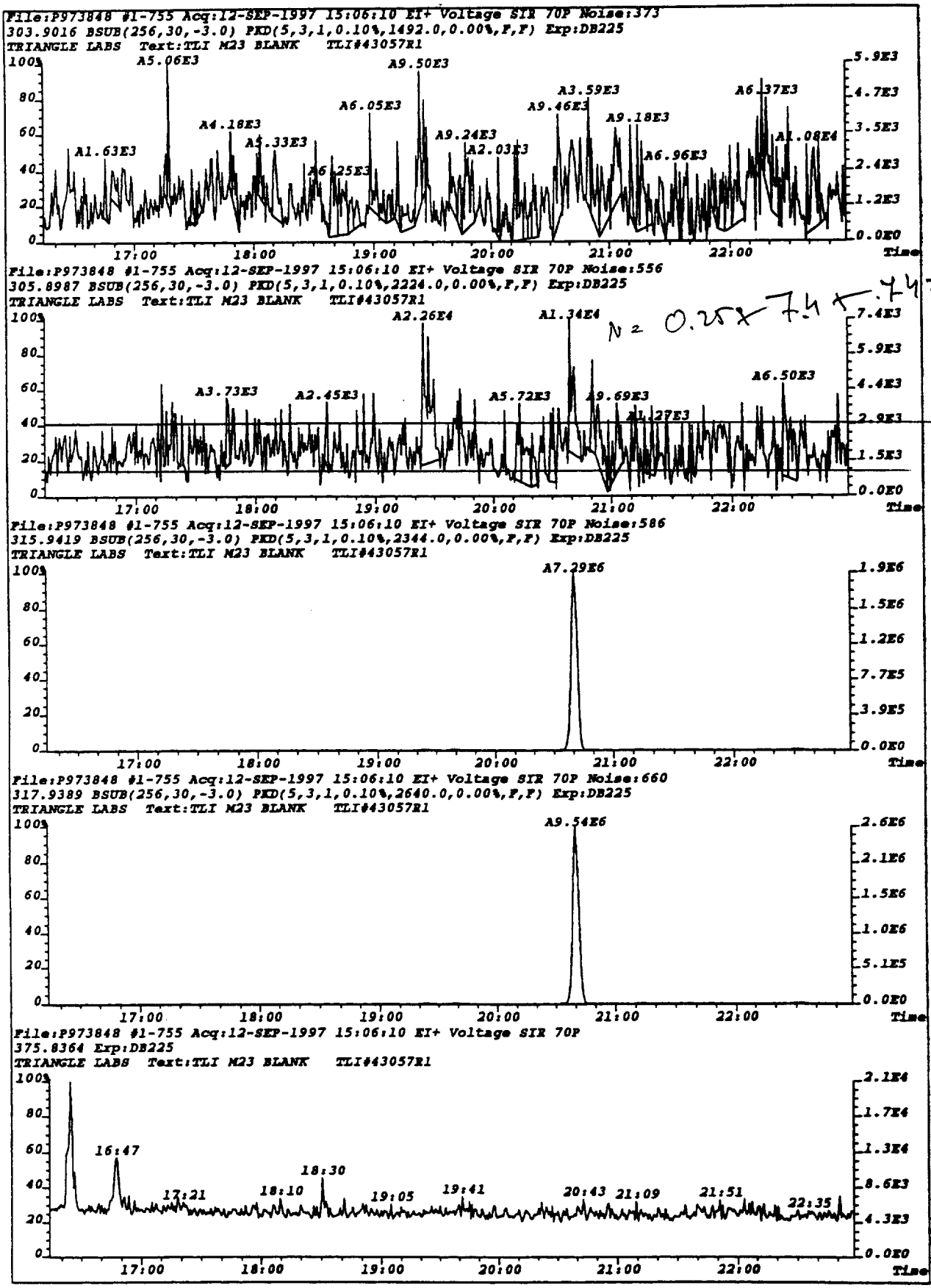
Page No. 1 Listing of P973848B.dbf
09/14/97 Matched GC Peaks / Ratio / Ret. Time

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						0.786-1.096			
304-306	DC	NL		0:00		0.68	1.86			0.000			
	DC	SN		19:23	RO	0.42	2.18			0.938			
	DC	SN		20:14	RO	1.49	1.01			0.979			
	DC	SN		20:17	RO	0.34	0.53			0.981			
	DC	SN		20:20	RO	0.56	0.44			0.984			
	DC	SN		20:50		0.77	0.83			1.008			
	DC	SN		20:52		0.68	1.34			1.010			
	DC	SN		21:04	RO	1.43	1.72			1.019			
304-306			0	Peaks			0.00						
13C12-TCDF				0.65-0.89						0.952-1.048			
316-318	DC	NL		0:00		0.89	2.49			0.000			
	DC	WL		18:57		0.88	1.52			0.917			
	DC	WL		19:23		0.75	9.49			0.938			
	DC	WL		19:38	RO	1.64	5.95			0.950			
				20:40		0.76	1,683.28	729.00	954.28	1.000	13C12-2378-TCDF	IS0	
				21:12		0.82	5.27	2.38	2.89	1.026			
	DC	SN		21:38	RO	2.91	1.54			1.047			
	DC	WH		22:32		0.73	12.08			1.090			
316-318			2	Peaks			1,688.55						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.897-1.103			
332-334	DC	NL		0:00	RO	1.87	1.72			0.000			
	DC	SN		17:32	RO	2.59	0.51			0.901			
	DC	SN		18:26	RO	0.39	3.56			0.947			
				19:28		0.79	1,370.66	605.30	765.36	1.000	13C12-2378-TCDD	IS1	
				19:42		0.81	1,668.46	744.76	923.70	1.012	13C12-1234-TCDD	RS1	
				20:22		0.82	16.80	7.58	9.22	1.046			
	DC	WH		21:34	RO	2.58	0.58			1.108			
	DC	WH		21:45	RO	0.43	1.08			1.117			
	DC	WH		21:55		0.80	3.76			1.126			
332-334			3	Peaks			3,055.92						

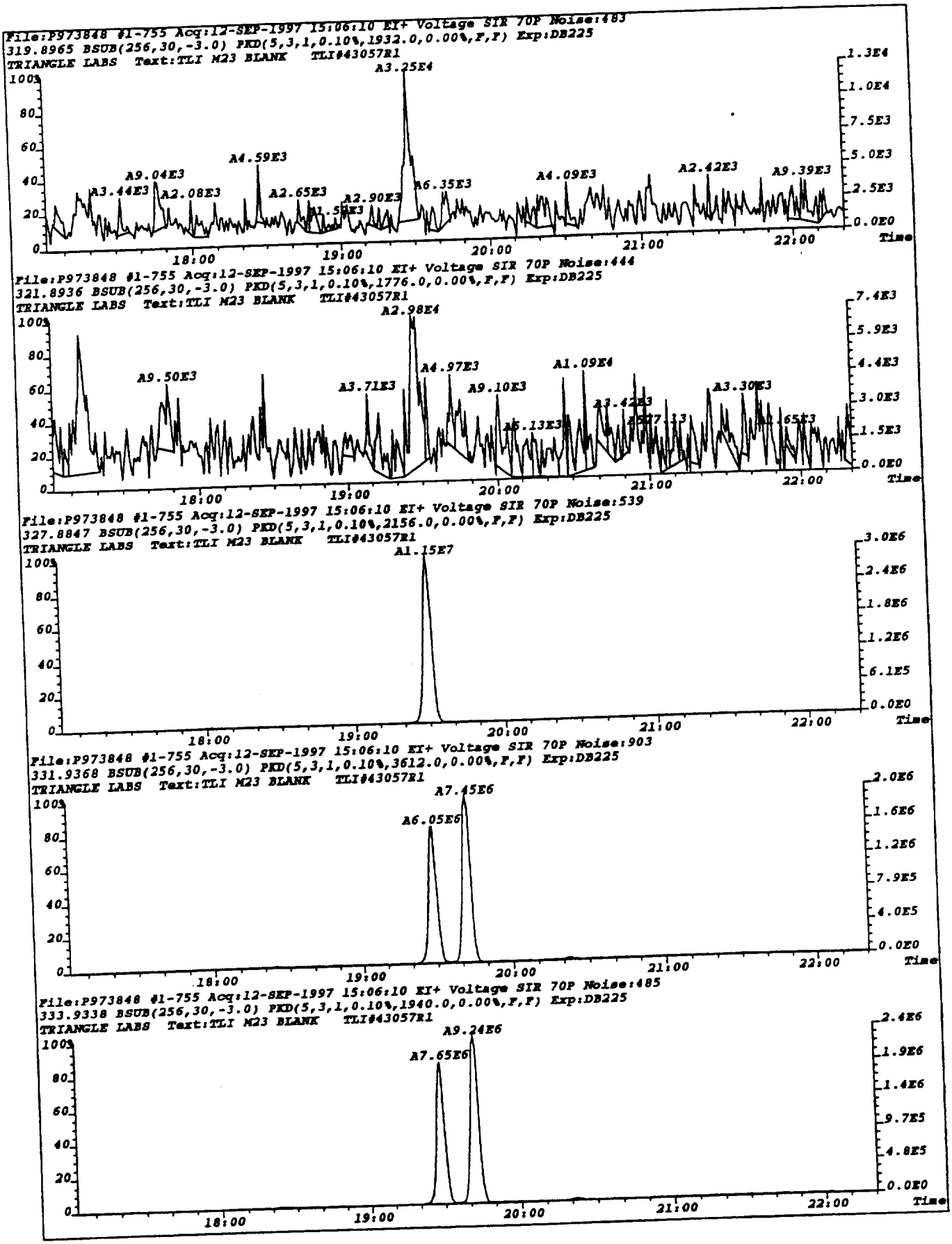
Compound:
M_Z.... QC.Log Omit Why ..RT. OK Ratio Total.Area... Area.Peak.1.. Area.Peak.2.. Rel.RT Compound.Name.. ID.. Flags.

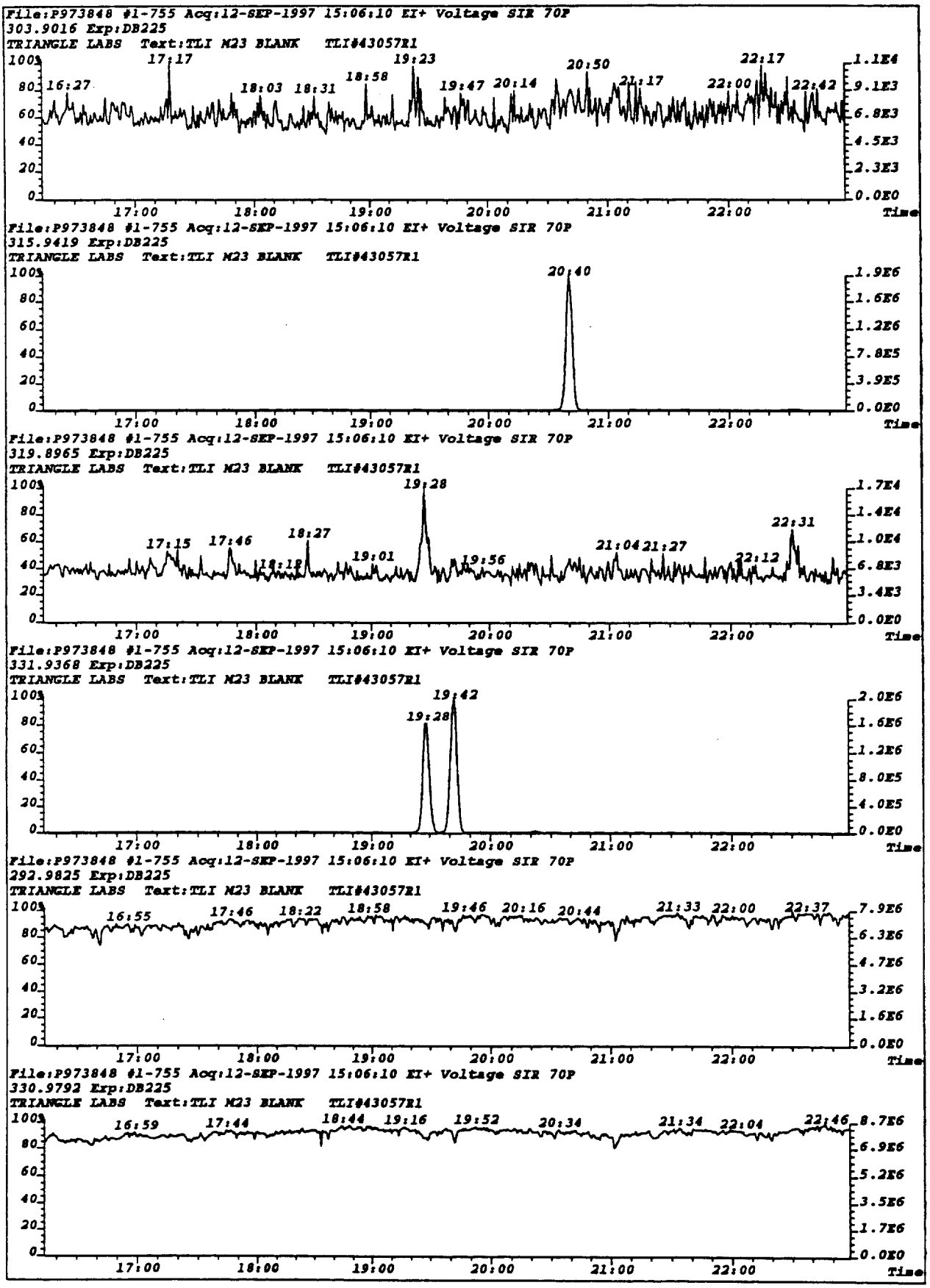
Column Description.....	"Why" Code Description.....	QC Log Desc.....
M_Z -Nominal Ion Mass(es)	WL-Below Retention Time Window	A-Peak Added
..RT. -Retention Time (mm:ss)	WH-Above Retention Time Window	K-Peak Kept
Rat.1 -Ratio of M/M+2 Ions	SN-Below Signal to Noise Level	D-Peak Deleted
OK -RO=Ratio Outside 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
		E-Ether Interference

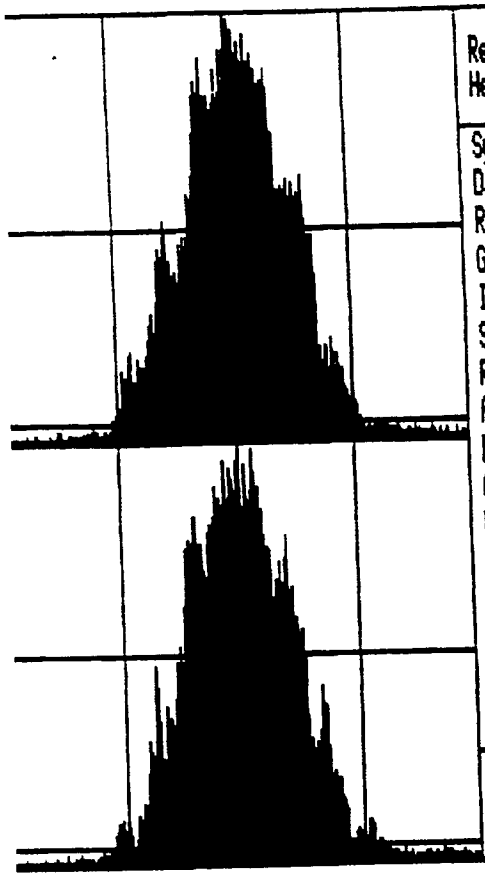
*** End of Report ***



N = 0.25 × 7.4 × 7.4 = 1.37
WB
9/12/97


File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P Noise:483
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1932.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
A3.25E4
A4.59E3
A9.04E3
A3.44E3
A2.08E3
A2.65E3
A2.90E3
A6.35E3
A4.09E3
A2.42E3
A9.39E3
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P Noise:444
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1776.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
A2.98E4
A9.50E3
A3.71E3
A4.97E3
A9.10E3
A1.09E4
A3.30E3
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P Noise:539
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2156.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
A1.15E7
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P Noise:903
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,3612.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
A7.45E6
A6.05E6
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P Noise:485
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1940.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
A9.24E6
A7.65E6
18:00
19:00
20:00
21:00
22:00
Time


File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
303.9016 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
16:27 17:17 18:03 18:31 18:58 19:23 19:47 20:14 20:50 21:17 22:00 22:17 22:42
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
20:40
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
17:15 17:46 18:18 18:27 19:01 19:28 19:56 21:04 21:27 22:12 22:31
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
19:28 19:42
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
16:55 17:46 18:22 18:58 19:46 20:16 20:44 21:33 22:00 22:37
File:P973848 #1-755 Acq:12-SEP-1997 15:06:10 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:TLI M23 BLANK TLI#43057R1
16:59 17:44 18:44 19:16 19:52 20:34 21:34 22:04 22:46
17:00 18:00 19:00 20:00 21:00 22:00 Time



Ref. mass 292.9825 Peak top
Height 1.18 volts Span 200 ppm

System file name	DB225
Data file name	A:P973848
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		

Channel I 330.9792 Peak top
Height 1.15 volts Span 200 ppm

Pacific Environmental Services

TLI Project: **43057r1** — Method 23 PCDD/PCDF Analysis (a)
Client Sample: **O-M23-4** — Analysis File: **S975865**

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	**M23TRAIN**	Date Received:	**08/29/97**	Spike File:	**SPX23704**
TLI ID:	**181-27-6A-C**	Date Extracted:	**09/06/97**	ICal:	**SF56117**
		Date Analyzed:	**09/13/97**	ConCal:	**S975861**
Sample Size:	**1.000**	Dilution Factor:	**n/a**	% Moisture:	**n/a**
Dry Weight:	**n/a**	Blank File:	**S975864**	% Lipid:	**n/a**
GC Column:	**DB-5**	Analyst:	**ML**	% 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	0.005				—
1,2,3,4,7,8-HxCDD	ND	0.006				—
1,2,3,6,7,8-HxCDD	0.01			1.27	30:00	—
1,2,3,7,8,9-HxCDD	ND	0.005				—
1,2,3,4,6,7,8-HpCDD	EMPC		0.04			B
1,2,3,4,6,7,8,9-OCDD	0.09			0.93	35:22	B
2,3,7,8-TCDF	0.02			0.85	21:39	B
1,2,3,7,8-PeCDF	ND	0.003				—
2,3,4,7,8-PeCDF	EMPC		0.01			B
1,2,3,4,7,8-HxCDF	0.03			1.25	29:12	B
1,2,3,6,7,8-HxCDF	0.01			1.33	29:19	B
2,3,4,6,7,8-HxCDF	0.02			1.24	29:48	B,JR
1,2,3,7,8,9-HxCDF	ND	0.004				—
1,2,3,4,6,7,8-HpCDF	0.05			0.99	31:58	B
1,2,3,4,7,8,9-HpCDF	0.02			1.05	33:09	B
1,2,3,4,6,7,8,9-OCDF	0.05			1.00	35:29	B

Totals	Amt. (ng)	Number	DL	EMPC	Flags
Total TCDD	EMPC			0.007	—
Total PeCDD	0.01	1		0.02	—
Total HxCDD	0.07	3			—
Total HpCDD	EMPC			0.07	—
Total TCDF	0.03	3			—
Total PeCDF	0.01	1		0.02	—
Total HxCDF	0.09	5		0.10	—
Total HpCDF	0.09	3		0.10	—

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Pacific Environmental Services

TLI Project: **43057r1**
Client Sample: **O-M23-4**

Method 23 PCDD/PCDF Analysis (a)
Analysis File: **S975865**

Internal Standards	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	4.8	120	40%-130%	0.76	21:37	—
$^{13}C_{12}$-2,3,7,8-TCDD	3.9	98.7	40%-130%	0.79	22:23	—
$^{13}C_{12}$-1,2,3,7,8-PeCDF	4.3	107	40%-130%	1.46	25:41	—
$^{13}C_{12}$-1,2,3,7,8-PeCDD	4.5	112	40%-130%	1.55	26:45	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	4.5	113	40%-130%	0.51	29:18	—
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	4.1	103	40%-130%	1.24	29:59	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	3.5	88.5	25%-130%	0.42	31:57	—
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	3.6	90.1	25%-130%	1.03	32:48	—
$^{13}C_{12}$-1,2,3,4,6,7,8,9-OCDD	5.5	68.8	25%-130%	0.92	35:22	—

Surrogate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	4.3	106	70%-140%		22:23	—
$^{13}C_{12}$-2,3,4,7,8-PeCDF	3.7	93.4	70%-140%	1.44	26:24	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	3.9	97.6	70%-140%	0.50	29:12	—
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	3.4	85.9	70%-140%	1.26	29:55	—
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	3.9	98.7	70%-140%	0.42	33:08	—

Alternate Standards (Type A)	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	4.7	117	40%-130%	0.51	30:29	—
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	4.3	107	40%-130%	0.51	29:47	—

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	22:11	—
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.24	30:17	—

Data Reviewer: _____ 09/14/97

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Initial ....Date...

Data Review By: VC 9/14/97 Calculated Noise Area: 2.22

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 S975865B.dbf
09/14/97 Matched GC Peaks / Ratio / Ret. Time

Compound / M_Z....		QC.Log	Cmit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF					0.65-0.89						0.838-1.092			
304-306		DC	NL		0:00	RO	1.00	0.23			0.000			
		DC	SN		18:18	RO	0.54	3.65			0.847			
		DC	SN		18:35		0.67	1.84			0.860			
		DC	SN		20:33	RO	0.55	5.33			0.951			
	D	d	SN		20:53	RO	1.13	7.24			0.966			
					21:12		0.84	28.09	12.84	15.25	0.981			
		DC	SN		21:28	RO	0.52	3.72			0.993			
					21:39		0.85	39.70	18.25	21.45	1.002	2378-TCDF		AN
	D	d	SN		22:04	RO	1.05	6.05			1.021			
		DC	SN		22:22	RO	0.37	1.95			1.035			
	A				23:22		0.66	13.66	5.45	8.21	1.081			
304-306				3	Peaks			81.45						
13C12-TCDF					0.65-0.89						0.954-1.046			
316-318		DC	NL		0:00	RO	0.39	0.34			0.000			
					21:11		0.72	34.00	14.26	19.74	0.980			
					21:37		0.76	7,668.11	3,317.31	4,350.80	1.000	13C12-2378-TCDF		ISO
					22:05		0.76	29.48	12.75	16.73	1.022			
316-318				3	Peaks			7,731.59						

---------- Above: TCDF / TCDD Follows ----------

TCDD					0.65-0.89						0.875-1.055			
320-322		DC	NL		0:00	RO	2.21	0.34			0.000			
		DC	WL		19:31	RO	1.26	1.03			0.872			
					19:45	RO	1.04	10.34	6.08	5.84	0.882			
	D	d	SN		20:15	RO	0.60	6.53			0.905			
		DC	SN		20:25	RO	1.41	2.60			0.912			
		DC	SN		20:54	RO	0.41	0.69			0.934			
	D	d	SN		21:10		0.83	6.92			0.946			
		DC	SN		21:22		0.76	2.32			0.955			
		DC	SN		21:29	RO	1.35	1.49			0.960			
		DC	SN		21:37	RO	2.09	2.07			0.966			
		DC	SN		21:49	RO	0.59	2.34			0.975			
		DC	SN		22:04	RO	2.35	0.60			0.986			
	D	d	SN		22:17	RO	0.91	5.42			0.996			
		DC	SN		22:36	RO	1.38	1.03			1.010			
		DC	SN		22:41	RO	0.38	0.71			1.013			
		DC	SN		22:49		0.67	1.05			1.019			
		DC	SN		23:03	RO	0.13	0.46			1.030			
		DC	SN		23:15	RO	1.10	2.23			1.039			
320-322				1	Peak			10.34						

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
37Cl-TCDD										0.910-1.090			
328	DC	NL		0:00			0.47			0.000			
				22:23			4,561.50	4,561.50		1.000	37Cl-TCDD		SUR1
328				1 Peak			4,561.50						
										0.910-1.090			
13C12-TCDD					0.65-0.89					0.000			
332-334	DC	NL		0:00	RO	4.09	0.57			0.945			
				21:09	RO	1.08	20.87	12.71	11.79	0.991	13C12-1234-TCDD		RS1
				22:11		0.81	4,829.18	2,166.73	2,662.45	1.000	13C12-2378-TCDD		IS1
				22:23		0.79	5,081.62	2,248.91	2,832.71	1.015			
				22:43		0.86	75.34	34.92	40.42				
332-334				4 Peaks			10,007.01						

---------- Above: TCDD / PeCDF Follows ----------

PeCDF					1.32-1.78					0.915-1.074			
340-342	DC	NL		0:00	RO	1.03	0.61			0.000			
	DC	SN		23:40	RO	2.79	5.94			0.921			
	DC	SN		23:57	RO	0.66	1.37			0.933			
	DC	SN		24:35	RO	0.97	1.88			0.957			
	DC	SN		24:42	RO	1.23	4.01			0.962			
				24:47		1.52	15.41	9.30	6.11	0.965			
	DC	SN		25:09		1.57	6.31			0.979			
	DC	SN		25:24	RO	5.98	4.13			0.989			
	DC	SN		25:50	RO	2.23	3.80			1.006			
	DC	SN		25:58	RO	2.09	5.92			1.011			
	DC	SN		26:09	RO	3.57	1.17			1.018			
M				26:25	RO	1.83	17.01	12.20	6.67	1.029	23478-PeCDF		AN
	DC	SN		26:50	RO	1.02	4.08			1.045			
	DC	SN		27:04	RO	3.06	1.73			1.054			
	DC	SN		27:31	RO	0.77	1.30			1.071			
	DC	WH		27:47	RO	0.39	0.71			1.082			
340-342				2 Peaks			32.42						
										0.844-1.156			
13C12-PeCDF					1.32-1.78					0.000			
352-354	DC	NL		0:00	RO	1.00	0.23			0.966			
				24:49		1.60	21.77	13.39	8.38	0.985			
				25:18	RO	1.90	25.09	18.71	9.84	1.000	13C12-PeCDF	123	IS2
				25:41		1.46	5,880.80	3,488.97	2,391.83	1.006			
				25:50		1.54	20.34	12.33	8.01	1.011			
				25:58		1.53	32.07	19.38	12.69	1.028	13C12-PeCDF	234	SUR2
				26:24		1.44	5,329.39	3,141.80	2,187.59	1.066			
				27:22	RO	1.02	11.86	7.21	7.08				
352-354				7 Peaks			11,321.32						

---------- Above: PeCDF / PeCDD Follows ----------

PeCDD					1.32-1.78					0.926-1.024			
356-358	DC	NL		0:00	RO	0.83	0.16			0.000			
	DC	WL		24:44	RO	6.00	0.31			0.925			
				24:56	RO	1.28	7.86	4.78	3.74	0.932			
	DC	SN		25:15	RO	2.84	0.48			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.
	DC	SN		25:30	RO	0.87	0.76			0.953			
				25:41		1.71	12.35	7.80	4.55	0.960			
K				25:59	RO	1.94	5.89	4.47	2.31	0.971			
	DC	SN		26:28	RO	4.73	2.04			0.989			
	DC	SN		26:36	RO	0.48	1.10			0.994			
	DC	SN		26:46	RO	2.18	3.19			1.001	12378-PeCDD	AN	
	DC	SN		26:54	RO	2.68	1.12			1.006			
	DC	SN		27:07	RO	1.02	0.89			1.014			
	DC	WH		27:30	RO	0.75	1.05			1.028			
356-358			3	Peaks			26.10						
13C12-PeCDD					1.32-1.78					0.850-1.150			
368-370	DC	NL		0:00	RO	0.83	0.16			0.000			
	DC	SN		26:28	RO	1.27	3.06			0.989			
				26:45		1.55	3,437.52	2,090.64	1,346.88	1.000	13C12-PeCDD 123	IS3	
				26:54		1.55	274.11	166.48	107.63	1.006			
368-370			2	Peaks			3,711.63						
---------- Above: PeCDD / HxCDF Follows ----------													
HxCDF					1.05-1.43					0.959-1.050			
374-376	DC	NL		0:00		1.21	2.54			0.000			
				28:14		1.21	15.56	8.51	7.05	0.964			
				28:22		1.34	35.02	20.04	14.98	0.968			
D	d	SN		28:39	RO	0.95	6.02			0.978			
	DC	SN		28:49	RO	0.77	4.21			0.984			
	DC	SN		28:59	RO	5.85	0.45			0.989			
				29:12		1.25	50.54	28.07	22.47	0.997	123478-HxCDF	AN	
				29:19		1.33	23.99	13.68	10.31	1.001	123678-HxCDF	AN	
	DC	SN		29:25	RO	1.81	4.88			1.004			
D	d	SN		29:36	RO	1.44	10.12			1.010			
				29:48		1.24	28.71	15.88	12.83	1.017	234678-HxCDF	AN	
	DC	SN		29:56	RO	2.02	1.10			1.022			
	DC	SN		30:08	RO	0.24	0.51			1.028			
	DC	SN		30:31	RO	0.77	3.97			1.042	123789-HxCDF	AN	
				30:34	RO	1.01	9.10	5.04	4.97	1.043			
	DC	SN		30:37	RO	0.79	1.45			1.045			
374-376			6	Peaks			162.92						
13C12-HxCDF					0.43-0.59					0.863-1.137			
384-386	DC	NL		0:00	RO	1.00	2.49			0.000			
				28:21		0.56	8.55	3.07	5.48	0.968			
				29:12		0.50	4,955.40	1,656.35	3,299.05	0.997	13C12-HxCDF 478	SUR3	
				29:18		0.51	5,294.90	1,782.26	3,512.64	1.000	13C12-HxCDF 678	IS4	
	DC	SN		29:34	RO	0.26	2.58			1.009			
				29:47		0.51	4,637.69	1,563.79	3,073.90	1.016	13C12-HxCDF 234	ALT2	
N				30:29		0.51	4,428.48	1,493.87	2,934.61	1.040	13C12-HxCDF 789	ALT1	
384-386			5	Peaks			19,325.02						
---------- Above: HxCDF / HxCDD Follows ----------													

Compound/ M_I....	QC.Log	Omit	Why	RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
HxCDD						1.05-1.43				0.953-1.014			
390-392	DC	NL		0:00	RO	0.90	1.79			0.000			
	DC	SN		28:45	RO	0.66	4.50			0.959			
	DC	SN		28:50	RO	0.27	0.38			0.962			
	DC	SN		29:00	RO	5.35	0.83			0.967			
				29:12		1.30	41.69	23.54	18.15	0.974			
	DC	SN		29:17	RO	1.76	3.09			0.977			
				29:25		1.27	20.79	11.63	9.16	0.981			
	DC	SN		29:56	RO	0.59	3.50			0.998	123478-HxCDD	AN	
				30:00		1.27	12.73	7.11	5.62	1.001	123678-HxCDD	AN	
D	d	SN		30:17		1.18	10.77			1.010	123789-HxCDD	AN	
	DC	WH		30:30	RO	1.01	2.01			1.017			
	DC	WH		30:38	RO	0.42	0.54			1.022			
390-392	3 Peaks						75.21						
13C12-HxCDD						1.05-1.43				0.967-1.033			
402-404	DC	NL		0:00		1.08	3.28			0.000			
				29:24		1.10	14.96	7.82	7.14	0.981			
				29:55		1.26	3,341.80	1,862.50	1,479.30	0.998	13C12-HxCDD 478		SUR4
				29:59		1.24	3,998.61	2,212.03	1,786.58	1.000	13C12-HxCDD 678		IS5
				30:17		1.24	3,896.41	2,157.96	1,738.45	1.010	13C12-HxCDD 789		RS2
402-404	4 Peaks						11,251.78						

---------- Above: HxCDD / HpCDF Follows ----------

HpCDF						0.88-1.20				0.995-1.042			
408-410	DC	NL		0:00	RO	1.56	4.08			0.000			
				31:58		0.99	57.69	28.69	29.00	1.001	1234678-HpCDF	AN	
				32:11	RO	1.42	13.73	9.55	6.73	1.007			
				32:18		0.92	18.53	8.88	9.65	1.011			
	DC	SN		32:51	RO	0.69	3.96			1.028			
				33:09		1.05	19.72	10.10	9.62	1.038	1234789-HpCDF	AN	
M	DC	WH		33:20	RO	0.26	3.24			1.043			
408-410	4 Peaks						109.67						
13C12-HpCDF						0.37-0.51				0.937-1.125			
418-420	DC	NL		0:00	RO	1.39	3.12			0.000			
				31:57		0.42	3,058.65	906.47	2,152.18	1.000	13C12-HpCDF 678		IS6
				32:30	RO	0.25	14.27	4.36	17.37	1.017			
				32:46	RO	2.72	6.84	12.91	4.75	1.026			
				33:08		0.42	2,327.94	685.97	1,641.97	1.037	13C12-HpCDF 789		SUR5
				33:20	RO	0.18	68.69	20.99	118.75	1.043			
418-420	5 Peaks						5,476.39						

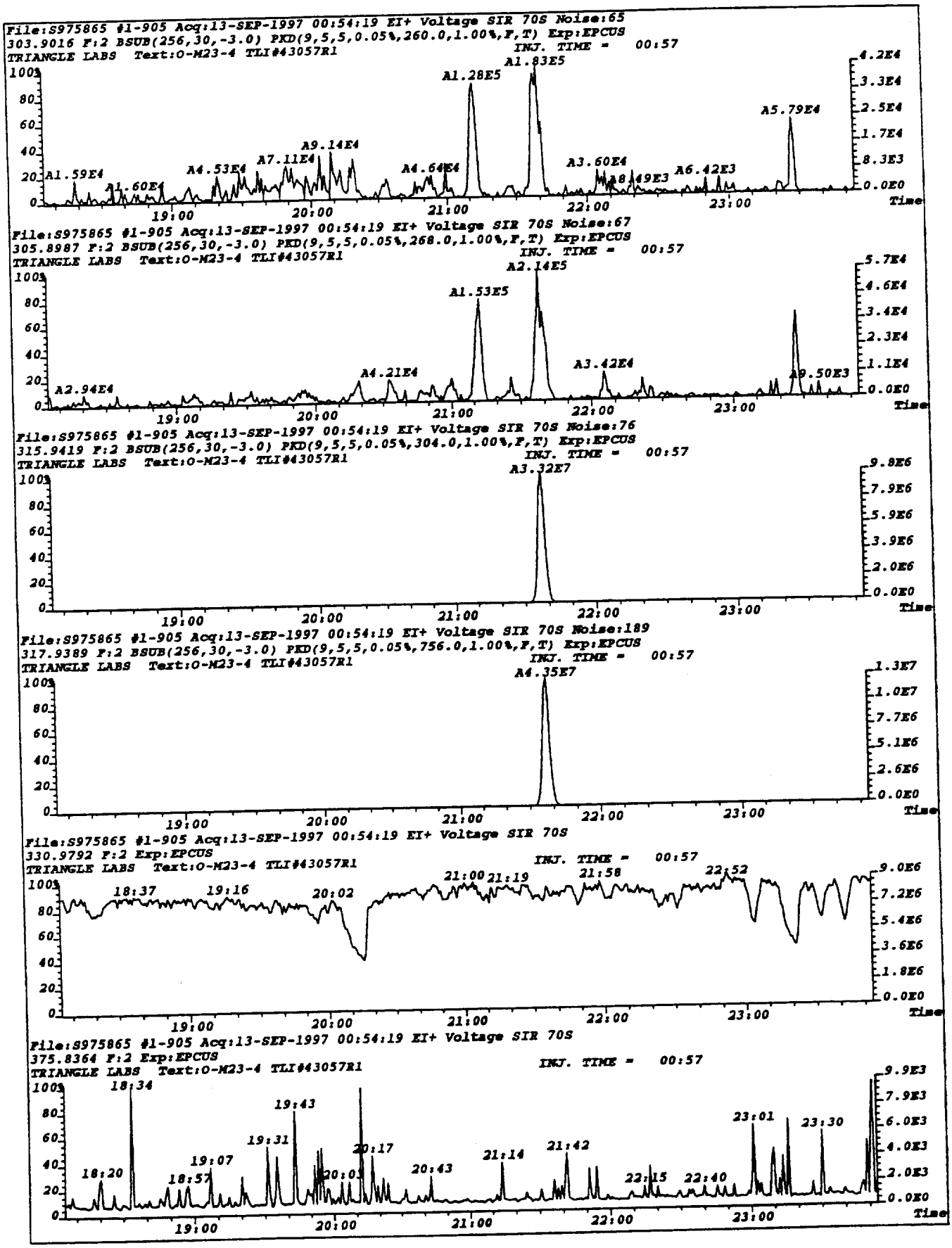
---------- Above: HpCDF / HpCDD Follows ----------

HpCDD						0.88-1.20				0.977-1.005			
424-426	DC	NL		0:00	RO	2.13	4.22			0.000			
M				32:12	RO	1.54	19.26	14.50	9.44	0.982			
M				32:48	RO	1.23	32.44	19.60	15.90	1.000	1234678-HpCDD	AN	
	DC	WH		32:59	RO	6.14	5.20			1.006			
	DC	WH		33:14	RO	5.99	4.32			1.013			

Compound/ M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
424-426			2 Peaks				51.70						
13C12-HpCDD						0.88-1.20				0.969-1.031			
436-438	DC	NL		0:00		1.13	1.51			0.000			
				32:12	RO	0.77	5.77	2.94	3.83	0.982			
				32:48		1.03	2,861.43	1,452.51	1,408.92	1.000	13C12-HpCDD	678	IS7
436-438			2 Peaks				2,867.20						
---------- Above: HpCDD / Octa-CDD and CDF Follows ----------													
OCDF						0.76-1.02				0.887-1.113			
442-444	DC	NL		0:00	RO	0.60	0.74			0.000			
	DC	WL		31:20	RO	0.38	0.85			0.886			
	DC	SN		31:40	RO	0.33	0.62			0.895			
	DC	SN		31:54	RO	0.11	0.32			0.902			
	DC	SN		32:27	RO	0.37	0.62			0.918			
	DC	SN		32:40	RO	0.51	0.89			0.924			
	DC	SN		33:29	RO	2.28	0.76			0.947			
	DC	SN		33:59	RO	0.69	0.66			0.961			
	DC	SN		34:41		0.96	1.80			0.981			
M				35:29		1.00	23.40	11.70	11.70	1.003	OCDF		AN
	DC	SN		35:39	RO	1.18	1.74			1.008			
	DC	SN		35:52		0.91	1.62			1.014			
442-444			1 Peak				23.40						
OCDD						0.76-1.02				0.887-1.113			
458-460	DC	NL		0:00	RO	1.25	0.30			0.000			
	DC	SN		35:09		0.95	1.07			0.994			
M				35:22		0.93	33.80	16.30	17.50	1.000	OCDD		AN
	DC	SN		35:34	RO	3.30	0.43			1.006			
	DC	SN		35:41	RO	0.44	0.51			1.009			
	DC	SN		35:47	RO	1.09	1.66			1.012			
458-460			1 Peak				33.80						
13C12-OCDD						0.76-1.02				0.996-1.005			
470-472	DC	NL		0:00	RO	1.20	0.19			0.000			
				35:22		0.92	2,782.87	1,335.35	1,447.52	1.000	13C12-OCDD		IS8
470-472			1 Peak				2,782.87						

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
		E-Ether Interference

*** End of Report ***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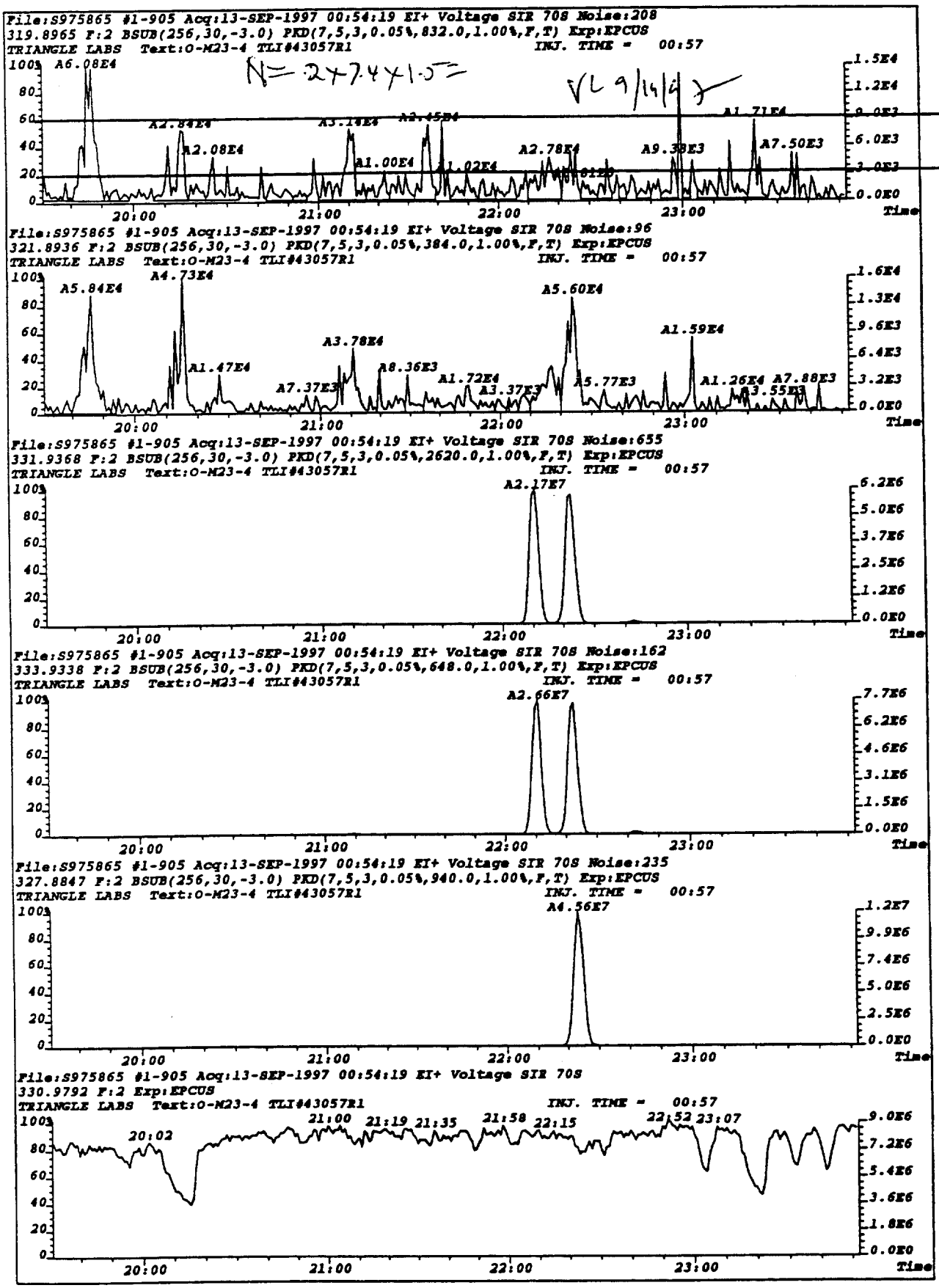
303.9016 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,260.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.59E4
A1.60E4
A4.53E4
A7.11E4
A9.14E4
A4.64E4
A1.28E5
A1.83E5
A3.60E4
A8.49E3
A6.42E3
A5.79E4
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:67
305.8987 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,268.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.94E4
A4.21E4
A1.53E5
A2.14E5
A3.42E4
A9.50E3
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:76
315.9419 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,304.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A3.32E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:189
317.9389 F:2 BSUB(256,30,-3.0) PKD(9,5,5,0.05%,756.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A4.35E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
18:37
19:16
20:02
21:00
21:19
21:58
22:52
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
375.8364 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
18:20
18:34
18:57
19:07
19:31
19:43
20:01
20:17
20:43
21:14
21:42
22:15
22:40
23:01
23:30
Time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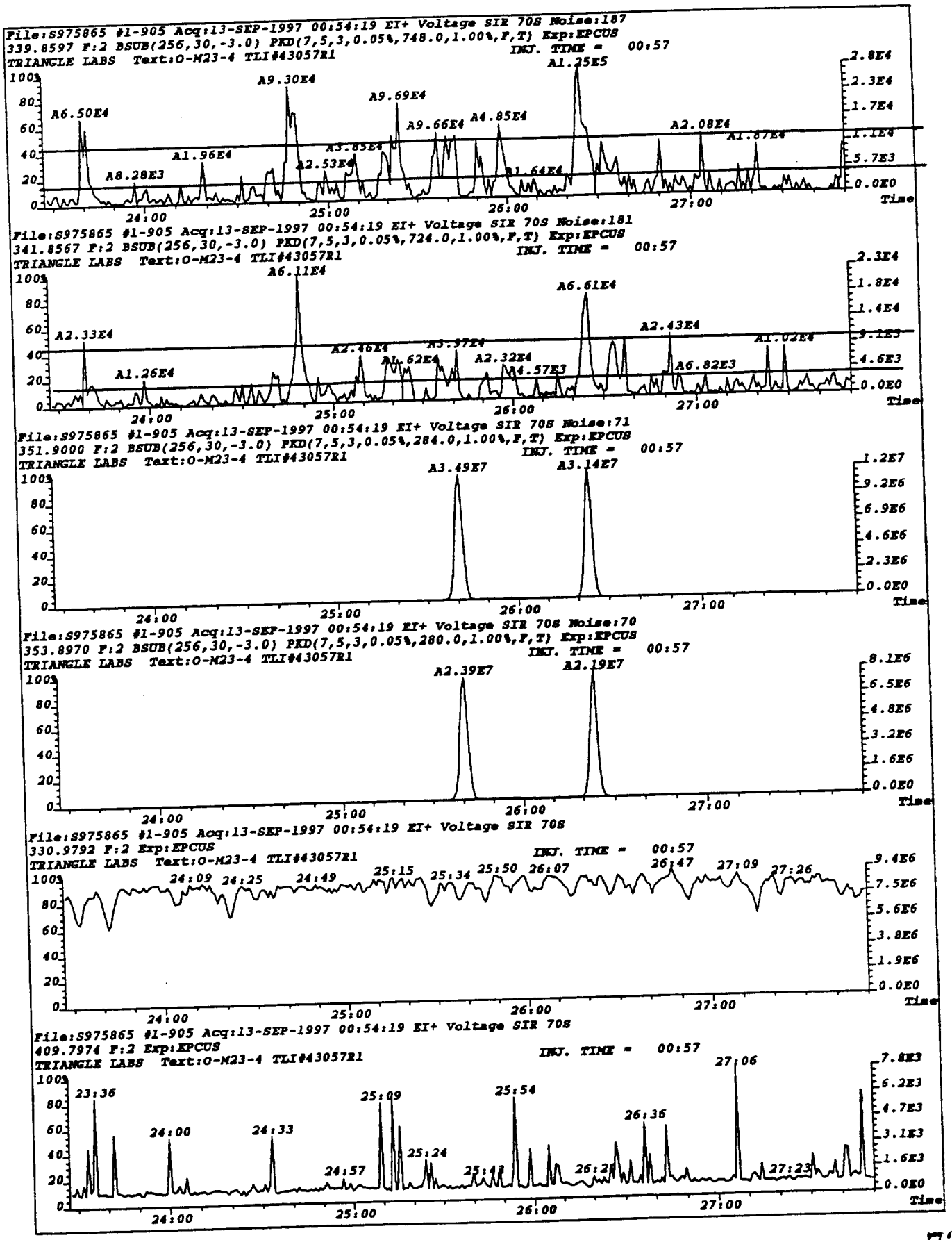
319.8965 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,832.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A6.08E4
A2.84E4
A2.08E4
A3.14E4
A2.45E4
A1.00E4
A1.02E4
A2.78E4
A9.38E3
A1.71E4
A7.50E3
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 708 Noise:96
321.8936 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,384.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A5.84E4
A4.73E4
A1.47E4
A7.37E3
A3.78E4
A8.36E3
A1.72E4
A3.37E3
A5.60E4
A5.77E3
A1.59E4
A1.26E4
A7.88E3
A3.55E3
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 708 Noise:655
331.9368 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2620.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.17E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 708 Noise:162
333.9338 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,648.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.66E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 708 Noise:235
327.8847 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,940.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A4.56E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 708
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
20:02
21:00
21:19
21:35
21:58
22:15
22:52
23:07
20:00
21:00
22:00
23:00
Time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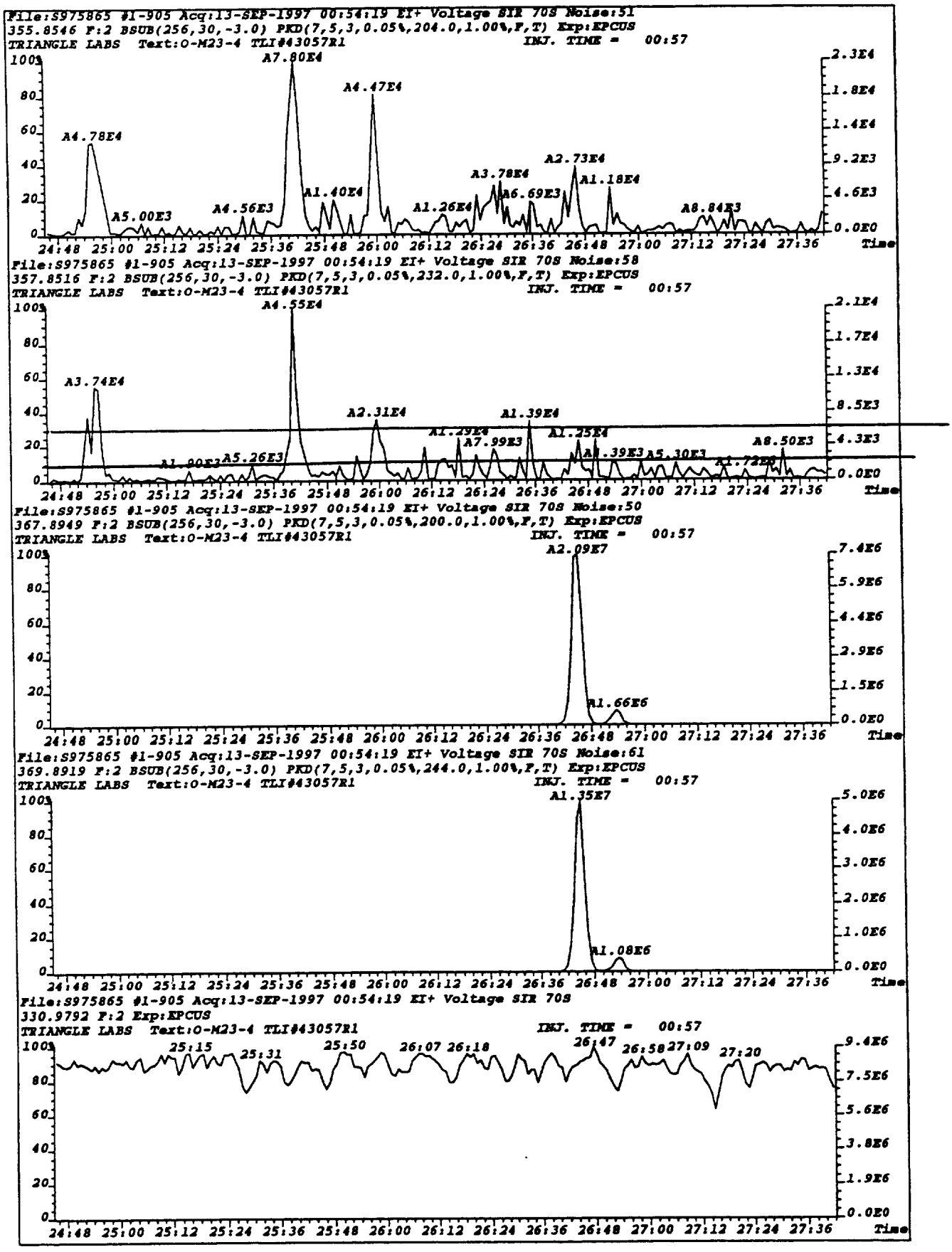
339.8597 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,748.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A6.50E4
A9.30E4
A9.69E4
A1.25E5
A9.66E4
A4.85E4
A2.08E4
A1.87E4
A1.96E4
A3.85E4
A2.53E4
A8.28E3
A1.64E4
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:181
341.8567 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,724.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A6.11E4
A6.61E4
A2.33E4
A2.43E4
A1.02E4
A2.46E4
A3.97E4
A1.62E4
A2.32E4
A4.57E3
A6.82E3
A1.26E4
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:71
351.9000 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,284.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A3.49E7
A3.14E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:70
353.8970 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,280.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.39E7
A2.19E7
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
24:09 24:25 24:49 25:15 25:34 25:50 26:07 26:47 27:09 27:26
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
409.7974 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
23:36 24:00 24:33 24:57 25:09 25:24 25:54 26:36 27:06 27:23
Time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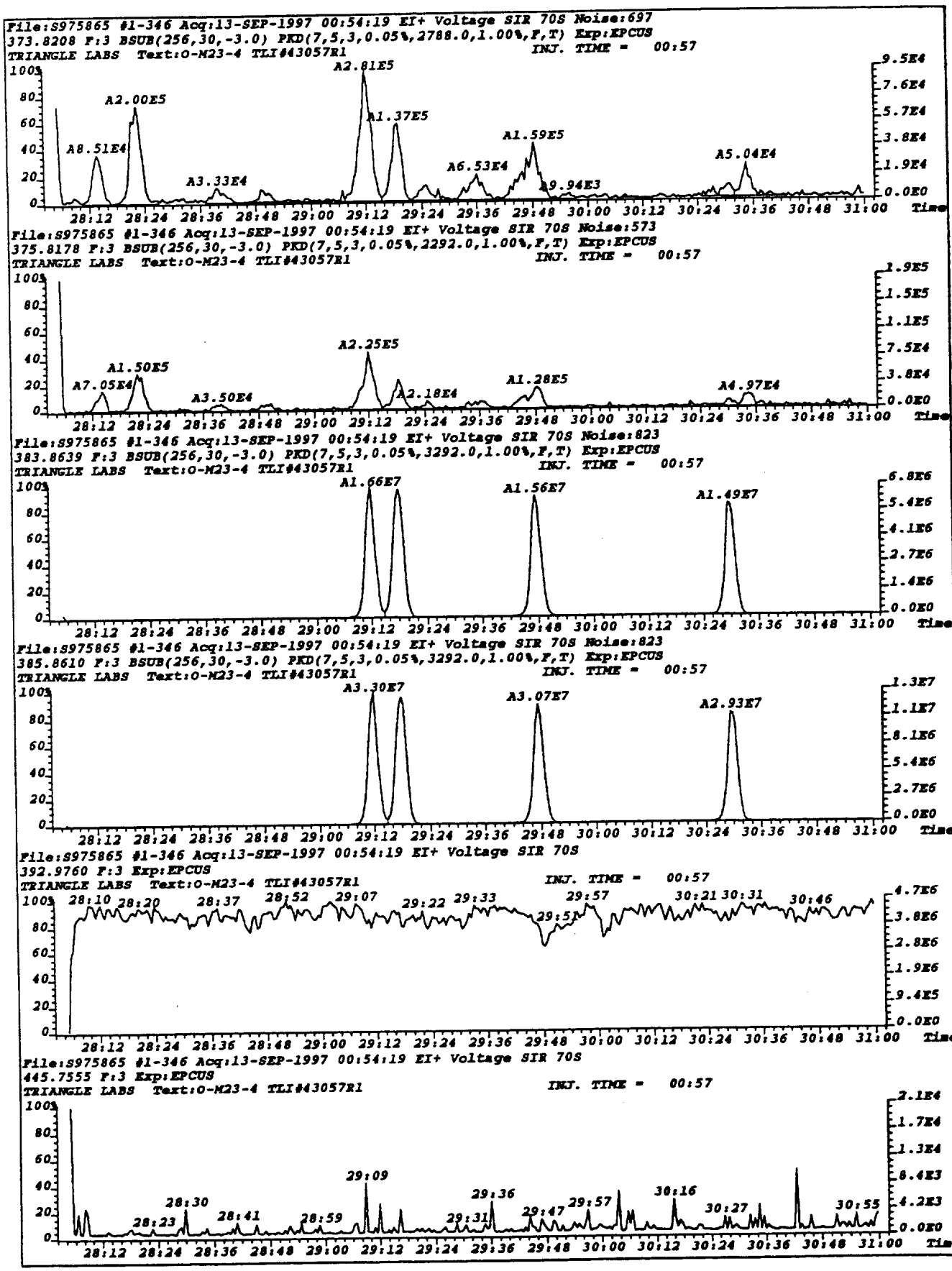
355.8546 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,204.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A7.80E4
A4.47E4
A4.78E4
A2.73E4
A3.78E4
A1.18E4
A1.40E4
A6.69E3
A1.26E4
A4.56E3
A5.00E3
A8.84E3
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:58
357.8516 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,232.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A4.55E4
A3.74E4
A2.31E4
A1.39E4
A1.29E4
A1.25E4
A7.99E3
A8.50E3
A5.26E3
A5.30E3
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:50
367.8949 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,200.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.09E7
A1.66E6
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:61
369.8919 F:2 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,244.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.35E7
A1.08E6
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
330.9792 F:2 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
25:15
25:31
25:50
26:07
26:18
26:47
26:58
27:09
27:20
24:48 25:00 25:12 25:24 25:36 25:48 26:00 26:12 26:24 26:36 26:48 27:00 27:12 27:24 27:36
Time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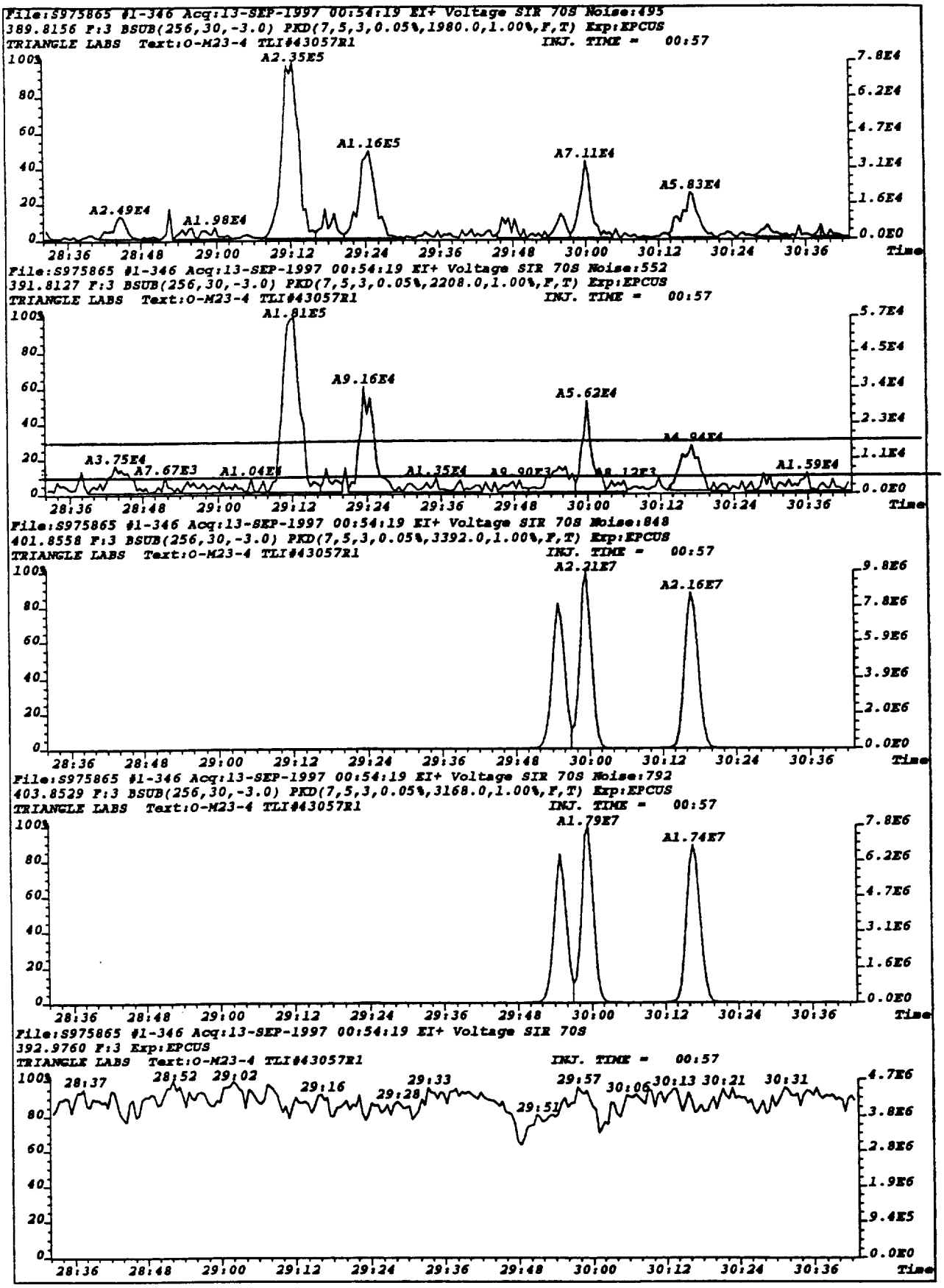
373.8208 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2788.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.81E5
A2.00E5
A1.37E5
A1.59E5
A8.51E4
A6.53E4
A5.04E4
A3.33E4
A9.94E3
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:573
375.8178 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2292.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.25E5
A1.50E5
A7.05E4
A3.50E4
A2.18E4
A1.28E5
A4.97E4
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:823
383.8639 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3292.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.66E7
A1.56E7
A1.49E7
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:823
385.8610 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3292.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A3.30E7
A3.07E7
A2.93E7
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
445.7555 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
Time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389.8156 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1980.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.35E5
A1.16E5
A7.11E4
A5.83E4
A2.49E4
A1.98E4
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:552
391.8127 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,2208.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.81E5
A9.16E4
A5.62E4
A3.75E4
A7.67E3
A1.04E4
A1.59E4
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:848
401.8558 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3392.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.21E7
A2.16E7
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:792
403.8529 F:3 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3168.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.79E7
A1.74E7
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
392.9760 F:3 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
28:37
28:52
29:02
29:16
29:28
29:33
29:51
29:57
30:06
30:13
30:21
30:31
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30:00
30:12
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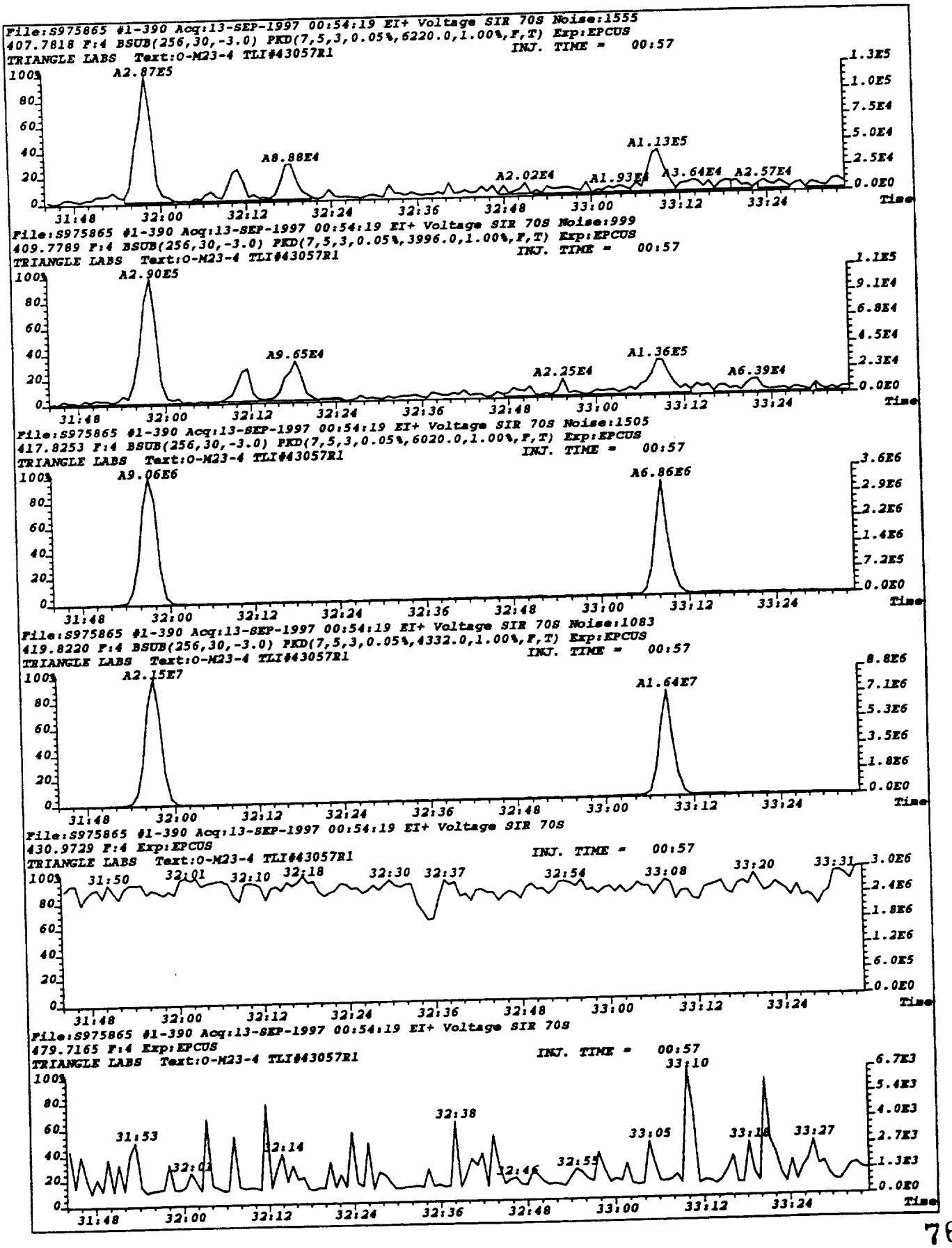
30:36
Time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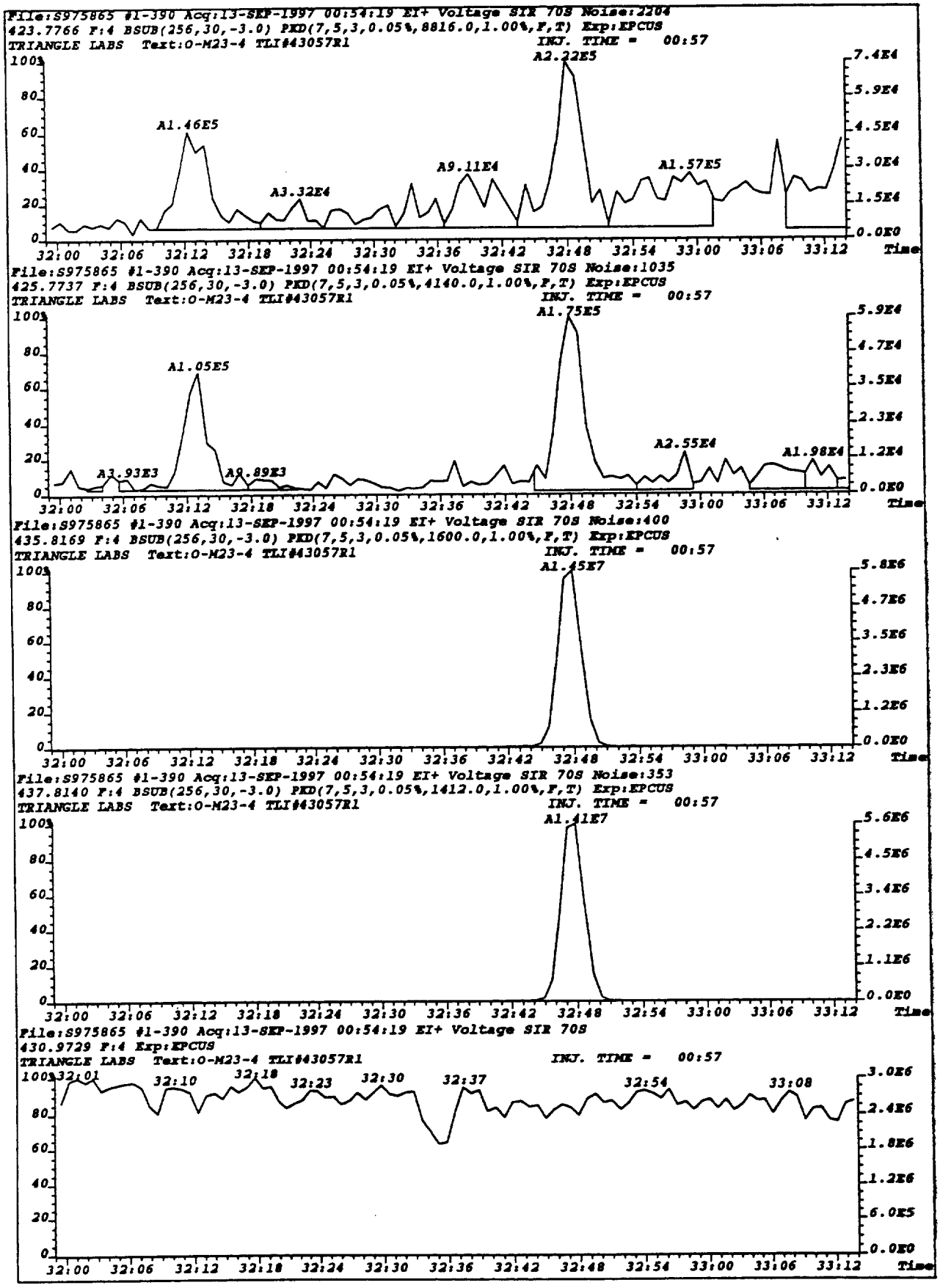
407.7818 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6220.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.87E5
A8.88E4
A2.02E4
A1.93E4
A1.13E5
A3.64E4
A2.57E4
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:999
409.7789 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,3996.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.90E5
A9.65E4
A2.25E4
A1.36E5
A6.39E4
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:1505
417.8253 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,6020.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A9.06E6
A6.86E6
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:1083
419.8220 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4332.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A2.15E7
A1.64E7
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
479.7165 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
Time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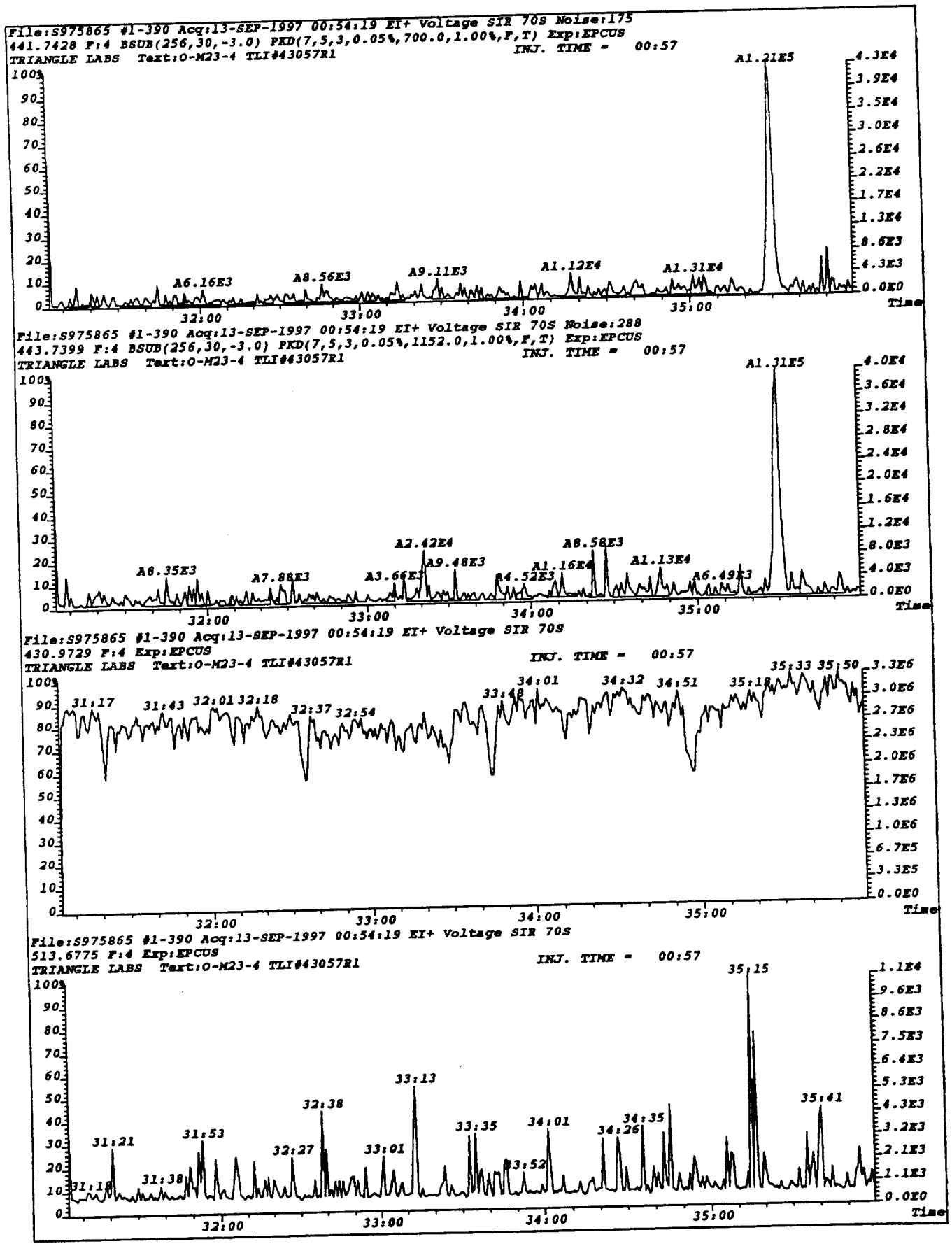
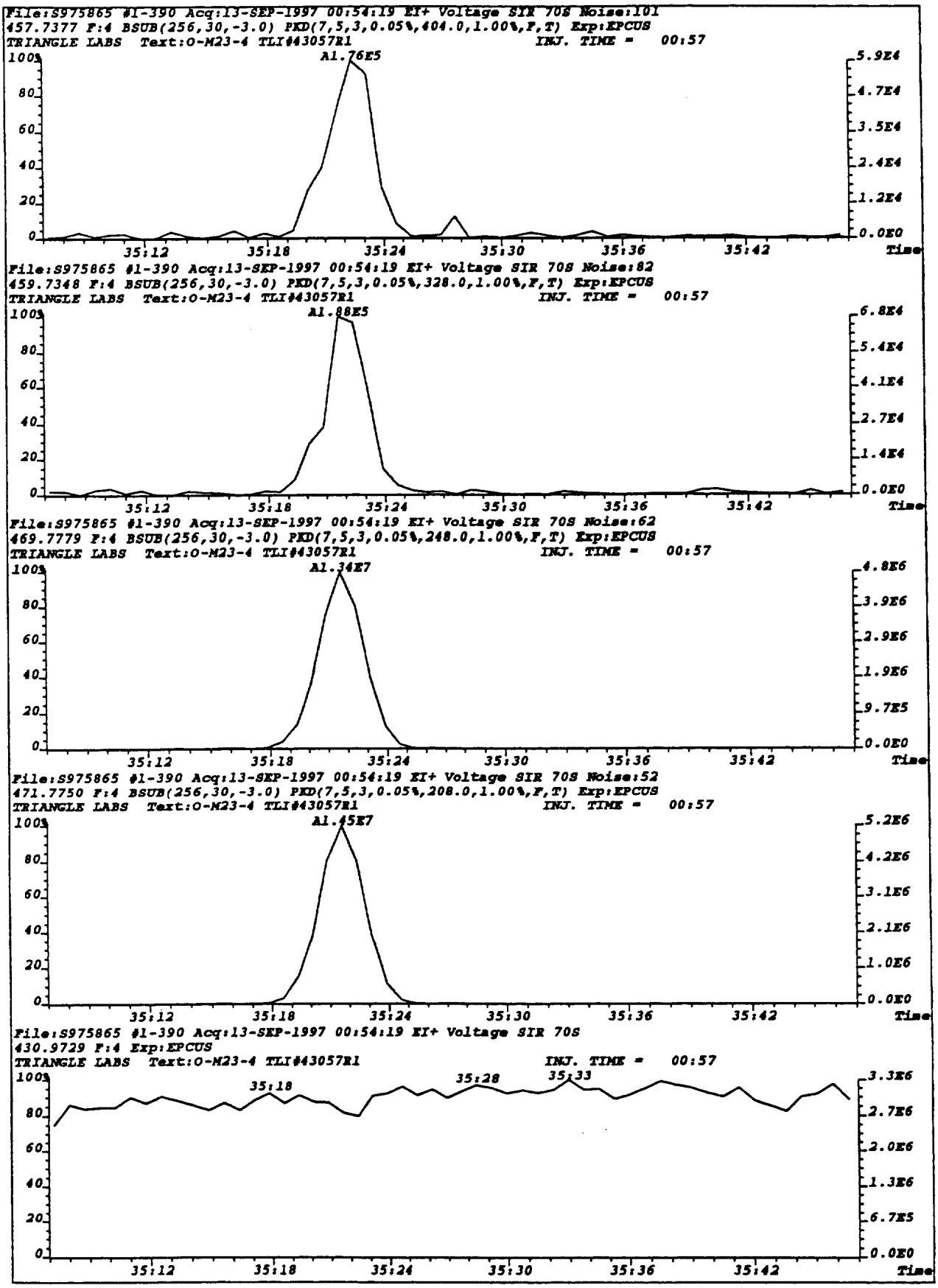
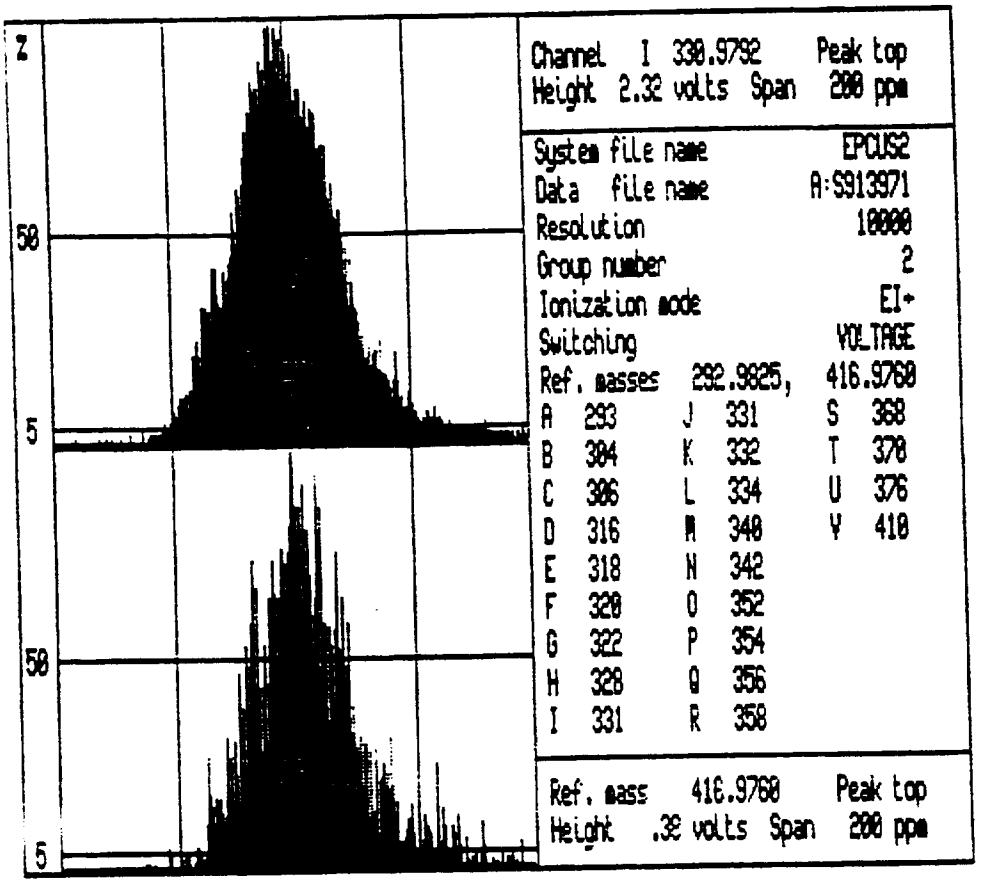
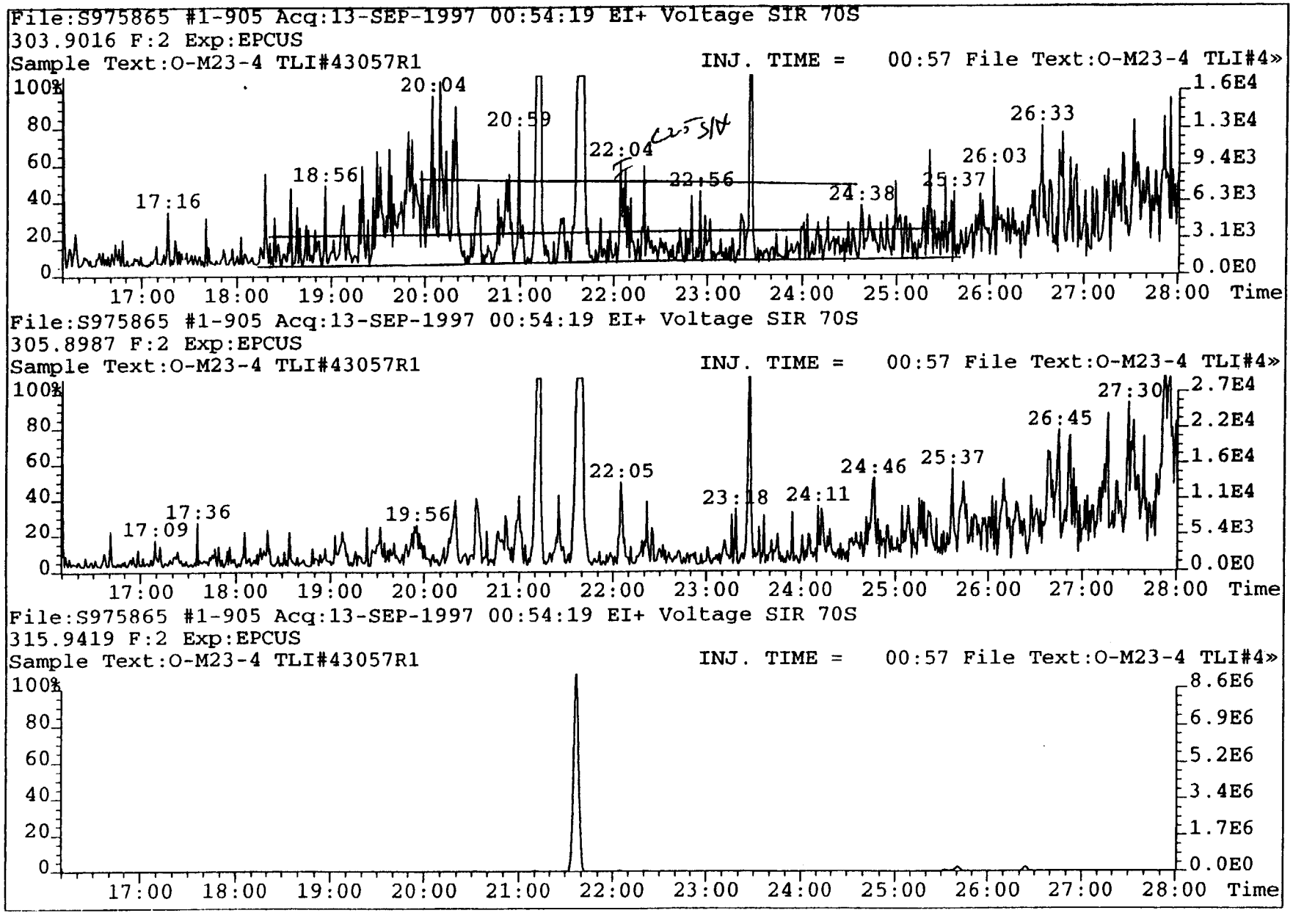
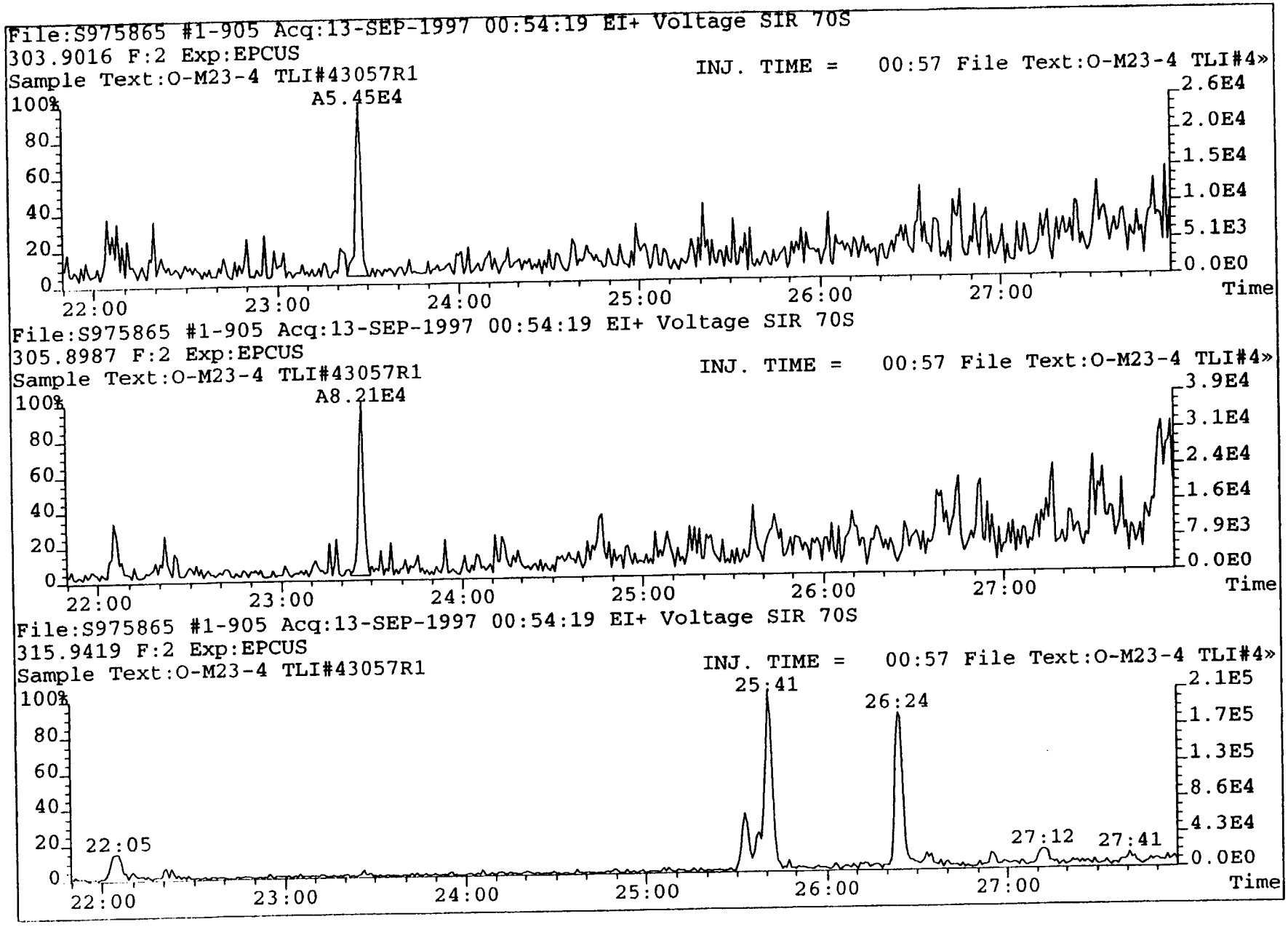
423.7766 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,8816.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.46E5
A3.32E4
A9.11E4
A2.22E5
A1.57E5
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:1035
425.7737 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,4140.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A3.93E3
A1.05E5
A9.89E3
A1.75E5
A2.55E4
A1.98E4
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:400
435.8169 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1600.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.45E7
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:353
437.8140 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1412.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.41E7
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
32:01
32:10
32:18
32:23
32:30
32:37
32:54
33:08
Time

