EA Laboratories
A Division of EA Engineering,
Science, and Technology, Inc.

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Sparks, MD 21152
Telephone: 301-771-4920
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Fax: 301-771-4407

N00158.AR.000048
NAS WILLOW GROVE
5090.3a

October 15, 1991

Mr. Gregory T. Campbell
EA Engineering, Science and Technology, Inc.
EA Mid-Atlantic Operations
15 Loveton Circle
Sparks, Maryland 21152

Re: Willow Grove (10388.08)

Dear Mr. Campbell:

Enclosed is our report on the analysis of 26 soil samples, one rinsate, and one field blank collected for Willow Grove between 11 and 13 September 1991. This report has been formatted consistent with Level C reporting deliverables stated in Section 7.2 of Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (NEESA 20.2-047B, 2nd revision, June 1988).

EA Laboratories is a division of EA Engineering, Science, and Technology, Inc. We appreciate your confidence in our analytical skills, quality and dedication to provide you with the best possible service as promptly as possible. We hope that this report meets your objectives and that you are satisfied with its quality and appearance. We welcome any suggestions you may have that will improve the usefulness of this report, particularly concerning format. Through our continued service to our clients, EA Laboratories' goal is to maintain a solid working relationship.

Please contact me if you have any questions or require further information and refer to report 911433. Unless other arrangements are made, we reserve the right to dispose of your samples thirty (30) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Gwendolyn Probst for RDL

Robert D. Lentz,
Project and Operations Manager

RSR/rep
enclosure

MEMORANDUM

DATE: October 15, 1991

TO: Gregory T. Campbell, Project Manager

FROM: Gwendolen S. Probst, Client Relations and Communications Supervisor

SUBJECT: Contract Compliance Screening/ Willow Grove (10388.08)

Enclosed is the Contract Compliance Screening for the Naval Energy & Environmental Support Activity Contracts. The samples were collected for Willow Grove between 11 and 13 September 1991.

Please contact me if you have any questions or require further information. Refer to report number 911433.

EA Laboratories Report No. 911433

CONTRACT COMPLIANCE SCREENING

Naval Energy and Environmental Support Activity Contracts

Willow Grove NAS

---

1. All samples analyzed for volatile organic compounds (VOAs) were extracted and analyzed within 10 days of receipt at the laboratory.

   ✓ Yes ____ No

2. Samples were extracted within 5 days of sample receipt for waters or 10 days for soils and analyzed within 40 days of extraction for the determination of semivolatile organic compounds (BNAs), pesticides, and PCBs.

   NA ____ Yes ____ No

3. All samples were analyzed for cyanide within 14 days of receipt at the laboratory.

   NA ____ Yes ____ No

4. All samples were analyzed for mercury within 26 days of receipt at the laboratory.

   ✓ Yes ____ No

5. All samples were analyzed for metals (except mercury) within 6 months of receipt at the laboratory.

   ✓ Yes ____ No

6. Holding times for all samples analyzed outside the required limits did not exceed 50%.

   NA ____ Yes ____ No

7. Methylene chloride, acetone, toluene, or phthalate esters did not exceed 5X CRQL in the VOA and BNA laboratory blanks analyzed with these samples. All other target compounds and analytes were <CRQL.

   ✓ Yes ____ No

---

8. Surrogate recoveries in the VOA laboratory blanks met the following criteria:

   Toluene-d_8: 88-110% (water), 81-117% (soil).

   ✓ Yes ____ No

   4-Bromofluorobenzene: 86-115% (water), 74-121% (soil).

   ____ Yes ✓ No

   1,2-Dichloroethane-d_4: 76-114% (water), 70-121% (soil).

   ✓ Yes ____ No

9. Surrogate recoveries in the BNA laboratory blanks met the following criteria:

   2-Fluorophenol: 21-110% (water), 24-121% (soil).

   NA ____ Yes ____ No

   Phenol-d_5: 10-110% (water), 24-113% (soil).

   NA ____ Yes ____ No

   2,4,6-Tribromophenol: 10-123% (water), 19-122% (soil).

   NA ____ Yes ____ No

   2-Fluorobiphenyl: 43-116% (water), 30-115% (soil).

   NA ____ Yes ____ No

   Terphenyl-d_{14}: 33-141% (water), 18-137% (soil).

   NA ____ Yes ____ No

EA Laboratories Report No. 911433

CONTRACT COMPLIANCE SCREENING

Naval Energy and Environmental Support Activity Contracts

Willow Grove NAS

10. Dibutyl chlorendate (DBC) surrogate recoveries in laboratory blanks for the pesticide/PCB determinations were between 24-154% for water and 20-150% for soil.

NA ____ Yes ____ No

If the answer to any of the above is "no", the following corrective actions must be taken:

1. If any of the holding times were exceeded more than 50% over the required holding times, the affected samples will be resampled and analyzed for the out-of-control analytes.

2. If any laboratory blanks show any analyte present at a concentration greater than the upper control limit while the samples are within control limits, a new blank will be analyzed.

3. If any analyte is identified in the laboratory blanks and in the samples outside the upper control limit, the affected samples will be resampled and analyzed for the out-of-control analytes.

4. If surrogate recoveries in the laboratory blanks are outside control limits, the blank and the associated samples will be reextracted and analyzed. No action is necessary if there is insufficient sample for the reextraction.

5. If surrogate recoveries in the laboratory blanks **and the associated samples** are outside control limits and there is insufficient sample to reextract, the affected samples will be resampled and reanalyzed for the out-of-control fraction.

Comments BROMOFLUOROBENZENE WAS BELOW THE LOWER QC LIMIT OF 74 IN SAMPLE RR2S-3. THE RESULT WAS 73. THE SAMPLE WAS RUN TWICE AND THE SAME RESULT WAS OBTAINED. THEREFORE THE

EA Laboratories Report No. 911433

CONTRACT COMPLIANCE SCREENING

Naval Energy and Environmental Support Activity Contracts

Willow Grove NAS

Comments (continued) SURROGATE WAS OUTSIDE OF THE QC LIMITS DUE TO MATRIX INTERFERENCES. BOTH SETS OF DATA FOR SAMPLE RR2S-3 ARE INCLUDED.

Lastina Lommalan
Signature

10/9/91
Date

(Revised 28 June 1989)

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1. ANALYTICAL SUMMARY

100000

ANALYTICAL SUMMARY

Between 11 and 13 September 1991 EA Engineering, Science, and Technology, Inc. personnel collected 26 soil samples, one rinsate, and one field blank for Willow Grove. The samples were taken to EA Laboratories in Sparks, Maryland for analysis. Upon receipt at the laboratory, the samples were inspected, compared with the chain-of-custody records, logged, assigned laboratory accession numbers and distributed for the analysis listed in Table 1.

A matrix duplicate was not performed on sample #8766 as was requested on the chain of custody with the exception of mercury. All other quality control criteria was performed and was found to be in control for all requested analytes.

Results are summarized in the appended NEESA Level C data package. Analytical concerns are discussed in the Quality Assurance Summary included at the end of each section.

Analytical control limits specified in the Plan of Action for Site Inspection Willow Grove were met.

TABLE 1. ANALYTICAL METHODS

Parameter	Method	Method Number	Matrix	Reference
SAMPLE PREPARATION				
Metals Digestion (GFAA)	Nitric Acid - Hydrogen Peroxide	CLP	SO	(1)
Metals Digestion (FAA/ICP)	Hydrochloric Acid - Hydrogen Peroxide	CLP	SO	(1)
Total Metals Digestion (FAA/ICP)	Nitric Acid - Hydrochloric Acid	CLP	W	(1)
Total Metals Digestion (GFAA)	Nitric Acid - Hydrogen Peroxide	CLP	W	(1)
ORGANICS				
Volatile Organic Compounds	Gas Chromatography/Mass Spectrometry	CLP	W,SO	(2)
METALS				
Aluminum	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Antimony	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Arsenic	Atomic Absorption - Furnace	206.2 CLP-M	W,SO	(1)
Barium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Beryllium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Cadmium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Calcium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Chromium, Total	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Cobalt	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Copper	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Iron	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Lead	Atomic Absorption - Furnace	239.2 CLP-M	W,SO	(1)

100002

TABLE 1. ANALYTICAL METHODS

Parameter	Method	Method Number	Matrix	Reference
Magnesium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Manganese	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Mercury	Atomic Absorption - Cold Vapor	245.2 CLP-M	SO	(1)
Nickel	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Potassium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Selenium	Atomic Absorption - Furnace	270.2 CLP-M	W,SO	(1)
Silver	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Sodium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Thallium	Atomic Absorption - Furnace	279.2 CLP-M	W,SO	(1)
Vanadium	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)
Zinc	Atomic Emission - ICP	200.7 CLP-M	W,SO	(1)

Matrix codes:

A - Air
W - Estuarine water, ground water, leachates, ocean water, surface water, and wastewater
DW - Drinking water
SO - Soils, sludges, sediments, wastes
T - Animal tissue, plant tissue

References:

(1) United States Environmental Protection Agency. March 1990. U.S. EPA Contract Laboratory Program. Statement of Work for Inorganics Analysis. U.S. EPA, Washington, D.C.

(2) United States Environmental Protection Agency. February 1988. U.S. EPA Contract Laboratory Program. Statement of Work for Organics Analysis. U.S. EPA, Washington, D.C.

E00003

Chain-of-Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
(301) 771-4920

Company Name: EA ENG

Project Manager or Contact: G. T. CAMPBELL
Phone: 301-771-4950

Project No.: 10388.08

Project Name: 10388.08

Sample Storage Location: N9

Page 1 of 2

Batch ID: 1489

Reports/Deliverables Only: NORmal Turnaround

Parameters/Method Numbers for Analysis*: TCL - VOC; TAL - METALS; CLP methodology

Date	Time	Water	Soil	Sample Identification (ID and Matrix) 19 Characters	No. of Containers	TCL - VOC	TAL - METALS	CLP methodology	EA Labs Acession Number	Remarks
9/11/91	1800		X	RR2B-2 2.5	3	X	X		8744	NAVY LEVEL C
9.11.91	1805		X	RR2B-2 5	3	X	X		8745	Diskette Deliverable
9.11.91	1815		X	RR2B-2 7.5	3	X	X		8746	
9.11.91	1820		X	RR2B-2 10	3	X	X		8748	CLP PROTOCOL
9.11.91	1825		X	RR2B-2 12.5	3	X	X		8749	
9.12.91	0835		X	RR2B-3 2.5	3	X	X		8750	Do MS/MSD on
9.12.91	0845		X	RR2B-3 5	3	X	X		8751	DUPLICATES, TCL
9.12.91	0855		X	RR2B-3 7.5	3	X	X		8752	
9.12.91	0900		X	RR2B-3 10	3	X	X		8753	SMO skipped 8747
9.12.91	0910		X	RR2B-3 12	3	X	X		8754	skipped 9108747
9.12.91	0945		X	RR2B-4 2.5	3	X	X		8755	Logged in as canceled.
9.12.91	0950		X	RR2B-4 5	3	X	X		8756	@ 9/14/91
9.12.91	1000		X	RR2B-4 7.5	3	X	X		8757	
9.12.91	1005		X	RR2B-4 10	3	X	X		8758	
9.12.91	1010		X	RR2B-4 12.5	3	X	X		8759	
9.12.91	1100		X	RR2B-1 5	3	X	X		8760	
9.12.91	1135		X	RR2B-1 7.5	3	X	X		8761	
9.12.91	1145		X	RR2B-1 10	3	X	X		8762	
9.12.91	1200		X	RR2B-1 12.5	3	X	X		8763	
9.12.91	1215		X	RR2B-1 14	3	X	X		8764	

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Dave Metallo	9.12.91 1700	Dave Metallo	9/13/91 1330	[signature]	9/14/91 10:00
Received by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Holding Times for VOAs	

Cooler Temp.: 4.0 C pH: ☐ Yes ☒ No Comments: soil stored in walkin

*NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory technicians.

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS Other: Handcarried

Air Bill Number:

EA 0396 White — EA Laboratories Yellow — EA Laboratories Pink — Project Manager Shaded Area for Lab Use Only

Chain-of-Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
(301) 771-4920

Company Name: EA ENG

Project Manager or Contact: G.T. CAMPBELL
Phone: 301-771-4950

Project No.: 10388.08

Project Name: Willow Grove

Sample Storage Location: N9

Page 2 of 2

Batch ID: 1489

Reports/Deliverables Only: Normal Turnaround

Parameters/Method Numbers for Analysis*: TCL - VOC; TAL - METALS; CLP methodology

Date	Time	Water	Soil	Sample Identification (ID and Matrix) 19 Characters	No. of Containers	TCL - VOC	TAL - METALS	CLP methodology	EA Labs Acession Number	Remarks
9.12.91	0855		X	RR2DUP-1	3	X	X	X	8765	NAVY LEVEL C
9.12.91	1200		X	RR2DUP-2	3	X	X	X	8766	Diskette Deliverable
9.13.91	0800		X	RR2S-1	3	X	X	X	8767	
9.13.91	0825		X	RR2S-2	3	X	X	X	8768	CLP PROTOCOL
9.13.91	0730		X	RR2S-3	3	X	X	X	8769	
9.13.91	0745		X	RR2S-4	3	X	X	X	8770	Do MS/MSD on
										DUPLICATES - TCL
9.12.91	1700	X		RINSATE-2	3	X	X	X	8771	
9.12.91	1630	X		FIELD-2	3	X	X	X	8772	
9.12.91		X		TRIP BLANK	2	X			8773	
~~9.12.91~~										
~~9.12.91~~										

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Dave Metcalfe	9.13.91 1100	Dave Metcalfe	9/13/91 1330		9/14/91 1000
Received by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Holding Times for VOAs	Sample Shipped by: (Circle)
					Fed. Ex. Puro. UPS

Cooler Temp.: 4.0c pH: X Yes ☐ No Comments: pH less then 2 on C stored in walkin

Other: Handcarried

Air Bill Number:

*NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory technicians.

EA 0396 White — EA Laboratories Yellow — EA Laboratories Pink — Project Manager Shaded Area for Lab Use Only

000002

3. VOLATILES DATA

U.S. EPA CLP ORGANIC ANALYSIS DATA QUALIFIERS (SOW 2/88) FOR GC/MS ANALYSES

U Indicates a compound on the target compound list (TCL) was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and, if a soil sample, for percent moisture. For example, 10 U is used for phenol in water if the sample final volume is the protocol-specified final volume. If a 1-to-10 dilution of the extract was necessary, the reported limit is (10 x 10 U) or 100 U. For a soil sample, the value is also adjusted for percent moisture. For example, if the sample had 24% moisture and a 1-to-10 dilution factor, the soil sample quantitation limit for phenol (330 U) would be corrected as follows:

Reported limit = (330 U) x df / D

where: df = dilution factor = 10

D = (100 - % moisture) / 100

At 24% moisture, D = (100-24) / 100 = 0.76

Reported limit = (330 U) x 10 / 0.76 = 4300 U

(rounded to two significant figures)

For soil samples subjected to gel permeation chromatography (GPC) cleanup procedures, the contract required quantiation limit (CRQL) is also multiplied by 2 to account for the fact that only half of the extract is recovered. Note: If GPC procedures are employed, the factor of 2 is not included in the dilution factor reported; a "Y" is entered for GPC (Y/N).

J Indicates an estimated value. This flag is used either when the concentration of a tentatively identified compound (TIC) is estimated assuming a 1:1 response, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3 J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1-to-10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, the concentration is reported as 300 J.

C This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides with concentration equal to or greater than 10 ng/uL in the final extract must be confirmed by GC/MS.

B This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified TCL compound.

E This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag does not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater that full scale, the sample or extract must be diluted and reanalyzed according to the specifications listed in the SOW. All such compounds with a response greater than full scale should have a concentration flagged with an "E" on Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses are reported on separate Forms I. The Form I for the diluted sample will have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak is considered separately; e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D This flag identifies all compounds identified in the analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag.

A This flag indicates that a TIC is a suspected aldol-condensation product.

X Other specific flags may be required to properly define the results. If used, they are fully described and such description attached to the Sample Data Summary Package and the Case Narrative. The flags begin by using "X". If more that one flag is required, "Y" and "Z" are used, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

A. QC Summary

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: SDG No.: RR2B-2_2.5

LEVEL:(low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
1	VBLK1	99	95	101		0
2	LCS_V0834	98	93	103		0
3	RINSATE-2	98	95	106		0
4	FIELD-2	99	97	108		0
5	TRIP BLANK	98	97	106		0
6	RR2B-2_2.5	105	92	105		0
7	RR2B-2_5	100	95	108		0
8	RR2B-2_7.5	103	93	106		0
9	RR2B-2_10	104	91	105		0

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(~~84-138~~)(81-117)
SMC2 (BFB)	= Bromofluorobenzene	(~~59-113~~)(74-121)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(~~70-121~~)(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM II VOA-2

~~3/90~~
2/88

4/09-91

301004

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: W6V8744 SAS No.: _____ SDG No.: _____

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	VBLK2	99	100	104		0
02	LCS V0837	99	102	103		0
03	RR2B-2 12.5	100	100	103		0
04	RR2B-3 2.5	100	100	108		0
05	RR2B-3 5	98	101	110		0
06	RR2B-3 7.5	100	102	107		0
07	RR2B-3 10	100	101	111		0
08	RR2B-3 12	102	102	108		0
09	RR2B-4 2.5	101	103	110		0
10	RR2B-4 5	101	103	113		0
11	RR2B-4 7.5	101	101	113		0
12	RR2B-4 10	100	103	113		0
13	RR2B-4 12.5	101	102	111		0
14	RR2B-1 5	101	100	110		0
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

page __ of __

FORM II VOA-2

1/87 Rev.

303005

10-9-91

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: SDG No.: RR2B-2_2.5

LEVEL:(low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
1	VBLK3	98	92	92		0
2	LCS_V0842	98	94	96		0
3	RR2B-1_7.5	99	95	94		0
4	RR2B-1_10	99	96	99		0
5	RR2B-1_12.5	98	98	98		0
6	RR2B-1_14	99	99	103		0
7	RR2DUP-1	98	99	106		0
8	RR2DUP-2	101	102	110		0
9	RR2S-1	103	99	110		0
10	RR2S-2	102	102	115		0
11	RR2DUP-1MS	98	102	121		0
12	RR2DUP-1MSD	101	103	119		0

QC LIMITS

SMC1 (TOL) = Toluene-d8 (~~84-138~~) 81-117
SMC2 (BFB) = Bromofluorobenzene (~~59-113~~) 74-121
SMC3 (DCE) = 1,2-Dichloroethane-d4 (~~70-121~~) 70-121

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM II VOA-2

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2/88

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2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: SDG No.: RR2B-2_2.5

LEVEL: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
1	VBLK4	96	94	101		0
2	LCS_V0846	96	96	101		0
3	RR2S-1	101	~~87~~	95		0
4	RR2S-3	110	~~73*~~	100		1 ~~0~~
5	RR2S-4	104	85	102		0
6	RR2DUP-2MS	97	94	100		0
7	RR2DUP-2MSD	96	94	103		0

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10/9/91

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(~~84-138~~) 81-117
SMC2 (BFB)	= Bromofluorobenzene	(~~59-113~~) 74-121
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(~~70-121~~) 70-121

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM II VOA-2

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3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: RR2DUP-1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	59	118	59-172
Trichloroethene	50	0	56	112	62-137
Benzene	50	0	53	106	66-142
Toluene	50	0	53	106	59-139
Chlorobenzene	50	0	53	106	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	62	124	5	22	59-172
Trichloroethene	50	58	116	4	24	62-137
Benzene	50	55	110	4	21	66-142
Toluene	50	56	112	6	21	59-139
Chlorobenzene	50	56	112	6	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

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3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: RR2DUP-2 Level: (low/med) Low

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	54	108	59-172
Trichloroethene	50	0	52	104	62-137
Benzene	50	0	54	104	66-142
Toluene	50	0	51	102	59-139
Chlorobenzene	50	0	51	102	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	58	116	7	22	59-172
Trichloroethene	50	56	112	7	24	62-137
Benzene	50	56	112	7	21	66-142
Toluene	50	54	108	6	21	59-139
Chlorobenzene	50	53	106	4	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

20-9-91

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No: RR2B-2_2.5

Lab File ID: AI533 Lab Sample ID: 0

Date Analyzed: 09/18/91 Time Analyzed: 15:16

GC Column: RTX502.2 ID:.53 (mm) Heated purge: (Y/N)

Instrument ID: A1

kll 10/9/91

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	LCS_V0834	0	AI534	16:09
2	RINSATE-2	8771	AI535	17:14
3	FIELD-2	8772	AI536	17:57
4	TRIP BLANK	8773	AI537	18:40
5	RR2B-2_2.5	8744	AI538	19:22
6	RR2B-2_5	8745	AI539	20:05
7	RR2B-2_7.5	8746	AI540	20:47
8	RR2B-2_10	8748	AI541	21:30

COMMENTS:

page __ of __ FORM IV ~~SV~~ VOA ~~3/90~~ 2/88

RDS-91

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No: RR2B-2_2.5

Lab File ID: AI544 Lab Sample ID: 0

Date Analyzed: 09/19/91 Time Analyzed: 16:10

GC Column: RTX502.2 ID:.53 (mm) Heated purge: (Y/N)

Instrument ID: A1

LLL 10/9/91

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	LCS_V08~~45~~837	0	AI545	16:53
2	RR2B-2_12.5	8749	AI546	17:55
3	RR2B-3_2.5	8750	AI547	18:38
4	RR2B-3_5	8751	AI548	19:20
5	RR2B-3_7.5	8752	AI549	20:03
6	RR2B-3_10	8753	AI550	20:45
7	RR2B-3_12	8754	AI551	21:28
8	RR2B-4_2.5	8755	AI552	22:10
9	RR2B-4_5	8756	AI553	22:53
10	RR2B-4_7.5	8757	AI554	23:35
11	RR2B-4_10	8758	AI555	00:18
12	RR2B-4_12.5	8759	AI556	01:00
13	RR2B-1_5	8760	AI557	01:43

COMMENTS:

page __ of __ FORM IV ~~SV~~ VOA ~~3/90~~ 2/93

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10-9-91

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK3

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No: RR2B-2_2.5

Lab File ID: AI562 Lab Sample ID: 0

Date Analyzed: 09/23/91 Time Analyzed: 13:59

GC Column: RTX502.2 ID:.53 (mm) Heated purge: (Y/N)

Instrument ID: A1

LLL 10/9/91

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	LCS_V0842	0	AI563	14:54
2	RR2B-1_7.5	8761	AI564	15:57
3	RR2B-1_10	8762	AI565	16:40
4	RR2B-1_12.5	8763	AI566	17:21
5	RR2B-1_14	8764	AI567	18:01
6	RR2DUP-1	8765	AI568	18:39
7	RR2DUP-2	8766	AI569	19:16
~~8~~	~~RR2S-1~~	~~8767~~	~~AI570~~	~~19:54~~
9	RR2S-2	8768	AI571	20:31
10	RR2DUP-1MS	8765	AI574	22:23
11	RR2DUP-1MSD	8765	AI575	23:01

COMMENTS:

page __ of __ FORM IV ~~SV~~ VOA ~~3/90~~ 2/88

P 10-8-91

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK4

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No: RR2B-2_2.5

Lab File ID: AI580 Lab Sample ID: 0

Date Analyzed: 09/24/91 Time Analyzed: 12:13

GC Column: RTX502.2 ID:.53 (mm) Heated purge: (Y/N)

Instrument ID: A1

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THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	LCS_V0846	0	AI582	13:53
2	RR2S-1	8767	AI585	16:21
3	RR2S-3	8769	AI586	17:03
4	RR2S-4	8770	AI587	17:46
5	RR2DUP-2MS	8766	AI588	18:29
6	RR2DUP-2MSD	8766	AI589	19:11

COMMENTS:

page __ of __ FORM IV ~~SV~~ VOA ~~3/90~~ 2/88

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No.:RR2B-2_2.5

Lab File ID: AI527 BFB Injection Date: 09/18/91

Instrument ID: ~~AI~~ A1 @10-8-91 BFB Injection Time: 10:58

Matrix: (soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.0
75	30.0 - 60.0% of mass 95	58.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	69.2
175	5.0 -9.0% of mass 174	5.5 (7.9)1
176	Greater than 95.0%, but less than 101.0% of mass 174	69.6 (100.6)1
177	5.0 -9.0% of mass 176	4.6 (6.5)2

1-Value is % mass 174 2-value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	6737	AI531	09/18/91	13:41
2	VBLK1	0	AI533	09/18/91	15:16
3	LCS_V0834	0	AI534	09/18/91	16:09
4	RINSATE-2	8771	AI535	09/18/91	17:14
5	FIELD-2	8772	AI536	09/18/91	17:57
6	TRIP BLANK	8773	AI537	09/18/91	18:40
7	RR2B-2_2.5	8744	AI538	09/18/91	19:22
8	RR2B-2_5	8745	AI539	09/18/91	20:05
9	RR2B-2_7.5	8746	AI540	09/18/91	20:47
10	RR2B-2_10	8748	AI541	09/18/91	21:30

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No.:RR2B-2_2.5

Lab File ID: AI542 BFB Injection Date: 09/19/91

Instrument ID: A1 BFB Injection Time: 14:48

Matrix: (soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.9
75	30.0 - 60.0% of mass 95	54.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.7
173	Less than 2.0% of mass 174	0.3 (0.4)1
174	Greater than 50.0% of mass 95	71.2
175	5.0 -9.0% of mass 174	5.1 (7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	71.2 (100.0)1
177	5.0 -9.0% of mass 176	5.1 (7.1)2

1-Value is % mass 174 2-value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	6741	AI543	09/19/91	15:15
2	VBLK2	0	AI544	09/19/91	16:10
3	LCS_V08~~45~~037	0	AI545	09/19/91	16:53
4	RR2B-2_12.5	8749	AI546	09/19/91	17:55
5	RR2B-3_2.5	8750	AI547	09/19/91	18:38
6	RR2B-3_5	8751	AI548	09/19/91	19:20
7	RR2B-3_7.5	8752	AI549	09/19/91	20:03
8	RR2B-3_10	8753	AI550	09/19/91	20:45
9	RR2B-3_12	8754	AI551	09/19/91	21:28
10	RR2B-4_2.5	8755	AI552	09/19/91	22:10
11	RR2B-4_5	8756	AI553	09/19/91	22:53
12	RR2B-4_7.5	8757	AI554	09/19/91	23:35
13	RR2B-4_10	8758	AI555	09/20/91	00:18
14	RR2B-4_12.5	8759	AI556	09/20/91	01:00
15	RR2B-1_5	8760	AI557	09/20/91	01:43

10-8-91

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No.:RR2B-2_2.5

Lab File ID: AI578 BFB Injection Date: 09/24/91

Instrument ID: A1 BFB Injection Time: 10:57

Matrix: (soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.7
75	30.0 - 60.0% of mass 95	59.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	7.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.9
175	5.0 -9.0% of mass 174	5.1 (6.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	77.4 (96.9)1
177	5.0 -9.0% of mass 176	5.0 (6.4)2

1-Value is % mass 174 2-value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	6748	AI579	09/24/91	11:18
2	VBLK4	0	AI580	09/24/91	12:13
3	LCS_V0846	0	AI582	09/24/91	13:53
4	RR2S-1	8767	AI585	09/24/91	16:21
5	RR2S-3	8769	AI586	09/24/91	17:03
6	RR2S-4	8770	AI587	09/24/91	17:46
7	RR2DUP-2MS	8766	AI588	09/24/91	18:29
8	RR2DUP-2MSD	8766	AI589	09/24/91	19:11

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No.:RR2B-2_2.5

Lab File ID: AI559 BFB Injection Date: 09/23/91

Instrument ID: A1 BFB Injection Time: 11:54

Matrix: (soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.1
75	30.0 - 60.0% of mass 95	58.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	77.9
175	5.0 -9.0% of mass 174	6.6 (8.5)1
176	Greater than 95.0%, but less than 101.0% of mass 174	74.2 (95.3)1
177	5.0 -9.0% of mass 176	5.9 (8.0)2

1-Value is % mass 174 2-value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	6745	AI560	09/23/91	12:15
2	VBLK3	0	AI562	09/23/91	13:59
3	LCS_V0842	0	AI563	09/23/91	14:54
4	RR2B-1_7.5	8761	AI564	09/23/91	15:57
5	RR2B-1_10	8762	AI565	09/23/91	16:40
6	RR2B-1_12.5	8763	AI566	09/23/91	17:21
7	RR2B-1_14	8764	AI567	09/23/91	18:01
8	RR2DUP-1	8765	AI568	09/23/91	18:39
9	RR2DUP-2	8766	AI569	09/23/91	19:16
10	RR2S-1	8767	AI570	09/23/91	19:54
11	RR2S-2	8768	AI571	09/23/91	20:31
12	RR2DUP-1MS	8765	AI574	09/23/91	22:23
13	RR2DUP-1MSD	8765	AI575	09/23/91	23:01

LCS RECOVERY REPORT

LAB NAME: EA LABORATORIES

DATA FILE: AI534

INSTRUMENT: a1

DATE: 09/18/91

SAMPLE ID: LCS 834

MATRIX: SOIL

ANALYST: SPH

SPIKE COMPOUND	CONC.	%REC.
Benzene	49.37	99
Chlorobenzene	47.24	94
1,1-Dichloroethene	51.71	103
Toluene	49.28	99
Trichloroethene	51.78	104

CURRENT VOLATILE LCS LIMITS

	WATER	SOIL
Benzene	74 - 142	65 - 145
Chlorobenzene	93 - 133	91 - 122
1,1-Dichloroethene	61 - 151	66 - 136
Toluene	80 - 140	83 - 133
Trichloroethene	73 - 149	70 - 141

If LCS is outside limits, a non-conformance form is required.

The LCS has been checked and is within/outside current limits.

ANALYST 09.18.91 DATE NA Non-conformance form #

300017B

VOLATILE LCS RECOVERY FORM

LAB NAME: EA LABORATORIES

DATA FILE: >AI545::D4

INST. ID: 8701A1/7002E5

DATE/TIME: 9/19/91 16:53

SAMP. ID: STD#V0~~845~~ 837

@1084

MATRIX: WATER / SOIL

SPIKE	COMPOUND	CONC.	%REC.
C045	1,1-Dichloroethen	47.430	95
C150	Trichloroethene	50.025	100
C165	Benzene	48.679	97
C230	Toluene	47.552	95
C235	Chlorobenzene	48.094	96

CURRENT VOLATILE LCS LIMITS

	WATER	SOIL
1,1-Dichloroethene	61 - 151	66 - 136
Trichloroethene	73 - 149	70 - 141
Benzene	74 - 142	65 - 145
Toluene	80 - 140	83 - 133
Chlorobenzene	93 - 133	91 - 122

The LCS has been checked and is within/outside current limits

09-25-91 NA

ANALYST DATE NCR#

300017C

LCS RECOVERY REPORT

LAB NAME: EA LABORATORIES

DATA FILE: AI563

INSTRUMENT: A1

DATE: 09/23/91

SAMPLE ID: LCS 842

MATRIX: SOIL

ANALYST: SPH

SPIKE COMPOUND	CONC.	%REC.
Benzene	49.88	100
Chlorobenzene	46.57	93
1,1-Dichloroethene	50.36	101
Toluene	48.85	98
Trichloroethene	47.58	95

CURRENT VOLATILE LCS LIMITS

	WATER	SOIL
Benzene	74 - 142	65 - 145
Chlorobenzene	93 - 133	91 - 122
1,1-Dichloroethene	61 - 151	66 - 136
Toluene	80 - 140	83 - 133
Trichloroethene	73 - 149	70 - 141

If LCS is outside limits, a non-conformance form is required.

The LCS has been checked and is within X outside current limits.

ANALYST 09-23-91 DATE

NA
Non-conformance form #

300017D

LCS RECOVERY REPORT

LAB NAME: EA LABORATORIES

DATA FILE: AI582

INSTRUMENT: A1

DATE: 09/24/91

SAMPLE ID: LCS 846

MATRIX: SOIL

ANALYST: SPH

SPIKE COMPOUND	CONC.	%REC.
Benzene	47.88	96
Chlorobenzene	46.56	93
1,1-Dichloroethene	51.30	103
Toluene	47.73	95
Trichloroethene	48.40	97

CURRENT VOLATILE LCS LIMITS

	WATER	SOIL
Benzene	74 - 142	65 - 145
Chlorobenzene	93 - 133	91 - 122
1,1-Dichloroethene	61 - 151	66 - 136
Toluene	80 - 140	83 - 133
Trichloroethene	73 - 149	70 - 141

If LCS is outside limits, a non-conformance form is required.

The LCS has been checked and is within/outside current limits.

ANALYST 09.24.91 DATE

NA
Non-conformance form #

300017E

B. Sample Data

303018

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-2_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8744

Sample wt/vol: 5 (g/ml) G Lab File ID: AI538

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 4.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	J
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

~~3/90~~
2/88
P10.4.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-2_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8744

Sample wt/vol: 5 (g/ml) G Lab File ID: AI538

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 4.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

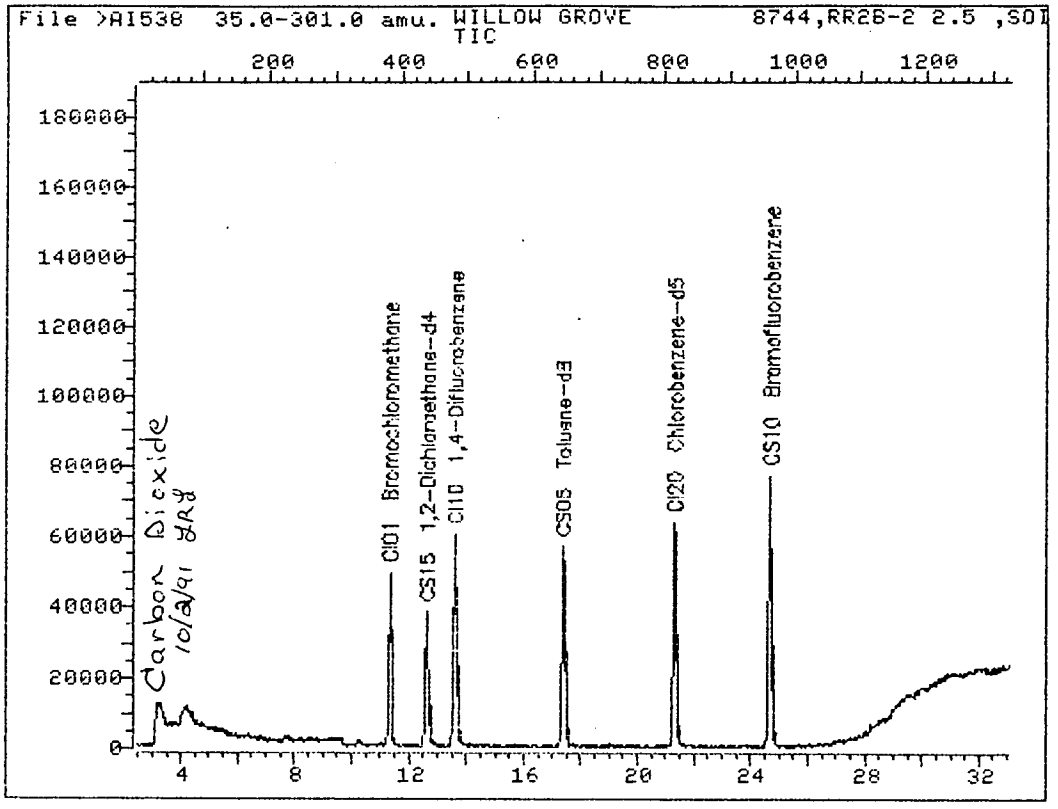
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	4.17	13	~~B~~ J

FORM I VOA-TIC

~~3/90~~
2/08

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI538::D4 Quant Output File: ^AI538::QT
Name: WILLOW GROVE
Misc: 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 19:56
Injected at: 910918 19:22

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 19:56
Output File: ^AI538::D4 Injected at: 910918 19:22
Data File: >AI538::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH

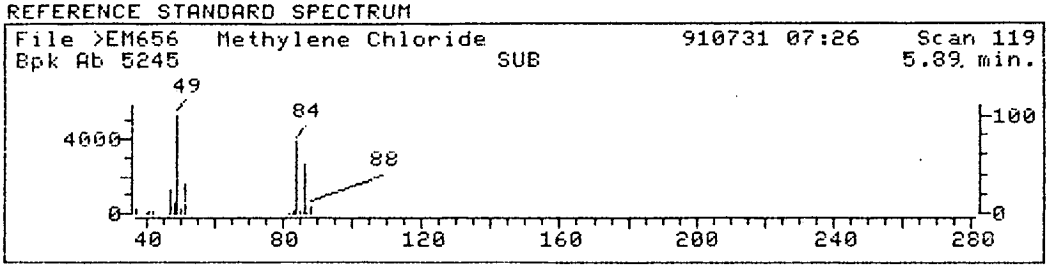
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	41229	50.00	UG/KG	80
8)	C030	Methylene Chloride	7.70	84.0	3063	2.66	UG/KG	79
9)	C035	Acetone	6.39	43.0	5138	7.63	UG/KG	93
20)	C110	2-Butanone	10.22	72.0	1008	6.11	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	112960	52.47	UG/KG 105%	80
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	148509	50.00	UG/KG	92
40)	*CI20	Chlorobenzene-d5	21.29	117.0	112481	50.00	UG/KG	98
48)	CS05	Toluene-d8	17.34	98.0	133749	52.53	UG/KG 105%	98
57)	CS10	Bromofluorobenzene	24.68	95.0	101250	45.98	UG/KG 92%	96

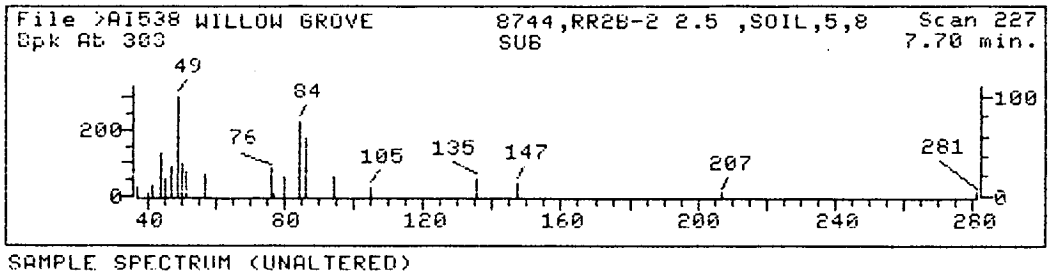
* Compound is ISTD

07-25-91

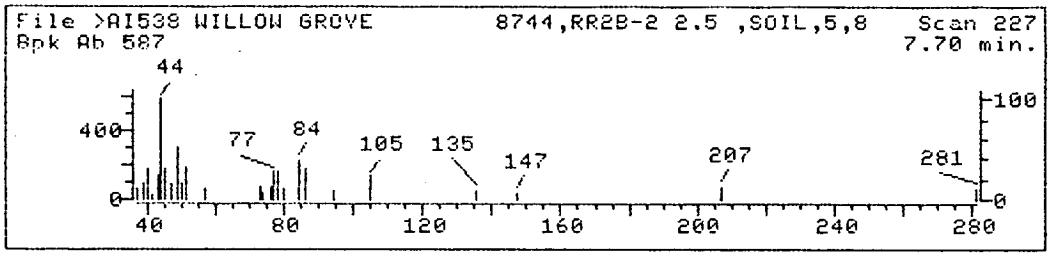
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



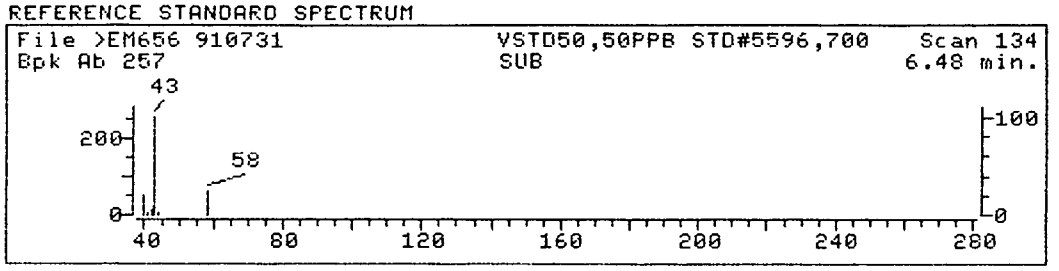
SAMPLE SPECTRUM (UNALTERED)



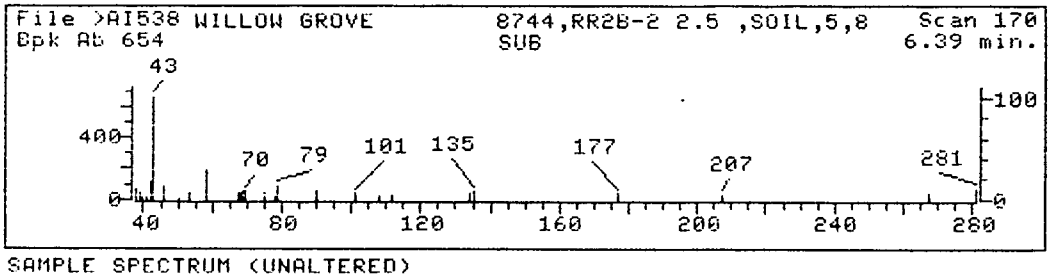
Data File: >AI538::D4 Quant Output File: ^AI538::QT
Name: WILLOW GROVE
Misc: 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:56 Quant ID File: CCAS::BD
Injected at: 910918 19:22 Last Calibration: 910918 14:28

Compound No: 8
Compound Name: C030 Methylene Chloride
Scan Number: 227
Retention Time: 7.70 min.
Quant Ion: 84.0
Area: 3063
Concentration: 2.66 UG/KG
q-value: 79

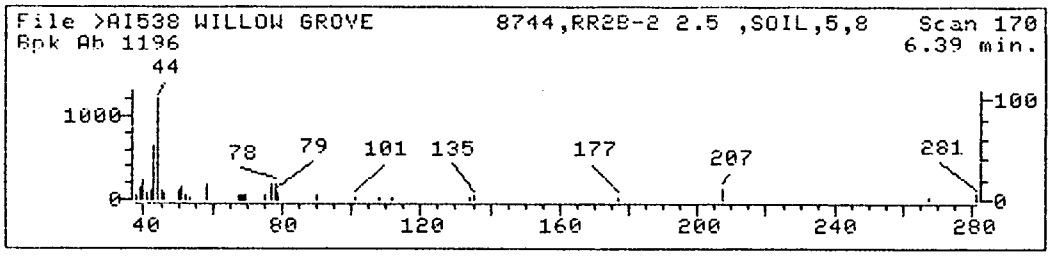
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



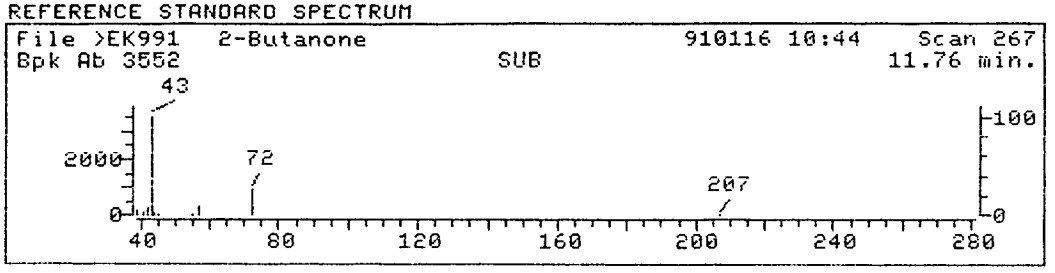
SAMPLE SPECTRUM (UNALTERED)



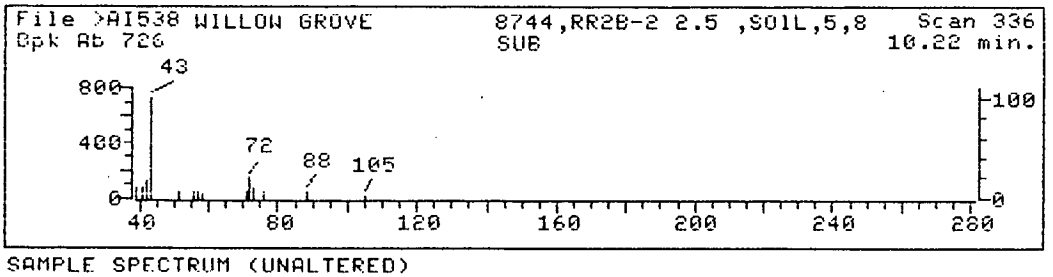
Data File: >AI538::D4 Quant Output File: ^AI538::QT
Name: WILLOW GROVE
Misc: 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:56 Quant ID File: CCAS::BD
Injected at: 910918 19:22 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.39 min.
Quant Ion: 43.0
Area: 5138
Concentration: 7.63 UG/KG
q-value: 93

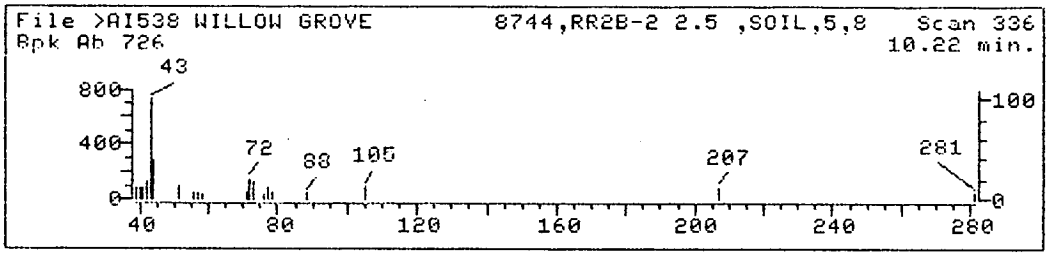
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI538::D4 Quant Output File: ^AI538::QT
Name: WILLOW GROVE
Misc: 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:56 Quant ID File: CCAS::BD
Injected at: 910918 19:22 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.22 min.
Quant Ion: 72.0
Area: 1008
Concentration: 6.11 UG/KG
q-value: 99

·AI538 WILLOW GROVE 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Ipslope: .20 Area Reject: 33826. Max Peaks: 2 Bunching: -1
Inslope: 0.00 Results File IAI538 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.18	24	31	32	12083	89193	86184	100.00	51.902
2	4.17	70	74	89	5352	240236	79868	92.67	48.098

Sum of corrected areas: 166052.