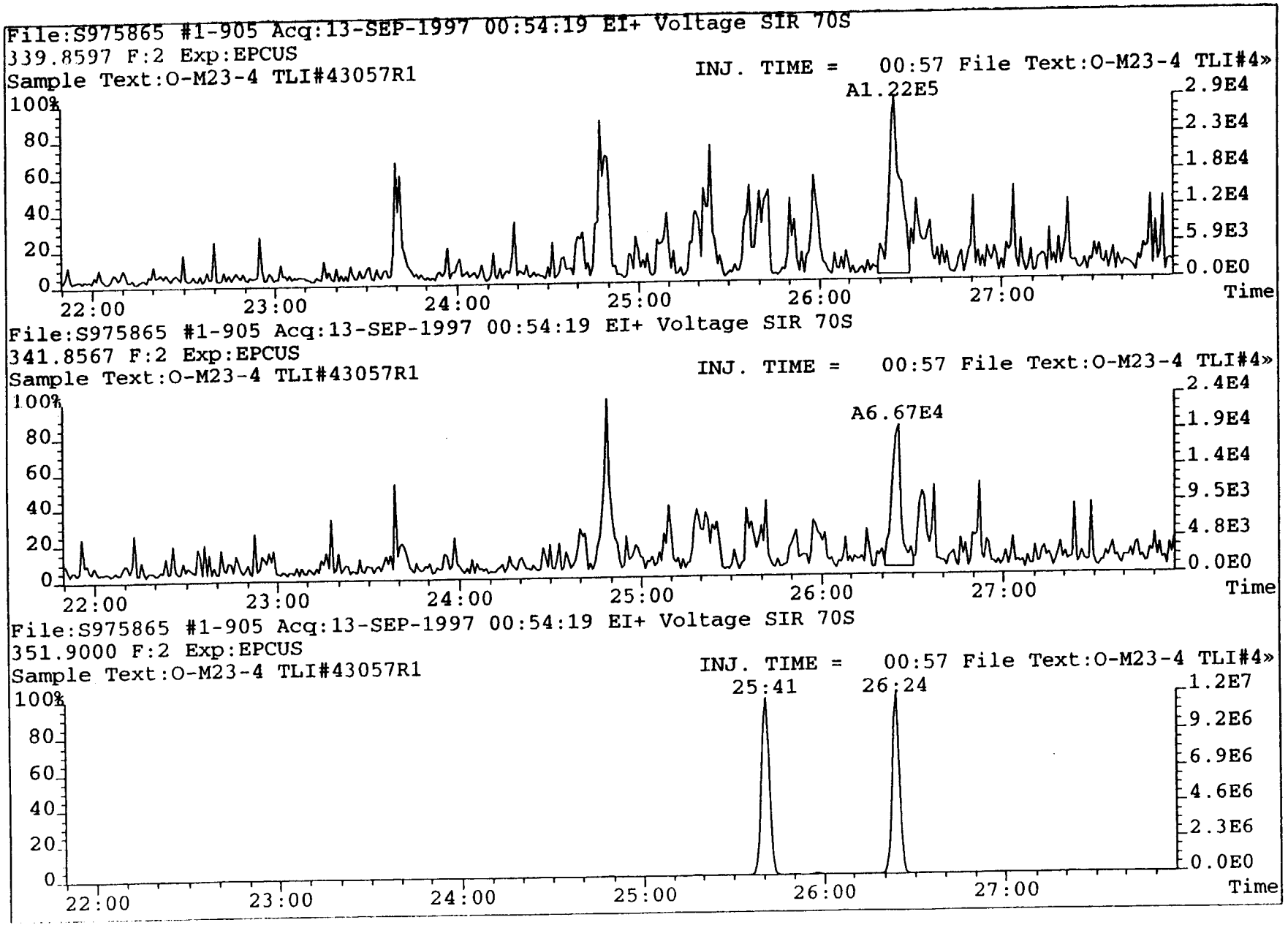

File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:175
441.7428 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,700.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.21E5
A6.16E3
A8.56E3
A9.11E3
A1.12E4
A1.31E4
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:288
443.7399 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,1152.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
A1.31E5
A8.35E3
A7.88E3
A2.42E4
A3.66E3
A9.48E3
A4.52E3
A1.16E4
A8.58E3
A1.13E4
A6.49E3
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
31:17
31:43
32:01
32:18
32:37
32:54
33:48
34:01
34:32
34:51
35:18
35:33
35:50
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
513.6775 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57
31:21
31:38
31:53
32:27
32:38
33:01
33:13
33:35
33:52
34:01
34:26
34:35
35:15
35:41
32:00
33:00
34:00
35:00
Time

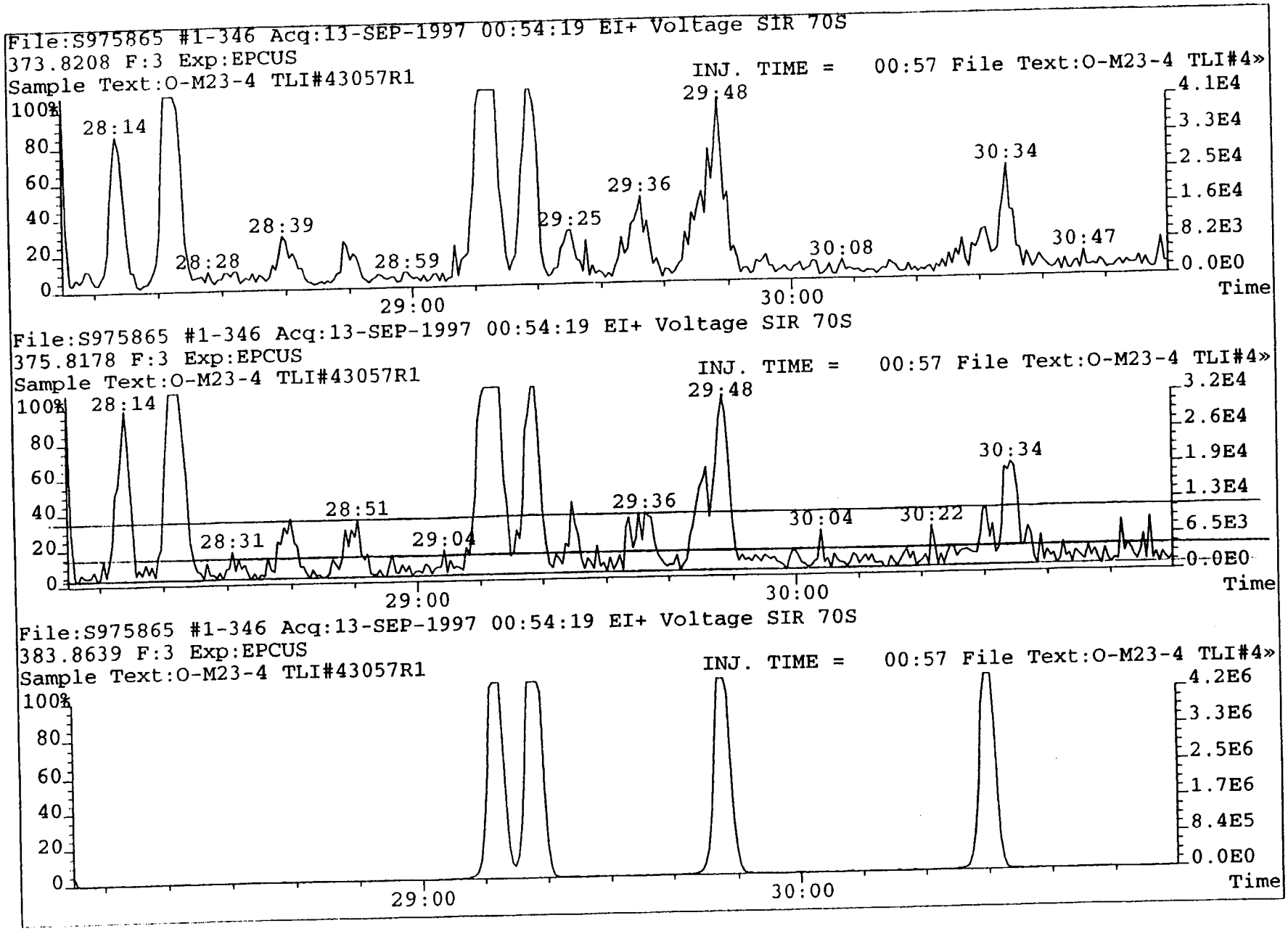

File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:101
457.7377 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,404.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1 INJ. TIME = 00:57
A1.76E5
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:82
459.7348 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,328.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1 INJ. TIME = 00:57
A1.88E5
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:62
469.7779 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,248.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1 INJ. TIME = 00:57
A1.34E7
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S Noise:52
471.7750 F:4 BSUB(256,30,-3.0) PKD(7,5,3,0.05%,208.0,1.00%,F,T) Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1 INJ. TIME = 00:57
A1.45E7
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
430.9729 F:4 Exp:EPCUS
TRIANGLE LABS Text:O-M23-4 TLI#43057R1 INJ. TIME = 00:57
35:18
35:28
35:33
35:12
35:18
35:24
35:30
35:36
35:42
Time

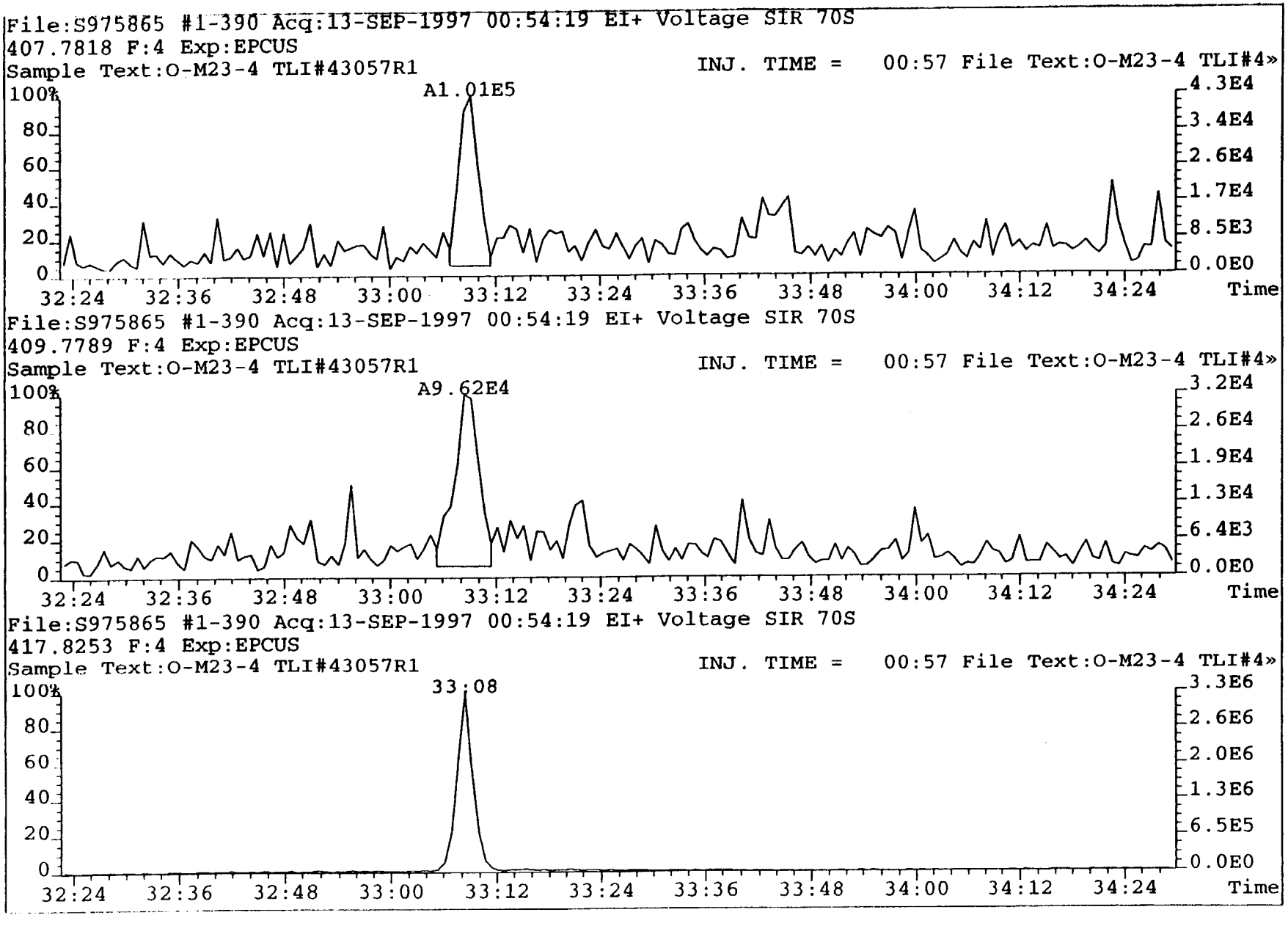

Z
50
5
50
5
Channel 1 330.9792 Peak top
Height 2.32 volts Span 200 ppm
System file name EPCUS2
Data file name A:S913971
Resolution 10000
Group number 2
Ionization mode EI+
Switching VOLTAGE
Ref. masses 292.9825, 416.9760
A 293 J 331 S 368
B 304 K 332 T 370
C 306 L 334 U 376
D 316 M 340 V 410
E 318 N 342
F 320 O 352
G 322 P 354
H 328 Q 356
I 331 R 358
Ref. mass 416.9760 Peak top
Height .32 volts Span 200 ppm

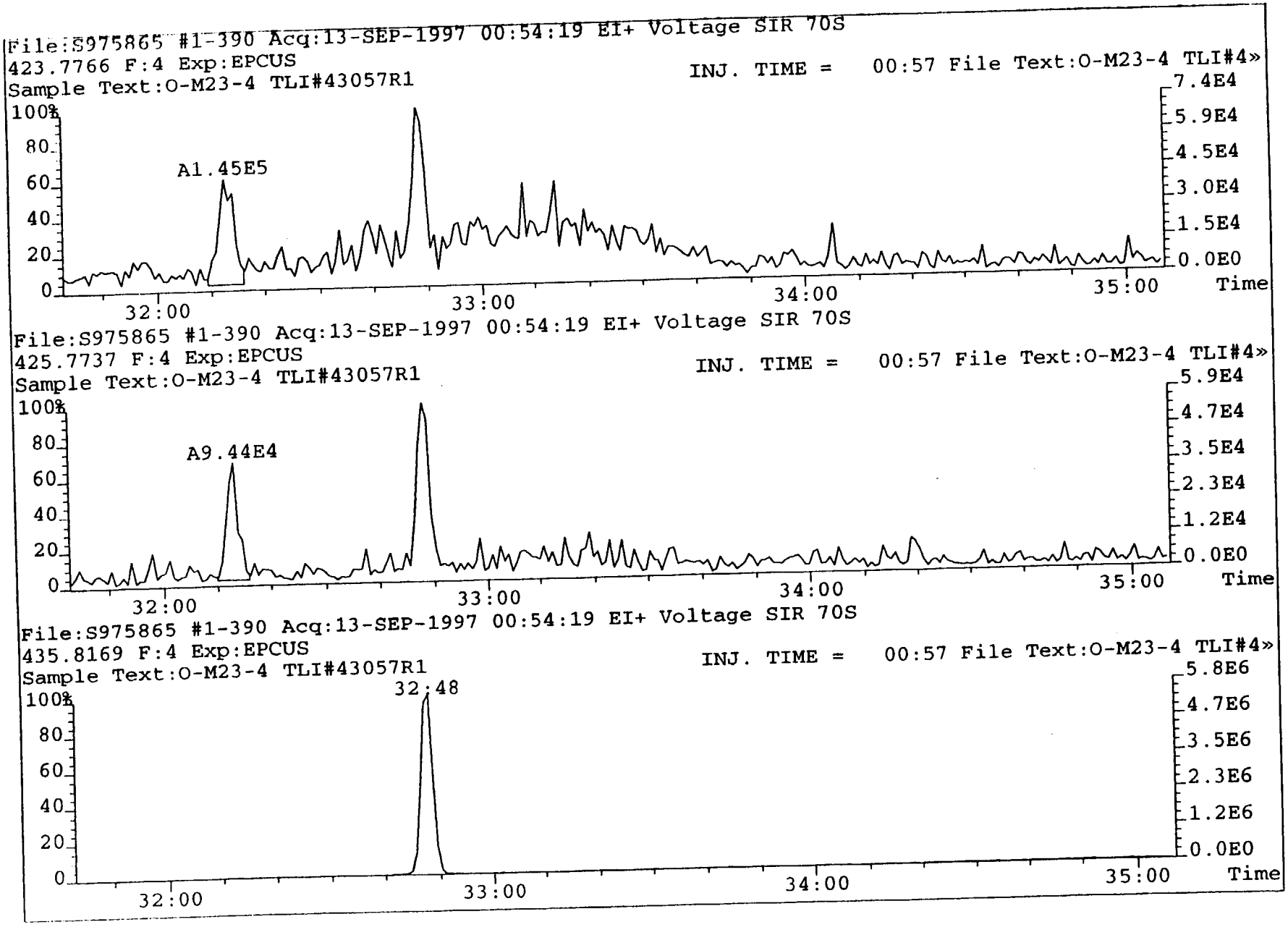

File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
303.9016 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
17:16
18:56
20:04
20:59
22:04
22:56
24:38
25:37
26:03
26:33
1.6E4
1.3E4
9.4E3
6.3E3
3.1E3
0.0E0
17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 Time
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
305.8987 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
17:09
17:36
19:56
22:05
23:18
24:11
24:46
25:37
26:45
27:30
2.7E4
2.2E4
1.6E4
1.1E4
5.4E3
0.0E0
17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 Time
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
315.9419 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
8.6E6
6.9E6
5.2E6
3.4E6
1.7E6
0.0E0
17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00 25:00 26:00 27:00 28:00 Time

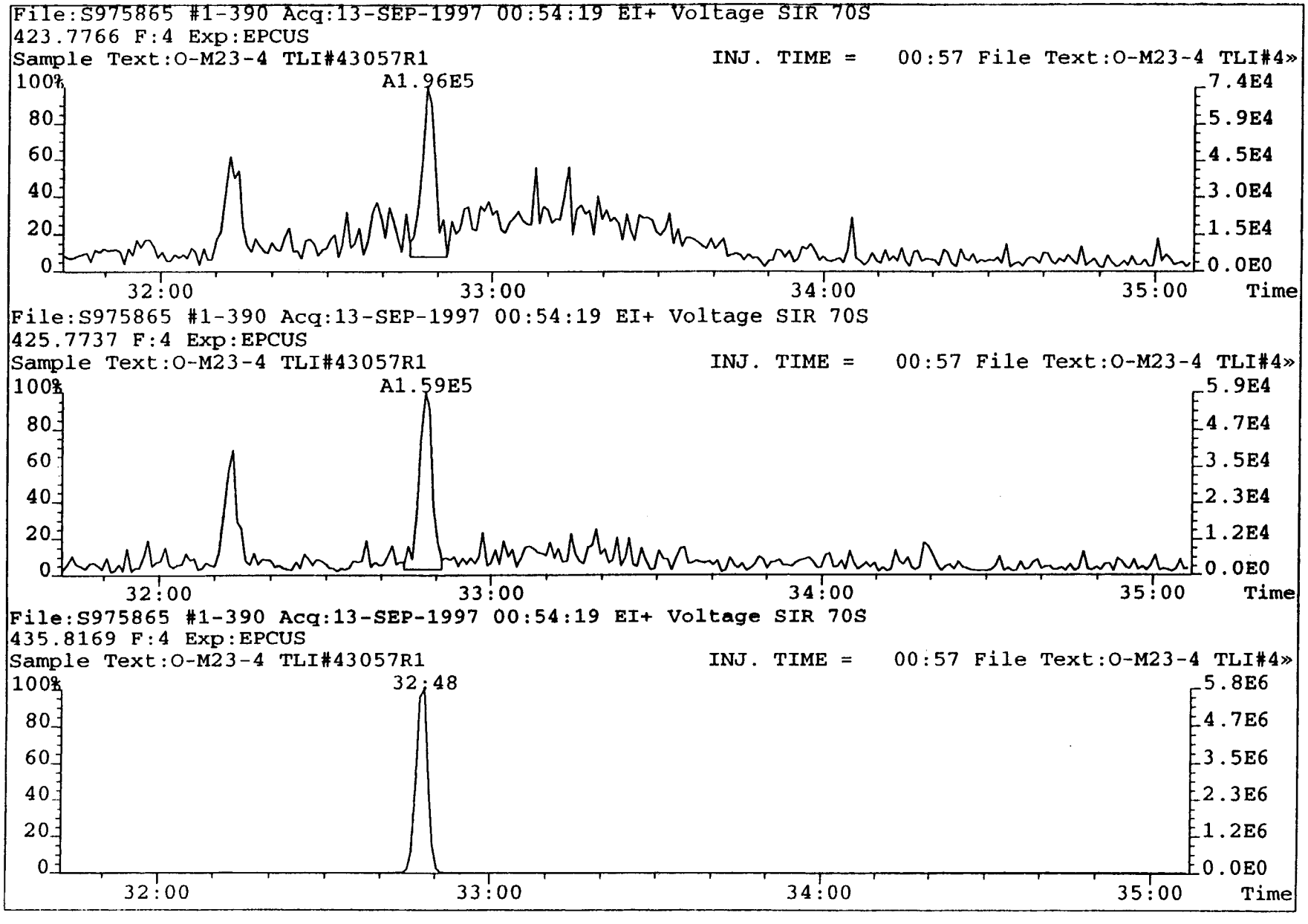

File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
303.9016 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A5.45E4
100%
80
60
40
20
0
22:00
23:00
24:00
25:00
26:00
27:00
Time
2.6E4
2.0E4
1.5E4
1.0E4
5.1E3
0.0E0
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
305.8987 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A8.21E4
3.9E4
3.1E4
2.4E4
1.6E4
7.9E3
0.0E0
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
315.9419 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
25:41
26:24
22:05
27:12
27:41
2.1E5
1.7E5
1.3E5
8.6E4
4.3E4
0.0E0

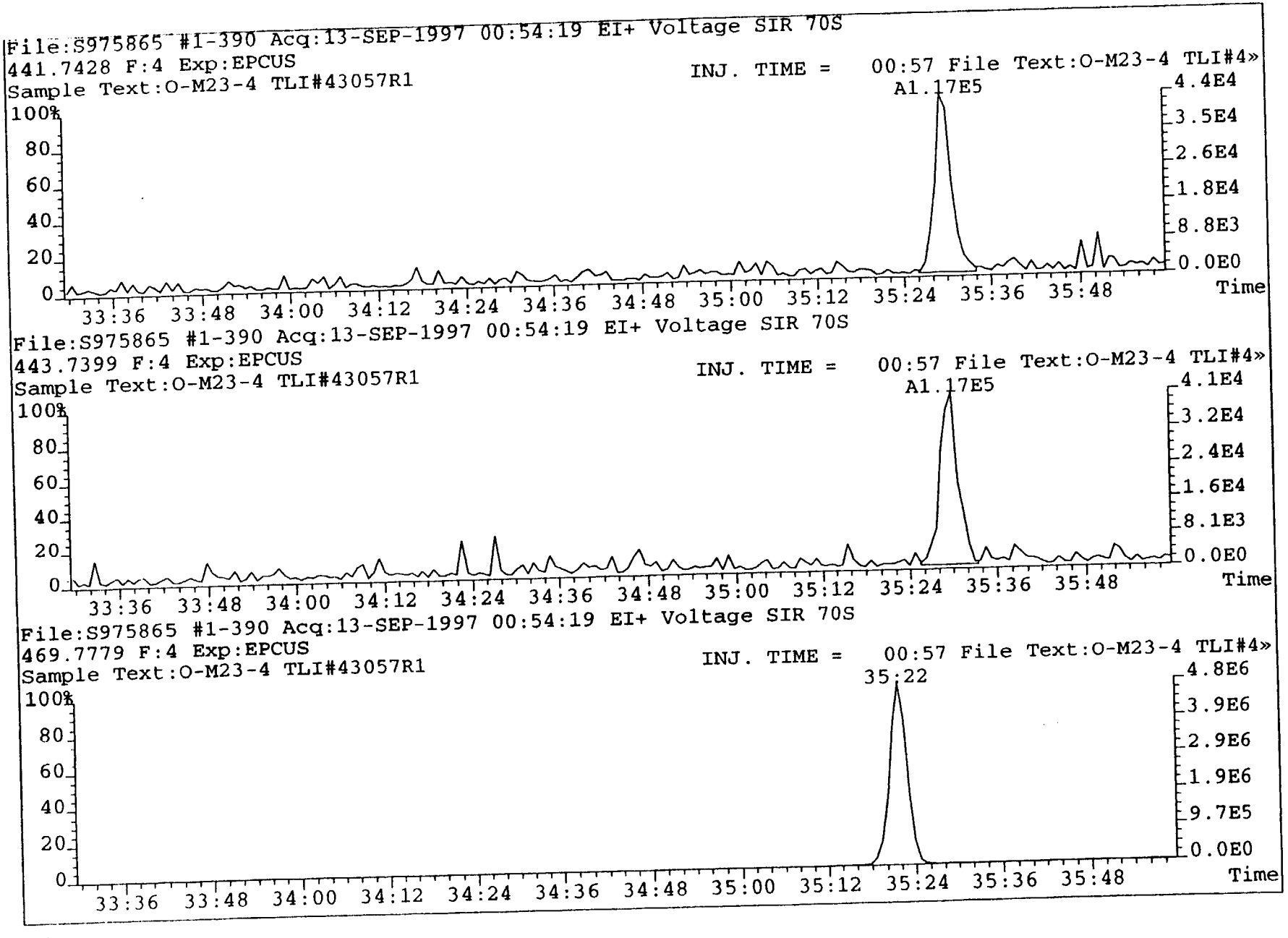

File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
339.8597 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.22E5
100%
80
60
40
20
0
2.9E4
2.3E4
1.8E4
1.2E4
5.9E3
0.0E0
Time
22:00
23:00
24:00
25:00
26:00
27:00
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
341.8567 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A6.67E4
2.4E4
1.9E4
1.4E4
9.5E3
4.8E3
0.0E0
File:S975865 #1-905 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
351.9000 F:2 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
25:41
26:24
1.2E7
9.2E6
6.9E6
4.6E6
2.3E6
0.0E0

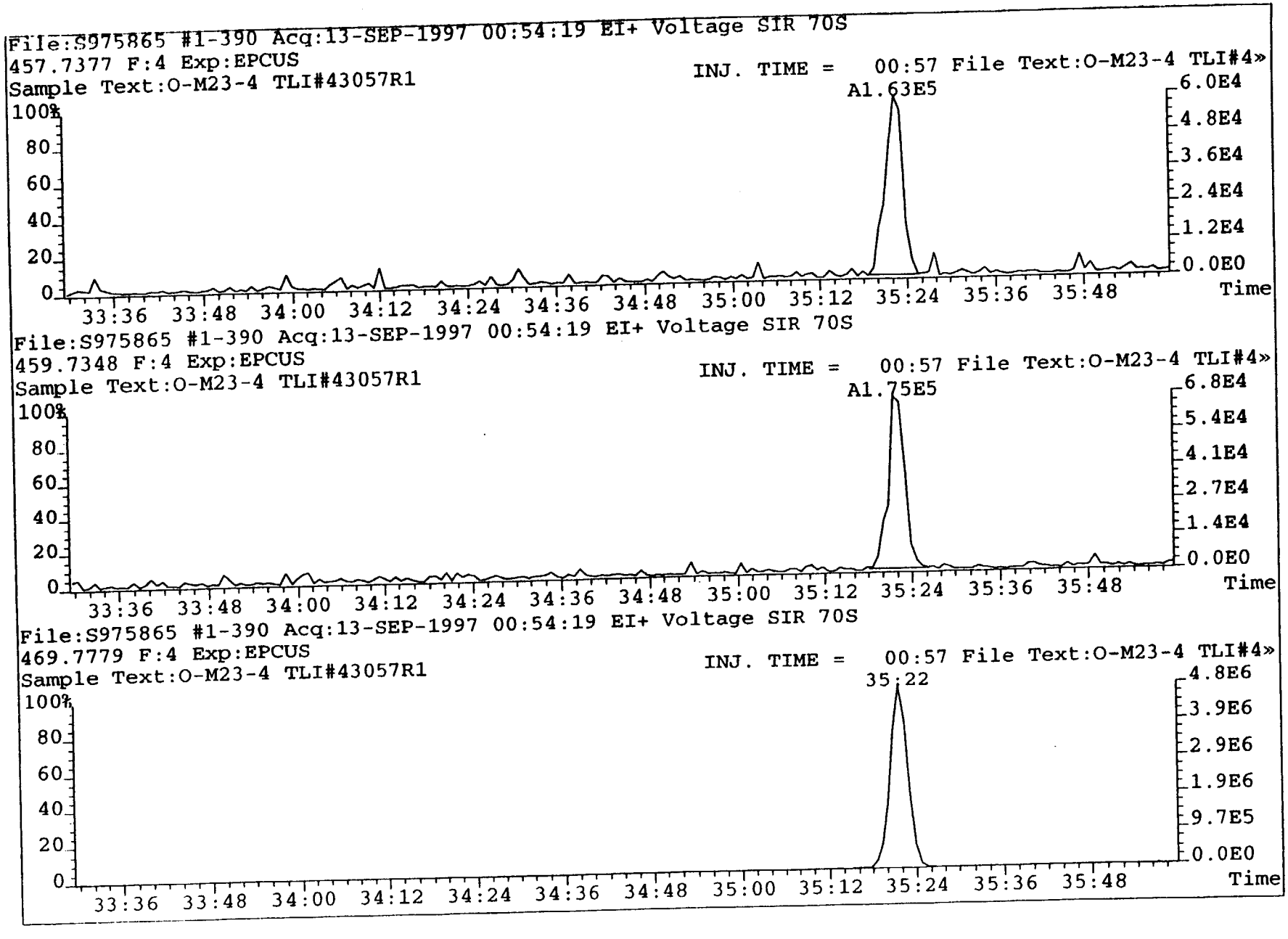

File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
373.8208 F:3 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
28:14
28:28
28:39
28:59
29:25
29:36
29:48
30:08
30:34
30:47
4.1E4
3.3E4
2.5E4
1.6E4
8.2E3
0.0E0
Time
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
375.8178 F:3 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
28:14
28:31
28:51
29:04
29:36
29:48
30:04
30:22
30:34
3.2E4
2.6E4
1.9E4
1.3E4
6.5E3
0.0E0
Time
File:S975865 #1-346 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
383.8639 F:3 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
4.2E6
3.3E6
2.5E6
1.7E6
8.4E5
0.0E0
Time


File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
407.7818 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.01E5
100%
80
60
40
20
0
4.3E4
3.4E4
2.6E4
1.7E4
8.5E3
0.0E0
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24 Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
409.7789 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A9.62E4
100%
80
60
40
20
0
3.2E4
2.6E4
1.9E4
1.3E4
6.4E3
0.0E0
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24 Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
417.8253 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
33:08
100%
80
60
40
20
0
3.3E6
2.6E6
2.0E6
1.3E6
6.5E5
0.0E0
32:24 32:36 32:48 33:00 33:12 33:24 33:36 33:48 34:00 34:12 34:24 Time


File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.45E5
7.4E4
5.9E4
4.5E4
3.0E4
1.5E4
0.0E0
Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A9.44E4
5.9E4
4.7E4
3.5E4
2.3E4
1.2E4
0.0E0
Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
32:48
5.8E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0
Time
100%
80
60
40
20
0
32:00
33:00
34:00
35:00


File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
423.7766 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
100%
A1.96E5
7.4E4
5.9E4
4.5E4
3.0E4
1.5E4
0.0E0
80
60
40
20
0
32:00
33:00
34:00
35:00
Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
425.7737 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
100%
A1.59E5
5.9E4
4.7E4
3.5E4
2.3E4
1.2E4
0.0E0
80
60
40
20
0
32:00
33:00
34:00
35:00
Time
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
435.8169 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
100%
32:48
5.8E6
4.7E6
3.5E6
2.3E6
1.2E6
0.0E0
80
60
40
20
0
32:00
33:00
34:00
35:00
Time


File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
441.7428 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.17E5
4.4E4
3.5E4
2.6E4
1.8E4
8.8E3
0.0E0
Time
100%
80
60
40
20
0
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
443.7399 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.17E5
4.1E4
3.2E4
2.4E4
1.6E4
8.1E3
0.0E0
Time
100%
80
60
40
20
0
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
35:22
4.8E6
3.9E6
2.9E6
1.9E6
9.7E5
0.0E0
Time
100%
80
60
40
20
0
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48


File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
457.7377 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.63E5
100%
80
60
40
20
0
6.0E4
4.8E4
3.6E4
2.4E4
1.2E4
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
459.7348 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
A1.75E5
100%
80
60
40
20
0
6.8E4
5.4E4
4.1E4
2.7E4
1.4E4
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48
File:S975865 #1-390 Acq:13-SEP-1997 00:54:19 EI+ Voltage SIR 70S
469.7779 F:4 Exp:EPCUS
Sample Text:O-M23-4 TLI#43057R1
INJ. TIME = 00:57 File Text:O-M23-4 TLI#4»
35:22
100%
80
60
40
20
0
4.8E6
3.9E6
2.9E6
1.9E6
9.7E5
0.0E0
Time
33:36 33:48 34:00 34:12 34:24 34:36 34:48 35:00 35:12 35:24 35:36 35:48

Pacific Environmental Services

TLI Project: **43057r1** — Method 23 TCDD/TCDF Analysis (DB-225)
Client Sample: **O-M23-4** — Analysis File: **P973849**

Client Project:	ASPHALT PLANT "A"				
Sample Matrix:	M23TRAIN	Date Received:	08/29/97	Spike File:	SPC2NF04
TLI ID:	181-27-6A-C	Date Extracted:	09/06/97	ICal:	PF22206
		Date Analyzed:	09/12/97	ConCal:	P973843
Sample Size:	1.000	Dilution Factor:	n/a	% Moisture:	n/a
Dry Weight:	n/a	Blank File:	P973848	% 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	ND	0.01				—

Internal Standard	Amt. (ng)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-2,3,7,8-TCDF	4.1	104	40%-130%	0.76	20:42	—

Recovery Standard	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.81	19:47	—

Data Reviewer: _____ 09/14/97

C2NF_PSR v2.00. LARS 6.10.04

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801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 17:55 09/14/97

Initial ....Date...

Data Review By: LC 9/14/97 Calculated Noise Area: 2.55

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 P973849B.dbf
09/14/97 Matched GC Peaks / Ratio / Ret. Time

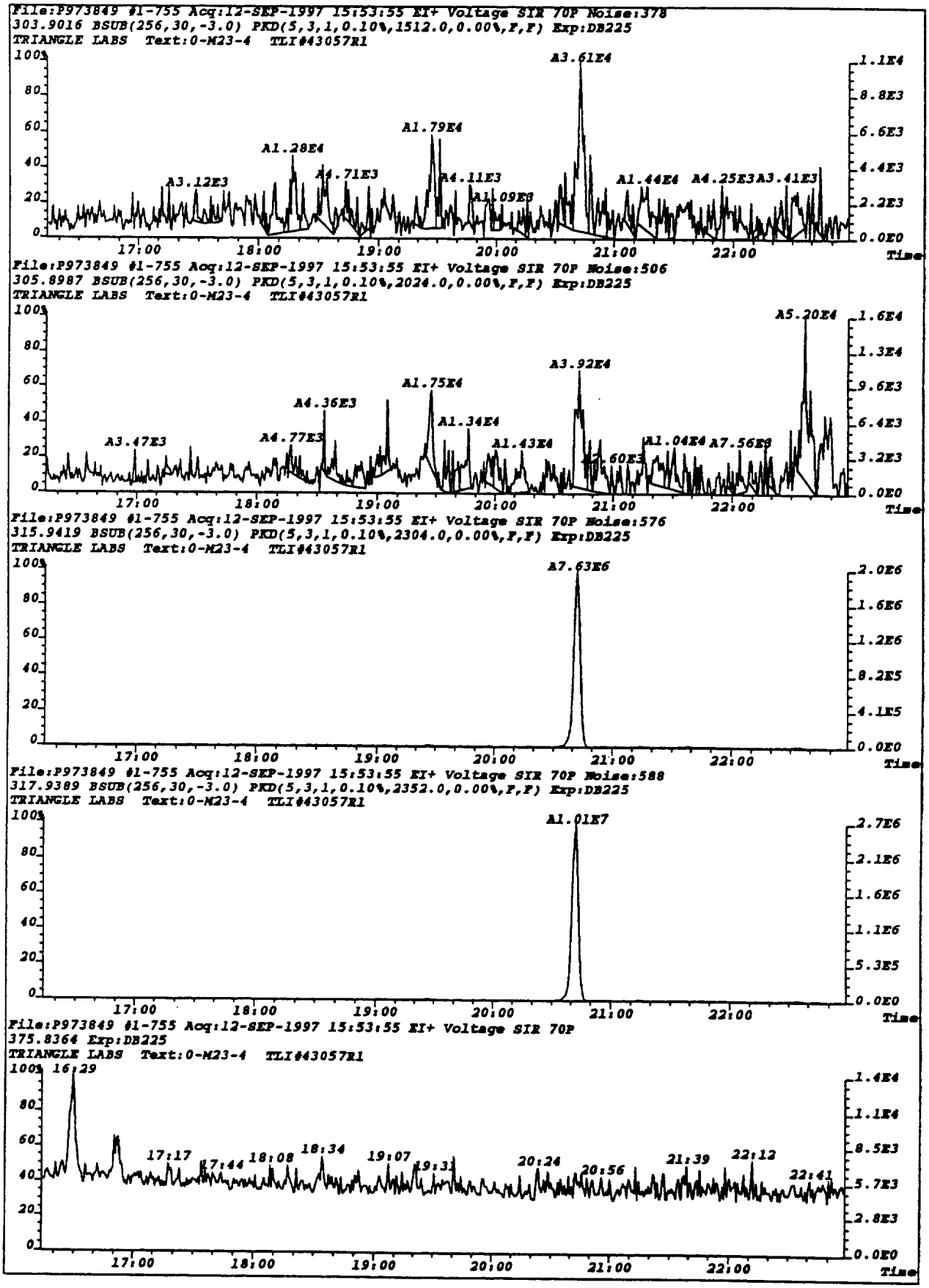
Compound M_Z....	QC.Log	Omit	Why	..RT.	OK	Ratio	Total.Area...	Area.Peak.1..	Area.Peak.2..	Rel.RT	Compound.Name..	ID..	Flags.
TCDF				0.65-0.89						0.786-1.096			
304-306	DC	NL		0:00		0.75	1.77			0.000			
	DC	SN		18:17	RO	2.67	0.85			0.883			
	DC	SN		18:22	RO	1.31	0.57			0.887			
	DC	SN		18:32	RO	2.68	0.78			0.895			
	DC	SN		18:38	RO	0.22	0.44			0.900			
	DC	SN		18:43	RO	2.04	0.41			0.904			
	DC	SN		18:51	RO	0.13	0.28			0.911			
	DC	SN		19:27	RO	1.02	3.10			0.940			
	DC	SN		19:46	RO	0.31	0.94			0.955			
	DC	SN		19:58	RO	0.29	0.46			0.965			
	DC	SN		19:59	RO	0.27	0.60			0.965			
	DC	SN		20:03	RO	0.39	0.25			0.969			
	DC	SN		20:14	RO	0.24	0.80			0.977			
D	d	SN		20:43	RO	0.92	6.94			1.001	2378-TCDF		AN
	DC	SN		20:48	RO	1.11	1.15			1.005			
	DC	SN		20:56	RO	0.61	2.32			1.011			
	DC	SN		20:59	RO	1.46	0.46			1.014			
	DC	SN		21:22	RO	0.64	1.86			1.032			
	DC	SN		21:28		0.85	0.72			1.037			
	DC	SN		21:50	RO	3.11	0.34			1.055			
	DC	SN		21:57	RO	4.88	0.57			1.060			
	DC	SN		22:12	RO	0.28	0.34			1.072			
304-306			0	Peaks			0.00						
13C12-TCDF				0.65-0.89						0.952-1.048			
316-318	DC	NL		0:00	RO	0.97	2.09			0.000			
	DC	WL		19:01	RO	1.25	1.15			0.919			
	DC	WL		19:26		0.78	6.21			0.939			
	DC	SN		20:17	RO	3.24	0.65			0.980			
				20:42		0.76	1,768.72	763.37	1,005.35	1.000	13C12-2378-TCDF		IS0
	DC	SN		20:52	RO	0.26	1.38			1.008			
	DC	SN		21:02	RO	0.63	0.90			1.016			
				21:14	RO	1.11	5.45	3.43	3.08	1.026			
	DC	WH		22:35		0.85	14.24			1.091			
316-318			2	Peaks			1,774.17						
---------- Above: TCDF / TCDD Follows ----------													
13C12-TCDD				0.65-0.89						0.897-1.103			
332-334	DC	NL		0:00	RO	1.58	1.50			0.000			
				18:28		0.67	5.39	2.16	3.23	0.945			
				19:33		0.79	1,310.93	576.92	734.01	1.000	13C12-2378-TCDD		IS1
				19:47		0.81	1,229.21	550.46	678.75	1.012	13C12-1234-TCDD		RS1

Listing of P973849B.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.
										1.019			
	DC		SN	19:55	RO	1.02	1.65			1.024			
	DC		SN	20:01	RO	0.34	0.53			1.044			
				20:25	RO	0.93	16.78	8.78	9.48	1.072			
	DC		SN	20:57	RO	0.36	1.72			1.081			
	DC		SN	21:08	RO	0.62	0.78			1.085			
	DC		SN	21:13		0.73	1.75			1.089			
	DC		SN	21:17	RO	1.37	0.81			1.110			
	DC		WH	21:42	RO	3.11	0.48			1.123			
	DC		WH	21:57		0.68	9.31						
332-334				4 Peaks			2,562.31						

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
		E-Ether Interference

*** End of Report ***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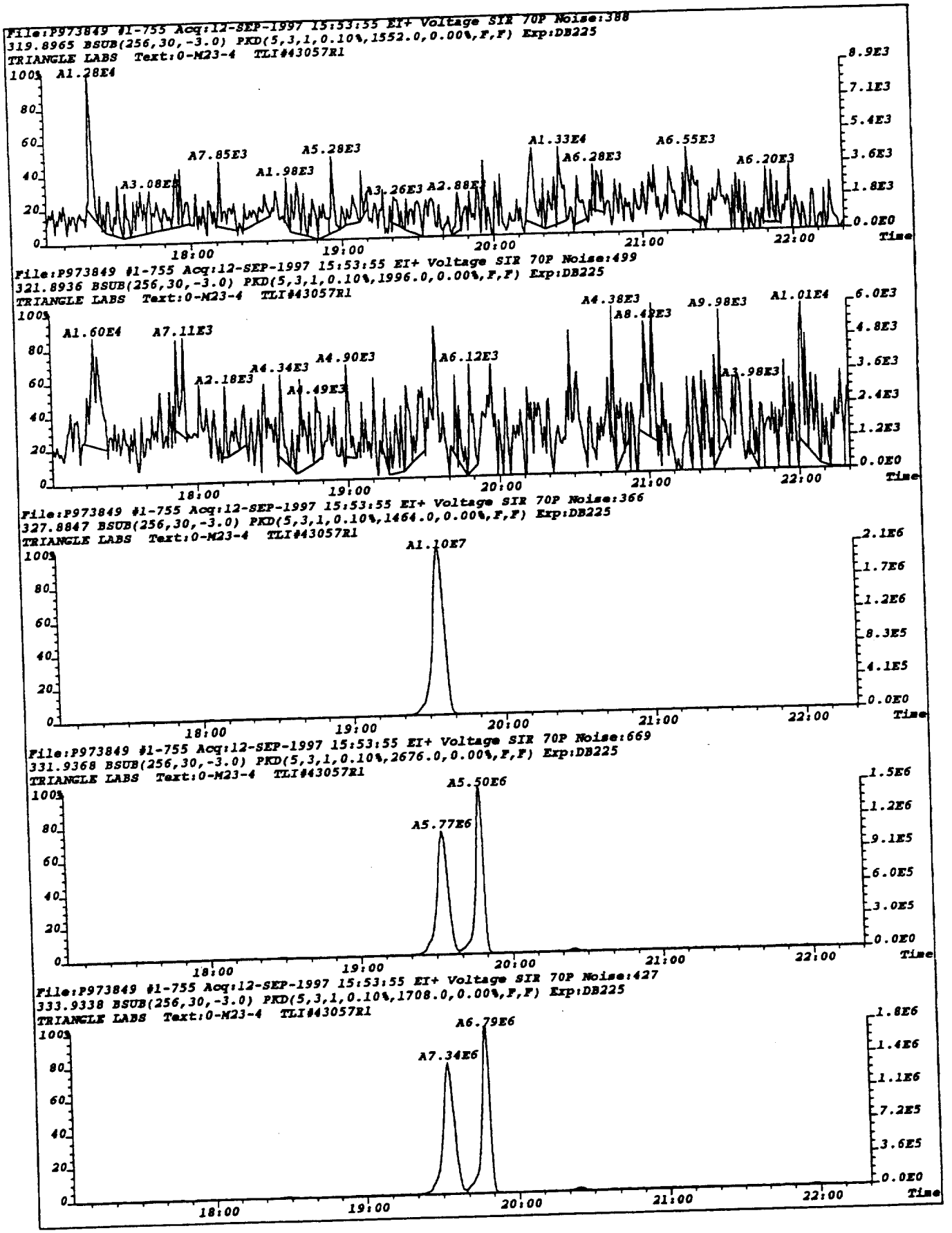
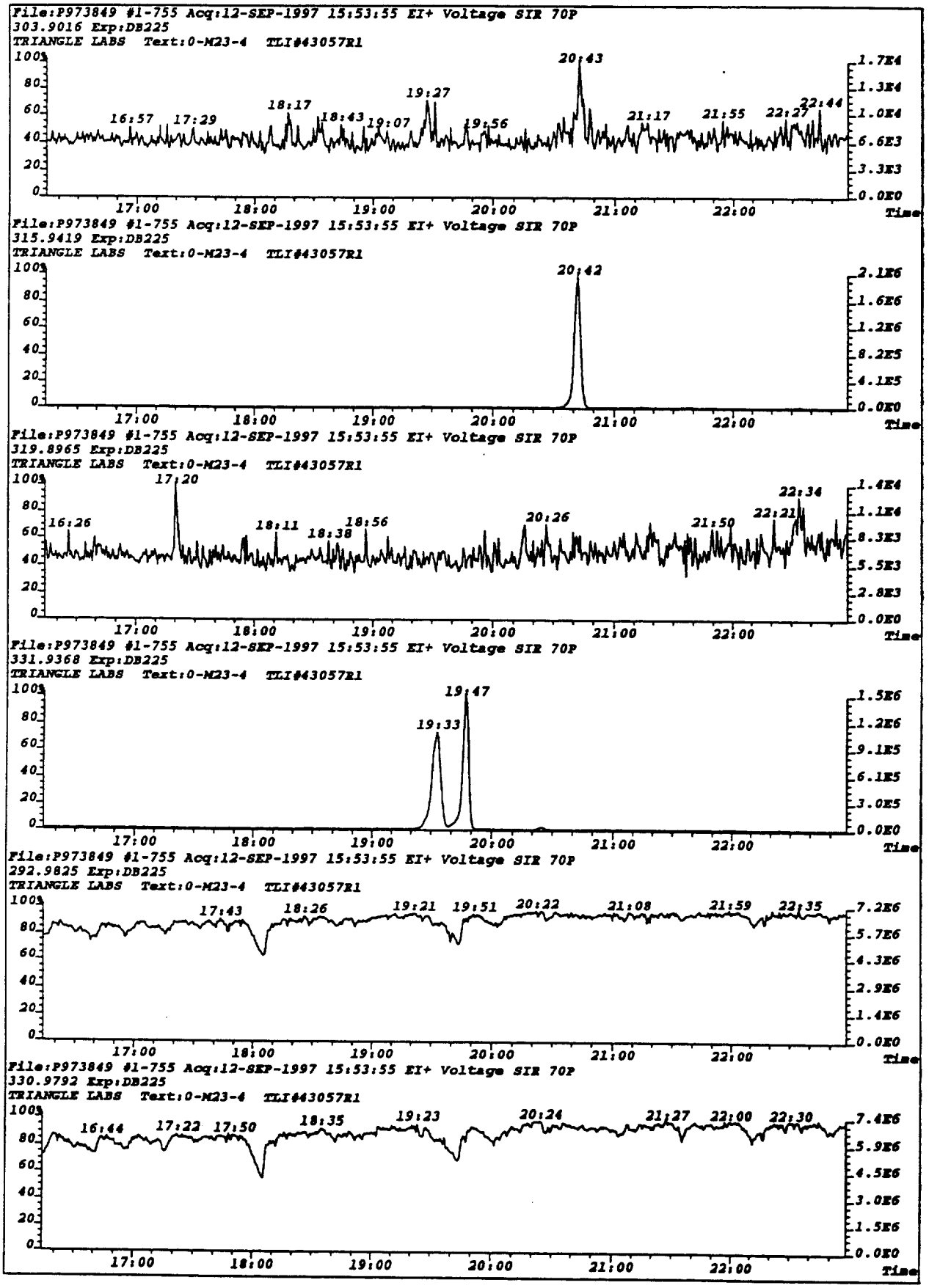
303.9016 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1512.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A3.61E4
A1.79E4
A1.28E4
A3.12E3
A4.71E3
A4.11E3
A1.09E3
A1.44E4
A4.25E3
A3.41E3
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:506
305.8987 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2024.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A5.20E4
A3.92E4
A1.75E4
A4.36E3
A1.34E4
A3.47E3
A4.77E3
A1.43E4
A1.04E4
A7.56E3
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:576
315.9419 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2304.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A7.63E6
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:588
317.9389 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2352.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A1.01E7
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
375.8364 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
16:29
17:17
17:44
18:08
18:34
19:07
19:31
20:24
20:56
21:39
22:12
22:41
17:00
18:00
19:00
20:00
21:00
22:00
Time


File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:388
319.8965 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1552.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A1.28E4
A7.85E3
A5.28E3
A1.98E3
A3.08E3
A3.26E3
A2.88E3
A1.33E4
A6.28E3
A6.55E3
A6.20E3
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:499
321.8936 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1996.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A1.60E4
A7.11E3
A2.18E3
A4.34E3
A4.49E3
A4.90E3
A6.12E3
A4.38E3
A8.42E3
A9.98E3
A3.98E3
A1.01E4
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:366
327.8847 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1464.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A1.10E7
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:669
331.9368 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,2676.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A5.50E6
A5.77E6
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P Noise:427
333.9338 BSUB(256,30,-3.0) PKD(5,3,1,0.10%,1708.0,0.00%,F,F) Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
A6.79E6
A7.34E6
18:00
19:00
20:00
21:00
22:00
Time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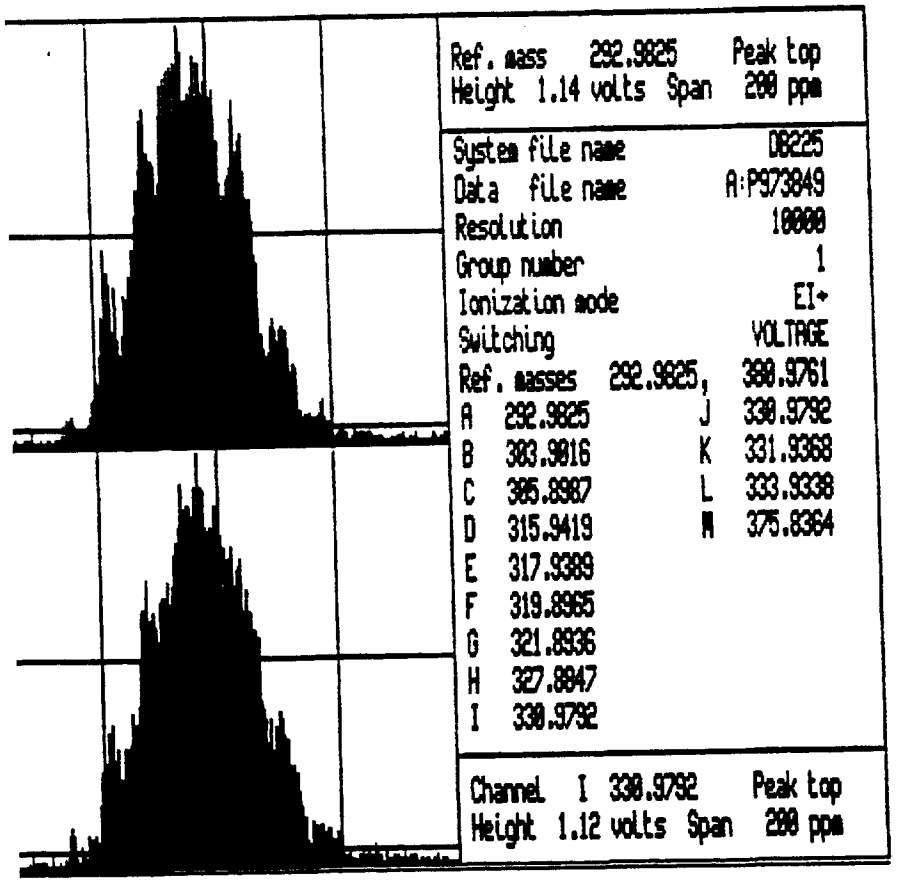
303.9016 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
16:57 17:29 18:17 18:43 19:07 19:27 19:56 20:43 21:17 21:55 22:27 22:44
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
315.9419 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
20:42
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
319.8965 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
16:26 17:20 18:11 18:38 18:56 20:26 21:50 22:21 22:34
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
331.9368 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
19:33 19:47
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
292.9825 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
17:43 18:26 19:21 19:51 20:22 21:08 21:59 22:35
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
330.9792 Exp:DB225
TRIANGLE LABS Text:0-M23-4 TLI#43057R1
16:44 17:22 17:50 18:35 19:23 20:24 21:27 22:00 22:30
17:00 18:00 19:00 20:00 21:00 22:00
Time

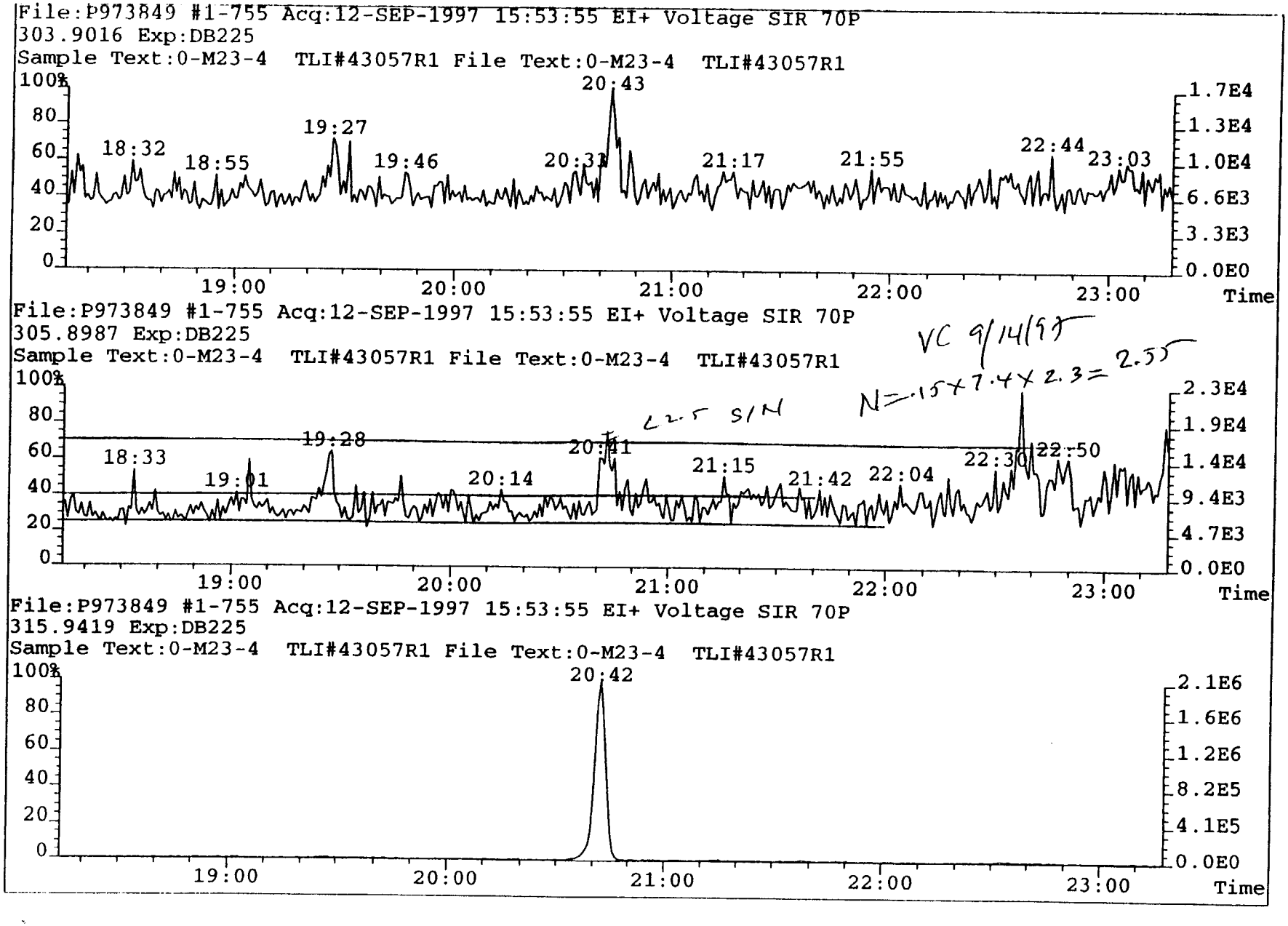


Ref. mass 292.9825 Peak top
Height 1.14 volts Span 200 ppm

System file name	DB225
Data file name	A:P973849
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		

Channel I 330.9792 Peak top
Height 1.12 volts Span 200 ppm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303.9016 Exp:DB225
Sample Text:0-M23-4 TLI#43057R1 File Text:0-M23-4 TLI#43057R1
18:32
18:55
19:27
19:46
20:31
20:43
21:17
21:55
22:44
23:03
19:00
20:00
21:00
22:00
23:00
Time
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
305.8987 Exp:DB225
Sample Text:0-M23-4 TLI#43057R1 File Text:0-M23-4 TLI#43057R1
VC 9/14/97
N=.15x7.4x2.3=2.55
2.5 S/N
18:33
19:01
19:28
20:14
20:41
21:15
21:42
22:04
22:30
22:50
19:00
20:00
21:00
22:00
23:00
Time
File:P973849 #1-755 Acq:12-SEP-1997 15:53:55 EI+ Voltage SIR 70P
315.9419 Exp:DB225
Sample Text:0-M23-4 TLI#43057R1 File Text:0-M23-4 TLI#43057R1
20:42
19:00
20:00
21:00
22:00
23:00
Time

TRIANGLE LABS

CALIBRATION DATA

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Durham, NC 27713-4411
919-544-5729

P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Continuing Calibration for P973843

Analysis Date....: 09/12/97
Operator.....: WK
Init Calibration.: PF22206
ICal Date.....: 02/20/96
Analysis Time....: 11:04

Method.....: C2NF
Instrument..: P
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	0.964	0.76	16:14 22:38	20:40	1.0008	1.040	-0.076	-7.3%
TOTAL TCDF	0.964	0.76				1.040	-0.076	-7.3%
2378-TCDD	1.001	0.75	17:03 22:00	19:28	1.0009	0.992	0.009	0.9%
TOTAL TCDD	1.001	0.75				0.992	0.009	0.9%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.937		17:27 21:27	19:28	1.0009	1.014	-0.077	-7.6%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.201	0.77	19:39 21:39	20:39	1.0000	1.388	-0.187	-13.5%
13C12-2378-TCDD	1.006	0.79	17:27 21:27	19:27	1.0000	1.067	-0.061	-5.7%

Recovery Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-1234-TCDD	1.000	0.82		19:41	1.0120	1.000	0.000	0.0%

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Date: 09/12/97

TRIANGLE LABORATORIES, INC.
Continuing Calibration for S975861

Analysis Date....: 09/12/97
Operator.....: ML
Init Calibration.: SF56117
ICal Date.....: 06/10/97

Method.....: M237
Instrument..: S
Std.Conc....: 50.00

Analyte Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
Total MCDF	0.000		1:34 15:34			2.087	-2.087	100.0%
Total MCDD	0.000		2:19 16:19			1.625	-1.625	100.0%
Total DCDF	0.000		8:34 16:34			0.687	-0.687	100.0%
Total DCDD	0.000		9:19 17:19			1.326	-1.326	100.0%
Total TriCDF	0.000		12:34 19:34			1.082	-1.082	100.0%
Total TriCDD	0.000		14:19 20:19			0.933	-0.933	100.0%
2378-TCDF	1.182	0.81	18:05 23:33	21:35	1.0008	1.251	-0.069	-5.5%
TOTAL TCDF	1.182	0.81				1.251	-0.069	-5.5%
2378-TCDD	1.078	0.79	19:31 23:32	22:20	1.0007	1.191	-0.113	-9.5%
TOTAL TCDD	1.078	0.79				1.191	-0.113	-9.5%
12378-PeCDF	1.051	1.53	23:27 27:30	25:38	1.0007	1.111	-0.060	-5.4%
23478-PeCDF	1.100	1.52		26:22	1.0293	1.115	-0.015	-1.4%
TOTAL PeCDF	1.075	1.52				1.113	-0.038	-3.4%
12378-PeCDD	1.210	1.59	24:45 27:22	26:43	1.0000	1.256	-0.046	-3.7%
TOTAL PeCDD	1.210	1.59				1.256	-0.046	-3.7%
123478-HxCDF	1.070	1.33	28:02 30:42	29:09	0.9971	1.215	-0.145	-11.9%
123678-HxCDF	1.354	1.31		29:15	1.0006	1.574	-0.220	-14.0%
234678-HxCDF	1.059	1.32		29:45	1.0177	1.247	-0.188	-15.1%
123789-HxCDF	0.981	1.34		30:27	1.0416	1.105	-0.124	-11.2%
TOTAL HxCDF	1.116	1.33				1.285	-0.169	-13.1%
123478-HxCDD	0.908	1.25	28:32 30:23	29:52	0.9972	0.953	-0.045	-4.7%
123678-HxCDD	1.059	1.25		29:57	1.0000	1.133	-0.074	-6.6%

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123789-HxCDD	1.090	1.25		30:14	1.0095	1.091	-0.001	-0.1%
TOTAL HxCDD	1.019	1.25				1.059	-0.040	-3.8%
1234678-HpCDF	1.503	1.03	31:44 33:15	31:54	1.0000	1.543	-0.040	-2.6%
1234789-HpCDF	1.267	1.03		33:05	1.0371	1.184	0.083	7.0%
TOTAL HpCDF	1.385	1.03				1.363	0.022	1.6%
1234678-HpCDD	0.934	1.00	31:59 32:54	32:44	1.0000	1.068	-0.134	-12.6%
TOTAL HpCDD	0.934	1.00				1.068	-0.134	-12.6%
OCDF	1.597	0.86	31:16 39:16	35:25	1.0043	1.493	0.104	7.0%
OCDD	1.040	0.85	31:16 39:16	35:17	1.0005	1.105	-0.065	-5.9%

Other Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
37Cl-TCDD	0.842		20:19 24:19	22:20	1.0007	0.843	-0.001	-0.1%
13C12-PeCDF 234	0.975	1.54	21:37 29:37	26:21	1.0286	0.970	0.005	0.5%
13C12-HxCDF 478	0.934	0.50		29:09	0.9971	0.959	-0.025	-2.6%
13C12-HxCDF 234	0.903	0.49		29:44	1.0171	0.926	-0.023	-2.5%
13C12-HxCDF 789	0.789	0.49		30:27	1.0416	0.805	-0.016	-2.0%
13C12-HxCDD 478	0.950	1.21		29:52	0.9972	0.973	-0.023	-2.4%
13C12-HpCDF 789	0.830	0.42	29:54 35:54	33:04	1.0366	0.771	0.059	7.6%

Internal Standard Summary

Name	RF	Ratio 1&2	RT Lo/High	RT	Rel. RT	ICal RF	Delta RF	%D
13C12-2378-TCDF	1.488	0.76	20:34 22:34	21:34	1.0000	1.318	0.170	12.9%
13C12-2378-TCDD	1.131	0.80	20:19 24:19	22:19	1.0000	1.066	0.065	6.1%
13C12-PeCDF 123	1.302	1.53	21:37 29:37	25:37	1.0000	1.133	0.169	14.9%
13C12-PeCDD 123	0.780	1.52	22:43 30:43	26:43	1.0000	0.635	0.145	22.9%
13C12-HxCDF 678	1.171	0.50	25:14 33:14	29:14	1.0000	1.204	-0.033	-2.7%
13C12-HxCDD 678	0.934	1.21	28:57 30:57	29:57	1.0000	0.995	-0.061	-6.1%

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Date: 09/12/97

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Continuing Calibration for S975861

13C12-HpCDF 678	0.831	0.42	29:54 35:54	31:54	1.0000	0.887	-0.056	-6.3%
13C12-HpCDD 678	0.786	1.10	31:44 33:44	32:44	1.0000	0.815	-0.029	-3.5%
13C12-OCDD	0.453	0.94	35:07 35:27	35:16	1.0000	0.519	-0.066	-12.6%

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		22:08	0.9918	1.000	0.000	0.0%
13C12-HxCDD 789	1.000	1.21		30:14	1.0095	1.000	0.000	0.0%

QC Front End Check: 1.4500

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TRIANGLE LABORATORIES, INC. Date: 06/10/97
Initial Calibration Summary for SF56117

Analysis Date.....: 06/10/97 Method.....: M237
Instrument.....: S

Analytes	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
Total MCDF	2.087	0.000	0%	8:15	0:01	13:43	2.931		1
Total MCDD	1.625	0.000	0%	8:42	0:34	14:34	2.827		1
Total DCDF	0.687	0.000	0%	10:38	6:43	14:43	5.965		1
Total DCDD	1.326	0.000	0%	11:09	7:34	15:34	1.609		1
Total TriCDF	1.082	0.000	0%	13:59	10:43	17:43	1.025		1
Total TriCDD	0.933	0.000	0%	14:03	12:34	18:34	1.064		1
2378-TCDF	1.251	0.116	9%	19:43	15:43	23:43	0.799		5
TOTAL TCDF	1.251	0.116	9%				0.799		5
2378-TCDD	1.191	0.231	19%	20:36	16:34	24:34	0.772		5
TOTAL TCDD	1.191	0.231	19%				0.772		5
12378-PeCDF	1.111	0.082	7%	24:12	20:11	28:11	1.552		5
23478-PeCDF	1.115	0.061	5%	24:59			1.470		5
TOTAL PeCDF	1.113	0.069	6%				1.509		5
12378-PeCDD	1.256	0.113	9%	25:22	21:21	29:21	1.526		5
TOTAL PeCDD	1.256	0.113	9%				1.526		5
123478-HxCDF	1.215	0.064	5%	27:55	24:01	32:01	1.247		5
123678-HxCDF	1.574	0.099	6%	28:01			1.260		5
234678-HxCDF	1.247	0.069	6%	28:32			1.243		5
123789-HxCDF	1.105	0.060	5%	29:15			1.246		5
TOTAL HxCDF	1.285	0.062	5%				1.249		5
123478-HxCDD	0.953	0.067	7%	28:41	24:45	32:45	1.265		5
123678-HxCDD	1.133	0.070	6%	28:46			1.251		5
123789-HxCDD	1.091	0.067	6%	29:03			1.233		5
TOTAL HxCDD	1.059	0.067	6%				1.249		5
1234678-HpCDF	1.543	0.103	7%	30:45	26:45	34:45	1.034		5
1234789-HpCDF	1.184	0.100	8%	31:57			1.080		5
TOTAL HpCDF	1.363	0.095	7%				1.053		5
1234678-HpCDD	1.068	0.089	8%	31:37	27:36	35:36	0.993		5
TOTAL HpCDD	1.068	0.089	8%				0.993		5
OCDF	1.493	0.131	9%	34:09	30:02	38:02	0.876		5
OCDD	1.105	0.066	6%	34:03	30:02	38:02	0.902		5

Other Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
37Cl-TCDD	0.843	0.038	5%	20:36	18:34	22:34			5
13C12-PeCDF 234	0.970	0.030	3%	24:58	22:11	26:11	1.470		5
13C12-HxCDF 478	0.959	0.042	4%	27:55			0.518		5
13C12-HxCDF 234	0.926	0.021	2%	28:32			0.517		5
13C12-HxCDF 789	0.805	0.044	5%	29:15			0.519		5
13C12-HxCDD 478	0.973	0.027	3%	28:40			1.241		5
13C12-HpCDF 789	0.771	0.049	6%	31:57	28:45	34:45	0.424		5

Internal Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-2378-TCDF	1.318	0.065	5%	19:43	18:43	20:43	0.734		5
13C12-2378-TCDD	1.066	0.020	2%	20:34	18:34	22:34	0.802		5
13C12-PeCDF 123	1.133	0.051	5%	24:11	20:11	28:11	1.447		5

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Printed: 09:49 06/10/97

TRIANGLE LABORATORIES INC. Date: 06/10/97

Initial Calibration Summary for SF56117

13C12-PeCDD 123	0.535	0.082	13%	25:21	21:21	29:21	1.461	5
13C12-HxCDF 678	1.204	0.073	6%	28:01	24:01	32:01	0.522	5
13C12-HxCDD 678	0.995	0.017	2%	28:45	27:45	29:45	1.240	5
13C12-HpCDF 678	0.887	0.046	5%	30:45	28:45	34:45	0.429	5
13C12-HpCDD 678	0.815	0.077	9%	31:36	30:36	32:36	1.019	5
13C12-OCDD	0.519	0.080	15%	34:02	32:02	36:02	0.866	5

Recovery Standards	RF	SD	%RSD	RT	RT/LO	RT/HI	Ratio1	Ratio2	N
13C12-1234-TCDD	1.000	0.000	0%	20:21			0.811		5
13C12-HxCDD 789	1.000	0.000	0%	29:02			1.231		5

*** End of Report ***

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TRIANGLE LABORATORIES OF RTP, INC. Date: 02/20/96

Initial Calibration Summary for PF022206

Analysis Date....: 02/22/96 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 ***

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Appendix C.3

Analytical Data

Method 29 Multiple Metals

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of Trace Metals

Method 29 April 1996 Rev.

Client:	Pacific Environmental Services
TLI Project Number:	43377
Date:	November 3, 1997

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Rev. 07-May-97

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Overview

Six train samples and a blank train sample were analyzed for silver (Ag), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), manganese (Mn), nickel (Ni), phosphorus (P), lead (Pb), antimony (Sb), selenium (Se), thallium (Tl), zinc (Zn), and mercury (Hg). For all analyses, the samples and associated QC samples were prepared and analyzed following the guidelines of Method 29 April 1996 Rev. Results reported relate only to the items tested.

QC Remarks

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

Sample Receipt:

Seven train samples were received at 22^{0}C on September 24, 1997 in good condition. The samples arrived without coolant, which resulted in the high temperature. Sample O-M29-FB-HCl was listed on the client's chain-of-custody, but was not received. The project was processed without this sample.

Sample Preparation:

Laboratory documentation of the sample preparation is included in the data package.

Instrumentation:

Silver (Ag), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), manganese (Mn), nickel (Ni), phosphorus (P), lead (Pb), antimony (Sb), selenium (Se), and zinc (Zn) concentrations were determined by Inductively Coupled Plasma Emission Spectroscopy (ICP).

Thallium (Tl) concentrations were analyzed by Graphite Furnace Atomic Absorption (GFAA).

Mercury (Hg) concentrations were determined by Cold Vapor Atomic Absorption (CVAA).

The linear range for the instrument TJA 61E Trace Analyzer was based on four standards and a blank, which established a correlation coefficient value greater than or equal to 0.995. A calibration curve, based on a blank and one standard, is established for each analytical run, followed by a check high standard and an initial calibration verification (ICV). The check high standard does not deviate from the calibration curve by more than 5%. In addition, continuing calibration verifications (CCVs) are performed throughout the analytical run.

A Reporting Detection Limit (RDL) is used instead of an Instrument Detection Limit (IDL). The spectrometer and atomic absorption instruments can achieve low detection limits between 0.2-8 ppb levels for many analytes. Triangle Labs is using RDL values of 1-10 times the IDL as detection limits for reporting purposes.

Data Review:

All analytes found in the method blank (MB) are detected at a level equal to or less than the respective Reporting Detection Limits (RDLs) except for Pb. The following guidelines may be used to assess analyte concentrations relative to the method blank: 1. Analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2. Analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3. Analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample. Please note that the Pb results that are near the RDL should be considered biased low.

All samples were received outside of the 28 day sampling to analysis holding time for Hg, therefore the holding time for Hg could not be met. All samples were analyzed within the six month sampling to analysis holding time for all other requested analytes.

The sample IDs on the client chain-of-custody did not match with the IDs on the sample containers. The sample IDs on TLI's chain-of-custody matches the IDs on the sample containers. The sample IDs on the Hg spreadsheets for the KMnO4 and HCl containers do not have the addition description added in order to alleviate redundancy.

The concentrations for Tl demonstrated high negative numbers for the samples analyzed by ICP, therefore the samples were analyzed by GFAA in order to obtain better results. A duplicate analysis is not reported for elements analyzed by GFAA. The GFAA instrument analyzes two separate aliquots of the sample and averages the values for a final result. These two analyses agree within a RPD of 20% or a second run is done for that sample. The ICP instrument analyzes one continuous aliquot three times and averages the values for a final result. The ICP does not take two separate aliquots, therefore a DA is performed.

The post-digestion spike (PDS) for Tl for the sample O-M29-1-FHACE,FHAR,FILTER FH demonstrated a percent recovery outside the QC criteria of 75-125 percent. This result for the front half post-digestion spike (PDS) indicates significant matrix effects specific to this analyte in the native sample matrix. The interference QC analysis is not reported (i.e. MS, MSD, PDS, and serial dilution) for this analyte for the front half samples since the Method of Standard Additions (MSA) was performed. The MSA results are reported if the correlation coefficient value is at least 0.995. The MSA results were reported for all of the front half samples except sample I-M29-1-FHACE,FHAR,FILTER FH. This sample was analyzed two times and the correlation coefficients for both runs were less than 0.995, therefore the results for this sample were taken from ICP.

The serial dilution results for Cr for the sample O-M29-1-FHACE,FHAR,FILTER FH demonstrated a RPD outside the QC control criteria of 10.0 percent, which indicates the presence of an amount of interferents specific to this analyte in the native sample matrix. Please note that the post-digestion spike (PDS) for Cr demonstrated a percent recovery within QC criteria, which indicates no significant amount of interfences specific to this analyte in the native sample matrix. Also note that this sample should be considered biased low for Cr due to matrix interferences.

The serial dilution results for Mn,P, Pb, and Zn for the sample O-M29-1-FHACE,FHAR,FILTER FH demonstrated RPDs slightly outside the QC control criteria of 10.0 percent, which does not indicate the presence of a significant amount of interferents specific to these analytes in the native sample matrix. Please note that the post-digestion spike (PDS) for Pb and P demonstrated percent recoveries within QC criteria, which indicates no significant amount of interfences specific to these analytes in the native sample matrix.

The post-digestion spike (PDS) for Be and Pb for the sample O-M29-1-FHACE,FHAR,FILTER FH and for Mn for sample O-M29-1-HNO3 BH demonstrated percent recoveries outside the QC criteria. These results may indicate significant matrix effects specific to these analytes in the native sample matrix. Please note that sample O-M29-1-FHACE,FHAR,FILTER FH should be considered biased low for Be and Pb due to matrix interferences. Also note that sample O-M29-1-HNO3 BH should be considered biased low for Mn due to matrix interferences.

The post-digestion spike (PDS) for Ag, P, and Se for the sample O-M29-1-FHACE,FHAR,FILTER FH and As for sample O-M29-1-HNO3 BH demonstrated percent recoveries slightly outside the QC criteria, but does not indicate any significant matrix effects specific to these analytes in the native sample matrix.

The recoveries for the post-digestion spike (PDS) are not reported for Ba, Mn and Zn for sample O-M29-1-FHACE,FHAR,FILTER FH. The spike concentrations added were insignificant in comparison to the levels of these analytes present in the native sample.

The pre-digestion spike (MS) and the pre-digestion spike duplicate (MSD) for Hg for the samples O-M29-1-HNO3 BH, O-M29-3-HNO3 BH, and O-M29-4-HNO3 BH demonstrated percent recoveries outside the QC criteria, which may indicate significant matrix effects specific to this analyte in the native sample matrix. Please note that these samples should be considered biased low for Hg due to matrix interferences.

QC requirements:

The duplicate analyses for analytes analyzed by ICP cannot be considered valid qualifiers if the concentrations of the analytes in the original and/or duplicate sample are not at least ten times the respective RDLs. The RPDs for these analyses are indicated by or "<RDL" in the Analyte Summary Reports.

For duplicate analyses which are valid qualifiers, the quality control RPD is ± 20.0 percent. If RPDs are outside this range, interferences are suspected.

The serial dilution analyses for analytes analyzed by GFAA cannot be considered valid qualifiers if the concentrations of the analytes in the serial dilution sample are not at least five times the respective RDLs. The serial dilution RPDs for these analyses are indicated by "<RDL" in the Analyte Summary Reports.

The serial dilution analyses for analytes analyzed by ICP cannot be considered valid qualifiers if the concentrations of the analytes in the serial dilution sample are less than ten times the respective RDLs. The serial dilution RPDs for these analyses are indicated by "<RDL" in the Analyte Summary Reports.

For serial dilution analyses which are valid qualifiers, the quality control RPD is ± 10.0 percent. If RPDs are outside this range, interferences are suspected.

The quality control range for percent recoveries of laboratory control spiked samples is 80-120.

The quality control range for percent recoveries of spiked samples is 75-125. If recoveries are outside this range, a matrix effect is suspected.

If the analyte concentrations analyzed by GFAA in the native samples are less than five times the respective RDLs, or if valid serial dilution analyses demonstrate RPDs outside the ten percent quality control range, the percent recoveries of post-digestion spiked samples is 75-125. If recoveries are outside this range, all matrix-related samples are analyzed by the Method of Standard Additions (MSA). The MSA analysis for each sample is reported only if the correlation coefficient value is at least 0.995.

Triangle Laboratories, Inc.
Case Narrative

November 3, 1997
TLI Project #: 43377

By our interpretation, the analytical data in this project are valid based on the guidelines of Method 29 April 1996 Rev. Any specific QC concerns or problems have been discussed in the QC REMARKS section with emphasis on their effect on the data. Should Pacific Environmental Services have any questions or comments regarding this data package, please feel free to contact Project Scientist, Rose West, at (919) 544-5729 ext.270.

For Triangle Laboratories, Inc.,

Report Preparation

Linda F. Jones
Report Preparation Chemist

Quality Control

Terry P. Roach
Report Preparation Chemist

The total number of pages in this data package is: ~~198~~ 199

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, 1997. Laboratory I.D. # 40950. Dioxin in drinking water.

State of Alaska, Department of Environmental Conservation. Expires December 21, 1997. 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.

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. Recertification pending. Registration # PH-0117. Dioxin in drinking water.

Delaware Health and Social Services. Expires December 31, 1997. 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.

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

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Idaho Department of Health and Welfare. Expires November 30, 1997. Dioxin in drinking water.

State of Kansas, Department of Health and Environment. Expires January 31, 1998. Environmental Analyses/Non potable 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, 1997. 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, 1997. Dioxin in drinking water.

State of New Jersey, Department of Environmental Protection and Energy. Extended by state. Temporary certificate until December 31, 1997. 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, 1997. Certificate # 485. Metals, pesticides & PCBs, semi-volatiles and volatiles; TCLP.

North Dakota State Department of Health and Consolidated Laboratories. Expires December 31, 1997. 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. Expires November 30, 1997. 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 13, 1997. Dioxin in drinking water.

State of Utah, Department of Health. Expires December 31, 1997. 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, 1997. 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, 1997. 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 Radioactive Materials License. Expires April 30 1998. License No. 032-0954-1. License authorizes the licensee to receive, acquire, own, possess, transfer, import and use such radioactive materials as designated.

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.

ABBREVIATIONS

BH = Back Half
CCB = Continuing Calibration Blank
CCV = Continuing Calibration Verification
CHECK HS = Check High Standard
D = DUP = Analytical Duplicate (Prepared Duplicate)
DA = Duplicate Analysis
FH = Front Half
FV = Final Digestate Volume
ICB = Initial Calibration Blank
ICV = Initial Calibration Verification
ICSAB = Interference Check Solution (Solution AB)
I = Initial
F = Final
Solution AB contains common interferents in addition to the analyte of interest.
IDL = Instrument Detection Limit
L = Serial Dilution
LCS = Laboratory Control Spike Sample
MB = Method Blank
MPV = Mercury Preparation Volume
MS = Pre-digestion Spike
MSD = Pre-digestion Spike Duplicate
N/A = Not Applicable
N/Av = Not Available
N/V = Not Valid
PDS = Post-digestion Spike
%REC = Percent Recovery
RDL = Reporting Detection Limit
RPD = Relative Percent Difference
T = Analytical Triplicate (Prepared Triplicate; for Hg analysis by Method 7471 only)
TV = Total Sample Volume
< = Analyte concentration in the sample is less than the respective RDL

STANDARD CONCENTRATIONS
for the TJA 61E TRACE ANALYZER

Analyte	Units	High Std	ICV/CCV	ICSAB	RDL	Wavelength
Ag	ppb	1000	500	500	1	3280
As	ppb	1000	500	500	5	1890
Al	ppb	1000	500	500000	50	3082
B	ppb	1000	500	500	7	2496
Ba	ppb	1000	500	500	2	4934
Be	ppb	1000	500	500	1	3130
Ca	ppb	1000	500	500000	60	3179
Cd	ppb	1000	500	500	1	2265
Ce	ppb	1000	500	500	3	4186
Co	ppb	1000	500	500	1	2286
Cr	ppb	1000	500	500	2	2677
Cu	ppb	1000	500	500	2	3247
Fe	ppb	1000	500	200000	40	2714
K	ppb	10000	5000	19000	220	7664
Li	ppb	1000	500	500	1	6706
Mg	ppb	1000	500	500000	30	2790
Mn	ppb	1000	500	500	2	2576
Mo	ppb	1000	500	500	2	2020
Na	ppb	10000	5000	5000	300	3302
Ni	ppb	1000	500	500	3	2316
P	ppb	1000	500	500	30	2149
Pb	ppb	1000	500	500	2	2203
Sb	ppb	1000	500	500	4	2068
Se	ppb	1000	500	500	3	1960
Sn	ppb	1000	500	500	13	1899
Sr	ppb	1000	500	650	1	4215
Ti	ppb	1000	500	500	8	3349
Tl	ppb	1000	500	500	5	1908
V	ppb	1000	500	500	2	2924
Zn	ppb	1000	500	500	12	2062

Note: Use this reference page to review the raw data from the TJA 61E Trace Analyzer.

This page includes the standard concentrations for the check high standard, initial calibration verification (ICV), continuing calibration verification (CCV), and the interference check solution (ICSAB). In addition the reporting detection limit (RDL) and wavelength are reported for each analyte.

Revision Date: 15-Jul-96

CALCULATIONS FOR AIR SAMPLES

RESULTS FOR TRACE METALS (except mercury):

$$\text{RESULT in } \mu g \text{ (Front Half)} = \frac{\mu g/L * FV\ (mL) * DF}{1000\ mL/L}$$

$$\text{RESULT in } \mu g \text{ (Back Half \& Impingers)} = \frac{\mu g/L * TV\ (mL) * FV\ (mL) * DF}{mL\ used * 1000\ mL/L}$$

FV = final volume in mL
TV = total volume in mL
DF = Dilution Factor

The RESULTS for combined Front Half & Back Half samples use the same calculation as the Back Half & impinger samples.

RESULTS FOR MERCURY (Hg):

RESULT in µg (Front Half) = µg/L * (mL FV/mL aliquot) * MPV * DF

RESULT in µg (Back Half & Impingers) = µg/L * (mL TV/mL aliquot) * MPV * DF

MPV = mercury preparation volume = 0.1 L

%REC (Percent Recovery) for MS/MSD Hg spikes:

$$\%REC = \frac{\text{spike sample results - original sample results}}{\text{true spike sample results}} * 100$$

NOTE: Original sample results less than the RDL are not used in calulations.

%REC (Percent Recovery) for PDS:

$$\%REC = \frac{\text{Spike sample µg/L conc. - original sample µg/L conc.}}{\text{spike conc. (µg/L)}} * 100$$

%REC (Percent Recovery) for LCS/LCSD:

$$\%REC = \frac{\text{Spike sample µg/L conc.}}{\text{spike conc. (µg/L)}} * 100$$

RPDs:

$$RPD = \frac{|\ \text{Result 2 - Result 1}\ |}{(\text{Result 2 + Result 1})/2} * 100$$

Rev. 2-Oct-96

Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-1-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-1ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-0.509	N/A	N/A	100	1	< 0.1
As	26.614	N/A	N/A	100	1	2.66
Ba	2210.242	N/A	N/A	100	1	221
Be	-9.136	N/A	N/A	100	1	< 0.100
Cd	2.179	N/A	N/A	100	1	0.218
Co	18.249	N/A	N/A	100	1	1.820
Cr	147.007	N/A	N/A	100	1	14.7
Cu	173.186	N/A	N/A	100	1	17.3
Mn	2033.351	N/A	N/A	100	1	203
Ni	72.575	N/A	N/A	100	1	7.26
P	3317.880	N/A	N/A	100	1	332
Pb	197.328	N/A	N/A	100	1	19.7
Sb	44.560	N/A	N/A	100	1	4.46
Se	43.871	N/A	N/A	100	1	4.39
Tl	1.400	N/A	N/A	100	1	< 0.200
Zn	1144.375	N/A	N/A	100	1	114

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-1-FHACE,FHAR,FILTER FH L
TLI Sample ID:	184-50-1ABC FH L
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-0.444	N/A	N/A	100	5	< 0.500
As	3.164	N/A	N/A	100	5	< 2.50
Ba	484.810	N/A	N/A	100	5	242
Be	-1.931	N/A	N/A	100	5	< 0.500
Cd	0.372	N/A	N/A	100	5	< 0.500
Co	3.906	N/A	N/A	100	5	1.95
Cr	36.485	N/A	N/A	100	5	18.2
Cu	36.293	N/A	N/A	100	5	18.1
Mn	451.437	N/A	N/A	100	5	226
Ni	17.447	N/A	N/A	100	5	8.72
P	769.575	N/A	N/A	100	5	385
Pb	45.976	N/A	N/A	100	5	23.0
Sb	9.814	N/A	N/A	100	5	4.91
Se	10.801	N/A	N/A	100	5	5.40
Tl	N/A	N/A	N/A	N/A	N/A	N/A
Zn	260.071	N/A	N/A	100	5	130

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-1-HNO3 BH
TLI Sample ID:	184-50-1D BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.277	954	854	100	1	< 0.112
As	-2.638	954	854	100	1	< 0.559
Ba	20.506	954	854	100	1	2.29
Be	-0.125	954	854	100	1	< 0.112
Cd	5.845	954	854	100	1	0.653
Co	-2.288	954	854	100	1	< 0.112
Cr	11.391	954	854	100	1	1.27
Cu	22.134	954	854	100	1	2.47
Mn	45.093	954	854	100	1	5.04
Ni	16.338	954	854	100	1	1.83
P	620.845	954	854	100	1	69.4
Pb	63.809	954	854	100	1	7.13
Sb	3.419	954	854	100	1	< 0.447
Se	5.132	954	854	100	1	0.573
Tl	-0.50	954	854	100	1	< 0.223
Zn	280.848	954	854	100	1	31.4

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-1-HNO3 BH L
TLI Sample ID:	184-50-1D BH L
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-0.090	954	854	100	5	< 0.559
As	-1.821	954	854	100	5	< 2.79
Ba	2.332	954	854	100	5	1.30
Be	-0.050	954	854	100	5	< 0.559
Cd	1.419	954	854	100	5	0.793
Co	-0.174	954	854	100	5	< 0.559
Cr	1.220	954	854	100	5	< 1.12
Cu	3.320	954	854	100	5	1.85
Mn	4.133	954	854	100	5	2.31
Ni	2.951	954	854	100	5	< 1.68
P	131.717	954	854	100	5	73.6
Pb	12.379	954	854	100	5	6.91
Sb	-0.995	954	854	100	5	< 2.23
Se	1.379	954	854	100	5	< 1.68
Tl	-0.90	954	854	100	5	< 1.12
Zn	58.600	954	854	100	5	32.7

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-2-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-2ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	1.729	N/A	N/A	100	1	0.173
As	5.922	N/A	N/A	100	1	0.592
Ba	510.774	N/A	N/A	100	1	51.1
Be	-1.516	N/A	N/A	100	1	< 0.100
Cd	21.333	N/A	N/A	100	1	2.13
Co	-18.808	N/A	N/A	100	1	< 0.1
Cr	99.655	N/A	N/A	100	1	9.97
Cu	44.251	N/A	N/A	100	1	4.43
Mn	333.693	N/A	N/A	100	1	33.4
Ni	60.858	N/A	N/A	100	1	6.09
P	603.530	N/A	N/A	100	1	60.4
Pb	57.817	N/A	N/A	100	1	5.78
Sb	41.463	N/A	N/A	100	1	4.15
Se	39.586	N/A	N/A	100	1	3.96
Tl	2.100	N/A	N/A	100	1	0.210
Zn	466.631	N/A	N/A	100	1	46.7

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-2-FHACE,FHAR,FILTER FH DA
TLI Sample ID:	184-50-2ABC FH DA
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	1.879	N/A	N/A	100	1	0.188
As	9.131	N/A	N/A	100	1	0.913
Ba	508.461	N/A	N/A	100	1	50.8
Be	-1.543	N/A	N/A	100	1	< 0.100
Cd	21.142	N/A	N/A	100	1	2.11
Co	-19.059	N/A	N/A	100	1	< 0.100
Cr	100.776	N/A	N/A	100	1	10.1
Cu	43.699	N/A	N/A	100	1	4.37
Mn	333.777	N/A	N/A	100	1	33.4
Ni	61.462	N/A	N/A	100	1	6.15
P	595.276	N/A	N/A	100	1	59.5
Pb	55.996	N/A	N/A	100	1	5.60
Sb	42.580	N/A	N/A	100	1	4.26
Se	40.579	N/A	N/A	100	1	4.06
Tl	N/A	N/A	N/A	N/A	N/A	N/A
Zn	467.375	N/A	N/A	100	1	46.7

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-2-HNO3 BH
TLI Sample ID:	184-50-2DE BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.568	1645	1545	100	1	< 0.106
As	-7.156	1645	1545	100	1	< 0.532
Ba	8.581	1645	1545	100	1	0.914
Be	-0.007	1645	1545	100	1	< 0.106
Cd	0.848	1645	1545	100	1	< 0.106
Co	-1.476	1645	1545	100	1	< 0.106
Cr	4.083	1645	1545	100	1	0.435
Cu	19.038	1645	1545	100	1	2.03
Mn	15.930	1645	1545	100	1	1.70
Ni	7.948	1645	1545	100	1	0.846
P	547.642	1645	1545	100	1	58.3
Pb	23.644	1645	1545	100	1	2.52
Sb	0.771	1645	1545	100	1	< 0.426
Se	3.153	1645	1545	100	1	0.336
Tl	-0.10	1645	1545	100	1	< 0.213
Zn	146.490	1645	1545	100	1	15.6

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29--HNO3 BH DA
TLI Sample ID:	184-50-2DE BH DA
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-0.003	1645	1545	100	1	< 0.106
As	-8.639	1645	1545	100	1	< 0.532
Ba	8.590	1645	1545	100	1	0.915
Be	-0.054	1645	1545	100	1	< 0.106
Cd	1.010	1645	1545	100	1	0.108
Co	-1.200	1645	1545	100	1	< 0.106
Cr	4.012	1645	1545	100	1	0.427
Cu	18.268	1645	1545	100	1	1.94
Mn	16.004	1645	1545	100	1	1.70
Ni	8.008	1645	1545	100	1	0.853
P	541.735	1645	1545	100	1	57.7
Pb	23.731	1645	1545	100	1	2.53
Sb	1.277	1645	1545	100	1	< 0.426
Se	1.535	1645	1545	100	1	< 0.319
Tl	N/A	N/A	N/A	N/A	N/A	N/A
Zn	147.369	1645	1545	100	1	15.7

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Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-3-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-3ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	8.915	N/A	N/A	100	1	0.892
As	7.679	N/A	N/A	100	1	0.768
Ba	213.783	N/A	N/A	100	1	21.4
Be	-0.601	N/A	N/A	100	1	< 0.100
Cd	-0.976	N/A	N/A	100	1	< 0.100
Co	-15.077	N/A	N/A	100	1	< 0.100
Cr	78.480	N/A	N/A	100	1	7.85
Cu	32.218	N/A	N/A	100	1	3.22
Mn	142.085	N/A	N/A	100	1	14.2
Ni	43.197	N/A	N/A	100	1	4.32
P	258.320	N/A	N/A	100	1	25.8
Pb	31.038	N/A	N/A	100	1	3.10
Sb	33.494	N/A	N/A	100	1	3.35
Se	30.059	N/A	N/A	100	1	3.01
Tl	2.30	N/A	N/A	100	1	0.230
Zn	202.846	N/A	N/A	100	1	20.3

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-3-HNO3 BH
TLI Sample ID:	184-50-3DE BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.191	1130	1030	100	1	< 0.110
As	-7.223	1130	1030	100	1	< 0.549
Ba	11.257	1130	1030	100	1	1.23
Be	-0.054	1130	1030	100	1	< 0.110
Cd	16.442	1130	1030	100	1	1.80
Co	-0.577	1130	1030	100	1	< 0.110
Cr	6.680	1130	1030	100	1	0.733
Cu	52.085	1130	1030	100	1	5.71
Mn	17.223	1130	1030	100	1	1.89
Ni	34.806	1130	1030	100	1	3.82
P	747.814	1130	1030	100	1	82.0
Pb	964.422	1130	1030	100	1	106
Sb	-0.531	1130	1030	100	1	< 0.439
Se	86.488	1130	1030	100	1	9.49
Tl	1.50	1130	1030	100	1	< 0.219
Zn	192.074	1130	1030	100	1	21.1

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-4-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-4ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	2.082	N/A	N/A	100	1	0.208
As	4.111	N/A	N/A	100	1	< 0.500
Ba	139.273	N/A	N/A	100	1	13.9
Be	-0.365	N/A	N/A	100	1	< 0.100
Cd	-2.418	N/A	N/A	100	1	< 0.100
Co	-16.291	N/A	N/A	100	1	< 0.100
Cr	64.361	N/A	N/A	100	1	6.44
Cu	21.367	N/A	N/A	100	1	2.14
Mn	204.413	N/A	N/A	100	1	20.4
Ni	28.942	N/A	N/A	100	1	2.89
P	142.275	N/A	N/A	100	1	14.2
Pb	6.657	N/A	N/A	100	1	0.666
Sb	27.323	N/A	N/A	100	1	2.73
Se	24.357	N/A	N/A	100	1	2.44
Tl	-1.00	N/A	N/A	100	1	< 0.200
Zn	160.507	N/A	N/A	100	1	16.1

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-4-HNO3 BH
TLI Sample ID:	184-50-4DE BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.311	1105	1005	100	1	< 0.110
As	-6.866	1105	1005	100	1	< 0.550
Ba	5.349	1105	1005	100	1	0.588
Be	-0.016	1105	1005	100	1	< 0.110
Cd	0.131	1105	1005	100	1	< 0.110
Co	-1.780	1105	1005	100	1	< 0.110
Cr	2.399	1105	1005	100	1	0.264
Cu	11.289	1105	1005	100	1	1.24
Mn	491.453	1105	1005	100	1	54.0
Ni	8.884	1105	1005	100	1	0.977
P	555.480	1105	1005	100	1	61.1
Pb	12.479	1105	1005	100	1	1.37
Sb	-1.163	1105	1005	100	1	< 0.440
Se	0.932	1105	1005	100	1	< 0.330
Tl	0.80	1105	1005	100	1	< 0.220
Zn	94.302	1105	1005	100	1	10.4

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-FB-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-5ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	1.066	N/A	N/A	100	1	0.107
As	6.275	N/A	N/A	100	1	0.627
Ba	46.626	N/A	N/A	100	1	4.66
Be	-0.052	N/A	N/A	100	1	< 0.100
Cd	-6.656	N/A	N/A	100	1	< 0.100
Co	-31.577	N/A	N/A	100	1	< 0.100
Cr	94.985	N/A	N/A	100	1	9.50
Cu	10.522	N/A	N/A	100	1	1.05
Mn	10.861	N/A	N/A	100	1	1.09
Ni	48.171	N/A	N/A	100	1	4.82
P	0.201	N/A	N/A	100	1	< 3.00
Pb	-20.784	N/A	N/A	100	1	< 0.200
Sb	49.090	N/A	N/A	100	1	4.91
Se	42.696	N/A	N/A	100	1	4.27
Tl	1.20	N/A	N/A	100	1	< 0.200
Zn	30.196	N/A	N/A	100	1	3.02

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-FB-HNO3 BH
TLI Sample ID:	184-50-5BD BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-0.084	150	150	100	1	< 0.100
As	-5.436	150	150	100	1	< 0.500
Ba	2.368	150	150	100	1	0.237
Be	-0.037	150	150	100	1	< 0.100
Cd	1.295	150	150	100	1	0.130
Co	-0.835	150	150	100	1	< 0.100
Cr	3.764	150	150	100	1	0.376
Cu	6.244	150	150	100	1	0.624
Mn	71.682	150	150	100	1	7.17
Ni	2.070	150	150	100	1	< 0.300
P	120.688	150	150	100	1	12.1
Pb	65.879	150	150	100	1	6.59
Sb	0.971	150	150	100	1	< 0.400
Se	4.210	150	150	100	1	0.421
Tl	-2.80	150	150	100	1	< 0.200
Zn	29.576	150	150	100	1	2.96

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-RB-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-6ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	2.705	N/A	N/A	100	1	0.270
As	3.407	N/A	N/A	100	1	< 0.500
Ba	43.292	N/A	N/A	100	1	4.33
Be	-0.112	N/A	N/A	100	1	< 0.100
Cd	-6.215	N/A	N/A	100	1	< 0.100
Co	-29.571	N/A	N/A	100	1	< 0.100
Cr	93.294	N/A	N/A	100	1	9.33
Cu	10.580	N/A	N/A	100	1	1.06
Mn	9.109	N/A	N/A	100	1	0.911
Ni	46.803	N/A	N/A	100	1	4.68
P	17.600	N/A	N/A	100	1	< 3.00
Pb	-12.883	N/A	N/A	100	1	< 0.200
Sb	41.765	N/A	N/A	100	1	4.18
Se	43.531	N/A	N/A	100	1	4.35
Tl	-3.00	N/A	N/A	100	1	< 0.200
Zn	25.989	N/A	N/A	100	1	2.60

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	O-M29-RB-HNO3 BH
TLI Sample ID:	184-50-6BD BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.061	300	300	100	1	< 0.100
As	-8.994	300	300	100	1	< 0.500
Ba	3.256	300	300	100	1	0.326
Be	-0.044	300	300	100	1	< 0.100
Cd	-0.536	300	300	100	1	< 0.100
Co	-1.619	300	300	100	1	< 0.100
Cr	2.217	300	300	100	1	0.222
Cu	14.381	300	300	100	1	1.44
Mn	346.891	300	300	100	1	34.7
Ni	6.056	300	300	100	1	0.606
P	553.359	300	300	100	1	55.3
Pb	2.647	300	300	100	1	0.265
Sb	1.642	300	300	100	1	< 0.400
Se	-0.017	300	300	100	1	< 0.300
Tl	-1.50	300	300	100	1	< 0.200
Zn	20.330	300	300	100	1	2.03

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	I-M29-1-FHACE,FHAR,FILTER FH
TLI Sample ID:	184-50-7ABC FH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	-15.487	N/A	N/A	100	1	< 0.100
As	152.097	N/A	N/A	100	1	15.2
Ba	6171.882	N/A	N/A	100	1	617
Be	-35.757	N/A	N/A	100	1	< 0.100
Cd	60.007	N/A	N/A	100	1	6.00
Co	265.325	N/A	N/A	100	1	26.5
Cr	358.682	N/A	N/A	100	1	35.9
Cu	1251.144	N/A	N/A	100	1	125
Mn	11640.313	N/A	N/A	100	1	1160
Ni	160.800	N/A	N/A	100	1	16.1
P	34933.355	N/A	N/A	100	1	3490
Pb	450.776	N/A	N/A	100	1	45.1
Sb	-2.294	N/A	N/A	100	1	< 0.400
Se	-55.967	N/A	N/A	100	1	< 0.300
Tl	29.038	N/A	N/A	100	1	2.90
Zn	5032.940	N/A	N/A	100	1	503

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Client: **Pacific Environmental Services**
Project Number: **43377**

Sample Report

Client Sample ID:	I-M29-1-HNO3 BH
TLI Sample ID:	184-50-7D BH
Date Received:	September 24, 1997
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	Air

Analyte	Conc. (ug/L)	mL Total Vol.	mL Used	mL Final Vol.	Dilution Factor	Total ug Result
Ag	0.376	435	335	100	1	< 0.130
As	-2.937	435	335	100	1	< 0.649
Ba	4.655	435	335	100	1	0.604
Be	-0.012	435	335	100	1	< 0.130
Cd	5.279	435	335	100	1	0.686
Co	-1.085	435	335	100	1	< 0.130
Cr	6.758	435	335	100	1	0.878
Cu	7.221	435	335	100	1	0.938
Mn	109.380	435	335	100	1	14.2
Ni	7.742	435	335	100	1	1.01
P	447.197	435	335	100	1	58.1
Pb	42.647	435	335	100	1	5.54
Sb	-0.046	435	335	100	1	< 0.519
Se	7.465	435	335	100	1	0.969
Tl	0.40	435	335	100	1	< 0.26
Zn	163.332	435	335	100	1	21.2

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Client: **Pacific Environmental Services**
Project Number: 43377

QA: Serial Dilution

Client Sample ID:	O-M29-1-FHACE,FHAR,FILTER FH	O-M29-1-FHACE,FHAR,FILTER FH L
TLI Sample ID:	184-50-1ABC FH	184-50-1ABC FH L
Date Prepared:	October 10-14, 1997	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997	October 16,20,21 & 22, 1997
Matrix:	Air	Air

	Native Sample		Serial Dilution		
Analyte	Total ug Result	ug/L Conc.	Total ug Result	ug/L Conc.	RPD
Ag	< 0.100	-0.509	< 0.500	-0.444	<RDL
As	2.66	26.614	< 2.50	3.164	<RDL
Ba	221	2210.242	242	484.810	9.07%
Be	< 0.100	-9.136	< 0.500	-1.931	<RDL
Cd	0.218	2.179	< 0.500	0.372	<RDL
Co	1.82	18.249	1.95	3.906	<RDL
Cr	14.7	147.007	18.2	36.485	21.3%
Cu	17.3	173.186	18.1	36.293	4.52%
Mn	203	2033.351	226	451.437	10.7%
Ni	7.26	72.575	8.72	17.447	<RDL
P	332	3317.880	385	769.575	14.8%
Pb	19.7	197.328	23.0	45.976	15.5%
Sb	4.46	44.560	4.91	9.814	<RDL
Se	4.39	43.871	5.40	10.801	<RDL
Tl	< 0.200	1.400	N/A	N/A	N/A
Zn	114	1144.375	130	260.071	13.1%

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Client: **Pacific Environmental Services**
Project Number: 43377

QA: Serial Dilution

Client Sample ID:	O-M29-1-HNO3 BH	O-M29-1-HNO3 BH L
TLI Sample ID:	184-50-1D BH	184-50-1D BH L
Date Prepared:	October 10-14, 1997	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997	October 16,20,21 & 22, 1997
Matrix:	Air	Air

	Native Sample		Serial Dilution		
Analyte	Total ug Result	ug/L Conc.	Total ug Result	ug/L Conc.	RPD
Ag	< 0.112	0.277	< 0.559	-0.090	<RDL
As	< 0.559	-2.638	< 2.79	-1.821	<RDL
Ba	2.29	20.506	1.30	2.332	<RDL
Be	< 0.112	-0.125	< 0.559	-0.050	<RDL
Cd	0.653	5.845	0.793	1.419	<RDL
Co	< 0.112	-2.288	< 0.559	-0.174	<RDL
Cr	1.27	11.391	< 1.12	1.220	<RDL
Cu	2.47	22.134	1.85	3.320	<RDL
Mn	5.04	45.093	2.31	4.133	<RDL
Ni	1.83	16.338	< 1.68	2.951	<RDL
P	69.4	620.845	73.6	131.717	<RDL
Pb	7.13	63.809	6.91	12.379	<RDL
Sb	< 0.447	3.419	< 2.23	-0.995	<RDL
Se	0.573	5.132	< 1.68	1.379	<RDL
Tl	< 0.223	-0.500	< 1.12	-0.900	<RDL
Zn	31.4	280.848	32.7	58.600	<RDL

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Client: Pacific Environmental Services
Project Number: 43377

QA: Duplicate

Client Sample ID:	O-M29-2-FHACE,FHAR,FILTER FH	O-M29-2-FHACE,FHAR,FILTER FH DA
TLI Sample ID:	184-50-2ABC FH	184-50-2ABC FH DA
Date Prepared:	October 10-14, 1997	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997	October 16,20,21 & 22, 1997
Matrix:	Air	Air

	Sample		Duplicate		
Analyte	Total ug Result	ug/L Conc.	Total ug Result	ug/L Conc.	RPD
Ag	0.173	1.729	0.188	1.879	<RDL
As	0.592	5.922	0.913	9.131	<RDL
Ba	51.1	510.774	50.8	508.461	0.589%
Be	< 0.100	-1.516	< 0.100	-1.543	<RDL
Cd	2.13	21.333	2.11	21.142	0.943%
Co	< 0.100	-18.808	< 0.100	-19.059	<RDL
Cr	9.97	99.655	10.1	100.776	1.30%
Cu	4.43	44.251	4.37	43.699	1.36%
Mn	33.4	333.693	33.4	333.777	0.000%
Ni	6.09	60.858	6.15	61.462	0.980%
P	60.4	603.530	59.5	595.276	1.50%
Pb	5.78	57.817	5.60	55.996	3.16%
Sb	4.15	41.463	4.26	42.580	2.62%
Se	3.96	39.586	4.06	40.579	2.49%
Tl	0.210	2.100	N/A	N/A	N/A
Zn	46.7	466.631	46.7	467.375	0.000%

Client: **Pacific Environmental Services**
Project Number: **43377**

QA: Duplicate

Client Sample ID:	O-M29-2-HNO3 BH	O-M29--HNO3 BH DA
TLI Sample ID:	184-50-2DE BH	184-50-2DE BH DA
Date Prepared:	October 10-14, 1997	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997	October 16,20,21 & 22, 1997
Matrix:	Air	Air

	Sample		Duplicate		
Analyte	Total ug Result	ug/L Conc.	Total ug Result	ug/L Conc.	RPD
Ag	< 0.106	0.568	< 0.106	-0.003	<RDL
As	< 0.532	-7.156	< 0.532	-8.639	<RDL
Ba	0.914	8.581	0.915	8.590	<RDL
Be	< 0.106	-0.007	< 0.106	-0.054	<RDL
Cd	< 0.106	0.848	0.108	1.010	<RDL
Co	< 0.106	-1.476	< 0.106	-1.200	<RDL
Cr	0.435	4.083	0.427	4.012	<RDL
Cu	2.03	19.038	1.94	18.268	<RDL
Mn	1.70	15.930	1.70	16.004	<RDL
Ni	0.846	7.948	0.853	8.008	<RDL
P	58.3	547.642	57.7	541.735	1.03%
Pb	2.52	23.644	2.53	23.731	0.396%
Sb	< 0.426	0.771	< 0.426	1.277	<RDL
Se	0.336	3.153	< 0.319	1.535	<RDL
Tl	< 0.213	-0.100	N/A	N/A	N/A
Zn	15.6	146.490	15.7	147.369	0.639%

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Client: Pacific Environmental Services
Project Number: 43377

QA: Matrix Spikes (Post-Digestion)

Client Sample ID:	O-M29-1-FHACE,FHAR,FILTER FH PDS	
TLI Sample ID:	184-50-1ABC FH PDS	
Date Prepared:	October 10-14, 1997	
Date Analyzed:	October 16,20,21 & 22, 1997	
Matrix:	Air	

	Post-Digestion Spike			Post-Digestion Spike Duplicate			RPD
Analyte	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	
Ag	37.13	50	74%				---
As	66.21	50	79%				---
Ba	2207.64	50	Spike Low				---
Be	31.50	50	63%				---
Cd	44.31	50	84%				---
Co	60.73	50	85%				---
Cr	187.14	50	80%				---
Cu	216.04	50	86%				---
Mn	2026.71	50	Spike Low				---
Ni	112.31	50	79%				---
P	4053.51	1000	74%				---
Pb	231.32	50	68%				---
Sb	83.39	50	78%				---
Se	80.62	50	74%				---
Tl	N/A	N/A	N/A				---
Zn	1289.01	200	Spike Low				---

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Client: **Pacific Environmental Services**
Project Number: **43377**

QA: Matrix Spikes (Post-Digestion)

Client Sample ID:	O-M29-1-HNO3 BH PDS	
TLI Sample ID:	184-50-1D BH PDS	
Date Prepared:	October 10-14, 1997	
Date Analyzed:	October 16,20,21 & 22, 1997	
Matrix:	Air	

	Post-Digestion Spike			Post-Digestion Spike Duplicate			
Analyte	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	RPD
Ag	41.57	50	83%				---
As	36.64	50	73%				---
Ba	60.46	50	80%				---
Be	45.63	50	91%				---
Cd	52.79	50	94%				---
Co	46.23	50	92%				---
Cr	55.26	50	88%				---
Cu	69.47	50	95%				---
Mn	68.47	50	47%				---
Ni	61.19	50	90%				---
P	1409.02	1000	79%				---
Pb	108.50	50	89%				---
Sb	47.69	50	95%				---
Se	46.09	50	82%				---
Tl	20.6	25	82%				---
Zn	456.69	200	88%				---

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Client: **Pacific Environmental Services**
Project Number: **43377**

QA: Method Blank

TLI Sample ID:	43377 MB
Date Prepared:	October 10-14, 1997
Date Analyzed:	October 16,20,21 & 22, 1997
Matrix:	N/A

	Method Blank		
Analyte	Recovered Amount (ug/L)	Detection Limit (ug/L)	Pass or Fail
Ag	-0.13	1	Pass
As	-2.09	5	Pass
Ba	0.20	2	Pass
Be	0.01	1	Pass
Cd	-0.44	1	Pass
Co	-0.19	1	Pass
Cr	-1.08	2	Pass
Cu	0.22	2	Pass
Mn	-0.19	2	Pass
Ni	-1.00	3	Pass
P	-0.70	30	Pass
Pb	-2.82	2	Fail
Sb	-1.10	4	Pass
Se	-1.14	3	Pass
Tl	-0.10	2	Pass
Zn	7.27	12	Pass
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Client: Pacific Environmental Services
Project Number: 43377

QA: Lab Control Spikes

TLI Sample ID:	43377 LCS	
Date Prepared:	October 10-14, 1997	
Date Analyzed:	October 16,20,21 & 22, 1997	
Matrix:	N/A	

	Lab Control Spike			Lab Control Spike Duplicate			
Analyte	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	Recovered Amount (ug/L)	Spike Amount (ug/L)	% Recovery	RPD
Ag	45.11	50	90%				---
As	45.25	50	90%				---
Ba	49.05	50	98%				---
Be	47.58	50	95%				---
Cd	48.64	50	97%				---
Co	49.24	50	98%				---
Cr	48.24	50	96%				---
Cu	49.07	50	98%				---
Mn	48.63	50	97%				---
Ni	47.19	50	94%				---
P	981.55	1000	98%				---
Pb	46.89	50	94%				---
Sb	48.51	50	97%				---
Se	47.66	50	95%				---
Tl	45.00	50	90%				---
Zn	199.45	200	100%				---

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Client: **Pacific Environmental Services**
Project Number: 43377

Sample Report

Date Received:	September 24, 1997
Date Prepared:	October 10-20, 1997
Date Analyzed:	October 21-22, 1997
DATA FILE:	AB827 & AB828
Matrix:	Air

ANALYTE:	Hg
ug/L RDL:	0.2
Analysis Method:	29
Instrument:	P E Zeeman 5100
Spike Conc. (ug/L)	5

CVAA ANALYTE SUMMARY REPORT

Client Sample ID	TLI SAMPID	ug/L CONC	ml TV	ml FV	ml Aliquot	DIL FACTOR	Total ug RESULT	Avg. RESULT	RPD	%REC
O-M29-1-FHACE,FHAR,FILTER FH	184-50-1ABC	0.034	N/A	100	5	1	< 0.400	--	--	--
O-M29-1-FHACE,FHAR,FILTER FH D	184-50-1ABC D	0.005	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-1-HNO3 BH	184-50-1D	0.034	954	N/A	5	1	< 3.82	--	--	--
O-M29-1-HNO3 BH D	184-50-1D D	0.036	954	N/A	5	1	< 3.82	< 3.82	--	--
O-M29-1-BHAR HNO3	184-50-1E	-0.005	37	N/A	5	1	< 0.148	--	--	--
O-M29-1-BHAR HNO3 D	184-50-1E D	-0.005	37	N/A	5	1	< 0.148	< 0.148	--	--
O-M29-1-KMnO4	184-50-1F	0.307	345	N/A	5	1	2.12	--	--	--
O-M29-1-KMnO4 D	184-50-1F D	0.328	345	N/A	5	1	2.26	2.19	--	--
O-M29-1-HCl	184-50-1G	0.016	50	N/A	5	1	< 0.200	--	--	--
O-M29-1-HCl D	184-50-1G D	0.010	50	N/A	5	1	< 0.200	< 0.200	--	--
O-M29-2-FHACE,FHAR,FILTER FH	184-50-2ABC	0.008	N/A	100	5	1	< 0.400	--	--	--
O-M29-2-FHACE,FHAR,FILTER FH D	184-50-2ABC D	-0.008	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-2-HNO3 BH	184-50-2DE	0.034	1645	N/A	5	1	< 6.58	--	--	--
O-M29-2-HNO3 BH D	184-50-2DE D	0.023	1645	N/A	5	1	< 6.58	< 6.58	--	--
O-M29-2-BHAR HNO3	184-50-2F	-0.018	35	N/A	5	1	< 0.140	--	--	--
O-M29-2-BHAR HNO3 D	184-50-2F D	-0.016	35	N/A	5	1	< 0.140	< 0.140	--	--
O-M29-2-KMnO4	184-50-2G	0.299	405	N/A	5	1	2.42	--	--	--
O-M29-2-KMnO4 D	184-50-2G D	0.302	405	N/A	5	1	2.45	2.43	--	--
O-M29-2-HCl	184-50-2H	-0.021	95	N/A	5	1	< 0.380	--	--	--
O-M29-2-HCl D	184-50-2H D	-0.018	95	N/A	5	1	< 0.380	< 0.380	--	--
O-M29-3-FHACE,FHAR,FILTER FH	184-50-3ABC	0.000	N/A	100	5	1	< 0.400	--	--	--
O-M29-3-FHACE,FHAR,FILTER FH D	184-50-3ABC D	0.003	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-3-HNO3 BH	184-50-3DE	0.549	1130	N/A	5	1	12.4	--	--	--
O-M29-3-HNO3 BH D	184-50-3DE D	0.554	1130	N/A	5	1	12.5	12.5	--	--
O-M29-3-BHAR HNO3	184-50-3F	-0.003	57	N/A	5	1	< 0.228	--	--	--
O-M29-3-BHAR HNO3 D	184-50-3F D	-0.018	57	N/A	5	1	< 0.228	< 0.228	--	--
O-M29-3-KMnO4	184-50-3G	0.442	330	N/A	5	1	2.92	--	--	--
O-M29-3-KMnO4 D	184-50-3G D	0.463	330	N/A	5	1	3.06	2.99	--	--
O-M29-3-HCl	184-50-3H	0.070	95	N/A	5	1	< 0.380	--	--	--
O-M29-3-HCl D	184-50-3H D	0.060	95	N/A	5	1	< 0.380	< 0.380	--	--

Client: Pacific Environmental Services
Project Number: 43377

Sample Report

Date Received:	September 24, 1997
Date Prepared:	October 10-20, 1997
Date Analyzed:	October 21-22, 1997
DATA FILE:	AB827 & AB828
Matrix:	Air

ANALYTE:	Hg
ug/L RDL:	0.2
Analysis Method:	29
Instrument:	P E Zeeman 5100
Spike Conc. (ug/L)	5

CVAA ANALYTE SUMMARY REPORT

Client Sample ID	TLI SAMPID	ug/L CONC	ml TV	ml FV	ml Aliquot	DIL FACTOR	Total ug RESULT	Avg RESULT	RPD	%REC
O-M29-4-FHACE,FHAR,FILTER FH	184-50-4ABC	-0.003	N/A	100	5	1	< 0.400	--	--	--
O-M29-4-FHACE,FHAR,FILTER FH D	184-50-4ABC D	-0.016	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-4-HNO3 BH	184-50-4DE	0.026	1105	N/A	5	1	< 4.42	--	--	--
O-M29-4-HNO3 BH D	184-50-4DE D	0.029	1105	N/A	5	1	< 4.42	< 4.42	--	--
O-M29-4-BHAR HNO3	184-50-4F	0.018	56	N/A	5	1	< 0.224	--	--	--
O-M29-4-BHAR HNO3 D	184-50-4F D	0.000	56	N/A	5	1	< 0.224	< 0.224	--	--
O-M29-4-KMnO4	184-50-4G	0.299	350	N/A	5	1	2.09	--	--	--
O-M29-4-KMnO4 D	184-50-4G D	0.297	350	N/A	5	1	2.08	2.09	--	--
O-M29-4-HCl	184-50-4H	0.010	61	N/A	5	1	< 0.244	--	--	--
O-M29-4-HCl D	184-50-4H D	0.005	61	N/A	5	1	< 0.244	< 0.244	--	--
O-M29-FB-FHACE,FHAR,FILTER FH	184-50-5ABC	-0.003	N/A	100	5	1	< 0.400	--	--	--
O-M29-FB-FHACE,FHAR,FILTER FH D	184-50-5ABC D	-0.010	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-FB-FHAR,HNO3 BH	184-50-5BD	-0.016	150	N/A	5	1	< 0.60	--	--	--
O-M29-FB-FHAR,HNO3 BH D	184-50-5BD D	-0.005	150	N/A	5	1	< 0.60	< 0.60	--	--
O-M29-FB-BHAR HNO3	184-50-5E	-0.013	56	N/A	5	1	< 0.224	--	--	--
O-M29-FB-BHAR HNO3 D	184-50-5E D	-0.013	56	N/A	5	1	< 0.224	< 0.224	--	--
O-M29-FB-KMnO4	184-50-5F	-0.018	155	N/A	5	1	< 0.62	--	--	--
O-M29-FB-KMnO4 D	184-50-5F D	-0.016	155	N/A	5	1	< 0.62	< 0.62	--	--
O-M29-RB-FHACE,FHAR,FILTER FH	184-50-6ABC	-0.016	N/A	100	5	1	< 0.400	--	--	--
O-M29-RB-FHACE,FHAR,FILTER FH D	184-50-6ABC D	-0.003	N/A	100	5	1	< 0.400	< 0.400	--	--
O-M29-RB-FHAR,HNO3 BH	184-50-6BD	0.066	300	N/A	5	1	< 1.20	--	--	--
O-M29-RB-FHAR,HNO3 BH D	184-50-6BD D	0.083	300	N/A	5	1	< 1.20	< 1.20	--	--
O-M29-RB-FHAR HNO3	184-50-6B	0.033	100	N/A	5	1	< 0.400	--	--	--
O-M29-RB-FHAR HNO3 D	184-50-6B D	0.011	100	N/A	5	1	< 0.400	< 0.400	--	--
O-M29-RB-KMnO4	184-50-6E	0.019	290	N/A	5	1	< 1.16	--	--	--
O-M29-RB-KMnO4 D	184-50-6E D	0.028	290	N/A	5	1	< 1.16	< 1.16	--	--
O-M29-RB-HCl	184-50-6FE	0.025	94	N/A	5	1	< 0.376	--	--	--
O-M29-RB-HCl D	184-50-6FE D	0.017	94	N/A	5	1	< 0.376	< 0.376	--	--

Client: Pacific Environmental Services
Project Number: 43377

Sample Report

Date Received:	September 24, 1997
Date Prepared:	October 10-20, 1997
Date Analyzed:	October 21-22, 1997
DATA FILE:	AB827 & AB828
Matrix:	Air

ANALYTE:	Hg
ug/L RDL:	0.2
Analysis Method:	29
Instrument:	P E Zeeman 5100
Spike Conc. (ug/L)	5

CVAA ANALYTE SUMMARY REPORT

Client Sample ID	TLI SAMPID	ug/L CONC	ml TV	ml FV	ml Aliquot	Dil. FACTOR	Total ug RESULT	Avg RESULT	RPD	%REC
I-M29-1-FHACE,FHAR,FILTER FH	184-50-7ABC	0.075	N/A	100	5	1	< 0.400	–	–	--
I-M29-1-FHACE,FHAR,FILTER FH D	184-50-7ABC D	0.063	N/A	100	5	1	< 0.400	< 0.400	–	--
I-M29-1-FHAR,HNO3 BH	184-50-7D	0.166	435	N/A	5	1	< 1.74	–	–	--
I-M29-1-FHAR,HNO3 BH D	184-50-7D D	0.144	435	N/A	5	1	< 1.74	< 1.74	–	--
I-M29-1-FHAR HNO3	184-50-7E	0.022	85	N/A	5	1	< 0.340	–	–	--
I-M29-1-FHAR HNO3 D	184-50-7E D	0.011	85	N/A	5	1	< 0.340	< 0.340	–	--
I-M29-1-KMnO4	184-50-7F	0.075	275	N/A	5	1	< 1.10	–	–	--
I-M29-1-KMnO4 D	184-50-7F D	0.072	275	N/A	5	1	< 1.10	< 1.10	–	--
O-M29-1-HNO3 BH MS	184-50-1D MS	8.522	954	N/A	5	1	163	–	–	170%
O-M29-1-HNO3 BH MSD	184-50-1D MSD	8.504	954	N/A	5	1	162	162	0.211%	170%
O-M29-3-HNO3 BH MS	184-50-3DE MS	8.403	1130	N/A	5	1	190	–	–	168%
O-M29-3-HNO3 BH MSD	184-50-3DE MSD	7.976	1130	N/A	5	1	180	185	5.21%	160%
O-M29-4-HNO3 BH MS	184-50-4DE MS	7.750	1105	N/A	5	1	171	–	–	155%
O-M29-4-HNO3 BH MSD	184-50-4DE MSD	7.575	1105	N/A	5	1	167.4	169	2.28%	152%
O-M29-RB-FHAR,HNO3 BH MS	184-50-6BD MS	4.937	300	N/A	5	1	29.6	–	–	99%
O-M29-RB-FHAR,HNO3 BH MSD	184-50-6BD MSD	5.227	300	N/A	5	1	31.4	30.5	5.71%	105%
I-M29-1-FHAR,HNO3 BH MS	184-50-7D MS	4.424	435	N/A	5	1	38.5	–	–	88%
I-M29-1-FHAR,HNO3 BH MSD	184-50-7D MSD	5.125	435	N/A	5	1	44.6	41.5	14.7%	103%
O-M29-1-HNO3 BH MS	True Spike MS	5	954	N/A	5	1	95.4	–	–	--
O-M29-1-HNO3 BH MSD	True Spike MS	5	954	N/A	5	1	95.4	–	–	--
O-M29-3-HNO3 BH MS	True Spike MS	5	1130	N/A	5	1	113	–	–	--
O-M29-3-HNO3 BH MSD	True Spike MS	5	1130	N/A	5	1	113	–	–	--
O-M29-4-HNO3 BH MS	True Spike MS	5	1105	N/A	5	1	111	–	–	--
O-M29-4-HNO3 BH MSD	True Spike MS	5	1105	N/A	5	1	111	–	–	--
O-M29-RB-FHAR,HNO3 BH MS	True Spike MS	5	300	N/A	5	1	30.0	–	–	--
O-M29-RB-FHAR,HNO3 BH MSD	True Spike MS	5	300	N/A	5	1	30.0	–	–	--
I-M29-1-FHAR,HNO3 BH MS	True Spike MS	5	435	N/A	5	1	43.5	–	–	--
I-M29-1-FHAR,HNO3 BH MSD	True Spike MS	5	435	N/A	5	1	43.5	–	–	--

Client: **Pacific Environmental Services**
Project Number: 43377

Sample Report

Date Received:	September 24, 1997
Date Prepared:	October 10-20, 1997
Date Analyzed:	October 21-22, 1997
DATA FILE:	AB827 & AB828
Matrix:	Air

ANALYTE:	Hg
ug/L RDL:	0.2
Analysis Method:	29
Instrument:	P E Zeeman 5100
Spike Conc. (ug/L)	5

CVAA ANALYTE SUMMARY REPORT

Client Sample ID	TLI SAMPID	ug/L CONC	ml TV	ml FV	ml Aliquot	DIL FACTOR	Total ug RESULT	Avg. RESULT	RPD	%REC
I-M29-1-FHAR,HNO3 BH MS	True Spike MS	5	435	N/A	5	1	43.5	--	--	--
I-M29-1-FHAR,HNO3 BH MSD	True Spike MS	5	435	N/A	5	1	43.5	--	--	--
Method Blank	43377 MB1	-0.008	--	--	--	--	--	--	--	--
Method Blank D	43377 MB1 D	-0.016	--	--	--	--	--	--	--	--
LCS	43377 LCS1	5.278	--	--	--	--	--	--	--	106%
LCSD	43377 LCS1 D	5.018	--	--	--	--	--	--	--	100%
Method Blank	43377 MB2	0.003	--	--	--	--	--	--	--	--
Method Blank D	43377 MB2 D	-0.003	--	--	--	--	--	--	--	--
LCS	43377 LCS2	4.981	--	--	--	--	--	--	--	100%
LCSD	43377 LCS2 D	4.733	--	--	--	--	--	--	--	95%

Triangle Laboratories, Inc.
801 Capitola Drive * Durham, North Carolina 27713
Tele: (919) 544-5729 * Fax: (919) 544-5491

Printed: 05-Nov-97 at 04:27 PM

PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

COPY KMM 9/25/97

Chain of Custody Record

Project Numb	Project Name	Analysis Requested							Remarks
s413-004	PLANT "A" US EPA EMC Asphalt Cement,								
Samplers: Abernathy, Dickerson, Gay									
Date	Time	Field Sample ID	Sample Description	MM	Hg						
8/19/97	1104	O-M29-1-FHACE	FH Acetone Rinse - Beaker No. M-2	•	•						
8/19/97	1104	O-M29-1-FHAR	FH 0.1 N HNO3 Rinse	•	•						
8/19/97	1104	O-M29-1-Filter	Filter M97-003 - Beaker No. M-1	•	•						
8/19/97	1104	O-M29-1-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution	•	•						
8/19/97	1104	O-M29-1-BHAR	BH 0.1 N HNO3 Rinse	•	•						
8/19/97	1104	O-M29-1-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.		•						
8/19/97	1104	O-M29-1-HCl	8N HCl Rinse		•						
8/20/97	0822	O-M29-2-FHACE	FH Acetone Rinse - Beaker No. M-5	•	•						
8/20/97	0822	O-M29-2-FHAR	FH 0.1 N HNO3 Rinse	•	•						
8/20/97	0822	O-M29-2-Filter	Filter M97-002 - Beaker No. M-4	•	•						
8/20/97	0822	O-M29-2-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution	•	•						Bottle 1/2
8/20/97	0822	O-M29-2-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution	•	•						Bottle 2/2
8/20/97	0822	O-M29-2-BHAR	BH 0.1 N HNO3 Rinse	•	•						
8/20/97	0822	O-M29-2-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.		•						
8/20/97	1405	O-M29-2-HCl	8N HCl Rinse		•						
8/20/97	1405	O-M29-3-FHACE	FH Acetone Rinse - Beaker No. M-7	•	•						
8/20/97	1405	O-M29-3-FHAR	FH 0.1 N HNO3 Rinse	•	•						
8/20/97	1405	O-M29-3-Filter	Filter M97-004 - Beaker No. M-6	•	•						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for lab by: (Signature)	REMARKS		
	9/29/97 1435	Kelli M. Lynch			

Page: 1 of 2

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PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

Chain of Custody Record

Project Numb	Project Name	Analysis Requested							Remarks
s413-004	US EPA EMC Asphalt Cement, PLANT "A"								
Samplers: Abernathy, Dickerson, Gay									
Date	Time	Field Sample ID	Sample Description	MM	Hg						
8/20/97	1405	Q-M29-3-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution								Bottle 1/2
8/20/97	1405	O-M29-3-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution								Bottle 2/2
8/20/97	1405	O-M29-3-BHAR	BH 0.1 N HNO3 Rinse								
8/20/97	1405	O-M29-3-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.								
8/20/97	1405	O-M29-3-HCl	8N HCl Rinse								
8/21/97	0740	O-M29-4-FHACE	FH Acetone Rinse - Beaker No. M-9								
8/21/97	0740	O-M29-4-FHAR	FH 0.1 N HNO3 Rinse								
8/21/97	0740	O-M29-4-Filter	Filter M97-005 - Beaker No. M-8								
8/21/97	0740	O-M29-4-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution								Bottle 1/2
8/22/97	0741	O-M29-4-HNO4	5% HNO3 / 10% H2O2 Absorbing Solution								Bottle 2/2
8/21/97	0740	O-M29-4-BHAR	BH 0.1 N HNO3 Rinse								
8/21/97	0740	O-M29-4-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.								
8/21/97	0740	O-M29-4-HCl	8N HCl Rinse								
8/20/97		O-M29-FB-FHACE	FH Acetone Rinse - Beaker No. M-15								
8/20/97		O-M29-FB-FHAR	FH 0.1 N HNO3 Rinse								
8/20/97		O-M29-FB-Filter	Filter M97-006 - Beaker No. M-14								
8/20/97		O-M29-FB-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution								
8/20/97		O-M29-FB-BHAR	BH 0.1 N HNO3 Rinse								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time 9/24/97 1430	Received for lab by: (Signature)	REMARKS		

PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
Research Triangle Park, North Carolina 27709-2077
(919) 941-0333 FAX: (919) 941-0234

Chain of Custody Record

Project Numb	Project Name	Analysis Requested							Remarks
s413-004	PLANT "A" US EPA EMC Asphalt Cement,								
Samplers: Abernathy, Dickerson, Gay		MM	Hg						
Date	Time	Field Sample ID	Sample Description						
8/20/97		O-M29-FB-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.						
8/20/97		O-M29-FB-HCl	8N HCl Rinse						
8/21/97		O-M29-RB-FHACE	FH Acetone Rinse - Beaker No. M-18						
8/21/97		O-M29-RB-FHAR	FH 0.1 N HNO3 Rinse						
8/21/97		O-M29-RB-Filter	Filter No. 97-001 - Beaker No. M-16						
8/21/97		O-M29-RB-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution						
8/21/97		O-M29-RB-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.						
8/21/97		O-M29-RB-HCl	8N HCl Solution						
8/19/97		I-M29-1-FHACE	FH Acetone Rinse - Beaker No. M-11						
8/19/97		I-M29-1-FHAR	FH 0.1 N HNO3 Rinse						
8/19/97		I-M29-1-Filter	Filter M97-0010 - Beaker No. M-10						
8/19/97		I-M29-1-HNO3	5% HNO3 / 10% H2O2 Absorbing Solution						
8/19/97		I-M29-1-BHAR	BH 0.1 N HNO3 Rinse						
8/19/97		I-M29-1-KMnO4	10% H2SO4 / 4% KMnO4 Absorbing Sol.						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	9/29/97 1430				Robin McGrath

45

COPY KML 9/25/97

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43377
Client: PES03 - Pacific Environmental Services

Book 184

Date Received 09/24/97 By Kristi M. Lynch

Carrier and Number HAND DELIVERED

Page 50

Ice Chest NO COOLANT Temp 20.0 C

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
184-50-1A O-M29-1-FHACE FH ACETONE RINSE O-M29-1-FHACE METALS LAB									
184-50-1B O-M29-1-FHAR FH .1N HNO3 O-M29-1-FHAR METALS LAB									
184-50-1C O-M29-1-FILTER FILTER O-M29-1-FILTER METALS LAB									
184-50-1D O-M29-1-HNO3 HNO3/H2O2 O-M29-1-HNO3 METALS LAB									
184-50-1E O-M29-1-BHAR BH HNO3 O-M29-1-BHAR METALS LAB									
184-50-1F O-M29-1-KMNO4 H2SO4/KMNO4 O-M29-1-KMNO4 METALS LAB									
184-50-1G O-M29-1-HCL 8N HCL O-M29-1-HCL METALS LAB									
184-50-2A O-M29-2-FHACE FH ACETONE RINSE O-M29-2-FHACE METALS LAB									
184-50-2B O-M29-2-FHAR FH .1N HNO3 O-M29-2-FHAR METALS LAB									
184-50-2C O-M29-2-FILTER FILTER O-M29-2-FILTER METALS LAB									
184-50-2D O-M29-2-HNO3 HNO3/H2O2 O-M29-2-HNO3 METALS LAB									
184-50-2E O-M29-2-HN03 HNO3/H2O2 O-M29-2-HN03 METALS LAB									
184-50-2F O-M29-2-BHAR BH HNO3 O-M29-2-BHAR METALS LAB									
184-50-2G O-M29-2-KMNO4 H2SO4/KMNO4 O-M29-2-KMNO4 METALS LAB									

Receiving Remarks: NO COOLANT WAS WITH SAMPLES. COC LISTED SAMPLE O-M29-FB-HCL BUT SAMPLE WAS NOT RECEIVED.

Archive Remarks:

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43377
Client: PES03 - Pacific Environmental Services

Book 184

Date Received 09/24/97 By Kelly M. Brooks

Ice Chest NO COOLANT Temp 20.0 C

Carrier and Number HAND DELIVERED

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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
184-50-2H	O-M29-2-HCL O-M29-2-HCL	8N HCL METALS LAB									
184-50-3A	O-M29-3-FHACE O-M29-3-FHACE	FH ACETONE RINSE METALS LAB									
184-50-3B	O-M29-3-FHAR O-M29-3-FHAR	FH .1N HNO3 METALS LAB									
184-50-3C	O-M29-3-FILTER O-M29-3-FILTER	FILTER METALS LAB									
184-50-3D	O-M29-3-HNO3 O-M29-3-HNO3	HNO3/H2O2 METALS LAB									
184-50-3E	O-M29-3-HNO3 O-M29-3-HNO3	HNO3/H2O2 METALS LAB									
184-50-3F	O-M29-3-BHAR O-M29-3-BHAR	BH HNO3 METALS LAB									
184-50-3G	O-M29-3-KMNO4 O-M29-3-KMNO4	H2SO4/KMNO4 METALS LAB									
184-50-3H	O-M29-3-HCL O-M29-3-HCL	8N HCL METALS LAB									
184-50-4A	O-M29-4-FHACE O-M29-4-FHACE	FH ACETONE RINSE METALS LAB									
184-50-4B	O-M29-4-FHAR O-M29-4-FHAR	FH .1N HNO3 METALS LAB									
184-50-4C	O-M29-4-FILTER O-M29-4-FILTER	FILTER METALS LAB									
184-50-4D	O-M29-4-HNO3 O-M29-4-HNO3	HNO3/H2O2 METALS LAB									
184-50-4E	O-M29-4-HNO3 O-M29-4-HNO4 *	HNO3/H2O2 METALS LAB									

Receiving Remarks: NO COOLANT WAS WITH SAMPLES. COC LISTED SAMPLE O-M29-FB-HCL BUT SAMPLE WAS NOT RECEIVED.

Archive Remarks:

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43377
Client: PES03 - Pacific Environmental Services

Book 184

Date Received 09/24/97 By [signature]

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Carrier and Number HAND DELIVERED

Ice Chest NO COOLANT Temp 20.0 C

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
184-50-4F	O-M29-4-BHAR O-M29-4-BHAR	BH HNO3 METALS LAB									
184-50-4G	O-M29-4-KMNO4 O-M29-4-KMNO4	H2SO4/KMNO4 METALS LAB									
184-50-4H	O-M29-4-HCL O-M29-4-HCL	8N HCL METALS LAB									
184-50-5A	O-M29-FB-FHACE O-M29-FB-FHACE	FH ACETONE RINSE METALS LAB									
184-50-5B	O-M29-FB-FHAR O-M29-FB-FHAR	FH .1N HNO3 METALS LAB									
184-50-5C	O-M29-FB-FILTER O-M29-FB-FILTER	FILTER METALS LAB									
184-50-5D	O-M29-FB-HNO3 O-M29-FB-HNO3	HNO3/H2O2 METALS LAB									
184-50-5E	O-M29-FB-BHAR O-M29-FB-BHAR	BH HNO3 METALS LAB									
184-50-5F	O-M29-FB-KMNO4 O-M29-FB-KMNO4	H2SO4/KMNO4 METALS LAB									
184-50-6A	O-M29-RB-FHACE O-M29-RB-FHACE	FH ACETONE RINSE METALS LAB									
184-50-6B	O-M29-RB-FHAR O-M29-RB-FHAR	FH .1 HNO3 METALS LAB									
184-50-6C	O-M29-RB-FILTER O-M29-RB-FILTER	FILTER METALS LAB									
184-50-6D	O-M29-RB-HNO3 O-M29-RB-HNO3	HNO3/H2O2 METALS LAB									
184-50-6E	O-M29-RB-KMNO4 O-M29-RB-KMNO4	H2SO4/KMNO4 METALS LAB									

Receiving Remarks: NO COOLANT WAS WITH SAMPLES. COC LISTED SAMPLE O-M29-FB-HCL BUT SAMPLE WAS NOT RECEIVED.

Archive Remarks:

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

Custody Seal : Absent
Chain of Custody : Present
Sample Tags : Absent
Sample Tag Numbers: Not Listed on Chain of Custody
SMO Forms : N/A

Sample Seals: Absent
Container...: Intact

TLI Project Number 43377
Client: PES03 - Pacific Environmental Services

Book 184

Date Received 09/24/97 By

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Ice Chest NO COOLANT Temp 20.0 C

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
184-50-6F	O-M29-RB-HCL	8N HCL									
	O-M29-RB-HCL	METALS LAB									
184-50-7A	I-M29-1-FHACE	FH ACETONE RINSE									
	I-M29-1-FHACE	METALS LAB									
184-50-7B	I-M29-1-FHAR	FH .1N HNO3									
	I-M29-1-FHAR	METALS LAB									
184-50-7C	I-M29-1-FILTER	FILTER									
	I-M29-1-FILTER	METALS LAB									
184-50-7D	I-M29-1-HNO3	HNO3/H2O2									
	I-M29-1-HNO3	METALS LAB									
184-50-7E	I-M29-1-BHAR	BH HNO3									
	I-M29-1-BHAR	METALS LAB									
184-50-7F	I-M29-1-KMNO4	H2SO4/KMNO4									
	I-M29-1-KMNO4	METALS LAB									

Receiving Remarks: NO COOLANT WAS WITH SAMPLES. COC LISTED SAMPLE O-M29-FB-HCL BUT SAMPLE WAS NOT RECEIVED.

Archive Remarks:

Project # 43377

Client: Pacific Environmental Services

Date/Int.: 10/8/97 DSE

Client Run# 0-M29-1

Triangle Laboratories of RTP
(919) 544-5729

Analytes

ICP	GFAA	FLAA	CVAA
Ag Ni As P Ba Pb Be Sb Cd Se Co Tl Cr Zn Mn Cu			Hg

CONT # 1

Filter
Type: G or Q

label 184-50-1C

CONT # 2

Acetone Rinse

label 184-50-1A

Volume DRY

Desiccate to dryness and redissolve in 10ml con HNO3 Int DSE Date 10/14/97

Microwave dig with conc. HF conc. HNO3 Int DSE Date 10/14/97

CONT # 3

HNO3 Rinse

label 184-50-1B

Volume 120 mls

Reduce volume to 20 ml on hotplate Int SF Date 10-10-97

Microwave dig with conc. HF and conc. HNO3 Int DSE Date 10/14/97

label 184-50-1C,A,B

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls Int DSE Date 10/14/97

label 184-50-1C,A,B

Volume 100 ML

For Metal

label 184-50-1C,A,B Int DSE

Volume 100 Date 10/14/97

post digest spike on FH for GFAA))

& BH Post dig. spk.

_____ppb (Instrument spiked)

For Hg

label 184-50-1ABC Int SRB

Volume 100 ml Date 10/20/97

Aliquot A: 5 mL

(No spike required)

Aliquot B: 5 mL

CONT # 4

Back Half Impinger

label 184-50-1D

Volume 954 mls

For Metals

label 184-50-1D

Volume 854

Reduce Volume to 20 ml. on Hotplate Int. SF Date 10-10-97

Hotplate dig with HNO3 and H202 Int. DSE Date 10/14/97

Add 500 uL Sc Int. _____ Date _____

Dilute to 100 mls Int. DSE Date 10/14/97

label 184-50-1D Int DSE

Volume 100 Date 10/14/97

(One post digestion spk on BH for GFAA)

For Hg

label 184-50-1D

Volume 100

Hg Impingers

CONT # 5A HNO3

label 184-50-1E

Volume 37 ml

Aliquot A 5

Aliquot B 5 Int SRB

Date 10/20/97

CONT # 5B KMNO4

label 184-50-1F

Volume 345 ml

Aliquot A 5

Aliquot B 5 Int SRB

Date 10/20/97

CONT # 5C HCl

label 184-50-1G

Volume 50 ml

Aliquot A 5

Aliquot B 5 Int SRB

Date 10/20/97

(Duplicate Analysis of Eac

Sample

label 184-50-1D Int SRB

Volume 100 Date 10/20/97

Aliquot A: 5

Aliquot B: 5

Spike
(1 BH Hg Spike required)

label 184-50-1D Int SRB

Volume 100 Date 10/20/97

Aliquot A: 5

Aliquot B: 5

spk 5 ml of 100 ppb Int SRB

final spk conc. added 5 ppb Date 10/20/97

FH & BH Serial dilution performed

____ ml to ____ ml FV + ____ uL Sc

Initials: _____

Project # 43377

Client:

Date/Int.:

Client Run# 0-M29-2

Triangle Laboratories of RTP
(919) 544-5729

Analytes: ICP | GFAA | FLAA | CVAA

CONT # 1
Filter
Type: G or Q
label 184-50-2C
Desslcate to dryness and redissolve in 10ml con HNO3 Int OSE Date 10/14/97
Microwave dlg Int OSE
with conc. HF
and conc. HNO3 Date 10/14/97

CONT # 2
Acetone Rinse
label 184-50-2A
Volume DRY
Reduce volume to 20 ml on hotplate Int SF Date 10-10-97
Microwave dlg Int OSE
with conc. HF
and conc. HNO3 Date 10/14/97
label 184-50-2C,A,B

CONT # 3
HNO3 Rinse
label 184-50-2B
Volume 91ml's

CONT # 4
Back Half Impinger
label 184-50-2D/E
Volume 1645 =TV
For Metals: label 184-50-2D/E Volume 1545
For Hg: label 184-50-2DE Volume 100

2D = 940 mls
2G = 705 mls

Hg Impingers

CONT # 5A HNO3
label 184-50-2F
Volume 35 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5B KMNO4
label 184-50-2G
Volume 405 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5C HCl
label 184-50-2
Volume 95 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/

(Duplicate Analysis of Ea

Combine digestates

Front Half Digestate
Add 500 uL Sc
Dilute to 100 mls Int OSE Date 10/14/97
label 184-50-2C,A,B
Volume 100 ML

For Metal
label 184-50-2C,A,B Int OSE
Volume 100 Date 10/14/97
post digest spike on FH for GFAA))

For Hg
label 184-50-2ABC Int SRB
Volume 100ml Date 10/20/97
Aliquot A: 5 ml
(No spike required)

FH & BH Post dlg. spk.