Summary of PBM Library Search and Quantitation on file :>AI538::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	338264.	11.30	2.49 - 12.44
2	50.0	452373.	13.59	12.44 - 17.44
3	50.0	426181.	21.29	17.44 - 33.06

CALCULATIONS

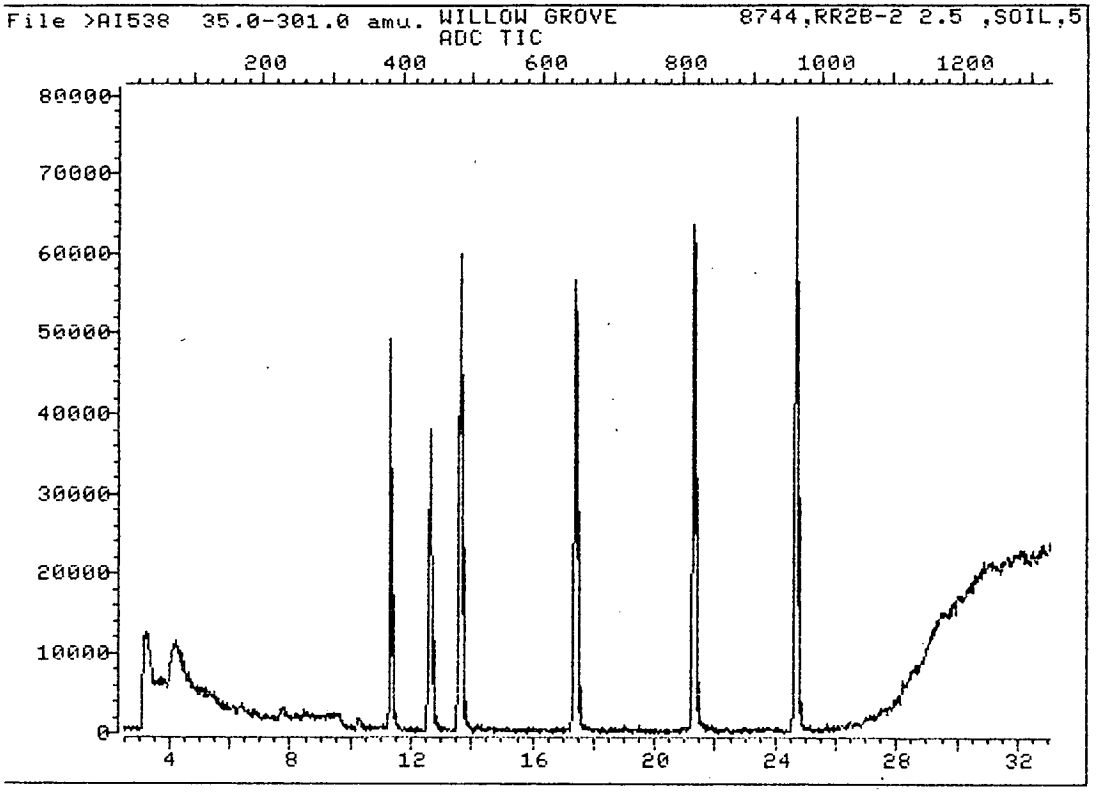
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

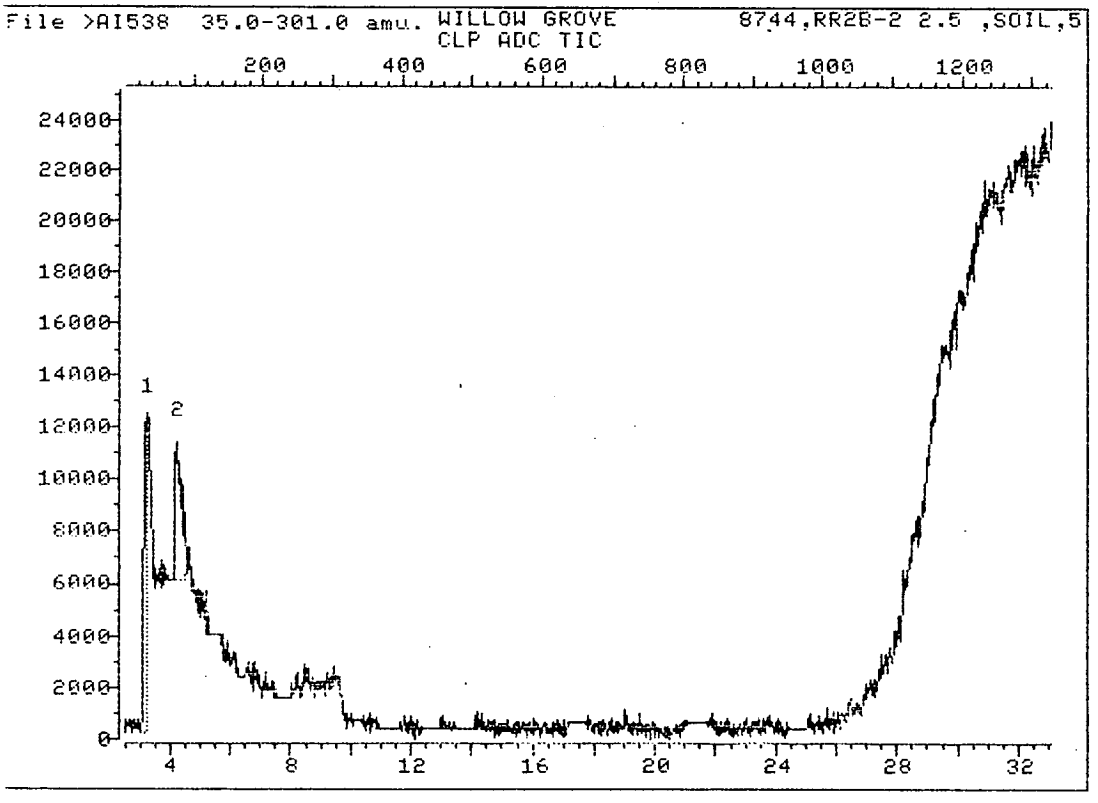
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

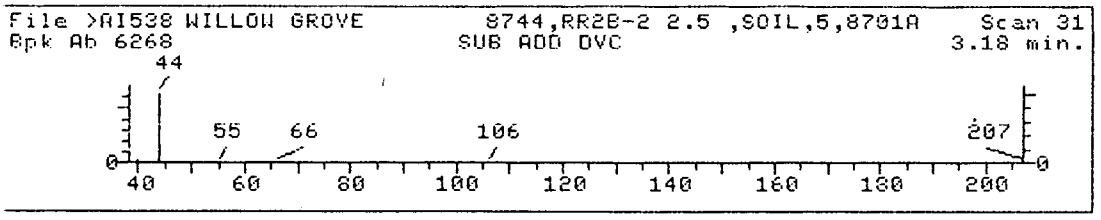
8:16 PM WED., 18 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
~~SOLVENT~~
CAS #124-38-9
07-17-91

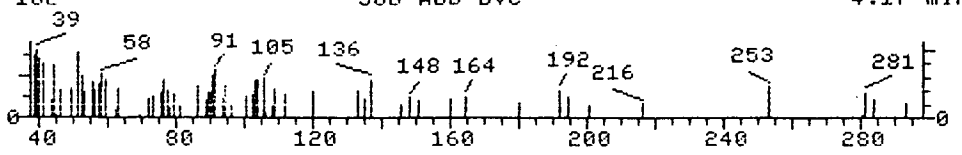
Retention time = 3.18

Area = 86184.00 Tentative Concentration is 13.00

Sample file: >AI538 Spectrum #: 31

No data base entries were retrieved.

File >AI538 WILLOW GROVE 8744,RR2B-2 2.5 ,SOIL,5,8701A Scan 74
Bpk Ab 162 SUB ADD DVC 4.17 min.



UNKNOWN
07.12.91

Retention time = 4.17

Area = 79868.00 Tentative Concentration is 12.00

Sample file: >AI538 Spectrum #: 74

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI538::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 19:22
Misc:8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak #. in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.18	86184	33826
2	4.17	79868	33826

>AI538 WILLOW GROVE 8744,RR2B-2 2.5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI538 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.18	24	31	32	12083	94725	86184	16.58	3.369
2	4.13	63	72	73	5111	137466	48823	9.39	1.909
3	11.30	375	383	400	48862	368395	338264	65.06	13.225
4	12.62	432	440	454	37824	295608	273742	52.65	10.702
5	13.59	474	482	499	59883	474104	452373	87.01	17.686
6	17.34	637	645	657	56651	431434	412300	79.30	16.119
7	21.29	809	816	828	63152	453188	426181	81.97	16.662
8	24.68	954	963	977	77025	542620	519923	100.00	20.327

Sum of corrected areas: 2557790.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-2_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8745

Sample wt/vol: 5 (g/ml) G Lab File ID: AI539

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	5	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-2_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8745

Sample wt/vol: 5 (g/ml) G Lab File ID: AI539

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

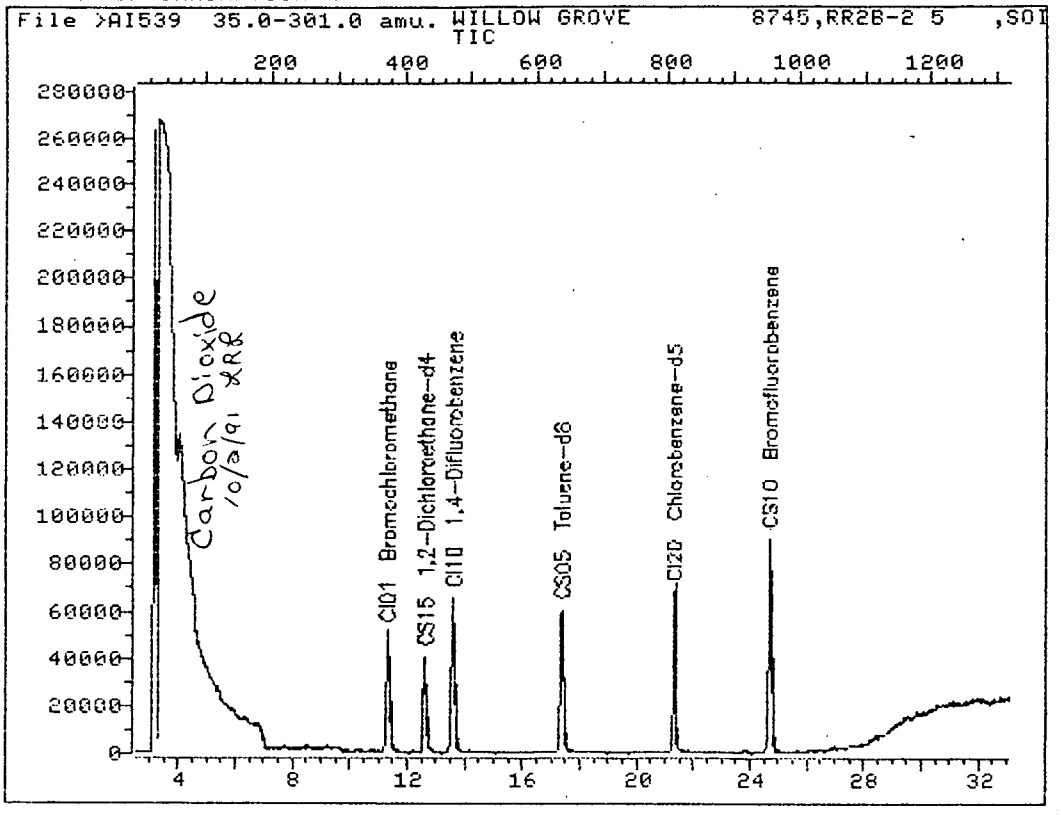
Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88
9/10/91

TOTAL ION CHROMATOGRAM



Data File: >AI539::D4 Quant Output File: ^AI539::D4
Name: WILLOW GROVE
Misc: 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 20:39
Injected at: 910918 20:05

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 20:39
Output File: ^AI539::D4 Injected at: 910918 20:05
Data File: >AI539::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH

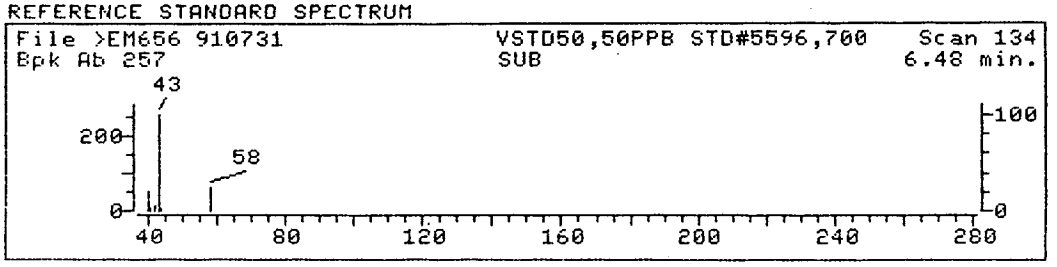
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	43418	50.00	UG/KG	84
9)	CO35	Acetone	6.38	43.0	4541	6.41	UG/KG	75
20)	CI10	2-Butanone	10.26	72.0	786	4.52	UG/KG	98
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	122800	54.16	UG/KG 108%	80
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	162310	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.28	117.0	125772	50.00	UG/KG	93
48)	CS05	Toluene-d8	17.36	98.0	142323	49.99	UG/KG 100%	99
57)	CS10	Bromofluorobenzene	24.67	95.0	116426	47.28	UG/KG 95%	97

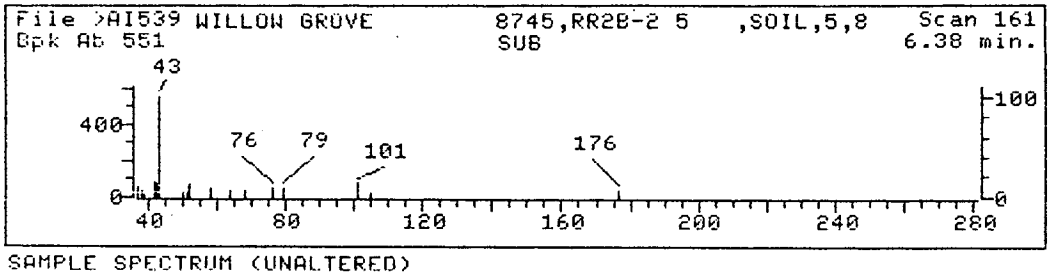
* Compound is ISTD

09/19/91

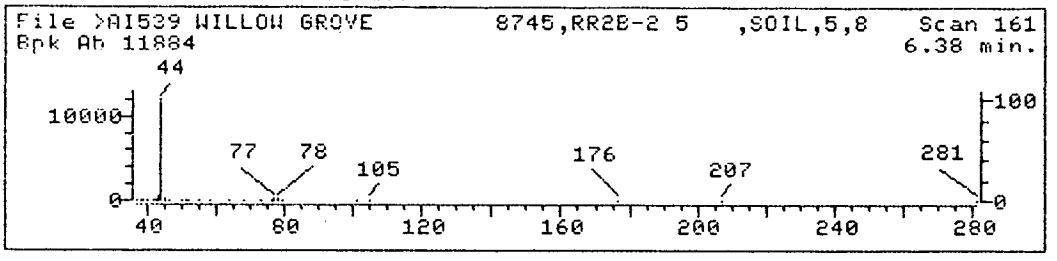
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



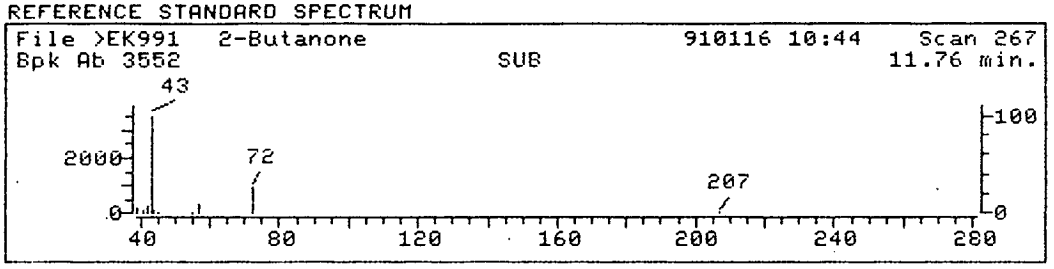
SAMPLE SPECTRUM (UNALTERED)



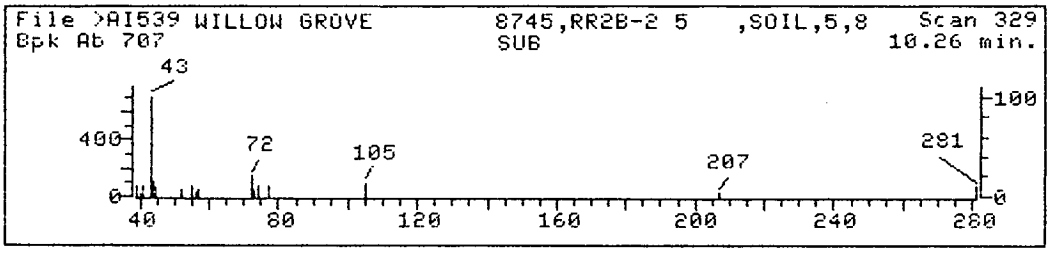
Data File: >AI539::D4 Quant Output File: ^AI539::D4
Name: WILLOW GROVE
Misc: 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 20:39 Quant ID File: CCAS::BD
Injected at: 910918 20:05 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 161
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 4541
Concentration: 6.41 UG/KG
q-value: 75

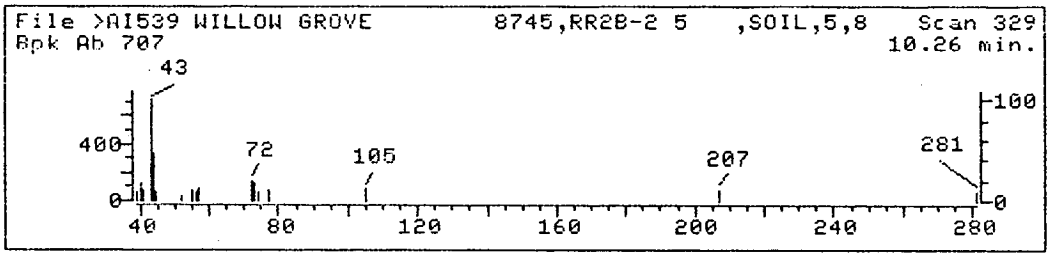
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI539::D4 Quant Output File: ^AI539::QT
Name: WILLOW GROVE
Misc: 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 20:39 Quant ID File: CCAS::BD
Injected at: 910918 20:05 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 329
Retention Time: 10.26 min.
Quant Ion: 72.0
Area: 786
Concentration: 4.52 UG/KG
q-value: 98

AI539 ,WILLOW GROVE 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
lpslope: .20 Area Reject: 36538. Max Peaks: 2 Bunching: -1
nslope: 0.00 Results File IAI539 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	18	28	29	267254	1249361	1243975	15.67	13.544
2	3.40	30	32	55	258356	8184540	7940616	100.00	86.456

Sum of corrected areas: 9184592.

Summary of PBM Library Search and Quantitation on file :>AI539::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	365377.	11.29	2.55 - 12.45
2	50.0	481947.	13.60	12.45 - 17.44
3	50.0	490944.	21.28	17.44 - 33.08

CALCULATIONS

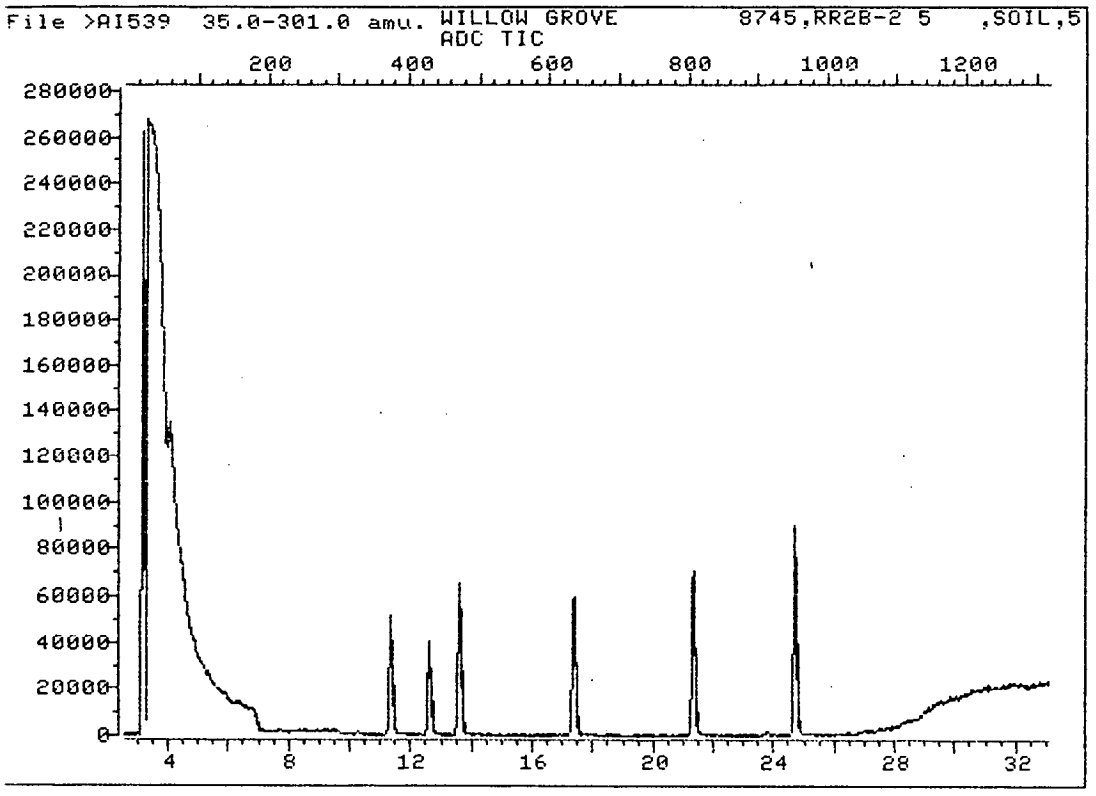
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

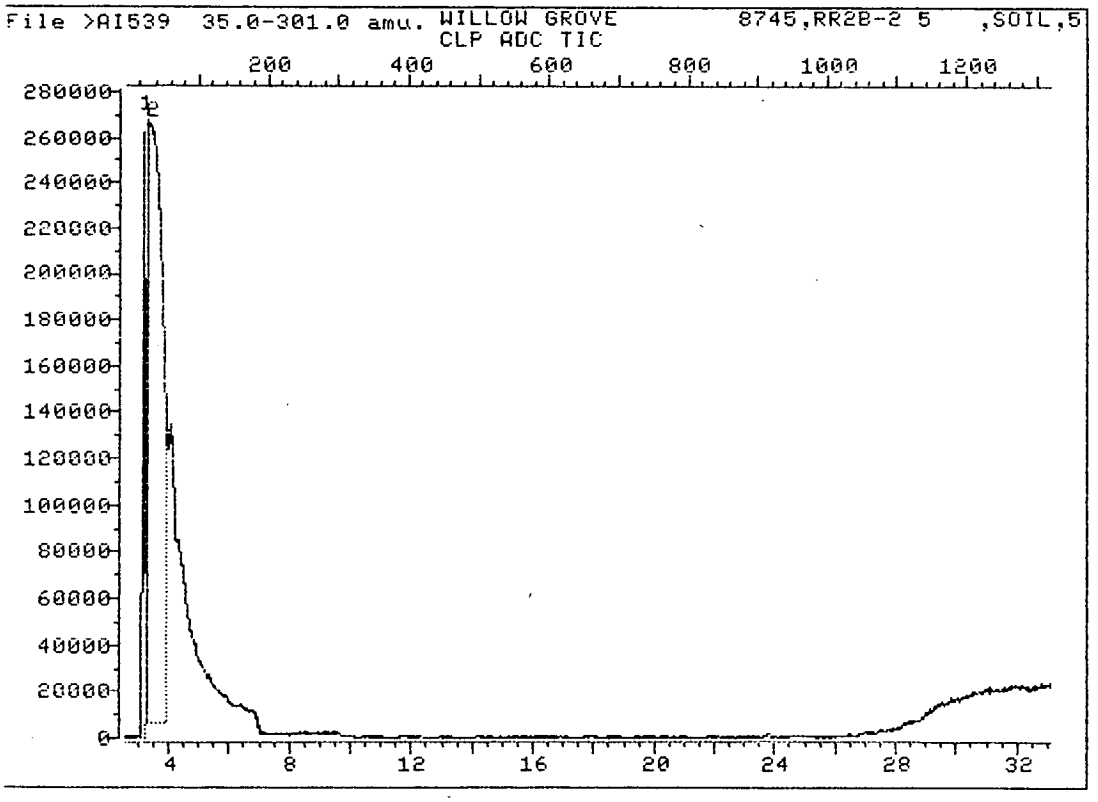
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

8:53 PM WED., 18 SEPT, 1991

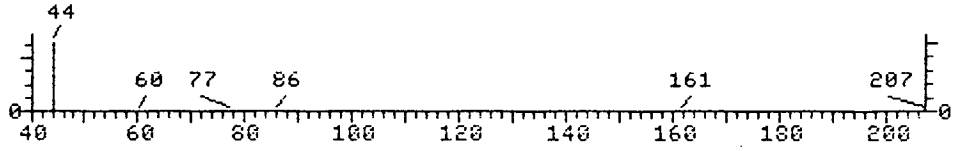
UNALTERED TIC



CLIPPED TIC



File >AI539 WILLOW GROVE 8745,RR2B-2 5 ,SOIL,5,8701A Scan 28
Bpk Ab 258091 SUB ADD DVC 3.17 min.



CARBON DISULFIDE
CAS # 124-38-9
~~SOLVENT~~
09-19-91

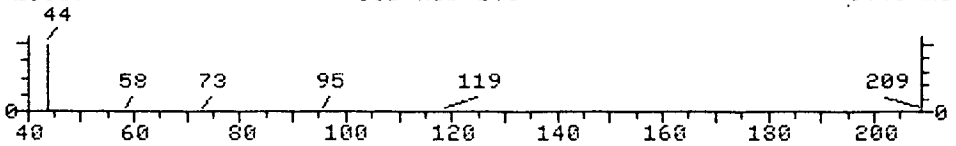
Retention time = 3.17

Area = 1243975. Tentative Concentration is 170.00

Sample file: >AI539 Spectrum #: 28

No data base entries were retrieved.

File >RI539 WILLOW GROVE 8745,RR2B-2 5 ,SOIL,5,8701A Scan 32
Bpk Ab 196897 SUB ADD DVC 3.40 min.



CARBON DISULFIDE
CAS #75-15-0
~~SOLVENT~~
BD
05-15-91

Retention time = 3.40

Area = 7940616. Tentative Concentration is 1100.00

Sample file: >AI539 Spectrum #: 32

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI539::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 20:05
Misc:8745,RR2B-2 5 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.17	1243975	36538
2	3.40	7940616	36538

>AI539 WILLOW GROVE 8745,RR2B-2 5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 6 Bunching: -1
Onslope: 0.00 Results File IAI539 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	18	28	29	267254	1256085	1243975	15.67	11.116
2	3.40	30	32	55	258356	8201651	7940616	100.00	70.954
3	13.60	465	474	486	65131	501012	481947	6.07	4.306
4	17.36	628	637	648	60101	465690	442232	5.57	3.952
5	21.30	798	808	822	71319	514628	490944	6.18	4.387
6	24.67	942	954	965	90220	616427	591468	7.45	5.285

Sum of corrected areas: 11191184.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-2_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8746

Sample wt/vol: 5 (g/ml) G Lab File ID: AI540

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 7.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

FORM I VOA

~~3/90~~
2/89
9/09/91

300044

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-2_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8746

Sample wt/vol: 5 (g/ml) G Lab File ID: AI540

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 7.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 2.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

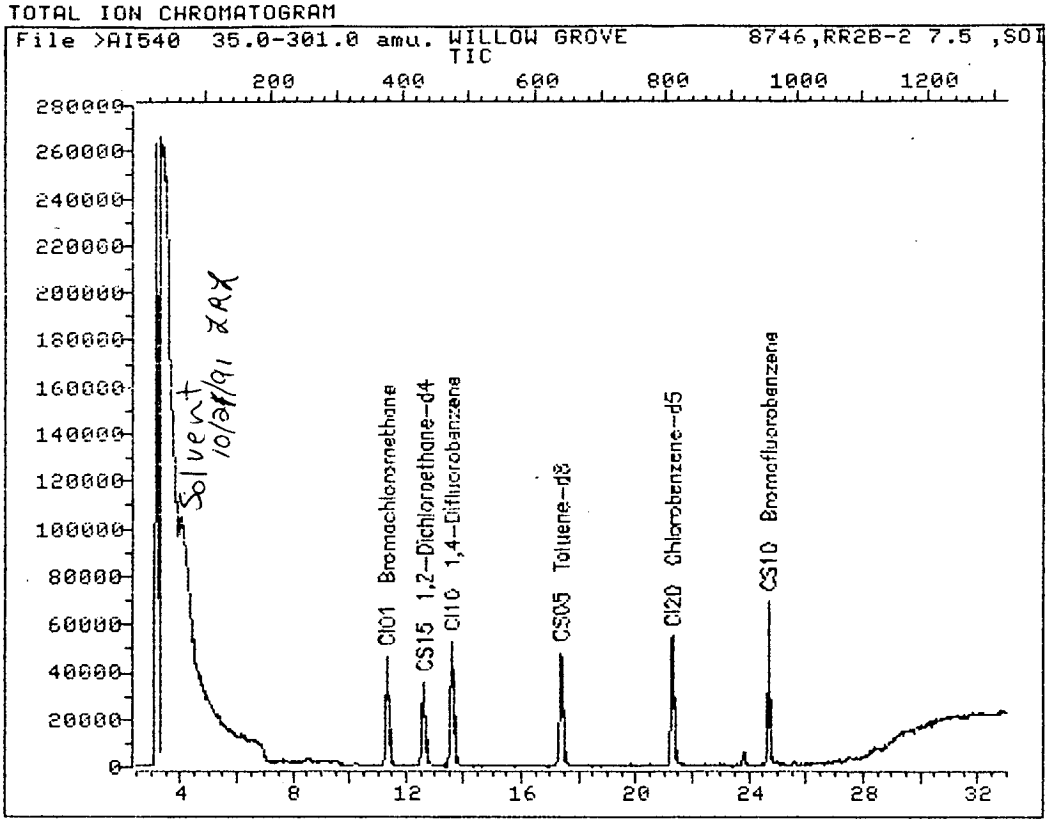
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	Unknown	23.79	6	J
2.~~55045039~~----	~~Benzaldehyde,3-methoxy-4-[(t~~	~~28.40~~	~~8~~	~~JN~~

(W) 10.8.91

FORM I VOA-TIC

~~3/90~~
~~1/98~~
10.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI540::D4 Quant Output File: ^AI540::QT
Name: WILLOW GROVE
Misc: 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 21:21
Injected at: 910918 20:47

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 21:21
Output File: ^AI540::D4 Injected at: 910918 20:47
Data File: >AI540::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH

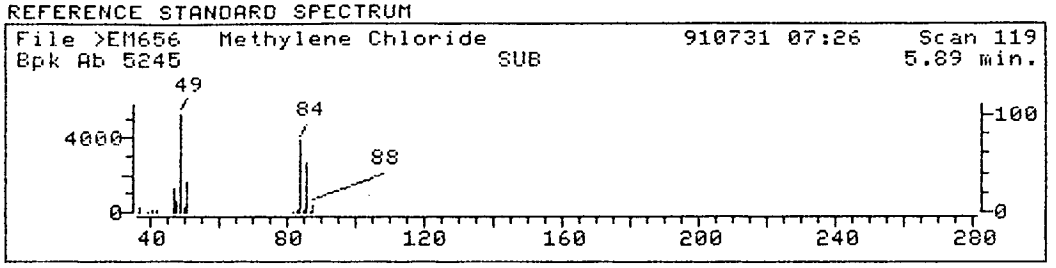
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	38832	50.00	UG/KG	80
8)	C030	Methylene Chloride	7.63	84.0	1915	1.77	UG/KG	47
20)	C110	2-Butanone	10.24	72.0	937	6.03	UG/KG	96
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	107140	52.84	UG/KG 106%	79
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	131410	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.28	117.0	97605	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.34	98.0	113840	51.53	UG/KG 103%	99
57)	CS10	Bromofluorobenzene	24.67	95.0	88858	46.50	UG/KG 93%	98

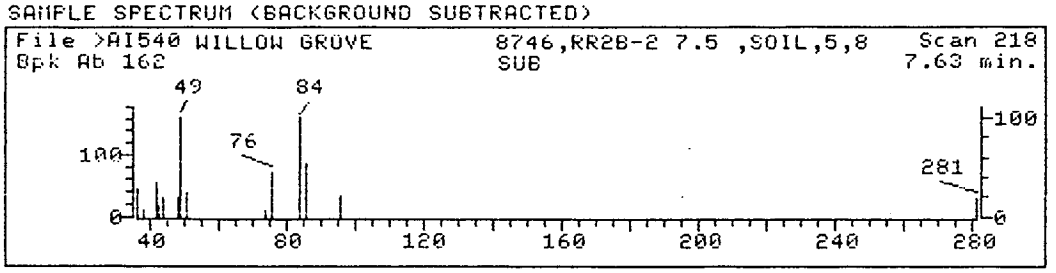
* Compound is ISTD

09.25.91

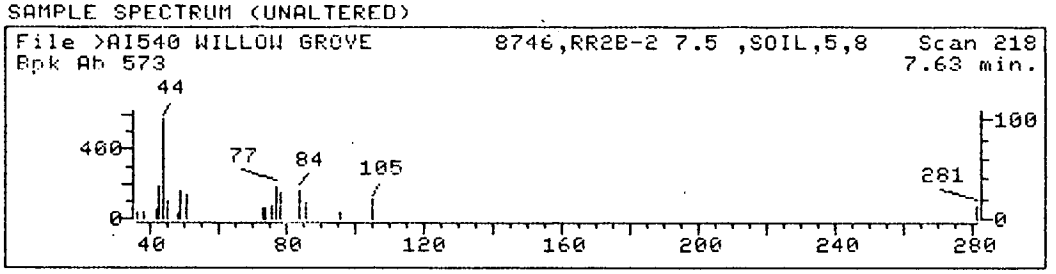
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



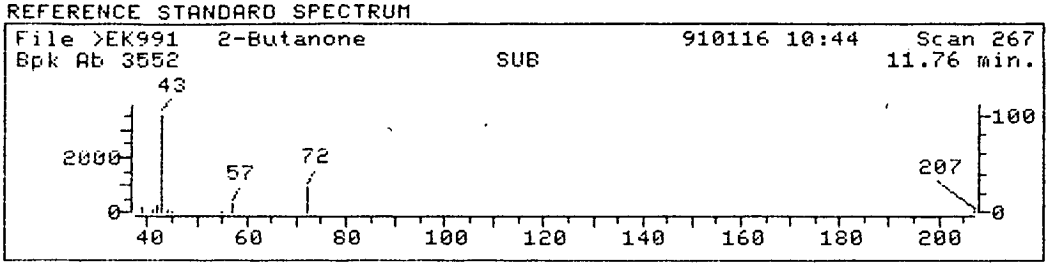
SAMPLE SPECTRUM (UNALTERED)



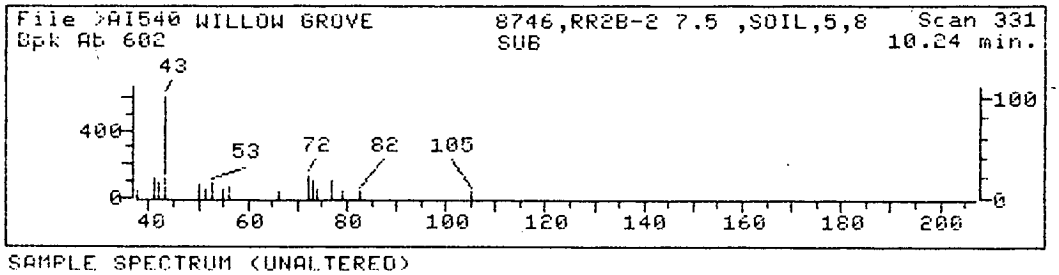
Data File: >AI540::D4 Quant Output File: ^AI540::QT
Name: WILLOW GROVE
Misc: 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 21:21 Quant ID File: CCAS::BD
Injected at: 910918 20:47 Last Calibration: 910918 14:28

Compound No: 8
Compound Name: C030 Methylene Chloride
Scan Number: 218
Retention Time: 7.63 min.
Quant Ion: 84.0
Area: 1915
Concentration: 1.77 UG/KG
q-value: 47

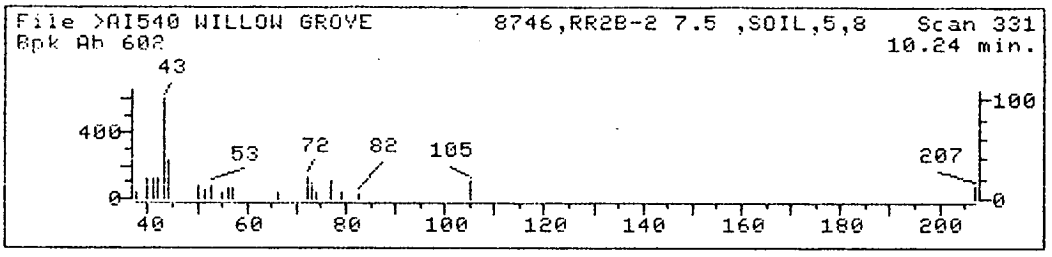
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI540::D4 Quant Output File: ^AI540::QT
Name: WILLOW GROVE
Misc: 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH
Quant Time: 910918 21:21 Quant ID File: CCAS::BD
Injected at: 910918 20:47 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 331
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 937
Concentration: 6.03 UG/KG
q-value: 96

AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Ipslope: .20 Area Reject: 31843. Max Peaks: 4 Bunching: -1
Inslope: 0.00 Results File IAI540 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.15	23	30	32	262356	1372819	1365188	21.58	17.529
2	3.41	33	35	57	252608	6562093	6325815	100.00	81.221
3	23.79	912	919	926	5489	55008	43502	.69	.559
4	28.40	1107	1119	1123	4111	150286	53864	.85	.692

Sum of corrected areas: 7788369.

Summary of PBM Library Search and Quantitation on file :>AI540::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	318429.	11.30	2.48 - 12.44
2	50.0	399798.	13.58	12.44 - 17.43
3	50.0	384329.	21.28	17.43 - 33.03

CALCULATIONS

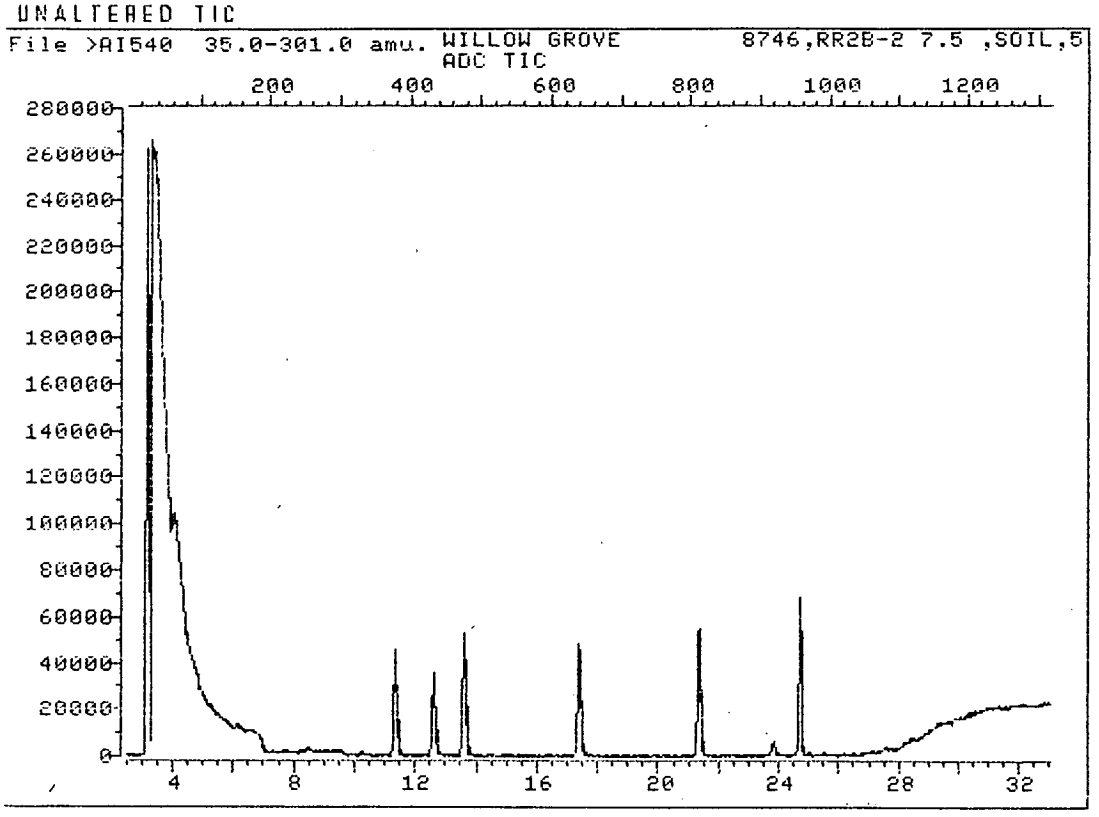
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

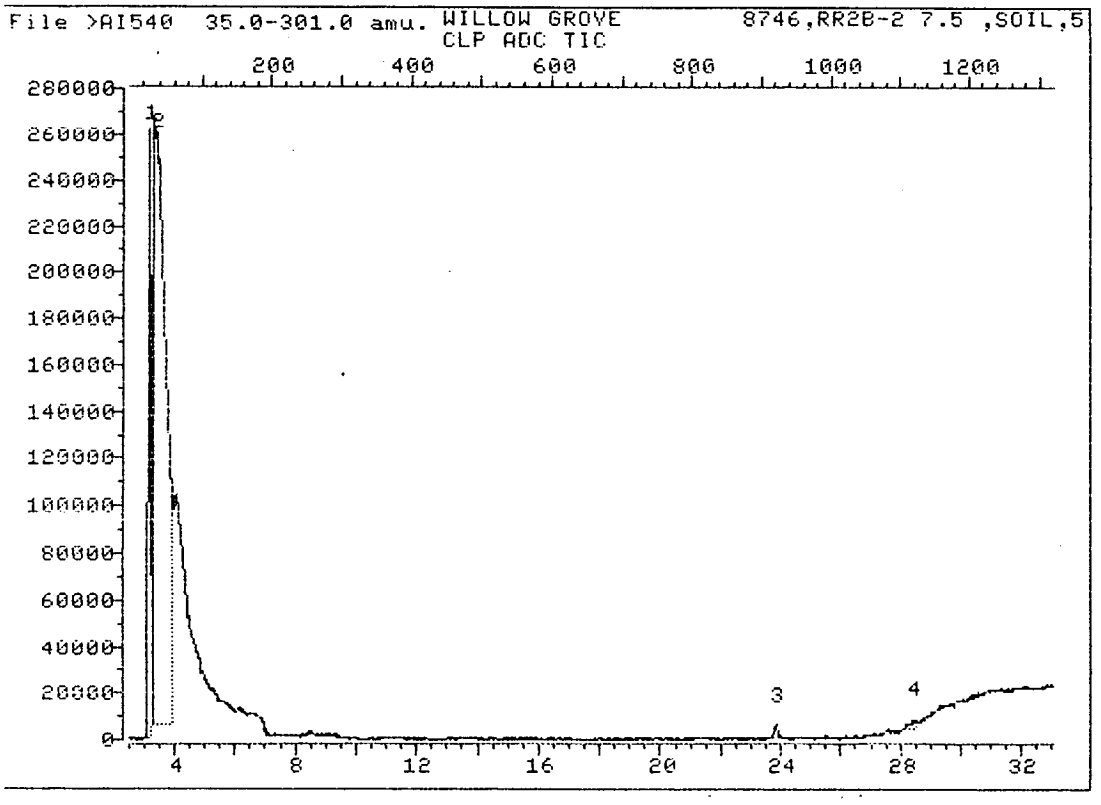
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

9:39 PM WED., 18 SEPT, 1991

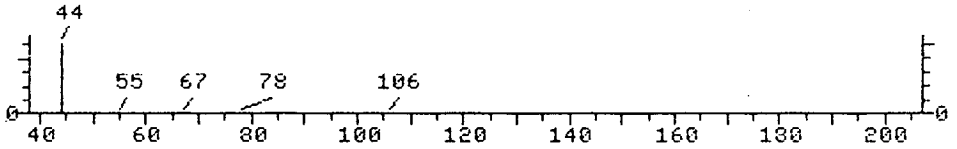
UNALTERED TIC



CLIPPED TIC



File >AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701A Scan 30
Bpk Ab 255707 SUB ADD DVC 3.15 min.



SOLVENT

09.19.91

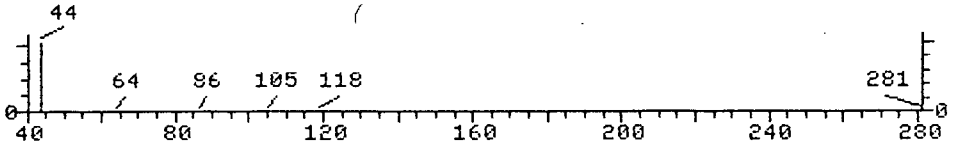
Retention time = 3.15

Area = 1365188. Tentative Concentration is 210.00

Sample file: >AI540 Spectrum #: 30

No data base entries were retrieved.