Reduce Volume to 20 ml. on Hotplate Int. SF Date 10-10-97
Hotplate dlg with HNO3 and H202 Int. OSE Date 10/14/97
Add 500 uL Sc Int. Date
Dilute to 100 mls Int. OSE Date 10/14/97
label 184-50-2DE Int OSE
Volume 100 Date 10/14/97
(One post digestion spk on BH for GFAA)

Sample
Spike
(1 BH Hg Spike required)

label 184-50-2DE Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5

label Int
Volume Date
Aliquot A:
Aliquot B:

spk ml of ppb Int
final spk conc. added ppb Date

FH & BH Serial dilution performed
ml to ml FV + uL Sc
Initials:

Project # 43377

Client: _____

Date/Int.: _____

Client Run# 0-M29-3

Triangle Laboratories of RTP

(919) 544-5729

Analytes: ICP - GFAA - FLAA - CVAA

CONT # 1 — Filter
type: G or Q
label 184-50-3C
Microwave dig Int DSE
with conc. HF Date 10/14/97
conc. HNO3

CONT # 2 — Acetone Rinse
label 184-50-3A
Volume DRY
~~Dessicate to dryness and~~ redissolve in 10ml con HNO3 Int DSE Date 10/14/97

CONT # 3 — HNO3 Rinse
label 184-50-3B
Volume 710 mls
Reduce volume to 20 ml on hotplate Int SF Date 10-10-97
Microwave dig with conc. HF and conc. HNO3 Int DSE Date 10/14/97
label 184-50-3C,A,B

CONT # 4 — Back Half Impinger
label 184-50-3D/E
Volume 930 + 11 = 941
For Metals: label 184-50-3D; Volume 1030
For Hg: label 184-50-3E; Volume 100

Combine digestates

Front Half Digestate
Add ~~500~~ uL Sc
Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-3C,A,B
Volume 100 ML

For Metal
label 184-50-3C,A,B Int DSE
Volume 100 Date 10/14/97
post digest spike on FH for GFAA))

For Hg
label 184-50-3ABC Int SRB
Volume 100 ml Date 10/20/97

FH & BH Post dlg. spk.
_____ppb (Instrument spiked)

Aliquot A: 5 ml
(No spike required)
Aliquot B: 5 ml

Reduce Volume to 20 mL on Hotplate Int SF Date 10-10-97
Hotplate dlg with HNO3 and H202 Int DSE Date 10/14/97
Add 500 uL Sc Int _____ Date _____
Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-3D,E
Volume 102 Date 10/14/97
(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # 5A — HNO3
label 184-50-3F
Volume 57 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5B — KMNO4
label 184-50-3G
Volume 330 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5C — HCl
label 184-50-3H
Volume 95 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

(Duplicate Analysis of Eac

Sample
label 184-50-3DE Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5

Spike
(1 BH Hg Spike required)
label 184-50-3DE Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5
spk 5 ml of 100 ppb Int SRB
final spk conc. added 5 ppb Date 10/20/97

FH & BH Serial dilution performed
____ ml to ____ ml FV + ____ uL Sc
Initials: _____

Project # 43377

Client:

Date/Int.:

Client Run# 0-M29-4

Triangle Laboratories of RTP
(919) 544-5729

Analytes: ICP · GFAA · FLAA · CVAA

CONT # 1
Filter
Type: G or Q
label 184-50-4C

CONT # 2
Acetone Rinse
label 184-50-4A
Volume DRY
~~Dessicate to dryness and~~ redissolve in 10ml con HNO3 Int DSE Date 10/14/97
Microwave dig with conc. HF and conc. HNO3 Int DSE Date 10/14/97
label 184-50-4C,A,B

CONT # 3
HNO3 Rinse
label 184-50-4B
Volume 63 mls
Reduce volume to 20 ml on hotplate Int SF Date 10-10-97
Hotplate dig with HNO3 and H202 Int DSE Date 10/14/97
Add 500 uL Sc Int ____ Date ____
Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-4D,E
Volume 100 Date 10/14/97
(One post digestion spk on BH for GFAA)

CONT # 4
Back Half Impinger
4D = 990 mls
4E = 115 mls
label 184-50-4D,E
Volume 1105 = TV
For Metals: label 184-50-4D,E; Volume 1005
For Hg: label 184-50-4E; Volume 100

CONT # 5A
HNO3
label 184-50-4E
Volume 56 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5B
KMNO4
label 184-50-4C
Volume 350 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20/97

CONT # 5C
HCl
label 184-50-4I
Volume 61 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/20

Hg Impingers

(Duplicate Analysis of Ea

Combine digestates

Front Half Digestate
Add 500 uL Sc
Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-4C,A,B
Volume 100 ML

For Metal
label 184-50-4C,A,B Int DSE
Volume 100 Date 10/14/97
(One post digest spike on FH for GFAA))

For Hg
label 184-50-4A,B,C Int SRB
Volume 100 ml Date 10/20/97
Aliquot A: 5 ml
(No spike required)

FH & BH Post dig. spk.
ppb (instrument spiked)

Reduce Volume to 20 ml. on Hotplate Int. SF Date 10-10-97

Sample
label 184-50-4DE Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5

Spike
(1 BH Hg Spike required)
label 184-50-4DE Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5
spk 5 ml of 102 ppb Int SRB
final spk conc. added 5 ppb Date 10/20

FH & BH Serial dilution performed
____ ml to ____ ml FV + ____ uL Sc
Initials: ____

Project # 43377

Client:

Date/Int.:

Client Run# 0-M-29 F. Blank

Triangle Laboratories of RTP
(919) 544-5729

Analytes

ICP	GFAA	FLAA	CVAA

CONT # 1

Filter
Type: G or Q

label 184-50-5C

Dessicate to dryness and redissolve in 10ml con HNO3 — Int OSE — Date 10/14/97

Microwave dig conc. HF conc. HNO3 — Int OSE — Date 10/14/97

CONT # 2

Acetone Rinse

label 184-50-5A

Volume DRY

Reduce volume to 20 ml on hotplate — Int SE — Date 10-14-97

Microwave dig with conc. HF and conc. HNO3 — Int OSE — Date 10/14/97

label 184-50-5C,A,B

CONT # 3

HNO3 Rinse

Used: 57mls of 5B

label 184-50-5B

Volume 107mls=TV

CONT # 4

Back Half Impinger

Used: 5B=50mls, 5D=100mls

label 184-50-5D

Volume 255mls=TV

For Metals: label 184-50-5B,D — Volume 150 mls

For Hg: label ____ — Volume ____

Combine digestates

Front Half Digestate

Add ~~500 uL Sc~~

Dilute to 100 mls — Int OSE — Date 10/14/97

label 184-50-5C,A,B

Volume 100 ML

For Metal

label 184-50-5C,A,B — Int OSE

Volume 100 — Date 10/14/97

(One digest spike on FH for GFAA))

FH & BH Post dig. spk.

____ppb (Instrument spiked)

Allquot A: 5 mL

(No spike required)

Allquot B: 5 mL

For Hg

label 184-50-5ABC — Int SCB

Volume 100 ml — Date 10/20/97

Reduce Volume to 20 mL on Hotplate — Int. SE — Date 10-14-97

Hotplate dig with HNO3 and H202 — Int. OSE — Date 10/14/97

Add 500 uL Sc — Int. ____ — Date ____

Dilute to 100 mls — Int. OSE — Date 10/14/97

label 184-50-5B,D — Int OSE

Volume 100 — Date 10/14/97

(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # 5A — HNO3

label 184-50-5E

Volume 56 ml

Allquot A 5

Allquot B 5

Int SRB

Date 10/20/97

CONT # 5B — KMNO4

label 184-50-5F

Volume 155ml

Allquot A 5

Allquot B 5

Int SRB

Date 10/20/97

CONT # 5C — HCl

label ____

Volume ____ ml

Allquot A ____

Allquot B ____

Int ____

Date ____

(Duplicate Analysis of Eac

Sample

Spike (1 BH Hg Spike required)

label 184-50-5BD — Int SRB

Volume 100 — Date 10/20/97

Allquot A: 5

Allquot B: 5

label ____ Int ____

Volume ____ Date ____

Allquot A: ____

Allquot B: ____

spk ____ ml of ____ ppb — Int ____

final spk conc. added ____ ppb — Date ____

FH & BH Serial dilution performed

____ ml to ____ ml FV + ____ uL Sc

Initials: ____

Date: ____

Project # 43377

Client:

Date/Int.:

Client Run# 0-M29-R. Blank

Triangle Laboratories of RTP
(919) 544-5729

Analytes: ICP | GFAA | FLAA | CVAA

CONT # 1
Filter Type: G or Q
label 184-50-6C

CONT # 2
Acetone Rinse
label 184-50-6A
Volume DRY
Dessicate to dryness and redissolve in 10ml con HNO3 Int DSE Date 10/14/97
Microwave dig with conc. HF and conc. HNO3 Int DSE Date 10/14/97
label 184-50-6C, A, B
Microwave dig with conc. HF conc. HNO3 Int DSE Date 10/14/97
Combine digestates
Front Half Digestate
Add 500 uL SC
Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-6C, A, B
Volume 100 ML
For Metal
label 184-50-6C, A, B Int DSE
Volume 100 Date 10/14/97
(post digest spike on FH for GFAA))
For Hg
label 184-50-6ABC Int SRB
Volume 100 ml Date 10/20/97
Allquot A: 5 mL
(No spike required)
Allquot B: 5 ml
FH & BH Post dig. spk.
ppb (Instrument spiked)

CONT # 3
HNO3 Rinse
used 6B = 175mls
label 184-50-6B
Volume 375mls
Reduce volume to 20 ml on hotplate Int DSE Date 10/14/97
Reduce Volume to 20 mL on Hotplate Int. SE Date 10-10-97
Hotplate dig with HNO3 and H202 Int. DSE Date 10/14/97
Add 500 uL Sc Int. Date
Dilute to 100 mls Int. DSE Date 10/14/97
(One post digestion spk on BH for GFAA)

CONT # 4
Back Half Impinger
used 6B = 100mls 6D = 200 mls
label 184-50-6D
Volume 320mls
For Metals
label 184-50-6B,D
Volume 300mls
For Hg
label
Volume
184-50-6B,D label Int DSE Volume 100 Date 10/14/97

Hg Impingers

CONT # 5A HNO3
label 184-50-6B
Volume 100 ml
Allquot A 5
Allquot B 5
Int SRB
Date 10/21/97

CONT # 5B KMNO4
label 184-50-6E
Volume 240 ml
Allquot A 5
Allquot B 5
Int SRB
Date 10/21/97

CONT # 5C HCl
label 184-50-6F
Volume 94 ml
Allquot A 5
Allquot B 5
Int SRB
Date 10/21/

(Duplicate Analysis of Ea

Sample
label 184-50-6BD Int SRB
Volume 100 Date 10/21/97
Allquot A: 5
Allquot B: 5

Spike (1 BH Hg Spike required)
label 184-50-6BD Int SRB
Volume 100 Date 10/21/97
Allquot A: 5
Allquot B: 5
spk 5 ml of 100 ppb Int SRB
final spk conc. added 5 ppb Date 10/21/9

FH & BH Serial dilution performed
___ ml to ___ ml FV + ___ uL Sc
Initials: ___

Project # 43377

Client:

Date/Int.:

Client Run # T-M29-1

Triangle Laboratories of RTP
(919) 544-5729

Analytes

ICP - GFAA	FLAA	CVAA

CONT # 1
Filter
Type: G or Q
label 184-50-7C

CONT # 2
Acetone Rinse
label 184-50-7A
Volume DRY

CONT # 3
HNO3 Rinse
label 184-50-7B
Volume 98 ml/s

CONT # 4
Back Half Impinger
label 184-50-7D
Volume 435

Hg Impingers

CONT # 5A
HNO3
label 184-50-7E
Volume 85 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/21/97

CONT # 5B
KMNO4
label 184-50-7F
Volume 275 ml
Aliquot A 5
Aliquot B 5
Int SRB
Date 10/21/97

CONT # 5C
HCl
label ____
Volume ____ ml
Aliquot A ____
Aliquot B ____
Int ____
Date ____

Desiccate to dryness and redissolve in 10ml con HNO3 Int DSE Date 10/14/97

Reduce volume to 20 ml on hotplate Int SE Date 10-10-97

Microwave dig with conc. HF and conc. HNO3 Int DSE Date 10/14/97
label 184-50-7C,A,B

Microwave dig w/ conc. HF conc. HNO3 Int DSE Date 10/14/97

Combine digestates

Front Half Digestate

Add 500 uL Sc Int DSE

Dilute to 100 mls Int DSE Date 10/14/97
label 184-50-7C,A,B
Volume 100 ML

For Metal
label 184-50-7C,A,B Int DSE
Volume 100 Date 10/14/97
post digest spike on FH for GFAA))

For Hg
label 184-50-7ABC Int SRB
Volume 100 ml Date 10/21/97

& BH Post dig. spk.
____ ppb (instrument spiked)

Aliquot A: 5 mL
(No spike required)
Aliquot B: 5 mL

For Metals
label 184-50-7D
Volume 335

For Hg
label 184-50-7D
Volume 100

Reduce Volume to 20 ml. on Hotplate Int. SE Date 10-10-97

Hotplate dig with HNO3 and H202 Int. DSE Date 10/14/97

Add 500 uL Sc Int. ____ Date ____

Dilute to 100 mls Int. DSE Date 10/14/97

label 184-50-7D Int DSE
Volume 100 Date 10/14/97

(One post digestion spk on BH for GFAA)

(Duplicate Analysis of Eac

Sample

label 184-50-7D Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5

Spike
(1 BH Hg Spike required)

label 184-50-7D Int SRB
Volume 100 Date 10/20/97
Aliquot A: 5
Aliquot B: 5

spk 5 ml of 100 ppb Int SRB
final spk conc. added 5 ppb Date 10/21/97

FH & BH Serial dilution performed
____ ml to ____ ml FV + ____ uL Sc
Initials: ____
Date: ____

INORGANICS SPIKE LOG

DATE	PROJECT # / SAMPLE IDs	ANALYTE	ORIGINAL STANDARD #	ORIGINAL STANDARD CONC. (PPM)	SPIKE SAMPLE (µL) / FINAL VOLUME (mL)	SPIKE SAMPLE (PPB)	INITIALS	WITNESS
10/13/97	43339-C LCS	*	3-013-4	*	1000/100	*	DSE	SF
	184-12-2BMS						↓	↓
	184-12-2B MSD						↓	↓
10/14/97	43478-LCS	*	3-013-4	*	250/50	*	SRB	SF
	185-52-2MS						↓	↓
	185-52-2MSD						↓	↓
10/14/97	43482B-LCS	*	3-013-4	*	1000/100	*	SRB	J.C.S.
	185-56-1CMS						↓	↓
	185-56-1CMSD						↓	↓
10/14/97	43482E-LCS	*	3-013-4	*	1000/100	*	SRB	SF
	185-56-2-4MS						↓	↓
	185-56-2-4MSD						↓	↓
10/14/97	43536-LCS	*	3-013-4	*	250/50	*	SRB	DSE
	186-11-2MS						↓	↓
	186-11-2MSD						↓	↓
10/14/97	43377-LCS	*	3-013-4	*	1000/100	*	DSE	SRB
		P	2-120-2	1000	100/100	1000	↓	↓

TLI # 43377

*** SEE SPIKE LOG**

	Spiking Standard Preparation					SPIKING from Spiking Standard		
EXP date	Element	Standard ID	Orig. Std. (ppm)	Spike(uL) Fvol(100mL)	conc (ppm)	Spike(uL) FVol(100ml)	conc (ppb)	combined total
2/1/98	Ag	2-115-4	100	5000	5	1000	50	
9/1/98	As	3-010-10	100	5000	5	1000	50	
2/1/98	Al	2-115-4	100	5000	5	1000	50	
9/1/98	Al	3-010-7	10000	950	95	1000	950	1000
2/1/98	B	2-115-4	100	5000	5	1000	50	
2/1/98	Ba	2-115-4	100	5000	5	1000	50	
9/1/98	Be	3-010-10	100	5000	5	1000	50	
9/1/98	Ca	3-010-10	100	5000	5	1000	50	
9/1/98	Ca	3-012-7	10000	950	95	1000	950	1000
9/1/98	Cd	3-010-10	100	5000	5	1000	50	
9/1/98	Co	3-010-10	100	5000	5	1000	50	
9/1/98	Cr	3-010-10	100	5000	5	1000	50	
9/1/98	Cu	3-010-10	100	5000	5	1000	50	
9/1/98	Fe	3-010-10	100	5000	5	1000	50	
9/1/98	Fe	3-012-6	10000	950	95	1000	950	1000
2/1/98	K	2-115-4	1000	5000	50	1000	500	
9/1/98	K	3-012-5	10000	1500	150	1000	1500	2000
9/1/98	Mg	3-010-10	100	5000	5	1000	50	
8/1/98	Mg	3-010-8	10000	950	95	1000	950	1000
9/1/98	Mn	3-010-10	100	5000	5	1000	50	
9/1/98	Mo	3-010-10	100	5000	5	1000	50	
2/1/98	Na	2-115-4	100	5000	5	1000	50	
8/1/98	Na	3-010-9	10000	1950	195	1000	1950	2000
9/1/98	Ni	3-010-10	100	5000	5	1000	50	
9/1/98	Pb	3-010-10	100	5000	5	1000	50	
9/1/98	Sb	3-010-10	100	5000	5	1000	50	
9/1/98	Se	3-010-10	100	5000	5	1000	50	
9/1/98	Ti	3-010-10	100	5000	5	1000	50	
9/1/98	Tl	3-010-10	100	5000	5	1000	50	
9/1/98	V	3-010-10	100	5000	5	1000	50	
9/1/98	Zn	3-010-10	100	5000	5	1000	50	
8/1/98	Zn	3-010-6	1000	1500	15	1000	150	200

1000uL of the Spiking Standard gives the listed conc. of the above elements.

****Spike seperately**

Element	Orig Std (ppm)	Spike(uL) Fvol(100m	conc (ppb)
Au	1000	140	1400
Ce	1000	30	300
Li	1000	70	700
P	1000	100	1000
Pd	1000	160	1600
Pt	1000	300	3000
S	1000	350	3500
Si	10000	350	35000
Sn	1000	20	200
Sr	1000	5	50

Spiking Standard 3-013-4
EXP: 11/26/97

Spiked by:
Predigestion- D. Sheeler-Edwards 10/14/97
Postdigestion-

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 43377

Transfer From: IWLM To: IA I

	Initials..	Date.....	Time...
Released by:	[illegible]	10/14/97	19:15
Accepted by:	MKH	10/14/97	21:45

MILES.ID.....		TLI_No.....	Cust.Id.....
43377-	-000	TLI Blank	TLI Method Blank
43377-	-001	184-50-1A	O-M29-1-FHACE
43377-	-002	184-50-1B	O-M29-1-FHAR
43377-	-003	184-50-1C	O-M29-1-FILTER
43377-	-004	184-50-1D	O-M29-1-HNO3
43377-	-005	184-50-1E	O-M29-1-BHAR
43377-	-006	184-50-1F	O-M29-1-KMNO4
43377-	-007	184-50-1G	O-M29-1-HCL
43377-	-008	184-50-2A	O-M29-2-FHACE
43377-	-009	184-50-2B	O-M29-2-FHAR
43377-	-010	184-50-2C	O-M29-2-FILTER
43377-	-011	184-50-2D	O-M29-2-HNO3
43377-	-012	184-50-2E	O-M29-2-HN03
43377-	-013	184-50-2F	O-M29-2-BHAR
43377-	-014	184-50-2G	0-M29-2-KMNO4
43377-	-015	184-50-2H	0-M29-2-HCL
43377-	-016	184-50-3A	O-M29-3-FHACE
43377-	-017	184-50-3B	O-M29-3-FHAR
43377-	-018	184-50-3C	O-M29-3-FILTER
43377-	-019	184-50-3D	O-M29-3-HNO3
43377-	-020	184-50-3E	O-M29-3-HNO3
43377-	-021	184-50-3F	O-M29-3-BHAR
43377-	-022	184-50-3G	O-M29-3-KMN04
43377-	-023	184-50-3H	O-M29-3-HCL
43377-	-024	184-50-4A	O-M29-4-FHACE
43377-	-025	184-50-4B	O-M29-4-FHAR
43377-	-026	184-50-4C	O-M29-4-FILTER
43377-	-027	184-50-4D	O-M29-4-HNO3
43377-	-028	184-50-4E	O-M29-4-HNO3
43377-	-029	184-50-4F	O-M29-4-BHAR

XfrCOC (Rev 11/01/94)

Additional comments or instructions:

TRIANGLE LABORATORIES, INC.
Transfer Chain-of-Custody Form
Project 43377

Transfer From: IWLM To: IA I

	Initials..	Date.....	Time...
Released by:	[illegible]	10/14/97	19:15
Accepted by:	MLM	10/14/97	21:45

MILES.ID.....		TLI_No.....	Cust.Id.....
43377-	-030	184-50-4G	O-M29-4-KMNO4
43377-	-031	184-50-4H	O-M29-4-HCL
43377-	-032	184-50-5A	O-M29-FB-FHACE
43377-	-033	184-50-5B	O-M29-FB-FHAR
43377-	-034	184-50-5C	O-M29-FB-FILTER
43377-	-035	184-50-5D	O-M29-FB-HNO3
43377-	-036	184-50-5E	O-M29-FB-BHAR
43377-	-037	184-50-5F	O-M29-FB-KMNO4
43377-	-039	184-50-6A	O-M29-RB-FHACE
43377-	-040	184-50-6B	0-M29-RB-FHAR
43377-	-041	184-50-6C	O-M29-RB-FILTER
43377-	-042	184-50-6D	O-M29-RB-HNO3
43377-	-043	184-50-6E	O-M29-RB-KMNO4
43377-	-044	184-50-6F	O-M29-RB-HCL
43377-	-045	184-50-7A	I-M29-1-FHACE
43377-	-046	184-50-7B	I-M29-1-FHAR
43377-	-047	184-50-7C	I-M29-1-FILTER
43377-	-048	184-50-7D	I-M29-1-HNO3
43377-	-049	184-50-7E	I-M29-1-BHAR
43377-	-050	184-50-7F	I-M29-1-KMNO4
43377-	-051	LCS	Lab Control Spike

XfrCOC (Rev 11/01/94)

Additional comments or instructions:

Date	Project # Sample ID	Analyte	Std ID	Std. conc ppm	Spike vol. / sample vol. mL / mL	Spike conc ppb	Initials
10/16/97	43377	"	3-013-3	"	100/10	"	MCH
	184-SD-1 BK PDS	P	2-112-4	100	100/10	"	MCH
	184-SD-1C PDS	"	"	"	"	"	"
10/19/97	43239	"	3-013-3	"	100/10	"	MCH
	183-11-5 PDS	"	"	"	"	"	"
10/19/97	42011 Cal	"	3-013-3	"	100/10	"	MCH
	170-70-3 PDS	"	"	"	"	"	"
10/14/97	43438	"	3-013-3	"	100/10	"	MCH
	185-12-1 PDS	"	"	"	"	"	"
10/20/97	43411	"	3-013-3	"	100/10	"	MCH
	184-84-1 BK PDS	P	2-112-4	100	100/10	(1000) "	
	184-84-10 PDS	"	"	"	"	"	

43377

* SEE SPIKE LOG

EXP date	Element	Spiking Standard Preparation: Standard ID	Orig. Std. (ppm)	Spike(uL) FVol(100mL)	conc (ppm)	SPIKING from Spiking Standard: Spike(uL) FVol(100ml)	conc (ppb)	combined total
2/1/98	Ag	2-115-4	100	5000	5	1000	50	
9/1/98	As	3-010-10	100	5000	5	1000	50	
2/1/98	Al	2-115-4	100	5000	5	1000	50	
9/1/98	Al	3-010-7	10000	950	95	1000	950	1000
2/1/98	B	2-115-4	100	5000	5	1000	50	
2/1/98	Ba	2-115-4	100	5000	5	1000	50	
9/1/98	Be	3-010-10	100	5000	5	1000	50	
9/1/98	Ca	3-010-10	100	5000	5	1000	50	
9/1/98	Ca	3-012-7	10000	950	95	1000	950	1000
9/1/98	Cd	3-010-10	100	5000	5	1000	50	
9/1/98	Co	3-010-10	100	5000	5	1000	50	
9/1/98	Cr	3-010-10	100	5000	5	1000	50	
9/1/98	Cu	3-010-10	100	5000	5	1000	50	
9/1/98	Fe	3-010-10	100	5000	5	1000	50	
9/1/98	Fe	3-012-6	10000	950	95	1000	950	1000
2/1/98	K	2-115-4	1000	5000	50	1000	500	
9/1/98	K	3-012-5	10000	1500	150	1000	1500	2000
9/1/98	Mg	3-010-10	100	5000	5	1000	50	
8/1/98	Mg	3-010-8	10000	950	95	1000	950	1000
9/1/98	Mn	3-010-10	100	5000	5	1000	50	
9/1/98	Mo	3-010-10	100	5000	5	1000	50	
2/1/98	Na	2-115-4	100	5000	5	1000	50	
8/1/98	Na	3-010-9	10000	1950	195	1000	1950	2000
9/1/98	Ni	3-010-10	100	5000	5	1000	50	
9/1/98	Pb	3-010-10	100	5000	5	1000	50	
9/1/98	Sb	3-010-10	100	5000	5	1000	50	
9/1/98	Se	3-010-10	100	5000	5	1000	50	
9/1/98	Ti	3-010-10	100	5000	5	1000	50	
9/1/98	Tl	3-010-10	100	5000	5	1000	50	
9/1/98	V	3-010-10	100	5000	5	1000	50	
9/1/98	Zn	3-010-10	100	5000	5	1000	50	
8/1/98	Zn	3-010-6	1000	1500	15	1000	150	200

1000uL of the Spiking Standard gives the listed conc. of the above elements.

**Spike seperately

Element	Orig Std (ppm)	Spike(uL) FVol(100m	conc (ppb)
Au	1000	140	1400
Ce	1000	30	300
Li	1000	70	700
P	1000	100	1000
Pd	1000	160	1600
Pt	1000	300	3000
S	1000	350	3500
Si	10000	350	35000
Sn	1000	20	200
Sr	1000	5	50

Spiking Standard 3-013-3
EXP: 11/26/97

Spiked by:
Predigestion-
Postdigestion- 10/16/97 DKH

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	STD1-BLANK	101997	TRIANGL2	10/20/97	00:38		V	IR
2	STD1-BLANK	101997	TRIANGL2	10/20/97	00:48		V	IR
3	STD1	101997	TRIANGL2	10/20/97	00:53		V	IR
4	STD1	101997	TRIANGL2	10/20/97	00:58	DKH	U	CONC
5	STD1-BLANK	101997	TRIANGL2	10/20/97	01:24		V	IR
6	STD1-BLANK	101997	TRIANGL2	10/20/97	01:37		V	IR
7	STD1-BLANK	101997	TRIANGL2	10/20/97	01:45		V	IR
8	STD1	101997	TRIANGL2	10/20/97	01:49		V	IR
9	STD	101997	TRIANGL2	10/20/97	01:54	DKH	U	CONC
10	STD1-BLANK	101997	TRIANGL2	10/20/97	02:09		V	IR
11	STD1-BLANK	101997	TRIANGL2	10/20/97	02:34		V	IR
12	STD1	101997	TRIANGL2	10/20/97	02:38		V	IR
13	STD	101997	TRIANGL2	10/20/97	02:43	DKH	U	CONC
14	CHECK STD	101997	TRIANGL2	10/20/97	02:48	DKH	U	CONC
15	TCV/CCV	101997	TRIANGL2	10/20/97	02:52	DKH	U	CONC
16	TCB/CCB	101997	TRIANGL2	10/20/97	02:57	DKH	U	CONC
17	TCB/CCB	101997	TRIANGL2	10/20/97	03:03	DKH	U	CONC
18	TCB/CCB	101997	TRIANGL2	10/20/97	03:09	DKH	U	CONC
19	TCSAB	101997	TRIANGL2	10/20/97	03:14	DKH	U	CONC
20	43411 MB	101997	TRIANGL2	10/20/97	03:29	DKH	S	CONC
21	43411 LCS	101997	TRIANGL2	10/20/97	03:33	DKH	S	CONC
22	184-84-1ARC	101997	TRIANGL2	10/20/97	03:38	DKH	S	CONC
23	184-84-1ARC PDS	101997	TRIANGL2	10/20/97	03:43	DKH	S	CONC
24	184-84-1ARC 1	101997	TRIANGL2	10/20/97	03:47	DKH	S	CONC
25	184-84-2ARC	101997	TRIANGL2	10/20/97	03:52	DKH	S	CONC
26	184-84-2ARC DA	101997	TRIANGL2	10/20/97	03:57	DKH	S	CONC
27	184-84-3ARC	101997	TRIANGL2	10/20/97	04:01	DKH	S	CONC
28	184-84-3ARC	101997	TRIANGL2	10/20/97	04:06	DKH	S	CONC
29	184-84-5ARC	101997	TRIANGL2	10/20/97	04:11	DKH	S	CONC
30	184-84-7ARC	101997	TRIANGL2	10/20/97	04:17	DKH	S	CONC
31	[illegible]	101997	TRIANGL2	10/20/97	04:21	DKH	U	CONC
32	[illegible]	101997	TRIANGL2	10/20/97	04:27	DKH	U	CONC
33	[illegible]	101997	TRIANGL2	10/20/97	04:33	DKH	S	CONC
34	[illegible]	101997	TRIANGL2	10/20/97	04:38	DKH	S	CONC
35	184-84-10F	101997	TRIANGL2	10/20/97	04:42	DKH	S	CONC
36	184-84-10F PDS	101997	TRIANGL2	10/20/97	04:47	DKH	S	CONC
37	184-84-10F 1	101997	TRIANGL2	10/20/97	04:52	DKH	S	CONC
38	184-84-20F	101997	TRIANGL2	10/20/97	04:56	DKH	S	CONC
39	184-84-20F DA	101997	TRIANGL2	10/20/97	05:01	DKH	S	CONC
40	184-84-50F	101997	TRIANGL2	10/20/97	05:06	DKH	S	CONC
41	184-84-10	101997	TRIANGL2	10/20/97	05:10	DKH	S	CONC
42	184-84-50D	101997	TRIANGL2	10/20/97	05:15	DKH	S	CONC
43	TCV/CCV	101997	TRIANGL2	10/20/97	05:20	DKH	U	CONC
44	TCB/CCB	101997	TRIANGL2	10/20/97	05:25	DKH	U	CONC
45	184-84-6D	101997	TRIANGL2	10/20/97	05:31	DKH	S	CONC
46	184-84-7FF	101997	TRIANGL2	10/20/97	05:36	DKH	S	CONC
47	184-50-7D	101997	TRIANGL2	10/20/97	06:05		S	CONC
48	TCV/CCV	101997	TRIANGL2	10/20/97	06:09	DKH	U	CONC
49	TCB/CCB	101997	TRIANGL2	10/20/97	06:17	DKH	U	CONC
50	TCSAB	101997	TRIANGL2	10/20/97	06:23	DKH	U	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	STD1-BLANK	101697	TRIANGL2	10/16/97	05:22		X	IR
2	STD3	101697	TRIANGL2	10/16/97	05:26		X	IR
3	STD5	101697	TRIANGL2	10/16/97	05:31	DKH	Q	CONC
4	CHECK 10	101697	TRIANGL2	10/16/97	05:35	DKH	Q	CONC
5	ICV/CCV	101697	TRIANGL2	10/16/97	05:39	DKH	Q	CONC
6	ICB/CCB	101697	TRIANGL2	10/16/97	05:38	DKH	Q	CONC
7	ICB/CCB	101697	TRIANGL2	10/16/97	06:09	DKH	Q	CONC
8	ICSAB	101697	TRIANGL2	10/16/97	06:14	DKH	Q	CONC
9	43377 MB	101697	TRIANGL2	10/16/97	06:27	DKH	S	CONC
10	43377 LCS	101697	TRIANGL2	10/16/97	06:31	DKH	S	CONC
11	184-50-1ABC	101697	TRIANGL2	10/16/97	06:35	DKH	S	CONC
12	184-50-1ABC PDS	101697	TRIANGL2	10/16/97	06:40	DKH	S	CONC
13	184-50-1ABC L	101697	TRIANGL2	10/16/97	06:44	DKH	S	CONC
14	184-50-2ABC	101697	TRIANGL2	10/16/97	06:48	DKH	S	CONC
15	184-50-2ABC DA	101697	TRIANGL2	10/16/97	06:53	DKH	S	CONC
16	184-50-3ABC	101697	TRIANGL2	10/16/97	06:57	DKH	S	CONC
17	184-50-4ABC	101697	TRIANGL2	10/16/97	07:01	DKH	S	CONC
18	184-50-5ABC	101697	TRIANGL2	10/16/97	07:06	DKH	S	CONC
19	ICV/CCV	101697	TRIANGL2	10/16/97	07:10	DKH	Q	CONC
20	ICB/CCB	101697	TRIANGL2	10/16/97	07:46	DKH	Q	CONC
21	ICB/CCB	101697	TRIANGL2	10/16/97	07:52	DKH	Q	CONC
22	184-50-6ABC	101697	TRIANGL2	10/16/97	07:57	DKH	S	CONC
23	184-50-7ABC	101697	TRIANGL2	10/16/97	08:02	DKH	S	CONC
24	184-50-10	101697	TRIANGL2	10/16/97	08:06	DKH	S	CONC
25	184-50-~~10~~ 10 PDS	101697	TRIANGL2	10/16/97	08:10	DKH	S	CONC
26	184-50-~~10~~ 10 L	101697	TRIANGL2	10/16/97	08:14	DKH	S	CONC
27	184-50-~~10 DA~~ 20	101697	TRIANGL2	10/16/97	08:56	DKH	S	CONC
28	184-50-~~10~~ 20 DA	101697	TRIANGL2	10/16/97	09:00	DKH	S	CONC
29	184-50-~~10~~ 30	101697	TRIANGL2	10/16/97	09:04	DKH	S	CONC
30	ICV/CCV	101697	TRIANGL2	10/16/97	09:09	DKH	Q	CONC
31	ICB/CCB	101697	TRIANGL2	10/16/97	09:35	DKH	Q	CONC
32	ICB/CCB	101697	TRIANGL2	10/16/97	09:41	DKH	Q	CONC
33	184-50-~~20~~ 40	101697	TRIANGL2	10/16/97	09:46	DKH	S	CONC
34	184-50-~~DA~~ 50	101697	TRIANGL2	10/16/97	09:51	DKH	S	CONC
35	184-50-~~20~~ 60	101697	TRIANGL2	10/16/97	09:55	DKH	S	CONC
36	ICV/CCV	101697	TRIANGL2	10/16/97	09:59	DKH	Q	CONC
37	ICV/CCV	101697	TRIANGL2	10/16/97	12:11	DKH	Q	CONC
38	ICB/CCB	101697	TRIANGL2	10/16/97	12:32	DKH	Q	CONC
39	ICB/CCB	101697	TRIANGL2	10/16/97	13:13	DKH	Q	CONC
40	ICSAB	101697	TRIANGL2	10/16/97	13:22	DKH	Q	CONC

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 43377 Client: Pacific Environmental Services (PES03)

Method: 7470 Sample Information IN0107 version 5 was used for digestion. SRB 10/21/97 Hg.

Solvent/Acids(): HNO_3/H_2SO_4 Extraction Date: / / Lot: 197050 | 319020

Sample #	crd	TLI SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt g	Vol ml	Final Volume ml	Extraction Date ___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
000		TLI Blank 1 / TLI Method Blank	N/A	N/A	100	SRB 10/20/97					
		TLI BlankDup 1									
001		184-50-1A O-M29-1-FHACE									
002		184-50-1B O-M29-1-FHAR									
003		184-50-1CAB O-M29-1-FILTER	5	5		SRB 10/20/97					
		184-50-1CABDup									
004		184-50-1D O-M29-1-HNO3	5	5							
		184-50-1D Dup									
005		184-50-1E O-M29-1-BHAR	5	5							
		184-50-1E Dup									
006		184-50-1F O-M29-1-KMNO4	5	5							
		184-50-1F Dup									
007		184-50-1G O-M29-1-HCL	5	5		SRB 10/20/97					
		184-50-1G Dup									
008		184-50-2A O-M29-2-FHACE									
009		184-50-2B O-M29-2-FHAR									
010		184-50-2CAB O-M29-2-FILTER	5	5		SRB 10/20/97					
		184-50-2CAB Dup									
011		184-50-2DE O-M29-2-HNO3	5	5		SRB 10/20/97					
		184-50-2DE Dup									
012		184-50-2E O-M29-2-HNO3									

Comments: See HGSL-1, Spike Log p. 68

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 43377 Client: Pacific Environmental Services (PES03)

Sample Information

Method: 7470 Extraction Date: / /

Solvent/Acids(): HNO_3 | H_2SO_4 Lot: 117056 | 317020

Hg

Sample #	crd	TLI SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	Extraction Date					
013		184-50-2F / O-M29-2-BHAR	5/5	100	SRB 10/20/97					
		184-50-2F Dup								
014		184-50-2G / O-M29-2-KMNO4	5/5	100	↓					
		184-50-2G Dup								
015		184-50-2H / O-M29-2-HCL	5/5	100	SRB 10/20/97					
		184-50-2H Dup								
016		184-50-3A / O-M29-3-FHACE								
017		184-50-3B / O-M29-3-FHAR								
018		184-50-3CAB / O-M29-3-FILTER	5/5	100	SRB 10/20/97					
		184-50-3CABDup								
019		184-50-3DE / O-M29-3-HNO3	5/5	100	SRB 10/20/97					
		184-50-3E Dup								
020		184-50-3ED MS / O-M29-3-HNO3	5/5	100	SRB 10/20/97					
021		184-50-3F / O-M29-3-BHAR	5/5	100	SRB 10/20/97					
		184-50-3F Dup EE SRB 10/20/97								
022		184-50-3G / O-M29-3-KMN04	5/5	100	↓					
		184-50-3G Dup								
023		184-50-3H / O-M29-3-HCL	5/5	100	SRB 10/20/97					
		184-50-3H Dup								
024		184-50-4A / O-M29-4-FHACE								
025		184-50-4B / O-M29-4-FHAR								

Comments: See Page 1 of 4

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 43377

Client: Pacific Environmental Services (PES03)

Method: 7470

Solvent/Acids(): HNO_3 | H_2SO_4

Sample Information

Extraction Date: __/__/__

Lot: 117050 | 317020

#09

Sample #	TLI SAMPLE ID / CLIENT SAMPLE ID		Sample Wgt / Vol. g / ml	Final Volume ml	Extraction Date __/__/__
026	184-50-4CAB 184-50-4CABDup	O-M29-4-FILTER	5/5	100	SRB 10/20/97
027	184-50-4DE 184-50-4DE Dup	O-M29-4-HNO3	5/5	100	SRB 10/20/97
028	184-50-4ED MS 184-50-4ED MSD	O-M29-4-HNO3	5/5	100	SRB 10/20/97
029	184-50-4F 184-50-4F	O-M29-4-BHAR	5/5	100	SRB 10/20/97
030	184-50-4G 184-50-4G Dup	O-M29-4-KMNO4	5/5	100	↓
031	184-50-4H 184-50-4H Dup	O-M29-4-HCL	5/5	100	SRB 10/20/97
032	184-50-5A	O-M29-FB-FHACE			
033	184-50-5BD 184-50-5BD	O-M29-FB-FHAR	5/5	100	SRB 10/20/97
034	184-50-5CAB 184-50-5CAB	O-M29-FB-FILTER	5/5	100	SRB 10/20/97
035	184-50-5D 184-50-	O-M29-FB-HNO3			
036	184-50-5E 184-50-5E	O-M29-FB-BHAR	5/5	100	SRB 10/20/97
037	184-50-5F 184-50-5F	O-M29-FB-KMNO4	5/5	100	SRB 10/20/97
039	184-50-6A	O-M29-RB-FHACE			

Comments: See page 1 of 4

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 43377 Client: Pacific Environmental Services (PES03)

Sample Information

Method: 7470 Extraction Date: __/__/__

Solvent/Acids(): HNO3/H2SO4 Lot: 117050/319020

Hg

Sample #	crd	TLI / SAMPLE ID / CLIENT SAMPLE ID		Sample Wgt / Vol g / ml	Final Volume ml	Extraction Date					
040		184-50-6BD / 184-50-6BD	O-M29-RB-FHAR	5/5	100	SRB 10/21/97					
041		184-50-6CAB / 184-50-6CAB Dup	O-M29-RB-FILTER	5/5	100	SRB 10/20/97					
042		184-50-6DB MS / 184-50-6DB MSD	O-M29-RB-HNO3	5/5	100	SRB 10/21/97					
043		184-50-6E / 184-50-6E Dup	O-M29-RB-KMNO4	5/5	100	SRB 10/21/97					
044		184-50-6FE / 184-50-6FE Dup	O-M29-RB-HCL	5/5	100	SRB 10/21/97					
045		184-50-7A	I-M29-1-FHACE								
046		184-50-7B	I-M29-1-FHAR								
047		184-50-7CAB / 184-50-7CAB	I-M29-1-FILTER	5/5	100	SRB 10/21/97					
048		184-50-7D / 184-50-7D Dup	I-M29-1-HNO3	5/5	100						
049		184-50-7E / 184-50-7E Dup	I-M29-1-BHAR	5/5	100						
050		184-50-7F / 184-50-7F Dup	I-M29-1-KMNO4	5/5	100	SRB 10/21/97					
051		LCS / LCSD	Lab Control Spike	N/A / N/A	100	SRB 10/20/97					
		184-50-1D MS / 184-50-1D MSD		5/5	100	SRB 10/20/97					

Comments: See pag. 1 of 4

REV 07/26/93 (PSTMF 7)

TRIANGLE LABORATORIES, INC.

Sample Preparation Tracking & Management Form

Project: 43377 Client: Pacific Environmental Services (PES03)

Sample Information

Method: 7470 Extraction Date: / /

Solvent/Acids(): HNO3/H2SO4 Lot: 117050/317020

Hg

Sample # crd	TLI / SAMPLE ID / CLIENT SAMPLE ID	Sample Wgt / Vol g / ml	Final Volume ml	Extraction Date ___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
000	TLI Blank 2	N/A	100	SRB 10/21/97					
	MB 2 TLI Method Blank	N/A	100						
	43377 LCS 2	N/A	100	SRB 10/21/97					
	43377 LCS 2 D	N/A	100						
	184-50-7D MS	5	100	SRB 10/21/97					
	184-50-7D MSD	5	100						

Comments: See page 1 of 4

REV 07/26/93 (PSTMF 7)

MERCURY SPIKE LOG

DATE	PROJECT # SAMPLE IDs	ORIGINAL SPIKE CONC. (Hg)	STANDARD # WORKING STANDARD PREPARED FROM	SPIKE AMOUNT (mL)	SPIKE SAMPLE (PPB)	INITIALS	WITNESS
10/8/97	43411 LCS1 LCS1D	0.1 ppm	3-022-8	5	5	RSE	SF
	184-84-1DEMS						
	184-84-1DEMSD						
	184-84-2DEMS						
	184-84-2DEMSD						
	184-84-4DMS						
	184-84-4DMSD						
10/20/97	43411 LCS2 LCS2D	0.1 ppm	3-023-1	5	5	SRB	RSE
	184-84-6D MS						
	184-84-6D MSD						
	184-84-7EF MS						
	184-84-7EF MSD						
10/20/97	43377 LCS1 LCS1D	0.1 ppm	3-023-1	5	5	SRB	RSE
	184-50-1D MS						
	184-50-1D MSD						
	184-50-3DE MS						
	184-50-3DEMSD						
	184-50-4DE MS						
	184-50-4DEMSD						
10/21/97	43411 LCS3 LCS3D	0.1 ppm	3-023-5	5	5	SRB	RSE
	184-84-5BD MS						
	184-84-5BD MSD						
10/21/97	42011Cn1 LCS LCSD	0.1 ppm	3-023-5	5	5	SRB	RSE
	170-70-3MS						
	170-70-3MSD						
10/21/97	43377 LCS2 LCS2D	0.1 ppm	3-023-5	5	5	SRB	RSE
	184-50-6BD MS						
	184-50-6BD MSD						
	184-50-7D MS						
	184-50-7D MSD						

AutoSampler Report Table: HA460 Fri 10-17-97 07:23:18 PM page

Table Name: HA460 Autosampler Type: TYPE TJA
Sample Positions: 170/192 QC Positions: 13/19 # Sets: 1
Rinse Station location is rack -1 pos. -1.

--- Racks ---

Rack #	Type	Usage	#Pos Left	Analyses/Pos
1	Auto (1) Rack	STD/QC/BLANK	13	10
2	Sample (16mm)	Samples	26	1
3	Sample (16mm)	Samples	48	1
4	Sample (16mm)	Samples	48	1
5	Sample (16mm)	Samples	48	1

--- Sample Sets ---

Set#	Type	Prepare?	Description	Method	#Pos	Rack#	StartPos
1	Normal	No	43377	TRIANGL2	22	2	1

--- Preparation Info ---

Set#	Uptake	Uptake#2	Final	Dil.Factor

No Samples Prepared.

Rack #1

Pos	Row	Col	Sample Name	Set #	#Used	Type
1	1	1	STD5	-NA-	2	Standard
2	1	2	STD1-BLANK	-NA-	1	Standard
3	1	3	ICSAB	-NA-	2	QC Standard
4	1	4	CHECK ID	-NA-	1	QC Standard
5	1	5	ICV/CCV	-NA-	4	QC Standard
6	1	6	ICB/CCB	-NA-	4	QC Standard

(7...19 Not Used)

1-G1-4P
1-G1-6P
1-G1-5P

nkt 10/16/97

Rack #2

Pos	Row	Col	Sample Name	Set #	#Used	Type
1	1	1	43377 MB	1	-NA-	Sample
2	1	2	43377 LCS	1	-NA-	Sample
3	1	3	184-50-1ABC	1	-NA-	Sample
4	1	4	184-50-1ABC PDS	1	-NA-	Sample
5	1	5	184-50-1ABC L	1	-NA-	Sample
6	1	6	184-50-2ABC	1	-NA-	Sample
7	1	7	184-50-2ABC DA	1	-NA-	Sample
8	1	8	184-50-3ABC	1	-NA-	Sample
9	1	9	184-50-4ABC	1	-NA-	Sample
10	1	10	184-50-5ABC	1	-NA-	Sample
11	1	11	184-50-6ABC	1	-NA-	Sample
12	1	12	184-50-7ABC	1	-NA-	Sample
13	2	1	184-50-1D	1	-NA-	Sample
14	2	2	184-50-1D L	1	-NA-	Sample
15	2	3	184-50-2D ea 10-3-97 EE	1	-NA-	Sample

Rack #2

Pos	Row	Col	Sample Name	Set #	#Used	Type
16	2	4	184-50-20EDA	1	-NA-	Sample
17	2	5	184-50-30E	1	-NA-	Sample
18	2	6	184-50-40E	1	-NA-	Sample
19	2	7	184-50-50 BD	1	-NA-	Sample
20	2	8	184-50-AA BD	1	-NA-	Sample
21	2	9	184-50-70	1	-NA-	Sample
22	2	10	Empty	1	-NA-	-NA-
(23...48	Not Used)					

Rack #3

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1...48	Not Used)					

Rack #4

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1...48	Not Used)					

Rack #5

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1...48	Not Used)					

Method: TRIANGL2 Sample Name: STD1-BLANK Operator:
Run Time: 10/16/97 05:22 Filename: 101697
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	count	count	count	count	count	count
Avge	0	.0031	-.00019	.00794	.00055	.00025
SDev	.0001	.00001	.00008	.00031	.00001	0
%RSD	3635.78	.52885	42.0003	4.00744	2.42782	2.21217

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	count	count	count	count	count	count
Avge	.00046	.00022	-.00015	-.00016	.00006	.00308
SDev	0	.00013	.00009	.00002	.00005	.00002
%RSD	1.57036	58.8653	64.6794	15.5198	80.7159	.7618

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	count	count	count	count	count	count
Avge	.0001	4.5752	.08311	.00008	.0001	-.00001
SDev	.00003	.01151	.00015	.00004	.00001	.00002
%RSD	36.0564	.25173	.18524	50.8319	11.5987	186.243

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	count	count	count	count	count	count
Avge	.00353	-.00146	-.00102	.00169	.00033	.00054
SDev	.00172	.00016	.0002	.00035	.00008	.00005
%RSD	48.8019	11.173	20.1455	20.7044	25.2899	9.7444

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	count	count	count	count	count	count
Avge	-.00577	.00224	-.00059	.00026	.00015	-.00057
SDev	.00101	.0003	.00012	0	.00001	.00006
%RSD	17.5492	13.7567	21.21	2.09433	9.73981	12.1448

Elems	V_2924	Zn2062	Si2881
Units	count	count	count
Avge	-.00048	-.00001	.02278
SDev	.00001	0	.00012
%RSD	2.38296	33.0362	.53122

Method: TRIANGL2 Sample Name: STD3 Operator:
Run Time: 10/16/97 05:26 Filename: 101697
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	count	count	count	count	count	count
Avge	.43916	.01877	.05497	.18437	.30583	.29617
SDev	.00071	.00009	.00004	.00027	.0002	.00032
%RSD	.16361	.52664	.08152	.15163	.06854	.10884

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	count	count	count	count	count	count
Avge	.02564	1.03084	.12172	.11502	.16301	.18883
SDev	.00002	.00167	.00009	.0001	.00013	.00055
%RSD	.10205	.16276	.07497	.09089	.08115	.293

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	count	count	count	count	count	count
Avge	.00458	19.5824	12.9	.02237	.14267	.08458
SDev	.00001	.09441	.06776	.00002	.00004	.00017
%RSD	.31172	.48216	.5253	.10176	.02922	.21088

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	count	count	count	count	count	count
Avge	.18151	.38502	.0236	.19632	.09785	.12637
SDev	.0018	.00052	.00014	.00061	.00004	.00007
%RSD	.99529	.13628	.60403	.3121	.04131	.05785

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	count	count	count	count	count	count
Avge	.28236	.16701	.12576	.90196	1.21944	.03222
SDev	.00184	.00052	.0002	.00136	.0001	.00111
%RSD	.65206	.31513	.16687	.15151	.00873	3.45781

Elems	V_2924	Zn2062	Si2881	Pb2203	Se1960
Units	count	count	count		
Avge	.04245	.11347	.49173		
SDev	.00001	.00032	.00093		
%RSD	.02552	.29071	.19002		

Method: TRIANGL2 Sample Name: STD3 Operator: DKH
Run Time: 10/16/97 05:31 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	992.5	995.9	1001.	996.5	999.6	996.5
SDev	2.427	2.887	4.038	1.381	1.158	1.055
%RSD	.2445	.2899	.4033	.1386	.1158	.1059

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	999.0	1002.	1001.	999.3	998.0	996.1
SDev	1.354	2.02	.8085	.6837	.6912	1.467
%RSD	.1355	.2017	.0808	.0684	.0693	.1472

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	992.3	9.940	996.4	995.0	997.4	1002.
SDev	4.737	.0333	4.144	4.884	.5499	2.378
%RSD	.4774	.3355	.4159	.4909	.0551	.2374

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	10.07	1001.	1003.	1001.	1003.	1001.
SDev	.0643	5.343	9.268	.7707	2.273	1.868
%RSD	.6383	.5338	.9236	.077	.2266	.1867

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1005.	1005.	1001.	994.0	997.3	1026.
SDev	4.737	6.572	2.47	1.111	.5543	1.741
%RSD	.4714	.6537	.2467	.1118	.0556	.1698

Elems	V_2924	Zn2062	Si2881	Pb2203	Se1960
Units	ppb	ppb	ppb	ppb	ppb
Avge	998.3	1002.	9987.	1002.	1005.
SDev	1.45	2.799	9.863	1.507	2.897
%RSD	.1453	.2793	.0988	.1504	.2882

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/16/97 05:39 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	497.2	491.6	496.4	488.6	500.2	493.3
SDev	.6174	1.613	.4728	.339	.6356	.4983
%RSD	.1242	.3282	.0952	.0694	.1271	.101

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	495.4	494.7	496.0	494.9	495.4	496.7
SDev	.9225	.3475	.4688	.7794	.724	1.165
%RSD	.1862	.0703	.0945	.1575	.1461	.2345

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	498.4	4.804	472.3	491.6	494.7	495.7
SDev	10.32	.0177	2.856	.5662	.3527	1.441
%RSD	2.071	.3679	.6047	.1152	.0713	.2907

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	4.770	494.1	492.4	492.5	495.1	492.8
SDev	.0447	.22	10.29	1.085	2.392	2.136
%RSD	.9369	.0445	2.09	.2203	.4831	.4335

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	487.9	488.7	494.2	488.4	500.7	494.4
SDev	2.505	3.151	1.883	1.379	1.226	.3327
%RSD	.5134	.6448	.3809	.2824	.2449	.0673

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	494.3	496.4	496.2	494.5	4978.
SDev	.3491	13.91	.2308	.9458	2.399
%RSD	.0706	2.803	.0465	.1913	.0482

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 05:48 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.0251	-.1468	-2.552	-16.08	.1743	.1860
SDev	.1606	2.597	.7463	.6816	.0548	.068
%RSD	639.1	1769	29.24	4.238	31.42	36.58

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.1737	.0078	.9314	-.0482	-1.020	-.1595
SDev	.5635	.0481	.3562	.3383	.3341	.2928
%RSD	324.4	616.9	38.24	702.2	32.74	183.6

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-16.83	.0225	.2375	-.5152	-.1621	1.030
SDev	4.537	.0229	.003	1.067	.0676	.774
%RSD	26.96	102.1	1.264	207.1	41.7	75.18

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0087	-1.752	-2.711	.0122	-.7678	-1.563
SDev	.1181	.4109	6.839	1.914	.4029	.449
%RSD	1351	23.45	252.3	15660	52.48	28.72

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.449	-2.202	-.5081	-1.951	.2185	.1648
SDev	3.985	.6536	.8916	.9322	.2898	.0437
%RSD	274.9	29.69	175.5	47.77	132.6	26.54

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	.1199	Q5.732	.0692	.1459	32.17
SDev	.0913	2.911	.2807	.0658	2.27
%RSD	76.15	50.79	405.8	45.06	7.056

Baseline. Reanalyzed DKH 11/12/97

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 06:09 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.0760	-3.872	-2.786	-20.81	.0148	-.0132
SDev	.3345	3.324	2.026	.5299	.0051	.0079
%RSD	439.9	85.84	72.74	2.546	34.37	59.77

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.6572	-.1600	1.590	.0673	-.9291	-.2390
SDev	.546	.0568	2.161	.3247	.1488	.3005
%RSD	83.08	35.52	135.9	482.5	16.01	125.7

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-6.333	.0188	.0503	-1.393	-.2993	.1903
SDev	4.799	.007	.0079	1.208	.0598	.0328
%RSD	75.78	37.43	15.8	86.69	19.99	17.21

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	-.0474	-1.111	1.067	-1.100	.0093	-.5879
SDev	.0327	.337	5.132	.2984	1.257	2.165
%RSD	68.98	30.35	481	27.13	13560	368.2

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.8490	.8577	-.3602	.2893	.6021	.0061
SDev	3.533	2.373	.7454	2.744	1.647	.017
%RSD	416.1	276.7	207	948.4	273.6	277.8

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0337	3.651	-.1191	.0471	14.98
SDev	.0638	1.679	.0716	.4796	2.328
%RSD	189.3	45.99	60.15	1019	15.54

Method: TRIANGL2 Sample Name: ICSAB Operator: DKH
Run Time: 10/16/97 06:14 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	541.0	519700.	521.1	509.7	526.4	493.7
SDev	.2529	1508	3.499	.3806	.3111	1.055
%RSD	.0467	.2902	.6714	.0747	.0591	.2137

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	458700.	477.6	507.8	480.6	485.1	550.2
SDev	269.9	.7423	.8153	1.472	1.05	.3259
%RSD	.0588	.1554	.1606	.3062	.2165	.0592

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	178200.	Q26.11	644.8	537000.	465.6	503.8
SDev	188.2	.0261	.1787	465.2	.7978	3.635
%RSD	.1056	.0999	.0277	.0866	.1714	.7216

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	5.721	462.1	543.4	511.4	476.7	513.9
SDev	.129	1.291	6.619	1.496	2.666	4.053
%RSD	2.255	.2795	1.218	.2925	.5592	.7886

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	535.8	523.0	488.3	527.3	512.3	514.9
SDev	3.956	2.464	2.012	2.045	4.743	.2951
%RSD	.7383	.4711	.4121	.3879	.9258	.0573

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	503.5	509.5	498.7	452.7	5527.
SDev	.4079	17.96	.2738	.7735	.7959
%RSD	.081	3.525	.0549	.1709	.0144

Method: TRIANGL2 Sample Name: 43377 MB Operator: DKH
Run Time: 10/16/97 06:27 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.1281	L-2.091	L.2038	L.0090	L-.4397	L-.1883
SDev	.3852	1.579	.031	.0191	.1182	.343
%RSD	300.6	75.51	15.19	210.9	26.88	182.1

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-1.083	L-.1912	L-.9993	L-.7028	L-2.822	L-1.104
SDev	.3166	.0211	.5802	2.372	1.206	.8904
%RSD	29.22	11.05	58.06	337.5	42.75	80.63

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L-1.137	5.643	7.273	L.2200
SDev	1.702	.6505	.3766	.0934
%RSD	149.7	11.53	5.179	42.45

Method: TRIANGL2 Sample Name: 43377 LCS Operator: DKH
Run Time: 10/16/97 06:31 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	45.11	45.25	49.05	47.58	48.64	49.24
SDev	.2231	1.785	.0139	.1316	.2661	.491
%RSD	.4946	3.944	.0284	.2766	.547	.9973

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	48.24	48.63	47.19	981.6	46.89	48.51
SDev	.2651	.1117	.3361	3.672	1.369	3.475
%RSD	.5495	.2297	.7123	.3741	2.92	7.163

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	47.66	54.36	199.4	49.07
SDev	.9626	4.224	.5208	.1811
%RSD	2.02	7.77	.2611	.3691

Method: TRIANGL2 Sample Name: 184-50-1ABC Operator: DKH
Run Time: 10/16/97 06:35 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.5093	26.61	2210.	L-9.136	2.179	18.25
SDev	.3573	2.85	4.926	.1027	.0807	.3458
%RSD	70.16	10.71	.2229	1.125	3.703	1.895

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	147.0	2033.	72.58	3318.	197.3	44.56
SDev	.5588	3.064	1.588	2.661	3.371	3.312
%RSD	.3801	.1507	2.188	.0802	1.708	7.432

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	43.87	L-5.140	1144.	173.2
SDev	1.692	3.599	7.068	.7243
%RSD	3.858	70.02	.6177	.4182

Method: TRIANGL2 Sample Name: 184-50-1ABC PDS Operator: DKH
Run Time: 10/16/97 06:40 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	37.13	66.21	2208.	31.50	44.31	60.73
SDev	.3988	3.431	14.45	.3373	.2775	.4396
%RSD	1.074	5.182	.6547	1.071	.6263	.7238

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	187.1	2027.	112.3	4054.	231.3	83.39
SDev	1.437	14.98	.574	37.71	.7707	2.303
%RSD	.7677	.7391	.5111	.9302	.3332	2.762

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	80.62	41.25	1289.	216.0
SDev	1.987	4.864	11.44	1.288
%RSD	2.465	11.79	.8875	.5961

Method: TRIANGL2 Sample Name: 184-50-1ABC L Operator: DKH
Run Time: 10/16/97 06:44 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.4440	L3.164	484.8	L-1.931	L.3724	3.906
SDev	.322	3.221	2.054	.0161	.0955	.0837
%RSD	72.51	101.8	.4237	.8347	25.63	2.143

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	36.48	451.4	17.45	769.6	45.98	9.814
SDev	.1875	1.55	.7885	12.57	.9132	2.429
%RSD	.514	.3433	4.52	1.633	1.986	24.75

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	10.80	L-1.273	260.1	36.29
SDev	.6753	2.955	1.207	.0141
%RSD	6.252	232.2	.4642	.0389

Method: TRIANGL2 Sample Name: 184-50-2ABC Operator: DKH
Run Time: 10/16/97 06:48 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.729	5.922	510.8	L-1.516	21.33	L-18.81
SDev	.231	5.592	1.262	.0114	.4776	.3065
%RSD	13.36	94.42	.247	.7539	2.239	1.63

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	99.66	333.7	60.86	603.5	57.82	41.46
SDev	.7343	.5725	.6265	7.819	2.963	2.143
%RSD	.7369	.1716	1.029	1.295	5.125	5.167

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	39.59	L-20.75	466.6	44.25
SDev	2.103	4.068	1.658	.3904
%RSD	5.314	19.6	.3554	.8823

Method: TRIANGL2 Sample Name: 184-50-2ABC DA Operator: DKH
Run Time: 10/16/97 06:53 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.879	9.131	508.5	L-1.543	21.14	L-19.06
SDev	.1626	1.536	.6701	.018	.2932	.1298
%RSD	8.655	16.82	.1318	1.169	1.387	.6813

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	100.8	333.8	61.46	595.3	56.00	42.58
SDev	.6976	.1168	.2091	5.056	4.94	2.367
%RSD	.6922	.035	.3402	.8494	8.822	5.558

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	40.58	L-22.75	467.4	43.70
SDev	1.369	3.279	2.011	.1365
%RSD	3.374	14.42	.4304	.3123

Method: TRIANGL2 Sample Name: 184-50-3ABC Operator: DKH
Run Time: 10/16/97 06:57 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8.915	7.679	213.8	L-.6011	L-.9755	L-15.08
SDev	.1884	2.083	.1277	.0096	.3475	.4523
%RSD	2.113	27.13	.0597	1.597	35.62	3

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	78.48	142.1	43.20	258.3	31.04	33.49
SDev	.0716	.2221	.5583	3.008	1.936	1.467
%RSD	.0912	.1563	1.292	1.165	6.237	4.379

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	30.06	L-18.14	202.8	32.22
SDev	2.758	.807	.1254	.1674
%RSD	9.174	4.45	.0618	.5197

Method: TRIANGL2 Sample Name: 184-50-4ABC Operator: DKH
Run Time: 10/16/97 07:01 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.082	L4.111	139.3	L-.3650	L-2.418	L-16.29
SDev	.3145	.9489	.3593	.014	.0784	.181
%RSD	15.11	23.08	.258	3.836	3.242	1.111

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	64.36	204.4	28.94	142.3	6.657	27.32
SDev	1.317	.4675	1.379	4.509	2.292	2.046
%RSD	2.046	.2287	4.766	3.169	34.42	7.49

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	24.36	L-18.91	160.5	21.37
SDev	1.049	2.389	.5637	.469
%RSD	4.306	12.63	.3512	2.195

Method: TRIANGL2 Sample Name: 184-50-5ABC Operator: DKH
Run Time: 10/16/97 07:06 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.066	6.275	46.63	L-.0519	L-6.656	L-31.58
SDev	.1497	4.046	.113	.0165	.1467	.2198
%RSD	14.05	64.48	.2423	31.73	2.203	.6961

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	94.99	10.86	48.17	L.2013	L-20.78	49.09
SDev	.4271	.0346	.3339	9.721	.6739	1.36
%RSD	.4496	.3188	.6932	4828	3.243	2.771

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	42.70	L-28.34	30.20	10.52
SDev	.6499	5.619	.5619	.1553
%RSD	1.522	19.82	1.861	1.476

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/16/97 07:10 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	497.6	480.4	497.4	1432.	497.5	492.5
SDev	1.296	4.595	.8585	309.7	1.178	1.776
%RSD	.2604	.9565	.1726	21.62	.2368	.3606

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	495.3	490.4	496.7	493.1	502.8	493.8
SDev	1.154	1.266	1.79	1.344	1.048	1.2
%RSD	.233	.2582	.3604	.2727	.2084	.2429

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	497.8	4.972	482.6	483.5	493.5	496.9
SDev	2.846	.1091	9.826	4.639	1.056	2.046
%RSD	.5717	2.195	2.036	.9596	.2141	.4117

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	4.848	494.5	493.2	476.8	485.5	494.8
SDev	.0281	1.15	6.169	2.054	3.223	3.576
%RSD	.5799	.2326	1.251	.4309	.6637	.7228

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	481.9	484.5	482.6	483.6	490.0	494.1
SDev	4.544	2.786	1.525	1.43	2.134	1.144
%RSD	.9428	.575	.3161	.2956	.4355	.2315

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	491.8	493.0	496.4	495.5	Q120100.
SDev	1.006	8.102	1.576	.5795	12690
%RSD	.2047	1.643	.3176	.117	10.56

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 07:46 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.0533	-8.541	-1.340	1907.	-.0269	-.0517
SDev	.5781	6.096	.2432	194.5	.0699	.0198
%RSD	1085	71.38	18.15	10.2	259.4	38.3

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.7147	-.3193	.8197	Q-1.014	1.244	-.4342
SDev	.907	.0626	.4866	.5074	.748	.3392
%RSD	126.9	19.59	59.37	50.03	60.13	78.13

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-11.40	.0045	-.0035	-.9826	-.3995	.6451
SDev	6.564	.0222	.0453	3.155	.0642	.5139
%RSD	57.57	490.5	1308	321.1	16.08	79.65

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	-.0050	.0805	2.006	-1.232	-.7516	.5050
SDev	.1447	.9777	4.174	7.372	3.896	1.575
%RSD	2897	1215	208.1	598.5	518.3	311.8

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.012	-.6267	-.9115	.5850	-1.230	-.0048
SDev	1.688	1.426	.4417	1.225	1.1	.0368
%RSD	56.03	227.6	48.46	209.4	89.46	774.9

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0553	.4464	.3645	-.0630	Q40110.
SDev	.1514	2.371	.6429	.3788	6602
%RSD	273.7	531.1	176.4	600.9	16.46

Baseline variation
Reanalyzed
mkt 11/2/97

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 07:52 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.2417	-5.727	-1.300	1884.	-.0146	-.0323
SDev	.1502	1.172	.8748	169.2	.0456	.0263
%RSD	62.12	20.46	67.27	8.982	311.2	81.42

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5311	-.3609	.3116	-.5385	.1090	-.2913
SDev	.6907	.0259	.8719	.171	.4543	.0451
%RSD	130.1	7.184	279.8	31.76	416.7	15.48

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-7.667	-.0065	-.0156	-.2903	-.3527	.4612
SDev	5.091	.0216	.0346	1.237	.0684	.323
%RSD	66.4	334	221.9	426	19.4	70.04

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	-.0037	-.3360	2.354	-.3383	-1.221	-1.019
SDev	.0559	.2058	2.648	4.367	.6342	2.344
%RSD	1493	61.24	112.5	1291	51.93	230.1

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.228	-.3380	-.9271	.8494	.3410	-.0071
SDev	2.628	.8337	1.031	.5572	1.272	.0196
%RSD	81.42	246.7	111.2	65.6	373.1	277.3

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0109	2.425	.2912	-.0449	Q21790.
SDev	.0591	.5094	.5035	.3956	2608
%RSD	540.7	21.01	172.9	880.5	11.97

Method: TRIANGL2 Sample Name: 184-50-6ABC Operator: DKH
Run Time: 10/16/97 07:57 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.705	L3.407	43.29	L-.1124	L-6.215	L-29.57
SDev	.348	1.285	.0223	.0227	.1688	.2123
%RSD	12.86	37.71	.0516	20.18	2.717	.7179

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	93.29	9.109	46.80	L17.60	L-12.88	41.76
SDev	.2013	.0325	.2785	7.247	.9772	3.694
%RSD	.2157	.3564	.5951	41.18	7.586	8.844

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	43.53	L-27.42	25.99	10.58
SDev	1.23	3.657	.4895	.4742
%RSD	2.825	13.34	1.884	4.482

Method: TRIANGL2 Sample Name: 184-50-7ABC Operator: DKH
Run Time: 10/16/97 08:02 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-15.49	152.1	6172.	L-35.76	60.01	265.3
SDev	.9335	6.111	5.206	.8206	1.304	.9946
%RSD	6.028	4.018	.0844	2.295	2.173	.3749

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	358.7	11640.	160.8	34930.	450.8	L-2.294
SDev	1.837	125	.9667	123.5	4.528	14.75
%RSD	.512	1.074	.6012	.3535	1.004	643.1

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L-55.97	29.04	5033.	1251.
SDev	.4454	12.16	50.46	6.183
%RSD	.7958	41.88	1.003	.4942

Method: TRIANGL2 Sample Name: 184-50-1D Operator: DKH
Run Time: 10/16/97 08:06 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L.2766	L-2.638	20.51	L-.1251	5.845	L-2.288
SDev	.2345	1.093	2.731	.0185	.185	.3883
%RSD	84.78	41.45	13.32	14.76	3.164	16.97

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	11.39	45.09	16.34	620.8	63.81	L3.419
SDev	.9235	7.084	.285	11.34	.7614	.2362
%RSD	8.107	15.71	1.744	1.826	1.193	6.907

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	5.132	L-8.268	280.8	22.13
SDev	.7446	3.42	2.001	.6451
%RSD	14.51	41.37	.7124	2.914

1D PDS ~~1D L~~ ~~CC~~ MCA 11/21/97

Method: TRIANGL2 Sample Name: 184-50-~~1D L~~ Operator: DKH
Run Time: 10/16/97 08:10 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	41.57	36.64	60.46	45.63	52.79	46.23
SDev	.2792	1.116	1.695	.1066	.2122	.2617
%RSD	.6716	3.047	2.804	.2336	.402	.5661

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	55.26	68.47	61.19	1409.	108.5	47.69
SDev	.4554	4.15	.4983	13.14	1.194	2.649
%RSD	.8241	6.061	.8144	.9325	1.1	5.555

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	46.09	41.51	456.7	69.47
SDev	1.599	3.872	1.063	.3598
%RSD	3.469	9.327	.2327	.5179

Method: TRIANGL2 Sample Name: 184-50-2D 10 L EE DKA 11/2/97 Operator: DKH
Run Time: 10/16/97 08:14 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.0897	L-1.821	2.332	L-.0501	1.419	L-.1740
SDev	.0648	.896	.4586	.02	.0807	.2324
%RSD	72.25	49.2	19.67	39.9	5.688	133.6

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L1.220	4.133	L2.951	131.7	12.38	L-.9951
SDev	.4425	1.078	.2926	2.713	1.461	.6884
%RSD	36.28	26.09	9.914	2.059	11.8	69.18

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L1.379	L1.796	58.60	3.320
SDev	1.16	2.134	1.027	.1675
%RSD	84.13	118.8	1.753	5.045

2DE EE/MKH 11/2/97

Method: TRIANGL2 Sample Name: 184-50 ~~3D DA~~ Operator: DKH
Run Time: 10/16/97 08:56 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L.5679	L-7.156	8.581	L-.0070	L.8481	L-1.476
SDev	.6026	.8904	.0121	.0531	.0828	.1998
%RSD	106.1	12.44	.1407	754.6	9.766	13.54

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.083	15.93	7.948	547.6	23.64	L.7714
SDev	.4408	.0612	.6847	5.055	.388	1.848
%RSD	10.8	.3843	8.615	.9231	1.641	239.6

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	3.153	L-6.818	146.5	19.04
SDev	3.032	3.024	1.604	.7372
%RSD	96.15	44.35	1.095	3.872

20E0A

Method: TRIANGL2 Sample Name: 184-50-~~3D~~ CC NKA 11/2/97 Operator: DKH
Run Time: 10/16/97 09:00 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.0033	L-8.639	8.590	L-.0542	1.010	L-1.200
SDev	.4743	2.526	.0349	.0032	.1699	.1727
%RSD	14540	29.24	.4062	5.994	16.82	14.4

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.012	16.00	8.008	541.7	23.73	L1.277
SDev	.2092	.0218	.4832	2.227	.8123	1.673
%RSD	5.216	.1363	6.034	.411	3.423	131

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L1.535	L-8.808	147.4	18.27
SDev	1.975	2.69	.2439	.2617
%RSD	128.7	30.55	.1655	1.432

Method: TRIANGL2 Sample Name: 184-50-~~40~~ 30E ee nKH 11/2/97 Operator: DKH
Run Time: 10/16/97 09:04 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L.1911	L-7.223	11.26	L-.0539	16.44	L-.5769
SDev	.1505	2.258	.0357	.0202	.2015	.2555
%RSD	78.76	31.26	.317	37.46	1.225	44.29

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.680	17.22	34.81	747.8	964.4	L-.5307
SDev	.3669	.0706	.7899	4.429	2.741	.6234
%RSD	5.493	.4099	2.27	.5922	.2843	117.5

Elems	Se1960	Tl1908	Zn2062	CuJ247
Units	ppb	ppb	ppb	ppb
Avge	86.49	L-5.127	192.1	52.09
SDev	1.669	2.937	.6433	.3094
%RSD	1.93	57.29	.3349	.5941

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/16/97 09:09 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	499.2	475.2	499.3	2149.	503.9	486.6
SDev	3.819	13.69	15.74	81.88	2.32	1.029
%RSD	.765	2.881	3.152	3.811	.4604	.2115

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	482.2	486.7	496.2	486.7	487.2	487.7
SDev	8.614	3.548	6.679	4.786	6.891	5.337
%RSD	1.786	.7291	1.346	.9832	1.415	1.094

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	452.6	5.116	496.1	466.6	484.0	487.6
SDev	71.05	.1044	6.834	33.91	3.577	1.686
%RSD	15.7	2.04	1.378	7.268	.7391	.3457

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	4.938	484.9	482.5	470.1	490.0	493.9
SDev	.0967	8.103	23.23	15.77	3.984	3.688
%RSD	1.958	1.671	4.814	3.354	.8132	.7467

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	468.2	483.2	483.4	478.2	501.2	492.8
SDev	22.64	4.008	7.907	4.894	23.64	2.359
%RSD	4.835	.8296	1.636	1.023	4.716	.4787

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	485.2	501.9	490.1	485.1	Q7971.
SDev	4.465	17.69	2.037	2.417	272.6
%RSD	.9203	3.524	.4156	.4981	3.42

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 09:35 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.1502	-1.521	-.9882	950.4	.0421	-.0092
SDev	.3132	4.124	1.361	39.14	.0283	.0405
%RSD	208.6	271.1	137.7	4.118	67.18	438.9

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.5445	-.2155	1.001	-.0770	-.8534	-1.613
SDev	.7426	.2165	.4289	.1903	.3149	.2463
%RSD	136.4	100.4	42.83	247	36.9	15.27

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-14.15	-.0262	.0035	-1.332	-.3542	.8031
SDev	10.29	.0258	.0483	2.343	.0286	.5252
%RSD	72.74	98.57	1394	175.9	8.064	65.4

Baseline
DKH 11/2/97

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0387	-.8098	6.223	.1146	-1.624	-2.656
SDev	.0963	.454	2.934	.258	2.436	.6835
%RSD	248.7	56.07	47.14	225.2	150	25.74

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.043	-3.656	-1.045	-2.091	1.023	-.0007
SDev	.957	4.068	1.551	2.71	.5067	.0236
%RSD	91.74	111.3	148.4	129.6	49.55	3490

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0544	Q5.106	.8394	.0111	Q1699.
SDev	.0798	3.369	.4161	.3295	156.7
%RSD	146.8	65.99	49.57	2957	9.223

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 09:41 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.1087	-.7477	-2.236	944.4	.0551	-.0248
SDev	.2618	3.542	2.037	25.6	.0229	.0222
%RSD	240.8	473.7	91.1	2.71	41.53	89.67

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.3562	-.2554	-.5108	-.0309	-.9233	-1.471
SDev	.267	.1898	.5058	.3512	.3306	.2529
%RSD	74.94	74.31	99.02	1135	35.81	17.19

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-13.84	-.0342	-.0052	-.7875	-.3458	.8655
SDev	6.1	.0205	.039	1.658	.0465	.3214
%RSD	44.07	59.96	750.6	210.6	13.44	37.13

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	-.0350	-.5282	-.8495	-1.145	-.3056	-.2238
SDev	.0291	.5848	4.378	1.302	.8154	.2366
%RSD	83.22	110.7	515.4	113.6	266.8	105.7

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.861	-1.886	-.5852	-.6382	.6340	.0110
SDev	.6219	1.779	.9445	.9812	1.144	.0072
%RSD	33.42	94.34	161.4	153.7	180.4	65.82

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0894	2.843	.7315	.0786	Q1234.
SDev	.0373	1.955	.4703	.2427	42.21
%RSD	41.72	68.77	64.29	309	3.422

4DE

Method: TRIANGL2 Sample Name: 184-50~~-5D~~ ~~C~~ nC4 11/2(~~1~~) Operator: DKH
Run Time: 10/16/97 09:46 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L.3115	L-6.866	5.349	L-.0157	L.1314	L-1.780
SDev	.4234	.4176	.0566	.0227	.1903	.5384
%RSD	135.9	6.083	1.058	144.5	144.8	30.25

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.399	491.5	8.884	555.5	12.48	L-1.163
SDev	.2792	3.037	.5823	2.613	.6875	2.856
%RSD	11.64	.6179	6.555	.4705	5.509	245.6

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L.9315	L-2.512	94.30	11.29
SDev	.7501	6.04	1.396	.3558
%RSD	80.52	240.5	1.48	3.152

Method: TRIANGL2 Sample Name: 184-50~~-6D~~ 5D Operator: DKH
Run Time: 10/16/97 09:51 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-.0839	L-5.436	2.368	L-.0372	1.295	L-.8354
SDev	.2512	1.249	.0238	.02	.1503	.1079
%RSD	299.5	22.97	1.005	53.88	11.61	12.92

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.764	71.68	L2.070	120.7	65.88	L.9706
SDev	.105	.0245	.1183	2.985	.775	2.807
%RSD	2.79	.0342	5.715	2.473	1.176	289.2

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	4.210	L-1.944	29.58	6.244
SDev	2.228	4.813	.5408	.1993
%RSD	52.92	247.6	1.829	3.192

Method: TRIANGL2 Sample Name: 184-50~~-TB~~ Operator: DKH
Run Time: 10/16/97 09:55 Filename: 101697
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L.0610	L-8.994	3.256	L-.0435	L-.5364	L-1.619
SDev	.5059	1.325	.0253	.0074	.0302	.1431
%RSD	829.2	14.73	.7777	17.01	5.626	8.842

Elems	Cr2677	Mn2576	Ni2316	P_2149	Pb2203	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.217	346.9	6.056	553.4	2.647	L1.642
SDev	.163	.2669	.503	7.161	.517	1.483
%RSD	7.351	.0769	8.305	1.294	19.53	90.32

Elems	Se1960	Tl1908	Zn2062	Cu3247
Units	ppb	ppb	ppb	ppb
Avge	L-.0174	L-6.710	20.33	14.38
SDev	1.462	1.841	.2184	.3131
%RSD	8428	27.43	1.075	2.177

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/16/97 09:59 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	Q.0289	Q-157.8	Q-.2775	195.7	Q.0976	Q-.7472
SDev	.2048	1.047	.5037	9.615	.0335	.0087
%RSD	709.6	.6637	181.5	4.913	34.34	1.166

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	Q13.58	Q-.2812	1.721	Q.7068	Q-.3631	Q-13.65
SDev	.4391	.04	.1489	.1939	.1889	.0581
%RSD	3.234	14.22	8.651	27.43	52.03	.4254

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	Q-6.893	Q.7476	Q1.465	Q-.7281	Q-.3683	Q.2414
SDev	3.949	.0538	.1054	.8972	.1343	.1598
%RSD	57.29	7.201	7.192	123.2	36.47	66.18

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	Q.2460	Q.7523	Q16.36	-5.639	-1.913	Q-2.677
SDev	.1276	.2237	1.239	2.215	.5583	.7508
%RSD	51.87	29.74	7.573	39.29	29.18	28.05

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7.261	-6.855	Q-3.154	Q-2.154	Q1.646	Q.0357
SDev	3.582	1.993	.6018	.4271	.7386	.0067
%RSD	49.33	29.08	19.08	19.82	44.87	18.84

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	Q.3552	Q10.69	Q9.521	Q.1164	Q19.24
SDev	.3145	1.227	.217	.2914	48.69
%RSD	88.56	11.47	2.279	250.3	253.1

Cup empty
MCA 11/24/97

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/16/97 12:11 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	496.5	496.4	497.1	589.7	521.8	483.1
SDev	2.094	10.12	2.756	5.924	.7044	1.928
%RSD	.4218	2.038	.5544	1.005	.135	.3992

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	477.3	491.6	507.1	487.0	487.5	498.8
SDev	1.576	.9373	1.745	.9028	1.381	3.083
%RSD	.3302	.1907	.344	.1854	.2833	.618

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	478.3	5.313	517.9	478.8	488.1	486.0
SDev	5.517	.0461	2.416	1.865	1.115	3.467
%RSD	1.154	.8676	.4664	.3895	.2285	.7132

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	5.314	489.8	499.4	479.1	484.2	494.4
SDev	.1463	1.218	2.861	3.115	2.795	2.634
%RSD	2.754	.2487	.5729	.6501	.5773	.5328

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	499.8	496.9	482.5	497.9	489.3	505.4
SDev	6.374	3.053	.9208	2.98	2.196	.6817
%RSD	1.275	.6143	.1909	.5986	.4488	.1349

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	496.0	475.9	490.0	476.9	4965.
SDev	.5585	30.42	1.034	2.736	25.12
%RSD	.1126	6.391	.2111	.5736	.506

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 12:32 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.0211	2.899	-1.641	64.04	.1805	.0874
SDev	.5304	6.708	.2973	4.644	.0282	.0407
%RSD	2512	231.4	18.12	7.251	15.6	46.61

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.8989	-.1870	1.192	.4192	-1.059	-1.597
SDev	.6572	.0928	.8145	.1148	.0471	.3766
%RSD	73.11	49.62	68.33	27.4	4.444	23.58

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-14.64	-.1313	-.1855	-1.358	-.2783	.6601
SDev	2.611	.0146	.0227	1.257	.0504	.3691
%RSD	17.84	11.13	12.22	92.54	18.12	55.91

Baseline DKH 11/2/97

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0587	-.3710	6.871	-1.392	-1.881	-2.321
SDev	.186	.5011	7.798	2.056	1.06	1.109
%RSD	316.9	135.1	113.5	147.7	56.36	47.78

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.528	-2.544	-1.718	-.8550	.7120	.0851
SDev	3.378	1.409	.267	.1885	1.157	.0079
%RSD	133.6	55.37	15.54	22.05	162.5	9.293

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	.0736	Q5.661	.8681	.1856	56.57
SDev	.0634	1.711	.4693	.1994	4.884
%RSD	86.18	30.23	54.06	107.4	8.634

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/16/97 13:13 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.0448	-11.86	-.0733	32.74	.0667	-.0583
SDev	.1076	5.503	1.112	3.657	.0209	.0233
%RSD	240	46.39	1516	11.17	31.36	39.99

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.1563	-.2877	-.4351	-.0631	-1.310	-1.093
SDev	.5672	.1993	1.134	.1759	.379	.3509
%RSD	362.9	69.26	260.6	278.8	28.94	32.1

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-15.56	-.1034	-.2063	-3.506	-.3785	.3155
SDev	4.357	.038	.0807	1.121	.0222	.2953
%RSD	28	36.76	39.14	31.97	5.861	93.59

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	-.0362	-.2369	.0303	-.4790	-.8080	-1.452
SDev	.0437	.4007	3.413	1.431	1.298	2.125
%RSD	120.8	169.2	11270	298.9	160.6	146.4

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.483	-3.490	-.6984	-.8349	1.179	-.0038
SDev	.3989	1.281	.6201	.9805	.4081	.0097
%RSD	8.898	36.69	88.78	117.4	34.62	256.3

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.1327	Q5.342	-.0945	.2525	43.88
SDev	.0587	1.912	.2961	.4279	1.668
%RSD	44.24	35.79	313.4	169.5	3.802

Method: TRIANGL2 Sample Name: ICSAB Operator: DKH
Run Time: 10/16/97 13:22 Filename: 101697
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: 4377 Cust. Smpl. ID.: Cust. ID.: 4377D

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	546.6	518700.	526.9	567.1	544.1	489.4
SDev	.6686	2500	5.399	5.794	1.932	1.355
%RSD	.1223	.482	1.025	1.022	.3552	.277

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	448800.	475.3	512.3	476.7	479.2	554.2
SDev	1293	.7837	.7578	1.65	1.823	3.371
%RSD	.2881	.1649	.1479	.3462	.3804	.6082

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	177800.	Q27.72	678.7	531000.	461.0	501.7
SDev	173.2	.2547	4.585	169.7	.9409	1.681
%RSD	.0974	.9189	.6756	.032	.2041	.335

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	Q6.138	458.4	543.7	513.0	471.9	517.0
SDev	.1359	.3339	14.5	6.568	10.72	5.742
%RSD	2.215	.0728	2.667	1.28	2.271	1.111

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	552.9	522.7	485.6	532.7	513.7	523.0
SDev	18.88	8.605	5.122	2.276	4.282	1.604
%RSD	3.416	1.646	1.055	.4273	.8334	.3067

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	504.1	499.1	494.6	442.5	5534.
SDev	.3431	26.04	2.004	2.676	9.408
%RSD	.0681	5.218	.4052	.6049	.17

AutoSampler Report Table: HA462 Mon 10-20-97 06:51:52 AM Page 1

PKH 10/20/97

Table Name: HA462 Autosampler Type: TYPE TJA
Sample Positions: 170/192 QC Positions: 13/19 # Sets: 1
Rinse Station location is rack -1, pos. -1.

--- Racks ---

Rack #	Type	Usage	#Pos Left	Analyses/Pos
1	Aux (L) Rack	STD/QC/BLANK	13	10
2	Sample (16mm)	Samples	26	1
3	Sample (16mm)	Samples	48	1
4	Sample (16mm)	Samples	48	1
5	Sample (16mm)	Samples	48	1

--- Sample Sets ---

Set#	Type	Prepare?	Description	Method	#Pos	Rack#	StartPos
1	Normal	No	43411	TRIANGL2	22	2	1

--- Preparation Info --- # 43377

* Contains sample 184-50-7D for 43377. PKH 10/20/97

Set#	Notes	Notes#?	Final	Dil Factor

No Samples Prepared

Rack #1

Pos	Row	Col	Sample Name	Set #	#Used	Type
1	1	1	STD3	-NA-	2	Standard 1-G1-4P
2	1	2	STD1-BLANK	-NA-	1	Standard
3	1	3	ICSAB	-NA-	2	QC Standard 1-G1-6P
4	1	4	CHECK LO	-NA-	1	QC Standard
5	1	5	ICV/CCV	-NA-	4	QC Standard 1-G1-5P
6	1	6	ICB/CCB	-NA-	4	QC Standard

(7, ..19 Not Used)

PKH 10/19/97

Rack #2

Pos	Row	Col	Sample Name	Set #	#Used	Type
1	1	1	43411 MB	1	-NA-	Sample
2	1	2	43411 LCS	1	-NA-	Sample
3	1	3	184-84-1ABC	1	-NA-	Sample
4	1	4	184-84-1ABC PDS	1	-NA-	Sample
5	1	5	184-84-1ABC L	1	-NA-	Sample
6	1	6	184-84-2ABC	1	-NA-	Sample
7	1	7	184-84-2ABC DA	1	-NA-	Sample
8	1	8	184-84-3ABC	1	-NA-	Sample
9	1	9	184-84-4ABC	1	-NA-	Sample
10	1	10	184-84-5ABC	1	-NA-	Sample
11	1	11	184-84-6ABC	1	-NA-	Sample
12	1	12	184-84-7ABC	1	-NA-	Sample
13	2	1	184-84-1DE	1	-NA-	Sample
14	2	2	184-84-1DE PDS	1	-NA-	Sample
15	2	3	184-84-1DE L	1	-NA-	Sample

Rack #2

Pos	Row	Col	Sample Name	Set #	#Used	Type
16	2	4	184-84-20E	1	-NA-	Sample
17	2	5	184-84-20E DA	1	-NA-	Sample
18	2	6	184-84-3DF	1	-NA-	Sample
19	2	7	184-84-4D	1	-NA-	Sample
20	2	8	184-84-58D	1	-NA-	Sample
21	2	9	184-84-6D	1	-NA-	Sample
22	2	10	184-84-7FF	1	-NA-	Sample
(23..	48	Not Used)				

Rack #3

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1..	48	Not Used)				

Rack #4

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1	48	Not Used)				

Rack #5

Pos	Row	Col	Sample Name	Set #	#Used	Type
(1	48	Not Used)				

Method: TRIANGL2 Sample Name: STD1-BLANK Operator:
Run Time: 10/20/97 02:34 Filename: 101997
Mode: IP Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	count	count	count	count	count	count
Avge	-.00005	.00175	-.00025	.00053	.00016	.00015
SDev	.00018	.00003	.00016	.00007	0	0
%RSD	324.493	1.92741	64.7338	14.799	5.83794	3.00637

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	count	count	count	count	count	count
Avge	.00077	-.00011	-.00015	-.00013	-.00012	.00305
SDev	0	.00019	.00043	.00005	.00002	.00006
%RSD	.4196	169.969	276.427	38.9774	20.5118	2.00201

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	count	count	count	count	count	count
Avge	.00005	7.53193	.14862	.00007	.00002	.00005
SDev	.00001	.03932	.00073	.00006	0	0
%RSD	36.7786	.5221	.49205	78.2225	17.4372	19.3551

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	count	count	count	count	count	count
Avge	.00288	-.00183	-.00099	.0007	.00003	.00031
SDev	.00185	.00034	.00002	.00017	.00011	.00004
%RSD	64.1328	18.7786	2.33707	25.1502	307.289	15.2916

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	count	count	count	count	count	count
Avge	-.00491	.00187	-.00043	.00014	.00008	-.00042
SDev	.00038	.00033	.00002	.00001	.00011	.00002
%RSD	7.75111	17.6317	6.08648	8.357	132.664	6.83943

Elems	V_2924	Zn2062	Si2881
Units	count	count	count
Avge	-.00052	0	.02469
SDev	.00001	0	.0004
%RSD	2.6048	631.559	1.64285

Method: TRIANGL2 Sample Name: STD3 Operator:
Run Time: 10/20/97 02:38 Filename: 101997
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	count	count	count	count	count	count
Avge	.42951	.01757	.0559	.17083	.29967	.3191
SDev	.00188	.00012	.00055	.00151	.00142	.00285
%RSD	.43819	.72464	1.00079	.88584	.4763	.89544

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	count	count	count	count	count	count
Avge	.02939	1.16012	.12545	.12851	.18007	.1752
SDev	.00027	.00945	.00078	.00111	.0016	.00013
%RSD	.76907	.81485	.62275	.87038	.89392	.07961

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	count	count	count	count	count	count
Avge	.00506	22.8985	13.3093	.0238	.15667	.09006
SDev	.00006	.13666	.06544	.00011	.0012	.00089
%RSD	1.12096	.59682	.49173	.46229	.76807	.99213

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	count	count	count	count	count	count
Avge	.18664	.41579	.02492	.23202	.10364	.13048
SDev	.00144	.00321	.00015	.00161	.00128	.00103
%RSD	.77628	.77304	.62627	.69755	1.23524	.79634

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	count	count	count	count	count	count
Avge	.29726	.16957	.14125	.90854	1.28231	.03555
SDev	.00188	.00227	.00134	.005	.00816	.001
%RSD	.63477	1.34306	.95018	.55051	.63644	2.83301

Elems	V 2924	Zn2062	Si2881	Pb2203	Se1960
Units	count	count	count		
Avge	.04404	.13754	.5023		
SDev	.00032	.0014	.00051		
%RSD	.74319	1.02232	.10304		

Method: TRIANGL2 Sample Name: STD3 Operator: DKH
Run Time: 10/20/97 02:43 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	996.8	999.7	998.2	1013.	1001.	998.0
SDev	2.451	7.16	.6164	2.352	.614	2.751
%RSD	.2459	.7162	.0617	.2322	.0613	.2756

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1001.	1002.	1001.	1002.	1001.	999.5
SDev	1.699	1.713	1.951	2.245	2.438	4.02
%RSD	.1697	.1709	.1949	.224	.2436	.4022

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	1005.	10.46	1040.	1003.	1000.	1005.
SDev	17.19	.0423	4.999	2.091	1.761	1.499
%RSD	1.711	.4048	.4742	.2084	.1761	.149

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	10.22	1005.	992.6	994.2	989.8	1004.
SDev	.1834	1.144	2.915	13.09	19.77	.5386
%RSD	1.794	.1138	.2937	1.317	1.998	.0536

Elems	1960-1	1960-2	Sn1899	Sr4215	Ti3349	Tl1908
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	992.7	992.5	1002.	998.8	1000.	1034.
SDev	13.69	24.42	2.265	.667	1.423	13
%RSD	1.379	2.461	.2261	.0668	.1423	1.258

Elems	V_2924	Zn2062	Si2881	Pb2203	Se1960
Units	ppb	ppb	ppb	ppb	ppb
Avge	1002	1000	10000.	991.2	992.6
SDev	1.884	3.755	47.53	10.63	12.71
%RSD	1881	.3754	.4752	1.073	1.281

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/20/97 02:52 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID : Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	503.7	497.4	510.3	508.5	503.8	505.6
SDev	2.998	5.265	1.771	.82	.6946	1.469
%RSD	.5952	1.059	.3471	.1613	.1379	.2905

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	506.3	505.5	503.3	504.5	505.2	503.3
SDev	1.398	1.315	1.503	1.077	1.547	2.322
%RSD	.2761	.2602	.2987	.2136	.3061	.4614

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	522.9	5.008	495.6	506.9	504.0	503.0
SDev	5.68	.198	15.86	1.956	1.197	1.576
%RSD	1.086	3.954	3.2	.3858	.2375	.3132

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	4.993	507.4	505.1	512.0	508.3	502.4
SDev	.1653	1.78	7.985	.3717	19.37	4.196
%RSD	3.311	.3509	1.581	.0726	3.81	.8352

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	514.8	511.3	509.5	512.5	507.9	501.0
SDev	4.238	21.88	13.01	13.31	2.346	.9362
%RSD	.8231	4.278	2.552	2.598	.4665	.1869

Elems	Ti3349	Tl1908	V_2924	Zn2062	Zr2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	501.4	512.4	503.6	505.1	5044.
SDev	.9426	15.04	1.38	2.305	19.68
%RSD	.188	2.934	.2741	.4563	.3902

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/20/97 02:57 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Conf Not used
OK 11-31-97

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.1735	-5.811	1.192	8.720	-.0120	-.0320
SDev	.402	3.288	1.525	2.985	.0617	.0137
%RSD	231.6	56.58	127.9	34.23	513.9	42.79

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.9259	.0783	-1.139	-.1719	.1478	-.8462
SDev	1.035	.0624	.2886	.0044	.3938	.5876
%RSD	111.8	79.67	25.34	386.5	266.4	69.43

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-5.554	.0727	.1857	-3.469	.0181	1.168
SDev	9.133	.0223	.0351	3.018	.0231	.6304
%RSD	164.4	30.62	18.9	87	127.4	53.95

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0447	.4972	2.044	1.735	.0268	1.898
SDev	.0515	.5008	.6453	1.871	1.135	1.578
%RSD	115	100.7	31.56	107.8	4236	83.14

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.3487	1.342	.5957	.7787	.3233	.0013
SDev	.8807	2.524	.3347	1.975	1.28	.0289
%RSD	252.6	188.2	56.19	253.6	395.8	2178

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.1074	88.551	.5940	-.0219	-3.055
SDev	.1978	4.878	.5697	.1889	13.76
%RSD	193.3	57.05	95.9	862	450.4

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/20/97 03:03 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

DMF 11-2-97

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.2221	-3.678	.0696	2.468	-.0089	-.0133
SDev	.1611	3.804	1.593	.8468	.0311	.0339
%RSD	72.51	103.4	2288	34.32	349.8	255.7

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.1113	-.0435	-.6623	.0659	.1712	-.5688
SDev	.3358	.11	3.004	.371	.5479	.4993
%RSD	301.8	252.8	453.6	563	320	87.77

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	1.163	.0187	.0405	-2.102	-.0214	-.0177
SDev	3.876	.0281	.0558	2.497	.0181	.0142
%RSD	333.4	150.2	137.7	118.8	84.71	3463

Elems	Na5889	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0763	.0617	7.217	2.554	-.5674	.2166
SDev	.0479	.2071	5.95	3.996	3.047	2.294
%RSD	62.87	335.9	82.44	156.5	537	1059

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.125	-2.295	.4719	.1756	-.4727	.0059
SDev	3.879	3.175	1.371	2.334	.4895	.0168
%RSD	75.7	138.3	290.5	1329	103.6	283.2

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	-.0504	85.304	.4599	-.1179	-3.202
SDev	.0672	4.211	.4404	.2772	3.439
%RSD	133.2	79.4	95.75	235.1	107.4

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/20/97 03:09 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.0927	- 1024	.0053	.9844	.0678	-.0192
Sdev	.5361	4.777	.6625	.4981	.0099	.0392
%RSD	578	4664	12540	50.59	14.57	203.5

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5086	.0567	1.377	-.1144	.5188	-.0714
Sdev	.4261	.1304	.629	.2136	.3834	.6319
%RSD	83.78	230	45.68	186.7	73.9	884.5

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	4.817	- 0030	-.0034	2.899	.0160	-.0634
Sdev	3.712	.0119	.026	6.288	.0143	.5304
%RSD	77.07	395.7	769.6	216.9	89.63	837

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0859	.5174	9.855	.5028	-.7179	.8024
Sdev	.11	.4783	2.253	1.988	.7336	1.429
%RSD	128.1	73.11	22.86	395.5	102.2	178.1

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5315	1.143	-.3114	.9392	-.7503	.0229
Sdev	1.457	1.025	.8019	1.065	1.368	.0333
%RSD	274.1	89.7	257.5	113.4	182.4	145.5

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	.1295	.4138	.5028	.0210	-10.60
Sdev	.1235	1.767	.426	.1789	9.072
%RSD	95.38	426.9	84.72	851	85.61

Method: TRIANGL2 Sample Name: ICSA8 Operator: DKH
Run Time: 10/20/97 03:14 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	532.7	514100.	518.1	515.4	509.9	486.5
SDev	.7049	1439	6.113	2.926	.5178	1.457
%RSD	.1323	.28	1.18	.5677	.1015	.2994

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	452300	463.9	491.6	459.9	473.0	524.0
SDev	1160	.966	1.822	1.181	1.547	1.779
%RSD	.2564	.2082	.3707	.2567	.3271	.3395

Elems	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	171500.	926.15	609.2	528800.	449.0	496.9
SDev	283.4	.0898	2.652	526.1	1.076	2.026
%RSD	.1652	.3434	.4352	.0995	.2396	.4078

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	5.574	450.3	500.9	507.2	466.1	505.6
SDev	.0607	6123	33.4	13.61	9.595	11.71
%RSD	1.09	136	6.669	2.683	2.059	2.316

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	530.8	527.8	479.8	528.8	496.8	502.7
SDev	17.19	17.55	5.148	4.31	9.848	.1613
%RSD	3.296	3.377	1.073	.8152	1.982	.0321

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	491.9	506.3	488.3	439.1	5490.
SDev	.6456	14.66	1.108	1.92	5.319
%RSD	.1313	2.895	.2268	.4372	.0969

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/20/97 04:21 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	502.9	495.2	509.0	532.9	509.5	504.8
Sdev	1.593	7.521	1.504	20.68	.8612	1.808
%RSD	.3167	1.519	.2954	3.881	.169	.3581

Elems	Ca3179_	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	498.7	506.5	506.4	506.1	509.5	506.1
Sdev	3.838	3.023	4.282	2.693	2.346	2.119
%RSD	.7696	.5968	.8455	.532	.4605	.4186

Elems	Fe2714	K_7664	Li6707	Mg2790_	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	539.3	4.953	499.9	501.0	496.6	504.9
Sdev	30.63	.1458	13.96	13.14	1.284	3.702
%RSD	5.679	2.944	2.792	2.624	.2585	.7332

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	4.982	508.9	507.6	507.2	519.1	501.1
Sdev	.1514	2.628	10.25	10.46	15.51	5.733
%RSD	3.039	.5164	2.019	2.062	2.988	1.144

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	501.4	513.7	515.1	509.6	496.7	503.1
Sdev	8.704	20.53	12.47	15.14	2.316	.5268
%RSD	1.736	3.995	2.42	2.971	.4663	.1047

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	491.1	506.7	505.4	504.5	Q36500
Sdev	1.45	10.26	1.106	4.042	3713
%RSD	.2953	2.026	.2188	.8013	10.17

Method: TRIANGL2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/20/97 04:27 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.2444	-1.104	.8468	64.48	.2341	.2485
Sdev	1.482	4.935	1.792	3.905	.2044	.2476
%RSD	606.4	447.1	211.6	6.057	87.32	99.64

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.031	.3896	-.3917	-.4435	1.133	-.4975
Sdev	.146	.1817	4.722	.4693	.5588	.6875
%RSD	14.16	46.64	1205	105.8	49.3	138.2

Elems	Fe2714	K_7664	La6707	Mg2790	Mn2576	Mn2939
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-3.247	.0251	.4390	-3.914	.2216	.8116
Sdev	7.307	.0176	.2533	5.299	.2505	.3564
%RSD	225.1	70.1	57.69	84.3	113	43.91

Elems	Na3302	Ni2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0157	.7505	-.1184	1.387	-.5901	1.280
Sdev	.3821	1.057	6.419	1.937	1.867	.8589
%RSD	2430	140.8	5423	139.7	316.4	67.09

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.218	-1.721	.0681	-.7425	-.9249	.2630
Sdev	1.306	.815	.785	.3985	.6176	.2335
%RSD	107.2	47.34	1152	53.67	66.78	88.78

Elems	Ti3349	V_2924	Zn2062	Zr2881
Units	ppb	ppb	ppb	ppb
Avge	1.056	-2.476	.7337	.0267	814950
Sdev	.2482	2.257	.3239	.5394	828.4
%RSD	149.9	91.18	44.05	2020	5.54

Method: TRIANGL2 Sample Name: 184-50-70 Operator:
Run Time: 10/20/97 06:05 Filename: 101997
Mode: CONC Type: S Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag3280	As1890	Ba4934	Be3130	Cd2265	Co2286
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.3763	1-2.937	4.655	1-.0121	5.279	1-1.085
SDev	.6119	2.461	.0565	.0586	.0311	.5686
%RSD	1e3.6	83.8	1.214	484.2	.5885	52.39

Elems	Cr2677	Cu3247	Mn2576	Ni2316	P_2149	Pb2203
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.758	7.221	109.4	7.742	447.2	42.65
SDev	.5762	.5265	.3844	.7187	2.932	.4862
%RSD	8.526	7.29	.3515	9.283	.6557	1.14

Elems	Sb2068	Se1960	Tl1908	Zn2062
Units	ppb	ppb	ppb	ppb
Avge	1-.0401	7.465	1-6.667	1e3.3
SDev	1.986	1.411	3.501	1.675
%RSD	4308	18.9	52.51	1.025

Method: TRIANGL2 Sample Name: ICV/CCV Operator: DKH
Run Time: 10/20/97 06:09 Filename: 101997
Mode: CONC Type: A Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	515.5	505.1	508.2	512.4	506.5	504.5
Sdev	2.609	14.09	4.616	1.421	1.437	4.544
%RSD	.506	2.789	.9083	.2774	.2836	.9007

Elems	Ca3179	Cd2265	Ce4486	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	498.9	500.7	498.5	506.3	505.7	510.0
Sdev	1.709	4.584	2.348	2.901	1.533	3.015
%RSD	.3425	.9165	.4709	.573	.3032	.7089

Elems	Fe2714	K 7664	Li6707	Mg2790	Mn2576	Mn2939
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	516.5	5.269	538.9	502.2	500.0	501.1
Sdev	13.13	.2711	20.29	5.671	2.726	3.804
%RSD	2.546	5.144	3.765	1.129	.5451	.759

Elems	Na3302	Ni2316	P 2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	5.264	503.9	506.5	501.1	510.2	499.3
Sdev	.4491	1.877	5.058	5.469	.5667	2.094
%RSD	8.531	.3724	.9985	1.091	.1111	.4193

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	495.4	508.2	507.2	504.0	495.3	502.5
Sdev	7.969	4.55	2.164	5.632	2.256	?
%RSD	1.608	.8954	.4268	1.118	.4555	.3979

Elems	Ti3349	Tl1908	V 2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	487.6	506.1	504.1	498.0	5297
Sdev	7.477	11.86	2.069	5.751	64.8
%RSD	1.507	2.341	.4105	1.155	1.223

Method: TRACE2 Sample Name: ICB/CCB Operator: DKH
Run Time: 10/20/97 08:17 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.: 43411

Elems	Ag3280	Al3082	As1890	B_2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.3542	-.5698	.8032	6.283	.1427	.1775
SDev	.5844	3.135	.3593	.4852	.1627	.2517
%RSD	165	550.2	44.73	7.721	114	141.8

Elems	Ca3179	Cd2265	Ce4186	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.2677	.2130	-1.543	.0687	.3013	-.3605
SDev	.9295	.1861	3.572	.2555	.3698	.376
%RSD	346.9	87.38	231.5	371.8	122.7	104.3

Elems	Fe2714	K_7664	La3329	Mg2790	Mn2576	Mo2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	-5.030	.0086	.7635	-1.589	.2413	.3594
SDev	11.23	.0121	.837	5.675	.1739	.5087
%RSD	223.1	865.4	97.61	446.7	92.79	141.9

Elems	Na5889	Ni3134	P_2149	Pb1703-1	Pb2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	.0595	1.928	-.4086	3.227	-1.523	-2.229
SDev	.1139	.4165	2.139	3.819	2.074	2.598
%RSD	199	32.58	1747	118.3	136.2	116.6

Elems	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.835	-1.386	.0591	.3525	.4687	.1842
SDev	3.157	.8052	.5634	1.192	.865	.234
%RSD	82.33	58.1	953.1	338	184.5	127.1

Elems	Ti3349	Tl1908	V_2924	Zn2062	Si2881
Units	ppb	ppb	ppb	ppb	ppb
Avge	.1148	4.066	1.080	.4050	9155.4
SDev	.1339	1.454	.4349	.1001	5.502
%RSD	116.6	35.76	40.28	24.71	3.541

Method: IR1ANAL2 Sample Name: ICSAB Operator: DKH
Run Time: 10/20/97 06:23 Filename: 101997
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID: Cust. Smpl. ID.: Cust. ID.: 43411

Elem	Al3080	Al3082	As1890	B 2496	Ba4934	Be3130
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	547.2	527200	524.7	533.7	520.2	483.8
SDev	.99	4070	4.197	1.935	2.825	4.798
%RSD	1681	7721	7998	.3626	.5431	.9917

Elem	Ca3179-	Cd2265	Ce4486	Co2286	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	447000.	460.4	493.0	461.1	472.6	539.9
SDev	7103	5.642	4.98	4.999	6.476	6.501
%RSD	1.589	1.226	1.01	1.084	1.37	1.204

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mn2020
Units	ppb	ppm	ppb	ppb	ppb	ppb
Avge	174800	829.65	704.0	531200.	445.1	500.2
SDev	1564	1.364	38.43	2908	4.127	1.2
%RSD	.8947	.1601	5.459	.5475	.9273	.2399

Elem	Na3302	Nb2316	P_2149	2203-1	2203-2	Sb2068
Units	ppm	ppb	ppb	ppb	ppb	ppb
Avge	68.344	446.7	585.6	494.3	462.5	519.2
SDev	.5054	1.007	19.33	13.87	10.29	7.493
%RSD	1.787	.8969	3.543	2.803	2.224	1.443

Elem	1960-1	1960-2	Pb2203	Se1960	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	519.5	531.6	473.1	527.6	495.3	508.9
SDev	12.42	11.6	10.84	4.851	1.598	1.47
%RSD	2.392	2.183	2.292	.9194	.3227	.289

Elem	Ti3349	Ti1908	V 2924	Zn2062	Zr3881
Units	ppb	ppb	ppb	ppb	ppb
Avge	481.7	524.5	492.2	430.7	5681.
SDev	2.212	7.741	3.941	8.13	27.68
%RSD	.4592	1.476	.8006	1.888	.4873

Element File: TL.GEL

ID/Weight File: EB169.IDW

Loc.	Concentration	Solutions
0		Calib. Blank / Diluent / ICB / CCB
1	50.0 ug/L	Stock 1-62-1P
2	100.0 ug/L	Stock / Recovery Stock 1-62-2P
4		ICV=30ug/L 1-62-3P
5		CCV=60ug/L 1-62-4P
6		CHECK LO
7		43377 MB
8		43377 LCS
9		184-50-1ABC
10		184-50-1ABC L
11		184-50-2ABC
12		184-50-3ABC
13		184-50-4ABC
14		184-50-5ABC
15		184-50-6ABC
16		184-50-7ABC
17		184-50-1D
18		184-50-1D L
19		184-50-2D
20		184-50-3D
21		184-50-4D
22		184-50-5D
23		184-50-6D
24		184-50-7D
39		Modifier 1

MKA 10/20/97

MSAs will be analyzed.

MKA 10/21/97

All passing except 7ABC!

MKA 10/22/97

Element: Tl
Print Data: Main+Suppl.
Print: Calib. Curve

Analyst: HOLSTE
Peak Storage: 1 Repl./Sample

INSTRUMENT: 4100 ZL
Wavelength: 276.8 Peak
Signal Type: Zeeman AA
Read Time: 5.0
Sample Replicates: 2
Standard Replicates: 2

Technique: HGA
Slit: 0.70 Low
Signal Measurement: Peak Area
Read Delay: 0.0

Version: 7.30
BOC Time: 2

Spike Replicates: Same as Sample

CALIBRATION:

Solutions	ID	Conc	Location	Volume	Diluent Volume	Modifier #1	Modifier #2
Calib. Blank	STD BLK		0	20	5	5	
Standard 1	STD1=25ug/L	25.0	1	10	15	5	
Standard 2	STD2=50ug/L	50.0	1	20	5	5	
Standard 3	STD3=100ug/L	100.0	2	20	5	5	
Reslope Std.	50ug/L	50.0	1	20	5	5	
Samples				20	5	5	

Diluent Location: 0
Modifier #1 Location: 39
Calibration Units: ug/L
Calibration Type: Nonlinear

Modifier #2 Location:
Sample Units: ug/L

Furnace Time/Temperature Program:

Step	Temp	Ramp	Hold	Gas Flow	Read	Gas Type
1	110	5	30	250		Norm
2	130	1	35	250		Norm
3	700	5	20	250		Norm
4	1600	0	5	0	*	Norm
5	2500	1	5	250		Norm

Injection Temp: 20
Pipette Speed: 95%
Extraction System: On

SEQUENCE:

Step	Action and Parameters
1	Pipet diluent + modifier 1 + spike + sample/std
2	Run HGA steps 1 to End

CHECKS:
Recalibration Type: Reslope
Locations: None

Conc. Above Calibration Action: Dilute & Reanalyze After 1 Rep
Alternate Sample Volumes (uL): 5,2,1
Run Alternate Volume Blanks: Yes

If %RSD > 20.0 and Concentration > 1.7 then Retry 1 times
Check %RSD on: Samples + Standards + Spikes + QC Samples

Recovery Measurements:
5 uL of 100 ug/L Standard at Location 2 Gives 25.0 ug/L
Measure Recovery on Samples: 9,10,17,18
Add to QC Samples: Yes
% Recovery Limits: 75 to 125

QC:

#	A/S Loc.	QC Sample ID	Conc. Limits Lower	Conc. Limits Upper	After Calib	Periodic Check	At End	Count As Sample
1	4	ICV=30ug/L	27.0	33.0				
2	0	ICB	-2.0	2.0				
3	5	CCV=60ug/L	48.0	72.0		X		
4	0	CCB	-2.0	2.0		X		

Run Periodic QC Samples: Every 10
Out of Limit Action: Reslope and Rerun Samples

Matrix Check Calculations:
% Difference for Dupls: No Locations:
% Recovery for Spike: No Locations: Conc:

```
Element File: TL.GEL          Element: Tl              Wavelength: 276.8
Date: 10/20/97                Time: 03:06              Slit: 0.70 L
Data File: EB169.DAT          ID/Wt File: EB169.IDW    Lamp Current: 0
Technique: HGA                Calib. Type: Nonlinear   Energy: 43
```

Tl ID: STD BLK Seq. No.: 00001 A/S Pos.: 0 Date: 10/20/9

uL dispensed: 5 from 0, 5 from 39, 20 from 0

Tl ID: STD BLK Seq. No.: 00002 A/S Pos.: 0 Date: 10/20/9

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 1 Time: 03:10
Peak Area (A-s): -0.000 Peak Height (A): 0.010
Background Pk Area (A-s): 0.006 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.1

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 2 (Peak Stored) Time: 03:13
Peak Area (A-s): 0.000 Peak Height (A): 0.008
Background Pk Area (A-s): 0.001 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.4

Mean Conc (ug/L): 1.3 SD: 0.20 RSD(%): 15.91

Auto-zero performed.

Tl ID: STD1=25ug/L Seq. No.: 00003 A/S Pos.: 1 Date: 10/20/

uL dispensed: 15 from 0, 5 from 39, 10 from 1
Replicate 1 Time: 03:16
Peak Area (A-s): 0.038 Peak Height (A): 0.054
Background Pk Area (A-s): 0.020 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.038
Concentration (ug/L): 26.7

uL dispensed: 15 from 0, 5 from 39, 10 from 1
Replicate 2 (Peak Stored) Time: 03:19
Peak Area (A-s): 0.029 Peak Height (A): 0.050
Background Pk Area (A-s): 0.027 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 20.2

Mean Conc (ug/L): 23.4 SD: 4.54 RSD(%): 19.3

Standard number 1 applied. [25.0]
Correlation coefficient: 1.00000 Slope: 0.0014

Tl ID: STD2=50ug/L Seq. No.: 00004 A/S Pos.: 1 Date: 10/20

uL dispensed: 5 from 0, 5 from 39, 20 from 1
Replicate 1 Time: 03:22
Peak Area (A-s): 0.073 Peak Height (A): 0.102

Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 53.8

uL dispensed: 5 from 0, 5 from 39, 20 from 1
Replicate 2 (Peak Stored) Time: 03:25
Peak Area (A-s): 0.069 Peak Height (A): 0.099
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.069
Concentration (ug/L): 50.7

Mean Conc (ug/L): 52.3 SD: 2.15 RSD(%): 4.12

Standard number 2 applied. [50.0]
Correlation coefficient: 1.00000 Slope: 0.0013

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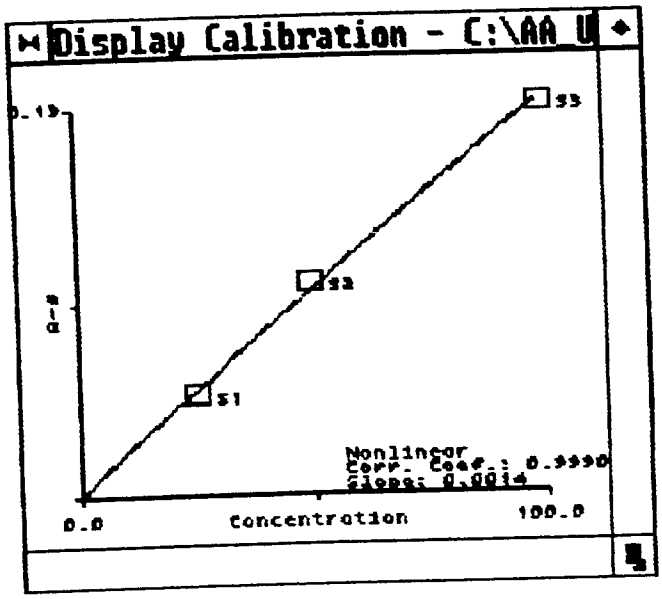
Display Calibration - C:\AA U
S3
S2
S1
Nonlinear
Corr. Coef.: 0.9990
Slope: 0.0014
0.0
Concentration
100.0

```
Element File: TL.GEL          Element: Tl                  Wavelength: 276.8
Date: 10/20/97                Time: 03:33                  Slit: 0.70 L
Data File: EB169.DAT          ID/Wt File: EB169.IDW        Lamp Current: 0
Technique: HGA                Calib. Type: Nonlinear       Energy: 47
```

Tl ID: ICB Seq. No.: 00006 A/S Pos.: 0 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 0

Tl ID: ICV=30ug/L Seq. No.: 00007 A/S Pos.: 4 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 4
Replicate 1
Time: 03:36
Peak Area (A-s): 0.042
Peak Height (A): 0.063
Background Pk Area (A-s): 0.028
Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.042
Concentration (ug/L): 30.7

uL dispensed: 5 from 0, 5 from 39, 20 from 4
Replicate 2 (Peak Stored)
Time: 03:39
Peak Area (A-s): 0.038
Peak Height (A): 0.063
Background Pk Area (A-s): 0.029
Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.038
Concentration (ug/L): 27.4

Mean Conc (ug/L): 29.0 SD: 2.32 RSD(%): 7.98

QC sample is within range 27.0 - 33.0

Tl ID: ICB Seq. No.: 00008 A/S Pos.: 0 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 0

Tl ID: ICB Seq. No.: 00009 A/S Pos.: 0 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 0

Tl ID: ICB Seq. No.: 00010 A/S Pos.: 0 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 1
Time: 03:48
Peak Area (A-s): 0.001
Peak Height (A): 0.009
Background Pk Area (A-s): 0.004
Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.6

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 2 (Peak Stored)
Time: 03:51
Peak Area (A-s): -0.002
Peak Height (A): 0.009
Background Pk Area (A-s): 0.005
Background Pk Height (A): 0.009
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -1.8

Mean Conc (ug/L): -0.6 SD: 1.65 RSD(%): 280.61

QC sample is within range -2.0 - 2.0

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T1    ID: CHECK LO              Seq. No.: 00011    A/S Pos.: 6      Date: 10/20/

uL dispensed: 5 from 0, 5 from 39, 20 from 6
Replicate  1                                  Time: 03:54
Peak Area (A-s): 0.006                        Peak Height (A): 0.018
Background Pk Area (A-s): 0.009               Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L  ): 4.0

uL dispensed: 5 from 0, 5 from 39, 20 from 6
Replicate  2 (Peak Stored)                    Time: 03:57
Peak Area (A-s): 0.007                        Peak Height (A): 0.015
Background Pk Area (A-s): 0.006               Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): 0.007
Concentration (ug/L  ): 5.0

Mean Conc (ug/L  ):        4.5        SD: 0.72                RSD(%): 15.9

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T1    ID: 43377 MB              Seq. No.: 00012    A/S Pos.: 7      Date: 10/20

uL dispensed: 5 from 0, 5 from 39, 20 from 7
Replicate  1                                  Time: 03:59
Peak Area (A-s): -0.001                       Peak Height (A): 0.010
Background Pk Area (A-s): 0.004               Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L  ): -0.8

uL dispensed: 5 from 0, 5 from 39, 20 from 7
Replicate  2 (Peak Stored)                    Time: 04:02
Peak Area (A-s): 0.001                        Peak Height (A): 0.011
Background Pk Area (A-s): 0.004               Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.6

Mean Conc  (ug/L  ):       -0.1        SD: 0.99                RSD(%): 992

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T1    ID: 43377 LCS             Seq. No.: 00013    A/S Pos.: 8      Date: 10/2

uL dispensed: 5 from 0, 5 from 39, 20 from 8
Replicate  1                                  Time: 04:05
Peak Area (A-s): 0.060                        Peak Height (A): 0.080
Background Pk Area (A-s): 0.036               Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L  ): 43.5

uL dispensed: 5 from 0, 5 from 39, 20 from 8
Replicate  2 (Peak Stored)                    Time: 04:08
Peak Area (A-s): 0.064                        Peak Height (A): 0.093
Background Pk Area (A-s): 0.040               Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L  ): 46.5

Mean Conc  (ug/L  ):       45.0        SD: 2.12                RSD(%): 4.
```

T1 ID: 184-50-1ABC Seq. No.: 00014 A/S Pos.: 9 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 9
Replicate 1 Time: 04:11
Peak Area (A-s): 0.003 Peak Height (A): 0.012
Background Pk Area (A-s): 0.006 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 2.4

uL dispensed: 5 from 0, 5 from 39, 20 from 9
Replicate 2 (Peak Stored) Time: 04:14
Peak Area (A-s): 0.005 Peak Height (A): 0.013
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.014
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 3.4

Mean Conc (ug/L): 2.9 SD: 0.76 RSD(%): 26.29

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T1.    ID: 184-50-1ABC L          Seq. No.: 00017    A/S Pos.: 10    Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 10
Replicate  1                                    Time: 04:29
Peak Area (A-s): -0.002                         Peak Height (A): 0.010
Background Pk Area (A-s): 0.005                 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L  ): -1.4

uL dispensed: 5 from 0, 5 from 39, 20 from 10
Replicate  2 (Peak Stored)                      Time: 04:32
Peak Area (A-s): -0.000                         Peak Height (A): 0.011
Background Pk Area (A-s): 0.002                 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L  ): -0.1

Mean Conc  (ug/L  ):        -0.7        SD: 0.91                RSD(%): 123.57

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T1    ID: 184-50 1ABC L NR    Seq. No.: 00018    A/S Pos.: 10    Date: 10/20/9

uL dispensed: 5 from 39, 5 from 2, 20 from 10
Replicate  1                                    Time: 04:35
Peak Area (A-s): 0.032                          Peak Height (A): 0.075
Background Pk Area (A-s): 0.023                 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L  ): 22.9

uL dispensed: 5 from 39, 5 from 2, 20 from 10
Replicate  2 (Peak Stored)                      Time: 04:38
Peak Area (A-s): 0.032                          Peak Height (A): 0.079
Background Pk Area (A-s): 0.019                 Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L  ): 22.7

Mean Conc  (ug/L  ):        22.8        SD: 0.12                RSD(%): 0.53

Recovery is 94.1%

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T1    ID: 184-50-2ABC          Seq. No.: 00019    A/S Pos.: 11    Date: 10/20/

uL dispensed: 5 from 0, 5 from 39, 20 from 11
Replicate  1                                    Time: 04:41
Peak Area (A-s): -0.002                         Peak Height (A): 0.010
Background Pk Area (A-s): 0.004                 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L  ): -1.4

uL dispensed: 5 from 0, 5 from 39, 20 from 11
Replicate  2 (Peak Stored)                      Time: 04:44
Peak Area (A-s): 0.004                          Peak Height (A): 0.010
Background Pk Area (A-s): 0.003                 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L  ): 2.6

Mean Conc  (ug/L  ):        0.6         SD: 2.86                RSD(%): 489.8
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```
Tl.    ID: 184-50-3ABC          Seq. No.: 00020    A/S Pos.: 12    Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 12
Replicate  1                                  Time: 04:46
Peak Area (A-s): 0.001                        Peak Height (A): 0.010
Background Pk Area (A-s): 0.004               Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.9

uL dispensed: 5 from 0, 5 from 39, 20 from 12
Replicate  2 (Peak Stored)                    Time: 04:49
Peak Area (A-s): 0.004                        Peak Height (A): 0.009
Background Pk Area (A-s): 0.001               Background Pk Height (A): 0.008
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L  ): 2.9

Mean Conc (ug/L  ):        1.9        SD: 1.37                RSD(%): 71.50
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Tl     ID: 184-50-3ABC          Seq. No.: 00021    A/S Pos.: 12    Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 12
Replicate  1                                  Time: 04:52
Peak Area (A-s): -0.000                       Peak Height (A): 0.009
Background Pk Area (A-s): -0.001              Background Pk Height (A): 0.009
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L  ): -0.1

uL dispensed: 5 from 0, 5 from 39, 20 from 12
Replicate  2 (Peak Stored)                    Time: 04:55
Peak Area (A-s): -0.000                       Peak Height (A): 0.010
Background Pk Area (A-s): -0.003              Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L  ): -0.1

Mean Conc  (ug/L  ):       -0.1        SD: 0.02                RSD(%): 21.76
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Tl     ID: CCV=60ug/L           Seq. No.: 00022    A/S Pos.: 5     Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 5
Replicate  1                                  Time: 04:58
Peak Area (A-s): 0.094                        Peak Height (A): 0.143
Background Pk Area (A-s): 0.048               Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.094
Concentration (ug/L  ): 69.5

uL dispensed: 5 from 0, 5 from 39, 20 from 5
Replicate  2 (Peak Stored)                    Time: 05:01
Peak Area (A-s): 0.087                        Peak Height (A): 0.136
Background Pk Area (A-s): 0.052               Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L  ): 64.1

Mean Conc  (ug/L  ):       66.8        SD: 3.83                RSD(%): 5.73

QC sample is within range 48.0 - 72.0
```

```
T1.    ID: CCB                    Seq. No.: 00023    A/S Pos.: 0      Date: 10/20/9

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate  1                              Time: 05:04
Peak Area (A-s): 0.001                    Peak Height (A): 0.009
Background Pk Area (A-s): -0.002          Background Pk Height (A): 0.009
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.5

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate  2 (Peak Stored)                Time: 05:07
Peak Area (A-s): -0.002                   Peak Height (A): 0.009
Background Pk Area (A-s): -0.000          Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L  ): -1.3

Mean Conc  (ug/L  ):       -0.4           SD: 1.25                RSD(%): 333.44

QC sample is within range -2.0 - 2.0

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T1    ID: 184-50-4ABC            Seq. No.: 00024    A/S Pos.: 13     Date: 10/20/
                                                                    3-97
uL dispensed: 5 from 0, 5 from 39, 20 from 13
Replicate  1                              Time: 05:10
Peak Area (A-s): -0.002                   Peak Height (A): 0.009
Background Pk Area (A-s): -0.001          Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L  ): -1.5

uL dispensed: 5 from 0, 5 from 39, 20 from 13
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
T1    ID: CCB                    Seq. No.: 00025    A/S Pos.: 0      Date: 10/20/

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate  1                              Time: 05:15
Peak Area (A-s): -0.002                   Peak Height (A): 0.011
Background Pk Area (A-s): 0.002           Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L  ): -1.8

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate  2 (Peak Stored)                Time: 05:18
Peak Area (A-s): 0.000                    Peak Height (A): 0.011
Background Pk Area (A-s): -0.004          Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L  ): -0.0

Mean Conc  (ug/L  ):       -0.9           SD: 1.26                RSD(%): 141.

QC sample is within range -2.0 - 2.0

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T1    ID: 184-50-4ABC            Seq. No.: 00026    A/S Pos.: 13     Date: 10/20

uL dispensed: 5 from 0, 5 from 39, 20 from 13
Replicate  1                              Time: 05:21
Peak Area (A-s): -0.000                   Peak Height (A): 0.010
```

Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.2

uL dispensed: 5 from 0, 5 from 39, 20 from 13

T1 ID: 184-50-4ABC Seq. No.: 00027 A/S Pos.: 13 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 13
Replicate 1 Time: 05:29
Peak Area (A-s): -0.002 Peak Height (A): 0.010
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -1.2

uL dispensed: 5 from 0, 5 from 39, 20 from 13
Replicate 2 (Peak Stored) Time: 05:32
Peak Area (A-s): -0.001 Peak Height (A): 0.010
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.7

Mean Conc (ug/L): -0.9 SD: 0.36 RSD(%): 39.44

T1 ID: 184-50-5ABC Seq. No.: 00028 A/S Pos.: 14 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 14
Replicate 1 Time: 05:35
Peak Area (A-s): -0.002 Peak Height (A): 0.009
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -1.3

uL dispensed: 5 from 0, 5 from 39, 20 from 14
Replicate 2 (Peak Stored) Time: 05:38
Peak Area (A-s): 0.000 Peak Height (A): 0.010
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.2

Mean Conc (ug/L): -0.6 SD: 1.01 RSD(%): 181.68

T1 ID: 184-50-6ABC Seq. No.: 00029 A/S Pos.: 15 Date: 10/20/97

uL dispensed: 5 from 0, 5 from 39, 20 from 15
Replicate 1 Time: 05:40
Peak Area (A-s): -0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.000 Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.5

uL dispensed: 5 from 0, 5 from 39, 20 from 15
Replicate 2 (Peak Stored) Time: 05:43
Peak Area (A-s): 0.000 Peak Height (A): 0.011
Background Pk Area (A-s): -0.001 Background Pk Height (A): 0.009
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.2

T1 ID: 184-50-7ABC Seq. No.: 00030 A/S Pos.: 16 Date: 10/20/

uL dispensed: 5 from 0, 5 from 39, 20 from 16
Replicate 1 Time: 05:46
Peak Area (A-s): 0.002 Peak Height (A): 0.015
Background Pk Area (A-s): 0.294 Background Pk Height (A): 0.141
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.2

uL dispensed: 5 from 0, 5 from 39, 20 from 16
Replicate 2 (Peak Stored) Time: 05:49
Peak Area (A-s): 0.012 Peak Height (A): 0.023
Background Pk Area (A-s): 0.495 Background Pk Height (A): 0.241
Blank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 8.2

Mean Conc (ug/L): 4.7 SD: 4.94 RSD(%): 104.3

T1 ID: 184-50-7ABC Seq. No.: 00031 A/S Pos.: 16 Date: 10/20/

uL dispensed: 5 from 0, 5 from 39, 20 from 16
Replicate 1 Time: 05:52
Peak Area (A-s): 0.005 Peak Height (A): 0.023
Background Pk Area (A-s): 0.566 Background Pk Height (A): 0.401
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 3.9

uL dispensed: 5 from 0, 5 from 39, 20 from 16
Replicate 2 (Peak Stored) Time: 05:55
Peak Area (A-s): 0.011 Peak Height (A): 0.023
Background Pk Area (A-s): 0.584 Background Pk Height (A): 0.428
Blank Corrected Pk Area (A-s): 0.011
Concentration (ug/L): 8.2

Mean Conc (ug/L): 6.0 SD: 3.03 RSD(%): 50.3

T1 ID: 184-50-1D Seq. No.: 00032 A/S Pos.: 17 Date: 10/20

uL dispensed: 5 from 0, 5 from 39, 20 from 17
Replicate 1 Time: 05:58
Peak Area (A-s): -0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.013
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.6

uL dispensed: 5 from 0, 5 from 39, 20 from 17
Replicate 2 (Peak Stored) Time: 06:01
Peak Area (A-s): -0.001 Peak Height (A): 0.009
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.4

Mean Conc (ug/L): -0.5 SD: 0.13 RSD(%): 25.1

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T1     ID: 184-50-1D POS 11-2-97 EC Seq. No.: 00033     A/S Pos.: 17     Date: 10/20/97

uL dispensed: 5 from 39, 5 from 2, 20 from 17
Replicate  1                                  Time: 06:04
Peak Area (A-s): 0.028                        Peak Height (A): 0.064
Background Pk Area (A-s): 0.023               Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.028
Concentration (ug/L  ): 20.4

uL dispensed: 5 from 39, 5 from 2, 20 from 17
Replicate  2 (Peak Stored)                    Time: 06:07
Peak Area (A-s): 0.029                        Peak Height (A): 0.056
Background Pk Area (A-s): 0.023               Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L  ): 20.8

Mean Conc. (ug/L  ):        20.6        SD: 0.25        RSD(%): 1.23

Recovery is 84.6% 2.4
11-2-97 EC
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```

T1. ID: 184-50-1D L NR Seq. No.: 00036 A/S Pos.: 18 Date: 10/20/9

11-2-99

uL dispensed: 5 from 39, 5 from 2, 20 from 18
Replicate 1 Time: 06:22
Peak Area (A-s): 0.038 Peak Height (A): 0.069
Background Pk Area (A-s): 0.018 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.038
Concentration (ug/L): 27.2

uL dispensed: 5 from 39, 5 from 2, 20 from 18
Replicate 2 (Peak Stored) Time: 06:25
Peak Area (A-s): 0.032 Peak Height (A): 0.061
Background Pk Area (A-s): 0.022 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L): 23.2

Mean Conc (ug/L): 25.2 SD: 2.81 RSD(%): 11.18

Recovery is 104.2%

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QC sample is within range -2.0 - 2.0

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Mean Conc (ug/L): 0.8 SD: 1.08 RSD(%): [illegible]

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Blank Corrected Pk Area (A-s): -0.006
Concentration (ug/L): -4.1

Mean Conc (ug/L): -2.8 SD: 1.85 RSD(%): 65.02

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Concentration (ug/L): 57.2

Mean Conc (ug/L): 55.8 SD: 1.96 RSD(%): 3.50

QC sample is within range 48.0 - 72.0

T1 ID: CCB Seq. No.: 00049 A/S Pos.: 0 Date: 10/21

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 1
Peak Area (A-s): -0.001
Background Pk Area (A-s): 0.011
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.4
Time: 01:03
Peak Height (A): 0.011
Background Pk Height (A): 0.013

uL dispensed: 5 from 0, 5 from 39, 20 from 0
Replicate 2 (Peak Stored)
Peak Area (A-s): 0.002
Background Pk Area (A-s): 0.011
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 1.3
Time: 01:06
Peak Height (A): 0.012
Background Pk Height (A): 0.013

Mean Conc (ug/L): 0.4 SD: 1.17 RSD(%): 265.

QC sample is within range -2.0 - 2.0

Autosampler Loading Map

Element File: TL_MSA.GEL ID/Weight File: EB170.IDW

MKB 10/22/97

Loc.	Concentration	Solutions
0		
1	50.0 ug/L	Calib. Blank / Diluent
2	100.0 ug/L	Stock 1-GZ-1P
6		Stock 1-GZ-2P
7		CHECK LO
8		43377 MB
9		43377 LCS
10		184-50-1ABC
11		184-50 1ABC L
12		184-50-2ABC
13		184-50-3ABC
14		184-50-4ABC
15		184-50-5ABC
16		184-50-6ABC
17		184-50-7ABC
18		184-50-1D
19		184-50-1D L
20		184-50-2DE
21		184-50-3DE
22		184-50-4DE
23		184-50-5D
24		184-50-6D
39		184-50-7D
		Modifier 1

mcat 10/21/97

MSATs analyzed

All pass except 7ABC!

DK# 10/22/97

Element: Tl
Element File: TL_MSA.GEL
Analyst: HOLSTE
Print Data: Main+Suppl.
Peak Storage: 1 Repl./Sample
Print: Calib. Curve

INSTRUMENT: 4100 ZL
Technique: HGA
Version: 7.30
Wavelength: 276.8 Peak
Slit: 0.70 Low
Signal Type: Zeeman AA
Signal Measurement: Peak Area
Read Time: 4.0
Read Delay: 0.0
BOC Time: 2
Sample Replicates: 2
Standard Replicates: 2
Spike Replicates: Same as Sample

CALIBRATION:

Solutions	ID	Conc	Location	Volume	Diluent Volume	Modifier #1	Modifier #2
Calib. Blank	AUTO ZERO		0	10	10	5	
Standard 1	ADD 1 50 ug/L	50.0	1	10		5	
Standard 2	ADD 2 100ug/L	100.0	2	10		5	
Samples				10	10	5	

Diluent Location: 0
Modifier #1 Location: 39
Modifier #2 Location:
Calibration Units: ug/L
Sample Units: ug/L
Calibration Type: Meth. of Add.

Furnace Time/Temperature Program:

Step	Temp	Ramp	Hold	Gas Flow	Read	Gas Type
1	110	5	30	250		Norm
2	130	1	35	250		Norm
3	700	5	20	250		Norm
4	1600	0	5	0	*	Norm
5	2500	1	5	250		Norm

Injection Temp: 20
Pipette Speed: 80%
Extraction System: On

SEQUENCE:

Step	Action and Parameters
1	Pipet diluent + modifier 1 + spike + sample/std
2	Run HGA steps 1 to End

CHECKS:
Additions Preparation: Automated
Periodic Autozero Locations: All Samples

If %RSD > 20.0 and Concentration > 1.7 then Retry 1 times
Check %RSD on: Samples

QC:
Matrix Check Calculations:
% Difference for Dupls: No Locations:
% Recovery for Spike: No Locations: Conc:

```
Element File: TL_MSA.GEL      Element: Tl                    Wavelength: 276.8
Date: 10/21/97                Time: 02:51                    Slit: 0.70 L
Data File: EB170.DAT          ID/Wt File: EB170.IDW          Lamp Current: 0
Technique: HGA                Calib. Type: Meth. of Add.     Energy: 40
```

Tl ID: AUTO ZERO Seq. No.: 00001 A/S Pos.: 0 Date: 10/21/97

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 1
Time: 02:54
Peak Area (A-s): 0.003
Peak Height (A): 0.013
Background Pk Area (A-s): 0.004
Background Pk Height (A): 0.011
Blank Corrected Pk Area (A-s): 0.005

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 2 (Peak Stored)
Time: 02:57
Peak Area (A-s): -0.001
Peak Height (A): 0.009
Background Pk Area (A-s): 0.003
Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.000

Mean Pk Area (A-s): 0.003 SD: 0.0032 RSD(%): 125.64

Auto-zero performed.

Tl ID: 184-50-1ABC Seq. No.: 00002 A/S Pos.: 9 Date: 10/21/97

uL dispensed: 10 from 0, 5 from 39, 10 from 9
Replicate 1
Time: 03:00
Peak Area (A-s): 0.002
Peak Height (A): 0.009
Background Pk Area (A-s): 0.003
Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.002

uL dispensed: 10 from 0, 5 from 39, 10 from 9
Replicate 2 (Peak Stored)
Time: 03:02
Peak Area (A-s): 0.001
Peak Height (A): 0.015
Background Pk Area (A-s): 0.005
Background Pk Height (A): 0.010
Blank Corrected Pk Area (A-s): 0.000

Mean Pk Area (A-s): 0.001 SD: 0.0012 RSD(%): 134.79

Tl ID: ADD 1 50 ug/L Seq. No.: 00003 A/S Pos.: 9 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 1, 10 from 9
Replicate 1
Time: 03:06
Peak Area (A-s): 0.035
Peak Height (A): 0.077
Background Pk Area (A-s): 0.027
Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.034

uL dispensed: 5 from 39, 10 from 1, 10 from 9
Replicate 2 (Peak Stored)
Time: 03:09
Peak Area (A-s): 0.034
Peak Height (A): 0.085
Background Pk Area (A-s): 0.026
Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.034

Mean Pk Area (A-s): 0.034 SD: 0.0003 RSD(%): 0.88

Tl ID: ADD 2 100ug/L Seq. No.: 00004 A/S Pos.: 9 Date: 10/21/97

Replicate 1 Time: 03:12
Peak Area (A-s): 0.067 Peak Height (A): 0.137
Background Pk Area (A-s): 0.045 Background Pk Height (A): 0.093
Blank Corrected Pk Area (A-s): 0.067

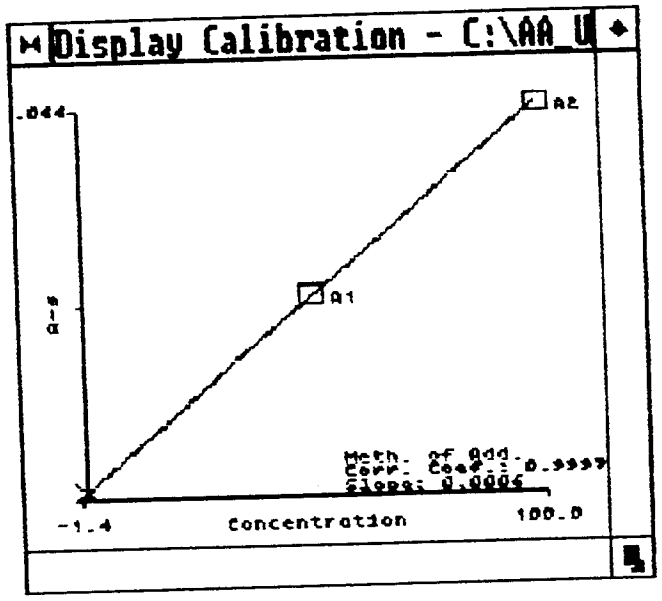
uL dispensed: 5 from 39, 10 from 2, 10 from 9
Replicate 2 (Peak Stored) Time: 03:15
Peak Area (A-s): 0.065 Peak Height (A): 0.143
Background Pk Area (A-s): 0.046 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.064

Mean Pk Area (A-s): 0.066 SD: 0.0015 RSD(%): 2.35

T1 ID: 184-50-1ABC Seq. No.: 00002 A/S Pos.: 9 Date: 10/21/9

Concentration (ug/L): 1.4

Correlation coefficient: 0.99973 Slope: 0.0006



T1 ID: AUTO ZERO Seq. No.: 00005 A/S Pos.: 0 Date: 10/21

uL dispensed: 10 from 0, 5 from 39, 10 from 0

T1 ID: AUTO ZERO Seq. No.: 00006 A/S Pos.: 0 Date: 10/21

uL dispensed: 10 from 0, 5 from 39, 10 from 0

T1 ID: AUTO ZERO Seq. No.: 00007 A/S Pos.: 0 Date: 10/21

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 1 Time: 03:22
Peak Area (A-s): 0.000 Peak Height (A): 0.000
Background Pk Area (A-s): 0.000 Background Pk Height (A): 0.000
Blank Corrected Pk Area (A-s): -0.001

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Replicate  2 (Peak Stored)                    Time: 03:25
Peak Area (A-s): -0.002                       Peak Height (A): 0.005
Background Pk Area (A-s): 0.003               Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): -0.002

Mean Pk Area (A-s):      -0.002               SD: 0.0012              RSD(%): 74.42

Auto-zero performed.

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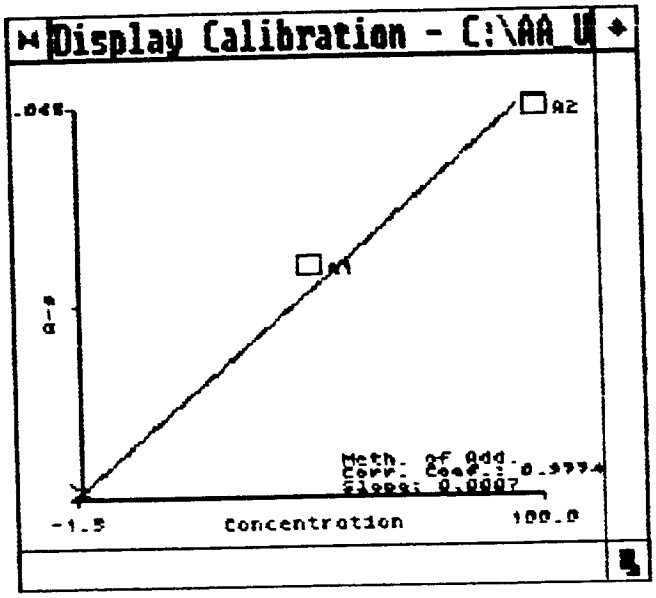
T1 ID: 184-50-2ABC Seq. No.: 00008 A/S Pos.: 11 Date: 10/21/9

Concentration (ug/L): 1.5

Correlation coefficient: 0.97741 Slope: 0.0007

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Background Pk Area (A-s): 0.001 Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): 0.002

Mean Pk Area (A-s): 0.002 SD: 0.0009 RSD(%): 54.83

Tl ID: ADD 1 50 ug/L Seq. No.: 00013 A/S Pos.: 12 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 1, 10 from 12
Replicate 1 Time: 03:58
Peak Area (A-s): 0.037 Peak Height (A): 0.069
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.039

uL dispensed: 5 from 39, 10 from 1, 10 from 12
Replicate 2 (Peak Stored) Time: 04:01
Peak Area (A-s): 0.038 Peak Height (A): 0.068
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.040

Mean Pk Area (A-s): 0.039 SD: 0.0006 RSD(%): 1.64

Tl ID: ADD 2 100ug/L Seq. No.: 00014 A/S Pos.: 12 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 2, 10 from 12
Replicate 1 Time: 04:04
Peak Area (A-s): 0.075 Peak Height (A): 0.133
Background Pk Area (A-s): 0.046 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.077

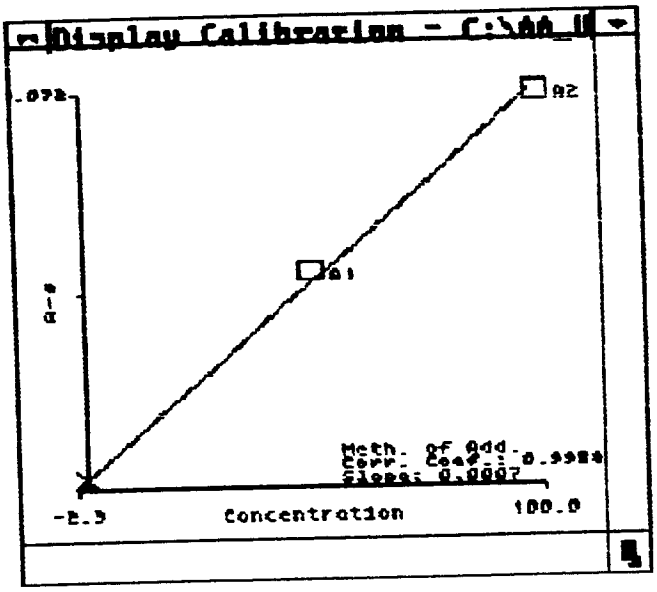
uL dispensed: 5 from 39, 10 from 2, 10 from 12
Replicate 2 (Peak Stored) Time: 04:07
Peak Area (A-s): 0.065 Peak Height (A): 0.115
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.067

Mean Pk Area (A-s): 0.072 SD: 0.0073 RSD(%): 10.10

Tl ID: 184-50-3ABC Seq. No.: 00012 A/S Pos.: 12 Date: 10/21/97

Concentration (ug/L): 2.3

Correlation coefficient: 0.99581 Slope: 0.0007


Display Calibration - C:\AA_II
.078
A2
A1
A-s
Meth. of Add
Corr. Coef.: 0.9988
Slope: 0.0007
-2.5
Concentration
100.0

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uL dispensed: 5 from 39, 10 from 1, 10 from 13
Replicate 2 (Peak Stored) Time: 04:41
Peak Area (A-s): 0.000 Peak Height (A): 0.007
Background Pk Area (A-s): 0.001 Background Pk Height (A): 0.005
Blank Corrected Pk Area (A-s): 0.000

Mean Pk Area (A-s): -0.001 SD: 0.0010 RSD(%): 151.33

Tl ID: ADD 1 50 ug/L Seq. No.: 00018 A/S Pos.: 13 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 1, 10 from 13
Replicate 1 Time: 04:44
Peak Area (A-s): 0.033 Peak Height (A): 0.061
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.033

uL dispensed: 5 from 39, 10 from 1, 10 from 13
Replicate 2 (Peak Stored) Time: 04:47
Peak Area (A-s): 0.033 Peak Height (A): 0.059
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.033

Mean Pk Area (A-s): 0.033 SD: 0.0004 RSD(%): 1.16

Tl ID: ADD 2 100ug/L Seq. No.: 00019 A/S Pos.: 13 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 2, 10 from 13
Replicate 1 Time: 04:50
Peak Area (A-s): 0.064 Peak Height (A): 0.115
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.064

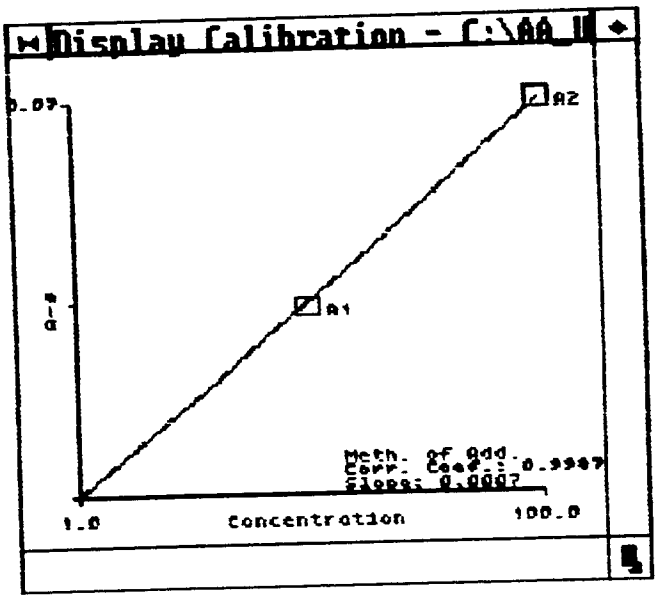
uL dispensed: 5 from 39, 10 from 2, 10 from 13
Replicate 2 (Peak Stored) Time: 04:53
Peak Area (A-s): 0.074 Peak Height (A): 0.129
Background Pk Area (A-s): 0.046 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.074

Mean Pk Area (A-s): 0.069 SD: 0.0073 RSD(%): 10.60

Tl ID: 184-50-4ABC Seq. No.: 00017 A/S Pos.: 13 Date: 10/21/97

Concentration (ug/L): -1.0

Correlation coefficient: 0.99874 Slope: 0.0007



T1 ID: AUTO ZERO Seq. No.: 00020 A/S Pos.: 0 Date: 10/21/9

uL dispensed: 10 from 0, 5 from 39, 10 from 0

T1 ID: AUTO ZERO Seq. No.: 00021 A/S Pos.: 0 Date: 10/21/9

uL dispensed: 10 from 0, 5 from 39, 10 from 0
The background signal is changing during BUC measurement.
Replicate 1 Time: 05:00
Peak Area (A-s): -0.003 Peak Height (A): 0.102
Background Pk Area (A-s): 1.446 Background Pk Height (A): 2.165
Blank Corrected Pk Area (A-s): -0.003

T1 ID: AUTO ZERO Seq. No.: 00022 A/S Pos.: 0 Date: 10/21/

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 1 Time: 05:03
Peak Area (A-s): -0.001 Peak Height (A): 0.007
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): -0.001

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 2 (Peak Stored) Time: 05:06
Peak Area (A-s): -0.002 Peak Height (A): 0.005
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): -0.002

Mean Pk Area (A-s): -0.002 SD: 0.0002 RSD(%): 14.30

Auto-zero performed.

T1 ID: 184-50-5ABC Seq. No.: 00023 A/S Pos.: 14 Date: 10/21/

uL dispensed: 10 from 0, 5 from 39, 10 from 14

MKA 10/22/97

Peak Area (A-s): -0.001 Peak Height (A): 0.005
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.001

uL dispensed: 10 from 0, 5 from 39, 10 from 14
Replicate 2 (Peak Stored) Time: 05:11
Peak Area (A-s): -0.001 Peak Height (A): 0.008
Background Pk Area (A-s): 0.002 Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.001

Mean Pk Area (A-s): 0.001 SD: 0.0001 RSD(%): 13.20

T1 ID: ADD 1 50 ug/L Seq. No.: 00024 A/S Pos.: 14 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 1, 10 from 14
Replicate 1 Time: 05:14
Peak Area (A-s): 0.037 Peak Height (A): 0.061
Background Pk Area (A-s): 0.024 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.039

uL dispensed: 5 from 39, 10 from 1, 10 from 14
Replicate 2 (Peak Stored) Time: 05:17
Peak Area (A-s): 0.037 Peak Height (A): 0.066
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.039

Mean Pk Area (A-s): 0.039 SD: 0.0002 RSD(%): 0.56

T1 ID: ADD 2 100ug/L Seq. No.: 00025 A/S Pos.: 14 Date: 10/21/97

uL dispensed: 5 from 39, 10 from 2, 10 from 14
Replicate 1 Time: 05:20
Peak Area (A-s): 0.065 Peak Height (A): 0.114
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.067

uL dispensed: 5 from 39, 10 from 2, 10 from 14
Replicate 2 (Peak Stored) Time: 05:23
Peak Area (A-s): 0.072 Peak Height (A): 0.124
Background Pk Area (A-s): 0.046 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.074

Mean Pk Area (A-s): 0.070 SD: 0.0046 RSD(%): 6.61

T1 ID: 184-50-5ABC Seq. No.: 00023 A/S Pos.: 14 Date: 10/21/97

Concentration (ug/L): 1.4

Correlation coefficient: 0.99408 Slope: 0.0007

MKA 10/22/97

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T1    ID: AUTO ZERO          Seq. No.: 00026    A/S Pos.: 0      Date: 10/21/

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate  1                                   Time: 23:11
Peak Area (A-s): 0.000                         Peak Height (A): 0.007
Background Pk Area (A-s): 0.003                Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.002

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate  2 (Peak Stored)                     Time: 23:14
Peak Area (A-s): -0.001                        Peak Height (A): 0.008
Background Pk Area (A-s): 0.004                Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.001

Mean Pk Area (A-s):      0.001          SD: 0.0005              RSD(%): 36.64

Auto-zero performed.