File >AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701R Scan 35
Bpk Ah 206281 SUB ADD DVC 3.41 min.



SOLVENT

02.17.91

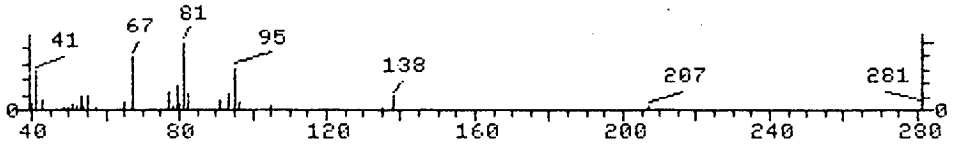
Retention time = 3.41

Area = 6325815. Tentative Concentration is 990.00

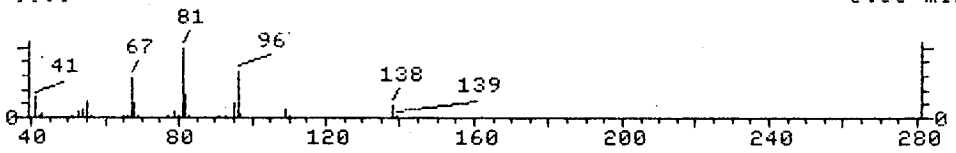
Sample file: >AI540 Spectrum #: 35

No data base entries were retrieved.

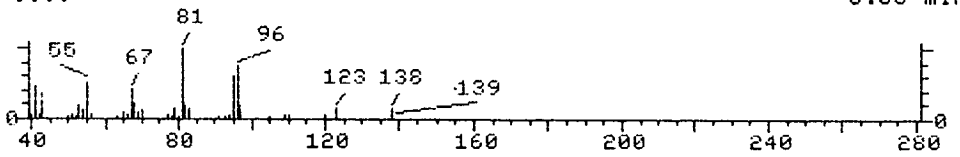
File >AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701A Scan 919
Bpk Ab 857 SUB ADD DVC 23.79 min.



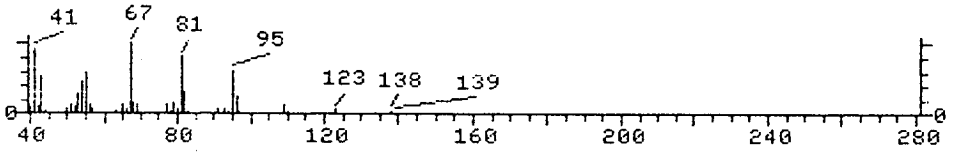
File >BIGDB Cyclohexene, 1-butyl- (8CI9CI) Scan 8135
Bpk Ab 9999 0.00 min.



File >BIGDB Bicyclo[3.1.0]hexan-2-one, 5-(1-methylethyl)- (9C Scan 8134
Bpk Ab 9999 0.00 min.



File >BIGDB 4,5-Nonadiene, 2-methyl- (9CI) Scan 5263
Bpk Ab 9999 0.00 min.



unknowns

07.19.91

Retention time = 23.79

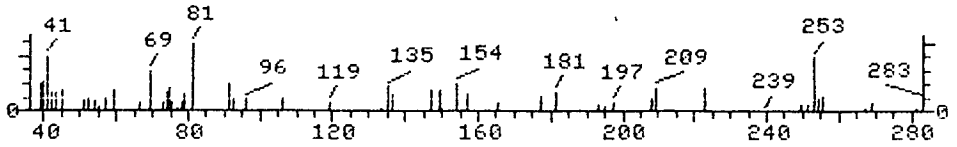
Area = 43502.00 Tentative Concentration is 6.00

1.	Cyclohexene, 1-butyl- (8CI9CI)	138	C10H18
2.	Bicyclo[3.1.0]hexan-2-one, 5-(1-methylethyl)- (9CI)	138	C9H14O
3.	4,5-Nonadiene, 2-methyl- (9CI)	138	C10H18
4.	Bicyclo[3.1.0]hexan-2-one, 3,3,6-trimethyl- (9CI)	138	C9H14O
5.	Cyclopentane, pentylidene- (9CI)	138	C10H18
6.	Cyclohexane, 1-methyl-4-(1-methylethylidene)- (9CI)	138	C10H18
7.	4,6-Decadiene (9CI)	138	C10H18

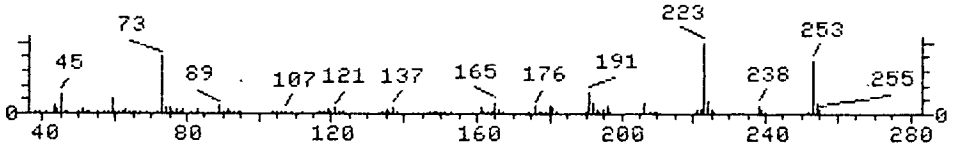
Sample file: >AI540 Spectrum #: 919
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	OK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	3282539	8135	"BIGDB	24	81	3	0	100	19	20	12
2.	36*	513202	8134	"BIGDB	25	90	3	0	100	29	14	13
3.	30*	55956326	5263	"BIGDB	41	77	3	0	68	32	12	13
4.	30*	53966408	5439	"BIGDB	30	74	3	0	152	33	12	13
5.	25*	53366555	15341	"BIGDB	34	71	3	0	62	43	8	13
6.	25*	1124272	15324	"BIGDB	34	83	3	0	62	43	8	13
7.	25*	55682650	15344	"BIGDB	22	83	3	0	80	49	7	12

File >AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701A Scan 1119
Bpk Ab 244 SUB ADD DVC 28.40 min.



File >DIGDB Benzaldehyde, 3-methoxy-4-[(trimethylsilyl)oxy]-, Scan 29632
Bpk Ab 9999 0.00 min.



6-17-96

Column bleed 10-8-96 (a)

Retention time = 28.40

Area = 53864.00 Tentative Concentration is 7.00

1. Benzaldehyde, 3-methoxy-4-[(trimethylsilyl)oxy]-, O-methyloxime (9CI) 253 C12H19NO3Si

Sample file: >AI540 Spectrum #: 1119
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	20*	55045039	29632	"BIGDB	25	142	3	0	105	55	5	13

LIBRARY SEARCH SUMMARY

MS Data File:>AI540::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 20:47
Misc:8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.15	1365188	31843
2	3.41	6325815	31843
3	23.79	43502	38433
4	28.40	53864	38433

>AI540 WILLOW GROVE 8746,RR2B-2 7.5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI540 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.15	23	30	32	262356	1378047	1365188	21.58	14.241
2	3.41	33	35	57	252608	6577787	6325815	100.00	65.990
3	11.30	370	377	393	45924	343197	318429	5.03	3.322
4	13.60	469	477	490	52893	414770	399798	6.32	4.171
5	17.34	630	639	653	48118	376179	352786	5.58	3.680
6	21.30	804	811	827	54738	407484	382977	6.05	3.995
7	24.67	948	957	968	68422	475606	441027	6.97	4.601

Sum of corrected areas: 9586022.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-2_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8748

Sample wt/vol: 5 (g/ml) G Lab File ID: AI541

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 4.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	45	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	9	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-2_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8748

Sample wt/vol: 5 (g/ml) G Lab File ID: AI541

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 4.0 Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

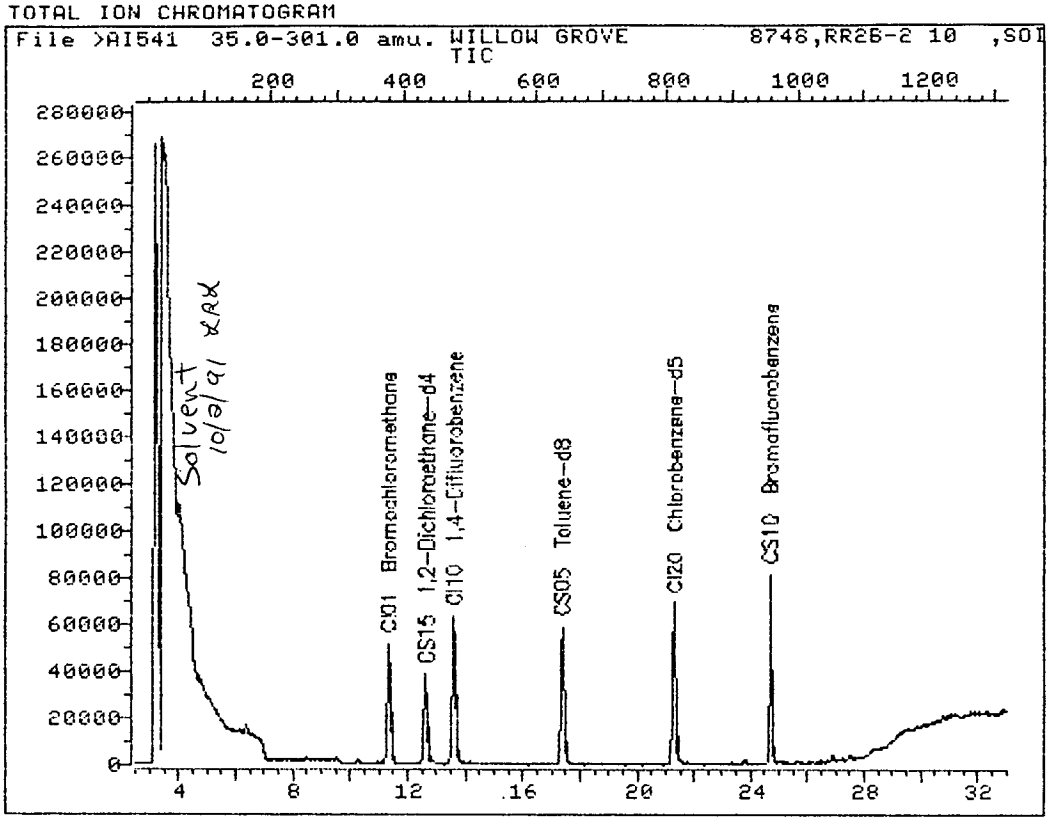
Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88
10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI541::D4 Quant Output File: ^AI541::QT
Name: WILLOW GROVE
Misc: 8748,RR2B-2 10 ,SOIL,5;8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 22:04
Injected at: 910918 21:30

QUANT REPORT

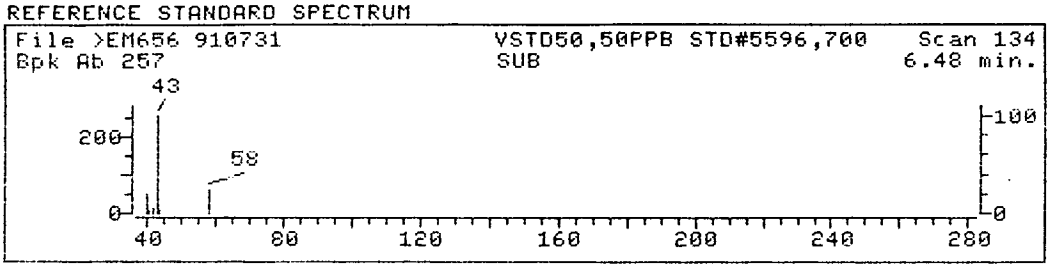
Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 22:04
Output File: ^AI541::QT Injected at: 910918 21:30
Data File: >AI541::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8748,RR2B-2 10 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

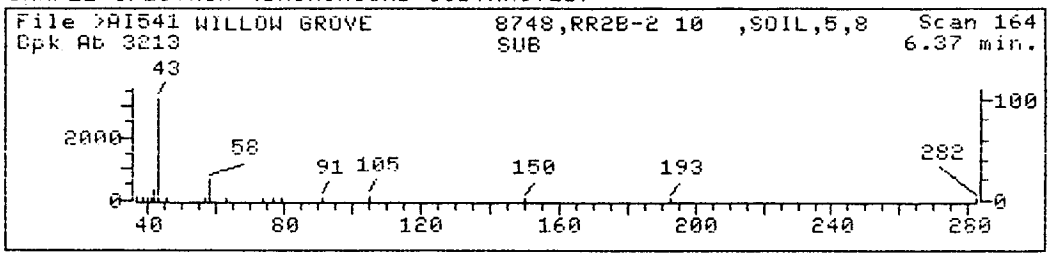
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	43868	50.00	UG/KG	79
9)	C035	Acetone	6.37	43.0	30985	43.26	UG/KG	90
20)	C110	2-Butanone	10.25	72.0	1575	8.97	UG/KG	95
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	120270	52.50	UG/KG 105%	79
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	155178	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.29	117.0	118263	50.00	UG/KG	96
48)	CS05	Toluene-d8	17.35	98.0	139074	51.95	UG/KG 104%	98
57)	CS10	Bromofluorobenzene	24.66	95.0	104978	45.34	UG/KG 91%	95

* Compound is ISTD

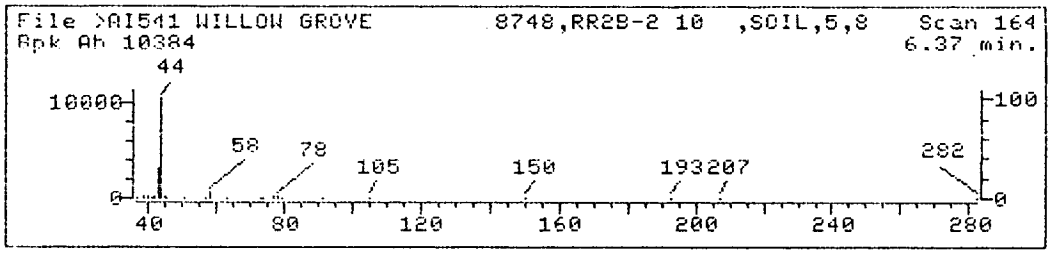
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



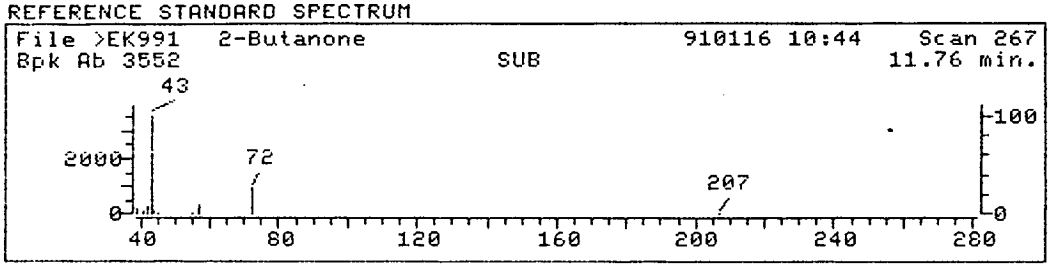
SAMPLE SPECTRUM (UNALTERED)



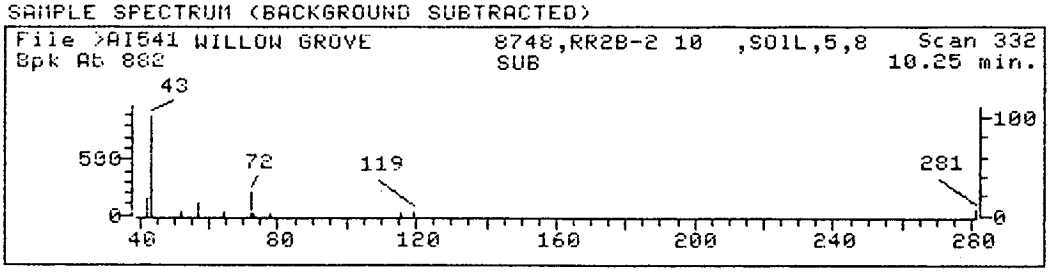
Data File: >AI541::D4 Quant Output File: ^AI541::QT
Name: WILLOW GROVE
Misc: 8748,RR2B-2 10 ,SOIL,5,8701A1,SPH
Quant Time: 910918 22:04 Quant ID File: CCAS::BD
Injected at: 910918 21:30 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 164
Retention Time: 6.37 min.
Quant Ion: 43.0
Area: 30985
Concentration: 43.26 UG/KG
q-value: 90

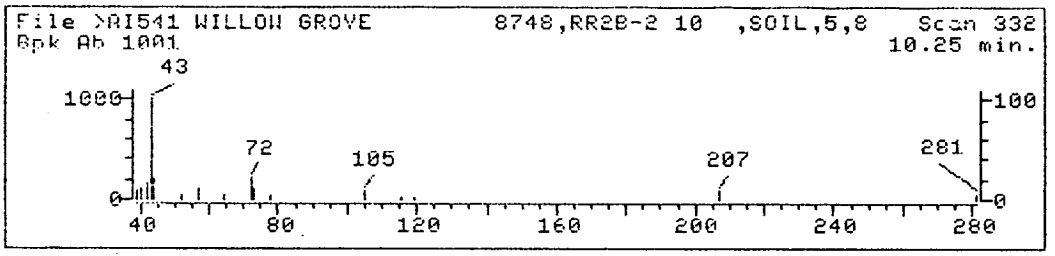
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI541::D4 Quant Output File: ^AI541::QT
Name: WILLOW GROVE
Misc: 8748,RR2B-2 10 ,SOIL,5,8701A1,SPH
Quant Time: 910918 22:04 Quant ID File: CCAS::BD
Injected at: 910918 21:30 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 332
Retention Time: 10.25 min.
Quant Ion: 72.0
Area: 1575
Concentration: 8.97 UG/KG
q-value: 95

AI541 WILLOW GROVE 8748,RR2B-2 10 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
lpslope: .20 Area Reject: 35947. Max Peaks: 2 Bunching: -1
nslope: 0.00 Results File IAI541 Sorted by Time/Area INT

eak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.14	23	30	31	265837	998226	994000	13.12	11.595
2	3.37	32	34	58	259904	7837059	7578495	100.00	88.405

Sum of corrected areas: 8572496.

Summary of PBM Library Search and Quantitation on file :>AI541::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	359472.	11.31	2.47 - 12.45
2	50.0	461070.	13.59	12.45 - 17.44
3	50.0	459470.	21.29	17.44 - 33.02

CALCULATIONS

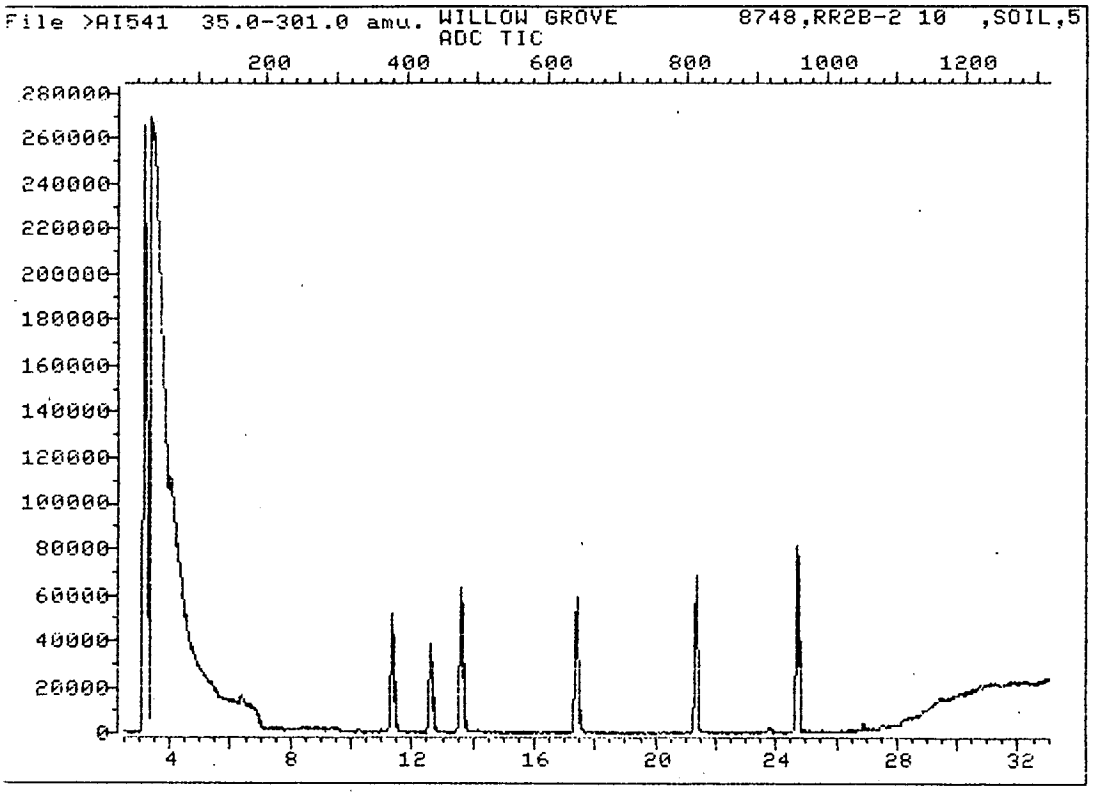
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

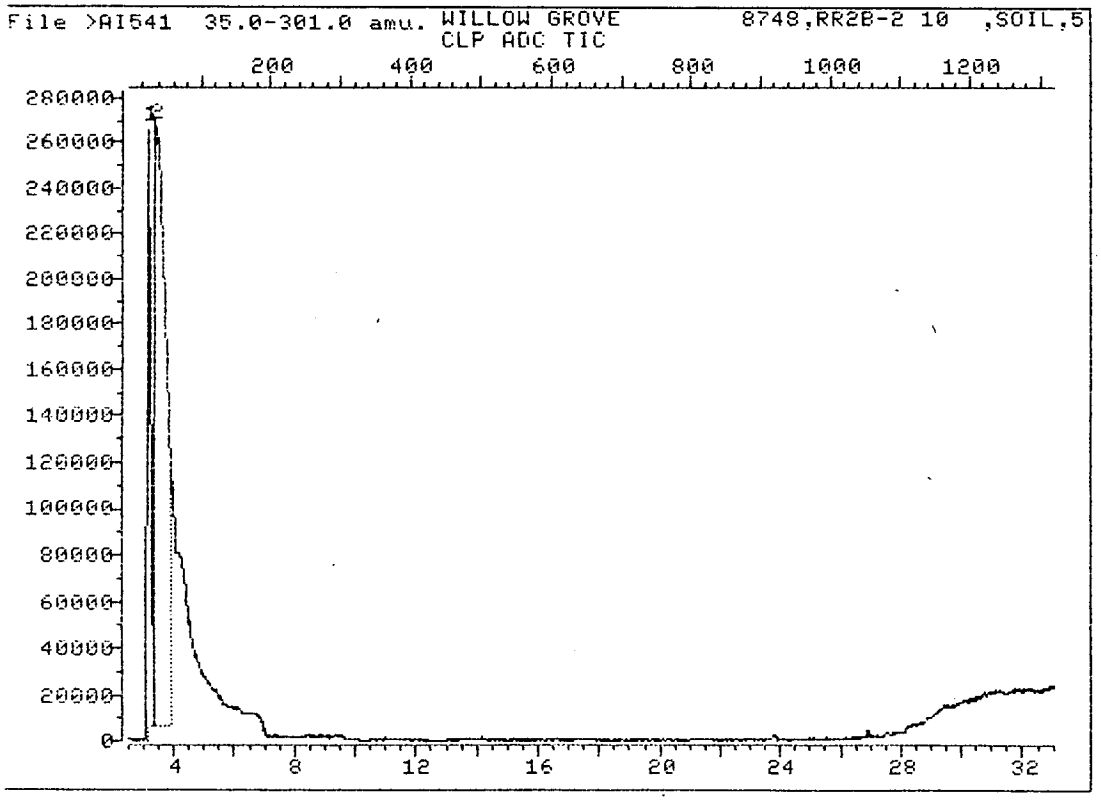
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

10:16 PM WED., 18 SEPT, 1991

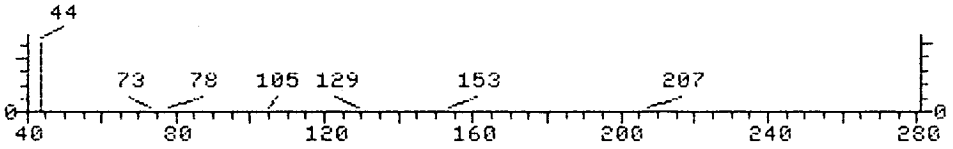
UNALTERED TIC



CLIPPED TIC



File >AI541 WILLOW GROVE 8748,RR2B-2 10 ,SOIL,5,8701A Scan 30
Bpk Ab 256706 SUB ADD DVC 3.14 min.



SOLVENT

05.14.91

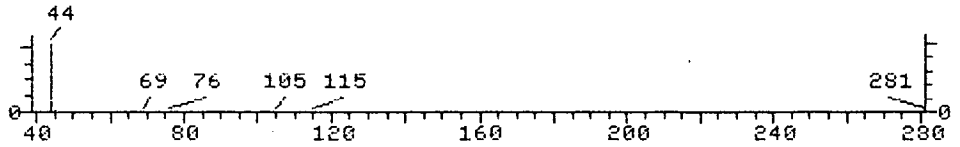
Retention time = 3.14

Area = 994000.0 Tentative Concentration is 140.00

Sample file: >AI541 Spectrum #: 30

No data base entries were retrieved.

File >AI541 WILLOW GROVE 8748,RR2B-2 10 ,SOIL,5,8701A Scan 34
Bpk Ab 205745 SUB ADD DVC 3.37 min.



Solvent

Retention time = 3.37

Area = 7578495. Tentative Concentration is 1100.00

Sample file: >AI541 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI541::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 21:30
Misc:8748,RR2B-2 10 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.14	994000	35947
2	3.37	7578495	35947

>AI541 WILLOW GROVE 8748,RR2B-2 10 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 6 Bunching: -1
Onslope: 0.00 Results File IAI541 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.14	23	30	31	265837	1001491	994000	13.12	9.506
2	3.37	32	34	58	259904	7848889	7578495	100.00	72.475
3	13.59	470	477	489	62877	479615	454178	5.99	4.343
4	17.35	631	640	654	58794	452238	430077	5.67	4.113
5	21.29	803	811	824	68745	482586	459470	6.06	4.394
6	24.66	947	957	968	81245	567601	540534	7.13	5.169

Sum of corrected areas: 10456756.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-2_12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8749

Sample wt/vol: 5 (g/ml) G Lab File ID: AI546

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	56	B
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	~~15~~ 11	~~B~~ U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

10-8-91

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RR2B-2 12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: _____ SDG No.: RR2B-2 2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8749

Sample wt/vol: 5 (g/mL) g Lab File ID: AI546

Level: (low/med) Low Date Received: 9/14/91

% Moisture: not dec. 13 Date Analyzed: 9/19/91

Column: (pack/cap) CAP Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) Ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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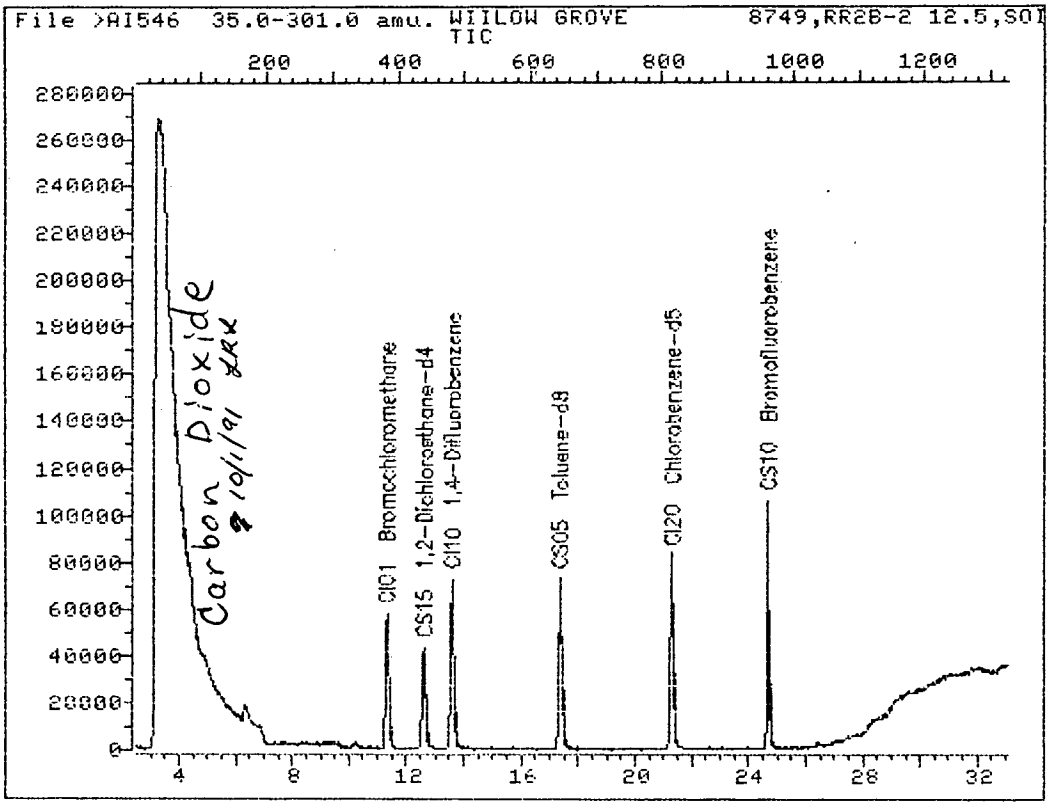
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

30.1071

GW 10.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI546::D4 Quant Output File: ^AI546::QT
Name: WILLOW GROVE
Misc: 8749,RR2B-2 12.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 18:30
Injected at: 910919 17:55

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 18:30
Output File: ^AI546::D4 Injected at: 910919 17:55
Data File: >AI546::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8749,RR2B-2 12.5,SOIL,5,8701A1,SPH

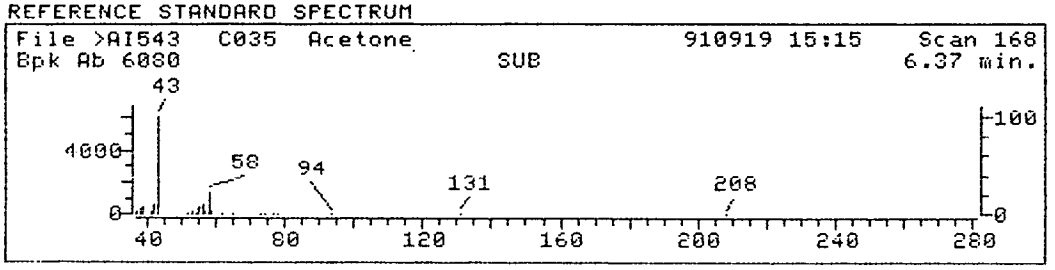
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	53445	50.00	UG/KG	81
9)	C035	Acetone	6.36	43.0	50010	48.97	UG/KG	91
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	131134	51.55	UG/KG 103%	84
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	192825	50.00	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.28	117.0	157671	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.33	98.0	174894	49.78	UG/KG 100%	98
57)	CS10	Bromofluorobenzene	24.67	95.0	142570	49.94	UG/KG 100%	94

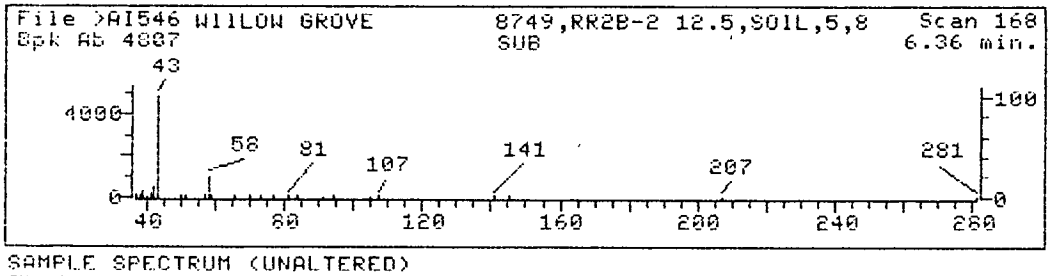
* Compound is ISTD

09.25.91

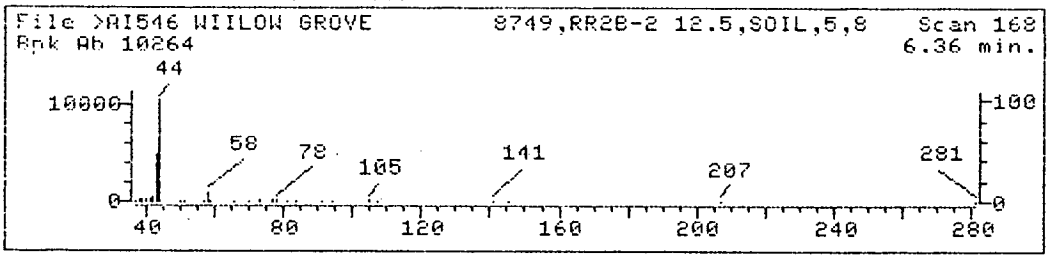
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI546::D4 Quant Output File: ^AI546::QT
Name: WILLOW GROVE
Misc: 8749,RR2B-2 12.5,SOIL,5,8701A1,SPH
Quant Time: 910919 18:30 Quant ID File: CCAS::BD
Injected at: 910919 17:55 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 168
Retention Time: 6.36 min.
Quant Ion: 43.0
Area: 50010
Concentration: 48.97 UG/KG
q-value: 91

>AI546 WILLOW GROVE 8749,RR2B-2 12.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 40872. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI546 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	33	63	268150	10439736	10410692	100.00	100.000

Sum of corrected areas: 10410692.

Summary of PBM Library Search and Quantitation on file :>AI546::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	408717.	11.29	2.51 - 12.44
2	50.0	550293.	13.58	12.44 - 17.43
3	50.0	581198.	21.28	17.43 - 33.06

CALCULATIONS

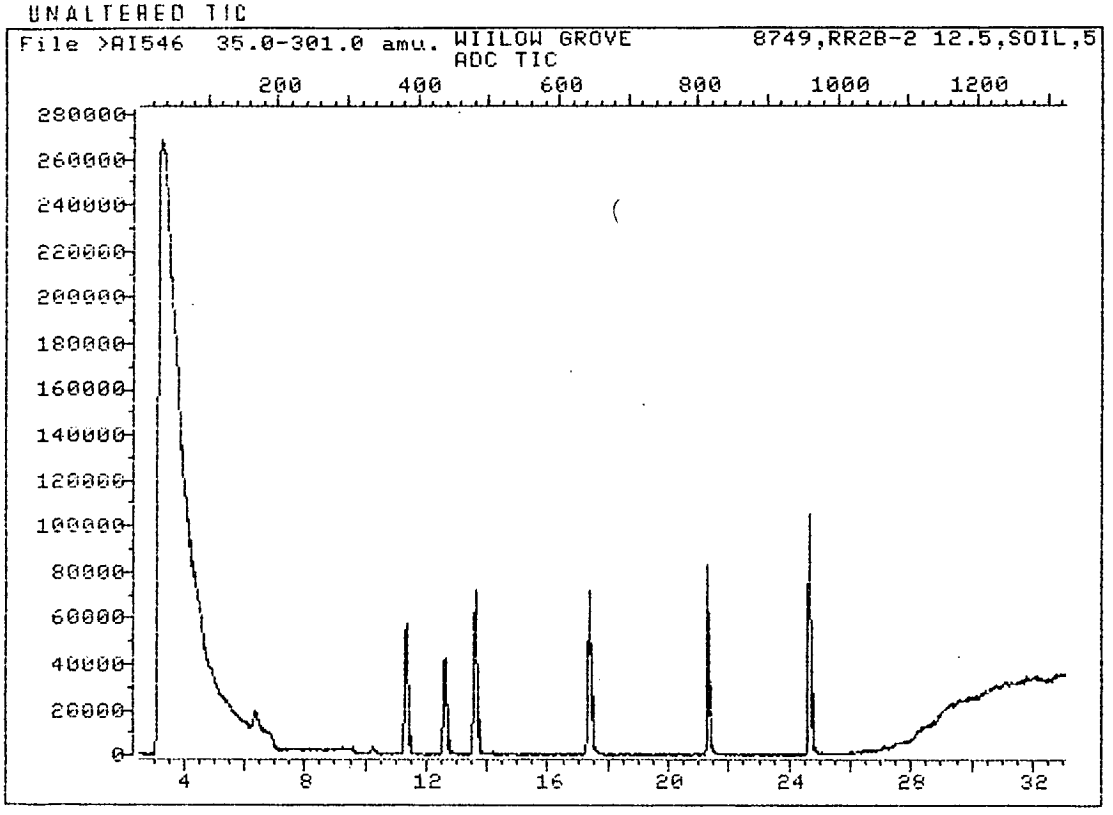
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

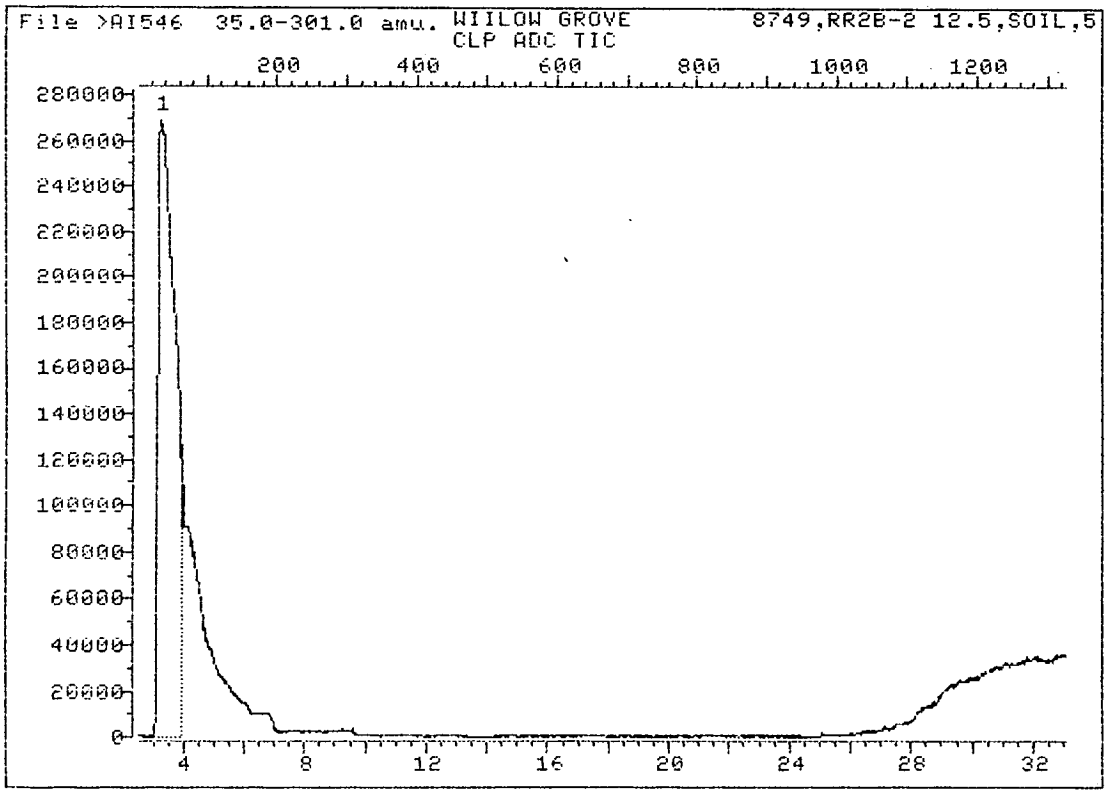
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

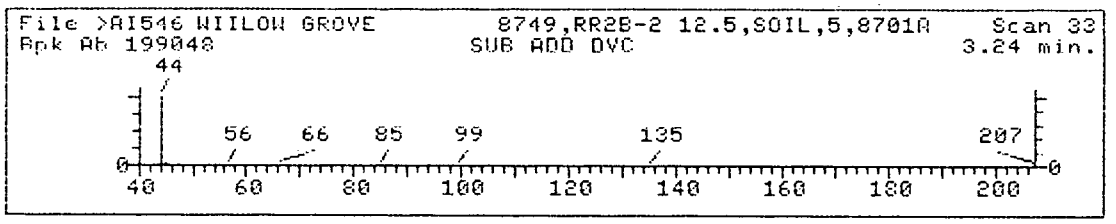
6:38 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS#124-38-9
06-25-91

Retention time = 3.24

Area = .10E+08 Tentative Concentration is 1300.00

Sample file: >AI546 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI546::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 17:55
Misc:8749,RR2B-2 12.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.24	10410692	40872

>AI546 WIILOW GROVE 8749,RR2B-2 12.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 1 Bunching: -1
Onslope: 0.00 Results File IAI546 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	33	100	268150	14338444	14245616	100.00	100.000

Sum of corrected areas: 14245616.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-3_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8750

Sample wt/vol: 5 (g/ml) G Lab File ID: AI547

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 11 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	7	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~
2/88
10-9-91

300080

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-3_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8750

Sample wt/vol: 5 (g/ml) G Lab File ID: AI547

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 11 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

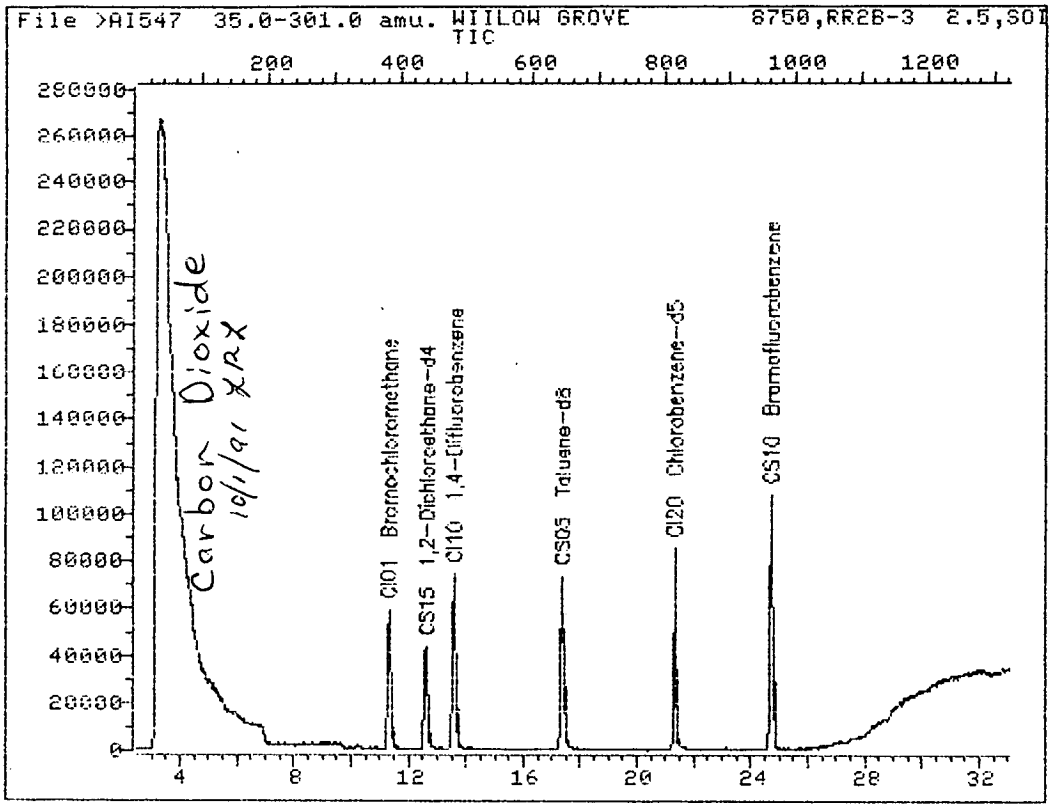
Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88
Q10-7.Y

TOTAL ION CHROMATOGRAM



Data File: >AI547::D4 Quant Output File: ^AI547::QT
Name: WILLOW GROVE
Misc: 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH

Id File: CCAS::RO
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 19:12
Injected at: 910919 18:38

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 19:12
Output File: ^AI547::D4 Injected at: 910919 18:38
Data File: >AI547::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH

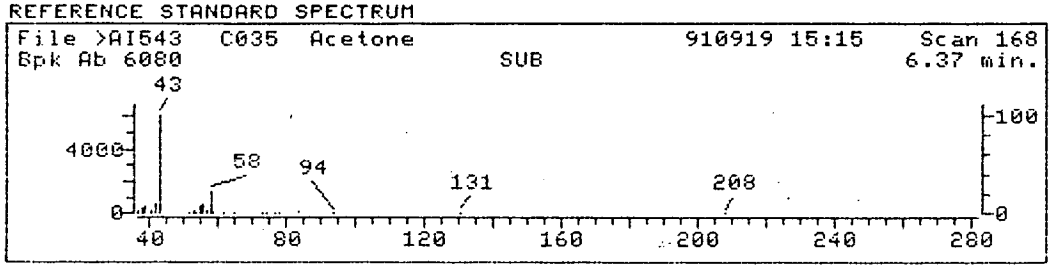
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	51254	50.00	UG/KG	78
9)	C035	Acetone	6.36	43.0	5350	5.46	UG/KG	80
20)	C110	2-Butanone	10.24	72.0	1282	5.80	UG/KG	77
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	132364	54.25	UG/KG 108%	82
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	193678	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.28	117.0	160104	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.34	98.0	178071	49.92	UG/KG 100%	99
57)	CS10	Bromofluorobenzene	24.67	95.0	144970	50.01	UG/KG 100%	97

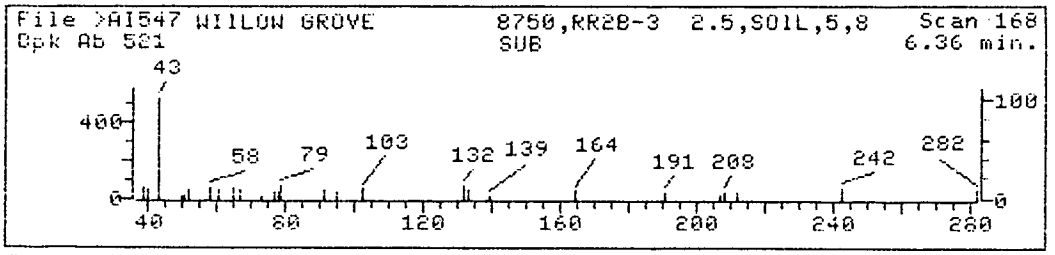
* Compound is ISTD

05-25-91

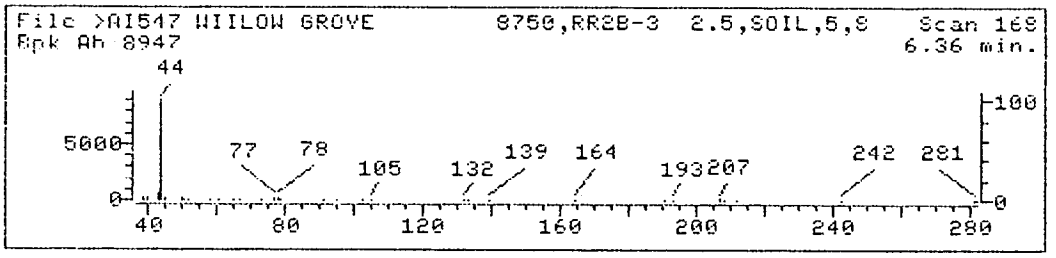
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



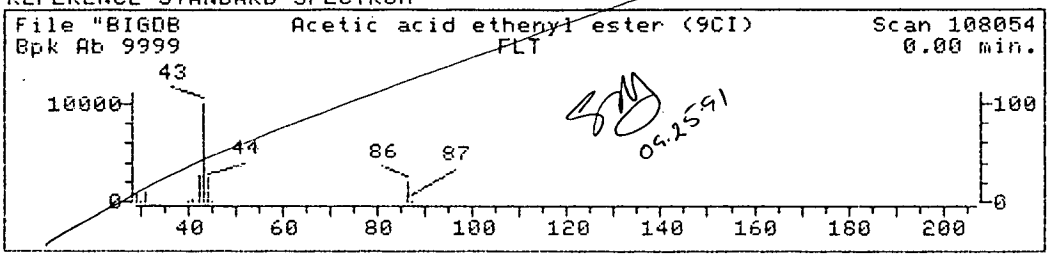
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI547::D4 Quant Output File: ^AI547::QT
Name: WILLOW GROVE
Misc: 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH
Quant Time: 910919 19:12 Quant ID File: CCAS::RD
Injected at: 910919 18:38 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 168
Retention Time: 6.36 min.
Quant Ion: 43.0
Area: 5350
Concentration: 5.46 UG/KG
q-value: 80

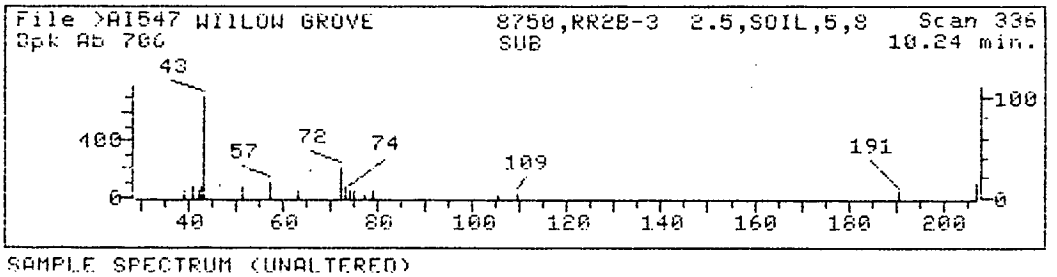
REFERENCE STANDARD SPECTRUM



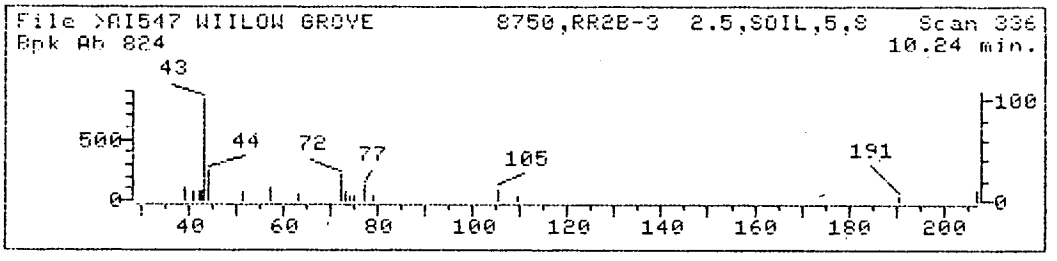
INCORRECT REFERENCE SPECTRUM IN FILE HAS BEEN UPDATED

ACTUAL HIT OF 2-BUTANONE

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI547::D4 Quant Output File: ^AI547::QT
Name: WILLOW GROVE
Misc: 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH
Quant Time: 910919 19:12 Quant ID File: CCAS::8D
Injected at: 910919 18:38 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 1282
Concentration: 5.80 UG/KG
q-value: 77

>AI547 WILLOW GROVE 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 41109. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI547 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.95	20	33	82	266503	12009486	11985366	100.00	100.000

Sum of corrected areas: 11985366.

Summary of PBM Library Search and Quantitation on file :>AI547::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	411085.	11.30	2.51 - 12.44
2	50.0	547058.	13.58	12.44 - 17.43
3	50.0	604177.	21.28	17.43 - 33.04

CALCULATIONS

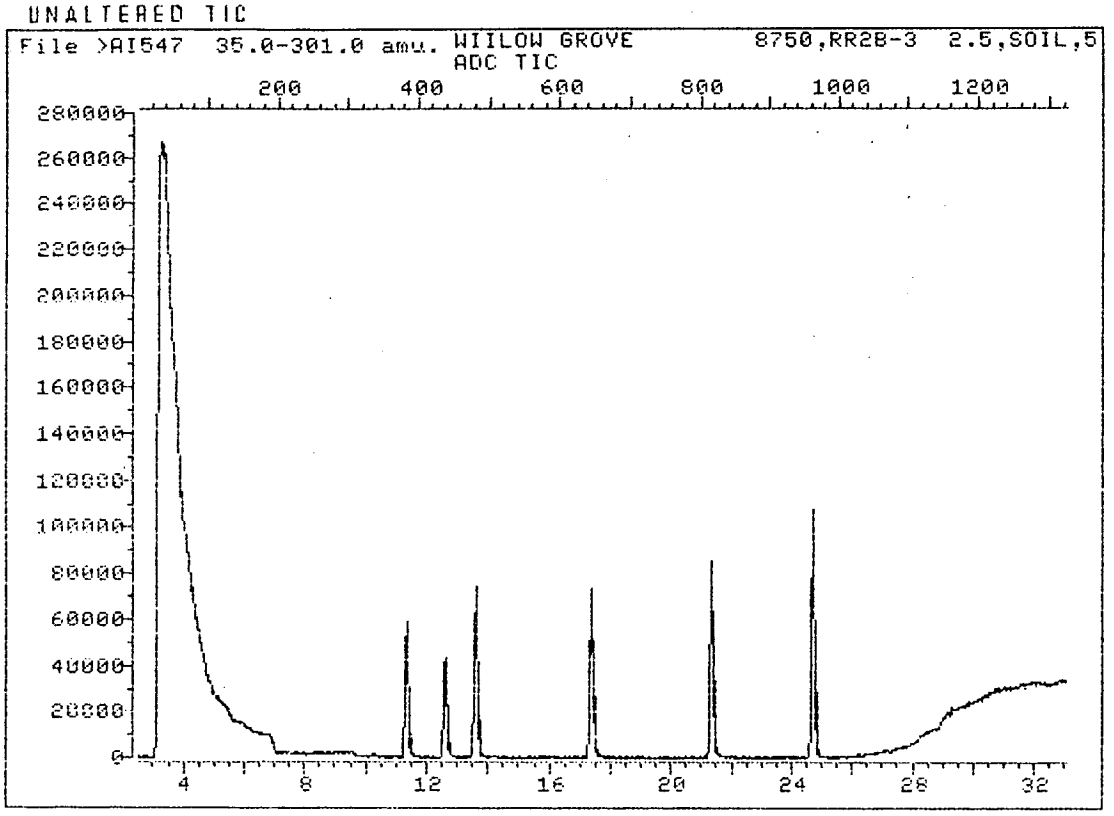
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

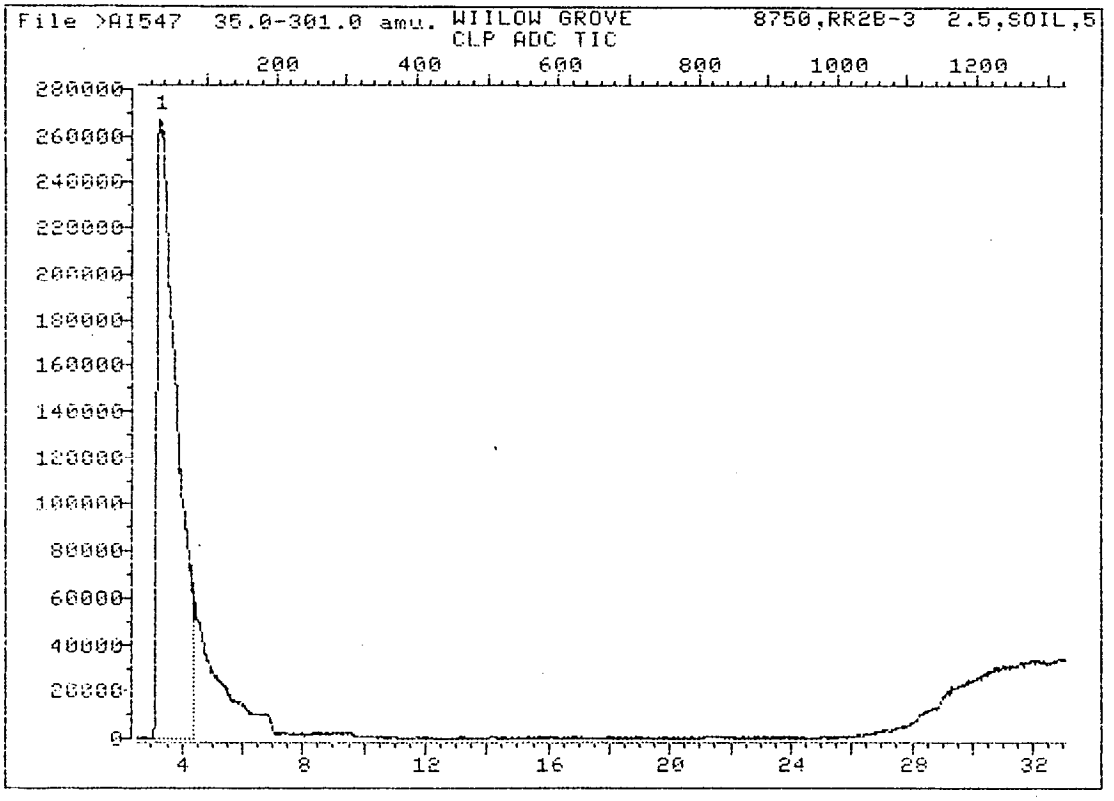
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

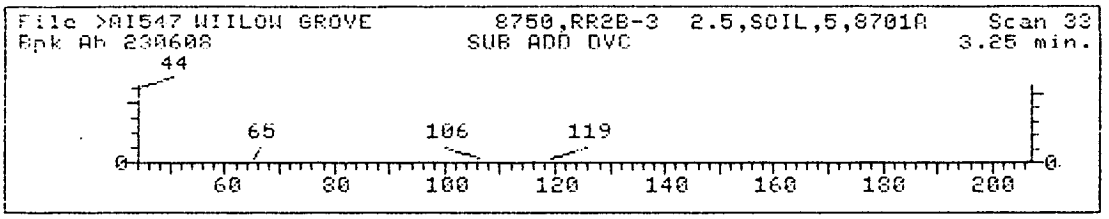
7:25 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9

01-25-91

Retention time = 3.25

Area = .12E+08 Tentative Concentration is 1500.00

Sample file: >AI547 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI547::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 18:38
Misc:8750,RR2B-3 2.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.25	11985366	41109

>AI547 WIILOW GROVE 8750,RR2B-3 2.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 2 Bunching: -1
Onslope: 0.00 Results File IAI547 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	20	33	108	266503	13528398	13427990	100.00	94.885
2	24.67	952	962	973	107692	744209	723861	5.39	5.115

Sum of corrected areas: 14151852.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-3_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8751

Sample wt/vol: 5 (g/ml) G Lab File ID: AI548

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~ 2/88

300091

Q 10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-3_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8751

Sample wt/vol: 5 (g/ml) G Lab File ID: AI548

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~ No Volatiles detected	~~28.49~~	~~6~~	~~B~~

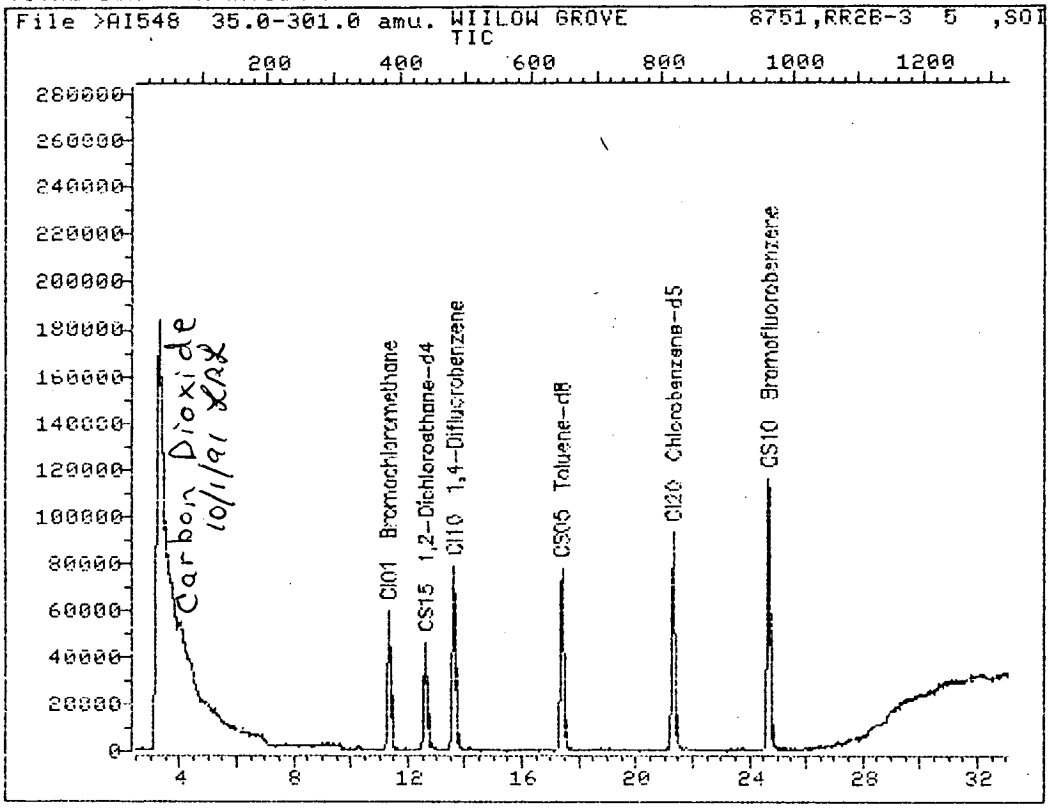
10-8-91

FORM I VOA-TIC

~~3/90~~
2/98

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI548::D4 Quant Output File: ^AI548::QT
Name: WIILOW GROVE
Misc: 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH

Id File: CCAS::RD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 19:54
Injected at: 910919 19:20

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 19:54
Output File: ^AI548::D4 Injected at: 910919 19:20
Data File: >AI548::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH

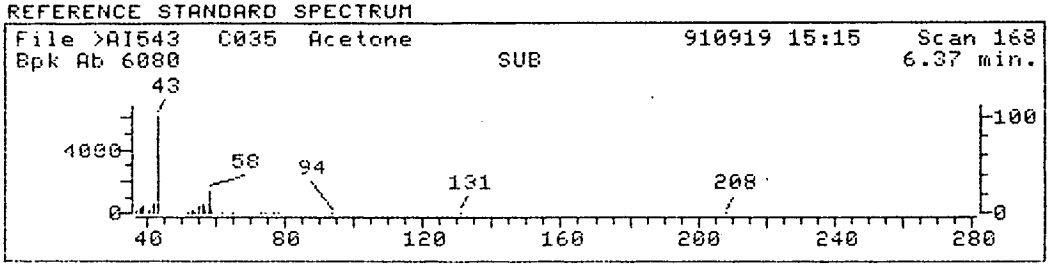
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	52780	50.00	UG/KG	83
9)	C035	Acetone	6.35	43.0	5559	5.51	UG/KG	79
20)	C110	2-Butanone	10.23	72.0	1218	5.35	UG/KG	82
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	138033	54.94	UG/KG 110%	83
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	202790	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.29	117.0	168957	50.00	UG/KG	97
48)	CS05	Toluene-d8	17.35	98.0	185063	49.16	UG/KG 98%	98
57)	CS10	Bromofluorobenzene	24.66	95.0	154943	50.65	UG/KG 101%	94

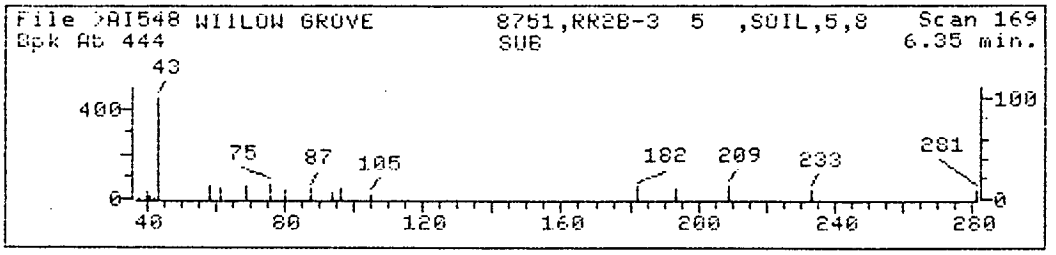
* Compound is ISTD

09-25-91

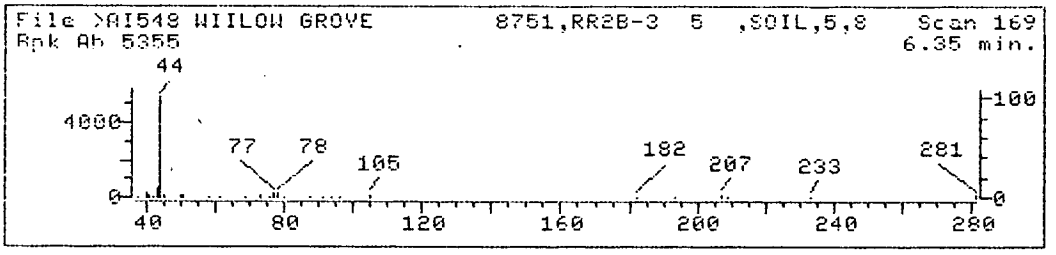
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



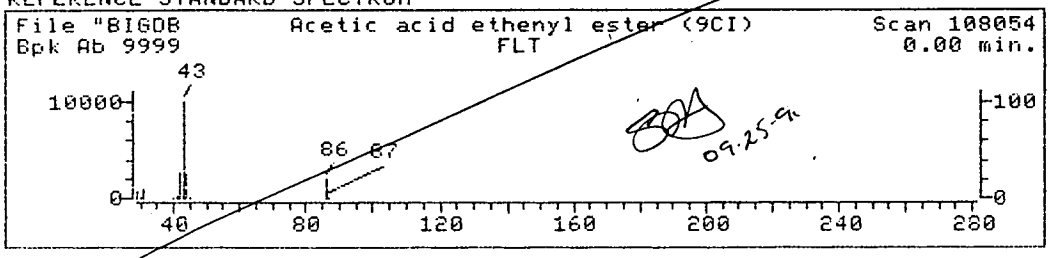
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI548::D4 Quant Output File: ^AI548::QT
Name: WILLOW GROVE
Misc: 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH
Quant Time: 910919 19:54 Quant ID File: CCAS::AD
Injected at: 910919 19:20 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.35 min.
Quant Ion: 43.0
Area: 5559
Concentration: 5.51 UG/KG
q-value: 79

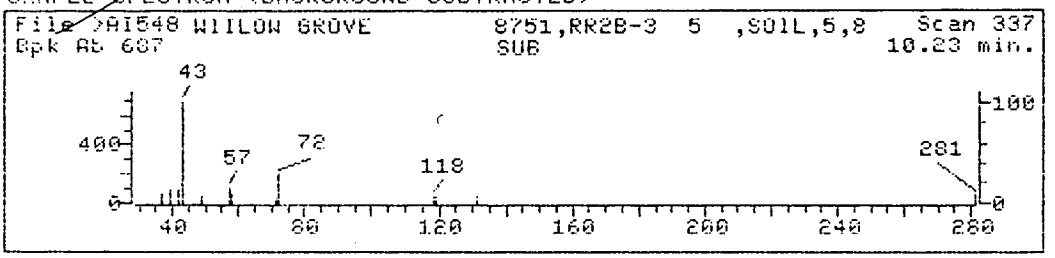
REFERENCE STANDARD SPECTRUM



09.25.91

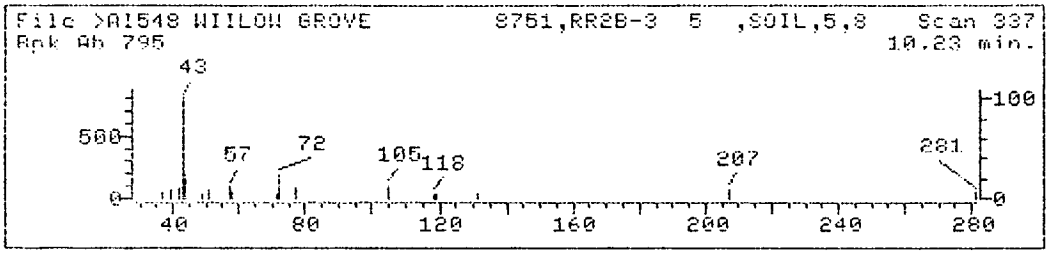
INCORRECT REFERENCE SPECTRUM TO FILE HAS BEEN UPDATED

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OF 2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



09.28.91

Data File: >AI548::D4 Quant Output File: ^AI548::QT
Name: WILLOW GROVE
Misc: 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH
Quant Time: 910919 19:54 Quant ID File: CCAS::RD
Injected at: 910919 19:20 Last Calibration: 910919 15:59

Compound No: 70
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 1218
Concentration: 5.35 UG/KG
q-value: 82

>AI548 WILLOW GROVE 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 42740. Max Peaks: 2 * Bunching: -1
Dnslope: 0.00 Results File IAI548 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	35	52	183560	3638960	3618420	100.00	98.152
2	28.49	1114	1129	1130	4527	228399	68127	1.88	1.848

Sum of corrected areas: 3686547.

Summary of PBM Library Search and Quantitation on file :>AI548::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	427396.	11.29	2.47 - 12.44
2	50.0	583173.	13.99	12.44 - 17.44
3	50.0	627437.	21.29	17.44 - 33.05

CALCULATIONS

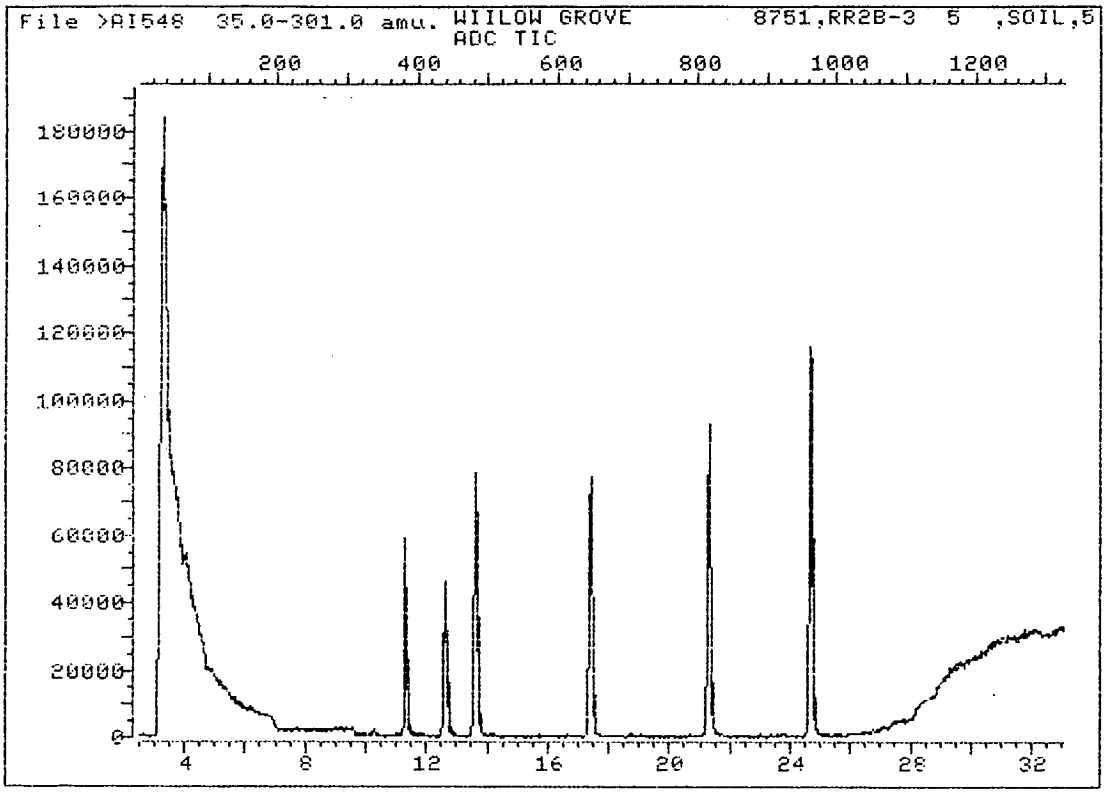
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

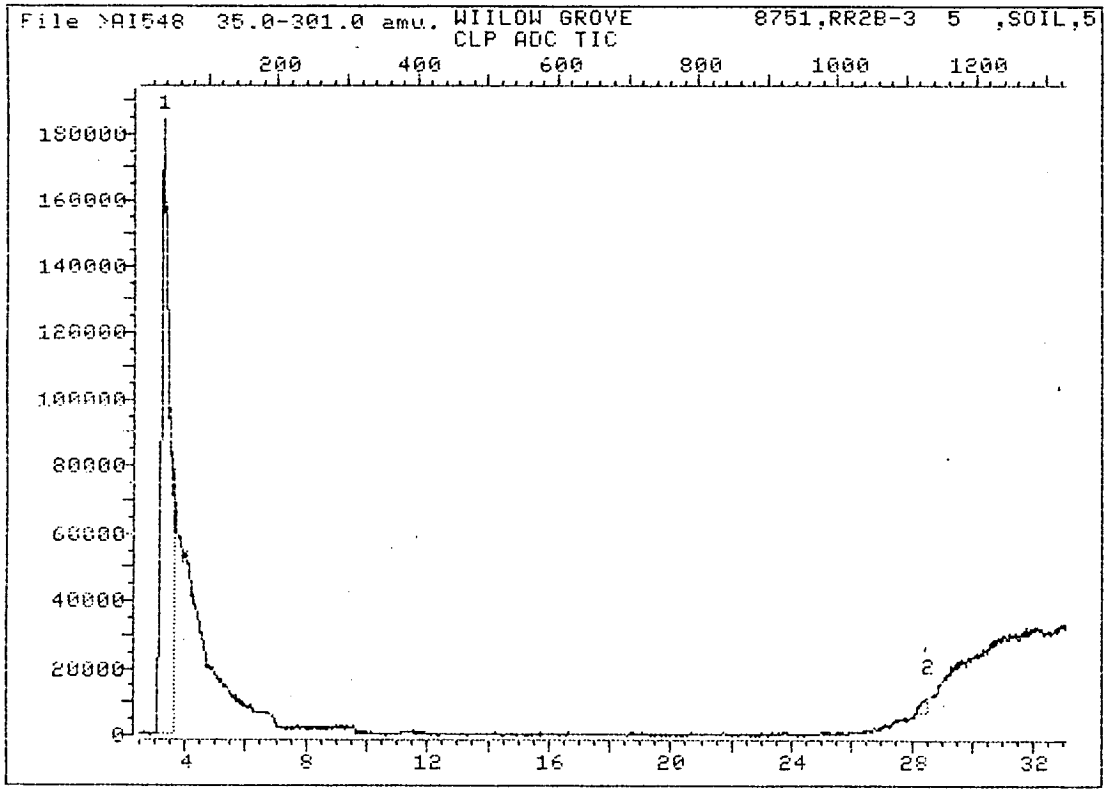
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

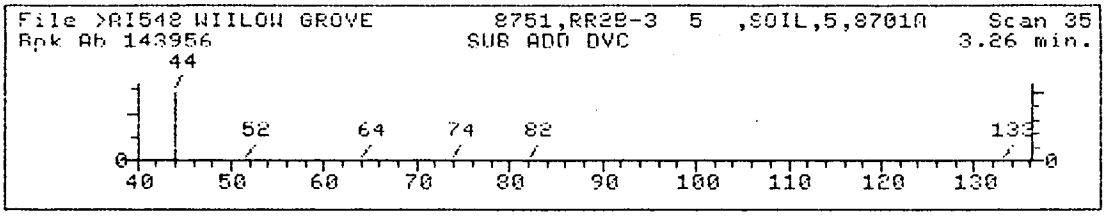
8:08 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DISULFIDE
CAS #124-38-9

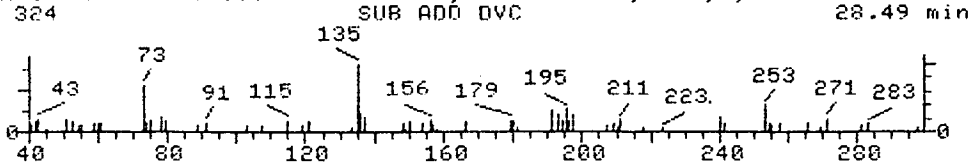
Retention time = 3.26

Area = 3618420. Tentative Concentration is 420.00

Sample file: >AI548 Spectrum #: 35

No data base entries were retrieved.

File >AI548 WILLOW GROVE 8751,RR2B-3 5 ,SOIL,5,8701A Scan 1129
Bpk Ab 324 SUB ADD DVC 28.49 min.



UNKNOWN

07-15-91

column bleed
6/10-8-91

Retention time = 28.49

Area = 68127.00 Tentative Concentration is 5.00

Sample file: >AI548 Spectrum #: 1129

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI548::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 19:20
Misc:8751,RR2B-3 5 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	3618420	42740
2	28.49	68127	62744

>AI548 WIILOW GROVE 8751,RR2B-3 5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI548 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	35	63	183560	4654621	4607804	100.00	58.039
2	11.29	376	383	398	58906	453410	427396	9.28	5.383
3	12.60	430	440	453	45792	359395	337756	7.33	4.254
4	13.59	470	483	494	78329	606788	583173	12.66	7.346
5	17.35	636	646	664	77416	596968	575738	12.49	7.252
6	21.29	806	817	833	92573	662336	627437	13.62	7.903
7	24.66	956	963	978	115581	804040	779799	16.92	9.822

Sum of corrected areas: 7939103.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-3_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8752

Sample wt/vol: 5 (g/ml) G Lab File ID: AI549

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

~~3/90~~ 2/88

300103

Q 10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-3_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8752

Sample wt/vol: 5 (g/ml) G Lab File ID: AI549

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

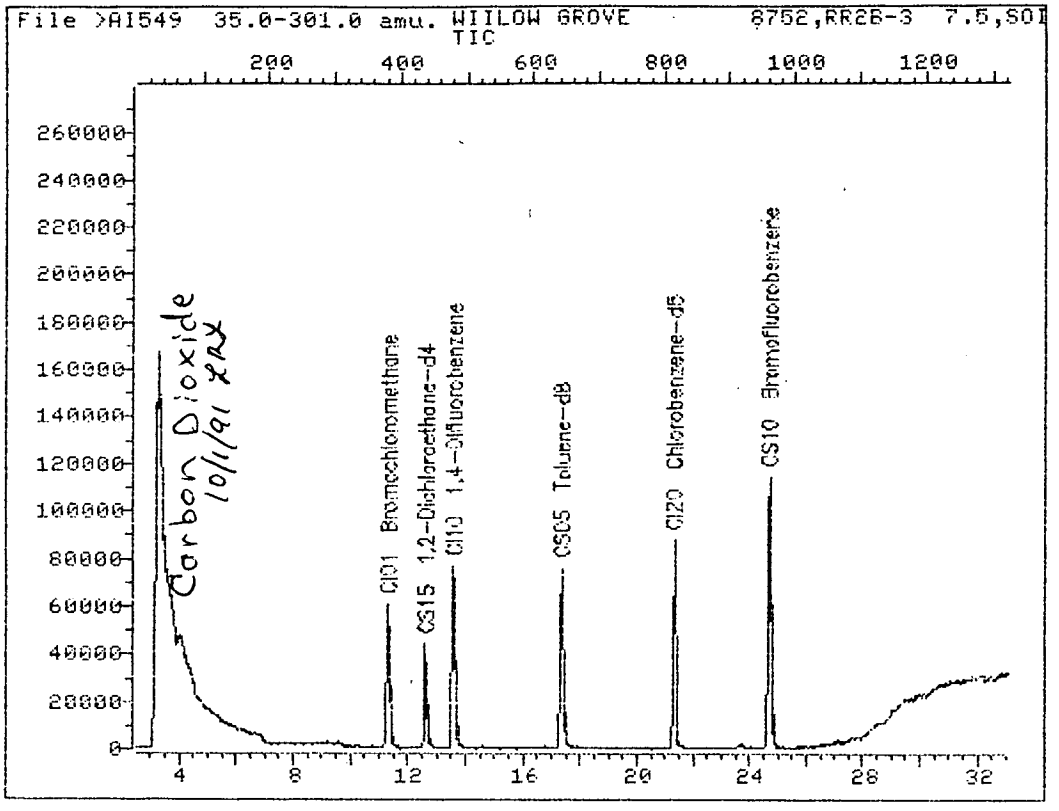
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88

W/D.F.9/

TOTAL ION CHROMATOGRAM



Data File: >AI549::D4 Quant Output File: ^AI549::QT
Name: WILLOW GROVE
Misc: 8752,RR2B-3 7.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 20:37
Injected at: 910919 20:03

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 20:37
Output File: ^AI549::D4 Injected at: 910919 20:03
Data File: >AI549::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8752,RR2B-3 7.5,SOIL,5,8701A1,SPH

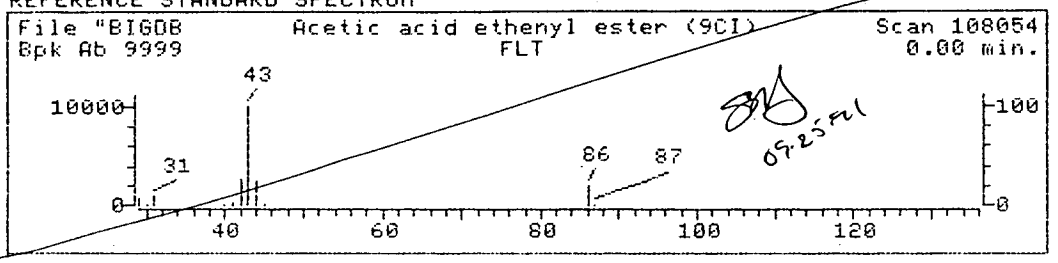
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	53234	50.00	UG/KG	82
20)	CI10	2-Butanone	10.22	72.0	1247	5.43	UG/KG	95
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	135708	53.55	UG/KG 107%	82
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	196921	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.28	117.0	163301	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.34	98.0	181172	49.79	UG/KG 100%	98
57)	CS10	Bromofluorobenzene	24.67	95.0	150531	50.92	UG/KG 102%	98

* Compound is ISTD

05-25-91

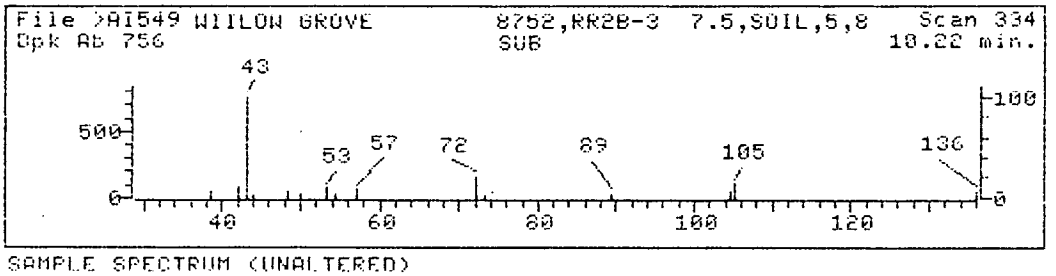
REFERENCE STANDARD SPECTRUM



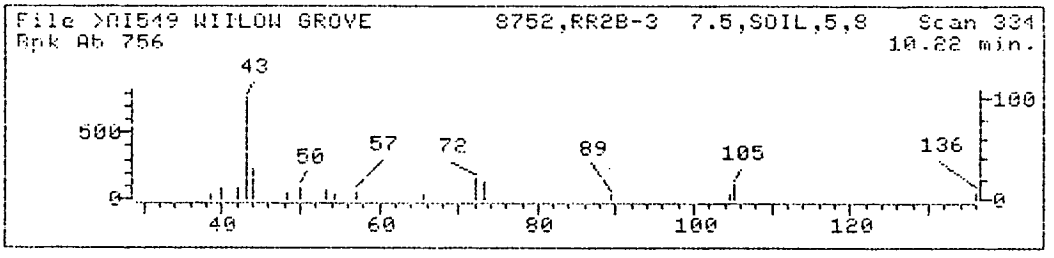
INCORRECT REFERENCE SPECTRUM. ID FILE HAS BEEN UPDATED

ACTUAL HIT IS 2-BUTANONE

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



09-25-91

Data File: >AI549::D4 Quant Output File: ^AI549::QT
Name: WILLOW GROVE
Misc: 8752,RR2B-3 7.5,SOIL,5,8701A1,SPH
Quant Time: 910919 20:37 Quant ID File: CCAS::RD
Injected at: 910919 20:03 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 334
Retention Time: 10.22 min.
Quant Ion: 72.0
Area: 1247
Concentration: 5.43 UG/KG
q-value: 95

>AI549 WILLOW GROVE 8752,RR2B-3 7.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 43787. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI549 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	19	32	63	166623	4261511	4227780	100.00	100.000

Sum of corrected areas: 4227780.

Summary of PRM Library Search and Quantitation on file :>AI549::04

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	432873.	11.30	2.53 - 12.44
2	50.0	576118.	13.58	12.44 - 17.43
3	50.0	609657.	21.28	17.43 - 33.06

CALCULATIONS

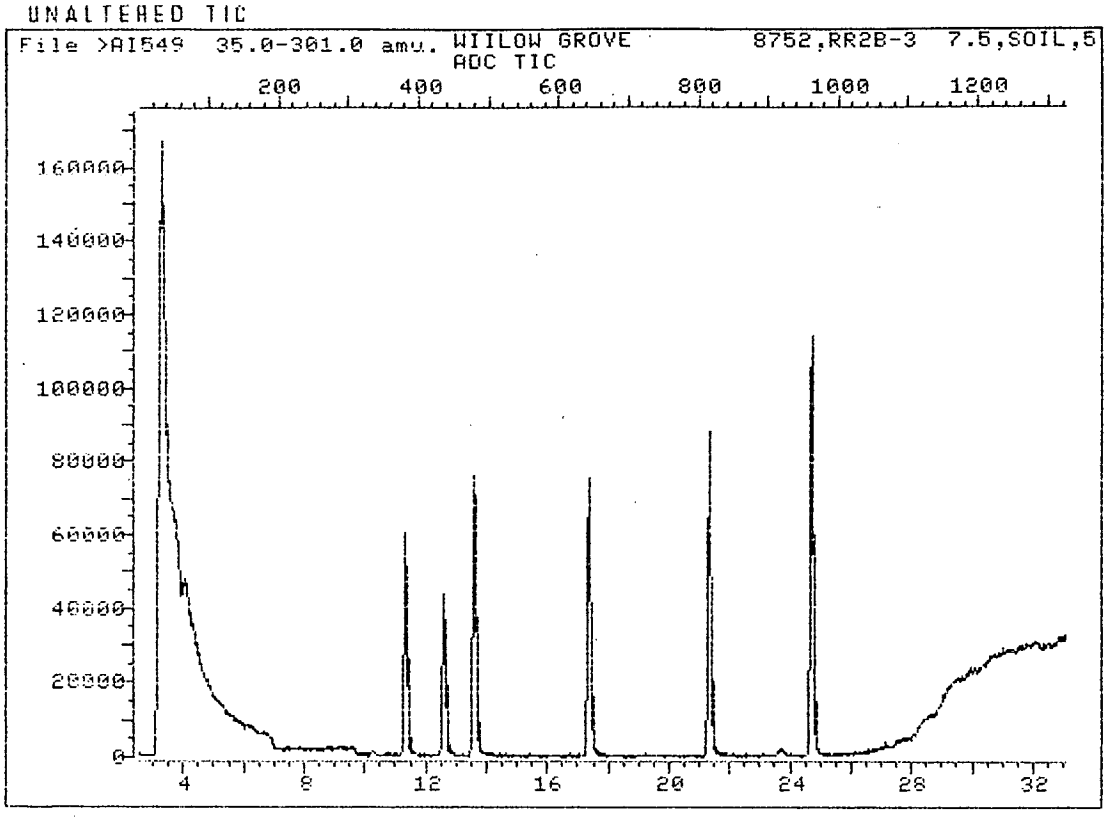
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

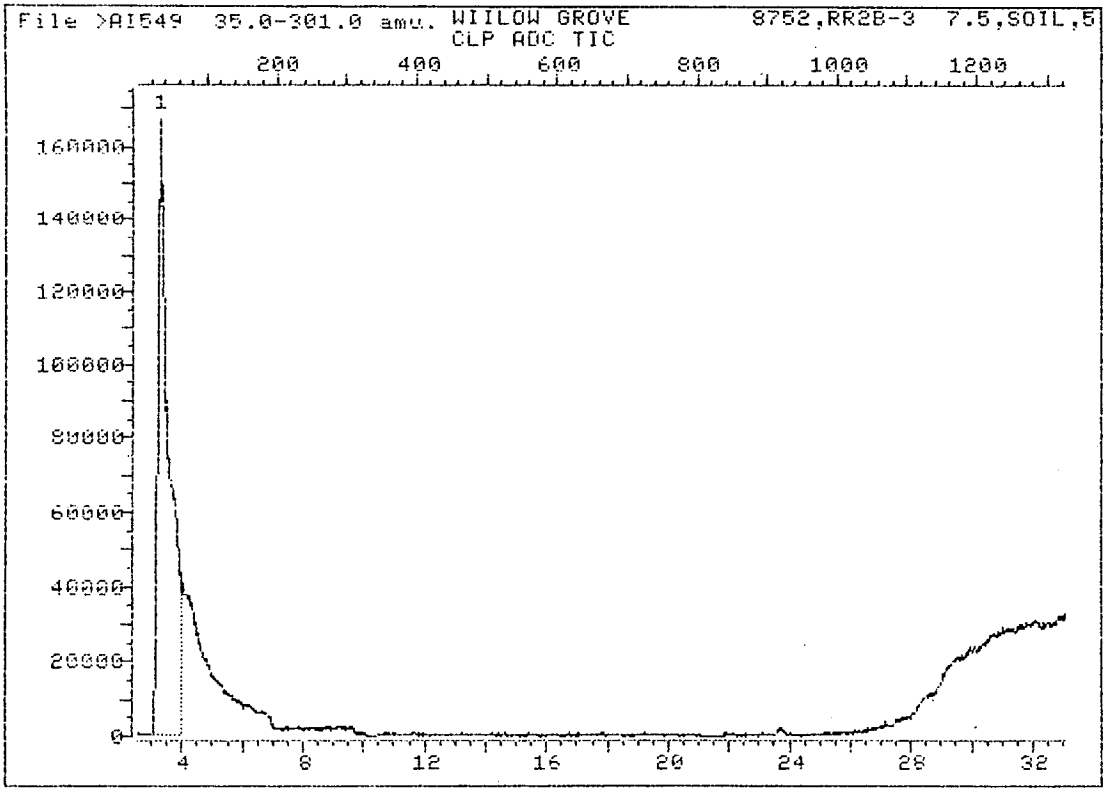
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

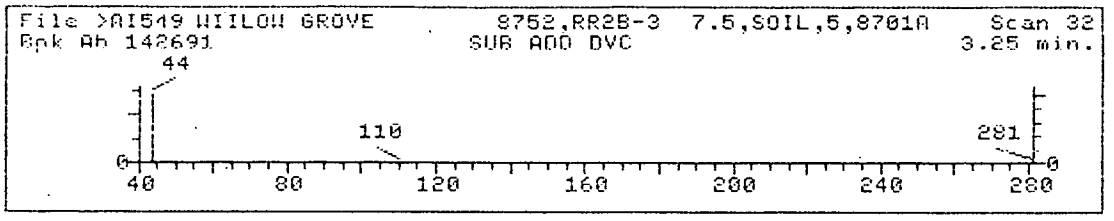
8:47 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS#124-38-9

05-25-91

Retention time = 3.25

Area = 4227780, Tentative Concentration is 480.00

Sample file: >AI549 Spectrum #: 32

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI549::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 20:03
Misc:8752,RR2B-3 7.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.95	4227780	43787

>AI549 WIILOW GROVE 8752,RR2B-3 7.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI549 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	19	32	60	166623	4115102	4063701	100.00	55.601
2	11.30	373	381	402	60409	458500	437873	10.78	5.991
3	12.61	428	438	447	43594	340099	319669	7.87	4.374
4	13.58	473	480	496	76129	595027	576118	14.18	7.883
5	17.34	635	643	653	75514	565926	547562	13.47	7.492
6	21.31	805	815	826	87895	629767	609657	15.00	8.342
7	24.67	954	961	980	113887	785838	754099	18.56	10.318