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T1    ID: 184-50-2ABC        Seq. No.: 00027    A/S Pos.: 11     Date: 10/21/

uL dispensed: 10 from 0, 5 from 39, 10 from 11
Replicate  1                                   Time: 23:17
Peak Area (A-s): 0.001                         Peak Height (A): 0.007
Background Pk Area (A-s): 0.002                Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.001

uL dispensed: 10 from 0, 5 from 39, 10 from 11
Replicate  2 (Peak Stored)                     Time: 23:20
Peak Area (A-s): 0.002                         Peak Height (A): 0.006
Background Pk Area (A-s): 0.001                Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.002

Mean Pk Area (A-s):      0.002          SD: 0.0012              RSD(%): 74.1

T1    ID: ADD 1 50 ug/L      Seq. No.: 00028    A/S Pos.: 11     Date: 10/21

uL dispensed: 5 from 39, 10 from 1, 10 from 11
Replicate  1                                   Time: 23:23
Peak Area (A-s): 0.039                         Peak Height (A): 0.086
Background Pk Area (A-s): 0.025                Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.039

uL dispensed: 5 from 39, 10 from 1, 10 from 11
Replicate  2 (Peak Stored)                     Time: 23:26
Peak Area (A-s): 0.039                         Peak Height (A): 0.082
Background Pk Area (A-s): 0.026                Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.039

Mean Pk Area (A-s):      0.039          SD: 0.0002              RSD(%): 0.5

T1    ID: ADD 2 100ug/L      Seq. No.: 00029    A/S Pos.: 11     Date: 10/2

uL dispensed: 5 from 39, 10 from 2, 10 from 11
Replicate  1                                   Time: 23:29
Peak Area (A-s): 0.076                         Peak Height (A): 0.156
Background Pk Area (A-s): 0.048                Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.076
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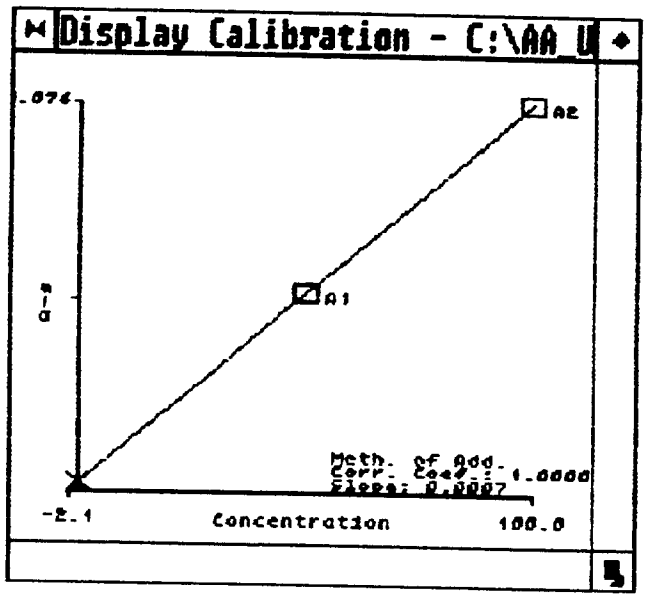
Replicate 2 (Peak Stored) Time: 23:32
Peak Area (A-s): 0.076 Peak Height (A): 0.162
Background Pk Area (A-s): 0.048 Background Pk Height (A): 0.093
Blank Corrected Pk Area (A-s): 0.076

Mean Pk Area (A-s): 0.076 SD: 0.0002 RSD(%): 0.26

T1 ID: 184-50-2ABC Seq. No.: 00027 A/S Pos.: 11 Date: 10/21/97

Concentration (ug/L): 2.1

Correlation coefficient: 1.00000 Slope: 0.0007

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Peak Area (A-s): -0.003
Background Pk Area (A-s): 0.005
Blank Corrected Pk Area (A-s): -0.001
Peak Height (A): 0.007
Background Pk Height (A): 0.008

uL dispensed: 10 from 0, 5 from 39, 10 from 14
Replicate 2 (Peak Stored)
Peak Area (A-s): 0.001
Background Pk Area (A-s): 0.002
Blank Corrected Pk Area (A-s): 0.003
Time: 23:44
Peak Height (A): 0.006
Background Pk Height (A): 0.008

Mean Pk Area (A-s): 0.001 SD: 0.0030 RSD(%): 334.0

T1 ID: ADD 1 50 ug/L Seq. No.: 00032 A/S Pos.: 14 Date: 10/21/

uL dispensed: 5 from 39, 10 from 1, 10 from 14
Replicate 1
Peak Area (A-s): 0.039
Background Pk Area (A-s): 0.023
Blank Corrected Pk Area (A-s): 0.041
Time: 23:47
Peak Height (A): 0.066
Background Pk Height (A): 0.039

uL dispensed: 5 from 39, 10 from 1, 10 from 14
Replicate 2 (Peak Stored)
Peak Area (A-s): 0.039
Background Pk Area (A-s): 0.025
Blank Corrected Pk Area (A-s): 0.040
Time: 23:50
Peak Height (A): 0.066
Background Pk Height (A): 0.040

Mean Pk Area (A-s): 0.040 SD: 0.0003 RSD(%): 0.68

T1 ID: ADD 2 100ug/L Seq. No.: 00033 A/S Pos.: 14 Date: 10/21/

uL dispensed: 5 from 39, 10 from 2, 10 from 14
Replicate 1
Peak Area (A-s): 0.074
Background Pk Area (A-s): 0.044
Blank Corrected Pk Area (A-s): 0.076
Time: 23:53
Peak Height (A): 0.132
Background Pk Height (A): 0.074

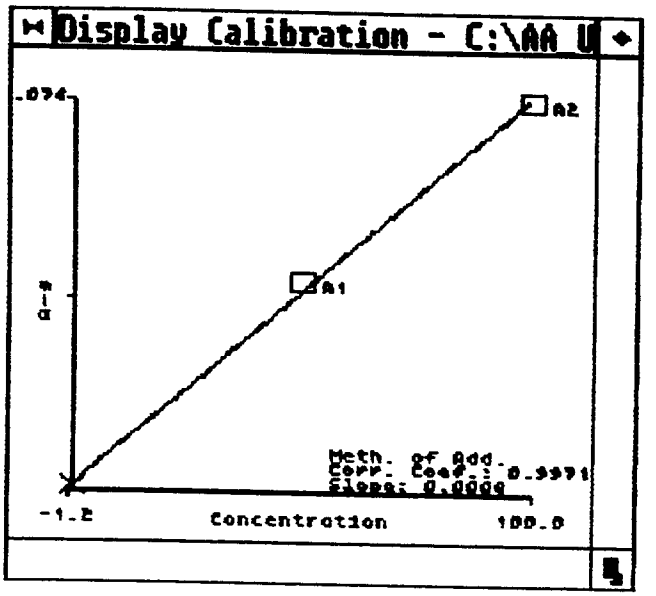
uL dispensed: 5 from 39, 10 from 2, 10 from 14
Replicate 2 (Peak Stored)
Peak Area (A-s): 0.074
Background Pk Area (A-s): 0.043
Blank Corrected Pk Area (A-s): 0.075
Time: 23:56
Peak Height (A): 0.127
Background Pk Height (A): 0.073

Mean Pk Area (A-s): 0.076 SD: 0.0006 RSD(%): 0.81

T1 ID: 184-50-5ABC Seq. No.: 00031 A/S Pos.: 14 Date: 10/21

Concentration (ug/L): 1.2

Correlation coefficient: 0.99714 Slope: 0.0008


Display Calibration - C:\AA
.074
A2
A1
Meth. of Add.
Corr. Coef.: 0.9971
Slope: 0.0006
-1.2
Concentration
100.0

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Replicate 1 Time: 00:10
Peak Area (A-s): 0.035 Peak Height (A): 0.066
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.042
Blank Corrected Pk Area (A-s): 0.034

uL dispensed: 5 from 39, 10 from 1, 10 from 15
Replicate 2 (Peak Stored) Time: 00:13
Peak Area (A-s): 0.037 Peak Height (A): 0.067
Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.036

Mean Pk Area (A-s): 0.035 SD: 0.0014 RSD(%): 3.88

T1 ID: ADD 2 100ug/L Seq. No.: 00037 A/S Pos.: 15 Date: 10/22/

uL dispensed: 5 from 39, 10 from 2, 10 from 15
Replicate 1 Time: 00:16
Peak Area (A-s): 0.070 Peak Height (A): 0.125
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.069

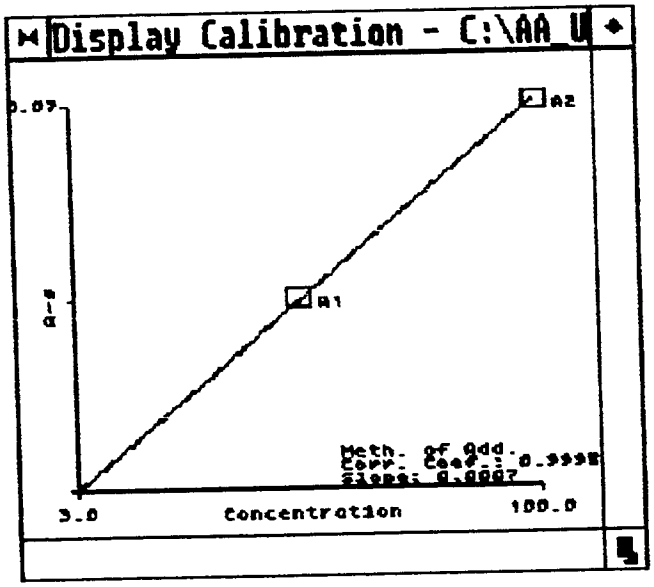
uL dispensed: 5 from 39, 10 from 2, 10 from 15
Replicate 2 (Peak Stored) Time: 00:19
Peak Area (A-s): 0.072 Peak Height (A): 0.135
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.077
Blank Corrected Pk Area (A-s): 0.072

Mean Pk Area (A-s): 0.070 SD: 0.0020 RSD(%): 2.90

T1 ID: 184-50-6ABC Seq. No.: 00035 A/S Pos.: 15 Date: 10/22/

Concentration (ug/L): -3.0

Correlation coefficient: 0.99954 Slope: 0.0007



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T1     ID: AUTO ZERO          Seq. No.: 00038     A/S Pos.: 0      Date: 10/22/97

uL dispensed: 10 from 0, 5 from 39, 10 from 0
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uL dispensed: 5 from 39, 10 from 2, 10 from 16
Replicate 1
Peak Area (A-s): 0.026
Background Pk Area (A-s): 0.962
Blank Corrected Pk Area (A-s): 0.026
Time: 01:02
Peak Height (A): 0.071
Background Pk Height (A): 1.406

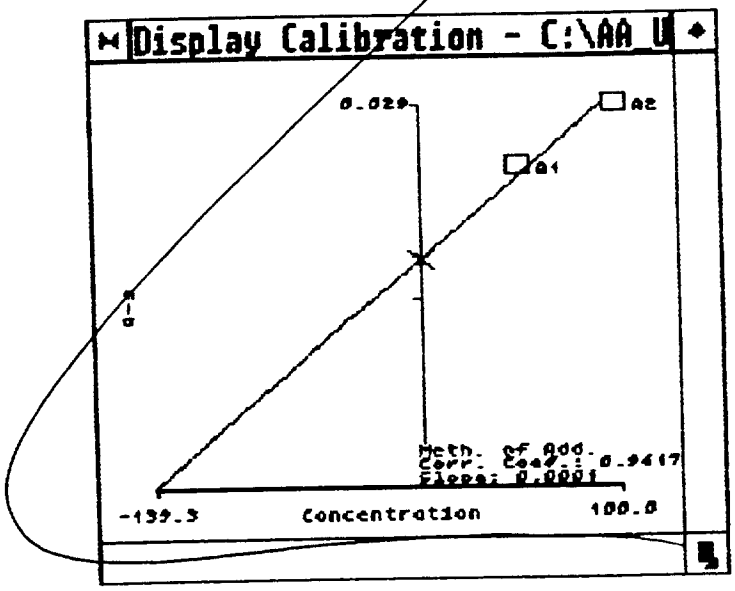
uL dispensed: 5 from 39, 10 from 2, 10 from 16
Replicate 2 (Peak Stored)
Peak Area (A-s): 0.032
Background Pk Area (A-s): 0.872
Blank Corrected Pk Area (A-s): 0.032
Time: 01:05
Peak Height (A): 0.109
Background Pk Height (A): 1.269

Mean Pk Area (A-s): 0.029 SD: 0.0040 RSD(%): 13.78

T1 ID: 184-50-7ABC Seq. No.: 00041 A/S Pos.: 16 Date: 10/22/

Concentration (ug/L): 139.3

Correlation coefficient: 0.96177 Slope: 0.0001



MCM 10/22/97

T1 ID: AUTO ZERO Seq. No.: 00044 A/S Pos.: 0 Date: 10/22

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 1
Peak Area (A-s): -0.001
Background Pk Area (A-s): 0.004
Blank Corrected Pk Area (A-s): -0.001
Time: 01:27
Peak Height (A): 0.007
Background Pk Height (A): 0.007

uL dispensed: 10 from 0, 5 from 39, 10 from 0
Replicate 2 (Peak Stored)
Peak Area (A-s): -0.000
Background Pk Area (A-s): 0.002
Blank Corrected Pk Area (A-s): -0.001
Time: 01:30
Peak Height (A): 0.007
Background Pk Height (A): 0.008

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Auto-zero performed.

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ID/Weight File: A6827.IDW
Sample Volume: 100 mL

Analyst: D.STREETER-EDWARDS
Nominal Weight: 1.0 g

Hg.

Loc.	Sample ID	Weight	Dilution
0	ST BLK		
1	STD1=0.2ug/L		
2	STD2=0.5ug/L		
3	STD3=1.0ug/L		
4	STD4=2.0ug/L		
5	STD5=5.0ug/L		
6	STD6=10.0ug/L		
7	ICV=4.0ug/L		
8	ICB		
9	CHECK LO		
10	43411 MB2		
11	43411 MB2D		
12	43411 LCS2		
13	43411 LCS2D		
14	184-84-6CAB		
15	184-84-6CAB D		
16	184-84-6D		
17	184-84-6E		
18	184-84-6D MS		
19	184-84-6D MSD		
20	CCV7=6.0ug/L		
21	CCB		
22	184-84-6G		
23	184-84-6G D		
24	184-84-6E		
25	184-84-6E D		
26	184-84-6F		
27	184-84-6F D		
28	184-84-7DCAB		
29	184-84-7DCAB D		
30	184-84-7G		
31	184-84-7G D		
32	CCV8=6.0ug/L		
33	CCB		
34	184-84-7EF		
35	184-84-7EF D		
36	184-84-7EF MS		
37	184-84-7EF MSD		
38	184-84-7H		
39	184-84-7H D		
40	184-84-7I		
41	184-84-7I D		
42	CCV9=6.0ug/L		
43	43377 MB1		
44	43377 MB1 D		
45	43377 LCS1		
46	43377 LCS1D		
47	184-50-1CAE		
48	184-50-1CAB D		
49	184-50-1D		
50	184-50-1D D		
51	184-50-1D MS		
52	184-50-1D MSD		
53	CCV1=6.0ug/L		

3-023-5 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

Loc.	Sample ID	Weight	Dilution
54	CCB		
55	184-50-1E		
56	184-50-1E D		
57	184-50-1F		
58	184-50-1F D		
59	184-50-1G		
60	184-50-1G D		
61	184-50-2CAB		
62	184-50-2CAB D		
63	184-50-2DE		
64	184-50-2DE D		
65	CCV2=6.0ug/L		
66	CCB		
67	184-50-2F		
68	184-50-2F D		
69	184-50-2G		
70	184-50-2G D		
71	184-50-2H		
72	184-50-2H D		
73	184-50-3DE		
74	184-50-3DE D		
75	184-50-3DE MS		
76	184-50-3DE MSD		
77	CCV3=6.0ug/L		
78	CCB		
79	184-50-3CAB		
80	184-50-3CAB D		
81	184-50-3F		
82	184-50-3F D		
83	184-50-3G		
84	184-50-3G D		
85	184-50-3H		
86	184-50-3H D		
87	184-50-4CAB		
88	184-50-4CAB D		
89	CCV4=6.0ug/L		
90	CCB		
91	184-50-4DE		
92	184-50-4DE D		
93	184-50-4DE MS		
94	184-50-4DE MSD		
95	184-50-4F		
96	184-50-4F D		
97	184-50-4G		
98	184-50-4G D		
99	184-50-4H		
100	184-50-4H D		
101	CCV5=6.0ug/L		
102	CCB		
103	184-50-5CAB		
104	184-50-5CAB D		
105	184-50-5BD		
106	184-50-5BD D		
107	184-50-5E		
108	184-50-5E D		
109	184-50-5F		

Hg

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

3-023-6 DSE 10/21/97

Loc.	Sample ID	Weight	Dilution
110	184-50-5F D		
111	184-50-6CAE		
112	184-50-6CAB D		
113	CCV6=6.0ug/L		
114	CCB		

—3-023-6 DSE 10/21/97

Hg.

Element: Hg2 Analyst: D STREETER-EDWARDS
Print Data: Main+Suppl. Peak Storage: None
Print: Calib. Curve
Remarks:
STANDARDS: 3-023-5
QC: 3-023-4,6

Hg.

INSTRUMENT: 510C Technique: MHS Version: 7.01
Wavelength: 253.7 Peak Slit: 0.7 Low
Signal Type: AA Signal Measurement: Peak Height (5)
Read Time: 30.0 Read Delay: 1.0 BOC Time: 2
Sample Replicates: 1
Standard Replicates: 1

FLAME:
Flame Type: Air Flame Sensor: On
Oxidant Flow: 10.0 L/min Fuel Flow: 2.0 L/min

CALIBRATION:

Solutions	ID	Conc
Calib. Blank	STD BLK	
Standard 1	STD 1	0.200
Standard 2	STD 2	0.500
Standard 3	STD 3	1.000
Standard 4	STD 4	2.000
Standard 5	STD 5	5.000
Standard 6	STD 6	10.000

Calibration Units: ug/L Sample Units: ug/L
Calibration Type: Linear

QC:
[illegible] Check Calculations:
[illegible]ference for Dupls: No Locations:
[illegible]ecovery for Spike: No Locations: Conc:

Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Date: 10/21/97 Time: 10:04 Slit: 0.7 L
Data File: A8827.DAT ID/Wt File: A8627.IDW Lamp Current: 0
Technique: MHS Calib. Type: Linear Energy: 71
Remark 1: STANDARDS= 3-023-5
Remark 2: QC= 3-023-4,4 ppb 10/21/97

Hg2 ID: Seq. 00001 Seq. No.: 00001 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:05
Peak Area (A-s): -0.035 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.014

Auto-zero performed.

Hg2 ID: Seq. 00002 Seq. No.: 00002 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:07
Peak Area (A-s): 0.022 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.012

Auto-zero performed.

Element File: HG_.ME_ Element: Hg2 Wavelength: 253.7
Date: 10/21/97 Time: 10:09 Slit: 0.7 L
Data File: AB827.DAT ID/Wt File: AB827.IDW Lamp Current: 0
Technique: MHS Calib. Type: Linear Energy: 71
Remark 1: STANDARDS= 3-023-5
Remark 2: QC= 3-023-4, 6 DSE 10/21/97

Hg2 ID: ST BLK Seq. No.: 00003 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:10
Peak Area (A-s): -0.004 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.003

Auto-zero performed.

Hg2 ID: STD1=0.1ug/L Seq. No.: 00004 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:11
Peak Area (A-s): 0.170 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.107

Standard number 1 applied. [0.200]
Correlation coefficient: 1.00000 Slope: 0.0346

Hg2 ID: STD2=0.5ug/L Seq. No.: 00005 A/S Pos.: -- Date: 10/21/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:12
Peak Area (A-s): 0.595 Peak Height (A): 0.018
Blank Corrected Pk Height (A): 0.018
Concentration (ug/L): 0.525

Standard number 2 applied. [0.500]
Correlation coefficient: 0.99914 Slope: 0.0361

Hg2 ID: STD3=1.0ug/L Seq. No.: 00006 A/S Pos.: -- Date: 10/21/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:13
Peak Area (A-s): 0.878 Peak Height (A): 0.039
Blank Corrected Pk Height (A): 0.039
Concentration (ug/L): 1.073

Standard number 3 applied. [1.000]
Correlation coefficient: 0.99824 Slope: 0.0382

Hg2 ID: STD4=2.0ug/L Seq. No.: 00007 A/S Pos.: -- Date: 10/21/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:15
Peak Area (A-s): 1.761 Peak Height (A): 0.074

Blank Corrected Pk Height (A): 0.074
Concentration (ug/L): 1.943

Standard number 4 applied. [2.000]
Correlation coefficient: 0.99947 Slope: 0.0373

Hg2 ID: STD5=5.0ug/L Seq. No.: 00008 A/S Pos.: -- Date: 10/21/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:16
Peak Area (A-s): 4.444 Peak Height (A): 0.190
Blank Corrected Pk Height (A): 0.190
Concentration (ug/L): 5.088

Standard number 5 applied. [5.000]
Correlation coefficient: 0.99989 Slope: 0.037[illegible]

Hg2 ID: STD6=10.0ug/L Seq. No.: 0000[illegible] A/S Pos.: -- Date: 10/21/97

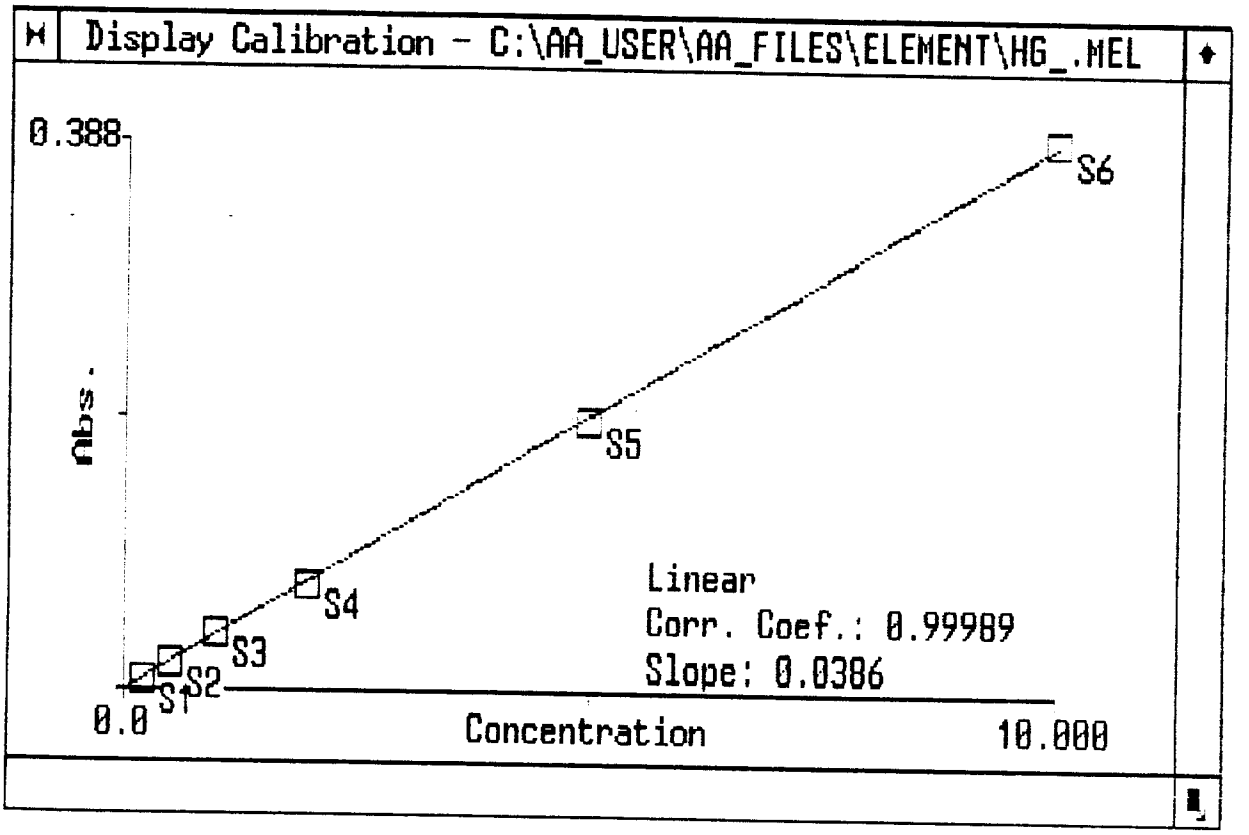
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:17
Peak Area (A-s): 8.952 Peak Height (A): 0.388
Blank Corrected Pk Height (A): 0.385
Concentration (ug/L): 10.231

Standard number 6 applied. [10.000]
Correlation coefficient: 0.99989 Slope: 0.038[illegible]

Element File: HG_.MEL	Element: Hg2	Wavelength: 253.7
Date: 10/21/97	Time: 10:18	Slit: 0.7 L
Data File: A8827.DAT	ID/Wt File: A8827.IDW	Lamp Current: 0
Technique: MHS	Calib. Type: Linear	Energy: 71

Remark 1: STANDARDS= 3-023-5

Remark 2: QC= 3-023-4, LDSE 10/24/97



Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Date: 10/21/97 Time: 10:19 Slit: 0.7 L
Data File: A8827.DAT ID/Wt File: A8827.IDW Lamp Current: 0
Technique: MHS Calib. Type: Linear Energy: 71
Remark 1: STANDARDS= 3-023-5
Remark 2: QC= 3-023-4, 6 DSE 10/21/97

Hg2 ID: ICV=4.0ug/L Seq. No.: 00010 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:21
Peak Area (A-s): 3.520 Peak Height (A): 0.152
Blank Corrected Pk Height (A): 0.152
Concentration (ug/L): 3.941

Hg2 ID: ICB Seq. No.: 00011 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:23
Peak Area (A-s): 0.008 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.005

Hg2 ID: CRDL LC Seq. No.: 00012 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:24
Peak Area (A-s): 0.163 Peak Height (A): 0.006
Blank Corrected Pk Height (A): 0.006
Concentration (ug/L): 0.166

Hg2 ID: 43411 MBC Seq. No.: 00013 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:26
Peak Area (A-s): -0.003 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.005

Hg2 ID: 43411 MB2D Seq. No.: 00014 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 10:27
Peak Area (A-s): -0.006 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.010

Hg2 ID: 43411 LCS2 Seq. No.: 00015 A/S Pos.: -- Date: 10/21/97 EE DSE 10/21/97

Replicate 1 Time: 10:29
Peak Area (A-s): 7.352 Peak Height (A): 0.321
Blank Corrected Pk Height (A): 0.321
Concentration (ug/L): 8.317

Hg2 ID: 43411 LCS2 Seq. No.: 00016 A/S Pos.: -- Date: 10/21/97

Hg2 ID: 184-84-7I D Seq. No.: 00046 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:28
Peak Area (A-s): 0.004 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.003

Hg2 ID: CCV9:6.0ug/L Seq. No.: 00047 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:29
Peak Area (A-s): 5.101 Peak Height (A): 0.216
Blank Corrected Pk Height (A): 0.216
Concentration (ug/L): 5.609

Hg2 ID: CCB Seq. No.: 00048 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:33
Peak Area (A-s): -0.011 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.013

Hg2 ID: 43377 MB1 Seq. No.: 00049 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:34
Peak Area (A-s): -0.005 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.005

Hg2 ID: 43377 MB1 D Seq. No.: 00050 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:35
Peak Area (A-s): -0.011 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

Hg2 ID: 43377 LCS1 Seq. No.: 00051 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:36
Peak Area (A-s): 7.457 Peak Height (A): 0.322
Blank Corrected Pk Height (A): 0.322
Concentration (ug/L): 8.340

EE
DSG 10/21/97

Hg2 ID: 43377 LCS1 Seq. No.: 00052 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:41
Peak Area (A-s): 4.712 Peak Height (A): 0.204
Blank Corrected Pk Height (A): 0.204
Concentration (ug/L): 5.279

Hg2 ID: 484-[illegible] Seq. No.: [illegible] A/S Pos.: [illegible] Date: 10/21/[illegible]

Replicate 1 Time: 12:42
Peak Area (A-s): 4.594 Peak Height (A): 0.194
Blank Corrected Pk Height (A): 0.194
Concentration (ug/L): 5.018

Hg2 ID: 184-50-1CAB ~~CAB~~ ABC 11-3-97 EE Seq. No.: 00054 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:43
Peak Area (A-s): 0.031 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.034

Hg2 ID: 184-50-1~~CAB~~ ABC 11-3-97 EE D Seq. No.: 00055 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:44
Peak Area (A-s): 0.014 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.005

Hg2 ID: 184-50-1D Seq. No.: 00056 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:45
Peak Area (A-s): 0.033 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.034

Hg2 ID: 184-50-1D D Seq. No.: 00057 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:46
Peak Area (A-s): 0.040 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.036

Hg2 ID: 184-50-1D MS Seq. No.: 00058 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:47
Peak Area (A-s): 7.796 Peak Height (A): 0.329
Blank Corrected Pk Height (A): 0.329
Concentration (ug/L): 8.522

Hg2 ID: 184-50-1D MSD Seq. No.: 00059 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:48
Peak Area (A-s): 7.729 Peak Height (A): 0.328
Blank Corrected Pk Height (A): 0.328
Concentration (ug/L): 8.504

Hg2 ID: CCV1=6.0ug/L Seq. No.: 00060 A/S Pos.: -- Date: 10/21/97

Blank Corrected Pk Height (A): 0.231
Concentration (ug/L): 5.981

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Hg2 ID: CCE Seq. No.: 00061 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:50
Peak Area (A-s): 0.043 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.044

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Hg2 ID: 184-50-1E Seq. No.: 00062 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:52
Peak Area (A-s): 0.003 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.005

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Hg2 ID: 184-50-1E D Seq. No.: 00063 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:53
Peak Area (A-s): -0.002 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.005

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Hg2 ID: 184-50-1F Seq. No.: 00064 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:54
Peak Area (A-s): 0.287 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.307

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Hg2 ID: 184-50-1F D Seq. No.: 00065 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:55
Peak Area (A-s): 0.298 Peak Height (A): 0.013
Blank Corrected Pk Height (A): 0.013
Concentration (ug/L): 0.320

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Hg2 ID: 184-50-1G Seq. No.: 00066 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:56
Peak Area (A-s): 0.023 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.016

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Hg2 ID: 184-50-1G D Seq. No.: 00067 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:57
Peak Area (A-s): 0.021 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
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Hg2 ID: 184-50-2CAB Seq. No.: 00068 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:58
Peak Area (A-s): 0.001 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.008

Hg2 ID: 184-50-2CAB D Seq. No.: 00069 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 12:59
Peak Area (A-s): -0.002 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.008

Hg2 ID: 184-50-2DE Seq. No.: 00070 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:00
Peak Area (A-s): 0.037 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.034

Hg2 ID: 184-50-2DE D Seq. No.: 00071 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:01
Peak Area (A-s): 0.027 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.025

Hg2 ID: CCV2e6.0ug/L Seq. No.: 00072 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:02
Peak Area (A-s): 5.44e Peak Height (A): 0.231
Blank Corrected Pk Height (A): 0.231
Concentration (ug/L): 6.001

Hg2 ID: CCB Seq. No.: 00073 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:03
Peak Area (A-s): 0.015 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.008

Hg2 ID: 184-50-2F Seq. No.: 00074 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:04
Peak Area (A-s): -0.013 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.018

Replicate 1 Time: 13:05
Peak Area (A-s): -0.012 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

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Hg2 ID: 184-50-2G Seq. No.: 00076 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:06
Peak Area (A-s): 0.275 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.299

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Hg2 ID: 184-50-2G D Seq. No.: 00077 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:07
Peak Area (A-s): 0.283 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012
Concentration (ug/L): 0.302

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Hg2 ID: 184-50-2H Seq. No.: 00078 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:08
Peak Area (A-s): -0.012 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.021

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Hg2 ID: 184-50-2H D Seq. No.: 00079 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:09
Peak Area (A-s): -0.014 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.018

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Hg2 ID: 184-50-3DE Seq. No.: 00080 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:10
Peak Area (A-s): 0.502 Peak Height (A): 0.021
Blank Corrected Pk Height (A): 0.021
Concentration (ug/L): 0.549

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Hg2 ID: 184-50-3DE D Seq. No.: 00081 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:11
Peak Area (A-s): 0.509 Peak Height (A): 0.021
Blank Corrected Pk Height (A): 0.021
Concentration (ug/L): 0.554

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Hg2 ID: 184-50-3DE MS Seq. No.: 00082 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:12
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Concentration (ug/L): 8.403

Hg2 ID: 184-50-3DE MSD Seq. No.: 00083 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): 7.202
Blank Corrected Pk Height (A): 0.308
Concentration (ug/L): 7.976

Time: 13:13
Peak Height (A): 0.308

Hg2 ID: CCV3=6.0ug/L Seq. No.: 00084 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): 5.583
Blank Corrected Pk Height (A): 0.239
Concentration (ug/L): 6.189

Time: 13:14
Peak Height (A): 0.235

Hg2 ID: CCB Seq. No.: 00085 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): 0.050
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.047

Time: 13:15
Peak Height (A): 0.002

Hg2 ID: 184-50-3DE ABC 10-3-9766 Seq. No.: 00086 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): 0.005
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.000

Time: 13:16
Peak Height (A): 0.000

Hg2 ID: 184-50-3DE D ABC 10-3-9766 Seq. No.: 00087 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): 0.001
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.000

Time: 13:17
Peak Height (A): 0.000

Hg2 ID: 184-50-3F Seq. No.: 00088 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): -0.010
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.000

Time: 13:18
Peak Height (A): -0.000

Hg2 ID: 184-50-3F D Seq. No.: 00089 A/S Pos.: -- Date: 10/21/97

Replicate 1
Peak Area (A-s): -0.012
Blank Corrected Pk Height (A): -0.001

Time: 13:19
Peak Height (A): -0.001

Concentration (ug/L): -0.018

Hg2 ID: 184-50-3G Seq. No.: 00090 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:21
Peak Area (A-s): 0.441 Peak Height (A): 0.017
Blank Corrected Pk Height (A): 0.017
Concentration (ug/L): 0.442

Hg2 ID: 184-50-3G D Seq. No.: 00091 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:22
Peak Area (A-s): 0.441 Peak Height (A): 0.018
Blank Corrected Pk Height (A): 0.018
Concentration (ug/L): 0.463

Hg2 ID: 184-50-3H Seq. No.: 00092 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:23
Peak Area (A-s): 0.060 Peak Height (A): 0.003
Blank Corrected Pk Height (A): 0.003
Concentration (ug/L): 0.070

Hg2 ID: 184-50-3H D Seq. No.: 00093 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:24
Peak Area (A-s): 0.060 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.060

ABC
Hg2 ID: 184-50-4 Seq. No.: 00094 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:25
Peak Area (A-s): -0.009 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.003

Hg2 ID: 184-50-4 D Seq. No.: 00095 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:26
Peak Area (A-s): -0.014 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

Hg2 ID: CCV4=6.0ug/L Seq. No.: 00096 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:27
Peak Area (A-s): 5.489 Peak Height (A): 0.236
Blank Corrected Pk Height (A): 0.236
Concentration (ug/L): 6.121

Hg2 ID: CCB Seq. No.: 00097 A/S Pos.: -- Date: 10/21/97

Peak Area (A-s): 0.036 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.029

Hg2 ID: 184-50-4DE Seq. No.: 00098 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:30
Peak Area (A-s): 0.022 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.026

Hg2 ID: 184-50-4DE D Seq. No.: 00099 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:31
Peak Area (A-s): 0.039 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.029

Hg2 ID: 184-50-4DE MS Seq. No.: 00100 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:32
Peak Area (A-s): 0.972 Peak Height (A): 0.299
Blank Corrected Pk Height (A): 0.299
Concentration (ug/L): 7.750

Hg2 ID: 184-50-4DE MSD Seq. No.: 00101 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:33
Peak Area (A-s): 0.812 Peak Height (A): 0.292
Blank Corrected Pk Height (A): 0.292
Concentration (ug/L): 7.578

Hg2 ID: 184-50-4F Seq. No.: 00102 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:35
Peak Area (A-s): 0.013 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.013

Hg2 ID: 184-50-4F D Seq. No.: 00103 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:36
Peak Area (A-s): -0.005 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.000

Hg2 ID: 184-50-4G Seq. No.: 00104 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:37
Peak Area (A-s): 0.271 Peak Height (A): 0.012

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Replicate 1 Time: 13:45
Peak Area (A-s): -0.009 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

Hg2 ID: 184-50-5BD D Seq. No.: 00113 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:46
Peak Area (A-s): -0.005 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.005

Hg2 ID: 184-50-5E Seq. No.: 00114 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:47
Peak Area (A-s): -0.014 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.013

Hg2 ID: 184-50-5E D Seq. No.: 00115 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:48
Peak Area (A-s): -0.014 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.013

Hg2 ID: 184-50-5F Seq. No.: 00116 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:49
Peak Area (A-s): -0.014 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.013

Hg2 ID: 184-50-5F D Seq. No.: 00117 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:50
Peak Area (A-s): -0.012 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

Hg2 ID: 184-50-6~~CAE~~ ABC ok 11-3-97 cc Seq. No.: 00118 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:51
Peak Area (A-s): -0.013 Peak Height (A): -0.001
Blank Corrected Pk Height (A): -0.001
Concentration (ug/L): -0.016

Hg2 ID: 184-50-6~~CAE~~ ABC ok 11-3-97 cc D Seq. No.: 00119 A/S Pos.: -- Date: 10/21/97

Replicate 1 Time: 13:52

Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.003

Hg2 ID: CCV6=6.0ug/L Seq. No.: 00120 A/S Pos.: -- Date: 10/21/9

Replicate 1 Time: 13:53
Peak Area (A-s): 5.608 Peak Height (A): 0.244
Blank Corrected Pk Height (A): 0.244
Concentration (ug/L): 6.332

Hg2 ID: CCB Seq. No.: 00121 A/S Pos.: -- Date: 10/21/9

Replicate 1 Time: 13:54
Peak Area (A-s): 0.008 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.003

Hg.

ID/Weight File: A8828.IDW Analyst: D.STREETER-EDWARDS
Sample Volume: 100 mL Nominal Weight: 1.0 g

Loc.	Sample ID	Weight	Dilution
0	ST BLANK		
1	STD1=0.2ug/L		
2	STD2=0.5ug/L		
3	STD3=1.0ug/L		
4	STD4=2.0ug/L		
5	STD5=5.0ug/L		
6	STD6=10.0ug/L		
7	ICV=4.0ug/L		
8	ICB		
9	CHECK LC		
10	43377 MB2		
11	43377 MB2D		
12	43377 LCS		
13	43377 LCSD		
14	184-50-6B		
15	184-50-6B D		
16	184-50-6BD		
17	184-50-6BD D		
18	184-50-6BD MS		
19	184-50-6BD MSD		
20	CCV7=6.0ug/L		
21	CCB		
22	184-50-6E		
23	184-50-6E D		
24	184-50-6FE		
25	184-50-6FE D		
26	184-50-7CAB		
27	184-50-7CAB D		
28	184-50-7E		
29	184-50-7E D		
30	184-50-7F		
31	184-50-7F D		
32	CCV8=6.0ug/L		
33	CCB		
34	184-50-7D		
35	184-50-7D D		
36	184-50-7D MS		
37	184-50-7D MSD		
38	CCV9=6.0ug/L		
39	CCB		
40	42011 Cnl MB		
41	42011 Cnl MBD		
42	42011 LCS		
43	42011 LCSD		
44	170-70-3		
45	170-70-3 D		
46	170-70-3 MS		
47	170-70-3 MSD		
48	CCV=6.0ug/L		
49	CCB		
50	43411 MB3		
51	43411 MB3 D		
52	43411 LCS3		
53	43411 LCS3D		

3-023-7 DSE 10/22/97

3-023-8 DSE 10/22/97

3-023-8 DSE 10/22/97

3-023-8 DSE 10/22/97

3-023-8 DSE 10/22/97

3-023-8 DSE 10/22/97

Hg

Loc.	Sample ID	Weight	Dilution
54	184-84-5BD		
55	184-84-5BD D		
56	184-84-5BD MS		
57	184-84-5BD MSD		
58	CCV10=6.0ug/L		
59	CCB		
60	184-84-5E		
61	184-84-5E D		
62	184-84-5F		
63	184-84-5F D		
64	184-84-5GF		
65	184-84-5GF D		
66	CCV11=6.0ug/L		
67	CCB		

—3-023-8 RSE 10/22/97

Hg

Element File: HG_.MEL
Element: Hg2
Print Data: Main+Suppl.
Print: Calib. Curve
Remarks:
 STANDARDS= 3-023-7
 QC= 3-023-8

Analyst: D STREETER-EDWARDS
Peak Storage: None

INSTRUMENT: 5100
Wavelength: 253.7 Peak
Signal Type: AA
Read Time: 30.0
Sample Replicates: 1
Standard Replicates: 1

Technique: MHS Version: 7.01
Slit: 0.7 Low
Signal Measurement: Peak Height (5)
Read Delay: 1.0 BOC Time: 2

FLAME:
Flame Type: Air
Oxidant Flow: 10.0 L/min

Flame Sensor: On
Fuel Flow: 2.0 L/min

CALIBRATION:

Solutions	ID	Conc
Calib. Blank	STD BLK	
Standard 1	STD 1	0.200
Standard 2	STD 2	0.500
Standard 3	STD 3	1.000
Standard 4	STD 4	2.000
Standard 5	STD 5	5.000
Standard 6	STD 6	10.000

 Calibration Units: ug/L Sample Units: ug/L
 Calibration Type: Linear

QC:
Matrix Check Calculations:
% Difference for Dupls: No Locations:
% Recovery for Spike: No Locations: Conc:

D.SE Hg
10/22/97

Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Date: 10/22/97 Time: 09:46 Slit: 0.7 L
Data File: A8828.DAT ID/Wt File: A8828.IDW Lamp Current: 0
Technique: MHS Calib. Type: Linear Energy: 71
Remark 1: STANDARDS: 3-023-7
Remark 2: QC: 3-023-8

Hg2 ID: Seq. 00001 Seq. No.: 00001 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 09:46
Peak Area (A-s): 0.290 Peak Height (A): 0.012
Blank Corrected Pk Height (A): 0.012

Auto-zero performed.

ID: Seq. 00002 Seq. No.: 00002 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 09:47
Peak Area (A-s): 0.020 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001

Auto-zero performed.

Element File: HG_.MEL Element: Hg2 Wavelength: 253.7
Date: 10/22/97 Time: 09:48 Slit: 0.7 L
Data File: AB828.DAT ID/Wt File: AB828.IDW Lamp Current: 0
Technique: MHS Calib. Type: Linear Energy: 71
Remark 1: STANDARDS= 3-023-7
Remark 2: QC= 3-023-8

Hg2 ID: ST BLANK Seq. No.: 00003 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 09:50
Peak Area (A-s): -0.000 Peak Height (A): -0.000
Blank Corrected Pk Height (A): -0.000

Auto-zero performed.

Hg2 ID: STD1=0.2ug/L Seq. No.: 00004 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 09:52
Peak Area (A-s): 0.162 Peak Height (A): 0.007
Blank Corrected Pk Height (A): 0.007

Standard number 1 applied. [0.200]
Correlation coefficient: 1.00000 Slope: 0.0331

Hg2 ID: STD2=0.5ug/L Seq. No.: 00005 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:53
Peak Area (A-s): 0.429 Peak Height (A): 0.018
Blank Corrected Pk Height (A): 0.018
Concentration (ug/L): 0.548

EE DSE 10/23/97 Didn't accept Data. (Re-run.)

Hg2 ID: STD3=1.0ug/L Seq. No.: 00006 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:54
Peak Area (A-s): 0.886 Peak Height (A): 0.038
Blank Corrected Pk Height (A): 0.038
Concentration (ug/L): 1.145

Hg2 ID: STD2=0.5ug/L Seq. No.: 00007 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:01
Peak Area (A-s): 0.470 Peak Height (A): 0.021
Blank Corrected Pk Height (A): 0.021
Concentration (ug/L): 0.621

Standard number 2 applied. [0.500]
Correlation coefficient: 0.98455 Slope: 0.0402

Hg2 ID: STD3=1.0ug/L Seq. No.: 00008 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:02
Peak Area (A-s): 0.913 Peak Height (A): 0.041
Blank Corrected Pk Height (A): 0.041
Concentration (ug/L): 1.020

Standard number 3 applied. [1.000]
Correlation coefficient: 0.99775 Slope: 0.0409

Hg2 ID: STD4=2.0ug/L Seq. No.: 00009 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:03
Peak Area (A-s): 1.700 Peak Height (A): 0.073
Blank Corrected Pk Height (A): 0.073
Concentration (ug/L): 1.798

Standard number 4 applied. [2.000]
Correlation coefficient: 0.99647 Slope: 0.0378

Hg2 ID: STD5=5.0ug/L Seq. No.: 00010 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:05
Peak Area (A-s): 4.214 Peak Height (A): 0.180
Blank Corrected Pk Height (A): 0.180
Concentration (ug/L): 4.768

Standard number 5 applied. [5.000]
Correlation coefficient: 0.99923 Slope: 0.0364

Hg2 ID: STD6=10.0ug/L Seq. No.: 00011 A/S Pos.: -- Date: 10/22/97

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:06
Peak Area (A-s): 8.381 Peak Height (A): 0.363
Blank Corrected Pk Height (A): 0.363
Concentration (ug/L): 9.993

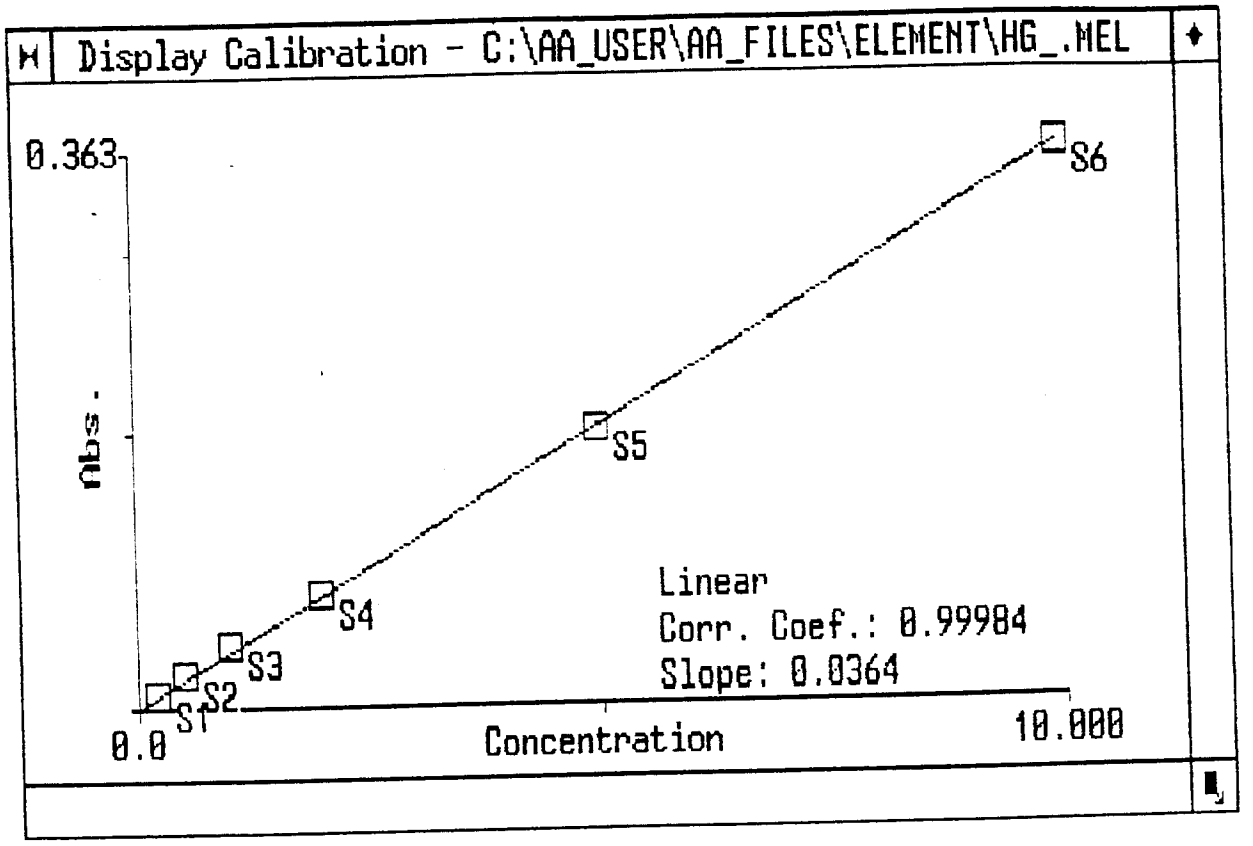
Standard number 6 applied. [10.000]
Correlation coefficient: 0.99984 Slope: 0.0364

Hg

Element File: HG_.MEL
Date: 10/22/97
Data File: A8828.DAT
Technique: MHS
Remark 1: STANDARDS= 3-023-7
Remark 2: QC= 3-023-8

Element: Hg2
Time: 10:07
ID/Wt File: A8828.IDW
Calib. Type: Linear

Wavelength: 253.7
Slit: 0.7 L
Lamp Current: 0
Energy: 71



Hg2 ID: ICV=4.0ug/L Seq. No.: 00012 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 3.522
Blank Corrected Pk Height (A): 0.150
Concentration (ug/L): 4.137
Time: 10:12
Peak Height (A): 0.150

Hg2 ID: ICB Seq. No.: 00013 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 0.014
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.003
Time: 10:13
Peak Height (A): 0.000

Hg2 ID: CHECK LO Seq. No.: 00014 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 0.173
Blank Corrected Pk Height (A): 0.007
Concentration (ug/L): 0.199
Time: 10:15
Peak Height (A): 0.007

Hg2 ID: 43377 MB2 Seq. No.: 00015 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 0.003
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.003
Time: 10:18
Peak Height (A): 0.000

Hg2 ID: 43377 MB2D Seq. No.: 00016 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 0.005
Blank Corrected Pk Height (A): -0.000
Concentration (ug/L): -0.003
Time: 10:19
Peak Height (A): -0.000

Hg2 ID: 43377 LCS Seq. No.: 00017 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 4.228
Blank Corrected Pk Height (A): 0.181
Concentration (ug/L): 4.981
Time: 10:20
Peak Height (A): 0.181

Hg2 ID: 43377 LCSD Seq. No.: 00018 A/S Pos.: -- Date: 10/22/97

Replicate 1
Peak Area (A-s): 4.003
Blank Corrected Pk Height (A): 0.172
Concentration (ug/L): 4.733
Time: 10:22
Peak Height (A): 0.172

Hg2 ID: 184-50-68 Seq. No.: 00019 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:23
Peak Area (A-s): 0.031 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.033

Hg2 ID: 184-50-6B D Seq. No.: 00020 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:24
Peak Area (A-s): 0.011 Peak Height (A): 0.000
Blank Corrected Pk Height (A): 0.000
Concentration (ug/L): 0.011

Hg2 ID: 184-50-6BD- Seq. No.: 00021 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:25
Peak Area (A-s): 0.065 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.066

Hg2 ID: 184-50-6BD D Sec. No.: 00022 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:26
Peak Area (A-s): 0.059 Peak Height (A): 0.003
Blank Corrected Pk Height (A): 0.003
Concentration (ug/L): 0.083

Hg2 ID: 184-50-6BD MS Seq. No.: 00023 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:27
Peak Area (A-s): 4.199 Peak Height (A): 0.179
Blank Corrected Pk Height (A): 0.179
Concentration (ug/L): 4.937

Hg2 ID: 184-50-6BD MSD Seq. No.: 00024 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:29
Peak Area (A-s): 4.372 Peak Height (A): 0.190
Blank Corrected Pk Height (A): 0.190
Concentration (ug/L): 5.227

Hg2 ID: CCV7=6.0ug/L Seq. No.: 00025 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:30
Peak Area (A-s): 5.185 Peak Height (A): 0.227
Blank Corrected Pk Height (A): 0.227
Concentration (ug/L): 6.231

Hg2 ID: CCB Seq. No.: 00026 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:31
Peak Area (A-s): 0.030 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001

ncentration (ug/L): 0.019

---

g2 ID: 184-50-6E Seq. No.: 00027 A/S Pos.: -- _ Date: 10/22/97

eplicate 1 Time: 10:32
eak Area (A-s): 0.015 Peak Height (A): 0.001
lank Corrected Pk Height (A): 0.001
oncentration (ug/L): 0.019

---

g2 ID: 184-50-6E D Seq. No.: 00028 A/S Pos.: -- Date: 10/22/97

eplicate 1 Time: 10:34
eak Area (A-s): 0.017 Peak Height (A): 0.001
lank Corrected Pk Height (A): 0.001
oncentration (ug/L): 0.028

---

g2 ID: 184-50-6FE Seq. No.: 00029 A/S Pos.: -- Date: 10/22/97

eplicate 1 Time: 10:34
eak Area (A-s): 0.015 Peak Height (A): 0.001
lank Corrected Pk Height (A): 0.001
oncentration (ug/L): 0.025

---

g2 ID: 184-50-6FE D Seq. No.: 00030 A/S Pos.: -- Date: 10/22/97

eplicate 1 Time: 10:35
rea (A-s): 0.020 Peak Height (A): 0.001
k Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.017

Hg2 ID: 184-50-7CAB Seq. No.: 00031 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:37
Peak Area (A-s): 0.065 Peak Height (A): 0.003
Blank Corrected Pk Height (A): 0.003
Concentration (ug/L): 0.075

Hg2 ID: 184-50-7CAB D Seq. No.: 00032 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:38
Peak Area (A-s): 0.064 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.063

Hg2 ID: 184-50-7E Seq. No.: 00033 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:39
Peak Area (A-s): 0.021 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.022

g2 ID: 184-50-7E D_ Seq. No.: 00034 A/S Pos.: -- Date: 10/22/97

eplicate 1 Time: 10:40
eak Area (A-s): 0.014 Peak Height (A): 0.000
lank Corrected Pk Height (A): 0.000
oncentration (ug/L): 0.011

---

lg2 ID: 184-50-7F Seq. No.: 00035 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:41
Peak Area (A-s): 0.060 Peak Height (A): 0.003
Blank Corrected Pk Height (A): 0.003
Concentration (ug/L): 0.075

Hg2 ID: 184-50-7F D Seq. No.: 00036 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:42
Peak Area (A-s): 0.071 Peak Height (A): 0.003
Blank Corrected Pk Height (A): 0.003
Concentration (ug/L): 0.072

Hg2 ID: CCV8=6.0ug/L Seq. No.: 00037 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:43
Peak Area (A-s): 4.596 Peak Height (A): 0.210
Blank Corrected Pk Height (A): 0.210
Concentration (ug/L): 5.776

Hg2 ID: CC8 Seq. No.: 00038 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:44
Peak Area (A-s): 0.034 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.039

Hg2 ID: 184-50-7D Seq. No.: 00039 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:45
Peak Area (A-s): 0.147 Peak Height (A): 0.006
Blank Corrected Pk Height (A): 0.006
Concentration (ug/L): 0.166

Hg2 ID: 184-50-7D D Seq. No.: 00040 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:46
Peak Area (A-s): 0.130 Peak Height (A): 0.005
Blank Corrected Pk Height (A): 0.005
Concentration (ug/L): 0.144

Hg2 ID: 184-50-7D MS Seq. No.: 00041 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:48
Peak Area (A-s): 3.349 Peak Height (A): 0.161
Blank Corrected Pk Height (A): 0.161
Concentration (ug/L): 4.424

Hg2 ID: 184-50-7D MSD Seq. No.: 00042 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:49
Peak Area (A-s): 4.134 Peak Height (A): 0.186
Blank Corrected Pk Height (A): 0.186
Concentration (ug/L): 5.125

Hg2 ID: CCV9=6.0ug/L Seq. No.: 00043 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:50
Peak Area (A-s): 4.599 Peak Height (A): 0.221
Blank Corrected Pk Height (A): 0.221
Concentration (ug/L): 6.082

Hg2 ID: CCB Seq. No.: 00044 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:51
Peak Area (A-s): 0.040 Peak Height (A): 0.002
Blank Corrected Pk Height (A): 0.002
Concentration (ug/L): 0.044

Hg2 ID: 42011 Cnl MB Seq. No.: 00045 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:53
Peak Area (A-s): 0.037 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.033

Hg2 ID: 42011 Cnl MBD Seq. No.: 00046 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:53
Peak Area (A-s): 0.028 Peak Height (A): 0.001
Blank Corrected Pk Height (A): 0.001
Concentration (ug/L): 0.030

Hg2 ID: 42011 LCS Seq. No.: 00047 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:55
Peak Area (A-s): 3.791 Peak Height (A): 0.178
Blank Corrected Pk Height (A): 0.178
Concentration (ug/L): 4.901

Hg2 ID: 42011 LCSD Seq. No.: 00048 A/S Pos.: -- Date: 10/22/97

Replicate 1 Time: 10:56
Peak Area (A-s): 3.851 Peak Height (A): 0.180
Blank Corrected Pk Height (A): 0.180

APPENDIX D

COMPUTER SUMMARIES

Appendix D.1

Computer Summaries

Baghouse Inlet - Method 23 & 29

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	MEASURED DATA	
γ	Meter Box Correction Factor	1.021
ΔH	Avg Meter Orifice Pressure, in. H_2O	1.93
P_{bar}	Barometric Pressure, inches Hg	29.90
V_m	Sample Volume, ft^3	11.116
T_m	Average Meter Temperature, °F	90
P_{static}	Stack Static Pressure, inches H_2O	-2.5
T_s	Average Stack Temperature, °F	230
V_{lc}	Condensate Collected, ml	84.0
CO_2	Carbon Dioxide content, % by volume	5.3
O_2	Oxygen content, % by volume	13.1
N_2	Nitrogen content, % by volume	81.6
C_p	Pitot Tube Coefficient	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.5927
Θ	Sample Run Duration, minutes	20
D_n	Nozzle Diameter, inches	0.312
	CALCULATED DATA	
A_n	Nozzle Area, ft^2	0.00053
$V_{m(std)}$	Standard Meter Volume, dscf	10.940
$V_{m(std)}$	Standard Meter Volume, dscm	0.310
P_s	Stack Pressure, inches Hg	29.72
B_{ws}	Moisture, % by volume	26.5
$B_{ws(sat)}$	Moisture (at saturation), % by volume	141.2
V_{wstd}	Standard Water Vapor Volume, ft^3	3.954
$1-B_{ws}$	Dry Mole Fraction	0.735
M_d	Molecular Weight (d.b.), lb/lb•mole	29.37
M_s	Molecular Weight (w.b.), lb/lb•mole	26.35
V_s	Stack Gas Velocity, ft/s	39.9
A	Stack Area, ft^2	12.57
Q_a	Stack Gas Volumetric flow, acfm	30,119
Q_s	Stack Gas Volumetric flow, dscfm	16,819
$Q_{s(cmm)}$	Stack Gas Volumetric flow, dscmm	476.3
I	Isokinetic Sampling Ratio, %	77.0

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA	
	DIOXINS:	
	2378 TCDD	
(ng)	Catch, ng	{0.004}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0129}
(µg/hr)	Emission Rate, µg/hr	{0.369}
	Total TCDD	
(ng)	Catch, ng	0.05
(ng/dscm)	Concentration, ng/dscm, as measured	0.161
(µg/hr)	Emission Rate, µg/hr	4.61
	12378 PeCDD	
(ng)	Catch, ng	0.005
(ng/dscm)	Concentration, ng/dscm, as measured	0.0161
(µg/hr)	Emission Rate, µg/hr	0.461
	Total PeCDD	
(ng)	Catch, ng	0.07
(ng/dscm)	Concentration, ng/dscm, as measured	0.226
(µg/hr)	Emission Rate, µg/hr	6.46
	123478 HxCDD	
(ng)	Catch, ng	0.02
(ng/dscm)	Concentration, ng/dscm, as measured	0.0646
(µg/hr)	Emission Rate, µg/hr	1.84
	123678 HxCDD	
(ng)	Catch, ng	0.04
(ng/dscm)	Concentration, ng/dscm, as measured	0.129
(µg/hr)	Emission Rate, µg/hr	3.69

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA -Continued	
	DIOXINS - Continued	
	123789 HxCDD	
(ng)	Catch, ng	0.05
(ng/dscm)	Concentration, ng/dscm, as measured	0.161
(µg/hr)	Emission Rate, µg/hr	4.61
	Total HxCDD	
(ng)	Catch, ng	0.45
(ng/dscm)	Concentration, ng/dscm, as measured	1.45
(µg/hr)	Emission Rate, µg/hr	41.5
	1234678 HpCDD	
(ng)	Catch, ng	0.72
(ng/dscm)	Concentration, ng/dscm, as measured	2.32
(µg/hr)	Emission Rate, µg/hr	66.4
	Total HpCDD	
(ng)	Catch, ng	1.6
(ng/dscm)	Concentration, ng/dscm, as measured	5.16
(µg/hr)	Emission Rate, µg/hr	148
	12346789 OCDD	
(ng)	Catch, ng	44.5
(ng/dscm)	Concentration, ng/dscm, as measured	144
(µg/hr)	Emission Rate, µg/hr	4,105
	Total PCDD	
(ng)	Catch, ng	46.67
(ng/dscm)	Concentration, ng/dscm, as measured	151
(µg/hr)	Emission Rate, µg/hr	4,305

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA - Continued	
	FURANS	
	2378 TCDF	
(ng)	Catch, ng	{0.02}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0646}
(µg/hr)	Emission Rate, µg/hr	{1.84}
	Total TCDF	
(ng)	Catch, ng	0.14
(ng/dscm)	Concentration, ng/dscm, as measured	0.452
(µg/hr)	Emission Rate, µg/hr	12.9
	12378 PeCDF	
(ng)	Catch, ng	0.008
(ng/dscm)	Concentration, ng/dscm, as measured	0.0258
(µg/hr)	Emission Rate, µg/hr	0.738
	23478 PeCDF	
(ng)	Catch, ng	0.02
(ng/dscm)	Concentration, ng/dscm, as measured	0.0646
(µg/hr)	Emission Rate, µg/hr	1.84
	Total PeCDF	
(ng)	Catch, ng	0.12
(ng/dscm)	Concentration, ng/dscm, as measured	0.387
(µg/hr)	Emission Rate, µg/hr	11.1
	123478 HxCDF	
(ng)	Catch, ng	0.06
(ng/dscm)	Concentration, ng/dscm, as measured	0.194
(µg/hr)	Emission Rate, µg/hr	5.53

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA - Continued	
	Furans - Continued	
	123678 HxCDF	
(ng)	Catch, ng	0.02
(ng/dscm)	Concentration, ng/dscm, as measured	0.0646
(µg/hr)	Emission Rate, µg/hr	1.84
	234678 HxCDF	
(ng)	Catch, ng	{0.02}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0646}
(µg/hr)	Emission Rate, µg/hr	{1.84}
	123789 HxCDF	
(ng)	Catch, ng	0.007
(ng/dscm)	Concentration, ng/dscm, as measured	0.0226
(µg/hr)	Emission Rate, µg/hr	0.646
	Total HxCDF	
(ng)	Catch, ng	0.19
(ng/dscm)	Concentration, ng/dscm, as measured	0.613
(µg/hr)	Emission Rate, µg/hr	17.5
	1234678 HpCDF	
(ng)	Catch, ng	0.12
(ng/dscm)	Concentration, ng/dscm, as measured	0.387
(µg/hr)	Emission Rate, µg/hr	11.1
	1234789 HpCDF	
(ng)	Catch, ng	0.04
(ng/dscm)	Concentration, ng/dscm, as measured	0.129
(µg/hr)	Emission Rate, µg/hr	3.69

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Inlet

	RUN NUMBER	***S-M23-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA - Continued	
	Furans - Continued	
	Total HpCDF	
(ng)	Catch, ng	0.30
(ng/dscm)	Concentration, ng/dscm, as measured	0.968
(µg/hr)	Emission Rate, µg/hr	27.7
	12346789 OCDF	
(ng)	Catch, ng	0.16
(ng/dscm)	Concentration, ng/dscm, as measured	0.516
(µg/hr)	Emission Rate, µg/hr	14.8
	Total PCDF	
(ng)	Catch, ng	0.910
(ng/dscm)	Concentration, ng/dscm, as measured	2.94
(µg/hr)	Emission Rate, µg/hr	83.9
	Total PCDD + PCDF	
(ng)	Catch, ng	47.6
(ng/dscm)	Concentration, ng/dscm, as measured	154
(µg/hr)	Emission Rate, µg/hr	4,389

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

PCDD/PCDF Corrected Stack Gas Concentrations and 2378 TCDD Toxic Equivalent Concentrations

ASPHALT PLANT "A" - Garner, North Carolina

US EPA Test Method 23 - PCDD/PCDF

Baghouse Inlet

	CONCENTRATION (ng/dscmm, adjusted to 7% O2)	2378-TCDD Toxic Equivalent Factor	2378 TOXIC EQUIVALENCIES (ng/dscmm, adjusted to 7% O2)
RUN NUMBER	S-M23-I-1		S-M23-I-1
RUN DATE	08/19/97		8/19/97
RUN TIME	0915-1010		0915-1010
DIOXINS:			
2378 TCDD	{0.0230}	1.000	{0.0230}
Total TCDD	0.288		
12378 PeCDD	0.0288	0.500	0.0144
Total PeCDD	0.403		
123478 HxCDD	0.115	0.100	0.0115
123678 HxCDD	0.230	0.100	0.0230
123789 HxCDD	0.288	0.100	0.0288
Total HxCDD	2.59		
1234678 HpCDD	4.14	0.010	0.0414
Total HpCDD	9.20		
12346789 OCDD	256	0.001	0.256
Total PCDD	268		{0.398}
FURANS:			
2378 TCDF	{0.115}	0.100	{0.0115}
Total TCDF	0.805		
12378 PeCDF	0.0460	0.050	0.00230
23478 PeCDF	0.115	0.500	0.0575
Total PeCDF	0.690		
123478 HxCDF	0.345	0.100	0.0345
123678 HxCDF	0.115	0.100	0.0115
234678 HxCDF	{0.115}	0.100	{0.0115}
123789 HxCDF	0.0403	0.100	0.00403
Total HxCDF	1.09		
1234678 HpCDF	0.690	0.010	0.00690
1234789 HpCDF	0.230	0.010	0.00230
Total HpCDF	1.73		
12346789 OCDF	0.920	0.001	0.000920
Total PCDF	5.23		0.120
Total PCDD + PCDF	274		0.518

Summary of Stack Gas Parameters and Test Results

US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"

US EPA Test Method 29 - Multiple Metals

Baghouse Inlet

	RUN NUMBER	***S-M29-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	MEASURED DATA	
γ	Meter Box Correction Factor	1.016
ΔH	Avg Meter Orifice Pressure, in. H_2O	1.10
P_{bar}	Barometric Pressure, inches Hg	29.90
V_m	Sample Volume, ft^3	10.780
T_m	Average Meter Temperature, °F	92
P_{static}	Stack Static Pressure, inches H_2O	-2.5
T_s	Average Stack Temperature, °F	230
V_{lc}	Condensate Collected, ml	78.8
CO_2	Carbon Dioxide content, % by volume	5.3
O_2	Oxygen content, % by volume	13.1
N_2	Nitrogen content, % by volume	81.6
C_p	Pitot Tube Coefficient	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.4682
Θ	Sample Run Duration, minutes	20
D_n	Nozzle Diameter, inches	0.311
	CALCULATED DATA	
A_n	Nozzle Area, ft^2	0.000527
$V_{m(std)\,cf}$	Standard Meter Volume, ft^3	10.491
$V_{m(std)\,cm}$	Standard Meter Volume, m^3	0.297
Q_m	Average Sampling Rate, dscfm	0.525
P_s	Stack Pressure, inches Hg	29.72
B_{ws}	Moisture, % by volume	26.1
$B_{ws(sat)}$	Moisture (at saturation), % by volume	141.2
V_{wstd}	Standard Water Vapor Volume, ft^3	3.709
$1-B_{ws}$	Dry Mole Fraction	0.739
M_d	Molecular Weight (d.b.), lb/lb•mole	29.37
M_s	Molecular Weight (w.b.), lb/lb•mole	26.40
V_s	Stack Gas Velocity, ft/s	31.5
A	Stack Area, ft^2	12.57
Q_a	Stack Gas Volumetric flow, acfm	23,773
$Q_{s\,cfm}$	Stack Gas Volumetric flow, dscfm	13,353
$Q_{s\,cmm}$	Stack Gas Volumetric flow, dscmm	378
I	Isokinetic Sampling Ratio, %	93.6

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Inlet

	RUN NUMBER	***S-M29-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA	
	<u>Particulate Matter</u>	
g	Target Catch, g	43.3384
gr/dscf	Concentration, gr/dscf	63.7
gr/dscf at 7%	Concentration, gr/dscf at 7% O2	114
g/dscm	Concentration, g/dscm	146
g/dscm at 7%	Concentration, g/dscm at 7% O2	260
lb/hr	Emission Rate, lb/hr	7,296
kg/hr	Emission Rate, kg/hr	3,310
	<u>Antimony</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Arsenic</u>	
µg	Target Catch, µg	15.2
µg/dscm	Concentration, µg/dscm	51.2
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	91.2
g/hr	Emission Rate, g/hr	1.16
	<u>Barium</u>	
µg	Target Catch, µg	613.0
µg/dscm	Concentration, µg/dscm	2,063
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	3,677
g/hr	Emission Rate, g/hr	46.8
	<u>Beryllium</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Cadmium</u>	
µg	Target Catch, µg	6.69
µg/dscm	Concentration, µg/dscm	22.5
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	40.1
g/hr	Emission Rate, g/hr	0.511

Summary of Stack Gas Parameters and Test Results

US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"

US EPA Test Method 29 - Multiple Metals

Baghouse Inlet

	RUN NUMBER	***S-M29-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA - Continued	
	<u>Chromium</u>	
µg	Target Catch, µg	27.2
µg/dscm	Concentration, µg/dscm	91.7
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	163
g/hr	Emission Rate, g/hr	2.08
	<u>Colbalt</u>	
µg	Target Catch, µg	26.5
µg/dscm	Concentration, µg/dscm	89.2
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	159
g/hr	Emission Rate, g/hr	2.02
	<u>Copper</u>	
µg	Target Catch, µg	124
µg/dscm	Concentration, µg/dscm	417
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	743
g/hr	Emission Rate, g/hr	9.46
	<u>Lead</u>	
µg	Target Catch, µg	50.4
µg/dscm	Concentration, µg/dscm	170
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	302
g/hr	Emission Rate, g/hr	3.85
	<u>Manganese</u>	
µg	Target Catch, µg	1,172
µg/dscm	Concentration, µg/dscm	3,946
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	7,032
g/hr	Emission Rate, g/hr	89.5
	<u>Mercury</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Inlet

	RUN NUMBER	***S-M29-I-1***
	RUN DATE	***8/19/97***
	RUN TIME	***0915-1010***
	EMISSIONS DATA - Continued	
	<u>Nickel</u>	
µg	Target Catch, µg	11.8
µg/dscm	Concentration, µg/dscm	39.8
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	70.9
g/hr	Emission Rate, g/hr	0.903
	<u>Phosphorus</u>	
µg	Target Catch, µg	3,545
µg/dscm	Concentration, µg/dscm	11,934
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	21,267
g/hr	Emission Rate, g/hr	271
	<u>Silver</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Selenium</u>	
µg	Target Catch, µg	0.969
µg/dscm	Concentration, µg/dscm	3.26
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	5.81
g/hr	Emission Rate, g/hr	0.0740
	<u>Thallium</u>	
µg	Target Catch, µg	2.90
µg/dscm	Concentration, µg/dscm	9.76
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	17.4
g/hr	Emission Rate, g/hr	0.221
	<u>Zinc</u>	
µg	Target Catch, µg	520.5
µg/dscm	Concentration, µg/dscm	1,752
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	3,123
g/hr	Emission Rate, g/hr	39.8

Appendix D.2

Computer Summaries

Baghouse Outlet - Method 9, 23 & 29

Visible Emission Observation Summary

Baghouse Outlet

Run Number	S-M9-O-1A	O-M9-1B	O-M9-1C	O-M9-1D
Date	8/19/97	8/19/97	8/19/97	8/19/97
Start Time	0918	1107	1304	1412
Stop Time	1106	1207	1404	1512
Percent Opacity				
Average for entire run	1.29	0.82	2.76	3.73
Highest single reading	15	10	10	10
Highest six-minute block average	2.92	1.46	3.61	6.25
Highest six-minute rolling average	3.54	1.67	3.75	6.46

Date: 8/19/97
Start Time: 0918
Stop Time: 1106

Baghouse Outlet
Run Number: O-M9-1A

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	3.13	24.25	1.46	36.25	1.04	48.25	0.83
0.50	NA	12.50	2.92	24.50	1.46	36.50	1.04	48.50	0.63
0.75	NA	12.75	2.92	24.75	1.46	36.75	1.04	48.75	0.63
1.00	NA	13.00	2.92	25.00	1.46	37.00	1.04	49.00	0.63
1.25	NA	13.25	2.71	25.25	1.67	37.25	1.04	49.25	0.63
1.50	NA	13.50	2.29	25.50	1.67	37.50	1.04	49.50	0.63
1.75	NA	13.75	2.29	25.75	1.46	37.75	0.83	49.75	0.63
2.00	NA	14.00	2.29	26.00	1.46	38.00	1.04	50.00	0.63
2.25	NA	14.25	2.50	26.25	1.46	38.25	1.04	50.25	0.63
2.50	NA	14.50	2.08	26.50	1.46	38.50	0.83	50.50	0.42
2.75	NA	14.75	2.08	26.75	1.46	38.75	0.83	50.75	0.63
3.00	NA	15.00	1.88	27.00	1.25	39.00	0.63	51.00	0.42
3.25	NA	15.25	1.67	27.25	0.83	39.25	0.63	51.25	0.42
3.50	NA	15.50	1.46	27.50	0.63	39.50	0.63	51.50	0.63
3.75	NA	15.75	1.46	27.75	0.63	39.75	0.42	51.75	0.63
4.00	NA	16.00	1.46	28.00	0.83	40.00	0.42	52.00	0.42
4.25	NA	16.25	1.46	28.25	1.04	40.25	0.42	52.25	0.42
4.50	NA	16.50	1.46	28.50	1.04	40.50	0.63	52.50	0.42
4.75	NA	16.75	1.25	28.75	0.83	40.75	0.63	52.75	0.42
5.00	NA	17.00	1.46	29.00	0.83	41.00	0.63	53.00	0.42
5.25	NA	17.25	1.46	29.25	0.83	41.25	0.63	53.25	0.42
5.50	NA	17.50	1.67	29.50	1.04	41.50	0.63	53.50	0.42
5.75	NA	17.75	1.67	29.75	1.04	41.75	0.63	53.75	0.42
6.00	**1.88**	**18.00**	**1.67**	**30.00**	**1.04**	**42.00**	**0.42**	**54.00**	**0.42**
6.25	1.67	18.25	1.46	30.25	1.25	42.25	0.42	54.25	0.42
6.50	1.88	18.50	1.46	30.50	1.25	42.50	0.63	54.50	0.63
6.75	1.67	18.75	1.46	30.75	1.25	42.75	0.63	54.75	0.63
7.00	1.88	19.00	1.25	31.00	1.25	43.00	0.63	55.00	0.63
7.25	2.08	19.25	1.25	31.25	1.04	43.25	0.63	55.25	0.83
7.50	2.50	19.50	1.25	31.50	1.04	43.50	0.63	55.50	1.04
7.75	2.50	19.75	1.46	31.75	1.25	43.75	0.63	55.75	1.04
8.00	2.50	20.00	1.25	32.00	1.25	44.00	0.42	56.00	1.04
8.25	2.50	20.25	1.25	32.25	1.04	44.25	0.42	56.25	1.04
8.50	3.13	20.50	1.04	32.50	1.25	44.50	0.63	56.50	1.04
8.75	2.92	20.75	1.04	32.75	1.25	44.75	0.63	56.75	0.83
9.00	2.92	21.00	1.25	33.00	1.46	45.00	0.83	57.00	0.83
9.25	3.13	21.25	1.67	33.25	1.46	45.25	0.83	57.25	0.83
9.50	3.33	21.50	1.88	33.50	1.46	45.50	0.83	57.50	0.83
9.75	3.54	21.75	1.67	33.75	1.67	45.75	0.83	57.75	0.83
10.00	3.33	22.00	1.67	34.00	1.46	46.00	1.04	58.00	0.83
10.25	3.13	22.25	1.67	34.25	1.25	46.25	1.04	58.25	0.83
10.50	3.13	22.50	1.67	34.50	1.25	46.50	0.83	58.50	0.83
10.75	3.13	22.75	1.88	34.75	1.25	46.75	0.83	58.75	0.83
11.00	3.13	23.00	1.67	35.00	1.25	47.00	0.83	59.00	0.83
11.25	3.13	23.25	1.67	35.25	1.25	47.25	0.83	59.25	0.83
11.50	3.13	23.50	1.46	35.50	1.04	47.50	0.83	59.50	NA*
11.75	2.92	23.75	1.46	35.75	1.04	47.75	0.83	59.75	NA*
12.00	**2.92**	**24.00**	**1.46**	**36.00**	**1.25**	**48.00**	**0.83**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 2.92
AVERAGE OPACITY DURING RUN = 1.29
HIGHEST SIX-MINUTE ROLLING AVERAGE = 3.54

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/19/97
Start Time: 1107
Stop Time: 1207

Baghouse Outlet
Run Number: O-M9-1B

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.83	24.25	0.63	36.25	0.21	48.25	0.63
0.50	NA	12.50	1.04	24.50	0.63	36.50	0.21	48.50	0.63
0.75	NA	12.75	1.04	24.75	0.63	36.75	0.21	48.75	0.83
1.00	NA	13.00	1.04	25.00	0.42	37.00	0.21	49.00	0.83
1.25	NA	13.25	1.04	25.25	0.42	37.25	0.63	49.25	0.83
1.50	NA	13.50	1.04	25.50	0.42	37.50	0.63	49.50	0.83
1.75	NA	13.75	1.04	25.75	0.42	37.75	0.83	49.75	0.83
2.00	NA	14.00	1.04	26.00	0.63	38.00	0.83	50.00	1.04
2.25	NA	14.25	1.04	26.25	0.63	38.25	1.04	50.25	1.04
2.50	NA	14.50	1.04	26.50	0.63	38.50	1.04	50.50	1.04
2.75	NA	14.75	1.04	26.75	0.63	38.75	1.04	50.75	1.04
3.00	NA	15.00	1.04	27.00	0.63	39.00	1.04	51.00	0.83
3.25	NA	15.25	1.25	27.25	0.42	39.25	1.04	51.25	0.83
3.50	NA	15.50	1.04	27.50	0.42	39.50	1.04	51.50	0.83
3.75	NA	15.75	1.04	27.75	0.42	39.75	1.04	51.75	0.83
4.00	NA	16.00	1.04	28.00	0.42	40.00	1.04	52.00	1.04
4.25	NA	16.25	1.04	28.25	0.42	40.25	1.04	52.25	1.04
4.50	NA	16.50	0.83	28.50	0.42	40.50	1.04	52.50	0.83
4.75	NA	16.75	0.83	28.75	0.42	40.75	1.25	52.75	0.83
5.00	NA	17.00	0.83	29.00	0.63	41.00	1.46	53.00	0.63
5.25	NA	17.25	0.63	29.25	0.63	41.25	1.46	53.25	0.63
5.50	NA	17.50	0.63	29.50	0.63	41.50	1.46	53.50	0.63
5.75	NA	17.75	0.63	29.75	0.63	41.75	1.46	53.75	0.63
6.00	**1.25**	**18.00**	**0.63**	**30.00**	**0.42**	**42.00**	**1.46**	**54.00**	**0.83**
6.25	1.04	18.25	0.63	30.25	0.63	42.25	1.67	54.25	0.83
6.50	1.04	18.50	0.42	30.50	0.63	42.50	1.67	54.50	1.04
6.75	1.04	18.75	0.42	30.75	0.63	42.75	1.67	54.75	0.83
7.00	1.04	19.00	0.63	31.00	0.63	43.00	1.67	55.00	0.83
7.25	1.04	19.25	0.63	31.25	0.63	43.25	1.25	55.25	0.83
7.50	1.04	19.50	0.63	31.50	0.63	43.50	1.25	55.50	1.04
7.75	1.04	19.75	0.63	31.75	0.63	43.75	1.04	55.75	1.04
8.00	1.04	20.00	0.63	32.00	0.42	44.00	1.04	56.00	0.83
8.25	1.04	20.25	0.63	32.25	0.42	44.25	0.83	56.25	0.83
8.50	1.04	20.50	0.63	32.50	0.42	44.50	0.83	56.50	0.83
8.75	0.83	20.75	0.63	32.75	0.42	44.75	0.83	56.75	NA*
9.00	0.83	21.00	0.63	33.00	0.42	45.00	1.04	57.00	NA*
9.25	0.83	21.25	0.63	33.25	0.42	45.25	1.04	57.25	NA*
9.50	0.83	21.50	0.63	33.50	0.63	45.50	0.83	57.50	NA*
9.75	0.63	21.75	0.63	33.75	0.63	45.75	0.83	57.75	NA*
10.00	0.42	22.00	0.63	34.00	0.63	46.00	0.83	58.00	NA*
10.25	0.42	22.25	0.63	34.25	0.63	46.25	0.83	58.25	NA*
10.50	0.63	22.50	0.63	34.50	0.63	46.50	1.04	58.50	NA*
10.75	0.83	22.75	0.42	34.75	0.63	46.75	0.83	58.75	NA*
11.00	0.83	23.00	0.42	35.00	0.42	47.00	0.83	59.00	NA*
11.25	0.83	23.25	0.42	35.25	0.42	47.25	0.83	59.25	NA*
11.50	0.83	23.50	0.42	35.50	0.42	47.50	0.83	59.50	NA*
11.75	0.83	23.75	0.42	35.75	0.42	47.75	0.83	59.75	NA*
12.00	**0.83**	**24.00**	**0.63**	**36.00**	**0.42**	**48.00**	**0.83**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 1.46
AVERAGE OPACITY DURING RUN = 0.82
HIGHEST SIX-MINUTE ROLLING AVERAGE = 1.67