Sum of corrected areas: 7308679.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-3_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8753

Sample wt/vol: 5 (g/ml) G Lab File ID: AI550

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	8	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

~~3/90~~
2/88

30113

(4)10.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-3_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8753

Sample wt/vol: 5 (g/ml) G Lab File ID: AI550

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

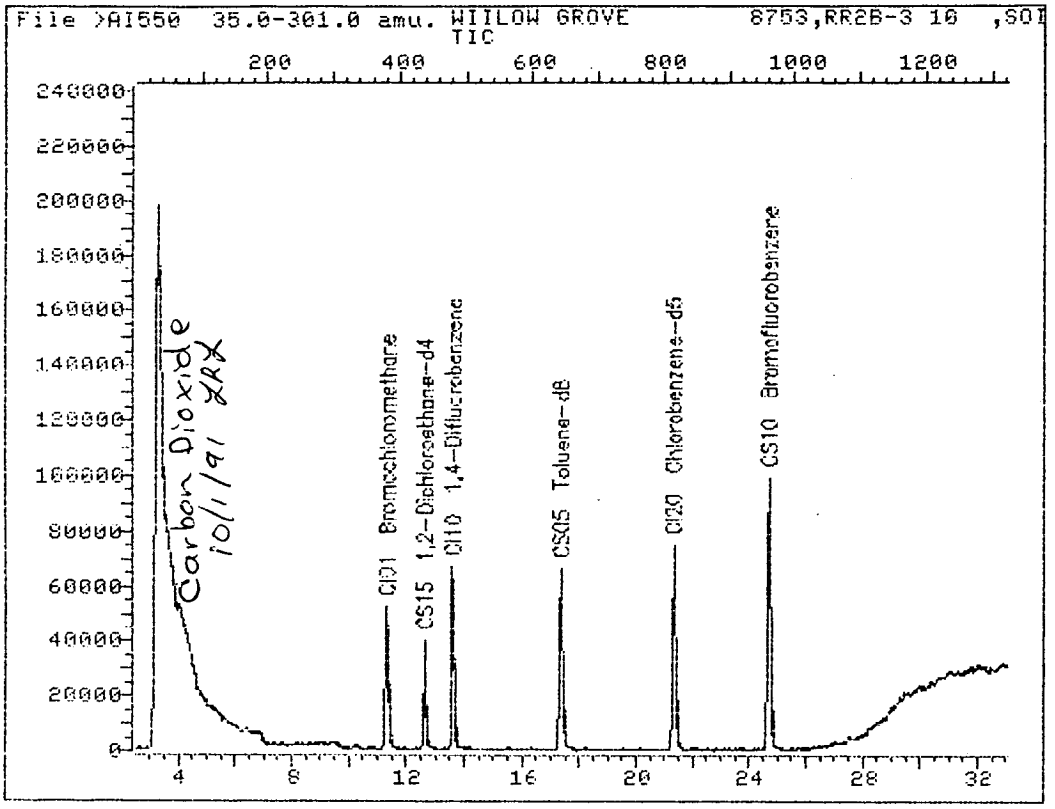
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88

9/09-91

TOTAL ION CHROMATOGRAM



Data File: >AI550::D4 Quant Output File: ^AI550::QT
Name: WILLOW GROVE
Misc: 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH

Id File: CCAS::RO
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 21:19
Injected at: 910919 20:45

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 21:19
Output File: ^AI550::D4 Injected at: 910919 20:45
Data File: >AI550::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH

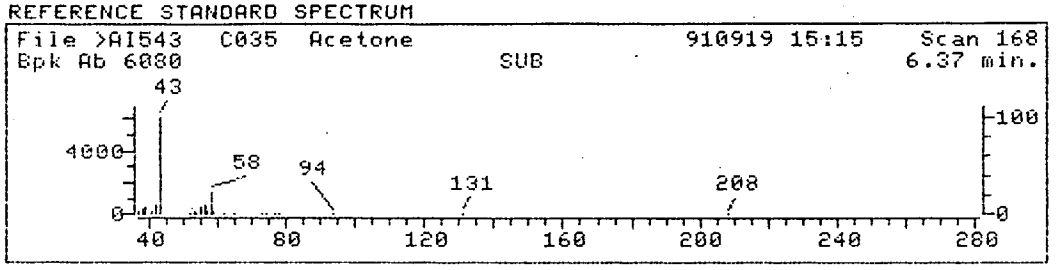
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	44619	50.00	UG/KG	79
9)	C035	Acetone	6.34	43.0	6515	7.64	UG/KG	77
20)	C110	2-Butanone	10.24	72.0	1246	6.48	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	117748	55.44	UG/KG 111%	81
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	171228	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.28	117.0	140418	50.00	UG/KG	96
48)	CS05	Toluene-d8	17.34	98.0	156921	50.16	UG/KG 106%	97
57)	CS10	Bromofluorobenzene	24.67	95.0	128965	50.73	UG/KG 102%	99

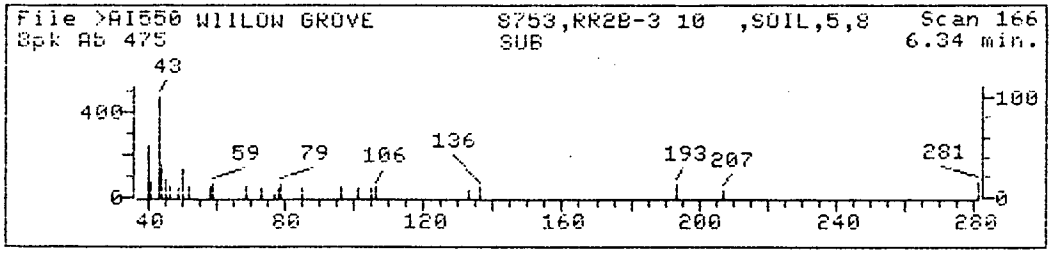
* Compound is ISTD

09-25-91

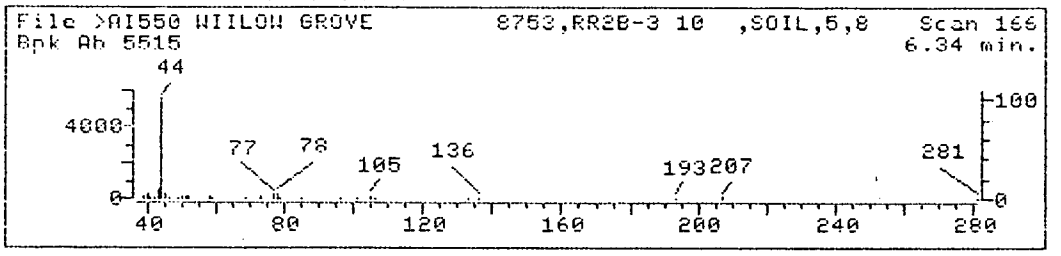
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



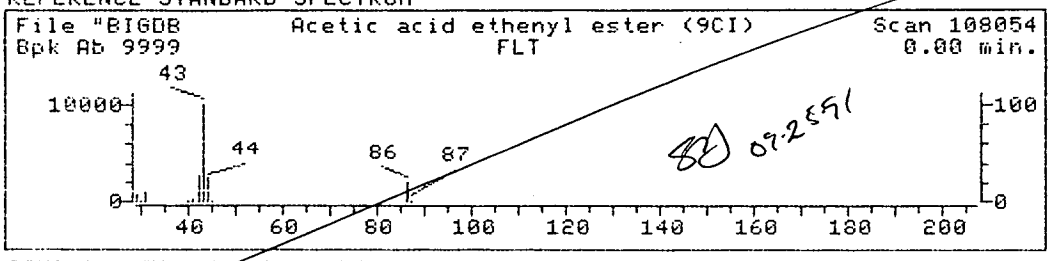
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI550::D4 Quant Output File: ^AI550::QT
Name: WILLOW GROVE
Misc: 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH
Quant Time: 910919 21:19 Quant ID File: CCAS::BD
Injected at: 910919 20:45 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 166
Retention Time: 6.34 min.
Quant Ion: 43.0
Area: 6515
Concentration: 7.64 UG/KG
q-value: 77

REFERENCE STANDARD SPECTRUM

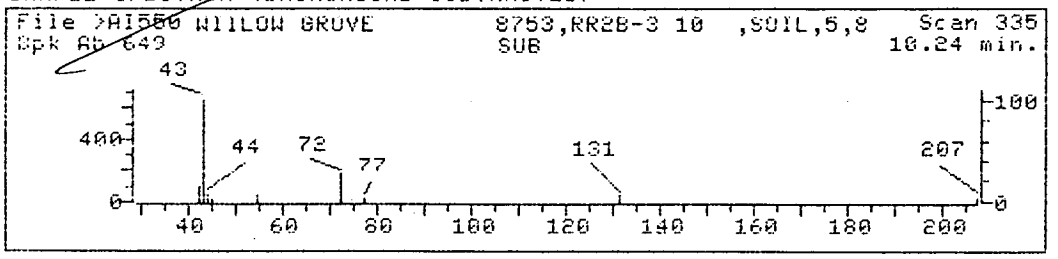


09.25.91

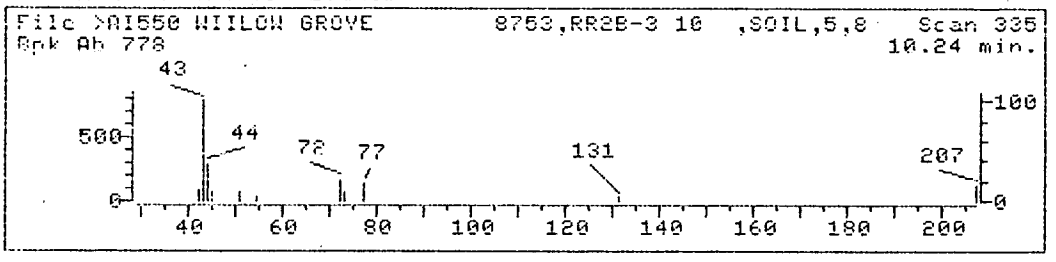
THIS CURRENT REFERENCE SPECTRUM IN FILE HAS BEEN UPDATED

ACTUAL HIT OF 2-BUTANONE

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



09.25.91

Data File: >AI550::D4 Quant Output File: ^AI550::QT
Name: WILLOW GROVE
Misc: 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH
Quant Time: 910919 21:19 Quant ID File: CCAS::BD
Injected at: 910919 20:45 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 335
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 1246
Concentration: 6.48 UG/KG
q-value: 88

>AI550 WILLOW GROVE 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 36124. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI550 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	21	32	41	197256	4799271	4769829	100.00	99.026
2	28.38	1111	1122	1123	4085	147741	46906	.98	.974

Sum of corrected areas: 4816735.

Summary of PBM Library Search and Quantitation on file :>AI550::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	361241.	11.30	2.53 - 12.44
2	50.0	508254.	13.58	12.44 - 17.43
3	50.0	527336.	21.28	17.43 - 33.04

CALCULATIONS

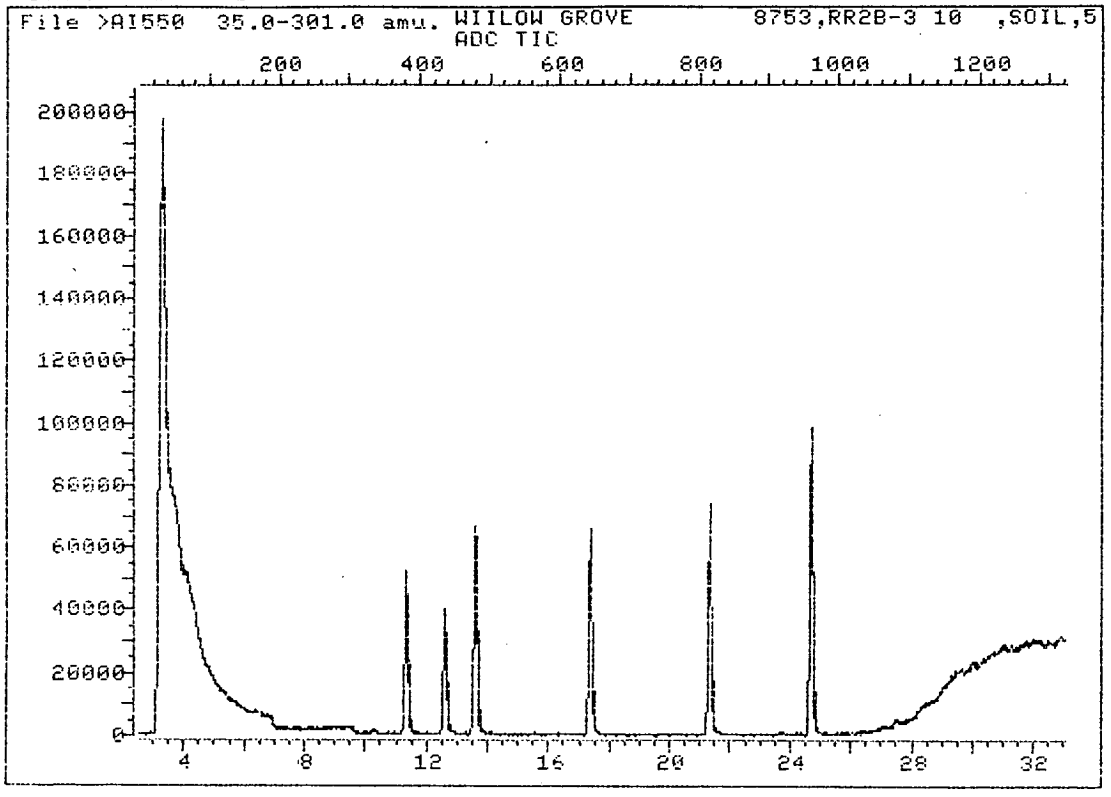
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

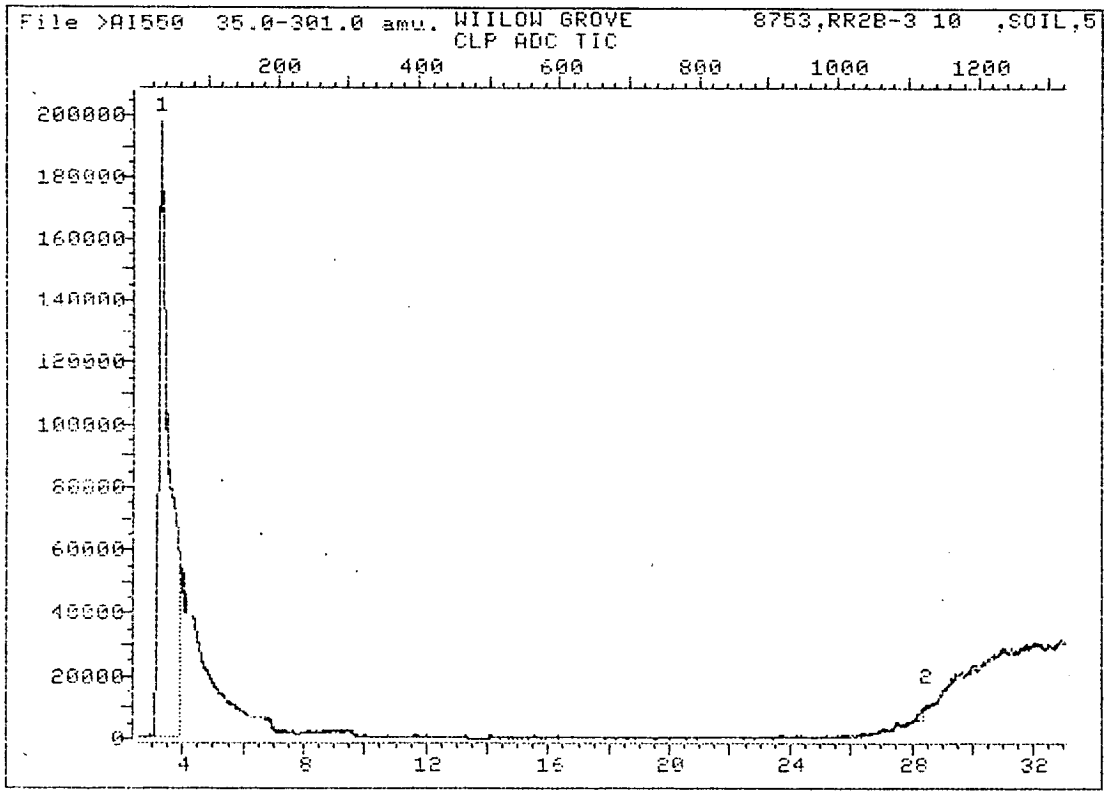
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

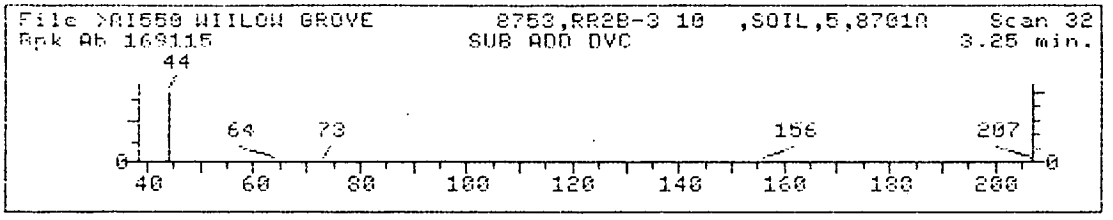
9:37 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9

Retention time = 3.25

Area = 4769829. Tentative Concentration is 660.00

Sample file: >AI550 Spectrum #: 32

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI550::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 20:45
Misc:8753,RR2B-3 10 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.25	4769829	36124

>AI550 WILLOW GROVE 8753,RR2B-3 10 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Onslope: 0.00 Results File IAI550 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.95	21	32	61	197256	4814656	4769829	100.00	62.872
2	11.30	374	381	395	51873	386026	361241	7.57	4.762
3	12.61	430	438	457	39705	317746	289320	6.07	3.814
4	13.58	470	480	497	66936	528355	508254	10.66	6.699
5	17.34	634	643	659	66060	508815	487333	10.22	6.424
6	21.28	804	814	836	74274	559743	527336	11.06	6.951
7	24.67	951	961	972	98633	665260	643286	13.49	8.479

Sum of corrected areas: 7586599.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-3_12

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8754

Sample wt/vol: 5 (g/ml) G Lab File ID: AI551

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 12 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~
2/88

90.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-3_12

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8754

Sample wt/vol: 5 (g/ml) G Lab File ID: AI551

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 12 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~ No Volatiles Detected	~~28.41~~	~~6~~	~~B~~

10-8-91

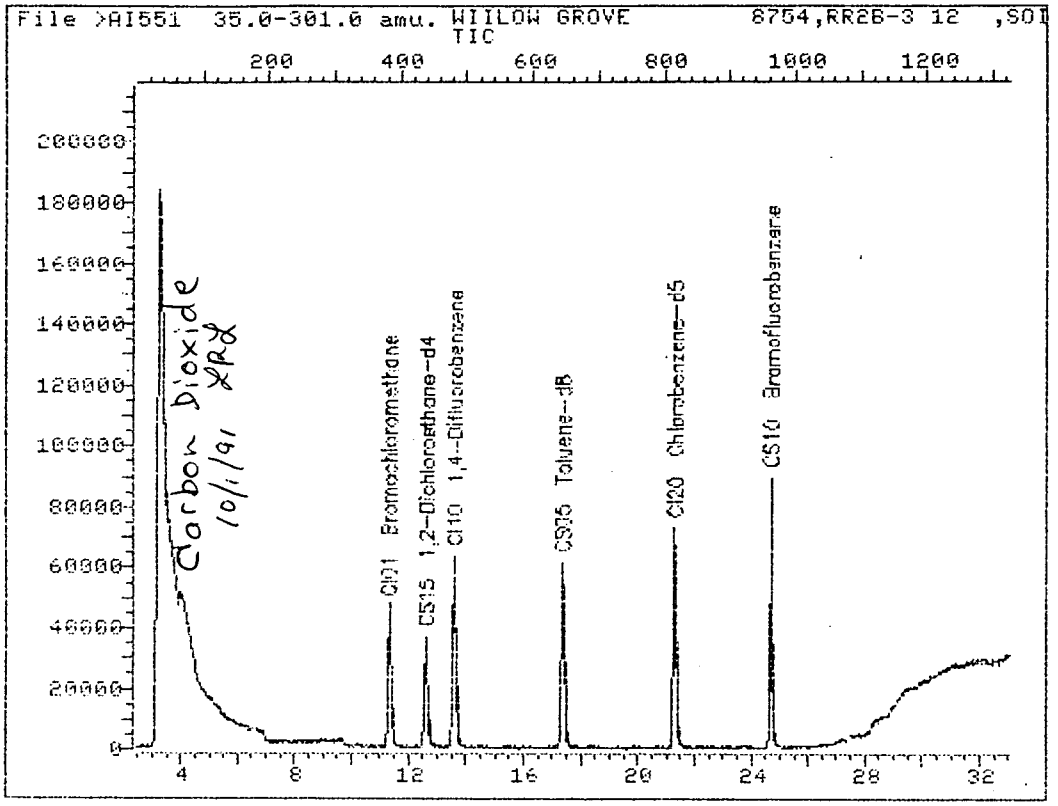
FORM I VOA-TIC

~~3/90~~
2/88

30.125

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI551::D4 Quant Output File: ^AI551::QT
Name: WILLOW GROVE
Misc: 8754,RR2B-3 12 ,SOIL,5,8701A1,SPH

Id File: CCAS::RD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 22:02
Injected at: 910919 21:28

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 22:02
Output File: ^AI551::D4 Injected at: 910919 21:28
Data File: >AI551::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8754,RR2B-3 12 ,SOIL,5,8701A1,SPH

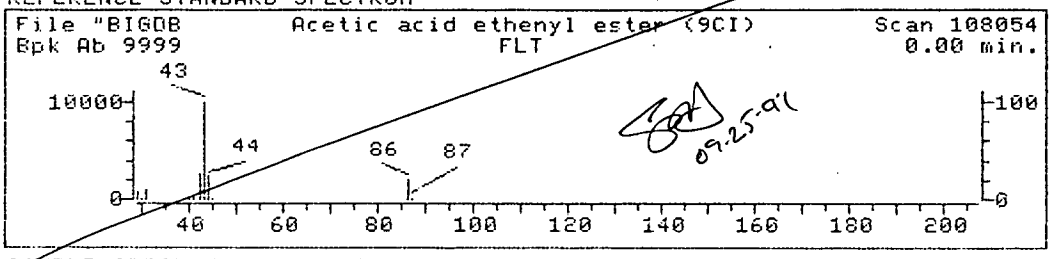
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.28	128.0	42968	50.00	UG/KG	84
20)	C110	2-Butanone	10.24	72.0	910	4.91	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	110485	54.02	UG/KG 108%	79
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	161008	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.29	117.0	130275	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.35	98.0	147304	50.75	UG/KG 102%	98
57)	CS10	Bromofluorobenzene	24.68	95.0	120872	51.25	UG/KG 102%	97

* Compound is ISTD

01-2651

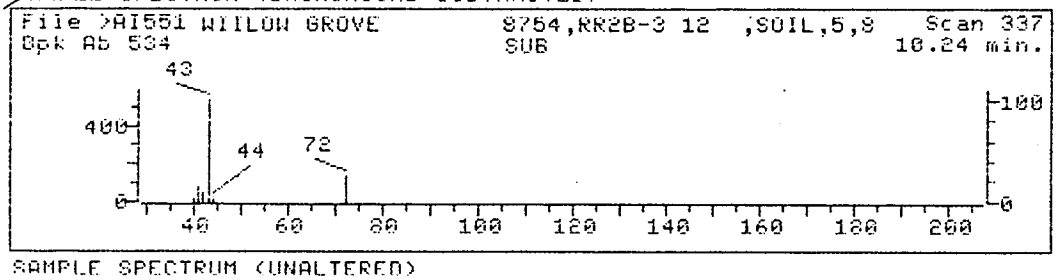
REFERENCE STANDARD SPECTRUM



09-25-91

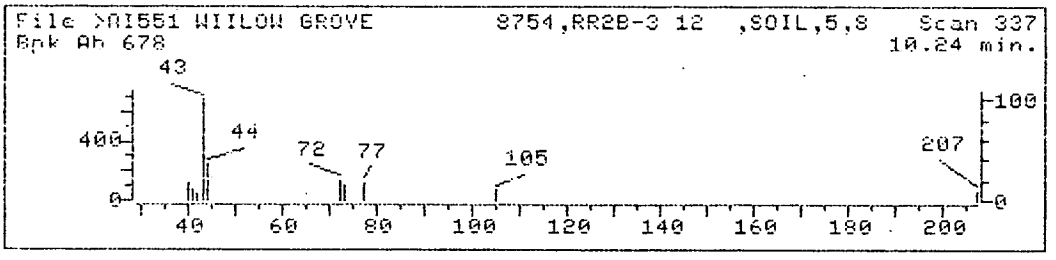
INCORRECT REFERENCE SPECTRUM TO FILE HAS BEEN UPDATED

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACETONE
HIT IF
2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



09-25-91

Data File: >AI551::D4 Quant Output File: ^AI551::QT
Name: WILLOW GROVE
Misc: 8754,RR2B-3 12 ,SOIL,5,8701A1,SPH
Quant Time: 910919 22:02 Quant ID File: CCAS::BD
Injected at: 910919 21:28 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 910
Concentration: 4.91 UG/KG
q-value: 88

>AI551 WILLOW GROVE 8754,RR2B-3 12 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 34585. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI551 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.23	20	33	61	183164	4323985	4305497	100.00	98.792
2	28.41	1112	1125	1127	3913	178604	52656	1.22	1.208

Sum of corrected areas: 4358153.

Summary of PBM Library Search and Quantitation on file :>AI551::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	345848.	11.28	2.49 - 12.43
2	50.0	475631.	13.59	12.43 - 17.44
3	50.0	491826.	21.29	17.44 - 33.04

CALCULATIONS

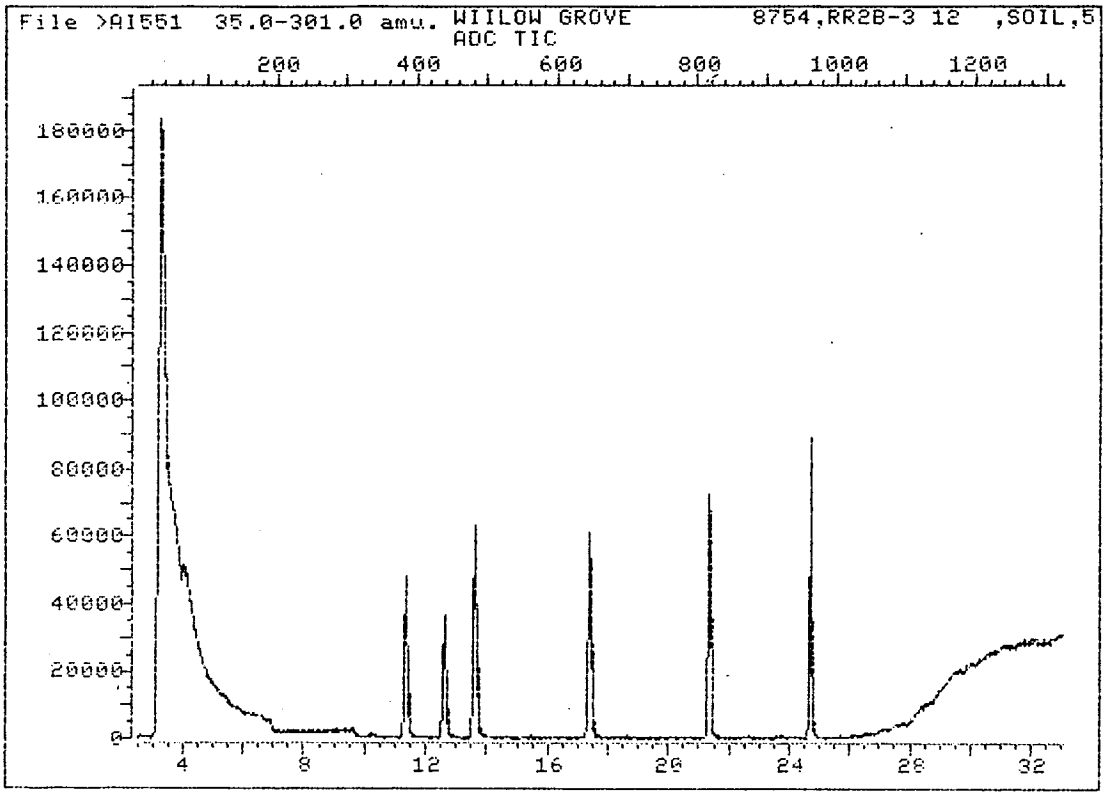
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

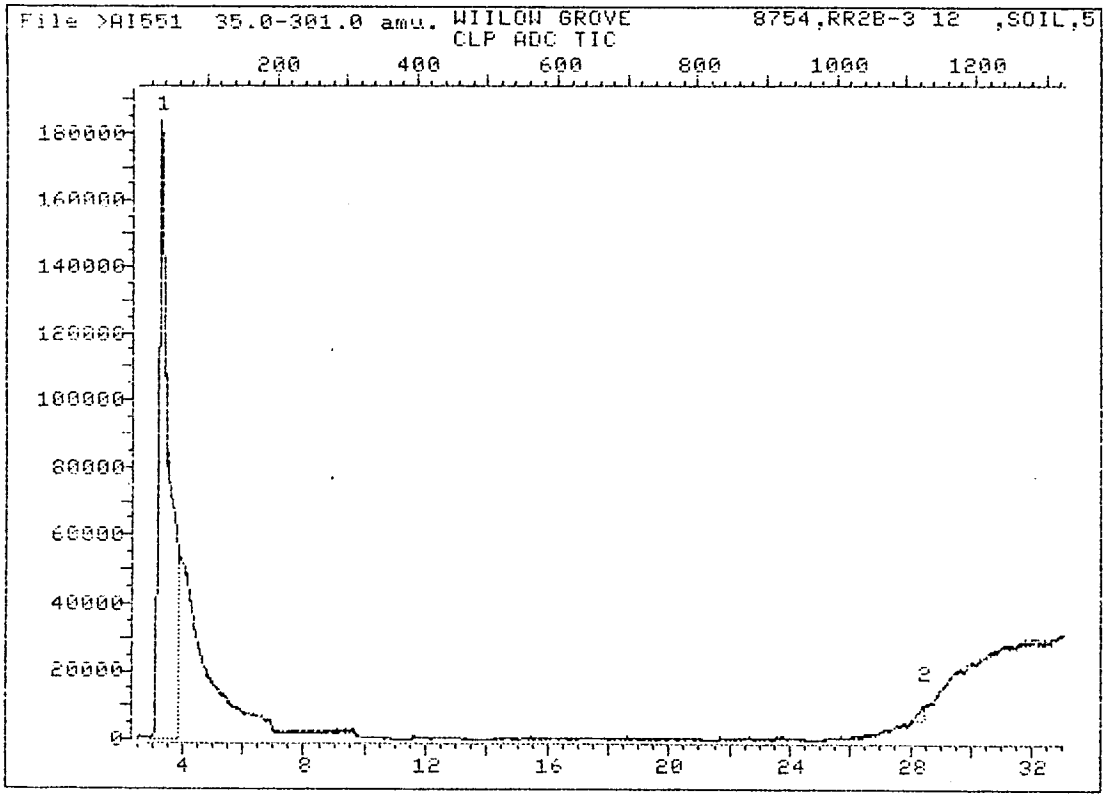
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

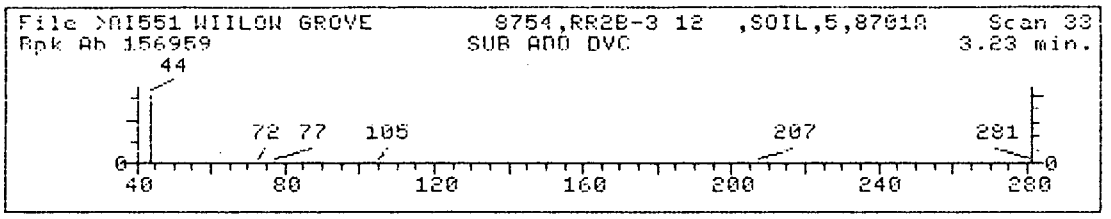
10:13 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS #124-38-9

04-25-91

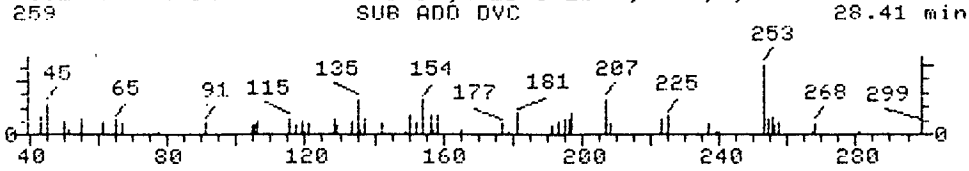
Retention time = 3.23

Area = 4305497. Tentative Concentration is 620.00

Sample file: >AI551 Spectrum #: 33

No data base entries were retrieved.

File >AI551 WILLOW GROVE 8754,RR2B-3 12 ,SOIL,5,8701A Scan 1125
Bpk Ab 259 SUB ADD DVC 28.41 min.



Unknown

07-25-91

column bleed

10-8-91

Retention time = 28.41

Area = 52656.00 Tentative Concentration is 5.00

Sample file: >AI551 Spectrum #: 1125

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI551::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 21:28
Misc:8754,RR2B-3 12 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.23	4305497	34585
2	28.41	52656	49183

>AI551 WILLOW GROVE 8754,RR2B-3 12 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Onslope: 0.00 Results File IAI551 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.23	20	33	62	183164	4407895	4365428	100.00	62.424
2	11.30	373	383	395	47877	367499	345848	7.92	4.946
3	12.60	431	439	452	36576	288806	272847	6.25	3.902
4	13.59	473	482	496	63441	492582	475631	10.90	6.801
5	17.35	638	645	657	60868	460435	438661	10.05	6.273
6	21.29	809	816	832	72546	516715	491826	11.27	7.033
7	24.68	953	963	976	89156	626403	602942	13.81	8.622

Sum of corrected areas: 6993183.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-4_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8755

Sample wt/vol: 5 (g/ml) G Lab File ID: AI552

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 14 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-4_2.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8755

Sample wt/vol: 5 (g/ml) G Lab File ID: AI552

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 14 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 2.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 80568	.alpha.-Pinene(ACN) ~~76032315~~D	23.74	30	JN
2. 138863	Limonene ~~940687A9B~~	26.88	17	JN

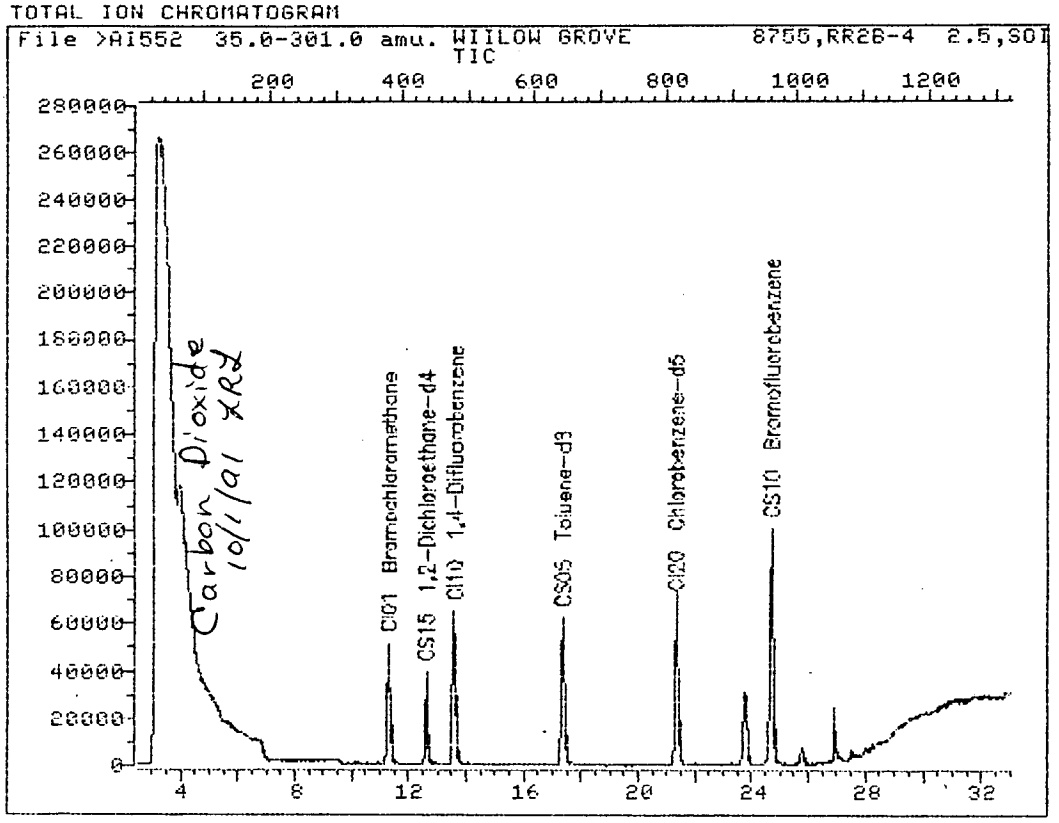
@ 10-8-91

FORM I VOA-TIC

~~3/90~~
2/88

10-9-91 303136

TOTAL ION CHROMATOGRAM



Data File: >AI552::D4 Quant Output File: ^AI552::QT
Name: WILLOW GROVE
Misc: 8755,RR2B-4 2.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 22:44
Injected at: 910919 22:10

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 22:44
Output File: ^AI552::D4 Injected at: 910919 22:10
Data File: >AI552::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8755,RR2B-4 2.5,SOIL,5,8701A1,SPH

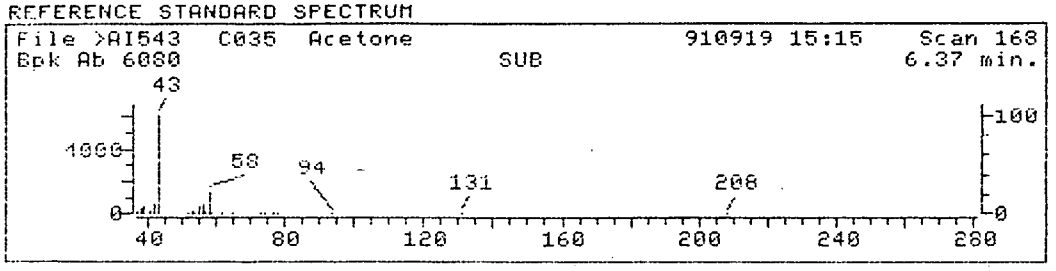
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.27	128.0	44353	50.00	UG/KG	80
9)	C035	Acetone	6.31	43.0	4276	5.05	UG/KG	89
21)	CS15	1,2-Dichloroethane-d4	12.58	65.0	115854	54.87	UG/KG 110%	79
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	165943	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.27	117.0	132572	50.00	UG/KG	92
48)	CS05	Toluene-d8	17.33	98.0	149348	50.56	UG/KG 101%	99
57)	CS10	Bromofluorobenzene	24.66	95.0	123025	51.26	UG/KG 103%	97

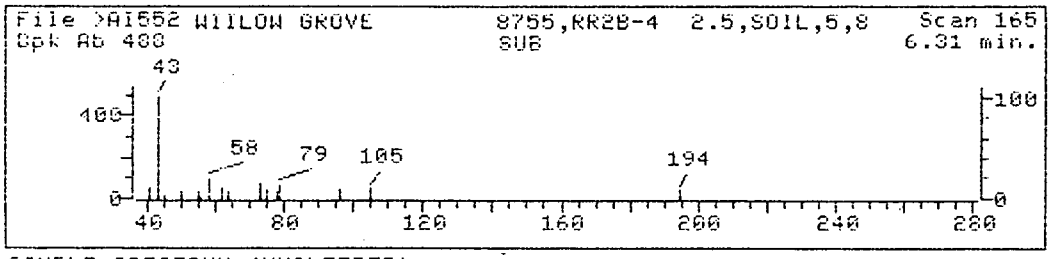
* Compound is ISTD

09-25-91

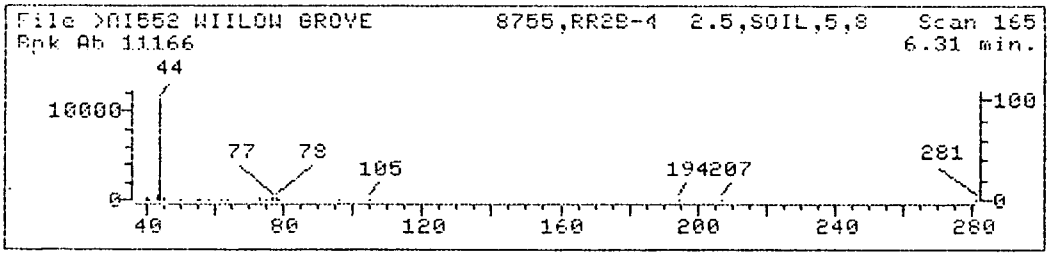
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI552::D4 Quant Output File: ^AI552::QT
Name: WILLOW GROVE
Misc: 8755,RR2B-4 2.5,SOIL,5,8701A1,SPH
Quant Time: 910919 22:44 Quant ID File: CCAS::BD
Injected at: 910919 22:10 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 165
Retention Time: 6.31 min.
Quant Ion: 43.0
Area: 4276
Concentration: 5.05 UG/KG
q-value: 89

>AI552 WILLOW GROVE 8755,RR2B-4 2.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 35117. Max Peaks: 4 Bunching: -1
Dnslope: 0.00 Results File IAI552 . Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	18	29	58	266017	10044590	10025886	100.00	95.562
2	23.74	909	921	931	30679	282950	267575	2.67	2.550
3	25.72	1000	1007	1014	6835	64904	49562	.49	.472
4	26.88	1052	1057	1070	23436	189859	148435	1.48	1.415

Sum of corrected areas: 10491460.

Summary of PBM Library Search and Quantitation on file :>AI552::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	351167.	11.27	2.53 - 12.42
2	50.0	479985.	13.58	12.42 - 17.43
3	50.0	508175.	21.28	17.43 - 33.03

CALCULATIONS

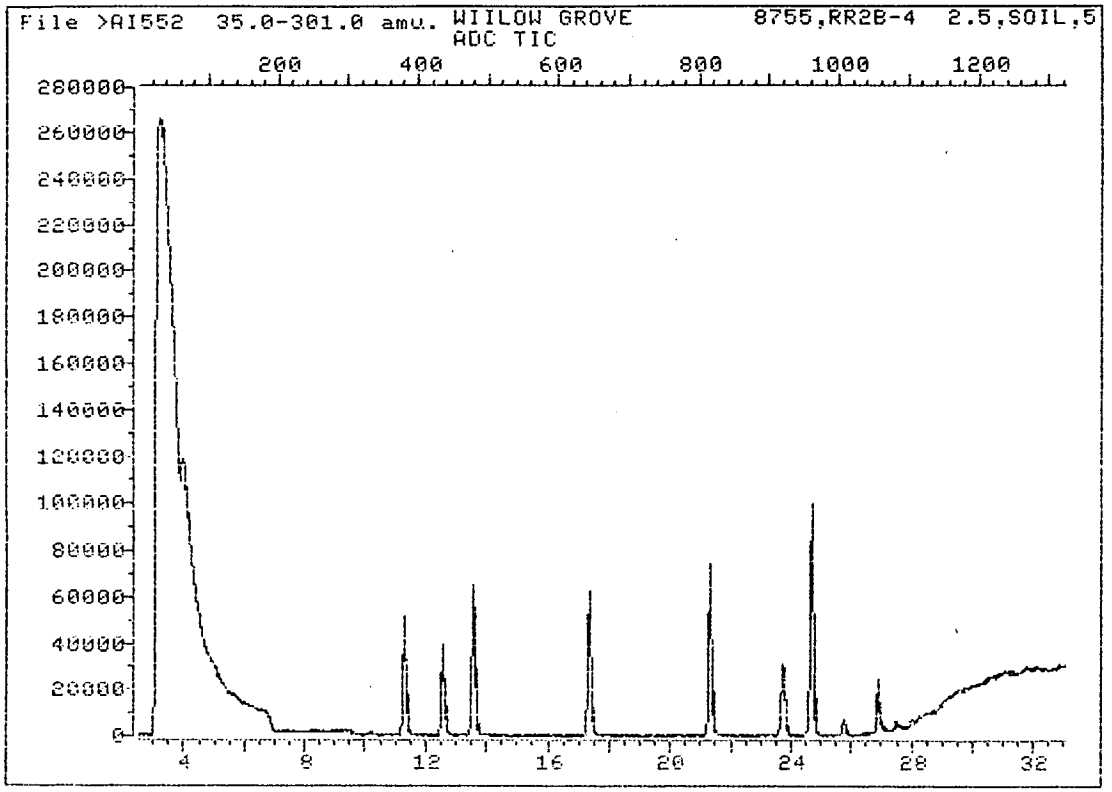
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

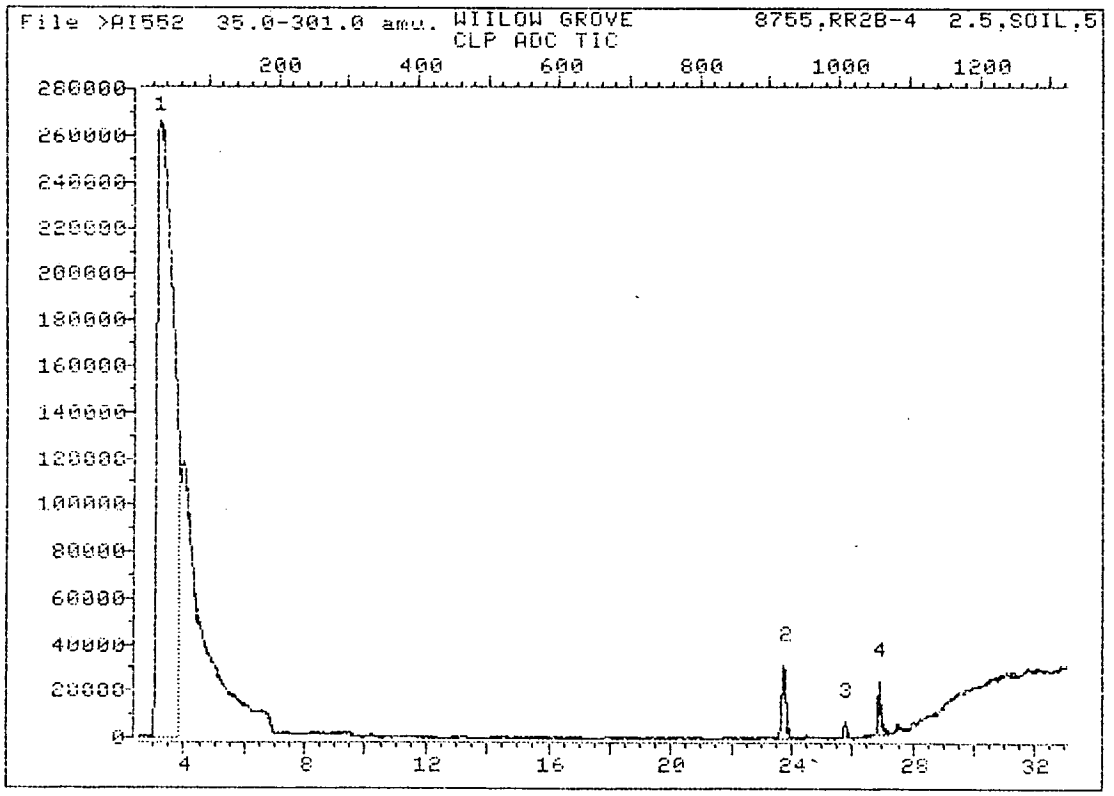
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

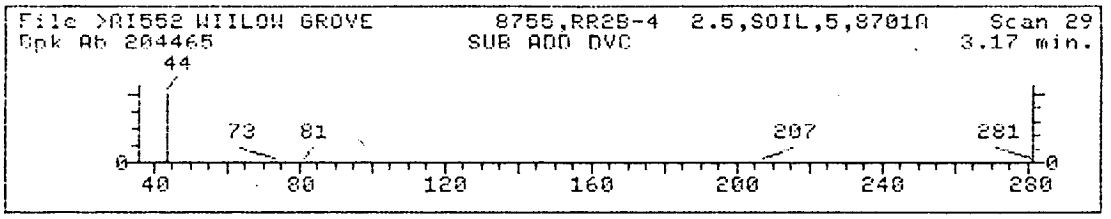
10:59 PM THU., 19 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS #124-38-9

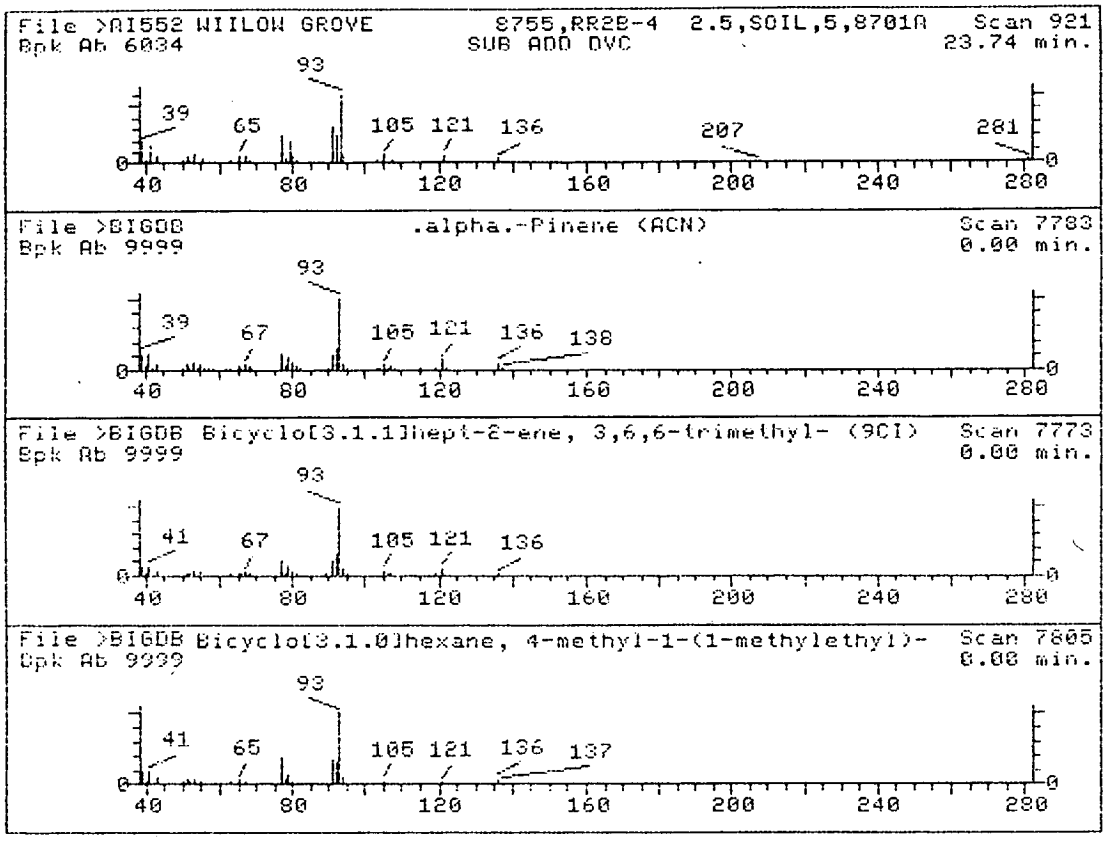
85-2571

Retention time = 3.17

Area = .10E+08 Tentative Concentration is 1400.00

Sample file: >AI552 Spectrum #: 29

No data base entries were retrieved.



α-PINENE

09-25-91

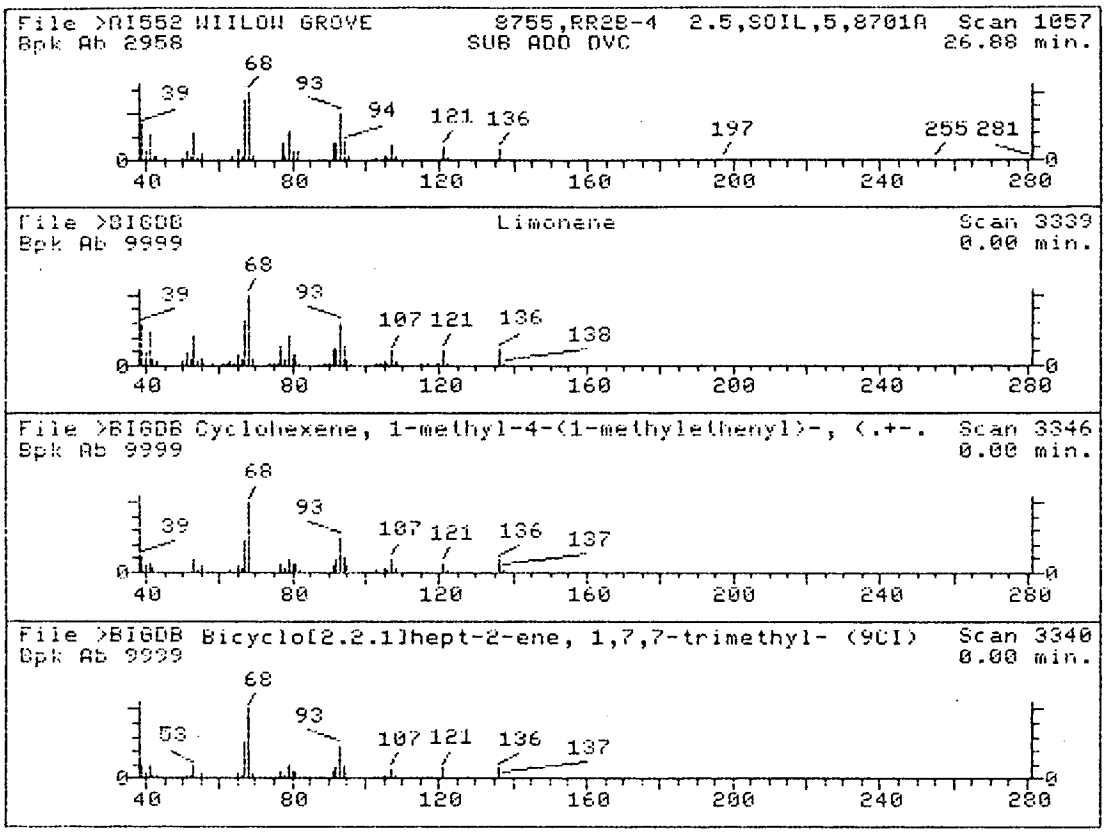
Retention time = 23.74

Area = 267575.0 Tentative Concentration is 26.00

1.	.alpha.-Pinene (ACN)	136	C10H16
2.	Bicyclo[3.1.1]hept-2-ene, 3,6,6-trimethyl- (9CI)	136	C10H16
3.	Bicyclo[3.1.0]hexane, 4-methyl-1-(1-methylethyl)-, didehydro deriv. (9CI)	136	C10H16
4.	Cyclohexene, 4-methylene-1-(1-methylethyl)- (9CI)	136	C10H16
5.	.beta.-Pinene	136	C10H16
6.	1,3,6-Octatriene, 3,7-dimethyl-, (E)- (8CI9CI)	136	C10H16
7.	Bicyclo[3.1.0]hex-2-ene, 2-methyl-5-(1-methylethyl)- (9CI)	136	C10H16

Sample file: >AI552 Spectrum #: 921
Search speed: 2 Tilting option: S No. of inn ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	76*	80568	7783	"BIGDB	62	40	0	0	82	29	37	24
2.	75*	4889832	7773	"BIGDB	57	36	0	0	100	17	35	69
3.	74*	58037879	7805	"BIGDB	43	50	0	0	94	13	39	48
4.	52	99843	14813	"BIGDB	57	42	2	2	96	19	20	13
5.	48*	127913	7789	"BIGDB	53	50	1	0	71	36	17	37
6.	39*	3779611	7772	"BIGDB	51	57	0	0	53	53	11	61



LIMONENE

Retention time = 26.88

Area = 148435.0 Tentative Concentration is 15.00

1.	Limonene	136	C10H16
2.	Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (.+-.)- (9CI)	136	C10H16
3.	Bicyclo[2.2.1]hept-2-ene, 1,7,7-trimethyl- (9CI)	136	C10H16
4.	Cyclohexene, 4-ethenyl-1,4-dimethyl- (9CI)	136	C10H16
5.	D-Limonene	136	C10H16
6.	Cyclohexene, 1-methyl-5-(1-methylethenyl)- (9CI)	136	C10H16
7.	Bicyclo[2.2.1]heptane, 2,2-dimethyl-3-methylene-, (1R)- (9CI)	136	C10H16

Sample file: >AI552 Spectrum #: 1057
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	94*	138863	3339	"BIGDB	83	46	0	0	73	17	60	95
2.	91*	7705148	3346	"BIGDB	82	31	0	0	94	31	50	94
3.	73*	464175	3340	"BIGDB	76	39	1	0	116	34	32	74
4.	63*	1743619	3341	"BIGDB	61	48	0	0	87	48	20	73
5.	57*	5989275	3344	"BIGDB	43	74	0	0	82	37	19	48
6.	53*	13898732	3347	"BIGDB	65	49	2	0	116	36	19	44

LIBRARY SEARCH SUMMARY

MS Data File:>AI552::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 22:10
Misc:8755,RR2B-4 2.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.17	10025886	35117
2	23.74	267575	50818
3	26.88	148435	50818

>AI552 WIILOW GROVE 8755,RR2B-4 2.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 3 Bunching: -1
Dnslope: 0.00 Results File IAI552 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	18	29	58	266017	10063958	10025886	100.00	89.383
2	21.30	803	815	834	74176	541890	508175	5.07	4.530
3	24.66	949	961	979	99552	720299	682716	6.81	6.087

Sum of corrected areas: 11216778.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-4_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8756

Sample wt/vol: 5 (g/ml) G Lab File ID: AI553

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-4_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8756

Sample wt/vol: 5 (g/ml) G Lab File ID: AI553

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

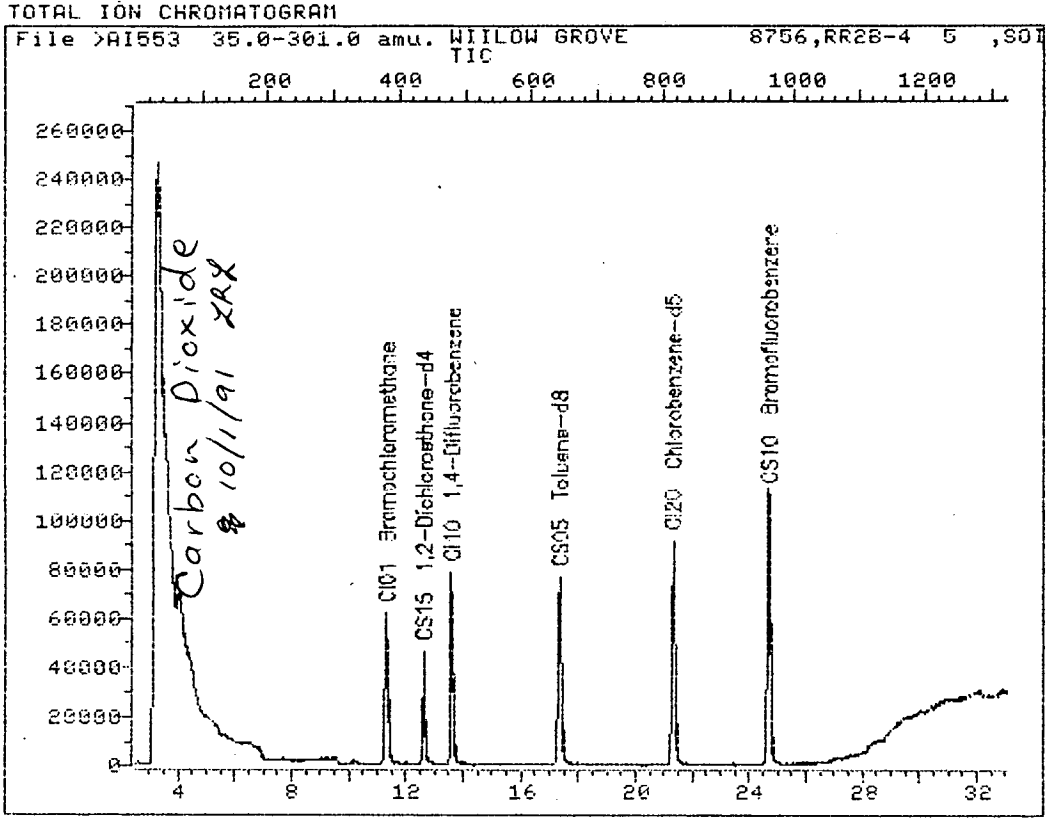
FORM I VOA-TIC

~~3/90~~
2/88

300148

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI553::D4 Quant Output File: ^AI553::QT
Name: WILLOW GROVE
Misc: 8756,RR2B-4 5 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 23:26
Injected at: 910919 22:53

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 23:26
Output File: ^AI553::D4 Injected at: 910919 22:53
Data File: >AI553::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8756,RR2B-4 5 ,SOIL,5,8701A1,SPH

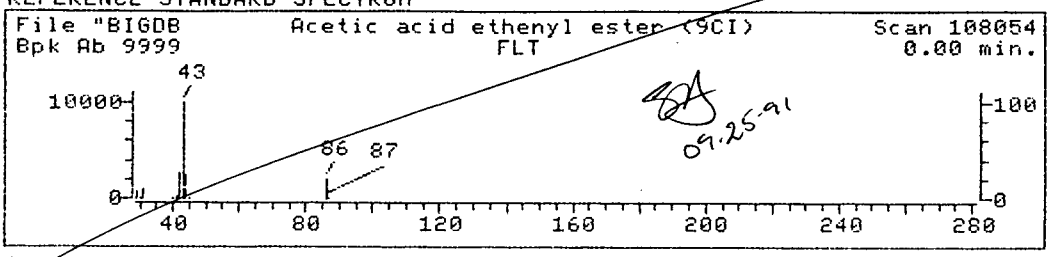
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	53162	50.00	UG/KG	77
9)	C035	Acetone	6.37	43.0	4017	3.95	UG/KG	87
20)	C110	2-Butanone	10.25	72.0	1108	4.84	UG/KG	84
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	142709	56.39	UG/KG 113%	80
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	198289	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.29	117.0	161912	50.00	UG/KG	96
48)	CS05	Toluene-d8	17.35	98.0	181898	50.42	UG/KG 101%	99
57)	CS10	Bromofluorobenzene	24.68	95.0	150742	51.42	UG/KG 103%	98

* Compound is ISTD

09-25-91

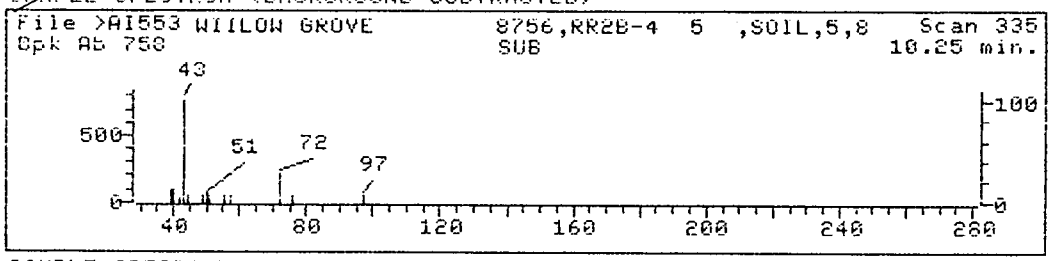
REFERENCE STANDARD SPECTRUM



09.25.91

INCORRECT REFERENCE SPECTRUM ID TABLE HAS BEEN UPDATED

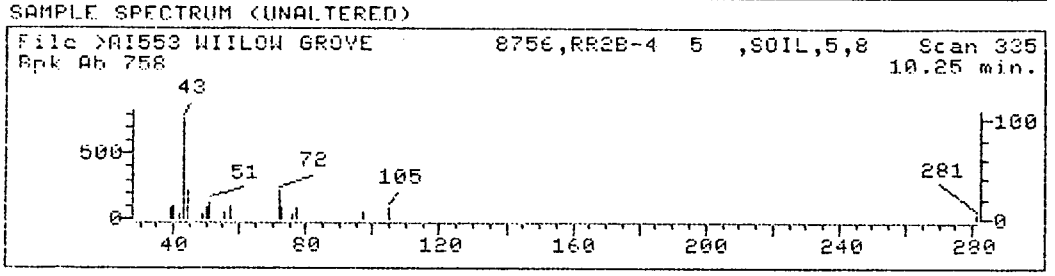
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL H2O OF 2-BUTANONE

09.25.91

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI553::D4 Quant Output File: ^AI553::QT
Name: WILLOW GROVE
Misc: 8756,RR2B-4 5 ,SOIL,5,8701A1,SPH
Quant Time: 910919 23:26 Quant ID File: CCAS::RD
Injected at: 910919 22:53 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 335
Retention Time: 10.25 min.
Quant Ion: 72.0
Area: 1108
Concentration: 4.84 UG/KG
q-value: 84

>AI553 WIILOW GROVE 8756,RR2B-4 5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 42912. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI553 Sorted by Tim /Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	21	32	61	245626	6871282	6833765	100.00	99.313
2	28.37	1111	1121	1123	4209	141839	47298	.69	.687

Sum of corrected areas: 6881063.

Summary of PBM Library Search and Quantitation on file :>AI553::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	429117.	11.31	2.54 - 12.45
2	50.0	584486.	13.59	12.45 - 17.44
3	50.0	616591.	21.29	17.44 - 33.05

CALCULATIONS

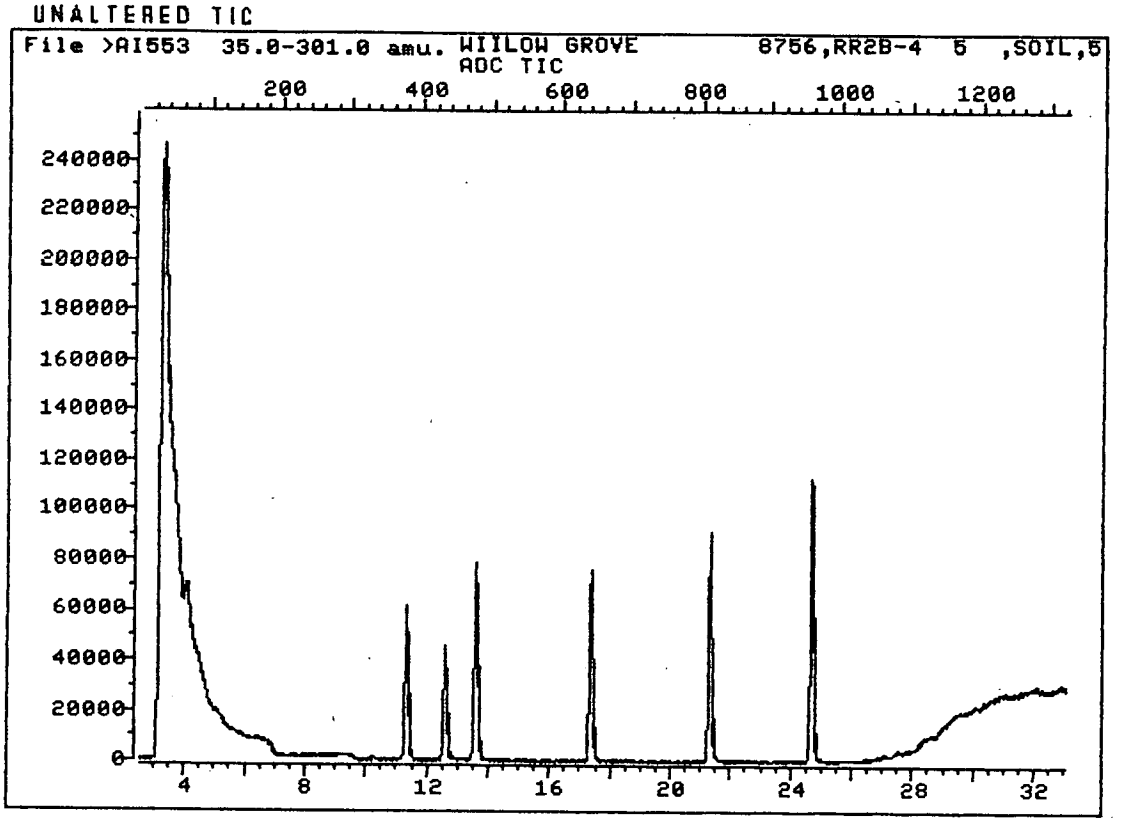
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Corr ction Factor = 1.00 = (AM / AU) / (DF * FS)

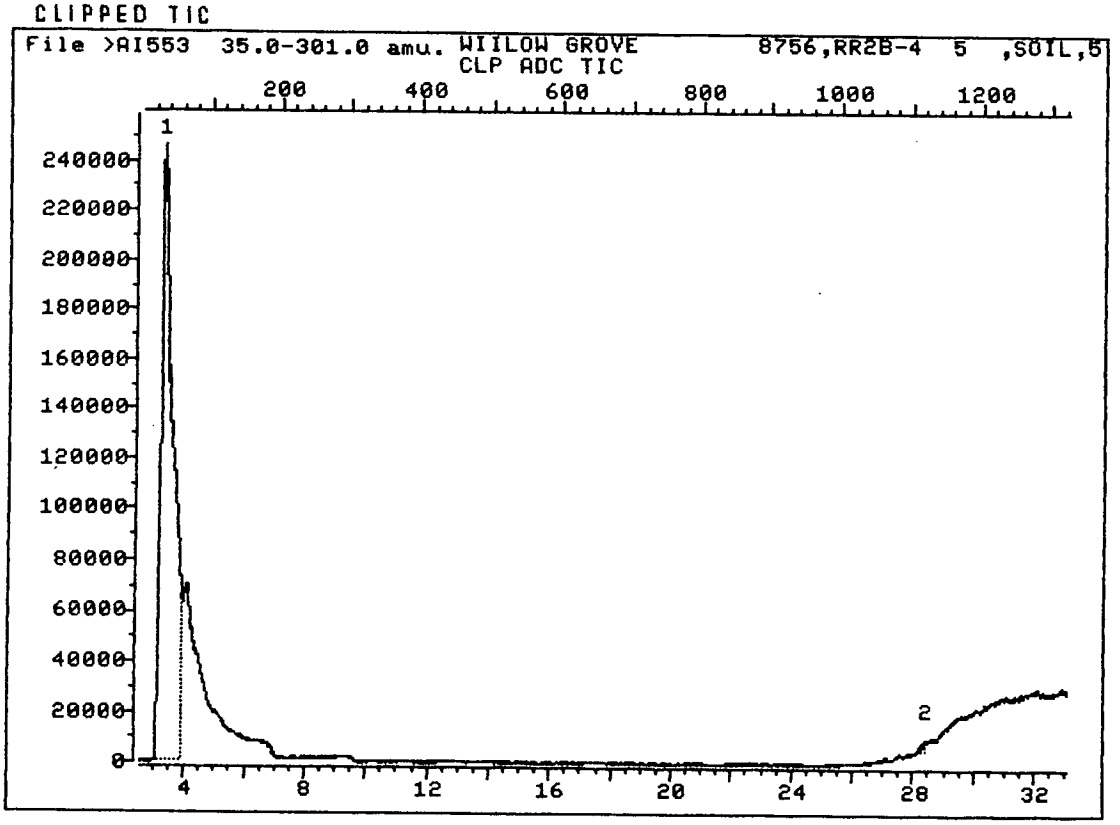
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

4:42 PM WED., 25 SEPT, 1991

UNALTERED TIC



CLIPPED TIC



>AI553 WIILOW GROVE 8756,RR2B-4 5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 6 Bunching: -1
Dnslope: 0.00 Results File IAI553 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	21	32	61	245626	6896901	6833765	100.00	69.868
2	11.31	373	381	392	61404	450549	429117	6.28	4.387
3	13.59	470	480	495	78429	611690	584486	8.55	5.976
4	17.35	634	643	657	76222	582321	558249	8.17	5.707
5	21.29	807	814	832	91443	642433	616591	9.02	6.304
6	24.66	949	960	970	112592	778523	758814	11.10	7.758

Sum of corrected areas: 9781024.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-4_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8757

Sample wt/vol: 5 (g/ml) G Lab File ID: AI554

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

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IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-4_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8757

Sample wt/vol: 5 (g/ml) G Lab File ID: AI554

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 16 Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

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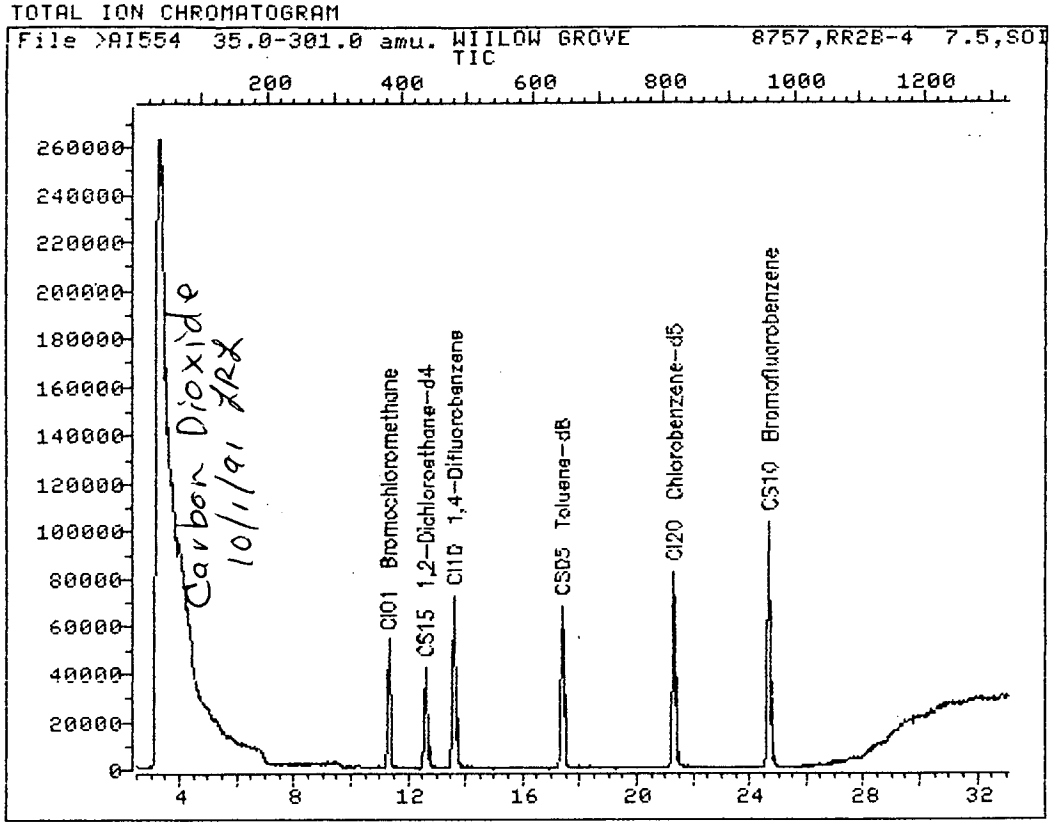
TOTAL ION CHROMATOGRAM



Data File: >AI554::D4 Quant Output File: ^AI554::D4
Name: WIILOW GROVE
Misc: 8757,RR2B-4 7.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910920 00:09
Injected at: 910919 23:35

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910920 00:09
Output File: ^AI554::D4 Injected at: 910919 23:35
Data File: >AI554::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8757,RR2B-4 7.5,SOIL,5,8701A1,SPH

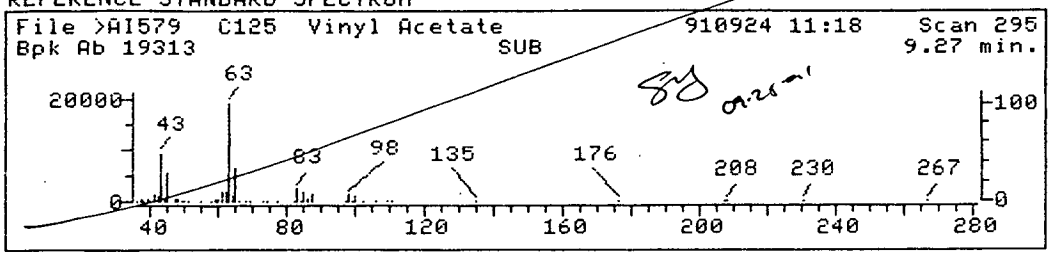
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	48434	50.00	UG/KG	85
20)	C110	2-Butanone	10.25	72.0	1020	4.89	UG/KG	74
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	128568	55.77	UG/KG 115%	80
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	181772	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.29	117.0	148186	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.35	98.0	166097	50.31	UG/KG 101%	99
57)	CS10	Bromofluorobenzene	24.66	95.0	135947	50.67	UG/KG 101%	90

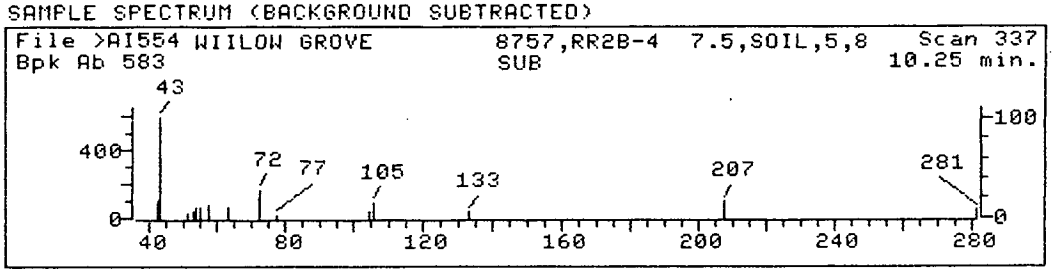
* Compound is ISTD

BY
09-25-91

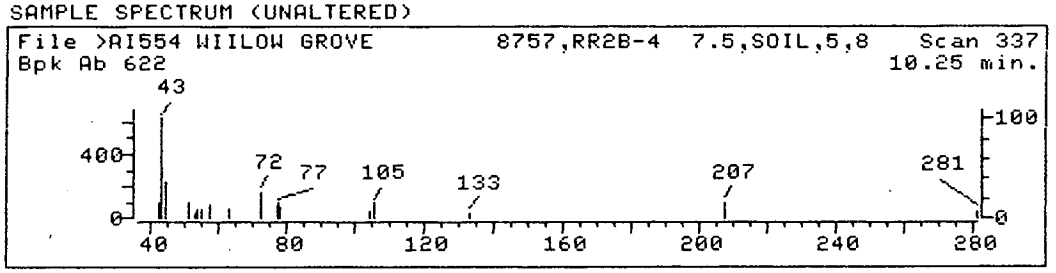
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI554::D4 Quant Output File: ^AI554::D4
Name: WIILOW GROVE
Misc: 8757,RR2B-4 7.5,SOIL,5,8701A1,SPH
Quant Time: 910920 00:09 Quant ID File: CCAS::BD
Injected at: 910919 23:35 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.25 min.
Quant Ion: 72.0
Area: 1020
Concentration: 4.89 UG/KG
q-value: 74

>AI554 WILLOW GROVE 8757,RR2B-4 7.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 38212. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File [AI554' Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	33	63	262956	8138620	8117542	100.00	100.000

Sum of corrected areas: 8117542.

Summary of PRM Library Search and Quantitation on file :>AI554::04

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	382123.	11.29	2.50 - 12.44
2	50.0	524697.	13.59	12.44 - 17.44
3	50.0	558818.	21.29	17.44 - 33.07

CALCULATIONS

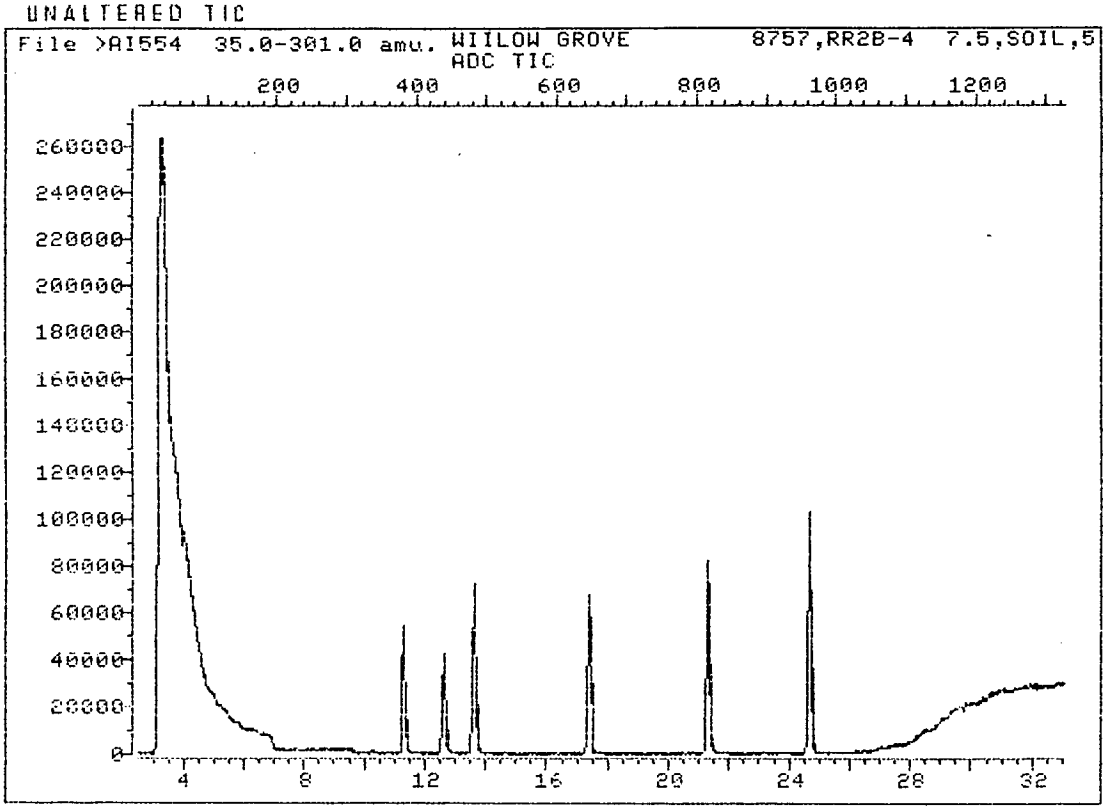
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

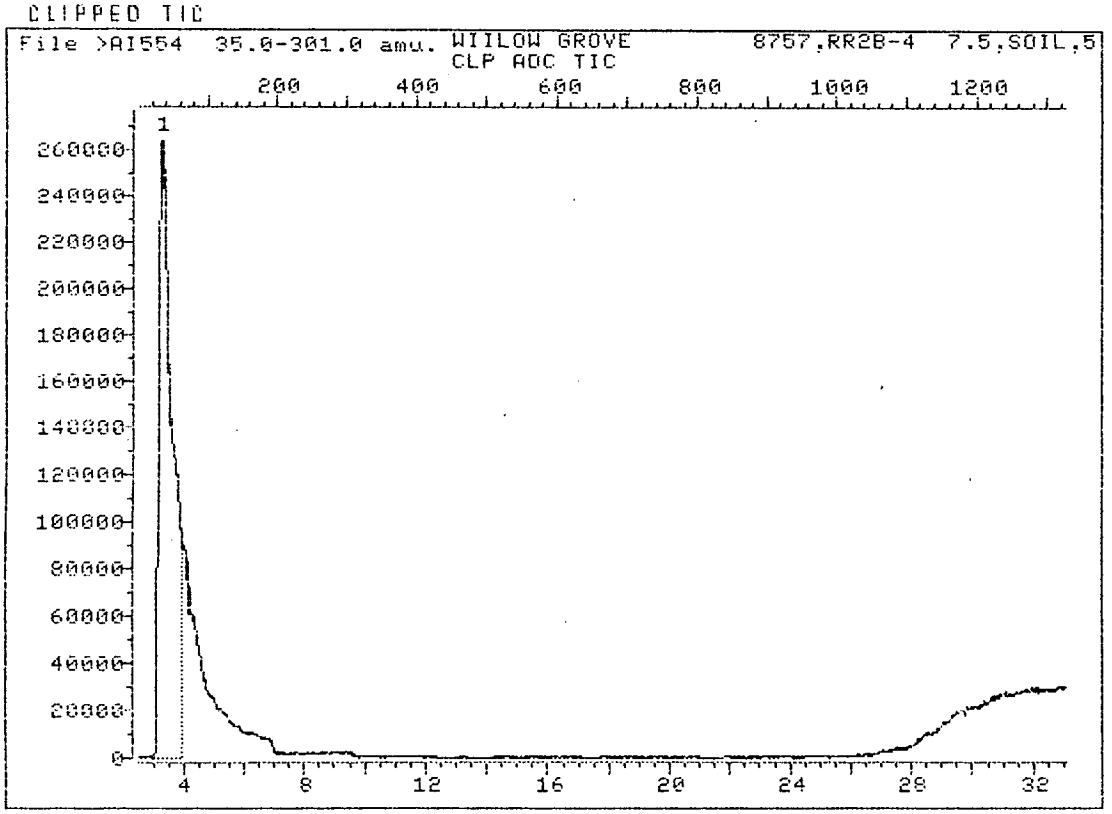
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

8:46 AM FRI., 20 SEPT, 1991

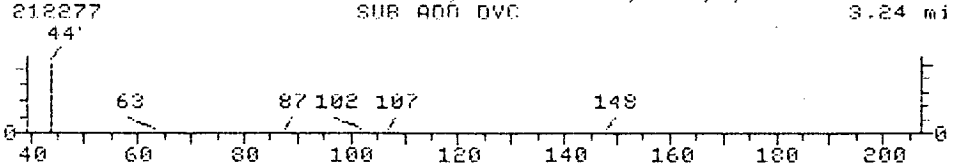
UNALTERED TIC



CLIPPED TIC



File >AI554 WILLOW GROVE 8757,RR2B-4 7.5,SOIL,5,8701A Scan 33
Bpk Ab 212277 SUB ADD DVC 3.24 min.



CARBON DIOXIDE
CAS# 124-38-9
07-28-91

Retention time = 3.24

Area = 8117542. Tentative Concentration is 1100.00

Sample file: >AI554 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI554::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/19/91 23:35
Misc:8757,RR2B-4 7.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.24	8117542	38212

>AI554 WILLOW GROVE 8757,RR2B-4 7.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 5 Bunching: -1
Onslope: 0.00 Results File IAI554 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	33	62	262956	8035024	7997319	100.00	77.861
2	13.59	471	482	493	72079	545616	524697	6.56	5.108
3	17.35	637	645	661	67567	529020	497069	6.22	4.839
4	21.29	805	816	833	82097	585820	558818	6.99	5.441
5	24.66	952	962	979	103398	716197	693367	8.67	6.751

Sum of corrected areas: 10271272.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-4_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8758

Sample wt/vol: 5 (g/ml) G Lab File ID: AI555

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 18 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	7	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

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IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-4_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8758

Sample wt/vol: 5 (g/ml) G Lab File ID: AI555

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 18 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

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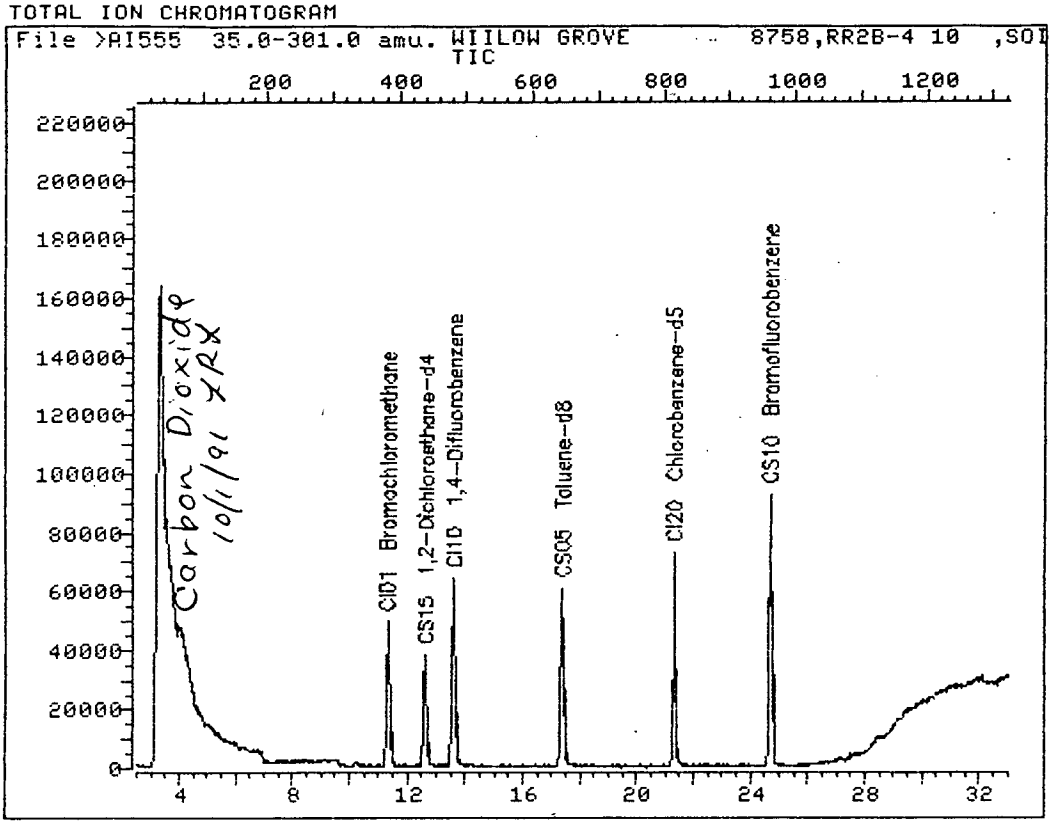
10-7-91

TOTAL ION CHROMATOGRAM



Data File: >AI555::D4 Quant Output File: ^AI555::D4
Name: WIILOW GROVE
Misc: 8758,RR2B-4 10 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910920 00:52
Injected at: 910920 00:18

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910920 00:52
Output File: ^AI555::D4 Injected at: 910920 00:18
Data File: >AI555::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8758,RR2B-4 10 ,SOIL,5,8701A1,SPH

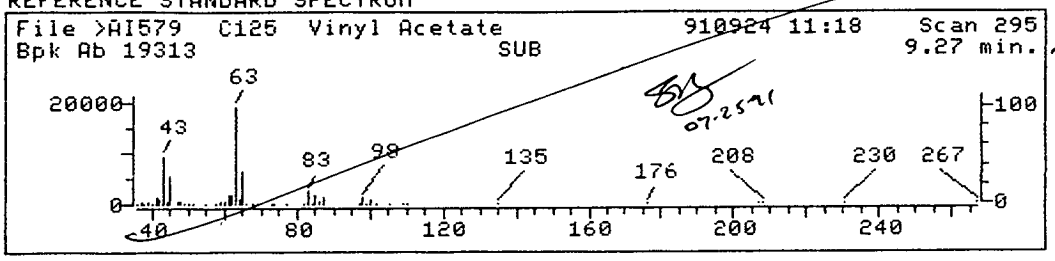
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	43471	50.00	UG/KG	82
20)	CI10	2-Butanone	10.25	72.0	1037	5.53	UG/KG	85
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	117349	56.71	UG/KG 113%	81
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	160602	50.00	UG/KG	88
40)	*CI20	Chlorobenzene-d5	21.29	117.0	130412	50.00	UG/KG	98
48)	CS05	Toluene-d8	17.35	98.0	145728	50.15	UG/KG 100%	99
57)	CS10	Bromofluorobenzene	24.66	95.0	121291	51.37	UG/KG 103%	90

* Compound is ISTD

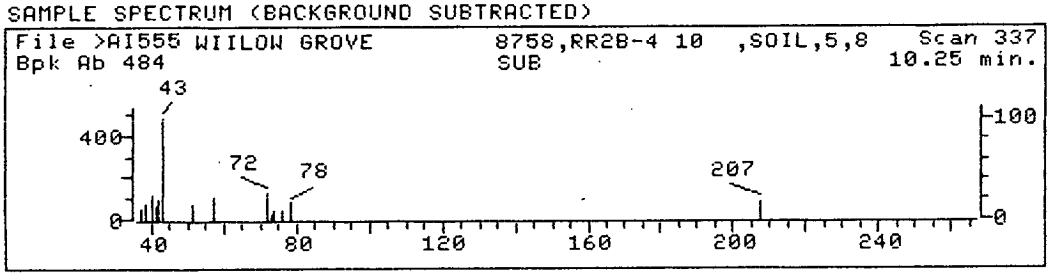
09-25-91

REFERENCE STANDARD SPECTRUM



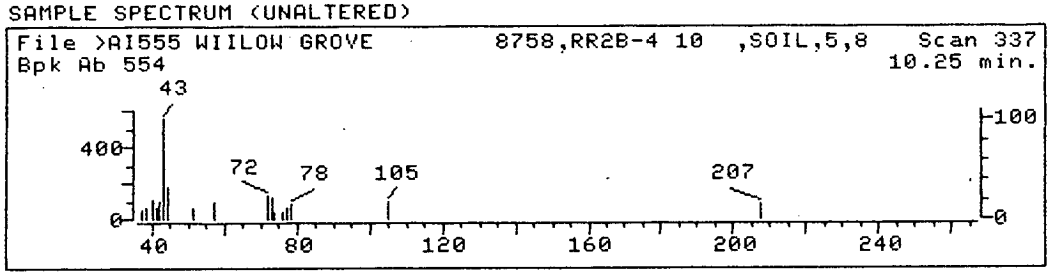
INCORRECT REFERENCE SPECTRUM

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



REMOVE HIT ON 2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI555::D4 Quant Output File: ^AI555::D4
Name: WIILOW GROVE
Misc: 8758,RR2B-4 10 ,SOIL,5,8701A1,SPH
Quant Time: 910920 00:52 Quant ID File: CCAS::BD
Injected at: 910920 00:18 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.25 min.
Quant Ion: 72.0
Area: 1037
Concentration: 5.53 UG/KG
q-value: 85

>AI555 WILLOW GROVE 8758,RR2B-4 10 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 35515. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI555 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	34	55	163832	3616542	3602114	100.00	100.000

Sum of corrected areas: 3602114.