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/19/97
Start Time: 1304
Stop Time: 1404

Baghouse Outlet
Run Number: O-M9-1C

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	1.67	24.25	2.71	36.25	3.54	48.25	2.92
0.50	NA	12.50	1.88	24.50	2.50	36.50	3.33	48.50	2.71
0.75	NA	12.75	1.88	24.75	2.29	36.75	3.33	48.75	2.71
1.00	NA	13.00	2.08	25.00	2.29	37.00	3.33	49.00	2.50
1.25	NA	13.25	2.08	25.25	2.29	37.25	3.13	49.25	2.50
1.50	NA	13.50	1.88	25.50	2.29	37.50	3.33	49.50	2.71
1.75	NA	13.75	2.08	25.75	2.08	37.75	3.54	49.75	2.71
2.00	NA	14.00	2.08	26.00	2.29	38.00	3.75	50.00	2.50
2.25	NA	14.25	2.08	26.25	2.29	38.25	3.54	50.25	2.29
2.50	NA	14.50	2.08	26.50	2.50	38.50	3.54	50.50	2.29
2.75	NA	14.75	1.88	26.75	2.50	38.75	3.54	50.75	2.50
3.00	NA	15.00	1.88	27.00	2.71	39.00	3.54	51.00	2.50
3.25	NA	15.25	2.08	27.25	2.92	39.25	3.54	51.25	2.92
3.50	NA	15.50	1.88	27.50	2.71	39.50	3.54	51.50	2.92
3.75	NA	15.75	1.88	27.75	2.50	39.75	3.54	51.75	2.71
4.00	NA	16.00	1.88	28.00	2.50	40.00	3.33	52.00	2.92
4.25	NA	16.25	1.88	28.25	2.50	40.25	3.13	52.25	2.92
4.50	NA	16.50	2.08	28.50	2.50	40.50	3.13	52.50	3.13
4.75	NA	16.75	2.29	28.75	2.50	40.75	3.13	52.75	NA*
5.00	NA	17.00	2.29	29.00	2.50	41.00	3.13	53.00	NA*
5.25	NA	17.25	2.29	29.25	2.50	41.25	3.33	53.25	NA*
5.50	NA	17.50	2.50	29.50	2.50	41.50	3.13	53.50	NA*
5.75	NA	17.75	2.50	29.75	2.29	41.75	2.92	53.75	NA*
6.00	**2.50**	**18.00**	**2.50**	**30.00**	**2.71**	**42.00**	**2.71**	**54.00**	NA*
6.25	2.29	18.25	2.71	30.25	2.71	42.25	2.71	54.25	NA*
6.50	2.29	18.50	2.71	30.50	2.92	42.50	2.92	54.50	NA*
6.75	2.29	18.75	2.92	30.75	3.13	42.75	2.92	54.75	NA*
7.00	2.08	19.00	2.71	31.00	3.33	43.00	2.92	55.00	NA*
7.25	1.88	19.25	2.71	31.25	3.54	43.25	3.13	55.25	NA*
7.50	2.08	19.50	2.92	31.50	3.33	43.50	2.92	55.50	NA*
7.75	1.88	19.75	2.92	31.75	3.54	43.75	2.71	55.75	NA*
8.00	1.88	20.00	2.92	32.00	3.33	44.00	2.71	56.00	NA*
8.25	1.46	20.25	2.92	32.25	3.54	44.25	2.92	56.25	NA*
8.50	1.46	20.50	2.71	32.50	3.54	44.50	2.92	56.50	NA*
8.75	1.67	20.75	2.92	32.75	3.33	44.75	2.92	56.75	NA*
9.00	1.67	21.00	3.13	33.00	2.92	45.00	3.13	57.00	NA*
9.25	1.67	21.25	2.92	33.25	2.92	45.25	2.92	57.25	NA*
9.50	1.88	21.50	3.13	33.50	2.92	45.50	3.13	57.50	NA*
9.75	1.67	21.75	3.33	33.75	3.13	45.75	3.13	57.75	NA*
10.00	1.88	22.00	3.13	34.00	3.33	46.00	3.13	58.00	NA*
10.25	1.88	22.25	3.13	34.25	3.33	46.25	3.33	58.25	NA*
10.50	2.08	22.50	2.71	34.50	3.54	46.50	3.13	58.50	NA*
10.75	1.88	22.75	2.50	34.75	3.54	46.75	3.33	58.75	NA*
11.00	1.88	23.00	2.50	35.00	3.54	47.00	3.33	59.00	NA*
11.25	1.67	23.25	2.71	35.25	3.33	47.25	3.13	59.25	NA*
11.50	1.67	23.50	2.71	35.50	3.33	47.50	3.33	59.50	NA*
11.75	1.88	23.75	2.71	35.75	3.75	47.75	3.13	59.75	NA*
12.00	**1.67**	**24.00**	**2.71**	**36.00**	**3.54**	**48.00**	**3.13**	**60.00**	NA*

HIGHEST SIX-MINUTE BLOCK AVERAGE = 3.61
AVERAGE OPACITY DURING RUN = 2.76
HIGHEST SIX-MINUTE ROLLING AVERAGE = 3.75

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/19/97
Start Time: 1412
Stop Time: 1512

Baghouse Outlet
Run Number: O-M9-1D

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	3.54	24.25	3.54	36.25	2.50	48.25	6.25
0.50	NA	12.50	3.33	24.50	3.54	36.50	2.29	48.50	6.25
0.75	NA	12.75	3.33	24.75	3.33	36.75	2.29	48.75	6.25
1.00	NA	13.00	3.33	25.00	3.13	37.00	2.29	49.00	6.25
1.25	NA	13.25	3.54	25.25	3.13	37.25	2.29	49.25	6.25
1.50	NA	13.50	3.33	25.50	2.92	37.50	2.29	49.50	6.04
1.75	NA	13.75	3.54	25.75	3.13	37.75	2.50	49.75	5.83
2.00	NA	14.00	3.54	26.00	3.13	38.00	2.50	50.00	5.63
2.25	NA	14.25	3.33	26.25	3.33	38.25	2.50	50.25	5.42
2.50	NA	14.50	3.54	26.50	3.33	38.50	2.50	50.50	5.42
2.75	NA	14.75	3.33	26.75	3.54	38.75	2.50	50.75	5.42
3.00	NA	15.00	3.33	27.00	3.54	39.00	2.50	51.00	5.42
3.25	NA	15.25	3.54	27.25	3.13	39.25	2.71	51.25	5.21
3.50	NA	15.50	3.75	27.50	3.13	39.50	2.71	51.50	5.00
3.75	NA	15.75	3.96	27.75	3.13	39.75	2.92	51.75	4.79
4.00	NA	16.00	3.75	28.00	3.13	40.00	2.92	52.00	4.58
4.25	NA	16.25	3.96	28.25	3.13	40.25	2.71	52.25	NA*
4.50	NA	16.50	3.75	28.50	3.13	40.50	2.92	52.50	NA*
4.75	NA	16.75	3.75	28.75	3.13	40.75	3.13	52.75	NA*
5.00	NA	17.00	3.75	29.00	3.54	41.00	3.13	53.00	NA*
5.25	NA	17.25	3.75	29.25	3.54	41.25	3.13	53.25	NA*
5.50	NA	17.50	3.75	29.50	3.33	41.50	3.13	53.50	NA*
5.75	NA	17.75	3.75	29.75	3.54	41.75	3.33	53.75	NA*
6.00	**2.29**	**18.00**	**3.75**	**30.00**	**3.75**	**42.00**	**3.54**	**54.00**	NA*
6.25	2.29	18.25	3.75	30.25	3.75	42.25	3.75	54.25	NA*
6.50	2.29	18.50	3.96	30.50	3.75	42.50	3.96	54.50	NA*
6.75	2.50	18.75	3.96	30.75	3.96	42.75	3.96	54.75	NA*
7.00	2.29	19.00	4.17	31.00	4.17	43.00	3.96	55.00	NA*
7.25	2.08	19.25	4.17	31.25	4.17	43.25	3.96	55.25	NA*
7.50	2.29	19.50	4.38	31.50	4.38	43.50	4.17	55.50	NA*
7.75	2.29	19.75	4.17	31.75	4.17	43.75	4.38	55.75	NA*
8.00	2.29	20.00	4.17	32.00	4.17	44.00	4.58	56.00	NA*
8.25	2.50	20.25	4.17	32.25	4.17	44.25	4.79	56.25	NA*
8.50	2.29	20.50	4.17	32.50	3.96	44.50	5.00	56.50	NA*
8.75	2.50	20.75	4.17	32.75	3.96	44.75	5.00	56.75	NA*
9.00	2.29	21.00	4.17	33.00	3.75	45.00	5.21	57.00	NA*
9.25	2.29	21.25	4.38	33.25	3.75	45.25	5.21	57.25	NA*
9.50	2.08	21.50	4.38	33.50	3.54	45.50	5.63	57.50	NA*
9.75	2.29	21.75	3.96	33.75	3.54	45.75	5.63	57.75	NA*
10.00	2.50	22.00	4.17	34.00	3.54	46.00	5.83	58.00	NA*
10.25	2.29	22.25	4.17	34.25	3.54	46.25	6.25	58.25	NA*
10.50	2.29	22.50	4.17	34.50	3.54	46.50	6.25	58.50	NA*
10.75	2.50	22.75	4.17	34.75	3.33	46.75	6.25	58.75	NA*
11.00	2.71	23.00	3.96	35.00	2.92	47.00	6.46	59.00	NA*
11.25	2.92	23.25	3.96	35.25	2.92	47.25	6.46	59.25	NA*
11.50	3.13	23.50	3.96	35.50	3.13	47.50	6.46	59.50	NA*
11.75	3.33	23.75	3.75	35.75	2.92	47.75	6.46	59.75	NA*
12.00	**3.54**	**24.00**	**3.54**	**36.00**	**2.71**	**48.00**	**6.25**	**60.00**	NA*

HIGHEST SIX-MINUTE BLOCK AVERAGE = 6.25
AVERAGE OPACITY DURING RUN = 3.73
HIGHEST SIX-MINUTE ROLLING AVERAGE = 6.46

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Visible Emission Observation Summary

Baghouse Outlet

Run Number	O-M9-2A	O-M9-2B	O-M9-2C	O-M9-2D
Date	8/20/97	8/20/97	8/20/97	8/20/97
Start Time	0824	0930	1035	1140
Stop Time	0924	1030	1135	1240
Percent Opacity				
Average for entire run	0.80	1.19	1.54	1.29
Highest single reading	10	15	20	15
Highest six-minute block average	1.36	2.39	2.95	2.62
Highest six-minute rolling average	1.59	2.83	3.70	2.75

Date: 8/20/97
Start Time: 0824
Stop Time: 0924

Baghouse Outlet
Run Number: O-M9-2A

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.42	24.25	0.42	36.25	1.14	48.25	1.43
0.50	NA	12.50	0.42	24.50	0.42	36.50	0.91	48.50	1.50
0.75	NA	12.75	0.63	24.75	0.42	36.75	1.14	48.75	1.50
1.00	NA	13.00	0.63	25.00	0.63	37.00	1.14	49.00	1.50
1.25	NA	13.25	0.83	25.25	0.63	37.25	1.30	49.25	1.50
1.50	NA	13.50	0.83	25.50	0.63	37.50	1.36	49.50	1.50
1.75	NA	13.75	0.87	25.75	0.63	37.75	1.30	49.75	1.50
2.00	NA	14.00	0.87	26.00	0.63	38.00	1.52	50.00	1.25
2.25	NA	14.25	0.91	26.25	0.63	38.25	1.52	50.25	1.50
2.50	NA	14.50	0.91	26.50	0.63	38.50	1.59	50.50	1.50
2.75	NA	14.75	0.91	26.75	0.83	38.75	1.43	50.75	1.25
3.00	NA	15.00	0.91	27.00	0.63	39.00	1.43	51.00	1.00
3.25	NA	15.25	0.68	27.25	0.63	39.25	1.43	51.25	0.50
3.50	NA	15.50	0.68	27.50	0.63	39.50	1.43	51.50	0.50
3.75	NA	15.75	0.68	27.75	0.63	39.75	1.19	51.75	0.53
4.00	NA	16.00	0.68	28.00	0.63	40.00	1.19	52.00	0.53
4.25	NA	16.25	0.68	28.25	0.43	40.25	0.95	52.25	0.53
4.50	NA	16.50	0.45	28.50	0.45	40.50	1.19	52.50	0.26
4.75	NA	16.75	0.68	28.75	0.45	40.75	1.43	52.75	0.26
5.00	NA	17.00	0.68	29.00	0.48	41.00	1.43	53.00	0.26
5.25	NA	17.25	0.68	29.25	0.50	41.25	1.43	53.25	0.28
5.50	NA	17.50	0.68	29.50	0.50	41.50	1.43	53.50	0.28
5.75	NA	17.75	0.68	29.75	0.50	41.75	1.43	53.75	0.26
6.00	**0.83**	**18.00**	**0.68**	**30.00**	**0.75**	**42.00**	**1.19**	**54.00**	**0.26**
6.25	0.83	18.25	0.68	30.25	0.79	42.25	1.19	54.25	0.25
6.50	0.83	18.50	0.68	30.50	1.05	42.50	1.19	54.50	0.24
6.75	0.83	18.75	0.45	30.75	1.05	42.75	0.95	54.75	0.24
7.00	0.83	19.00	0.45	31.00	0.79	43.00	0.95	55.00	0.24
7.25	0.83	19.25	0.23	31.25	0.83	43.25	0.71	55.25	0.48
7.50	0.83	19.50	0.23	31.50	0.83	43.50	0.68	55.50	0.48
7.75	0.83	19.75	0.22	31.75	0.88	43.75	0.68	55.75	0.50
8.00	0.63	20.00	0.22	32.00	0.88	44.00	0.68	56.00	0.50
8.25	0.63	20.25	0.21	32.25	0.88	44.25	0.68	56.25	0.25
8.50	0.63	20.50	0.21	32.50	0.88	44.50	0.65	56.50	0.25
8.75	0.42	20.75	0.21	32.75	0.88	44.75	0.83	56.75	0.25
9.00	0.42	21.00	0.42	33.00	0.88	45.00	1.04	57.00	0.50
9.25	0.63	21.25	0.42	33.25	0.88	45.25	1.46	57.25	0.50
9.50	0.63	21.50	0.42	33.50	0.88	45.50	1.46	57.50	0.50
9.75	0.63	21.75	0.42	33.75	1.18	45.75	1.46	57.75	0.71
10.00	0.63	22.00	0.42	34.00	1.18	46.00	1.46	58.00	0.71
10.25	0.42	22.25	0.63	34.25	1.39	46.25	1.46	58.25	0.71
10.50	0.42	22.50	0.63	34.50	1.32	46.50	1.46	58.50	0.71
10.75	0.42	22.75	0.42	34.75	1.32	46.75	1.25	58.75	0.95
11.00	0.42	23.00	0.42	35.00	1.25	47.00	1.25	59.00	0.95
11.25	0.42	23.25	0.42	35.25	1.19	47.25	1.25	59.25	0.91
11.50	0.42	23.50	0.42	35.50	1.19	47.50	1.30	59.50	NA*
11.75	0.42	23.75	0.42	35.75	1.19	47.75	1.36	59.75	NA*
12.00	**0.42**	**24.00**	**0.42**	**36.00**	**1.19**	**48.00**	**1.36**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 1.36
AVERAGE OPACITY DURING RUN = 0.80
HIGHEST SIX-MINUTE ROLLING AVERAGE = 1.59

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 0930
Stop Time: 1030

Baghouse Outlet
Run Number: O-M9-2B

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.24	24.25	0.91	36.25	1.30	48.25	2.39
0.50	NA	12.50	0.24	24.50	0.68	36.50	1.52	48.50	2.05
0.75	NA	12.75	0.24	24.75	0.68	36.75	1.52	48.75	2.27
1.00	NA	13.00	0.24	25.00	0.68	37.00	1.09	49.00	2.73
1.25	NA	13.25	0.24	25.25	0.68	37.25	1.74	49.25	2.73
1.50	NA	13.50	0.24	25.50	0.68	37.50	1.52	49.50	2.73
1.75	NA	13.75	0.24	25.75	0.68	37.75	1.52	49.75	2.61
2.00	NA	14.00	0.24	26.00	0.68	38.00	1.52	50.00	2.83
2.25	NA	14.25	0.25	26.25	0.68	38.25	1.52	50.25	2.61
2.50	NA	14.50	0.25	26.50	0.23	38.50	1.52	50.50	2.39
2.75	NA	14.75	0.50	26.75	0.23	38.75	1.52	50.75	2.39
3.00	NA	15.00	0.50	27.00	0.22	39.00	1.52	51.00	2.17
3.25	NA	15.25	0.25	27.25	0.22	39.25	1.52	51.25	2.17
3.50	NA	15.50	0.25	27.50	0.22	39.50	1.52	51.50	2.17
3.75	NA	15.75	0.25	27.75	0.22	39.75	1.30	51.75	2.39
4.00	NA	16.00	0.25	28.00	0.22	40.00	1.30	52.00	2.39
4.25	NA	16.25	0.50	28.25	0.22	40.25	1.30	52.25	1.96
4.50	NA	16.50	0.50	28.50	0.22	40.50	1.30	52.50	1.96
4.75	NA	16.75	0.48	28.75	0.22	40.75	1.30	52.75	1.96
5.00	NA	17.00	0.45	29.00	0.22	41.00	1.30	53.00	1.96
5.25	NA	17.25	0.45	29.25	0.22	41.25	1.30	53.25	2.17
5.50	NA	17.50	0.45	29.50	0.22	41.50	1.30	53.50	2.17
5.75	NA	17.75	0.45	29.75	0.22	41.75	0.87	53.75	2.17
6.00	**1.09**	**18.00**	**0.45**	**30.00**	**0.22**	**42.00**	**0.83**	**54.00**	**2.17**
6.25	1.09	18.25	0.45	30.25	0.22	42.25	0.83	54.25	2.17
6.50	1.09	18.50	0.68	30.50	0.22	42.50	1.04	54.50	2.08
6.75	1.09	18.75	0.68	30.75	0.22	42.75	1.04	54.75	1.88
7.00	1.09	19.00	0.68	31.00	0.65	43.00	1.04	55.00	1.46
7.25	1.09	19.25	0.68	31.25	0.65	43.25	0.42	55.25	1.46
7.50	1.09	19.50	0.68	31.50	0.87	43.50	0.83	55.50	1.04
7.75	0.87	19.75	0.68	31.75	0.87	43.75	0.87	55.75	1.04
8.00	0.87	20.00	0.68	32.00	0.87	44.00	0.87	56.00	1.04
8.25	0.83	20.25	0.65	32.25	0.87	44.25	1.09	56.25	1.04
8.50	0.83	20.50	1.09	32.50	0.87	44.50	1.52	56.50	0.83
8.75	0.83	20.75	0.87	32.75	0.87	44.75	1.52	56.75	NA*
9.00	0.83	21.00	0.91	33.00	0.87	45.00	1.74	57.00	NA*
9.25	1.04	21.25	0.91	33.25	0.87	45.25	1.74	57.25	NA*
9.50	1.04	21.50	0.91	33.50	0.87	45.50	1.74	57.50	NA*
9.75	1.04	21.75	0.91	33.75	1.09	45.75	1.74	57.75	NA*
10.00	1.04	22.00	0.91	34.00	1.09	46.00	1.74	58.00	NA*
10.25	1.04	22.25	0.68	34.25	1.09	46.25	2.17	58.25	NA*
10.50	0.87	22.50	0.65	34.50	1.09	46.50	2.17	58.50	NA*
10.75	0.91	22.75	0.65	34.75	1.09	46.75	2.17	58.75	NA*
11.00	0.48	23.00	0.65	35.00	1.09	47.00	2.39	59.00	NA*
11.25	0.48	23.25	0.65	35.25	1.09	47.25	2.39	59.25	NA*
11.50	0.48	23.50	0.65	35.50	1.09	47.50	2.39	59.50	NA*
11.75	0.48	23.75	0.65	35.75	1.52	47.75	2.39	59.75	NA*
12.00	**0.24**	**24.00**	**0.87**	**36.00**	**1.36**	**48.00**	**2.39**	**60.00**	NA*

HIGHEST SIX-MINUTE BLOCK AVERAGE = 2.39
HIGHEST SIX-MINUTE ROLLING AVERAGE = 2.83
AVERAGE OPACITY DURING RUN = 1.19

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 1035
Stop Time: 1135

Baghouse Outlet
Run Number: O-M9-2C

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	1.67	24.25	1.43	36.25	2.27	48.25	1.58
0.50	NA	12.50	1.67	24.50	1.43	36.50	2.27	48.50	1.58
0.75	NA	12.75	1.67	24.75	1.19	36.75	2.27	48.75	1.32
1.00	NA	13.00	0.95	25.00	1.19	37.00	2.38	49.00	1.32
1.25	NA	13.25	0.95	25.25	0.71	37.25	2.38	49.25	1.32
1.50	NA	13.50	0.91	25.50	0.71	37.50	1.90	49.50	1.32
1.75	NA	13.75	1.14	25.75	0.75	37.75	1.90	49.75	0.53
2.00	NA	14.00	1.09	26.00	1.00	38.00	0.95	50.00	0.79
2.25	NA	14.25	1.14	26.25	1.00	38.25	1.43	50.25	1.00
2.50	NA	14.50	1.14	26.50	1.00	38.50	1.36	50.50	1.43
2.75	NA	14.75	1.14	26.75	1.00	38.75	1.36	50.75	1.67
3.00	NA	15.00	1.14	27.00	0.50	39.00	1.36	51.00	1.67
3.25	NA	15.25	1.14	27.25	0.75	39.25	1.36	51.25	1.67
3.50	NA	15.50	1.14	27.50	0.71	39.50	0.91	51.50	1.67
3.75	NA	15.75	0.68	27.75	0.68	39.75	1.14	51.75	1.59
4.00	NA	16.00	0.68	28.00	1.14	40.00	0.91	52.00	1.52
4.25	NA	16.25	0.68	28.25	1.14	40.25	0.91	52.25	1.52
4.50	NA	16.50	0.45	28.50	1.14	40.50	0.68	52.50	1.52
4.75	NA	16.75	0.45	28.75	1.59	40.75	1.14	52.75	1.46
5.00	NA	17.00	0.45	29.00	1.59	41.00	1.14	53.00	1.52
5.25	NA	17.25	0.43	29.25	1.59	41.25	1.14	53.25	1.52
5.50	NA	17.50	0.43	29.50	2.05	41.50	1.09	53.50	1.52
5.75	NA	17.75	0.45	29.75	1.82	41.75	1.09	53.75	1.09
6.00	**2.06**	**18.00**	**0.45**	**30.00**	**1.82**	**42.00**	**1.09**	**54.00**	**1.14**
6.25	2.06	18.25	0.48	30.25	2.39	42.25	1.14	54.25	1.14
6.50	1.76	18.50	0.48	30.50	2.39	42.50	1.14	54.50	1.14
6.75	1.67	18.75	0.71	30.75	2.39	42.75	1.36	54.75	1.19
7.00	2.50	19.00	0.71	31.00	2.39	43.00	1.30	55.00	1.19
7.25	2.37	19.25	1.19	31.25	2.39	43.25	1.30	55.25	1.19
7.50	2.50	19.50	1.19	31.50	2.83	43.50	1.30	55.50	1.19
7.75	2.50	19.75	0.95	31.75	2.71	43.75	1.96	55.75	1.19
8.00	2.06	20.00	0.95	32.00	3.33	44.00	1.96	56.00	1.00
8.25	2.06	20.25	0.91	32.25	3.33	44.25	1.59	56.25	0.75
8.50	1.94	20.50	0.91	32.50	3.48	44.50	1.67	56.50	1.00
8.75	1.84	20.75	0.91	32.75	3.48	44.75	1.67	56.75	0.75
9.00	1.75	21.00	1.36	33.00	3.48	45.00	1.67	57.00	0.75
9.25	1.67	21.25	1.36	33.25	3.26	45.25	1.67	57.25	0.75
9.50	1.67	21.50	1.43	33.50	3.70	45.50	1.67	57.50	0.75
9.75	2.38	21.75	1.25	33.75	3.70	45.75	1.50	57.75	0.75
10.00	1.67	22.00	1.25	34.00	3.48	46.00	1.58	58.00	0.79
10.25	1.67	22.25	1.25	34.25	3.48	46.25	1.58	58.25	0.79
10.50	1.90	22.50	1.25	34.50	3.70	46.50	1.58	58.50	0.79
10.75	1.67	22.75	1.25	34.75	3.26	46.75	1.11	58.75	0.83
11.00	1.67	23.00	1.25	35.00	3.26	47.00	1.11	59.00	0.79
11.25	1.75	23.25	1.25	35.25	3.26	47.25	1.11	59.25	0.79
11.50	1.67	23.50	1.25	35.50	2.95	47.50	1.11	59.50	1.32
11.75	1.67	23.75	1.43	35.75	2.95	47.75	1.67	59.75	1.32
12.00	**1.67**	**24.00**	**1.43**	**36.00**	**2.95**	**48.00**	**1.67**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 2.95
AVERAGE OPACITY DURING RUN = 1.54
HIGHEST SIX-MINUTE ROLLING AVERAGE = 3.70

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 1140
Stop Time: 1240

Baghouse Outlet
Run Number: O-M9-2D

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.50	24.25	2.62	36.25	1.82	48.25	1.36
0.50	NA	12.50	0.50	24.50	2.62	36.50	1.82	48.50	1.43
0.75	NA	12.75	0.50	24.75	2.62	36.75	1.82	48.75	1.19
1.00	NA	13.00	0.50	25.00	2.62	37.00	1.82	49.00	1.19
1.25	NA	13.25	0.75	25.25	2.62	37.25	1.74	49.25	1.19
1.50	NA	13.50	0.75	25.50	2.62	37.50	1.74	49.50	1.19
1.75	NA	13.75	0.75	25.75	2.62	37.75	1.09	49.75	1.25
2.00	NA	14.00	0.75	26.00	2.75	38.00	0.87	50.00	0.75
2.25	NA	14.25	0.75	26.25	2.62	38.25	1.52	50.25	0.25
2.50	NA	14.50	1.50	26.50	2.73	38.50	1.52	50.50	0.25
2.75	NA	14.75	1.50	26.75	2.50	38.75	2.17	50.75	0.25
3.00	NA	15.00	1.43	27.00	2.50	39.00	2.27	51.00	0.25
3.25	NA	15.25	1.50	27.25	2.50	39.25	2.27	51.25	0.25
3.50	NA	15.50	1.43	27.50	2.50	39.50	2.27	51.50	0.25
3.75	NA	15.75	1.43	27.75	2.62	39.75	2.27	51.75	0.25
4.00	NA	16.00	1.43	28.00	2.50	40.00	2.27	52.00	0.25
4.25	NA	16.25	1.50	28.25	2.50	40.25	2.27	52.25	0.00
4.50	NA	16.50	1.75	28.50	2.50	40.50	2.27	52.50	0.00
4.75	NA	16.75	2.00	28.75	2.50	40.75	2.05	52.75	0.00
5.00	NA	17.00	1.90	29.00	1.82	41.00	2.05	53.00	0.00
5.25	NA	17.25	1.90	29.25	1.90	41.25	2.27	53.25	0.23
5.50	NA	17.50	2.38	29.50	2.14	41.50	2.27	53.50	0.23
5.75	NA	17.75	2.38	29.75	1.67	41.75	2.27	53.75	0.68
6.00	**0.56**	**18.00**	**2.38**	**30.00**	**1.00**	**42.00**	**1.59**	**54.00**	**0.68**
6.25	0.83	18.25	2.38	30.25	1.00	42.25	1.59	54.25	0.68
6.50	0.83	18.50	2.38	30.50	1.00	42.50	1.59	54.50	0.65
6.75	0.79	18.75	2.38	30.75	1.00	42.75	1.82	54.75	0.65
7.00	0.79	19.00	2.38	31.00	1.00	43.00	1.82	55.00	0.65
7.25	0.79	19.25	2.14	31.25	1.05	43.25	1.82	55.25	0.65
7.50	0.75	19.50	2.14	31.50	1.05	43.50	1.82	55.50	0.65
7.75	0.71	19.75	2.14	31.75	1.84	43.75	1.82	55.75	0.63
8.00	0.71	20.00	2.14	32.00	2.00	44.00	2.27	56.00	0.63
8.25	0.71	20.25	2.25	32.25	2.00	44.25	2.05	56.25	0.63
8.50	0.71	20.50	1.58	32.50	1.75	44.50	2.05	56.50	0.63
8.75	1.19	20.75	1.32	32.75	1.75	44.75	1.36	56.75	0.63
9.00	1.19	21.00	1.32	33.00	1.75	45.00	1.30	57.00	0.63
9.25	1.19	21.25	1.25	33.25	1.75	45.25	1.30	57.25	0.63
9.50	1.19	21.50	1.25	33.50	1.75	45.50	1.30	57.50	0.63
9.75	1.19	21.75	1.25	33.75	1.67	45.75	1.30	57.75	0.63
10.00	1.19	22.00	1.25	34.00	1.67	46.00	1.30	58.00	0.63
10.25	1.19	22.25	1.19	34.25	1.67	46.25	1.52	58.25	0.63
10.50	1.19	22.50	0.95	34.50	1.67	46.50	1.59	58.50	0.63
10.75	1.19	22.75	0.71	34.75	1.90	46.75	1.59	58.75	0.63
11.00	1.25	23.00	1.43	35.00	1.90	47.00	1.59	59.00	0.63
11.25	0.75	23.25	1.43	35.25	1.82	47.25	1.43	59.25	0.42
11.50	0.75	23.50	1.43	35.50	1.19	47.50	1.36	59.50	0.43
11.75	0.75	23.75	1.90	35.75	1.19	47.75	1.36	59.75	0.00
12.00	**0.75**	**24.00**	**2.62**	**36.00**	**1.82**	**48.00**	**1.36**	**60.00**	**0.00**

HIGHEST SIX-MINUTE BLOCK AVERAGE = 2.62
AVERAGE OPACITY DURING RUN = 1.29
HIGHEST SIX-MINUTE ROLLING AVERAGE = 2.75

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Visible Emission Observation Summary

Baghouse Outlet

Run Number	O-M9-3A	O-M9-3B	O-M9-1C	O-M9-3D
Date	8/20/97	8/20/97	8/20/97	8/20/97
Start Time	1405	1510	1615	1722
Stop Time	1505	1610	1720	1742
Percent Opacity				
Average for entire run	1.02	1.02	0.68	0.06
Highest single reading	15	15	10	5
Highest six-minute block average	1.67	1.59	1.67	0.22
Highest six-minute rolling average	2.17	1.67	1.94	0.42

Date: 8/20/97
Start Time: 1405
Stop Time: 1505

Baghouse Outlet
Run Number: O-M9-3A

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	1.59	24.25	1.09	36.25	0.65	48.25	1.09
0.50	NA	12.50	1.59	24.50	1.30	36.50	0.65	48.50	1.09
0.75	NA	12.75	1.59	24.75	1.30	36.75	0.65	48.75	0.87
1.00	NA	13.00	1.59	25.00	1.30	37.00	0.68	49.00	0.83
1.25	NA	13.25	1.59	25.25	1.09	37.25	1.36	49.25	0.87
1.50	NA	13.50	1.59	25.50	1.09	37.50	1.36	49.50	0.87
1.75	NA	13.75	2.05	25.75	1.09	37.75	1.82	49.75	0.43
2.00	NA	14.00	2.05	26.00	1.09	38.00	1.82	50.00	0.43
2.25	NA	14.25	2.05	26.25	1.09	38.25	1.82	50.25	0.43
2.50	NA	14.50	2.05	26.50	1.04	38.50	1.82	50.50	0.22
2.75	NA	14.75	1.82	26.75	1.25	38.75	1.82	50.75	0.22
3.00	NA	15.00	2.17	27.00	0.83	39.00	1.82	51.00	0.23
3.25	NA	15.25	2.17	27.25	0.83	39.25	1.82	51.25	0.23
3.50	NA	15.50	1.96	27.50	0.83	39.50	1.59	51.50	0.23
3.75	NA	15.75	1.96	27.75	0.63	39.75	1.59	51.75	0.23
4.00	NA	16.00	2.05	28.00	0.63	40.00	1.59	52.00	0.23
4.25	NA	16.25	2.05	28.25	0.63	40.25	1.14	52.25	0.45
4.50	NA	16.50	1.67	28.50	1.04	40.50	1.14	52.50	0.45
4.75	NA	16.75	1.59	28.75	1.04	40.75	1.19	52.75	0.45
5.00	NA	17.00	1.59	29.00	1.04	41.00	1.19	53.00	0.45
5.25	NA	17.25	1.67	29.25	1.04	41.25	1.19	53.25	0.45
5.50	NA	17.50	2.14	29.50	1.04	41.50	1.19	53.50	0.68
5.75	NA	17.75	2.14	29.75	1.04	41.75	1.19	53.75	0.68
6.00	**0.65**	**18.00**	**1.67**	**30.00**	**0.83**	**42.00**	**1.19**	**54.00**	**0.91**
6.25	0.68	18.25	1.67	30.25	0.83	42.25	1.14	54.25	0.68
6.50	0.68	18.50	1.67	30.50	0.63	42.50	1.14	54.50	0.68
6.75	0.68	18.75	1.67	30.75	0.63	42.75	1.36	54.75	1.14
7.00	0.68	19.00	1.67	31.00	0.63	43.00	1.36	55.00	1.14
7.25	0.68	19.25	1.90	31.25	0.63	43.25	0.68	55.25	1.14
7.50	0.68	19.50	1.90	31.50	0.63	43.50	0.68	55.50	1.14
7.75	0.87	19.75	1.19	31.75	0.63	43.75	0.68	55.75	1.14
8.00	0.65	20.00	1.19	32.00	0.63	44.00	0.68	56.00	1.14
8.25	0.65	20.25	1.19	32.25	0.63	44.25	0.68	56.25	1.14
8.50	0.65	20.50	1.25	32.50	0.63	44.50	0.91	56.50	1.14
8.75	0.87	20.75	1.25	32.75	0.42	44.75	0.91	56.75	1.14
9.00	0.91	21.00	1.25	33.00	0.42	45.00	0.91	57.00	1.09
9.25	0.68	21.25	1.25	33.25	0.42	45.25	0.91	57.25	1.30
9.50	0.91	21.50	1.25	33.50	0.63	45.50	0.91	57.50	1.30
9.75	0.91	21.75	1.50	33.75	0.63	45.75	0.91	57.75	1.30
10.00	0.91	22.00	1.43	34.00	0.63	46.00	0.91	58.00	1.30
10.25	0.91	22.25	1.43	34.25	1.04	46.25	0.91	58.25	1.09
10.50	1.36	22.50	1.36	34.50	0.63	46.50	0.91	58.50	1.09
10.75	1.43	22.75	1.36	34.75	0.63	46.75	0.87	58.75	1.09
11.00	1.43	23.00	1.36	35.00	0.63	47.00	0.87	59.00	1.09
11.25	1.43	23.25	1.30	35.25	0.63	47.25	0.87	59.25	1.09
11.50	1.19	23.50	0.87	35.50	0.63	47.50	0.87	59.50	NA*
11.75	1.19	23.75	0.87	35.75	0.63	47.75	0.87	59.75	NA*
12.00	**1.67**	**24.00**	**1.09**	**36.00**	**0.63**	**48.00**	**0.87**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 1.67
AVERAGE OPACITY DURING RUN = 1.02
HIGHEST SIX-MINUTE ROLLING AVERAGE = 2.17

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 1510
Stop Time: 1610

Baghouse Outlet
Run Number: O-M9-3B

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	1.05	24.25	1.30	36.25	0.95	48.25	1.00
0.50	NA	12.50	1.11	24.50	1.25	36.50	0.95	48.50	1.00
0.75	NA	12.75	1.11	24.75	0.63	36.75	0.95	48.75	1.00
1.00	NA	13.00	1.39	25.00	0.63	37.00	0.95	49.00	1.00
1.25	NA	13.25	1.39	25.25	0.63	37.25	0.95	49.25	0.94
1.50	NA	13.50	1.11	25.50	1.04	37.50	0.95	49.50	1.47
1.75	NA	13.75	1.11	25.75	1.09	37.75	0.95	49.75	1.39
2.00	NA	14.00	1.11	26.00	1.14	38.00	0.95	50.00	1.32
2.25	NA	14.25	1.39	26.25	1.19	38.25	0.95	50.25	1.25
2.50	NA	14.50	1.39	26.50	1.25	38.50	0.91	50.50	1.25
2.75	NA	14.75	1.39	26.75	1.32	38.75	0.91	50.75	1.25
3.00	NA	15.00	1.39	27.00	1.39	39.00	0.91	51.00	1.25
3.25	NA	15.25	1.32	27.25	1.11	39.25	1.09	51.25	1.25
3.50	NA	15.50	1.32	27.50	0.83	39.50	1.09	51.50	1.25
3.75	NA	15.75	1.32	27.75	0.83	39.75	0.87	51.75	1.25
4.00	NA	16.00	1.32	28.00	0.83	40.00	0.87	52.00	1.00
4.25	NA	16.25	1.32	28.25	0.83	40.25	0.87	52.25	1.00
4.50	NA	16.50	1.32	28.50	0.83	40.50	0.87	52.50	1.00
4.75	NA	16.75	0.79	28.75	0.83	40.75	0.65	52.75	0.95
5.00	NA	17.00	0.79	29.00	0.88	41.00	0.65	53.00	0.95
5.25	NA	17.25	0.79	29.25	0.88	41.25	0.63	53.25	1.14
5.50	NA	17.50	0.83	29.50	0.94	41.50	0.42	53.50	1.09
5.75	NA	17.75	0.88	29.75	0.94	41.75	0.21	53.75	1.09
6.00	**1.59**	**18.00**	**0.88**	**30.00**	**0.94**	**42.00**	**0.63**	**54.00**	**0.68**
6.25	1.59	18.25	0.83	30.25	0.94	42.25	0.63	54.25	0.71
6.50	1.36	18.50	0.83	30.50	0.94	42.50	0.63	54.50	0.71
6.75	1.43	18.75	1.58	30.75	0.94	42.75	0.63	54.75	0.71
7.00	1.43	19.00	1.32	31.00	0.94	43.00	0.63	55.00	0.95
7.25	0.95	19.25	1.32	31.25	0.94	43.25	0.65	55.25	1.00
7.50	1.14	19.50	1.32	31.50	0.31	43.50	0.68	55.50	0.50
7.75	1.14	19.75	1.32	31.75	0.29	43.75	0.71	55.75	0.50
8.00	0.95	20.00	1.25	32.00	0.28	44.00	0.75	56.00	0.50
8.25	0.95	20.25	1.00	32.25	0.26	44.25	0.79	56.25	0.50
8.50	0.95	20.50	1.00	32.50	0.26	44.50	0.83	56.50	0.48
8.75	0.95	20.75	1.00	32.75	0.25	44.75	0.83	56.75	NA*
9.00	0.50	21.00	0.95	33.00	0.24	45.00	0.83	57.00	NA*
9.25	0.53	21.25	1.19	33.25	0.25	45.25	0.56	57.25	NA*
9.50	0.53	21.50	1.67	33.50	0.00	45.50	0.56	57.50	NA*
9.75	0.53	21.75	1.67	33.75	0.25	45.75	0.56	57.75	NA*
10.00	0.50	22.00	1.67	34.00	0.25	46.00	0.83	58.00	NA*
10.25	0.50	22.25	1.67	34.25	0.25	46.25	0.83	58.25	NA*
10.50	0.50	22.50	1.67	34.50	0.25	46.50	0.83	58.50	NA*
10.75	0.75	22.75	1.67	34.75	0.50	46.75	0.88	58.75	NA*
11.00	0.75	23.00	1.67	35.00	0.48	47.00	0.88	59.00	NA*
11.25	1.00	23.25	1.43	35.25	0.50	47.25	0.94	59.25	NA*
11.50	1.00	23.50	1.36	35.50	0.71	47.50	1.00	59.50	NA*
11.75	1.00	23.75	1.30	35.75	0.95	47.75	1.00	59.75	NA*
12.00	**1.00**	**24.00**	**1.30**	**36.00**	**0.95**	**48.00**	**1.00**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 1.59
AVERAGE OPACITY DURING RUN = 1.02
HIGHEST SIX-MINUTE ROLLING AVERAGE = 1.67

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 1615
Stop Time: 1720

Baghouse Outlet
Run Number: O-M9-1C

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.68	24.25	0.63	36.25	0.22	48.25	0.75
0.50	NA	12.50	0.68	24.50	0.63	36.50	0.22	48.50	0.75
0.75	NA	12.75	0.68	24.75	0.83	36.75	0.23	48.75	0.75
1.00	NA	13.00	0.68	25.00	0.83	37.00	0.24	49.00	0.79
1.25	NA	13.25	0.45	25.25	0.83	37.25	0.25	49.25	0.79
1.50	NA	13.50	0.48	25.50	0.83	37.50	0.25	49.50	0.79
1.75	NA	13.75	0.50	25.75	0.83	37.75	0.25	49.75	0.79
2.00	NA	14.00	0.50	26.00	0.83	38.00	0.25	50.00	0.79
2.25	NA	14.25	0.50	26.25	0.87	38.25	0.75	50.25	0.79
2.50	NA	14.50	0.48	26.50	0.87	38.50	0.75	50.50	0.79
2.75	NA	14.75	0.50	26.75	1.09	38.75	0.75	50.75	1.05
3.00	NA	15.00	1.00	27.00	1.09	39.00	1.25	51.00	1.05
3.25	NA	15.25	1.00	27.25	1.09	39.25	1.25	51.25	1.05
3.50	NA	15.50	1.00	27.50	1.09	39.50	1.25	51.50	1.05
3.75	NA	15.75	1.00	27.75	1.09	39.75	1.25	51.75	1.32
4.00	NA	16.00	1.00	28.00	0.65	40.00	1.25	52.00	1.32
4.25	NA	16.25	1.00	28.25	0.65	40.25	1.75	52.25	1.32
4.50	NA	16.50	1.00	28.50	0.65	40.50	1.84	52.50	1.32
4.75	NA	16.75	1.00	28.75	0.65	40.75	1.94	52.75	1.25
5.00	NA	17.00	1.05	29.00	0.87	41.00	1.84	53.00	0.75
5.25	NA	17.25	0.79	29.25	0.87	41.25	1.67	53.25	0.50
5.50	NA	17.50	0.79	29.50	0.87	41.50	1.67	53.50	0.48
5.75	NA	17.75	0.83	29.75	0.87	41.75	1.67	53.75	0.48
6.00	**0.56**	**18.00**	**0.59**	**30.00**	**0.91**	**42.00**	**1.67**	**54.00**	**0.48**
6.25	0.56	18.25	0.63	30.25	0.91	42.25	1.67	54.25	0.48
6.50	0.56	18.50	0.94	30.50	0.68	42.50	1.67	54.50	0.48
6.75	0.56	18.75	0.94	30.75	0.45	42.75	1.58	54.75	0.48
7.00	0.53	19.00	0.94	31.00	0.45	43.00	1.50	55.00	0.45
7.25	0.79	19.25	0.94	31.25	0.45	43.25	1.43	55.25	0.45
7.50	0.75	19.50	0.88	31.50	0.45	43.50	1.50	55.50	0.65
7.75	0.75	19.75	0.83	31.75	0.45	43.75	1.58	55.75	0.63
8.00	0.79	20.00	0.79	32.00	0.45	44.00	1.58	56.00	0.63
8.25	0.79	20.25	0.79	32.25	0.43	44.25	1.05	56.25	0.63
8.50	0.56	20.50	0.79	32.50	0.43	44.50	1.05	56.50	0.63
8.75	0.56	20.75	0.75	32.75	0.22	44.75	1.05	56.75	0.42
9.00	0.56	21.00	0.25	33.00	0.22	45.00	0.53	57.00	0.42
9.25	0.56	21.25	0.25	33.25	0.22	45.25	0.53	57.25	0.42
9.50	0.56	21.50	0.25	33.50	0.22	45.50	0.53	57.50	0.43
9.75	0.53	21.75	0.25	33.75	0.22	45.75	0.53	57.75	0.22
10.00	0.50	22.00	0.75	34.00	0.22	46.00	0.53	58.00	0.22
10.25	0.50	22.25	0.75	34.25	0.22	46.25	0.00	58.25	0.23
10.50	0.50	22.50	0.75	34.50	0.22	46.50	0.00	58.50	0.23
10.75	0.48	22.75	0.75	34.75	0.22	46.75	0.00	58.75	0.23
11.00	0.48	23.00	0.71	35.00	0.00	47.00	0.50	59.00	0.23
11.25	0.71	23.25	0.71	35.25	0.23	47.25	0.71	59.25	0.23
11.50	0.68	23.50	0.71	35.50	0.23	47.50	0.75	59.50	0.45
11.75	0.45	23.75	0.68	35.75	0.23	47.75	0.75	59.75	0.45
12.00	**0.68**	**24.00**	**0.65**	**36.00**	**0.22**	**48.00**	**0.75**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 1.67
AVERAGE OPACITY DURING RUN = 0.68
HIGHEST SIX-MINUTE ROLLING AVERAGE = 1.94

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/20/97
Start Time: 1722
Stop Time: 1742

Baghouse Outlet
Run Number: O-M9-3D

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.21	24.25	0.00	36.25	0.00	48.25	0.00
0.50	NA	12.50	0.21	24.50	0.00	36.50	0.00	48.50	0.00
0.75	NA	12.75	0.21	24.75	0.00	36.75	0.00	48.75	0.00
1.00	NA	13.00	0.21	25.00	0.00	37.00	0.00	49.00	0.00
1.25	NA	13.25	0.42	25.25	0.00	37.25	0.00	49.25	0.00
1.50	NA	13.50	0.42	25.50	0.00	37.50	0.00	49.50	0.00
1.75	NA	13.75	0.42	25.75	0.00	37.75	0.00	49.75	0.00
2.00	NA	14.00	0.42	26.00	0.00	38.00	0.00	50.00	0.00
2.25	NA	14.25	0.42	26.25	0.00	38.25	0.00	50.25	0.00
2.50	NA	14.50	0.42	26.50	0.00	38.50	0.00	50.50	0.00
2.75	NA	14.75	0.42	26.75	0.00	38.75	0.00	50.75	0.00
3.00	NA	15.00	0.42	27.00	0.00	39.00	0.00	51.00	0.00
3.25	NA	15.25	0.42	27.25	0.00	39.25	0.00	51.25	0.00
3.50	NA	15.50	0.21	27.50	0.00	39.50	0.00	51.50	0.00
3.75	NA	15.75	0.21	27.75	0.00	39.75	0.00	51.75	0.00
4.00	NA	16.00	0.21	28.00	0.00	40.00	0.00	52.00	0.00
4.25	NA	16.25	0.21	28.25	0.00	40.25	0.00	52.25	0.00
4.50	NA	16.50	0.21	28.50	0.00	40.50	0.00	52.50	0.00
4.75	NA	16.75	0.21	28.75	0.00	40.75	0.00	52.75	0.00
5.00	NA	17.00	0.22	29.00	0.00	41.00	0.00	53.00	0.00
5.25	NA	17.25	0.22	29.25	0.00	41.25	0.00	53.25	0.00
5.50	NA	17.50	0.22	29.50	0.00	41.50	0.00	53.50	0.00
5.75	NA	17.75	0.22	29.75	0.00	41.75	0.00	53.75	0.00
6.00	**0.21**	**18.00**	**0.22**	**30.00**	**0.00**	**42.00**	**0.00**	**54.00**	**0.00**
6.25	0.21	18.25	0.22	30.25	0.00	42.25	0.00	54.25	0.00
6.50	0.21	18.50	0.22	30.50	0.00	42.50	0.00	54.50	0.00
6.75	0.21	18.75	0.22	30.75	0.00	42.75	0.00	54.75	0.00
7.00	0.21	19.00	0.22	31.00	0.00	43.00	0.00	55.00	0.00
7.25	0.21	19.25	0.00	31.25	0.00	43.25	0.00	55.25	0.00
7.50	0.21	19.50	0.00	31.50	0.00	43.50	0.00	55.50	0.00
7.75	0.21	19.75	0.00	31.75	0.00	43.75	0.00	55.75	0.00
8.00	0.21	20.00	0.00	32.00	0.00	44.00	0.00	56.00	0.00
8.25	0.21	20.25	0.00	32.25	0.00	44.25	0.00	56.25	0.00
8.50	0.21	20.50	0.00	32.50	0.00	44.50	0.00	56.50	0.00
8.75	0.21	20.75	0.00	32.75	0.00	44.75	0.00	56.75	0.00
9.00	0.21	21.00	0.00	33.00	0.00	45.00	0.00	57.00	0.00
9.25	0.21	21.25	0.00	33.25	0.00	45.25	0.00	57.25	0.00
9.50	0.42	21.50	0.00	33.50	0.00	45.50	0.00	57.50	0.00
9.75	0.42	21.75	0.00	33.75	0.00	45.75	0.00	57.75	0.00
10.00	0.42	22.00	0.00	34.00	0.00	46.00	0.00	58.00	0.00
10.25	0.42	22.25	0.00	34.25	0.00	46.25	0.00	58.25	0.00
10.50	0.42	22.50	0.00	34.50	0.00	46.50	0.00	58.50	0.00
10.75	0.42	22.75	0.00	34.75	0.00	46.75	0.00	58.75	0.00
11.00	0.42	23.00	0.00	35.00	0.00	47.00	0.00	59.00	0.00
11.25	0.42	23.25	0.00	35.25	0.00	47.25	0.00	59.25	0.00
11.50	0.42	23.50	0.00	35.50	0.00	47.50	0.00	59.50	0.00
11.75	0.42	23.75	0.00	35.75	0.00	47.75	0.00	59.75	0.00
12.00	**0.21**	**24.00**	**0.00**	**36.00**	**0.00**	**48.00**	**0.00**	**60.00**	**0.00**

HIGHEST SIX-MINUTE BLOCK AVERAGE = 0.22
AVERAGE OPACITY DURING RUN = 0.06
HIGHEST SIX-MINUTE ROLLING AVERAGE = 0.42

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Visible Emission Observation Summary

Baghouse Outlet

Run Number	O-M9-4A	O-M9-4B	O-M9-4C	O-M9-4D
Date	8/21/97	8/21/97	8/21/97	8/21/97
Start Time	0741	0848	0953	1058
Stop Time	0841	0948	1053	1158
Percent Opacity				
Average for entire run	0.15	0.17	0.13	0.10
Highest single reading	5	5	5	5
Highest six-minute block average	0.42	0.42	0.21	0.21
Highest six-minute rolling average	0.42	0.42	0.42	0.22

Date: 8/21/97
Start Time: 0741
Stop Time: 0841

Baghouse Outlet
Run Number: O-M9-4A

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.00	24.25	0.21	36.25	0.21	48.25	0.42
0.50	NA	12.50	0.00	24.50	0.21	36.50	0.21	48.50	0.42
0.75	NA	12.75	0.00	24.75	0.21	36.75	0.21	48.75	0.42
1.00	NA	13.00	0.00	25.00	0.00	37.00	0.21	49.00	0.42
1.25	NA	13.25	0.00	25.25	0.00	37.25	0.21	49.25	0.42
1.50	NA	13.50	0.00	25.50	0.00	37.50	0.21	49.50	0.42
1.75	NA	13.75	0.00	25.75	0.00	37.75	0.21	49.75	0.42
2.00	NA	14.00	0.00	26.00	0.00	38.00	0.42	50.00	0.42
2.25	NA	14.25	0.00	26.25	0.00	38.25	0.42	50.25	0.42
2.50	NA	14.50	0.00	26.50	0.00	38.50	0.42	50.50	0.42
2.75	NA	14.75	0.00	26.75	0.00	38.75	0.42	50.75	0.42
3.00	NA	15.00	0.00	27.00	0.00	39.00	0.42	51.00	0.42
3.25	NA	15.25	0.00	27.25	0.00	39.25	0.42	51.25	0.42
3.50	NA	15.50	0.00	27.50	0.00	39.50	0.42	51.50	0.21
3.75	NA	15.75	0.00	27.75	0.00	39.75	0.42	51.75	0.21
4.00	NA	16.00	0.00	28.00	0.00	40.00	0.42	52.00	0.21
4.25	NA	16.25	0.00	28.25	0.00	40.25	0.42	52.25	0.21
4.50	NA	16.50	0.00	28.50	0.00	40.50	0.42	52.50	0.21
4.75	NA	16.75	0.00	28.75	0.00	40.75	0.42	52.75	0.21
5.00	NA	17.00	0.00	29.00	0.00	41.00	0.42	53.00	0.21
5.25	NA	17.25	0.00	29.25	0.00	41.25	0.42	53.25	0.21
5.50	NA	17.50	0.00	29.50	0.00	41.50	0.42	53.50	0.00
5.75	NA	17.75	0.00	29.75	0.00	41.75	0.21	53.75	0.00
6.00	**0.21**	**18.00**	**0.00**	**30.00**	**0.00**	**42.00**	**0.21**	**54.00**	**0.00**
6.25	0.21	18.25	0.00	30.25	0.00	42.25	0.21	54.25	0.00
6.50	0.21	18.50	0.00	30.50	0.00	42.50	0.21	54.50	0.00
6.75	0.21	18.75	0.00	30.75	0.00	42.75	0.21	54.75	0.00
7.00	0.21	19.00	0.21	31.00	0.00	43.00	0.21	55.00	0.00
7.25	0.21	19.25	0.21	31.25	0.00	43.25	0.21	55.25	0.00
7.50	0.21	19.50	0.21	31.50	0.00	43.50	0.21	55.50	0.00
7.75	0.21	19.75	0.21	31.75	0.00	43.75	0.21	55.75	0.00
8.00	0.21	20.00	0.21	32.00	0.00	44.00	0.00	56.00	0.00
8.25	0.21	20.25	0.21	32.25	0.00	44.25	0.00	56.25	0.00
8.50	0.21	20.50	0.21	32.50	0.00	44.50	0.00	56.50	0.00
8.75	0.21	20.75	0.21	32.75	0.00	44.75	0.00	56.75	0.00
9.00	0.21	21.00	0.21	33.00	0.00	45.00	0.00	57.00	0.00
9.25	0.21	21.25	0.21	33.25	0.00	45.25	0.00	57.25	0.21
9.50	0.22	21.50	0.21	33.50	0.00	45.50	0.21	57.50	0.21
9.75	0.22	21.75	0.21	33.75	0.00	45.75	0.21	57.75	0.21
10.00	0.22	22.00	0.21	34.00	0.00	46.00	0.21	58.00	0.21
10.25	0.22	22.25	0.21	34.25	0.00	46.25	0.21	58.25	0.21
10.50	0.22	22.50	0.21	34.50	0.00	46.50	0.21	58.50	0.21
10.75	0.00	22.75	0.21	34.75	0.00	46.75	0.21	58.75	0.21
11.00	0.00	23.00	0.21	35.00	0.00	47.00	0.21	59.00	0.21
11.25	0.00	23.25	0.21	35.25	0.00	47.25	0.21	59.25	0.21
11.50	0.00	23.50	0.21	35.50	0.00	47.50	0.42	59.50	NA*
11.75	0.00	23.75	0.21	35.75	0.21	47.75	0.42	59.75	NA*
12.00	**0.00**	**24.00**	**0.21**	**36.00**	**0.21**	**48.00**	**0.42**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 0.42
AVERAGE OPACITY DURING RUN = 0.15
HIGHEST SIX-MINUTE ROLLING AVERAGE = 0.42

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/21/97

Start Time: 0848

Stop Time: 0948

Baghouse Outlet

Run Number: O-M9-4B

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.00	24.25	0.42	36.25	0.21	48.25	0.21
0.50	NA	12.50	0.00	24.50	0.42	36.50	0.21	48.50	0.21
0.75	NA	12.75	0.00	24.75	0.42	36.75	0.21	48.75	0.21
1.00	NA	13.00	0.00	25.00	0.42	37.00	0.21	49.00	0.21
1.25	NA	13.25	0.00	25.25	0.42	37.25	0.00	49.25	0.21
1.50	NA	13.50	0.00	25.50	0.42	37.50	0.00	49.50	0.21
1.75	NA	13.75	0.00	25.75	0.42	37.75	0.00	49.75	0.21
2.00	NA	14.00	0.00	26.00	0.42	38.00	0.00	50.00	0.21
2.25	NA	14.25	0.00	26.25	0.42	38.25	0.00	50.25	0.21
2.50	NA	14.50	0.00	26.50	0.42	38.50	0.00	50.50	0.21
2.75	NA	14.75	0.00	26.75	0.42	38.75	0.00	50.75	0.21
3.00	NA	15.00	0.00	27.00	0.42	39.00	0.00	51.00	0.21
3.25	NA	15.25	0.00	27.25	0.42	39.25	0.00	51.25	0.21
3.50	NA	15.50	0.00	27.50	0.42	39.50	0.00	51.50	0.21
3.75	NA	15.75	0.00	27.75	0.42	39.75	0.00	51.75	0.21
4.00	NA	16.00	0.00	28.00	0.42	40.00	0.00	52.00	0.42
4.25	NA	16.25	0.00	28.25	0.42	40.25	0.00	52.25	0.42
4.50	NA	16.50	0.00	28.50	0.21	40.50	0.00	52.50	0.42
4.75	NA	16.75	0.00	28.75	0.21	40.75	0.00	52.75	0.42
5.00	NA	17.00	0.00	29.00	0.21	41.00	0.00	53.00	0.21
5.25	NA	17.25	0.00	29.25	0.21	41.25	0.00	53.25	0.21
5.50	NA	17.50	0.00	29.50	0.21	41.50	0.00	53.50	0.21
5.75	NA	17.75	0.00	29.75	0.21	41.75	0.00	53.75	0.21
6.00	**0.42**	**18.00**	**0.00**	**30.00**	**0.00**	**42.00**	**0.00**	**54.00**	**0.21**
6.25	0.42	18.25	0.00	30.25	0.21	42.25	0.00	54.25	0.21
6.50	0.42	18.50	0.00	30.50	0.21	42.50	0.00	54.50	0.21
6.75	0.42	18.75	0.00	30.75	0.21	42.75	0.00	54.75	0.21
7.00	0.42	19.00	0.00	31.00	0.21	43.00	0.00	55.00	0.21
7.25	0.42	19.25	0.00	31.25	0.42	43.25	0.00	55.25	0.21
7.50	0.42	19.50	0.00	31.50	0.42	43.50	0.00	55.50	0.21
7.75	0.21	19.75	0.00	31.75	0.42	43.75	0.00	55.75	0.21
8.00	0.21	20.00	0.00	32.00	0.42	44.00	0.00	56.00	0.21
8.25	0.21	20.25	0.00	32.25	0.42	44.25	0.00	56.25	0.21
8.50	0.21	20.50	0.00	32.50	0.42	44.50	0.00	56.50	0.21
8.75	0.21	20.75	0.00	32.75	0.42	44.75	0.00	56.75	NA*
9.00	0.21	21.00	0.00	33.00	0.42	45.00	0.00	57.00	NA*
9.25	0.21	21.25	0.00	33.25	0.42	45.25	0.00	57.25	NA*
9.50	0.21	21.50	0.00	33.50	0.42	45.50	0.00	57.50	NA*
9.75	0.21	21.75	0.00	33.75	0.42	45.75	0.00	57.75	NA*
10.00	0.21	22.00	0.00	34.00	0.42	46.00	0.00	58.00	NA*
10.25	0.21	22.25	0.00	34.25	0.42	46.25	0.00	58.25	NA*
10.50	0.21	22.50	0.21	34.50	0.42	46.50	0.00	58.50	NA*
10.75	0.21	22.75	0.21	34.75	0.42	46.75	0.00	58.75	NA*
11.00	0.21	23.00	0.21	35.00	0.42	47.00	0.21	59.00	NA*
11.25	0.21	23.25	0.21	35.25	0.42	47.25	0.21	59.25	NA*
11.50	0.00	23.50	0.21	35.50	0.42	47.50	0.21	59.50	NA*
11.75	0.00	23.75	0.21	35.75	0.42	47.75	0.21	59.75	NA*
12.00	**0.00**	**24.00**	**0.42**	**36.00**	**0.42**	**48.00**	**0.21**	**60.00**	NA*

HIGHEST SIX-MINUTE BLOCK AVERAGE = 0.42 AVERAGE OPACITY DURING RUN = 0.17

HIGHEST SIX-MINUTE ROLLING AVERAGE = 0.42

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/21/97
Start Time: 0953
Stop Time: 1053

Baghouse Outlet
Run Number: O-M9-4C

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.21	24.25	0.00	36.25	0.21	48.25	0.21
0.50	NA	12.50	0.21	24.50	0.00	36.50	0.21	48.50	0.21
0.75	NA	12.75	0.21	24.75	0.00	36.75	0.21	48.75	0.21
1.00	NA	13.00	0.21	25.00	0.00	37.00	0.21	49.00	0.21
1.25	NA	13.25	0.21	25.25	0.00	37.25	0.21	49.25	0.21
1.50	NA	13.50	0.21	25.50	0.00	37.50	0.21	49.50	0.21
1.75	NA	13.75	0.21	25.75	0.00	37.75	0.21	49.75	0.21
2.00	NA	14.00	0.21	26.00	0.00	38.00	0.21	50.00	0.21
2.25	NA	14.25	0.21	26.25	0.00	38.25	0.21	50.25	0.21
2.50	NA	14.50	0.21	26.50	0.00	38.50	0.21	50.50	0.21
2.75	NA	14.75	0.21	26.75	0.00	38.75	0.21	50.75	0.21
3.00	NA	15.00	0.21	27.00	0.00	39.00	0.21	51.00	0.21
3.25	NA	15.25	0.21	27.25	0.00	39.25	0.21	51.25	0.21
3.50	NA	15.50	0.21	27.50	0.00	39.50	0.21	51.50	0.21
3.75	NA	15.75	0.21	27.75	0.00	39.75	0.21	51.75	0.21
4.00	NA	16.00	0.21	28.00	0.00	40.00	0.21	52.00	0.21
4.25	NA	16.25	0.21	28.25	0.00	40.25	0.21	52.25	0.21
4.50	NA	16.50	0.21	28.50	0.00	40.50	0.21	52.50	0.21
4.75	NA	16.75	0.00	28.75	0.00	40.75	0.42	52.75	0.21
5.00	NA	17.00	0.00	29.00	0.00	41.00	0.21	53.00	0.21
5.25	NA	17.25	0.00	29.25	0.00	41.25	0.21	53.25	0.21
5.50	NA	17.50	0.00	29.50	0.00	41.50	0.21	53.50	0.00
5.75	NA	17.75	0.00	29.75	0.00	41.75	0.21	53.75	0.21
6.00	**0.21**	**18.00**	**0.00**	**30.00**	**0.00**	**42.00**	**0.21**	**54.00**	**0.21**
6.25	0.21	18.25	0.00	30.25	0.00	42.25	0.21	54.25	0.21
6.50	0.21	18.50	0.00	30.50	0.00	42.50	0.21	54.50	0.21
6.75	0.21	18.75	0.00	30.75	0.00	42.75	0.21	54.75	0.21
7.00	0.21	19.00	0.00	31.00	0.00	43.00	0.21	55.00	0.21
7.25	0.21	19.25	0.00	31.25	0.00	43.25	0.21	55.25	0.21
7.50	0.21	19.50	0.00	31.50	0.00	43.50	0.21	55.50	0.21
7.75	0.21	19.75	0.00	31.75	0.00	43.75	0.21	55.75	0.21
8.00	0.00	20.00	0.00	32.00	0.00	44.00	0.21	56.00	0.21
8.25	0.00	20.25	0.00	32.25	0.00	44.25	0.21	56.25	0.21
8.50	0.00	20.50	0.00	32.50	0.00	44.50	0.21	56.50	0.21
8.75	0.00	20.75	0.00	32.75	0.00	44.75	0.21	56.75	0.21
9.00	0.00	21.00	0.00	33.00	0.00	45.00	0.21	57.00	0.21
9.25	0.00	21.25	0.00	33.25	0.00	45.25	0.21	57.25	0.21
9.50	0.00	21.50	0.00	33.50	0.00	45.50	0.21	57.50	0.21
9.75	0.00	21.75	0.00	33.75	0.00	45.75	0.21	57.75	0.21
10.00	0.00	22.00	0.00	34.00	0.00	46.00	0.21	58.00	0.21
10.25	0.00	22.25	0.00	34.25	0.00	46.25	0.21	58.25	0.21
10.50	0.00	22.50	0.00	34.50	0.00	46.50	0.21	58.50	0.21
10.75	0.21	22.75	0.00	34.75	0.00	46.75	0.00	58.75	0.21
11.00	0.21	23.00	0.00	35.00	0.21	47.00	0.00	59.00	0.21
11.25	0.21	23.25	0.00	35.25	0.21	47.25	0.00	59.25	0.21
11.50	0.21	23.50	0.00	35.50	0.21	47.50	0.21	59.50	0.21
11.75	0.21	23.75	0.00	35.75	0.21	47.75	0.21	59.75	0.00
12.00	**0.21**	**24.00**	**0.00**	**36.00**	**0.21**	**48.00**	**0.21**	**60.00**	**NA***

HIGHEST SIX-MINUTE BLOCK AVERAGE = 0.21
AVERAGE OPACITY DURING RUN = 0.13
HIGHEST SIX-MINUTE ROLLING AVERAGE = 0.42

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Date: 8/21/97
Start Time: 1058
Stop Time: 1158

Baghouse Outlet
Run Number: O-M9-4D

Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,	Net Run Time, minutes	six-minute rolling averages percent opacity,
0.25	NA	12.25	0.00	24.25	0.21	36.25	0.00	48.25	0.00
0.50	NA	12.50	0.00	24.50	0.21	36.50	0.00	48.50	0.00
0.75	NA	12.75	0.00	24.75	0.21	36.75	0.00	48.75	0.00
1.00	NA	13.00	0.21	25.00	0.21	37.00	0.00	49.00	0.00
1.25	NA	13.25	0.21	25.25	0.21	37.25	0.00	49.25	0.00
1.50	NA	13.50	0.21	25.50	0.21	37.50	0.00	49.50	0.00
1.75	NA	13.75	0.21	25.75	0.00	37.75	0.00	49.75	0.00
2.00	NA	14.00	0.21	26.00	0.00	38.00	0.00	50.00	0.00
2.25	NA	14.25	0.21	26.25	0.00	38.25	0.00	50.25	0.00
2.50	NA	14.50	0.21	26.50	0.00	38.50	0.00	50.50	0.00
2.75	NA	14.75	0.21	26.75	0.00	38.75	0.00	50.75	0.00
3.00	NA	15.00	0.21	27.00	0.00	39.00	0.00	51.00	0.00
3.25	NA	15.25	0.21	27.25	0.00	39.25	0.00	51.25	0.00
3.50	NA	15.50	0.21	27.50	0.00	39.50	0.00	51.50	0.00
3.75	NA	15.75	0.21	27.75	0.00	39.75	0.00	51.75	0.00
4.00	NA	16.00	0.21	28.00	0.00	40.00	0.00	52.00	0.00
4.25	NA	16.25	0.21	28.25	0.00	40.25	0.00	52.25	0.00
4.50	NA	16.50	0.21	28.50	0.00	40.50	0.00	52.50	0.00
4.75	NA	16.75	0.21	28.75	0.00	40.75	0.00	52.75	0.00
5.00	NA	17.00	0.21	29.00	0.00	41.00	0.00	53.00	0.00
5.25	NA	17.25	0.21	29.25	0.00	41.25	0.00	53.25	0.21
5.50	NA	17.50	0.21	29.50	0.00	41.50	0.21	53.50	0.21
5.75	NA	17.75	0.21	29.75	0.00	41.75	0.21	53.75	0.21
6.00	**0.21**	**18.00**	**0.21**	**30.00**	**0.00**	**42.00**	**0.21**	**54.00**	**0.21**
6.25	0.21	18.25	0.21	30.25	0.00	42.25	0.21	54.25	0.21
6.50	0.21	18.50	0.21	30.50	0.00	42.50	0.21	54.50	0.21
6.75	0.21	18.75	0.21	30.75	0.00	42.75	0.21	54.75	0.21
7.00	0.21	19.00	0.00	31.00	0.00	43.00	0.21	55.00	0.21
7.25	0.21	19.25	0.00	31.25	0.00	43.25	0.21	55.25	0.21
7.50	0.21	19.50	0.00	31.50	0.00	43.50	0.21	55.50	0.21
7.75	0.21	19.75	0.21	31.75	0.00	43.75	0.21	55.75	0.21
8.00	0.21	20.00	0.21	32.00	0.00	44.00	0.21	56.00	0.21
8.25	0.21	20.25	0.21	32.25	0.00	44.25	0.22	56.25	0.21
8.50	0.21	20.50	0.21	32.50	0.00	44.50	0.22	56.50	0.21
8.75	0.21	20.75	0.21	32.75	0.00	44.75	0.22	56.75	0.21
9.00	0.21	21.00	0.21	33.00	0.00	45.00	0.22	57.00	0.21
9.25	0.21	21.25	0.21	33.25	0.00	45.25	0.22	57.25	0.21
9.50	0.21	21.50	0.21	33.50	0.00	45.50	0.22	57.50	0.21
9.75	0.00	21.75	0.21	33.75	0.00	45.75	0.22	57.75	0.21
10.00	0.00	22.00	0.21	34.00	0.00	46.00	0.22	58.00	0.21
10.25	0.00	22.25	0.21	34.25	0.00	46.25	0.22	58.25	0.21
10.50	0.00	22.50	0.21	34.50	0.00	46.50	0.22	58.50	0.21
10.75	0.00	22.75	0.21	34.75	0.00	46.75	0.22	58.75	0.21
11.00	0.00	23.00	0.21	35.00	0.00	47.00	0.22	59.00	0.21
11.25	0.00	23.25	0.21	35.25	0.00	47.25	0.22	59.25	0.00
11.50	0.00	23.50	0.21	35.50	0.00	47.50	0.00	59.50	0.00
11.75	0.00	23.75	0.21	35.75	0.00	47.75	0.00	59.75	0.00
12.00	**0.00**	**24.00**	**0.21**	**36.00**	**0.00**	**48.00**	**0.00**	**60.00**	**0.00**

HIGHEST SIX-MINUTE BLOCK AVERAGE = 0.21
AVERAGE OPACITY DURING RUN = 0.10
HIGHEST SIX-MINUTE ROLLING AVERAGE = 0.22

* Due to fugitive emission obstructions, a number of readings could not be made. Running averages included the time lapses so that the net run time was shortened. NA indicates that for the time period, an average is Not Applicable.