Summary of PBM Library Search and Quantitation on file :>AI555::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	355150.	11.29	2.50 - 12.44
2	50.0	474571.	13.59	12.44 - 17.44
3	50.0	495348.	21.29	17.44 - 33.03

CALCULATIONS

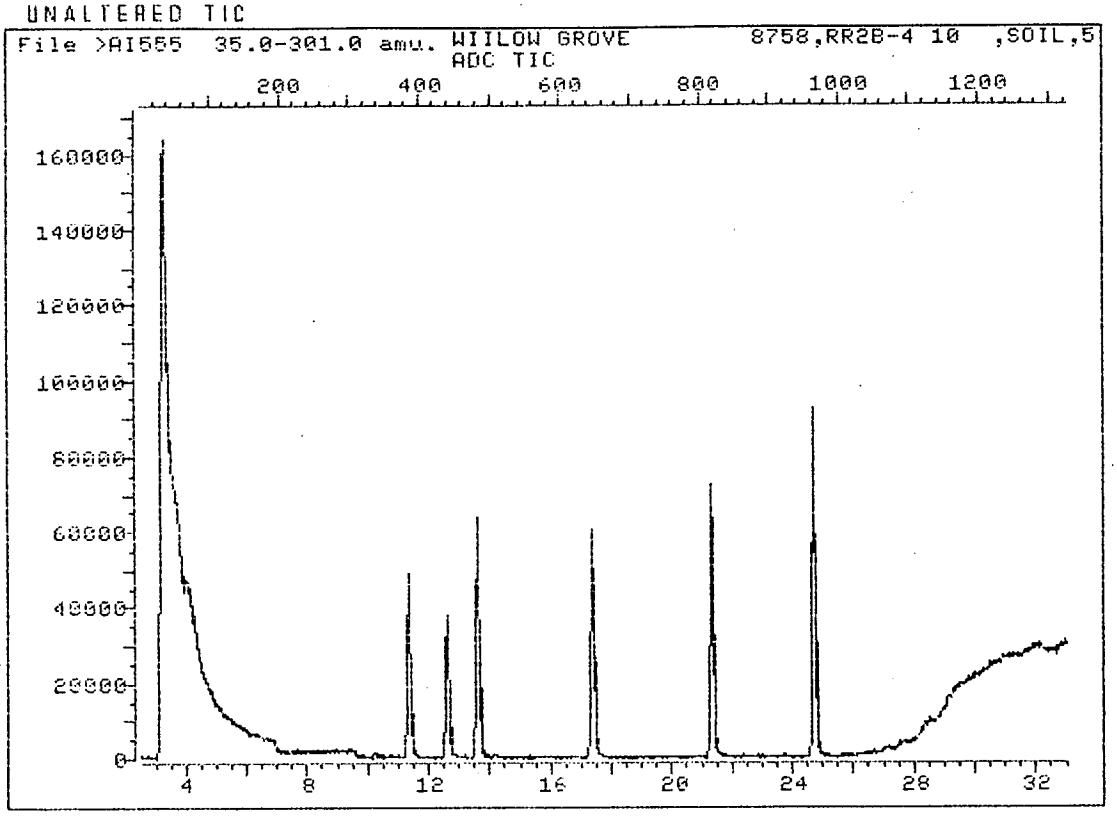
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

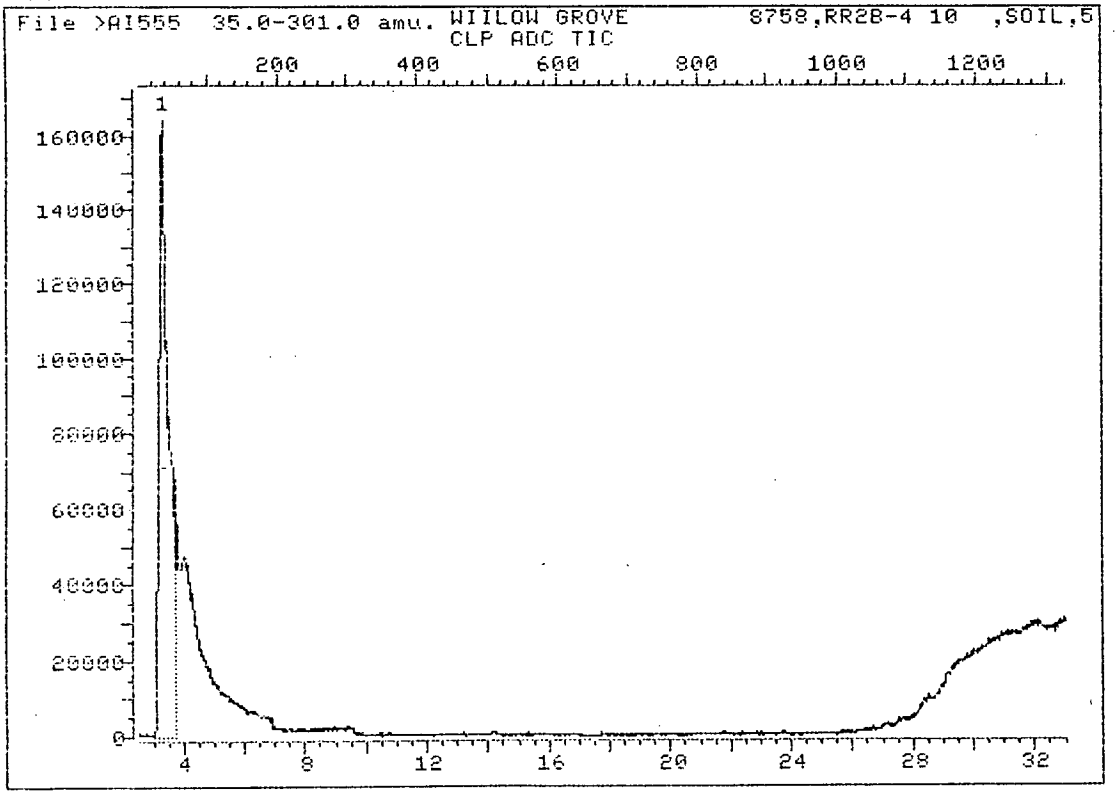
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

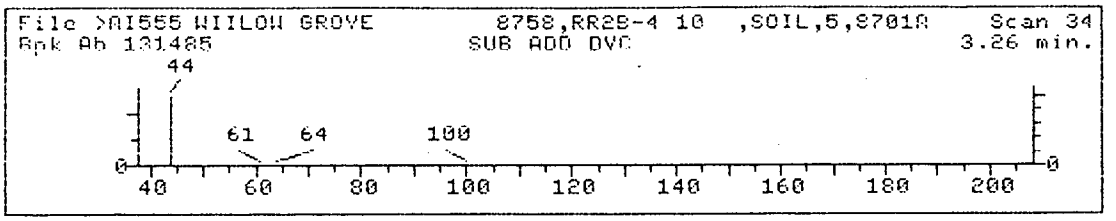
8:57 AM FRI., 20 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9

Retention time = 3.26

Area = 3602114. Tentative Concentration is 510.00

Sample file: >AI555 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI555::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/20/91 0:18
Misc:8758,RR2B-4 10 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	3602114	35515

>AI555 WIILOW GROVE 8758,RR2B-4 10 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI555 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	34	62	163832	4177637	4138799	100.00	60.871
2	11.31	374	383	400	48990	385870	355150	8.58	5.223
3	12.60	432	439	448	37753	290734	275770	6.66	4.056
4	13.59	473	482	498	63825	495434	474571	11.47	6.980
5	17.35	634	645	659	60558	471257	450571	10.89	6.627
6	21.29	807	816	831	72578	514975	495348	11.97	7.285
7	24.66	954	962	979	92064	638443	609067	14.72	8.958

Sum of corrected areas: 6799276.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-4_12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8759

Sample wt/vol: 5 (g/ml) G Lab File ID: AI556

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 12 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

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10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-4_12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8759

Sample wt/vol: 5 (g/ml) G Lab File ID: AI556

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 12 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

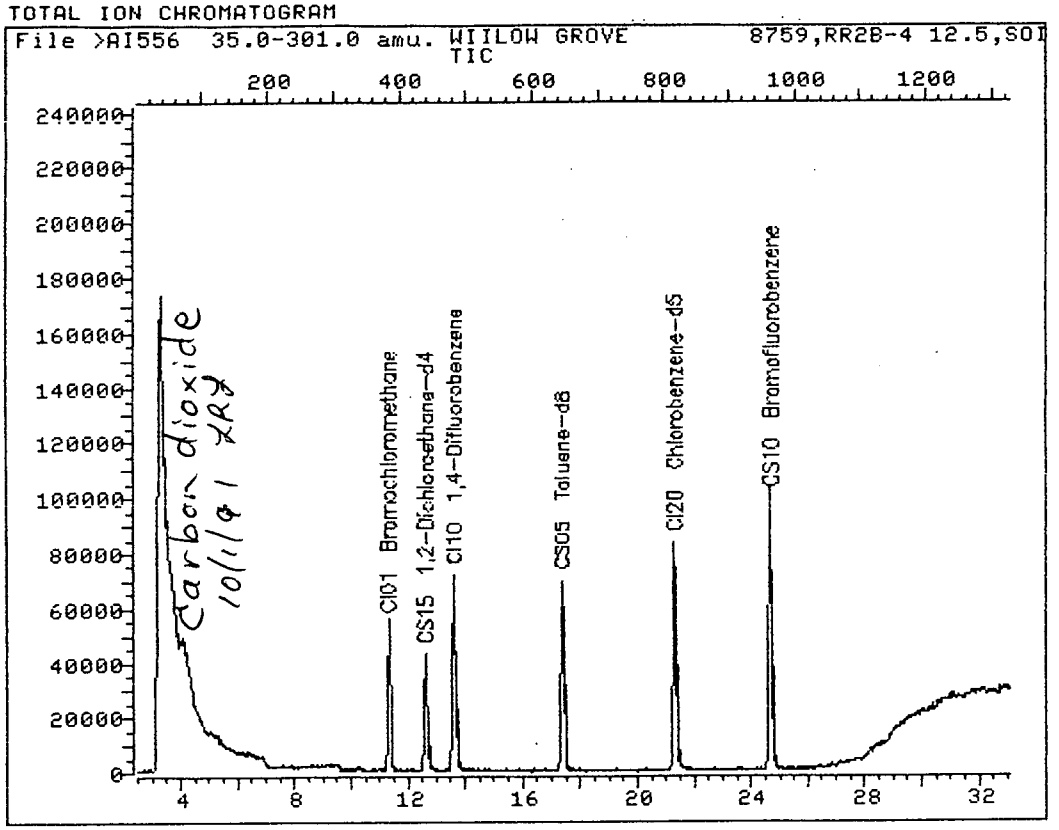
FORM I VOA-TIC

~~3/90~~
2/88

30 179

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI556::D4 Quant Output File: ^AI556::D4
Name: WIILOW GROVE
Misc: 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910920 01:34
Injected at: 910920 01:00

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910920 01:34
Output File: ^AI556::D4 Injected at: 910920 01:00
Data File: >AI556::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH

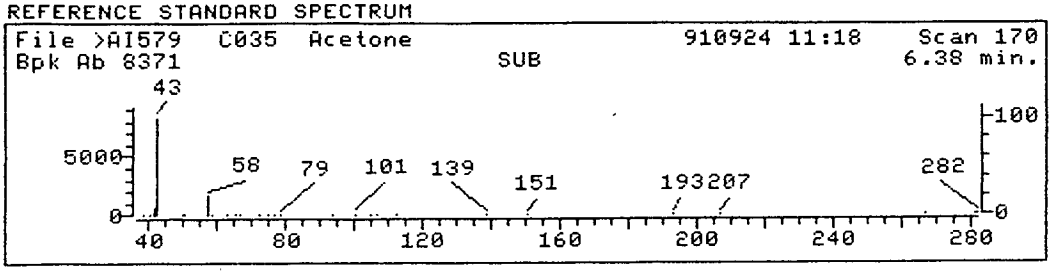
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	49730	50.00	UG/KG	84
9)	C035	Acetone	6.38	43.0	3698	3.89	UG/KG	78
20)	C110	2-Butanone	10.23	72.0	1215	5.67	UG/KG	76
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	130875	55.29	UG/KG 111%	81
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	178567	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.29	117.0	148255	50.00	UG/KG	98
48)	CS05	Toluene-d8	17.35	98.0	166408	50.38	UG/KG 101%	98
57)	CS10	Bromofluorobenzene	24.68	95.0	136541	50.87	UG/KG 102%	96

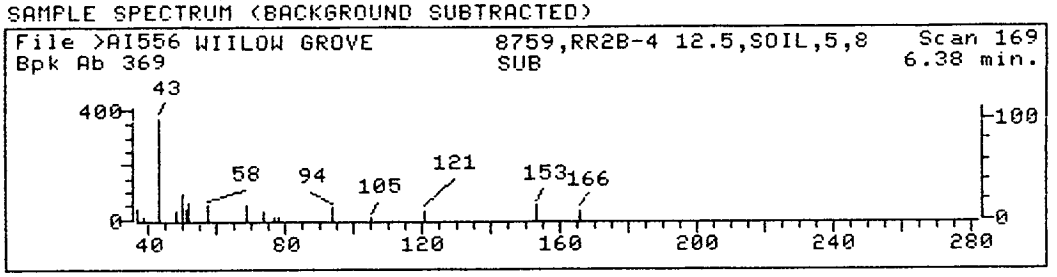
* Compound is ISTD

09-25-91

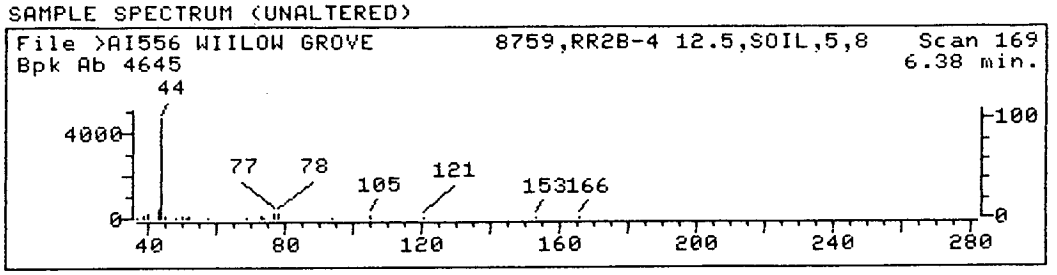
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



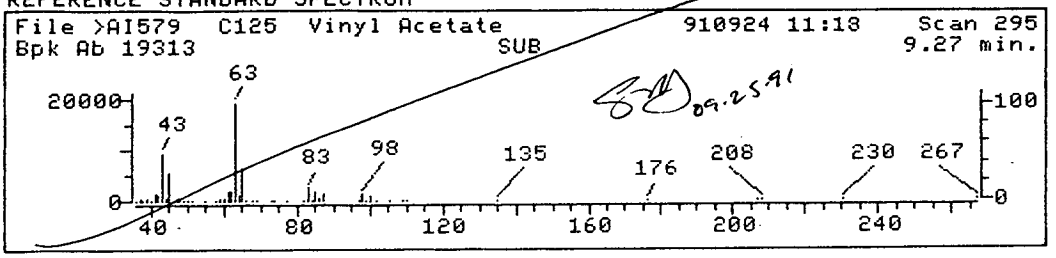
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI556::D4 Quant Output File: ^AI556::D4
Name: WIILOW GROVE
Misc: 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH
Quant Time: 910920 01:34 Quant ID File: CCAS::BD
Injected at: 910920 01:00 Last Calibration: 910919 15:59

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 3698
Concentration: 3.89 UG/KG
q-value: 78

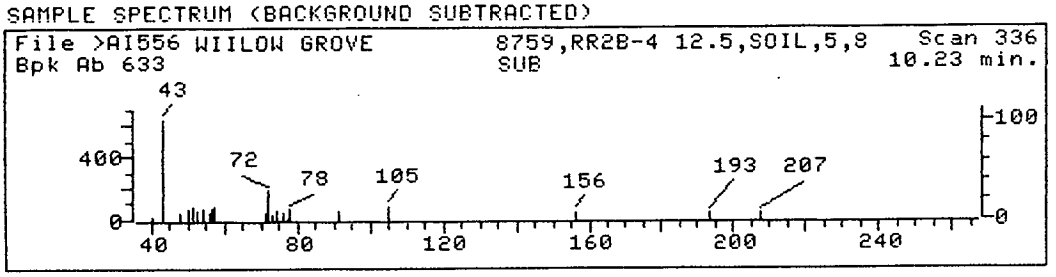
REFERENCE STANDARD SPECTRUM



INCORRECT RETRIEVED SPECTRUM

09.25.91

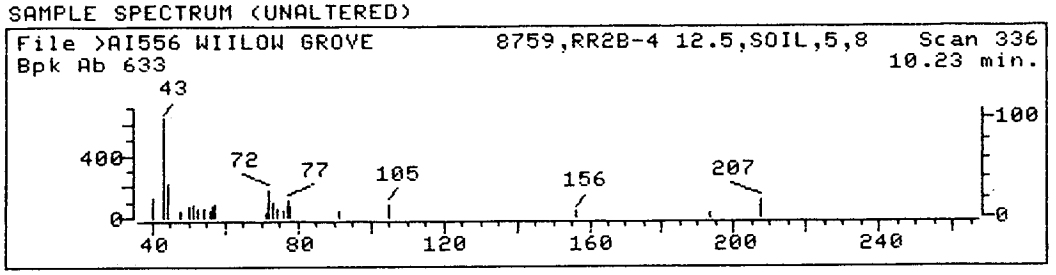
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL RET OF 2-BUTANONE

09-25-91

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI556::D4 Quant Output File: ^AI556::D4
Name: WIILOW GROVE
Misc: 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH
Quant Time: 910920 01:34 Quant ID File: CCAS::BD
Injected at: 910920 01:00 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 1215
Concentration: 5.67 UG/KG
q-value: 76

>AI556 WIILOW GROVE 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 39580. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI556 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.96	22	34	62	172471	4414034	4380010	100.00	100.000

Sum of corrected areas: 4380010.

Summary of PBM Library Search and Quantitation on file :>AI556::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	395801.	11.29	2.50 - 12.44
2	50.0	526697.	13.59	12.44 - 17.44
3	50.0	561631.	21.29	17.44 - 33.07

CALCULATIONS

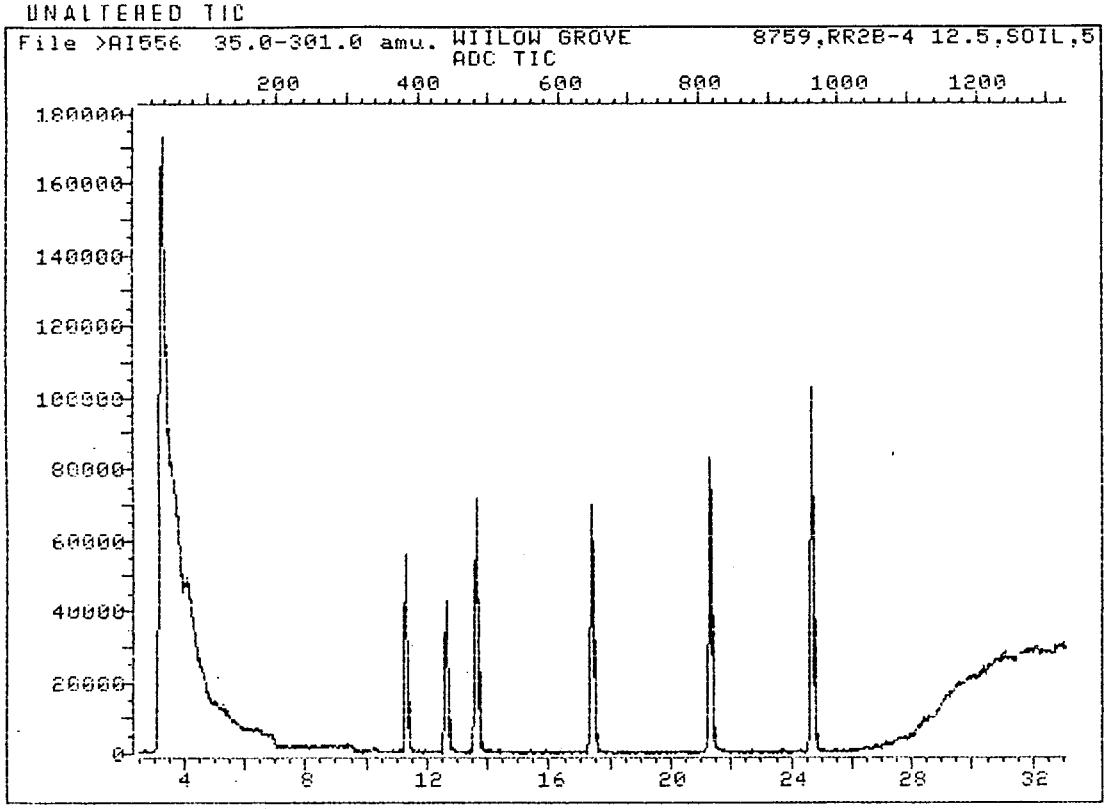
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

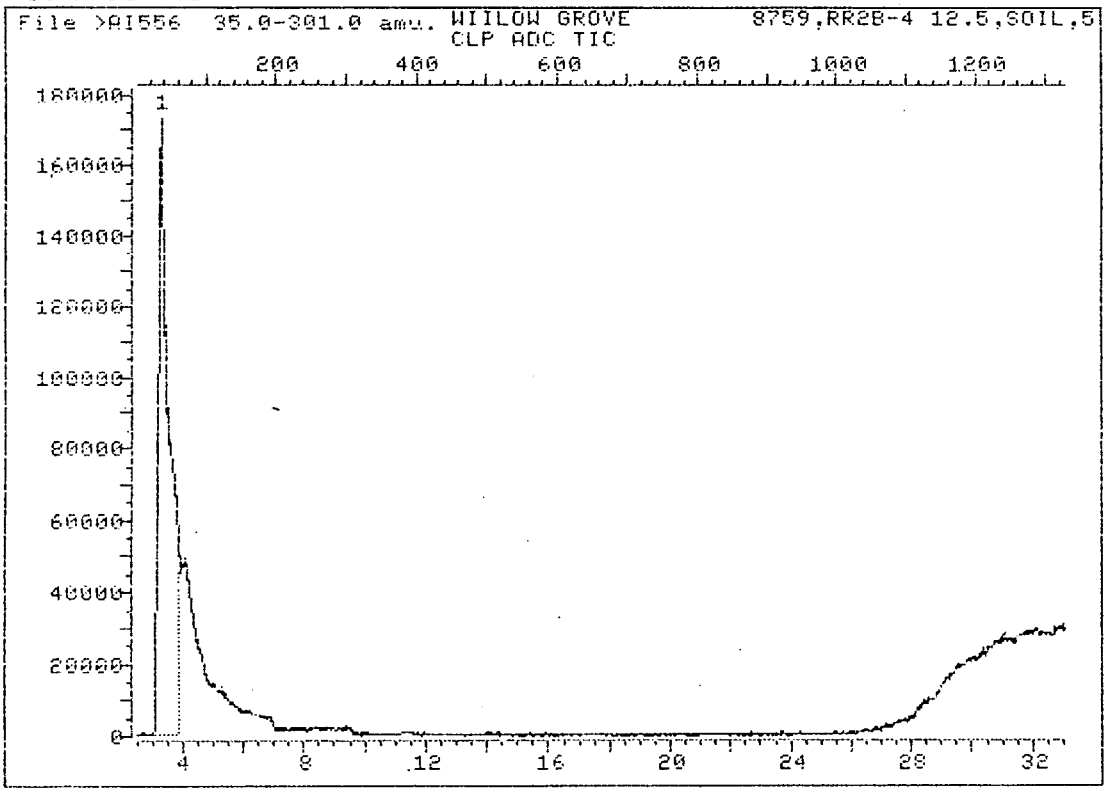
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

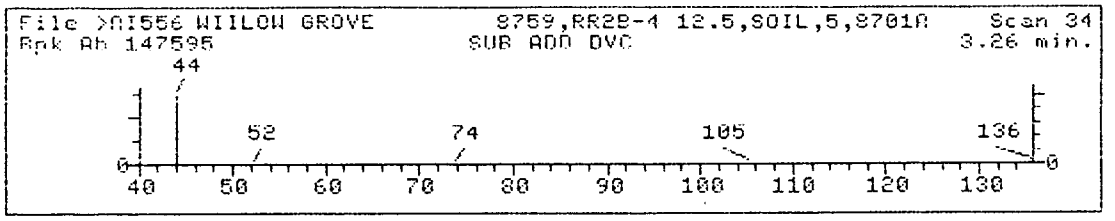
9:08 AM FRI., 20 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9

Retention time = 3.26

Area = 4380010. Tentative Concentration is 550.00

Sample file: >A1556 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI556::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/20/91 1:00
Misc:8759,RR2B-4 12.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	4380010	39580

>AI556 WILLOW GROVE 8759,RR2B-4 12.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Onslope: 0.00 Results File IAI556 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	22	34	62	172471	4435444	4380010	100.00	59.513
2	11.31	375	383	393	55560	414756	393908	8.99	5.352
3	12.60	433	439	448	42642	319827	304510	6.95	4.137
4	13.59	474	482	494	71767	544496	526697	12.03	7.156
5	17.35	637	645	661	69519	533116	509470	11.63	6.922
6	21.29	807	816	836	82887	592872	559325	12.77	7.600
7	24.66	954	962	974	102547	706437	685867	15.66	9.319

Sum of corrected areas: 7359787.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-1_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8760

Sample wt/vol: 5 (g/ml) G Lab File ID: AI557

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 19 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	3	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

300189

FORM I VOA

~~3/90~~
2/88
P 10.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-1_5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8760

Sample wt/vol: 5 (g/ml) G Lab File ID: AI557

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 19 Date Analyzed: 09/20/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

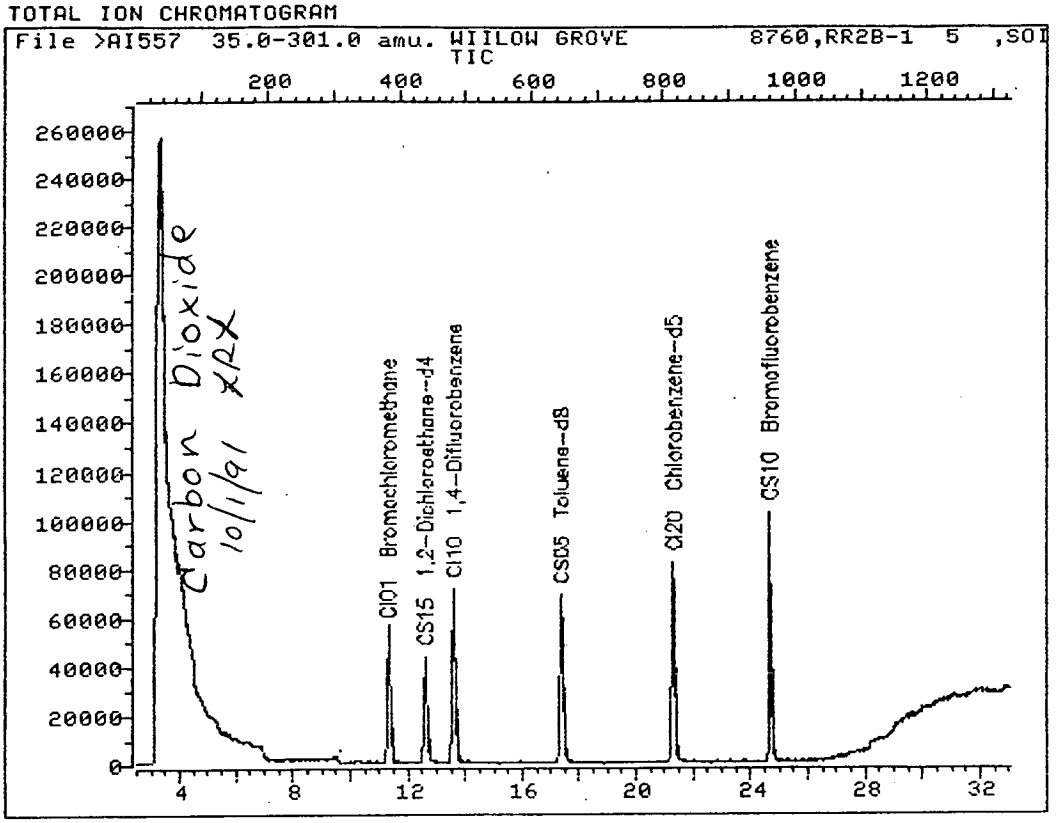
FORM I VOA-TIC

~~3/90~~
2/88

300190

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI557::D4 Quant Output File: ^AI557::D4
Name: WIILOW GROVE
Misc: 8760,RR2B-1 5 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910920 02:17
Injected at: 910920 01:43

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910920 02:17
Output File: ^AI557::D4 Injected at: 910920 01:43
Data File: >AI557::D4 Dilution Factor: 1.00000
Name: WIILOW GROVE
Misc: 8760,RR2B-1 5 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

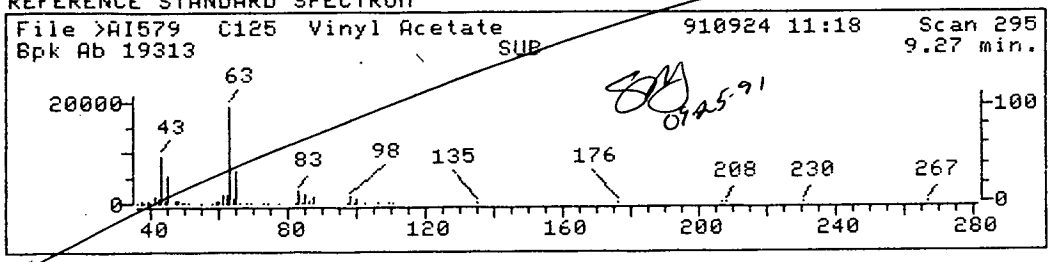
	Compound		R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	50662	50.00	UG/KG	83
20)	C110	2-Butanone	10.23	72.0	542	2.48	UG/KG	44
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	132092	54.77	UG/KG 110%	81
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	182466	50.00	UG/KG	88
40)	*CI20	Chlorobenzene-d5	21.29	117.0	148249	50.00	UG/KG	97
48)	CS05	Toluene-d8	17.35	98.0	166218	50.32	UG/KG 101%	99
57)	CS10	Bromofluorobenzene	24.66	95.0	134681	50.18	UG/KG 100%	90

* Compound is ISTD

09-25-91

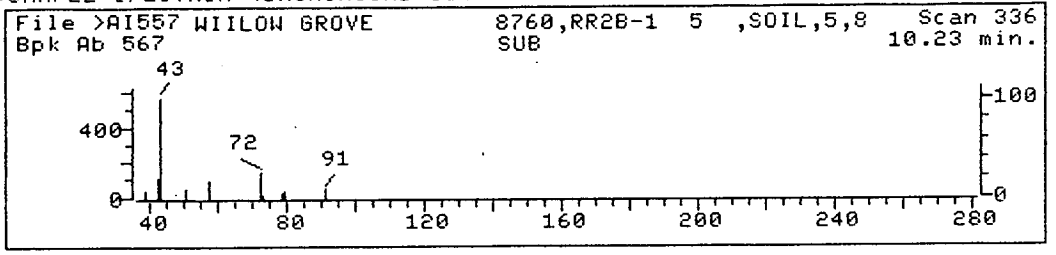
300192

REFERENCE STANDARD SPECTRUM



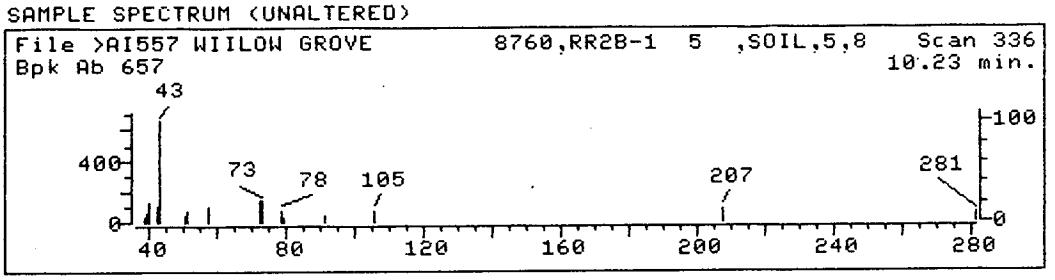
INCORRECT REFRENCE SPECTRUM

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OF 2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI557::D4 Quant Output File: ^AI557::D4
Name: WIILOW GROVE
Misc: 8760,RR2B-1 5 ,SOIL,5,8701A1,SPH
Quant Time: 910920 02:17 Quant ID File: CCAS::BD
Injected at: 910920 01:43 Last Calibration: 910919 15:59

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 542
Concentration: 2.48 UG/KG
q-value: 44

>AI557 WILLOW GROVE 8760,RR2B-1 5 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 40305. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI557 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	22	34	63	256789	6950761	6931423	100.00	100.000

Sum of corrected areas: 6931423.

Summary of PRM Library Search and Quantitation on file :>AI557::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	403055.	11.29	2.50 - 12.44
2	50.0	520310.	13.59	12.44 - 17.44
3	50.0	558987.	21.29	17.44 - 33.05

CALCULATIONS

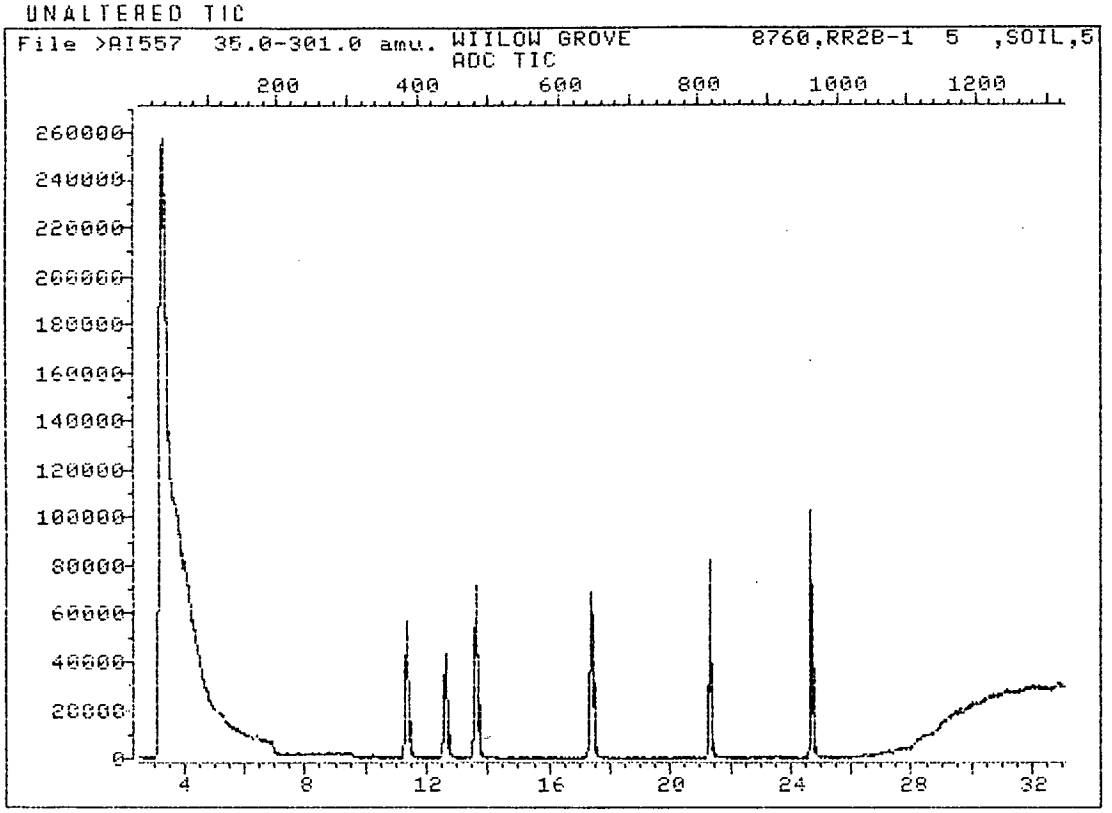
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

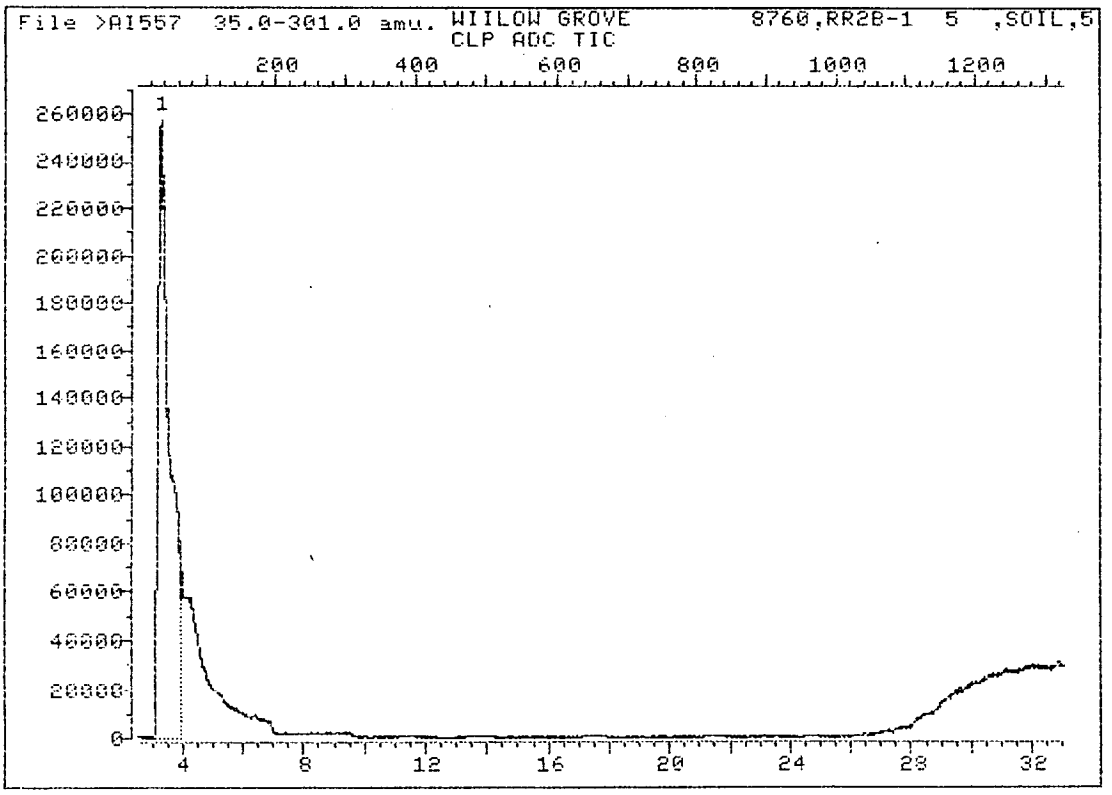
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

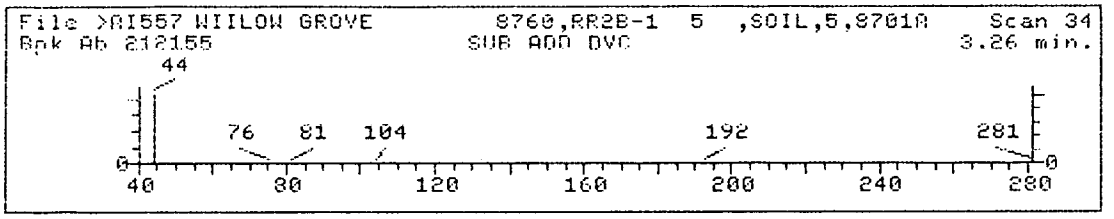
9:19 AM FRI., 20 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS #124-38-9

01-25-91

Retention time = 3.26

Area = 6931473. Tentative Concentration is 860.00

Sample file: >AI557 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI557::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/20/91 1:43
Misc:8760,RR2B-1 5 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	6931423	40305

>AI557 WILLOW GROVE 8760,RR2B-1 5 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 6 Bunching: -1
Dnslope: 0.00 Results File IAI557 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	22	34	62	256709	6924481	6881714	100.00	71.992
2	11.31	376	383	396	56599	426218	403055	5.86	4.216
3	13.59	474	482	493	71315	544319	520310	7.56	5.443
4	17.35	635	645	657	68879	525333	504969	7.34	5.283
5	21.29	808	816	829	82052	579824	558987	8.12	5.848
6	24.66	953	962	978	102688	717361	690027	10.03	7.219

Sum of corrected areas: 9559064.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-1_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8761

Sample wt/vol: 5 (g/ml) G Lab File ID: AI564

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 20 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	~~13~~ 12	U
74-83-9	Bromomethane	~~13~~ 12	U
75-01-4	Vinyl Chloride	~~13~~ 12	U
75-00-3	Chloroethane	~~13~~ 12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	~~13~~ 12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	~~13~~ 12	U
591-78-6	2-Hexanone	~~13~~ 12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

300199

FORM I VOA

~~3/90~~ 2/88

10.8.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-1_7.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8761

Sample wt/vol: 5 (g/ml) G Lab File ID: AI564

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 20 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

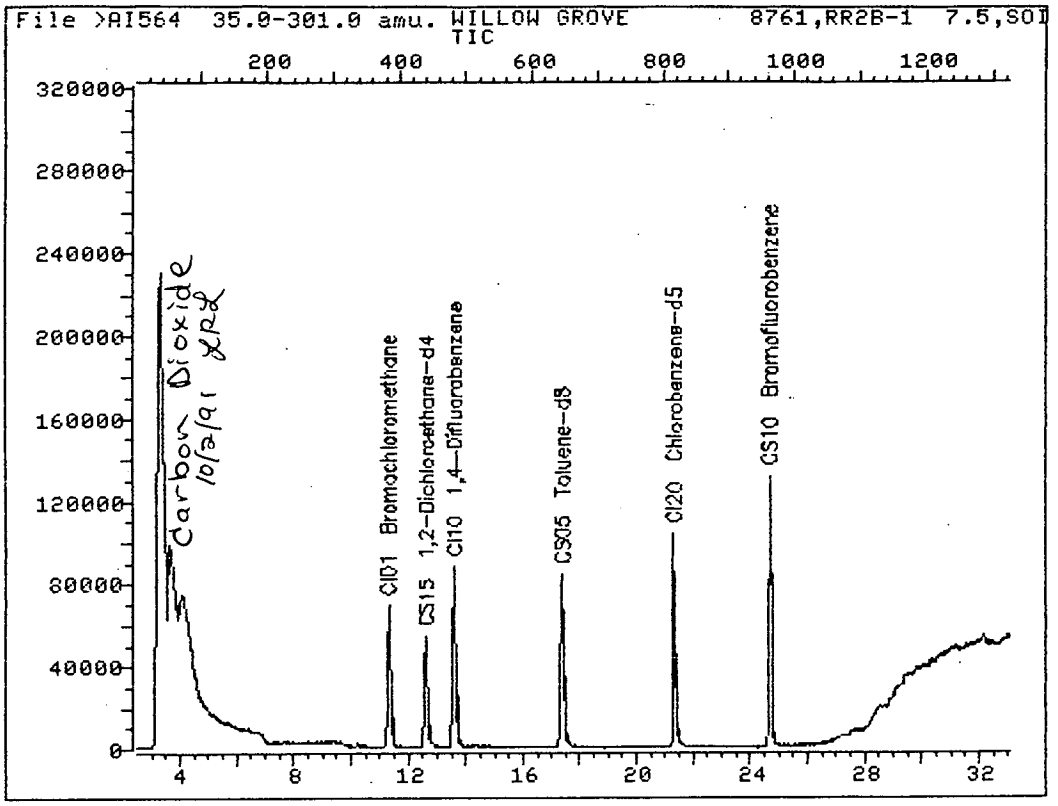
FORM I VOA-TIC

~~3/90~~
2/88

300200

A 10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI564::D4 Quant Output File: ^AI564::QT
Name: WILLOW GROVE
Misc: 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 16:31
Injected at: 910923 15:57