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 23 - PCDD / PCDF
Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	Average
	RUN DATE	8/19/97	8/20/97	8/20/97	
	RUN TIME	0915-1456	0822-1240	1405-1730	
	MEASURED DATA				
γ	Meter Box Correction Factor	0.987	0.987	0.987	0.987
ΔH	Avg Meter Orifice Pressure, in. H_2O	1.29	2.82	2.50	2.20
P_{bar}	Barometric Pressure, inches Hg	29.90	29.80	29.80	30.40
V_m	Sample Volume, ft^3	138.502	199.873	162.107	166.827
T_m	Average Meter Temperature, °F	115	102	109	109
P_{static}	Stack Static Pressure, inches H_2O	-0.22	-0.25	-0.25	-0.24
T_s	Average Stack Temperature, °F	185	223	209	206
V_{lc}	Condensate Collected, ml	601.6	1253.1	912.4	922.4
CO_2	Carbon Dioxide content, % by volume	5.3	5.5	5.1	5.3
O_2	Oxygen content, % by volume	13.1	13.1	13.1	13.1
N_2	Nitrogen content, % by volume	81.6	81.4	81.8	81.6
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.6897	0.9039	0.8429	0.8122
Θ	Sample Run Duration, minutes	240	240	200	227
D_n	Nozzle Diameter, inches	0.240	0.251	0.251	0.247
	CALCULATED DATA				
A_n	Nozzle Area, ft^2	0.00031	0.00034	0.00034	0.00033
$V_{m(std)}$	Standard Meter Volume, dscf	125.786	185.768	148.617	153.390
$V_{m(std)}$	Standard Meter Volume, dscm	3.562	5.260	4.208	4.344
P_s	Stack Pressure, inches Hg	29.88	29.78	29.78	29.82
B_{ws}	Moisture, % by volume	18.4	24.1	22.4	21.6
$B_{ws(sat)}$	Moisture (at saturation), % by volume	56.9	NA	93.9	75.4
V_{wstd}	Standard Water Vapor Volume, ft^3	28.317	58.983	42.947	43.416
$1-B_{ws}$	Dry Mole Fraction	0.816	0.759	0.776	0.784
M_d	Molecular Weight (d.b.), lb/lb•mole	29.37	29.40	29.34	29.37
M_s	Molecular Weight (w.b.), lb/lb•mole	27.28	26.66	26.80	26.91
V_s	Stack Gas Velocity, ft/s	44.1	60.2	55.4	53.2
A	Stack Area, ft^2	11.46	11.46	11.46	11.46
Q_a	Stack Gas Volumetric flow, acfm	30,291	41,402	38,097	36,596
Q_s	Stack Gas Volumetric flow, dscfm	20,210	24,166	23,222	22,533
$Q_{s(cmm)}$	Stack Gas Volumetric flow, dscmm	572.3	684.3	657.6	638.1
I	Isokinetic Sampling Ratio, %	94.6	106.8	106.7	102.7

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	
	RUN DATE	8/19/97	8/20/97	8/20/97	Average
	RUN TIME	0915-1456	0822-1240	1405-1730	
	EMISSIONS DATA				
	DIOXINS:				
	2378 TCDD				
(ng)	Catch, ng	ND	ND	{0.003}	{0.00100}
(ng/dscm)	Concentration, ng/dscm, as measured	ND	ND	{0.000713}	{0.000238}
(µg/hr)	Emission Rate, µg/hr	ND	ND	{0.0281}	{0.00938}
	Total TCDD				
(ng)	Catch, ng	0.007	0.02	0.01	0.0123
(ng/dscm)	Concentration, ng/dscm, as measured	0.00197	0.00380	0.00238	0.00271
(µg/hr)	Emission Rate, µg/hr	0.0675	0.156	0.0938	0.106
	12378 PeCDD				
(ng)	Catch, ng	ND	ND	0.005	0.00167
(ng/dscm)	Concentration, ng/dscm, as measured	ND	ND	0.00119	0.000396
(µg/hr)	Emission Rate, µg/hr	ND	ND	0.0469	0.0156
	Total PeCDD				
(ng)	Catch, ng	{0.040}	0.030	0.030	{0.0333}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0112}	0.00570	0.00713	{0.00802}
(µg/hr)	Emission Rate, µg/hr	{0.386}	0.234	0.281	{0.300}
	123478 HxCDD				
(ng)	Catch, ng	ND	ND	0.008	0.00267
(ng/dscm)	Concentration, ng/dscm, as measured	ND	ND	0.00190	0.000634
(µg/hr)	Emission Rate, µg/hr	ND	ND	0.0750	0.0250
	123678 HxCDD				
(ng)	Catch, ng	0.010	{0.020}	0.020	{0.0167}
(ng/dscm)	Concentration, ng/dscm, as measured	0.00281	{0.00380}	0.00475	{0.00379}
(µg/hr)	Emission Rate, µg/hr	0.0964	{0.156}	0.188	{0.147}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	Average
	RUN DATE	8/19/97	8/20/97	8/20/97	
	RUN TIME	0915-1456	0822-1240	1405-1730	
	EMISSIONS DATA -Continued				
	DIOXINS - Continued				
	123789 HxCDD				
(ng)	Catch, ng	0.020	ND	{0.010}	{0.0100}
(ng/dscm)	Concentration, ng/dscm, as measured	0.00562	ND	{0.00238}	{0.00266}
(µg/hr)	Emission Rate, µg/hr	0.193	ND	{0.0938}	{0.0955}
	Total HxCDD				
(ng)	Catch, ng	0.120	0.080	0.150	0.117
(ng/dscm)	Concentration, ng/dscm, as measured	0.0337	0.0152	0.0356	0.0282
(µg/hr)	Emission Rate, µg/hr	1.16	0.624	1.41	1.06
	1234678 HpCDD				
(ng)	Catch, ng	0.060	{0.040}	0.060	{0.0533}
(ng/dscm)	Concentration, ng/dscm, as measured	0.0168	{0.00760}	0.0143	{0.0129}
(µg/hr)	Emission Rate, µg/hr	0.578	{0.312}	0.563	{0.484}
	Total HpCDD				
(ng)	Catch, ng	0.100	0.040	0.060	0.0667
(ng/dscm)	Concentration, ng/dscm, as measured	0.0281	0.00760	0.0143	0.0166
(µg/hr)	Emission Rate, µg/hr	0.964	0.312	0.563	0.613
	12346789 OCDD				
(ng)	Catch, ng	0.530	0.190	0.130	0.283
(ng/dscm)	Concentration, ng/dscm, as measured	0.149	0.0361	0.0309	0.0719
(µg/hr)	Emission Rate, µg/hr	5.11	1.48	1.22	2.60
	Total PCDD				
(ng)	Catch, ng	{0.797}	0.360	0.380	{0.512}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.224}	0.0684	0.0903	{0.127}
(µg/hr)	Emission Rate, µg/hr	{7.68}	2.81	3.56	{4.69}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	
	RUN DATE	8/19/97	8/20/97	8/20/97	Average
	RUN TIME	0915-1456	0822-1240	1405-1730	
	EMISSIONS DATA - Continued				
	FURANS				
	2378 TCDF				
(ng)	Catch, ng	{0.008}	ND	0.020	{0.00933}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00225}	ND	0.00475	{0.00233}
(µg/hr)	Emission Rate, µg/hr	{0.0771}	ND	0.188	{0.0882}
	Total TCDF				
(ng)	Catch, ng	0.030	0.040	0.030	0.0333
(ng/dscm)	Concentration, ng/dscm, as measured	0.00842	0.00760	0.00713	0.00772
(µg/hr)	Emission Rate, µg/hr	0.289	0.312	0.281	0.294
	12378 PeCDF				
(ng)	Catch, ng	{0.006}	ND	0.007	{0.00433}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00168}	ND	0.00166	{0.00112}
(µg/hr)	Emission Rate, µg/hr	{0.0578}	ND	0.0656	{0.0412}
	23478 PeCDF				
(ng)	Catch, ng	{0.010}	ND	0.010	{0.00667}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00281}	ND	0.00238	{0.00173}
(µg/hr)	Emission Rate, µg/hr	{0.0964}	ND	0.0938	{0.0634}
	Total PeCDF				
(ng)	Catch, ng	0.050	ND	0.060	0.0367
(ng/dscm)	Concentration, ng/dscm, as measured	0.0140	ND	0.0143	0.00943
(µg/hr)	Emission Rate, µg/hr	0.482	ND	0.563	0.348
	123478 HxCDF				
(ng)	Catch, ng	0.040	0.040	0.060	0.0467
(ng/dscm)	Concentration, ng/dscm, as measured	0.0112	0.00760	0.0143	0.0110
(µg/hr)	Emission Rate, µg/hr	0.386	0.312	0.563	0.420

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	
	RUN DATE	8/19/97	8/20/97	8/20/97	Average
	RUN TIME	0915-1456	0822-1240	1405-1730	
	EMISSIONS DATA - Continued				
	Furans - Continued				
	123678 HxCDF				
(ng)	Catch, ng	0.010	0.010	0.020	0.0133
(ng/dscm)	Concentration, ng/dscm, as measured	0.00281	0.00190	0.00475	0.00315
(µg/hr)	Emission Rate, µg/hr	0.0964	0.0781	0.188	0.121
	234678 HxCDF				
(ng)	Catch, ng	0.020	0.020	0.020	0.0200
(ng/dscm)	Concentration, ng/dscm, as measured	0.00562	0.00380	0.00475	0.00472
(µg/hr)	Emission Rate, µg/hr	0.193	0.156	0.188	0.179
	123789 HxCDF				
(ng)	Catch, ng	ND	ND	ND	0.0
(ng/dscm)	Concentration, ng/dscm, as measured	ND	ND	ND	0.0
(µg/hr)	Emission Rate, µg/hr	ND	ND	ND	0.0
	Total HxCDF				
(ng)	Catch, ng	0.120	0.110	0.170	0.133
(ng/dscm)	Concentration, ng/dscm, as measured	0.0337	0.0209	0.0404	0.0317
(µg/hr)	Emission Rate, µg/hr	1.16	0.859	1.59	1.20
	1234678 HpCDF				
(ng)	Catch, ng	{0.070}	0.070	0.090	{0.0767}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0197}	0.0133	0.0214	{0.0181}
(µg/hr)	Emission Rate, µg/hr	{0.675}	0.546	0.844	{0.688}
	1234789 HpCDF				
(ng)	Catch, ng	0.040	0.020	{0.030}	{0.0300}
(ng/dscm)	Concentration, ng/dscm, as measured	0.0112	0.00380	{0.00713}	{0.00739}
(µg/hr)	Emission Rate, µg/hr	0.386	0.156	{0.281}	{0.274}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3	
	RUN DATE	8/19/97	8/20/97	8/20/97	Average
	RUN TIME	0915-1456	0822-1240	1405-1730	
	EMISSIONS DATA - Continued				
	Furans - Continued				
	Total HpCDF				
(ng)	Catch, ng	0.040	0.120	0.090	0.0833
(ng/dscm)	Concentration, ng/dscm, as measured	0.0112	0.0228	0.0214	0.0185
(µg/hr)	Emission Rate, µg/hr	0.386	0.937	0.844	0.722
	12346789 OCDF				
(ng)	Catch, ng	0.040	0.060	0.060	0.0533
(ng/dscm)	Concentration, ng/dscm, as measured	0.0112	0.0114	0.0143	0.0123
(µg/hr)	Emission Rate, µg/hr	0.386	0.468	0.563	0.472
	Total PCDF				
(ng)	Catch, ng	0.280	0.330	0.410	0.340
(ng/dscm)	Concentration, ng/dscm, as measured	0.0786	0.0627	0.0974	0.0796
(µg/hr)	Emission Rate, µg/hr	2.70	2.58	3.84	3.04
	Total PCDD + PCDF				
(ng)	Catch, ng	{1.08}	0.690	0.790	{0.852}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.302}	0.131	0.188	{0.207}
(µg/hr)	Emission Rate, µg/hr	{10.4}	5.39	7.41	{7.72}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

PCDD/PCDF Corrected Stack Gas Concentrations and 2378 TCDD Toxic Equivalent Concentrations
ASPHALT PLANT "A" - Garner, North Carolina
US EPA Test Method 23 - PCDD/PCDF
Baghouse Outlet

	CONCENTRATION (ng/dscmm, adjusted to 7% O2)				2378-TCDD	2378 TOXIC EQUIVALENCIES (ng/dscmm, adjusted to 7% O2)			
RUN NUMBER	S-M23-O-1	S-M23-O-2	S-M23-O-3		Toxic	S-M23-O-1	S-M23-O-2	S-M23-O-3	
RUN DATE	08/19/97	08/20/97	08/20/97	Average	Equivalent	8/19/97	8/20/97	8/20/97	Average
RUN TIME	0915-1456	0822-1240	1405-1730		Factor	0915-1456	0822-1240	1405-1730	
DIOXINS:									
2378 TCDD	ND	ND	{0.00127}	{0.000423}	1.000	ND	ND	{0.00127}	{0.000423}
Total TCDD	0.00350	0.00678	0.00423	0.00484					
12378 PeCDD	ND	ND	0.00212	0.000706	0.500	ND	ND	0.00106	0.000353
Total PeCDD	{0.0200}	0.0102	0.0127	{0.0143}					
123478 HxCDD	ND	ND	0.00339	0.00113	0.100	ND	ND	0.000339	0.000113
123678 HxCDD	0.00500	{0.00678}	0.00847	{0.00675}	0.100	0.000500	{0.000678}	0.000847	{0.000675}
123789 HxCDD	0.0100	ND	{0.00423}	{0.00475}	0.100	0.00100	ND	{0.000423}	{0.000475}
Total HxCDD	0.0600	0.0271	0.0635	0.0502					
1234678 HpCDD	0.0300	{0.0136}	0.0254	{0.0230}	0.010	0.000300	{0.000136}	0.000254	{0.000230}
Total HpCDD	0.0500	0.0136	0.0254	0.0297					
12346789 OCDD	0.265	0.0644	0.0550	0.128	0.001	0.000265	0.0000644	0.0000550	0.000128
Total PCDD	{0.399}	0.122	0.161	{0.227}		0.00207	{0.000877}	{0.00425}	{0.00240}
FURANS:									
2378 TCDF	{0.00400}	ND	0.00847	{0.00416}	0.100	{0.000400}	ND	0.000847	{0.000416}
Total TCDF	0.0150	0.0136	0.0127	0.0138					
12378 PeCDF	{0.00300}	ND	0.00296	{0.00199}	0.050	{0.000150}	ND	0.000148	{0.0000994}
23478 PeCDF	{0.00500}	ND	0.00423	{0.00308}	0.500	{0.00250}	ND	0.00212	{0.00154}
Total PeCDF	0.0250	ND	0.0254	0.0168					
123478 HxCDF	0.0200	0.0136	0.0254	0.0197	0.100	0.00200	0.00136	0.00254	0.001966
123678 HxCDF	0.00500	0.00339	0.00847	0.00562	0.100	0.000500	0.000339	0.000847	0.000562
234678 HxCDF	0.0100	0.00678	0.00847	0.00842	0.100	0.00100	0.000678	0.000847	0.000842
123789 HxCDF	ND	ND	ND	0.0	0.100	ND	ND	ND	0.00
Total HxCDF	0.0600	0.0373	0.0720	0.0564					
1234678 HpCDF	{0.0350}	0.0237	0.0381	{0.0323}	0.010	{0.000350}	0.000237	0.000381	{0.000323}
1234789 HpCDF	0.0200	0.00678	{0.0127}	{0.0132}	0.010	0.000200	0.0000678	{0.000127}	{0.000132}
Total HpCDF	0.0200	0.0407	0.0381	0.0329					
12346789 OCDF	0.0200	0.0203	0.0254	0.0219	0.001	0.0000200	0.0000203	0.0000254	0.0000219
Total PCDF	0.140	0.112	0.174	0.142		{0.00712}	0.00270	{0.00788}	{0.00590}
Total PCDD + PCDF	{0.539}	0.234	0.335	{0.369}		{0.00919}	{0.00357}	{0.0121}	{0.00830}

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***S-M23-O-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	MEASURED DATA	
γ	Meter Box Correction Factor	0.987
ΔH	Avg Meter Orifice Pressure, in. H_2O	2.37
P_{bar}	Barometric Pressure, inches Hg	29.70
V_m	Sample Volume, ft^3	179.969
T_m	Average Meter Temperature, °F	105
P_{static}	Stack Static Pressure, inches H_2O	-0.25
T_s	Average Stack Temperature, °F	180
V_{lc}	Condensate Collected, ml	819.1
CO_2	Carbon Dioxide content, % by volume	3.2
O_2	Oxygen content, % by volume	10.8
N_2	Nitrogen content, % by volume	86.0
C_p	Pitot Tube Coefficient	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.8374
Θ	Sample Run Duration, minutes	240
D_n	Nozzle Diameter, inches	0.251
	CALCULATED DATA	
A_n	Nozzle Area, ft^2	0.000344
$V_{m(std)}$	Standard Meter Volume, dscf	165.621
$V_{m(std)}$	Standard Meter Volume, dscm	4.690
P_s	Stack Pressure, inches Hg	29.68
B_{ws}	Moisture, % by volume	18.9
$B_{ws(sat)}$	Moisture (at saturation), % by volume	51.1
V_{wstd}	Standard Water Vapor Volume, ft^3	38.555
$1-B_{ws}$	Dry Mole Fraction	0.811
M_d	Molecular Weight (d.b.), lb/lb•mole	28.94
M_s	Molecular Weight (w.b.), lb/lb•mole	26.88
V_s	Stack Gas Velocity, ft/s	53.8
A	Stack Area, ft^2	11.46
Q_a	Stack Gas Volumetric flow, acfm	37,027
Q_s	Stack Gas Volumetric flow, dscfm	24,580
$Q_{s(cmm)}$	Stack Gas Volumetric flow, dscmm	696.0
I	Isokinetic Sampling Ratio, %	93.7

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***O-M23-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	EMISSIONS DATA	
	DIOXINS:	
	2378 TCDD	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	Total TCDD	
(ng)	Catch, ng	{0.007}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00149}
(µg/hr)	Emission Rate, µg/hr	{0.0623}
	12378 PeCDD	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	Total PeCDD	
(ng)	Catch, ng	0.010
(ng/dscm)	Concentration, ng/dscm, as measured	0.00213
(µg/hr)	Emission Rate, µg/hr	0.0890
	123478 HxCDD	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	123678 HxCDD	
(ng)	Catch, ng	0.010
(ng/dscm)	Concentration, ng/dscm, as measured	0.00213
(µg/hr)	Emission Rate, µg/hr	0.0890

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***O-M23-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	EMISSIONS DATA -Continued	
	DIOXINS - Continued	
	123789 HxCDD	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	Total HxCDD	
(ng)	Catch, ng	0.070
(ng/dscm)	Concentration, ng/dscm, as measured	0.0149
(µg/hr)	Emission Rate, µg/hr	0.623
	1234678 HpCDD	
(ng)	Catch, ng	{0.040}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00853}
(µg/hr)	Emission Rate, µg/hr	{0.356}
	Total HpCDD	
(ng)	Catch, ng	{0.070}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0149}
(µg/hr)	Emission Rate, µg/hr	{0.623}
	12346789 OCDD	
(ng)	Catch, ng	0.090
(ng/dscm)	Concentration, ng/dscm, as measured	0.0192
(µg/hr)	Emission Rate, µg/hr	0.801
	Total PCDD	
(ng)	Catch, ng	{0.247}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.0527}
(µg/hr)	Emission Rate, µg/hr	{2.20}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***O-M23-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	EMISSIONS DATA - Continued	
	FURANS	
	2378 TCDF	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	Total TCDF	
(ng)	Catch, ng	0.030
(ng/dscm)	Concentration, ng/dscm, as measured	0.00640
(µg/hr)	Emission Rate, µg/hr	0.267
	12378 PeCDF	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	23478 PeCDF	
(ng)	Catch, ng	{0.010}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.00213}
(µg/hr)	Emission Rate, µg/hr	{0.0890}
	Total PeCDF	
(ng)	Catch, ng	0.010
(ng/dscm)	Concentration, ng/dscm, as measured	0.00213
(µg/hr)	Emission Rate, µg/hr	0.0890
	123478 HxCDF	
(ng)	Catch, ng	0.030
(ng/dscm)	Concentration, ng/dscm, as measured	0.00640
(µg/hr)	Emission Rate, µg/hr	0.267

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***O-M23-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	EMISSIONS DATA - Continued	
	Furans - Continued	
	123678 HxCDF	
(ng)	Catch, ng	0.010
(ng/dscm)	Concentration, ng/dscm, as measured	0.00213
(µg/hr)	Emission Rate, µg/hr	0.0890
	234678 HxCDF	
(ng)	Catch, ng	0.020
(ng/dscm)	Concentration, ng/dscm, as measured	0.00426
(µg/hr)	Emission Rate, µg/hr	0.178
	123789 HxCDF	
(ng)	Catch, ng	ND
(ng/dscm)	Concentration, ng/dscm, as measured	ND
(µg/hr)	Emission Rate, µg/hr	ND
	Total HxCDF	
(ng)	Catch, ng	0.090
(ng/dscm)	Concentration, ng/dscm, as measured	0.0192
(µg/hr)	Emission Rate, µg/hr	0.801
	1234678 HpCDF	
(ng)	Catch, ng	0.050
(ng/dscm)	Concentration, ng/dscm, as measured	0.0107
(µg/hr)	Emission Rate, µg/hr	0.445
	1234789 HpCDF	
(ng)	Catch, ng	0.020
(ng/dscm)	Concentration, ng/dscm, as measured	0.00426
(µg/hr)	Emission Rate, µg/hr	0.178

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

Summary of Stack Gas Parameters and Test Results

ASPHALT PLANT "A"

US EPA Test Method 23 - PCDD / PCDF

Baghouse Outlet

	RUN NUMBER	***O-M23-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1148***
	EMISSIONS DATA - Continued	
	Furans - Continued	
	Total HpCDF	
(ng)	Catch, ng	0.090
(ng/dscm)	Concentration, ng/dscm, as measured	0.0192
(µg/hr)	Emission Rate, µg/hr	0.801
	12346789 OCDF	
(ng)	Catch, ng	0.050
(ng/dscm)	Concentration, ng/dscm, as measured	0.0107
(µg/hr)	Emission Rate, µg/hr	0.445
	Total PCDF	
(ng)	Catch, ng	0.270
(ng/dscm)	Concentration, ng/dscm, as measured	0.0576
(µg/hr)	Emission Rate, µg/hr	2.40
	Total PCDD + PCDF	
(ng)	Catch, ng	{0.517}
(ng/dscm)	Concentration, ng/dscm, as measured	{0.110}
(µg/hr)	Emission Rate, µg/hr	{4.60}

( ) Not Detected. Value shown is the detection limit for that sample.

{ } Estimated Maximum Possible Concentration.

PCDD/PCDF Corrected Stack Gas Concentrations and 2378 TCDD Toxic Equivalent Concentrations

Asphalt Plant "A" - **Garner, North Carolina**

US EPA Test Method 23 - PCDD/PCDF

Baghouse Outlet

	CONCENTRATION (ng/dscmm, adjusted to 7% O2)	2378-TCDD Toxic Equivalent Factor	2378 TOXIC EQUIVALENCIES (ng/dscmm, adjusted to 7% O2)
RUN NUMBER	S-M23-O-4		S-M23-O-4
RUN DATE	08/21/97		8/21/97
RUN TIME	0741-1148		0741-1148
DIOXINS:			
2378 TCDD	ND	1.000	ND
Total TCDD	{0.00205}		
12378 PeCDD	ND	0.500	ND
Total PeCDD	0.00293		
123478 HxCDD	ND	0.100	ND
123678 HxCDD	0.00293	0.100	0.000293
123789 HxCDD	ND	0.100	ND
Total HxCDD	0.0205		
1234678 HpCDD	{0.0117}	0.010	{0.000117}
Total HpCDD	{0.0205}		
12346789 OCDD	0.0264	0.001	0.0000264
Total PCDD	{0.0725}		{0.000437}
FURANS:			
2378 TCDF	ND	0.100	ND
Total TCDF	0.00880		
12378 PeCDF	ND	0.050	ND
23478 PeCDF	{0.00293}	0.500	{0.00147}
Total PeCDF	0.00293		
123478 HxCDF	0.00880	0.100	0.000880
123678 HxCDF	0.00293	0.100	0.000293
234678 HxCDF	0.00587	0.100	0.000587
123789 HxCDF	ND	0.100	ND
Total HxCDF	0.0264		
1234678 HpCDF	0.0147	0.010	0.000147
1234789 HpCDF	0.00587	0.010	0.0000587
Total HpCDF	0.0264		
12346789 OCDF	0.0147	0.001	0.0000147
Total PCDF	0.0792		{0.00345}
Total PCDD + PCDF	{0.152}		{0.00389}

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-1***	***S-M29-O-2***	***S-M29-O-3***	
	RUN DATE	***8/19/97***	***8/20/97***	***8/20/97***	***Average***
	RUN TIME	***0915-1454***	***0822-1240***	***1405-1735***	
	MEASURED DATA				
γ	Meter Box Correction Factor	0.965	0.965	0.965	0.965
ΔH	Avg Meter Orifice Pressure, in. H_2O	1.76	2.57	2.05	2.13
P_{bar}	Barometric Pressure, inches Hg	29.90	29.80	29.80	29.83
V_m	Sample Volume, ft^3	170.576	216.899	159.831	182.435
T_m	Average Meter Temperature, °F	104	96	104	101
P_{static}	Stack Static Pressure, inches H_2O	-0.25	-0.25	-0.25	-0.25
T_s	Average Stack Temperature, °F	179	222	207	203
V_{lc}	Condensate Collected, ml	691.0	993.1	978.8	887.6
CO_2	Carbon Dioxide content, % by volume	5.3	5.5	5.1	5.3
O_2	Oxygen content, % by volume	13.1	13.1	13.1	13.1
N_2	Nitrogen content, % by volume	81.6	81.4	81.8	81.6
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.7558	0.9285	0.8233	0.8359
Θ	Sample Run Duration, minutes	240	240	200	227
D_n	Nozzle Diameter, inches	0.251	0.253	0.253	0.252
	CALCULATED DATA				
A_n	Nozzle Area, ft^2	0.000344	0.000349	0.000349	0.000347
$V_{m(std)\,cf}$	Standard Meter Volume, ft^3	154.579	199.270	144.561	166.137
$V_{m(std)\,cm}$	Standard Meter Volume, m^3	4.377	5.643	4.094	4.704
Q_m	Average Sampling Rate, dscfm	0.644	0.830	0.723	0.732
P_s	Stack Pressure, inches Hg	29.88	29.78	29.78	29.81
B_{ws}	Moisture, % by volume	17.4	19.0	24.2	20.2
$B_{ws(sat)}$	Moisture (at saturation), % by volume	49.5	122.4	91.1	87.7
V_{wstd}	Standard Water Vapor Volume, ft^3	32.525	46.745	46.072	41.781
$1-B_{ws}$	Dry Mole Fraction	0.826	0.810	0.758	0.798
M_d	Molecular Weight (d.b.), lb/lb•mole	29.37	29.40	29.34	29.37
M_s	Molecular Weight (w.b.), lb/lb•mole	27.40	27.24	26.60	27.08
V_s	Stack Gas Velocity, ft/s	47.9	61.1	54.3	54.4
A	Stack Area, ft^2	11.46	11.46	11.46	11.46
Q_a	Stack Gas Volumetric flow, acfm	32,964	42,043	37,305	37,437
$Q_{s\,cfm}$	Stack Gas Volumetric flow, dscfm	22,478	26,229	22,276	23,661
$Q_{s\,cmm}$	Stack Gas Volumetric flow, dscmm	637	743	631	670
I	Isokinetic Sampling Ratio, %	95.6	103.9	106.5	102.0

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-1***	***S-M29-O-2***	***S-M29-O-3***	
	RUN DATE	***8/19/97***	***8/20/97***	***8/20/97***	***Average***
	RUN TIME	***0915-1454***	***0822-1240***	***1405-1735***	
	EMISSIONS DATA				
	<u>Particulate Matter</u>				
g	Target Catch, g	0.4499	0.0622	0.0274	0.1798
gr/dscf	Concentration, gr/dscf	0.0449	0.00482	0.00292	0.0176
gr/dscf at 7%	Concentration, gr/dscf at 7% O2	0.0800	0.00858	0.00521	0.0313
g/dscm	Concentration, g/dscm	0.103	0.0110	0.00669	0.0402
g/dscm at 7%	Concentration, g/dscm at 7% O2	0.183	0.0196	0.0119	0.0716
lb/hr	Emission Rate, lb/hr	8.65	1.08	0.558	3.43
kg/hr	Emission Rate, kg/hr	3.93	0.491	0.253	1.56
	<u>Antimony</u>				
µg	Target Catch, µg	0.280	0.0300	0.0	0.103
µg/dscm	Concentration, µg/dscm	0.0640	0.00532	0.0	0.0231
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.114	0.00947	0.0	0.0412
g/hr	Emission Rate, g/hr	0.00244	0.000237	0.0	0.000893
	<u>Arsenic</u>				
µg	Target Catch, µg	2.66	0.750	0.770	1.39
µg/dscm	Concentration, µg/dscm	0.608	0.133	0.188	0.310
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	1.08	0.237	0.335	0.552
g/hr	Emission Rate, g/hr	0.0232	0.00592	0.00712	0.0121
	<u>Barium</u>				
µg	Target Catch, µg	219	47.2	18.0	94.6
µg/dscm	Concentration, µg/dscm	49.9	8.37	4.39	20.9
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	89.0	14.9	7.82	37.2
g/hr	Emission Rate, g/hr	1.91	0.373	0.166	0.815
	<u>Beryllium</u>				
µg	Target Catch, µg	ND	ND	ND	ND
µg/dscm	Concentration, µg/dscm	ND	ND	ND	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND	ND	ND	ND
g/hr	Emission Rate, g/hr	ND	ND	ND	ND
	<u>Cadmium</u>				
µg	Target Catch, µg	0.870	2.23	1.80	1.63
µg/dscm	Concentration, µg/dscm	0.199	0.395	0.440	0.345
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.354	0.704	0.784	0.614
g/hr	Emission Rate, g/hr	0.00759	0.0176	0.0166	0.0139

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-1***	***S-M29-O-2***	***S-M29-O-3***	
	RUN DATE	***8/19/97***	***8/20/97***	***8/20/97***	***Average***
	RUN TIME	***0915-1454***	***0822-1240***	***1405-1735***	
	EMISSIONS DATA - Continued				
	<u>Chromium</u>				
µg	Target Catch, µg	6.42	0.910	0.510	2.61
µg/dscm	Concentration, µg/dscm	1.47	0.161	0.125	0.584
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	2.61	0.287	0.222	1.04
g/hr	Emission Rate, g/hr	0.0560	0.00719	0.00472	0.0226
	<u>Colbalt</u>				
µg	Target Catch, µg	1.82	ND	ND	0.607
µg/dscm	Concentration, µg/dscm	0.416	ND	ND	0.139
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.741	ND	ND	0.247
g/hr	Emission Rate, g/hr	0.0159	ND	ND	0.00529
	<u>Copper</u>				
µg	Target Catch, µg	17.7	4.33	6.87	9.6
µg/dscm	Concentration, µg/dscm	4.05	0.77	1.68	2.16
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	7.21	1.37	2.99	3.86
g/hr	Emission Rate, g/hr	0.155	0.0342	0.0635	0.0841
	<u>Lead</u>				
µg	Target Catch, µg	26.6	7.95	109	47.8
µg/dscm	Concentration, µg/dscm	6.07	1.41	26.6	11.4
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	10.8	2.51	47.4	20.2
g/hr	Emission Rate, g/hr	0.232	0.0628	1.01	0.434
	<u>Manganese</u>				
µg	Target Catch, µg	206	33.2	14.2	84.5
µg/dscm	Concentration, µg/dscm	47.1	5.88	3.46	18.8
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	83.9	10.5	6.17	33.5
g/hr	Emission Rate, g/hr	1.80	0.262	0.131	0.731
	<u>Mercury</u>				
µg	Target Catch, µg	2.19	2.43	15.5	6.70
µg/dscm	Concentration, µg/dscm	0.500	0.431	3.78	1.57
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.892	0.767	6.74	2.80
g/hr	Emission Rate, g/hr	0.0191	0.0192	0.143	0.0605

Summary of Stack Gas Parameters and Test Results

US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"

US EPA Test Method 29 - Multiple Metals

Baghouse Outlet

	RUN NUMBER	S-M29-O-1	S-M29-O-2	S-M29-O-3	
	RUN DATE	8/19/97	8/20/97	8/20/97	Average
	RUN TIME	0915-1454	0822-1240	1405-1735	
	EMISSIONS DATA - Continued				
	Nickel				
µg	Target Catch, µg	3.80	1.68	3.21	2.90
µg/dscm	Concentration, µg/dscm	0.868	0.298	0.784	0.650
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	1.55	0.53	1.40	1.16
g/hr	Emission Rate, g/hr	0.0332	0.0133	0.0297	0.0254
	Phosphorus				
µg	Target Catch, µg	398	115	104	206
µg/dscm	Concentration, µg/dscm	90.9	20.4	25.3	45.5
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	162	36.3	45.1	81.2
g/hr	Emission Rate, g/hr	3.47	0.909	0.959	1.78
	Silver				
µg	Target Catch, µg	ND	ND	0.620	0.207
µg/dscm	Concentration, µg/dscm	ND	ND	0.151	0.0505
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND	ND	0.270	0.0900
g/hr	Emission Rate, g/hr	ND	ND	0.00573	0.00191
	Selenium				
µg	Target Catch, µg	0.610	0.340	9.49	3.48
µg/dscm	Concentration, µg/dscm	0.139	0.0603	2.32	0.84
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.248	0.107	4.13	1.50
g/hr	Emission Rate, g/hr	0.00532	0.00269	0.0877	0.0319
	Thallium				
µg	Target Catch, µg	ND	0.21	0.23	0.147
µg/dscm	Concentration, µg/dscm	ND	0.0372	0.0562	0.0311
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND	0.0663	0.100	0.0555
g/hr	Emission Rate, g/hr	ND	0.00166	0.00213	0.00126
	Zinc				
µg	Target Catch, µg	141	58.8	37.8	79.2
µg/dscm	Concentration, µg/dscm	32.3	10.4	9.22	17.3
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	57.5	18.6	16.4	30.8
g/hr	Emission Rate, g/hr	1.23	0.464	0.349	0.682

Summary of Stack Gas Parameters and Test Results

US EPA EMC Asphalt Concrete Emissions Testing *ASPHALT PLANT "A"*

US EPA Test Method 29 - Multiple Metals

Baghouse Outlet

	RUN NUMBER	***S-M29-O-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1153***
	MEASURED DATA	
γ	Meter Box Correction Factor	0.965
ΔH	Avg Meter Orifice Pressure, in. H_2O	2.00
P_{bar}	Barometric Pressure, inches Hg	29.70
V_m	Sample Volume, ft^3	186.221
T_m	Average Meter Temperature, °F	102
P_{static}	Stack Static Pressure, inches H_2O	-0.25
T_s	Average Stack Temperature, °F	180
V_{lc}	Condensate Collected, ml	821.4
CO_2	Carbon Dioxide content, % by volume	3.2
O_2	Oxygen content, % by volume	10.8
N_2	Nitrogen content, % by volume	86.0
C_p	Pitot Tube Coefficient	0.84
$\Delta p^{1/2}$	Average Square Root Δp, $(in. H_2O)^{1/2}$	0.8239
Θ	Sample Run Duration, minutes	240
D_n	Nozzle Diameter, inches	0.253
	CALCULATED DATA	
A_n	Nozzle Area, ft^2	0.000349
$V_{m(std)\,cf}$	Standard Meter Volume, ft^3	168.390
$V_{m(std)\,cm}$	Standard Meter Volume, m^3	4.768
Q_m	Average Sampling Rate, dscfm	0.702
P_s	Stack Pressure, inches Hg	29.68
B_{ws}	Moisture, % by volume	18.7
$B_{ws(sat)}$	Moisture (at saturation), % by volume	51.1
V_{wstd}	Standard Water Vapor Volume, ft^3	38.663
$1-B_{ws}$	Dry Mole Fraction	0.813
M_d	Molecular Weight (d.b.), lb/lb•mole	28.94
M_s	Molecular Weight (w.b.), lb/lb•mole	26.90
V_s	Stack Gas Velocity, ft/s	53.0
A	Stack Area, ft^2	11.46
Q_a	Stack Gas Volumetric flow, acfm	36,415
$Q_{s\,cfm}$	Stack Gas Volumetric flow, dscfm	24,240
$Q_{s\,cmm}$	Stack Gas Volumetric flow, dscmm	686
I	Isokinetic Sampling Ratio, %	95.0

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1153***
	EMISSIONS DATA	
	<u>Particulate Matter</u>	
g	Target Catch, g	0.0133
gr/dscf	Concentration, gr/dscf	0.00122
gr/dscf at 7%	Concentration, gr/dscf at 7% O2	0.00168
g/dscm	Concentration, g/dscm	0.00279
g/dscm at 7%	Concentration, g/dscm at 7% O2	0.00384
lb/hr	Emission Rate, lb/hr	0.253
kg/hr	Emission Rate, kg/hr	0.115
	<u>Antimony</u>	
µg	Target Catch, µg	0.0
µg/dscm	Concentration, µg/dscm	0.0
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.0
g/hr	Emission Rate, g/hr	0.0
	<u>Arsenic</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Barium</u>	
µg	Target Catch, µg	9.83
µg/dscm	Concentration, µg/dscm	2.06
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	2.84
g/hr	Emission Rate, g/hr	0.0849
	<u>Beryllium</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Cadmium</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHACT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1153***
	EMISSIONS DATA - Continued	
	<u>Chromium</u>	
µg	Target Catch, µg	0.0420
µg/dscm	Concentration, µg/dscm	0.00881
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.0121
g/hr	Emission Rate, g/hr	0.000363
	<u>Colbalt</u>	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	<u>Copper</u>	
µg	Target Catch, µg	1.32
µg/dscm	Concentration, µg/dscm	0.277
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.381
g/hr	Emission Rate, g/hr	0.0114
	<u>Lead</u>	
µg	Target Catch, µg	1.77
µg/dscm	Concentration, µg/dscm	0.371
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.511
g/hr	Emission Rate, g/hr	0.0153
	<u>Manganese</u>	
µg	Target Catch, µg	70.79
µg/dscm	Concentration, µg/dscm	14.8
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	20.4
g/hr	Emission Rate, g/hr	0.611
	<u>Mercury</u>	
µg	Target Catch, µg	2.09
µg/dscm	Concentration, µg/dscm	0.438
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.603
g/hr	Emission Rate, g/hr	0.0181

Summary of Stack Gas Parameters and Test Results
US EPA EMC Asphalt Concrete Emissions Testing - ASPHALT PLANT "A"
US EPA Test Method 29 - Multiple Metals
Baghouse Outlet

	RUN NUMBER	***S-M29-O-4***
	RUN DATE	***8/21/97***
	RUN TIME	***0741-1153***
	EMISSIONS DATA - Continued	
	Nickel	
µg	Target Catch, µg	0.371
µg/dscm	Concentration, µg/dscm	0.0778
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.107
g/hr	Emission Rate, g/hr	0.00320
	Phosphorus	
µg	Target Catch, µg	72.25
µg/dscm	Concentration, µg/dscm	15.2
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	20.9
g/hr	Emission Rate, g/hr	0.624
	Silver	
µg	Target Catch, µg	0.0
µg/dscm	Concentration, µg/dscm	0.0
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.0
g/hr	Emission Rate, g/hr	0.0
	Selenium	
µg	Target Catch, µg	0.0
µg/dscm	Concentration, µg/dscm	0.0
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	0.0
g/hr	Emission Rate, g/hr	0.0
	Thallium	
µg	Target Catch, µg	ND
µg/dscm	Concentration, µg/dscm	ND
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	ND
g/hr	Emission Rate, g/hr	ND
	Zinc	
µg	Target Catch, µg	22.9
µg/dscm	Concentration, µg/dscm	4.80
µg/dscm at 7%	Concentration, µg/dscm at 7% O2	6.61
g/hr	Emission Rate, g/hr	0.198

Method 29 Analytical Results (ug) and Blank Corrections

ST Wooten

Outlet

"A" (1.4xAreaFilter), ug: 9.90

	Front H RBlank Mfhb	Back H RBlank Mbhb	Front H O-M29-1 Mfh	Back H O-M29-1 Mbh	Blank Adjusted Front H	Blank Adjusted Back H	O-M29-1 Adjusted Mt	Front H O-M29-2 Avg Mfh	Back H O-M29-2 Avg Mbh	Blank Adjusted Front H	Blank Adjusted Back H	O-M29-2 A Adjusted Mt	Front H O-M29-3 Mfh	Back H O-M29-3 Mbh	Blank Adjusted Front H	Blank Adjusted Back H	O-M29-3 Adjusted Mt
Antimony (Sb)	4.18	<.4	4.46	0	0.28	0.000	**0.28**	4.205	0	0.03	0.000	**0.03**	3.35	0	(0.83)	0.000	**0.00**
Arsenic (As)	< 0.5	< 0.5	2.66	0	2.660	0.000	**2.66**	0.7525	0	0.75	0.000	**0.75**	0.768	0	0.77	0.000	**0.77**
Barium (Ba)	4.33	0.326	221	2.29	216.67	1.964	**218.63**	50.95	0.9145	46.62	0.589	**47.21**	21.4	1.23	17.07	0.904	**17.97**
Beryllium (Be)	<.1	< 0.1	0	0	0.00	0.000	**ND**	0	0	0.00	0.000	**ND**	0	0	0.00	0.000	**ND**
Cadmium (Cd)	<.1	< 0.1	0.218	0.653	0.22	0.653	**0.87**	2.12	0.108	2.12	0.108	**2.23**	0	1.8	0.00	1.800	**1.80**
Chromium (Cr)	9.33	0.222	14.7	1.27	5.37	1.048	**6.42**	10.035	0.431	0.71	0.209	**0.91**	7.85	0.733	(1.48)	0.511	**0.51**
Colbalt (Co)	<.1	< 0.1	1.82	0	1.82	0.000	**1.82**	0	0	0.00	0.000	**ND**	0	0	0.00	0.000	**ND**
Copper (Cu)	1.06	1.44	17.3	2.47	16.24	1.470	**17.71**	4.4	1.985	3.34	0.985	**4.33**	3.22	5.71	2.16	4.710	**6.87**
Lead (Pb)	<.2	0.265	19.7	7.13	19.70	6.865	**26.57**	5.69	2.525	5.69	2.260	**7.95**	3.1	106	3.10	105.735	**108.84**
anganese (Mn	0.911	34.7	203	5.04	202.09	4.040	**206.13**	33.4	1.7	32.49	0.700	**33.19**	14.2	1.89	13.29	0.890	**14.18**
Mercury (Hg)	< 0.4	< 1.2	0	2.19			**2.19**	0	2.43			**2.43**	0	15.49			**15.49**
Nickel (Ni)	4.68	0.606	7.26	1.83	2.58	1.224	**3.80**	6.12	0.8495	1.44	0.244	**1.68**	4.32	3.82	(0.36)	3.214	**3.21**
Phosphorus (P)	<3	55.3	332	69.4	332.00	65.930	**397.93**	59.95	58	59.95	55.100	**115.05**	25.8	82	25.80	77.900	**103.70**
Selenium (Se)	4.35	< 0.3	4.39	0.573	0.04	0.573	**0.61**	4.01	0.336	(0.34)	0.336	**0.34**	3.01	9.49	(1.34)	9.490	**9.49**
Silver (Ag)	0.27	<.1	0	0	(0.27)	0.000	**ND**	0.1805	0	(0.09)	0.000	**0.00**	0.892	0	0.62	0.000	**0.62**
Thallium (Tl)	< 0.2	< 0.2	0	0	0.00	0.000	**ND**	0.21	0	0.21	0.000	**0.21**	0.23	0	0.23	0.000	**0.23**
Zinc (Zn)	2.6	2.03	114	31.4	111.40	29.830	**141.23**	46.7	15.65	44.10	14.650	**58.75**	20.3	21.1	17.70	20.045	**37.75**

Front Half Blank to be used:
If Mfhb < A, use Mfhb = Mfhb
If Mfhb > A, use Mfhb = A if A is > the lesser of Mfhb or 5% of Mfh
If A is not (is <), use Mfhb = the lesser of Mfhb or 5% of Mfh

Back Half Blank to be used:
If Mbhb < 1, use Mbhb = Mbhb
If Mbhb > 1, use Mfhb = 1 if 1 is > the lesser of Mbhb or 5% of Mbh
If 1 is not (is <), use Mbhb = the lesser of Mbhb or 5% of Mbh

Total Catch = Mt = (Mfh - Mfhb) + (Mbh - Mbhb) Note that if Mfhb or Mbhb is > catch, a 0 is used (no negative catches allowed)

Mercury:
If (Hgfhb + Hgbhb) <= 0.6, use (Hgfhb + Hgbhb)
If (Hgfhb + Hgbhb) > 0.6, use (Hgfhb + Hgbhb) = 0.6 if 0.6 is > the lesser of (Hgfhb+Hgbhb) or 5% of (Hgfh+Hgbh)
If 0.6 is not (is <), use (Hgfhb+Hgbhb) = the lesser of (Hgfhb+Hgbhb) or 5% of (Hgfh+Hgbh)

Total Hg Catch = Hgt = (Hgfh - Hgfhb) + (Hgbh - Hgbhb)

Method 29 Analytical Results (ug) and Blank Corrections
Outlet & Inlet

Filter Diameter, in^2 3

Volume Rinse

	Front H RBlank Mfhb	Back H RBlank Mbhb	Front H O-M29-4 Mfh	Back H O-M29-4 Mbh	Catch Values Used Front H	Catch Values Used Back H		Front H I-M29-1 Mfh	Back H I-M29-1 Mbh	Catch Values Used Front H	Catch Values Used Back H	
Antimony	4.18	<.4	2.73	0	2.73	0	2.73	0	0	0	0	0.00
Arsenic	< 0.5	< 0.5	0	0	0	0	0.00	15.2	0	15.2	0	15.20
Barium	4.33	0.326	13.9	0.588	13.9	0.588	14.49	617	0.604	617	0.604	617.60
Beryllium	<.1	< 0.1	0	0	0	0	0.00	0	0	0	0	0.00
Cadmium	<.1	< 0.1	0	0	0	0	0.00	6	0.686	6	0.686	6.69
Chromium	9.33	0.222	6.44	0.264	6.44	0.264	6.70	35.9	0.878	35.9	0.878	36.78
Colbalt	<.1	< 0.1	0	0	0	0	0.00	26.5	0	26.5	0	26.50
Copper	1.06	1.44	2.14	1.24	2.14	1.24	3.38	125	0.938	125	0.938	125.94
Lead	<.2	0.265	0.666	1.37	0.666	1.37	2.04	45.1	5.54	45.1	5.54	50.64
Manganese	0.911	34.7	20.4	54	20.4	54	74.40	1160	14.2	1160	14.2	1174.20
Mercury	< 0.4	< 1.2	0	2.09	0	2.09	2.09	0	< 1.74	0	0	0.00
Nickel	4.68	0.606	2.89	0.977	2.89	0.977	3.87	16.1	1.01	16.1	1.01	17.11
Phosphorus	<3	55.3	14.2	61.1	14.2	61.1	75.30	3490	58.1	3490	58.1	3548.10
Selenium	4.35	< 0.3	2.44	0	2.44	0	2.44	0	0.969	0	0.969	0.97
Silver	0.27	<.1	0.208	0	0.208	0	0.208	0	0	0	0	0.00
Thallium	< 0.2	< 0.2	0	0	0	0	0.00	2.9	0	2.9	0	2.90
Zinc	2.6	2.03	16.1	10.4	16.1	10.4	26.50	503	21.2	503	21.2	524.20

APPENDIX E

QA/QC DATA AND CERTIFICATIONS

TEMPERATURE SENSOR CALIBRATION FORM

Temperature Sensor No. SH-4 **Sensor Type** K - T/C **Length** 6" - Gasonic
Ambient Temp. °F 72 **Barometric Pressure, "Hg** 29.98
Reference Temp. Sensor: ASTM 3F

Date	Ref. Point No.	Temp. Source	Temp. °F		Temp. Diff. %	Within Limits Y/N	Calibrated By
			Ref. Sensor	Test Sensor			
10/21/97	1	ice water	(497) 37	(496) 36	0.20	Y	MDM
10/21/97	2	amb. air	(532) 72	(535) 75	-0.56	Y	MDM
10/21/97	3	hot water	(679) 210	(669) 209	0.15	Y	MDM
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						

$$\%\ Temp.\ Diff = \frac{(Ref.\ Temp + 460) - (Test\ Temp. + 460)}{(Ref.\ Temp. + 460)} \times 100 \leq 1.5\ \%$$

TEMPERATURE SENSOR CALIBRATION FORM

Temperature Sensor No. RT-11 **Sensor Type** K T/C **Length** 6" (Gooseneck)
Ambient Temp. °F 72 **Barometric Pressure, "Hg** 29.98
Reference Temp. Sensor: ASTM 3F

Date	Ref. Point No.	Temp. Source	Temp. °F		Temp. Diff. %	Within Limits Y/N	Calibrated By
			Ref. Sensor	Test Sensor			
10/21/97	1	ice water	36	35			
10/21/97	2	amb. air	72	74			
10/21/97	3	boil. water	210	210			
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						

$$\% \text{ Temp. Diff} = \frac{(\text{Ref. Temp} + 460) - (\text{Test Temp.} + 460)}{(\text{Ref. Temp.} + 460)} \times 100 \leq 1.5\ \%$$

TEMPERATURE SENSOR CALIBRATION FORM

Temperature Sensor No. RT-20 Sensor Type K T/C Length 4'
Ambient Temp. °F 72° Barometric Pressure, "Hg 29.98
Reference Temp. Sensor: ASTM - 3F

Date	Ref. Point No.	Temp. Source	Temp. °F		Temp. Diff. %	Within Limits Y/N	Calibrated By
			Ref. Sensor	Test Sensor			
10/21/97	1	ice water	(492) 32	(493) 33	-0.20	Y	mdm
10/21/97	2	cond. temp	(534) 74	(532) 72	0.37	Y	mdm
10/21/97	3	b. water	(678) 210	(671) 211	0.15	Y	mdm
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						

$$\% \text{ Temp. Diff} = \frac{(\text{Ref. Temp} + 460) - (\text{Test Temp.} + 460)}{(\text{Ref. Temp.} + 460)} \times 100 \leq 1.5\ \%$$

TEMPERATURE SENSOR CALIBRATION FORM

Temperature Sensor No. RT-3 Sensor Type K.T/c Length 4" 4'
Ambient Temp. °F 70 Barometric Pressure, "Hg 30.04
Reference Temp. Sensor: ASTM-3F

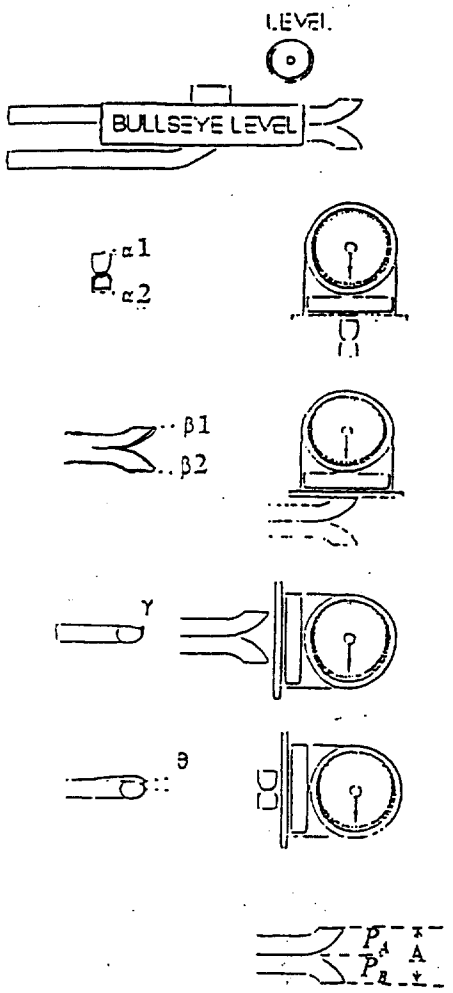
Date	Ref. Point No.	Temp. Source	Temp. °F		Temp. Diff. %	Within Limits Y/N	Calibrated By
			Ref. Sensor	Test Sensor			
9/18/97	1	ice bath	41	41	0	Y	mdm
9/18/97	2	w bath	72	72	0	Y	mdm
9/18/97	3	b. water	210	212	-0.30	Y	mdm
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						
	1						
	2						
	3						

$$\% \text{ Temp. Diff} = \frac{(\text{Ref. Temp} + 460) - (\text{Test Temp.} + 460)}{(\text{Ref. Temp.} + 460)} \times 100 \leq 1.5\ \%$$

DEECO

Probe or Pitot No. Deeco 5B

Pitot Tube Inspection



Date	8/16/97
Tube Assembly Level?	Yes
Ports Damaged?	No
$-10° < \alpha 1 < +10°$	2°
$-10° < \alpha 2 < +10°$	-1°
$-5° < \beta 1 < +5°$	2
$-5° < \beta 2 < +5°$	0
γ	-1°
θ	.5°
A	.990
$Z = A \sin\gamma \leq 0.125"$	-.017
$W = A \sin\theta \leq 0.031"$	.009
$P_A =$	.49
$P_B =$	.50
Tube Diameter (D_T) =	.383
$P_A = P_B \pm (0.063)$	.49+.01=.50
$1.05 \times D_T \leq P \leq 1.50 \times D_T$	.402 ≤ .50 ≤ .575

Thermocouple Calibration

Type of Reference Thermometer Mercury in Glass Date 8/16/97

Barometric Pressure 29.88 inHg Ambient Temperature 93 °F

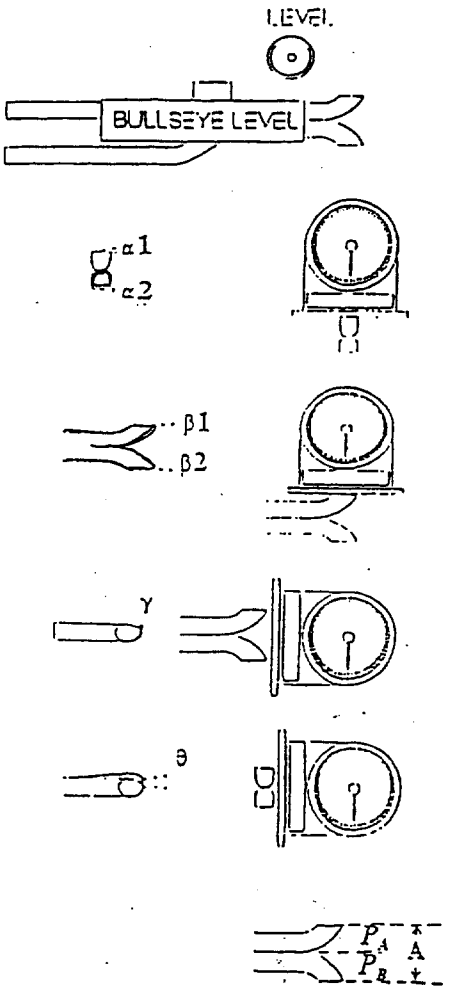
Source	Reference Temperature	Thermocouple Temperature	Absolute Temperature Difference[1]
Ambient	93	99	-.011
Ice bath	36	39	-.006
Hot Water	136	136	0

[1] $\frac{(Ref.\ Temp., °F + 460) - (Thermocouple Temp., °F + 460)}{(Ref.\ Temp., °F + 460)}$

DEECO

Probe or Pitot No. Deeco 5C

Pitot Tube Inspection



Date	8/16/97
Tube Assembly Level?	Yes
Ports Damaged?	No
$-10° < \alpha 1 < +10°$	2½ °
$-10° < \alpha 2 < +10°$	-2½ °
$-5° < \beta 1 < +5°$	1°
$-5° < \beta 2 < +5°$	-1°
γ	2½ °
θ	0°
A	1.013
$Z = A \sin\gamma \leq 0.125"$	.044
$W = A \sin\theta \leq 0.031"$	0
$P_A =$	.55
$P_B =$	.58
Tube Diameter (D_T) =	.370
$P_A = P_B \pm (0.063)$	.55 + .02 = .58
$1.05 \times D_T \leq P \leq 1.50 \times D_T$	.385 ≤ .55 ≤ .555

Thermocouple Calibration

Type of Reference Thermometer Mercury in Glass Date 8/16/97

Barometric Pressure 29.88 inHg Ambient Temperature 102 °F

Source	Reference Temperature	Thermocouple Temperature	Absolute Temperature Difference[1]
Hot Water	168	169	-.002
Ambient	102	101	.002
Ice Water	38	38	0

[1] (*Ref. Temp.*, °F + 460) - (*ThermocoupleTemp.*, °F + 460)

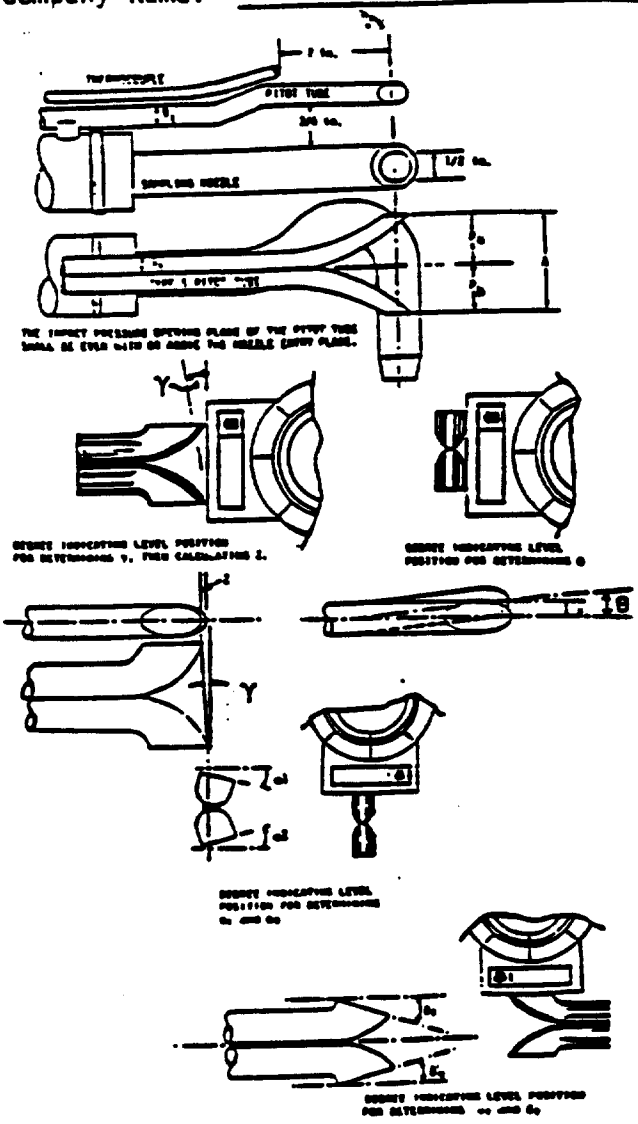
(Ref. Temp. °F + 460)

Example of S-Type Pitot Tube
Inspection Data Sheet

Company Name: PES

Pre-sample Date _____

Post Sample Date 10-13-97



	level?	YES
	obstructions?	NO
	damaged?	NO
	$-10° < \alpha_1 < +10°$	2°
	$-10° < \alpha_2 < +10°$	1°
	$-5° < \beta_1 < +5°$	0°
	$-5° < \beta_2 < +5°$	1°
	γ	.5
	θ	0
	A	1.0065
	$1.05\ D_t^{.376} < P_a^{.503} < 1.5\ D_t^{.376}$	YES
	$1.05\ D_t^{.375} < P_b^{.503} < 1.5\ D_t^{.375}$	YES
	$3/16" \leq D_t \leq 3/8"$	YES
	$A \tan \gamma < 0.125"$	.0087E
	$A \tan \theta < 0.03125"$	.0
	$P_a = P_b \pm 0.063"$	YES

Comments: _____

Pitot tube/probe number RP-20 meets or exceeds all specifications criteria and/or applicable design features* and is hereby assigned a pitot tube calibration factor of 0.84.

Signature _____

Date 10-13-97

*See 40 CFR 60, Vol. 42, No. 160, Method 2. Verify the minimum 2 inch setback of the thermocouple and the minimum 3/4 inch separation between the pitot tube and the nozzle as shown at the top of this page.

Date	05-Aug-97	Meter Box Number	M5-4
Calibrated By	B Palm	Initials	BP
Number of Runs	5		

REFERENCE TEST METER

Meter Y 1.016

	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
Vw, init	907.127	912.875	918.694	924.597	930.307	0
Vw, fin	912.513	918.262	924.06	929.999	936.958	0
Vw, total	5.386	5.387	5.366	5.402	6.651	0
Pb	29.80	29.80	29.80	29.80	29.80	29.80
tw	84	84	84	84	85	0
Tw+460	544	544	544	544	545	460

DRY GAS METER

Previous Y 1.024

Vm, init	653.019	658.758	664.577	670.486	676.205	0
Vm, fin	658.402	664.147	669.948	675.901	682.864	0
Vm, total	5.383	5.389	5.371	5.415	6.659	0
Tdi	85	88	89	92	93	0
Tdf	89	93	97	100	104	0
Tdoi	82	84	86	88	88	0
Tdof	84	86	87	88	89	0
Td,avg	85	87.75	89.75	92	93.5	0
Td+460	545	547.75	549.75	552	553.5	460
Time, min	13	9	8	7	7	0
Time, sec	30	30	0	0	0	0
Time Total	13.50	9.50	8.00	7.00	7.00	0.00
dH	0.50	1.00	1.50	2.00	3.00	4.00

CALIBRATION RESULTS

Y	1.017	1.020	1.022	1.023	1.023	0.000
dH@	1.764	1.740	1.861	1.869	1.854	0.000
Y tolerence from avg *	0.00	0.00	-0.00	-0.00	-0.00	1.02
dH@ tol. from avg **	0.05	0.08	-0.04	-0.05	-0.04	1.82

AVERAGE Y	1.021
AVERAGE dH@	1.818
Y error (vs prior Y) ***	-0.3%

* must be no greater than +/- 0.02
** must be no greater than +/- 0.20
*** must be no greater than +/- 5%

Date	31-Oct-97	Meter Box Number	M5-4
Calibrated By	Richard	Initials	RWBH
Number of Runs	3		

REFERENCE TEST METER

Meter Y 1.016

	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5
Vw, init	643.779	652.614	662.945	0	0
Vw, fin	652.1	662.322	670.381	0	0
Vw, total	8.321	9.708	7.436	0	0
Pb	29.87	29.87	29.87	29.87	29.87
tw	61	62	62	0	0
Tw+460	521	522	522	460	460

DRY GAS METER

Previous Y 1.021

Vm, init	790.367	799.004	809.171	0	0
Vm, fin	798.501	808.556	816.506	0	0
Vm, total	8.134	9.552	7.335	0	0
Tdii	63	70	75	0	0
Tdif	76	84	85	0	0
Tdoi	61	64	67	0	0
Tdof	64	67	69	0	0
Td,avg	66	71.25	74	0	0
Td+460	526	531.25	534	460	460
Time, min	12	12	8	0	0
Time, sec	20	7	31	0	0
Time Total	12.33	12.12	8.52	0.00	0.00
dH	1.50	2.00	2.50	2.00	3.00

CALIBRATION RESULTS

Y	1.045	1.046	1.047	0.000	0.000
dH@	1.760	1.661	1.740	0.000	0.000
Y tolerence from avg *	0.00	0.00	-0.00	1.05	1.05
dH@ tol. from avg **	-0.04	0.06	-0.02	1.72	1.72

AVERAGE Y	1.046
AVERAGE dH@	1.720
Y error (vs prior Y) ***	2.5%

* must be no greater than +/- 0.02
** must be no greater than +/- 0.20
*** must be no greater than +/- 5%

Orifice:

front leak check	Y
back leak check	Y

Date	05-Aug-97	Meter Box Number	M5-9
Calibrated By	B Palm	Initials	BP
Number of Runs	5		

REFERENCE TEST METER

Meter Y 1.016

	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
Vw, init	873.304	878.537	883.95	891.057	899.221	0
Vw, fin	878.349	883.6	890.707	897.317	905.513	0
Vw, total	5.045	5.063	6.757	6.26	6.292	0
Pb	29.80	29.80	29.80	29.80	29.80	29.80
tw	79.5	80.5	81	81.5	82	0
Tw+460	539.5	540.5	541	541.5	542	460

DRY GAS METER

Previous Y 0.996

Vm, init	717.968	723.215	728.655	735.791	743.976	0
Vm, fin	723.025	728.297	735.436	742.073	750.282	0
Vm, total	5.057	5.082	6.781	6.282	6.306	0
Tdi	79	82	85	87	88	0
Tdif	84	87	89	91	92	0
Tdoi	78	81	83	84	85	0
Tdof	80	82	84	85	86	0
Td,avg	80.25	83	85.25	86.75	87.75	0
Td+460	540.25	543	545.25	546.75	547.75	460
Time, min	12	9	10	8	6	0
Time, sec	30	0	0	0	30	0
Time Total	12.50	9.00	10.00	8.00	6.50	0.00
dH	0.50	1.00	1.50	2.00	3.00	4.00

CALIBRATION RESULTS

Y	1.014	1.014	1.017	1.017	1.017	0.000
dH@	1.708	1.757	1.823	1.813	1.777	0.000
Y tolerence from avg *	0.00	0.00	-0.00	-0.00	-0.00	0.00
dH@ tol. from avg **	0.07	0.02	-0.05	-0.04	-0.00	0.00

AVERAGE Y	1.016
AVERAGE dH@	1.776
Y error (vs prior Y) ***	2.0%

* must be no greater than +/- 0.02
** must be no greater than +/- 0.20
*** must be no greater than +/- 5%

Orifice:

front leak check	X
back leak check	X

Date	03-Sep-97	Meter Box Number	M5-9
Calibrated By	M MILBOURNE	Initials	MJM
Number of Runs	3		

REFERENCE TEST METER

Meter Y 1.016

	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5
Vw, init	368.4	373.864	379.247	0	0
Vw, fin	373.864	379.247	384.346	0	0
Vw, total	5.464	5.383	5.099	0	0
Pb	29.77	29.77	29.77	29.77	29.77
tw	84	83.5	83	0	0
Tw+460	544	543.5	543	460	460

DRY GAS METER

Previous Y 1.016

Vm, init	335.123	340.601	346	0	0
Vm, fin	340.601	346	351.11	0	0
Vm, total	5.478	5.399	5.11	0	0
Tdii	86	86	85	0	0
Tdif	86	85	85	0	0
Tdoi	86	86	85	0	0
Tdof	86	85	85	0	0
Td,avg	86	85.5	85	0	0
Td+460	546	545.5	545	460	460
Time, min	15	14	14	0	0
Time, sec	0	48	0	0	0
Time Total	15.00	14.80	14.00	0.00	0.00
dH	0.40	0.40	0.40	2.00	3.00

CALIBRATION RESULTS

Y	1.016	1.016	1.017	0.000	0.000
dH@	1.685	1.689	1.683	0.000	0.000
Y tolerence from avg *	0.00	0.00	-0.00	1.02	1.02
dH@ tol. from avg **	0.00	-0.00	0.00	1.69	1.69

AVERAGE Y	1.016
AVERAGE dH@	1.686
Y error (vs prior Y) ***	0.0%

* must be no greater than +/- 0.02
** must be no greater than +/- 0.20
*** must be no greater than +/- 5%

Orifice:

front leak check	Y
back leak check	Y

DRY GAS METER AND ORIFICE CALIBRATION

CONTROL BOX NO MB-10 BAROMETRIC PRESS. 29.50 IN. HG.

DATE: 12MAR97 PERFORMED BY : R. GEPHART

	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
Hd ("H2O)	0.50	0.75	1.00	1.50	2.00	4.00
INITIAL WTM	744.467	758.780	770.733	783.592	795.766	809.495
FINAL WTM	757.734	770.224	782.364	795.014	807.315	822.785
INITIAL DGM	653.193	668.257	680.852	694.428	707.301	721.813
FINAL DGM	667.139	680.310	693.138	706.511	719.509	735.856
TEMP. WTM (F)	73.0	74.0	74.0	74.0	74.0	74.0
TEMP. DGM (F)	81.0	84.0	86.0	87.0	88.0	89.0
TEST TIME (MIN.)	32.4	23.1	20.5	16.5	14.5	12.0
NET VOLUME WT	13.267	11.444	11.631	11.422	11.549	13.290
NET VOLUME DG	13.946	12.053	12.286	12.083	12.208	14.043
Y	0.964	0.965	0.966	0.965	0.966	0.963
H@	1.683	1.721	1.743	1.754	1.763	1.820

AVERAGE Y = 0.965

ACCEPTABLE Y RANGE = 0.945 TO 0.985

AVERAGE H@ = 1.747

ACCEPTABLE dH@ RANGE = 1.547 TO 1.947

$Y = (Vw \times Pb \times (Td + 460)) / (Vd (Pb + (dHd / 13.6)) \times (Tw + 460)$

$H@ = 0.0317 \times Hd / (Pb (Td + 460)) \times ((Tw + 460) \times time) / Vw)^2$

PACIFIC ENVIRONMENTAL SERVICES, INC.

Central Park West
5001 South Miami Boulevard, P.O. Box 12077
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(919) 941-0333 FAX: (919) 941-0234

Posttest Dry Gas Meter Calibration Form (English Units)

Pretest Calibration Factor 0.965
System Vacuum Setting, (in Hg) 6
Reference Meter Correction Factor 1.004

Date: 8/22/97 P_{bar}, in Hg 29.90 Calibrator: GG Meter Box No. MB-10

ΔH = 1.9

		Dry Gas Meter								
Trial	Duration (min)	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial, Inlet (°F)	Final, Inle (°F)	Avg. Inlet (°F)	Initial, Outlet (°F)	Final, Outlet (°F)	Avg. Outlet (°F)
1	15	168.592	180.101	11.509	90	90	90	90	90	90
2	15	181.101	191.728	10.627	90	90	90	90	90	90
3	15	191.728	203.498	11.77	90	90	90	90	90	90

	Reference Meter						Meter Box Correction Factor	Reference Orifice Press
	Gas Volume			Meter Temperature				
Trial	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial (°F)	Final (°F)	Avg. (°F)	γ	$ΔH_@$ (in. H2O)
1	347.479	358.341	10.862	80	80	80	0.961	2.04
2	358.341	369.176	10.835	80	80	80	1.038	2.05
3	369.176	380.031	10.855	80	80	80	0.939	2.05

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Initial Dry Gas Meter Calibration Form (English Units)

Date: 8/19/97 P_{bar}, in Hg 30.20 Calibrator: T. McDonald Meter Box No. RMB-11

ΔH = 0.5

		Dry Gas Meter								
	Trial	Gas Volume			Meter Temperatures					
	Duration	Initial	Final	Net	Initial, Inlet	Final, Inlet	Avg. Inlet	Initial, Outlet	inal, Outle	Avg. Outlet
Trial	(min)	(ft^3)	(ft^3)	(ft^3)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
1	15	231.840	237.828	5.988	81	81	81	78	78	78
2	15	237.828	243.880	6.052	82	79	80.5	80	78	79
3	15			0.000			#DIV/0!			#DIV/0!

	Reference Meter						Meter Box	Reference
	Gas Volume			Meter Temperature			Correction	Orifice Press
	Initial	Final	Net	Initial	Final	Avg.	Factor	$\Delta H_@$
Trial	(ft^3)	(ft^3)	(ft^3)	(°F)	(°F)	(°F)	γ	(in. H_2O)
1	257.881	263.67	5.789	78	79	78.5	0.967	1.91
2	263.670	269.541	5.871	76	76	76	0.976	1.84
3			0.000			#DIV/0!	#DIV/0!	#DIV/0!

ΔH = 1.8

		Dry Gas Meter								
	Trial	Gas Volume			Meter Temperatures					
	Duration	Initial	Final	Net	Initial, Inlet	Final, Inlet	Avg. Inlet	Initial, Outlet	inal, Outle	Avg. Outlet
Trial	(min)	(ft^3)	(ft^3)	(ft^3)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
1	10	244.055	251.377	7.322	85	80	82.5	79	79	79
2	10	251.377	258.770	7.393	84	84	84	79	79	79
3				0.000			#DIV/0!			#DIV/0!

	Reference Meter						Meter Box	Reference
	Gas Volume			Meter Temperature			Correction	Orifice Press
	Initial	Final	Net	Initial	Final	Avg.	Factor	$\Delta H_@$
Trial	(ft^3)	(ft^3)	(ft^3)	(°F)	(°F)	(°F)	γ	(in. H_2O)
1	269.71	276.902	7.192	76	76	76	0.987	1.96
2	276.902	284.146	7.244	76	76	76	0.986	1.93
3			0.000			#DIV/0!	#DIV/0!	#DIV/0!

ΔH = 3.0

		Dry Gas Meter								
	Trial	Gas Volume			Meter Temperatures					
	Duration	Initial	Final	Net	Initial, Inlet	Final, Inlet	Avg. Inlet	Initial, Outlet	inal, Outle	Avg. Outlet
Trial	(min)	(ft^3)	(ft^3)	(ft^3)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
1	10	258.770	268.038	9.268	88	83	85.5	80	79	79.5
2	10	268.038	277.350	9.312	90	86	88	81	80	80.5
3				0.000			#DIV/0!			#DIV/0!

	Reference Meter						Meter Box Correction Factor	Reference Orifice Press $\Delta H_@$
	Gas Volume			Meter Temperature				
Trial	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial (°F)	Final (°F)	Avg. (°F)	γ	(in. H_2O)
1	284.146	293.382	9.236	76	75	75.5	1.002	1.98
2	293.382	302.640	9.258	76	76	76	1.002	1.97
3			0.000			#DIV/0!	#DIV/0!	#DIV/0!

Calibration Results

ΔH	γ	$\Delta H_@$
0.50	0.972	1.873
1.80	0.986	1.946
3.0	1.002	1.97

Meter Box Calibration Factor	0.987
Meter Box Reference Orifice Pressure	1.93

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Posttest Dry Gas Meter Calibration Form (English Units)

Meter Box No.	MB-11	Date:	10/13/97
Dry Gas Meter No.		Calibrated by:	MAD
Orifice Manometer Setting, dH (in w.c.	2.5	Barometric Pressure, in. Hg	29.83
System Vacuum Setting, (in Hg)	2.5	Pretest Calibration Factor	0.987

		Dry Gas Meter								
		Gas Volume			Meter Temperatures					
Trial	Trial Duration (min)	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial, Inlet (°F)	Final, Inle (°F)	Avg. Inlet (°F)	Initial, Outlet (°F)	Final, Outlet (°F)	Avg. Outlet (°F)
1	6.5	56.145	61.57	5.425	75	78	76.5	74	79	75
2	7.5	61.57	67.712	6.142	78	78	78	76	78	77
3	6	67.712	72.705	4.993	83	87	85	77	75	76

	Reference Meter						Meter Box Correction Factor	Reference Orifice Press Delta-H@
	Gas Volume			Meter Temperature				
Trial	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial (°F)	Final (°F)	Avg. (°F)	γ	(in. H2O)
1	45.604	51.088	5.484	78	79	78.5	1.007	2.01
2	51.088	57.3	6.212	79	79	79	1.010	2.09
3	57.3	62.309	5.009	79	80	79.5	1.007	2.05

AVERAGE:	1.0080	2.049
% Change:	2.13%	

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Posttest Dry Gas Meter Calibration Form (English Units)

Reference Meter Calibration Factor 1.004
System Vacuum Setting, (in Hg) 7

Pretest Calibration Factor 0.987

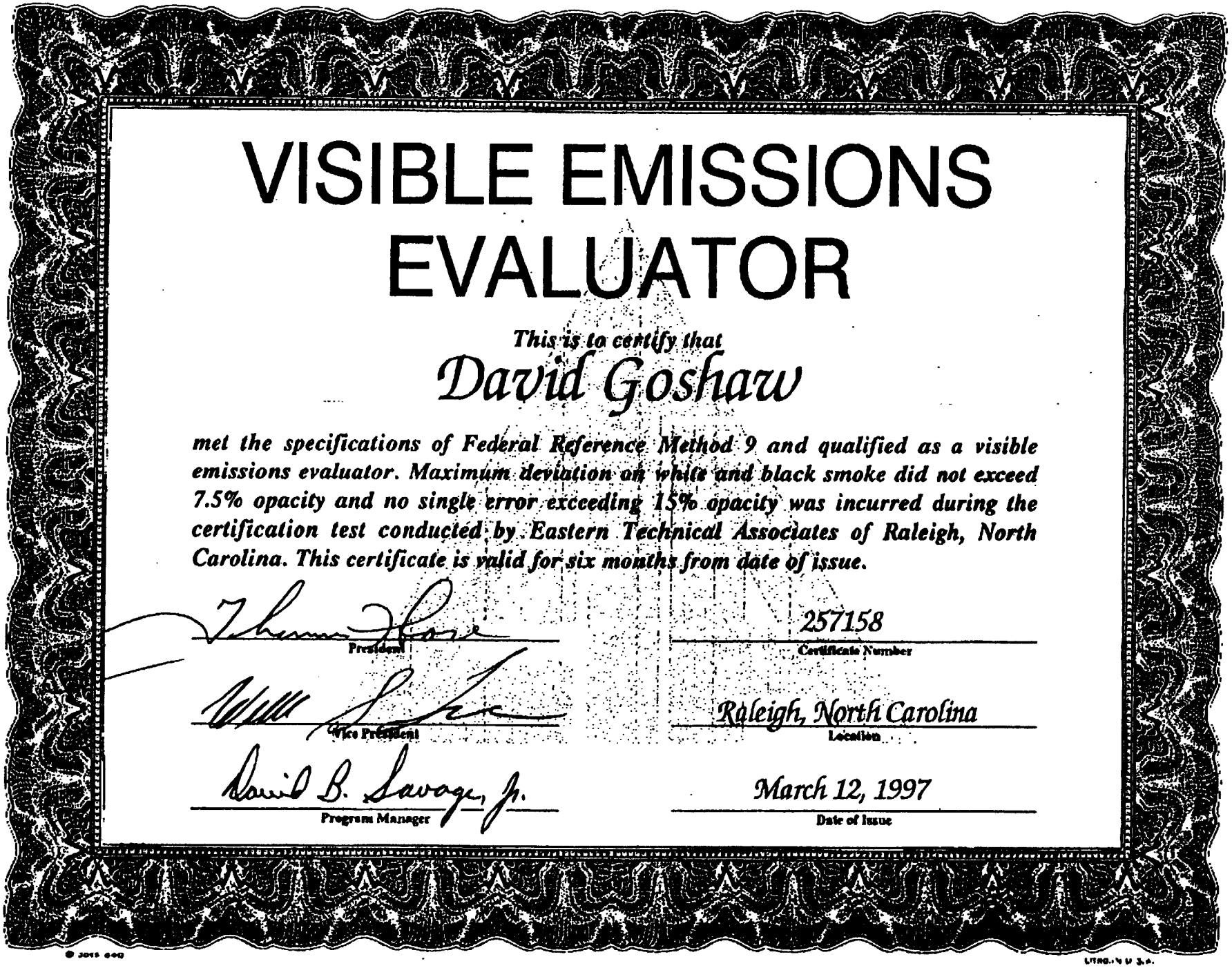
Date: 8/22/97 P_{bar}, in Hg 29.90 Calibrator: GG

Meter Box No. RMB-11

ΔH = 1.9

		Dry Gas Meter								
Trial	Duration (min)	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial, Inlet (°F)	Final, Inle (°F)	Avg. Inlet (°F)	Initial, Outlet (°F)	Final, Outlet (°F)	Avg. Outlet (°F)
1	15	993.836	1005.384	11.548	92	92	92	92	92	92
2	15	1005.384	1016.948	11.564	92	92	92	92	92	92
3	15	1016.948	1028.471	11.523	94	94	94	94	94	94

	Reference Meter						Meter Box Correction Factor	Reference Orifice Press
	Gas Volume			Meter Temperature				
Trial	Initial (ft^3)	Final (ft^3)	Net (ft^3)	Initial (°F)	Final (°F)	Avg. (°F)	γ	$\Delta H_@$ (in. H2O)
1	409.91	420.904	10.994	80	80	80	0.973	1.99
2	420.904	431.874	10.97	80	80	80	0.969	2.00
3	431.874	442.814	10.94	80	80	80	0.973	2.00



VISIBLE EMISSIONS EVALUATOR

This is to certify that

David Goshaw

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

President

257158
Certificate Number

Vice President

Raleigh, North Carolina
Location

David B. Savage, Jr.
Program Manager

March 12, 1997
Date of Issue

FROM 9194290835

APPENDIX F

FIELD TESTING PARTICIPANTS

FIELD TESTING PARTICIPANTS

Name	Affiliation	Responsibility
Michael Toney	USEPA, Emission Measurement Center	Work Assignment Manager
Mike Maret	Pacific Environmental Services, Inc.	Project Manager
Troy Abernathy	Pacific Environmental Services, Inc.	Sample Recovery
Gary Gay	Pacific Environmental Services, Inc.	Site Leader/Console Operator
Marc Hamilton	DEECO	Site Leader/Console Operator
Arthur Daughtery	DEECO[a]	Console Operator
Allen Bass	DEECO[a]	Console Operator
Barry Rayfield	DEECO[a]	Sample Recovery
David Goshaw	DEECO	Visible Emissions Observer
Tom McDonald	Atlantic Technical Services, Inc.	Console Operator
Mike Dickerson	Atlantic Technical Services, Inc.	Console Operator

[a] Subcontractor to Pacific Environmental Services, Inc.

TECHNICAL REPORT DATA

Please read instructions on the reverse before completing

1. REPORT NO. EPA-454/R-[redacted]00-021b	2.
3. RECIPIENT'S ACCESSION NO.	
4. TITLE AND SUBTITLE Final Report - Volume II of II, Emissions Test at an Asphalt Concrete Production Plant: Asphalt Plant "A" - Clayton, North Carolina	5. REPORT DATE [redacted] April 2000
6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) Michael D. Maret Franklin Meadows	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Pacific Environmental Services, Inc. Post Office Box 12077 Research Triangle Park, North Carolina 27709-2077	10. PROGRAM ELEMENT NO.
	11. CONTRACT/GRANT NO. 68-D-70069
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Emissions, Monitoring and Analysis Division Research Triangle Park, North Carolina 27711	13. TYPE OF REPORT AND PERIOD COVERED Final
	14. SPONSORING AGENCY CODE EPA/200/04
15. SUPPLEMENTARY NOTES	

16. ABSTRACT

The United States Environmental Protection Agency (EPA) is investigating the asphalt concrete production source category to identify and quantify emissions of hazardous air pollutants (HAPs) from rotary aggregate dryers. There are two types of rotary drum dryers in use at asphalt concrete production plants; parallel flow, wherein the direction of travel of the drying aggregate is in the same direction of travel of the the burner exhaust gases, and counter flow, wherein the aggregate and exhaust gas flows are opposite to each other. Plant "A" , Clayton, North Carolina was identified and selected by EPA as the host facility at which to obtain data on air emissions from a counter flow continuous drum mix process that utilized a baghouse for control of air emissions.

The primary objective of the testing program was to obtain data on controlled and uncontrolled emissions of polychlorinated dibenzo-*p* -dioxins (PCDDs or "dioxins") and polychlorinated dibenzofurans (PCDFs or "furans"), particulate matter (PM), and metallic HAP and non-HAP compounds. Testing of uncontrolled emissions was deleted from the scope of work because the high particulate grain loading at the inlet to the baghouse exceeded the sampling capacity of the Method 23 and Method 29 sampling trains. A secondary objective was to observe and record plume opacity form the baghouse. The data will be used by the EPA's Emission Standards Division to determine whether HAPs are emitted at levels that would justify regulation under the Maximum Achievable Control Technology (MACT) program.

During the testing program another EPA contractor monitored and recorded process and emission control system operating parameters, and prepared Section 3.0, Process Description, of this report.

This volume (Volume II) is comprised of 704 pages and consists of Appendices: C (Analytical Data), D (Computer Summaries), E (QA/QC Data and Certifications), and F (Field Testing Participants).

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTIONS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COASTI Field/Group
Baghouse Dioxins/Furans Emission Measurements Hazardous Air Pollutants Metals Particulate Matter Volatile Organic Hazardous Air Pollutants		

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