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 16:31
Output File: ^AI564::D4 Injected at: 910923 15:57
Data File: >AI564::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH

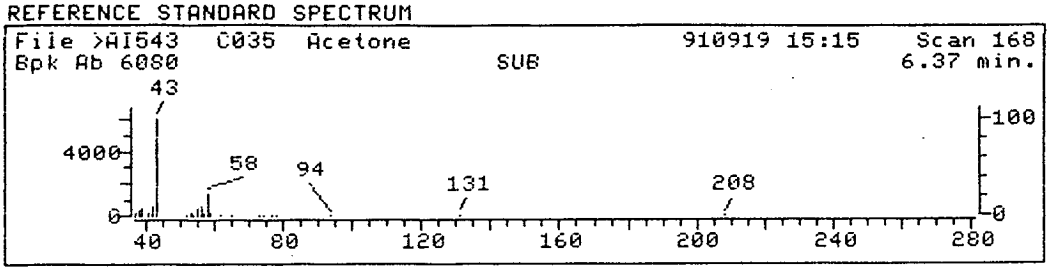
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	63334	50.00	UG/KG	87
9)	C035	Acetone	6.41	43.0	8208	7.42	UG/KG	97
20)	C110	2-Butanone	10.23	72.0	1031	4.64	UG/KG	77
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	165184	47.10	UG/KG 94%	82
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	227930	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.30	117.0	188738	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.36	98.0	207731	49.49	UG/KG 99%	96
57)	CS10	Bromofluorobenzene	24.67	95.0	170233	47.55	UG/KG 95%	87

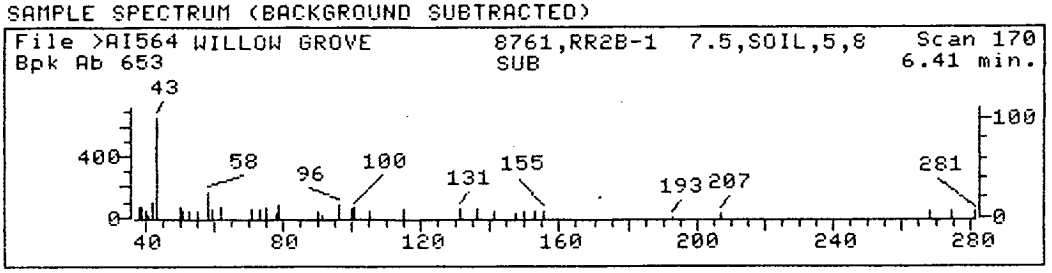
* Compound is ISTD

SM
09-25-91

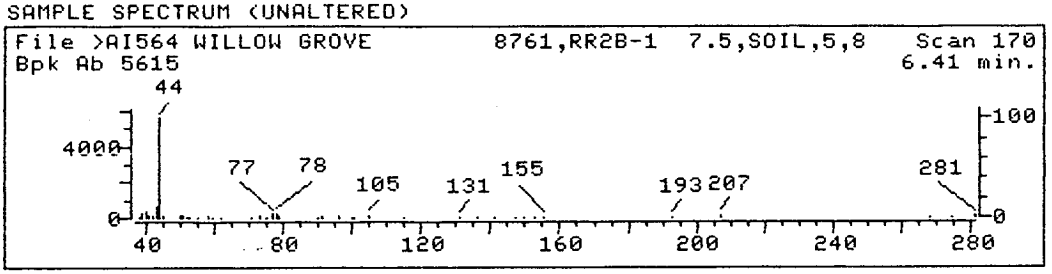
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



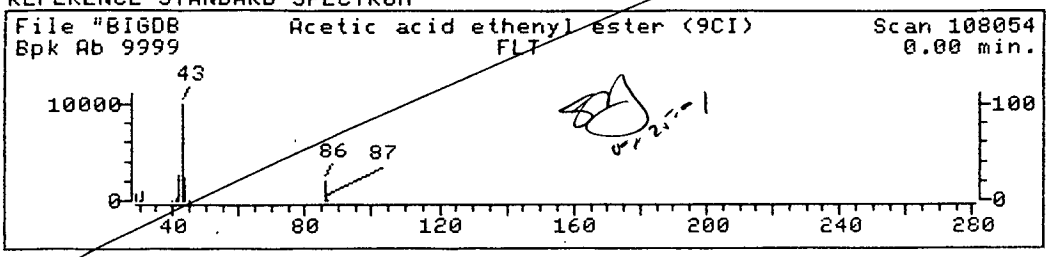
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI564::D4 Quant Output File: ^AI564::QT
Name: WILLOW GROVE
Misc: 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH
Quant Time: 910923 16:31 Quant ID File: CCAS::BD
Injected at: 910923 15:57 Last Calibration: 910923 13:27

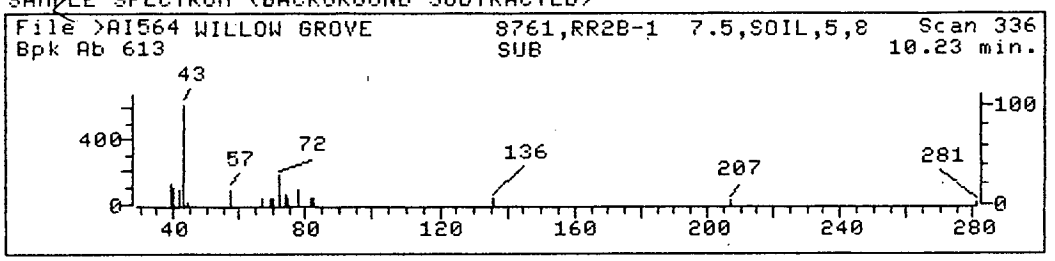
Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.41 min.
Quant Ion: 43.0
Area: 8208
Concentration: 7.42 UG/KG
q-value: 97

REFERENCE STANDARD SPECTRUM



INCORRECT REFERENCE SPECTRUM, HAS BEEN UPDATED

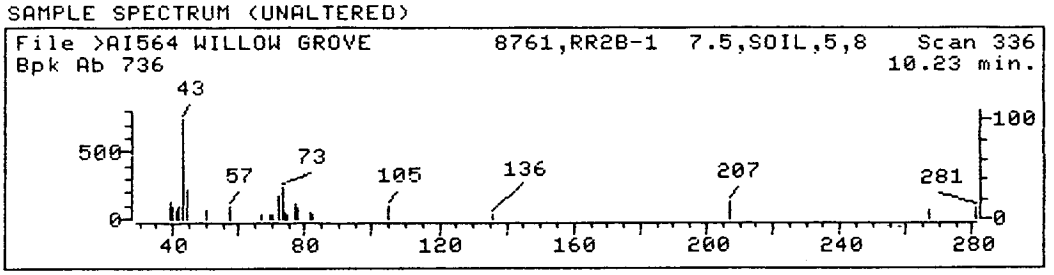
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OF 2-BUTANONE

09-25-91

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI564::D4 Quant Output File: ^AI564::QT
Name: WILLOW GROVE
Misc: 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH
Quant Time: 910923 16:31 Quant ID File: CCAS::BD
Injected at: 910923 15:57 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 1031
Concentration: 4.64 UG/KG
q-value: 77

>AI564 WILLOW GROVE 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 48894. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI564 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	22	34	44	229528	3515842	3503002	100.00	100.000

Sum of corrected areas: 3503002.

Summary of PBM Library Search and Quantitation on file :>AI564::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	488939.	11.30	2.51 - 12.45
2	50.0	650617.	13.60	12.45 - 17.45
3	50.0	712842.	21.30	17.45 - 33.04

CALCULATIONS

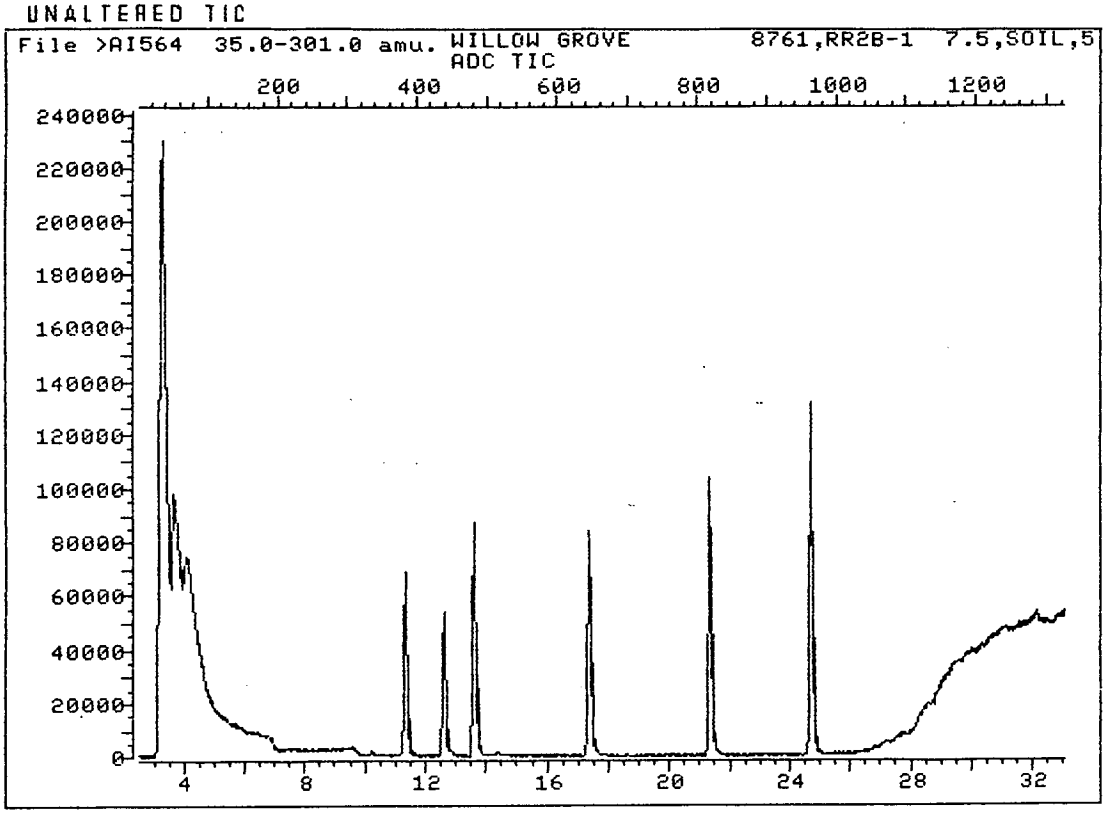
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

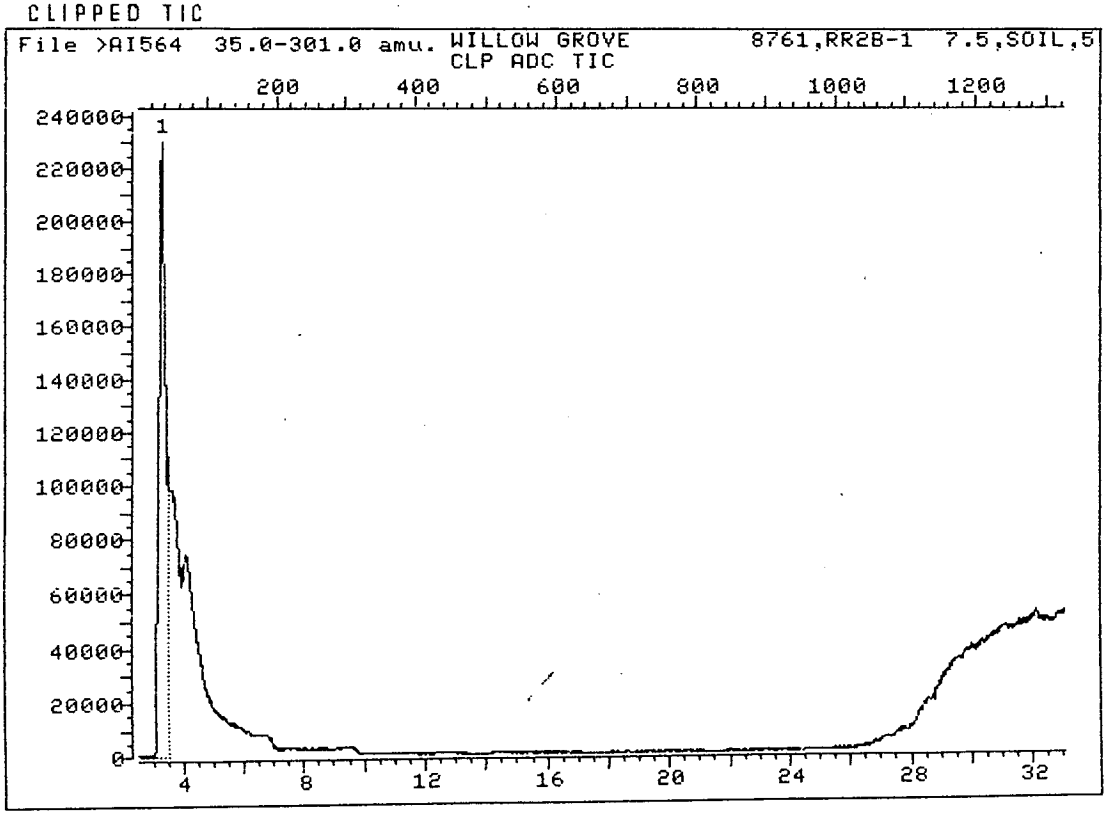
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

5:42 PM MON., 23 SEPT, 1991

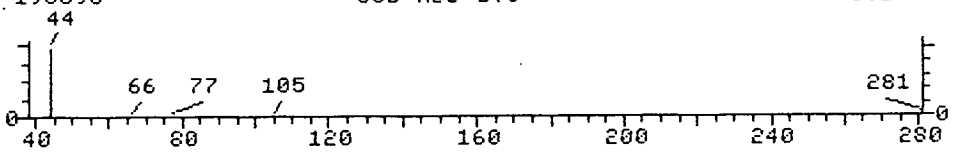
UNALTERED TIC



CLIPPED TIC



File >AI564 WILLOW GROVE 8761,RR2B-1 7.5,SOIL,5,8701A Scan 34
Bpk Ab 190398 SUB ADD DVC 3.27 min.



CARBON DIOXIDE
CAS # 124-38-9
07-25-01

Retention time = 3.27

Area = 3503002. Tentative Concentration is 360.00

Sample file: >AI564 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI564::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 15:57
Misc:8761,RR2B-1 7.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.27	3503002	48894

>AI564 WILLOW GROVE 8761,RR2B-1 7.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI564 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	22	34	46	229528	3660759	3627400	100.00	44.877
2	3.66	46	51	62	60602	1809302	687448	18.95	8.505
3	11.30	374	382	397	68504	518858	480950	13.26	5.950
4	12.61	430	439	459	53500	430475	394968	10.89	4.886
5	13.60	474	482	497	87361	680451	650617	17.94	8.049
6	17.36	634	645	663	83985	664488	637919	17.59	7.892
7	21.30	809	816	838	103372	749643	712842	19.65	8.819
8	24.67	951	962	979	131388	924508	890905	24.56	11.022

Sum of corrected areas: 8083049.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-1_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8762

Sample wt/vol: 5 (g/ml) G Lab File ID: AI565

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 11 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	7	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-1_10

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8762

Sample wt/vol: 5 (g/ml) G Lab File ID: AI565

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 11 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

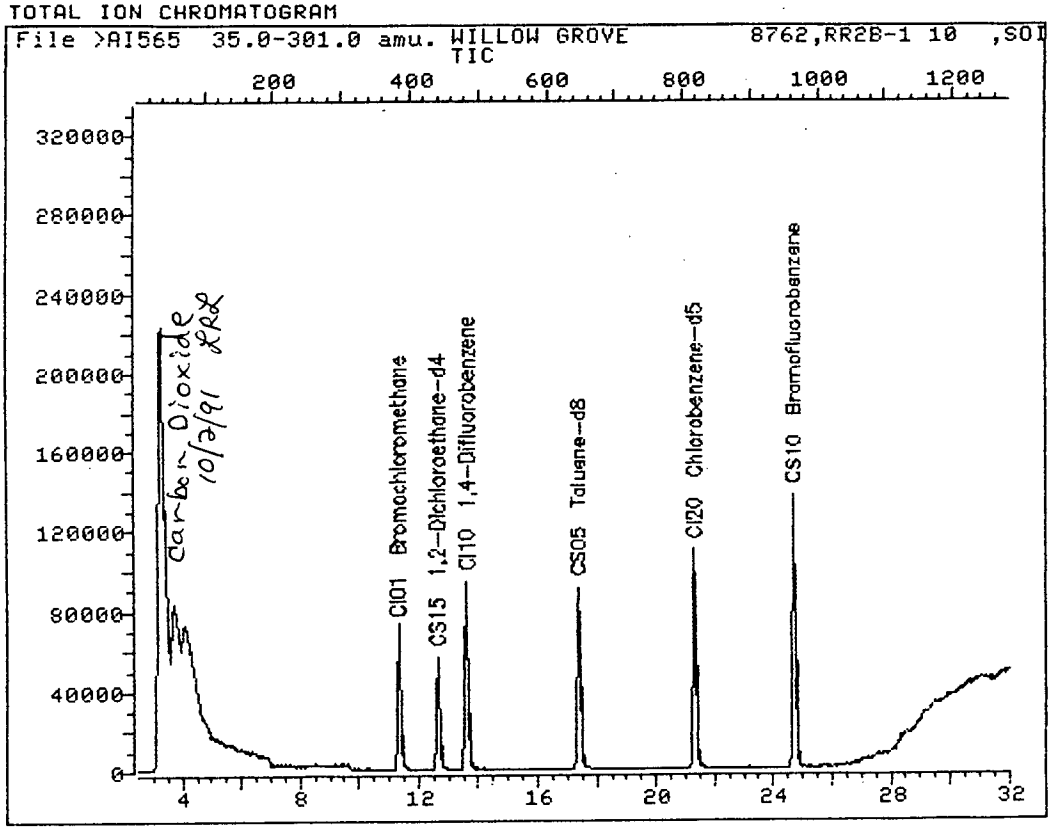
FORM I VOA-TIC

~~3/90~~
2/88

300211

09.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI565::D4 Quant Output File: ^AI565::QT
Name: WILLOW GROVE
Misc: 8762,RR2B-1 10 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 17:13
Injected at: 910923 16:40

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 17:13
Output File: ^AI565::D4 Injected at: 910923 16:40
Data File: >AI565::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8762,RR2B-1 10 ,SOIL,5,8701A1,SPH

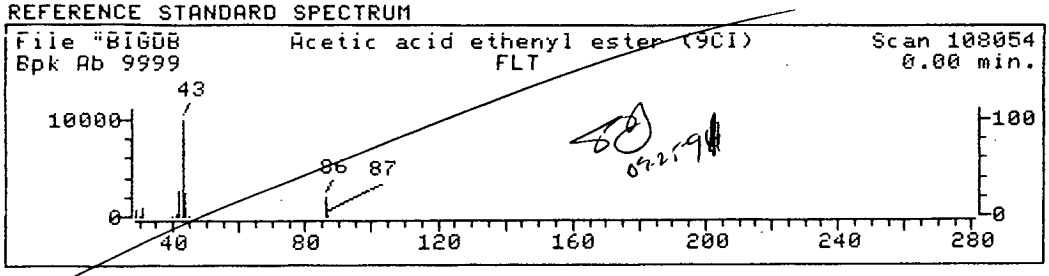
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*CI01	Bromochloromethane	11.30	128.0	64985	50.00	UG/KG		84
20)	CI10	2-Butanone	10.26	72.0	1394	6.11	UG/KG		79
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	177399	49.30	UG/KG	99%	80
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	241216	50.00	UG/KG		90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	199643	50.00	UG/KG		96
48)	CS05	Toluene-d8	17.36	98.0	219632	49.47	UG/KG	99%	99
57)	CS10	Bromofluorobenzene	24.69	95.0	181956	48.05	UG/KG	96%	92

* Compound is ISTD

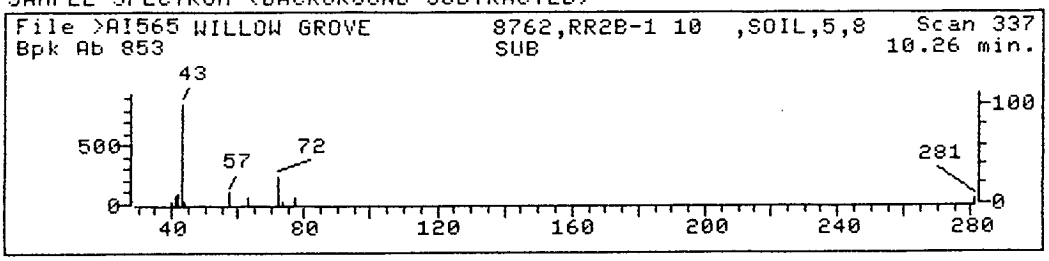
09-25-91

REFERENCE STANDARD SPECTRUM



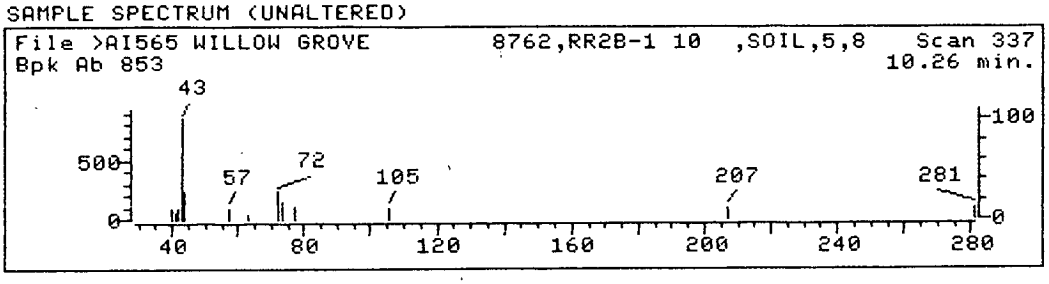
INCORRECT REFERENCE SPECTRUM ED KELLY HAS BEEN UPDATED

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OF 2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI565::D4 Quant Output File: ^AI565::QT
Name: WILLOW GROVE
Misc: 8762,RR2B-1 10 ,SOIL,5,8701A1,SPH
Quant Time: 910923 17:13 Quant ID File: CCAS::BD
Injected at: 910923 16:40 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.26 min.
Quant Ion: 72.0
Area: 1394
Concentration: 6.11 UG/KG
q-value: 79

>AI565 WILLOW GROVE 8762,RR2B-1 10 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 51659. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI565 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	23	34	46	222831	3490009	3479225	100.00	86.085
2	3.73	47	54	63	47585	1575277	562391	16.16	13.915

Sum of corrected areas: 4041616.

Summary of PBM Library Search and Quantitation on file :>AI565::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	516590.	11.30	2.51 - 12.45
2	50.0	692939.	13.60	12.45 - 17.45
3	50.0	743176.	21.30	17.45 - 32.02

CALCULATIONS

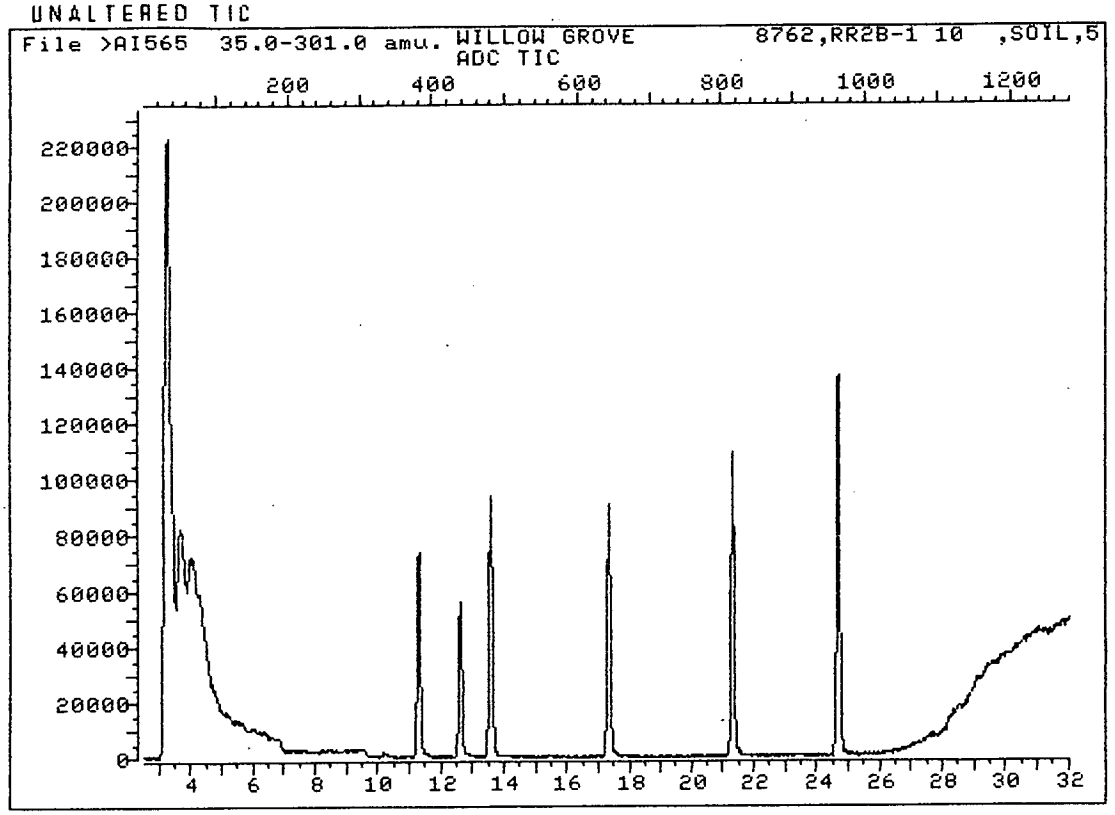
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

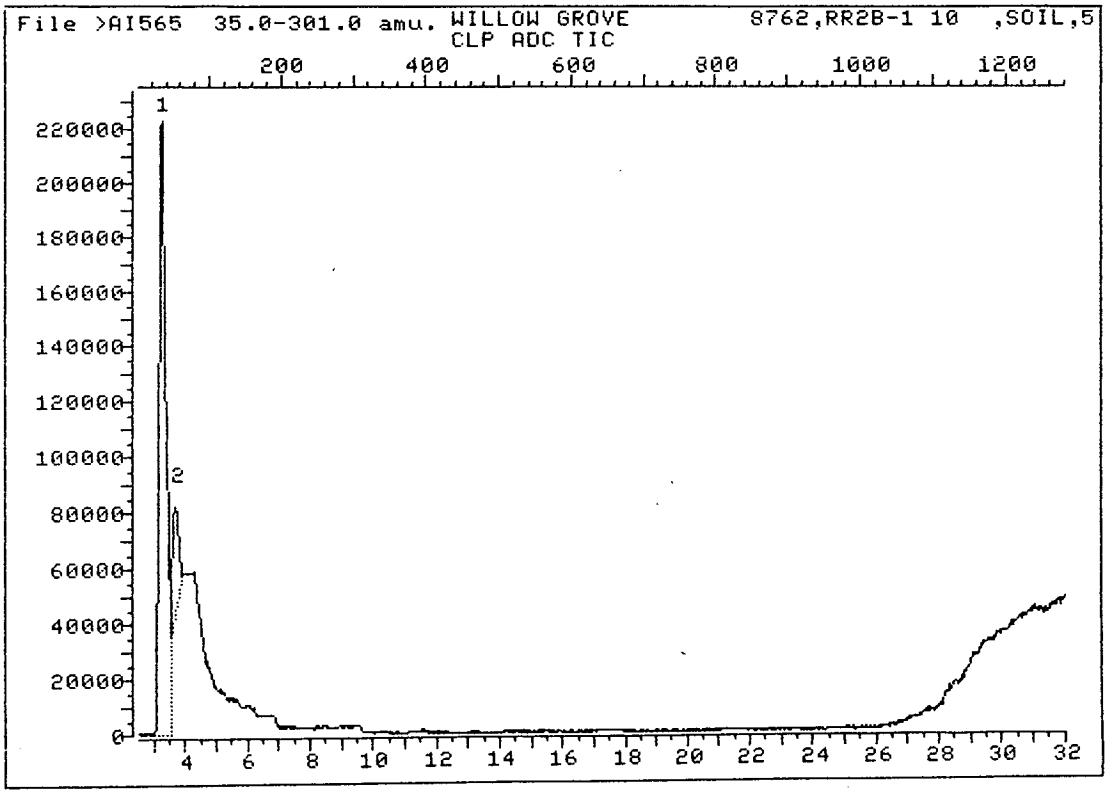
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

6:06 PM MON., 23 SEPT, 1991

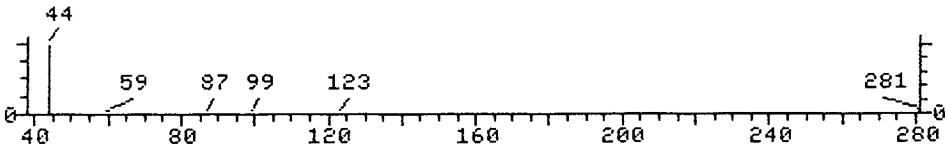
UNALTERED TIC



CLIPPED TIC



File >AI565 WILLOW GROVE 8762,RR2B-1 10 ,SOIL,5,8701A Scan 34
Bpk Ab 192843 SUB ADD DVC 3.27 min.



CARBON DIOXIDE
CAS # 124-38-9
09-23-11

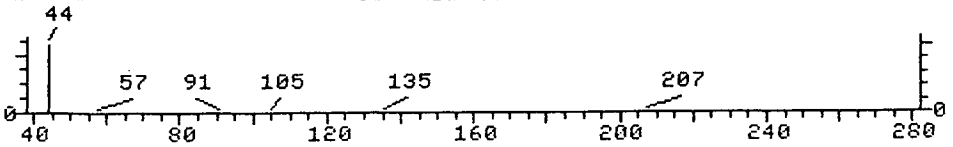
Retention time = 3.27

Area = 3479225. Tentative Concentration is 340.00

Sample file: >AI565 Spectrum #: 34

No data base entries were retrieved.

File >AI565 WILLOW GROVE 8762,RR2B-1 10 ,SOIL,5,8701A Scan 54
Bpk Ab 23480 SUB ADD DVC 3.73 min.



CARBON DIOXIDE
CAS # 124-38-9
09.25.91

Retention time = 3.73

Area = 562391.0 Tentative Concentration is 54.00

Sample file: >AI565 Spectrum #: 54

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI565::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 16:40
Misc:8762,RR2B-1 10 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.27	3479225	51659
2	3.73	562391	51659

>AI565 WILLOW GROVE 8762,RR2B-1 10 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI565 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	23	34	46	222831	3511927	3479225	100.00	43.564
2	3.73	47	54	62	45820	1510610	528413	15.19	6.616
3	11.32	374	383	401	73445	552629	515526	14.82	6.455
4	12.61	426	439	466	56474	470049	424010	12.19	5.309
5	13.60	473	482	494	94115	718289	692939	19.92	8.676
6	17.36	636	645	662	91110	696948	666395	19.15	8.344
7	21.30	808	816	837	109283	784992	743176	21.36	9.305
8	24.69	955	963	975	136804	968151	936802	26.93	11.730

Sum of corrected areas: 7986486.

300220

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-1_12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8763

Sample wt/vol: 5 (g/ml) G Lab File ID: AI566

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. ~~12~~ 11 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	~~11~~ 10	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	~~8~~ 7	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

10 BCY

FORM I VOA

~~3/90~~ 2/88

300221

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-1_12.5

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8763

Sample wt/vol: 5 (g/ml) G Lab File ID: AI566

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. ~~12~~ 11 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

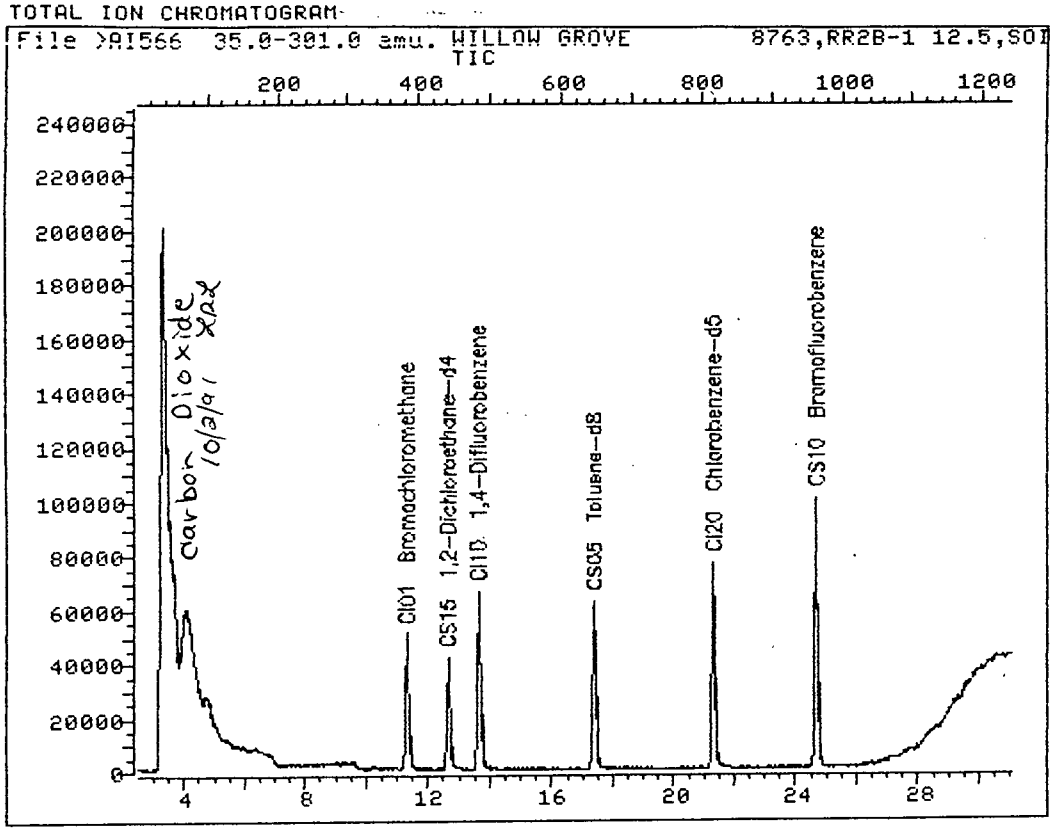
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC ~~3/90~~ 2/88

300222

10-8-91

TOTAL ION CHROMATOGRAM



Data File: >AI566::D4 Quant Output File: ^AI566::QT
Name: WILLOW GROVE
Misc: 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 17:53
Injected at: 910923 17:21

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 17:53
Output File: ^AI566::D4 Injected at: 910923 17:21
Data File: >AI566::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

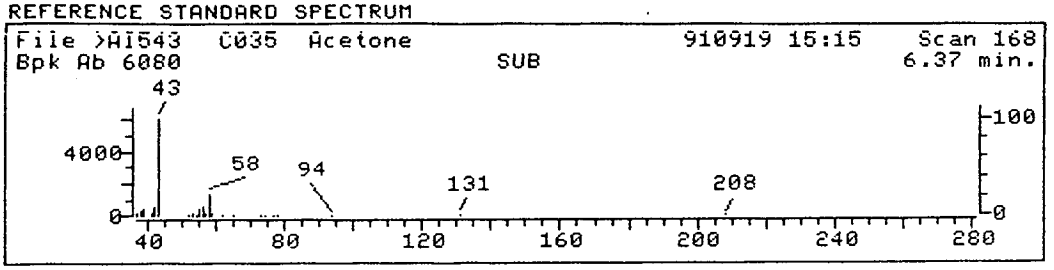
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	46130	50.00	UG/KG	87
9)	C035	Acetone	6.39	43.0	7447	9.25	UG/KG	88
20)	C110	2-Butanone	10.24	72.0	1079	6.66	UG/KG	59
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	125763	49.24	UG/KG 98%	80
23)	*CI10	1,4-Difluorobenzene	13.61	114.0	170592	50.00	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.31	117.0	139859	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.36	98.0	152392	48.99	UG/KG 98%	98
57)	CS10	Bromofluorobenzene	24.67	95.0	129872	48.96	UG/KG 98%	94

* Compound is ISTD

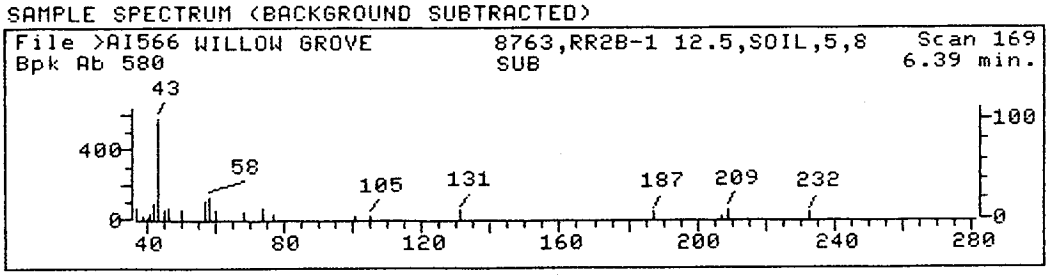
09/25/91

390224

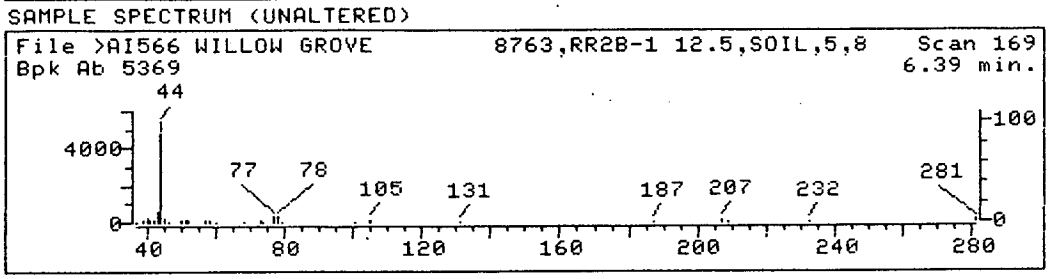
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



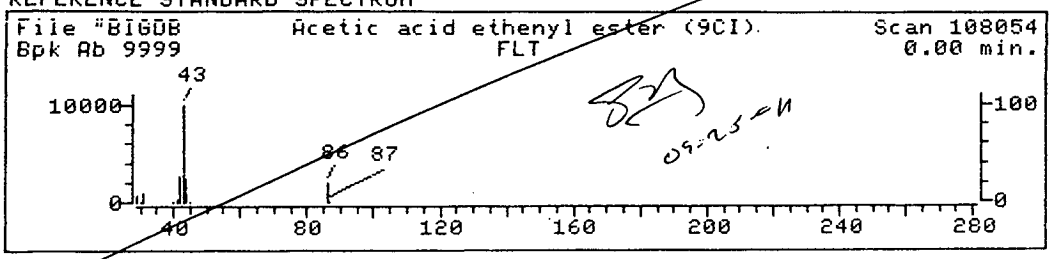
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI566::D4 Quant Output File: ^AI566::QT
Name: WILLOW GROVE
Misc: 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH
Quant Time: 910923 17:53 Quant ID File: CCAS::BD
Injected at: 910923 17:21 Last Calibration: 910923 13:27

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.39 min.
Quant Ion: 43.0
Area: 7447
Concentration: 9.25 UG/KG
q-value: 88

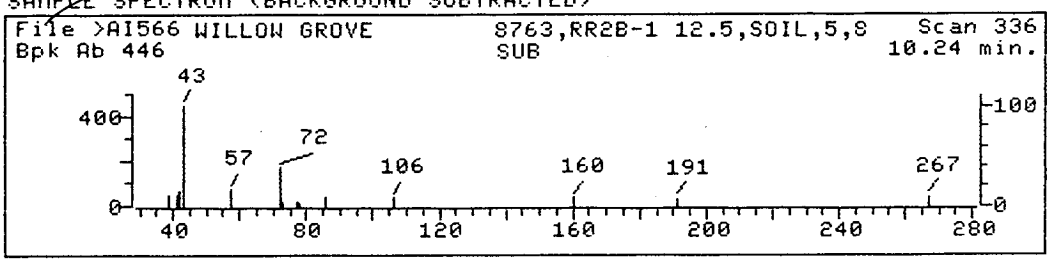
REFERENCE STANDARD SPECTRUM



INCORRECT REFERENCE SPECTRUM. THE ID FILE HAS BEEN UPDATED CORRECTED

09-25-91

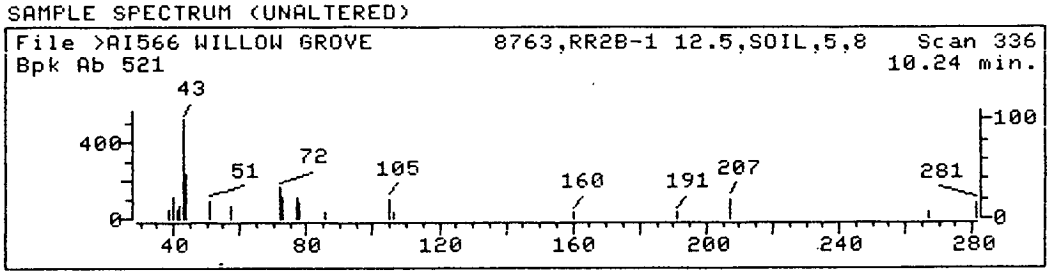
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



REMARK HIT OF 2-BUTANONE

09-25-91

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI566::D4 Quant Output File: ^AI566::QT
Name: WILLOW GROVE
Misc: 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH
Quant Time: 910923 17:53 Quant ID File: CCAS::BD
Injected at: 910923 17:21 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 1079
Concentration: 6.66 UG/KG
q-value: 59

>AI566 WILLOW GROVE 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 37089. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI566 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	18	34	58	200545	4288417	4266782	100.00	97.480
2	4.01	62	66	69	21369	495843	110292	2.58	2.520

Sum of corrected areas: 4377074.

Summary of PBM Library Search and Quantitation on file :>AI566::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	370886.	11.30	2.51 - 12.45
2	50.0	486855.	13.60	12.45 - 17.46
3	50.0	525789.	21.31	17.46 - 31.05

CALCULATIONS

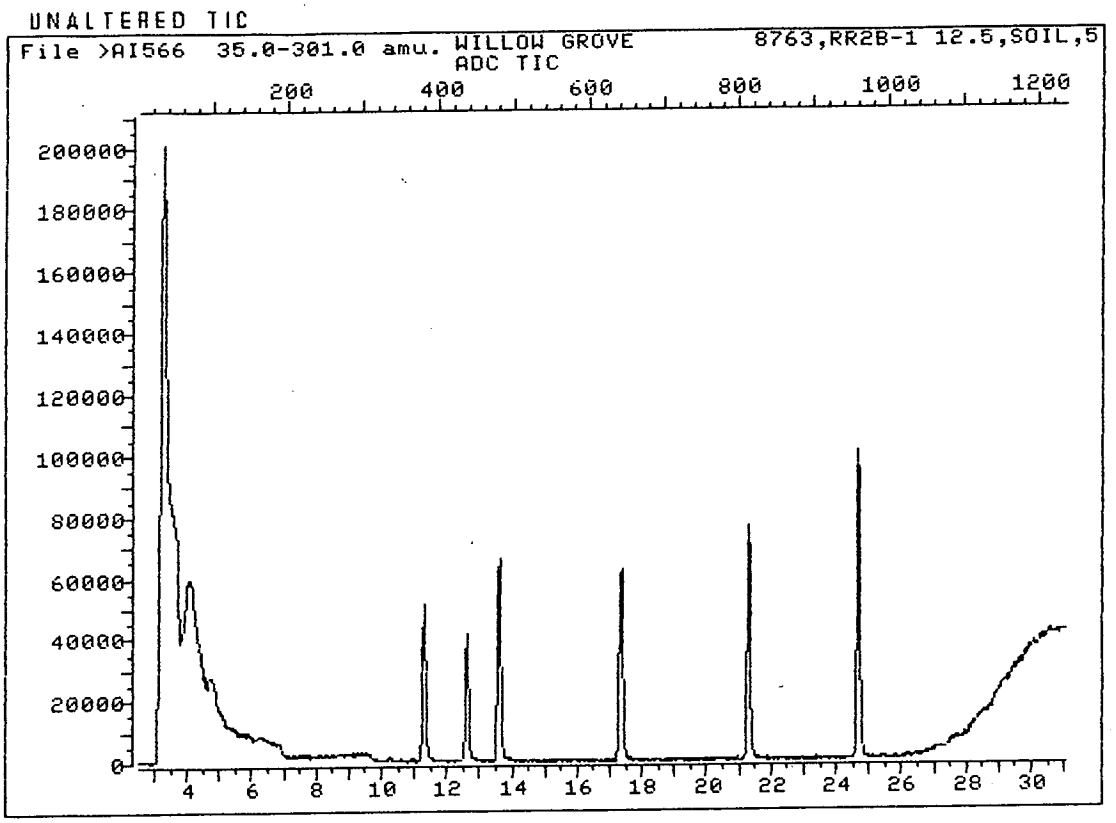
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

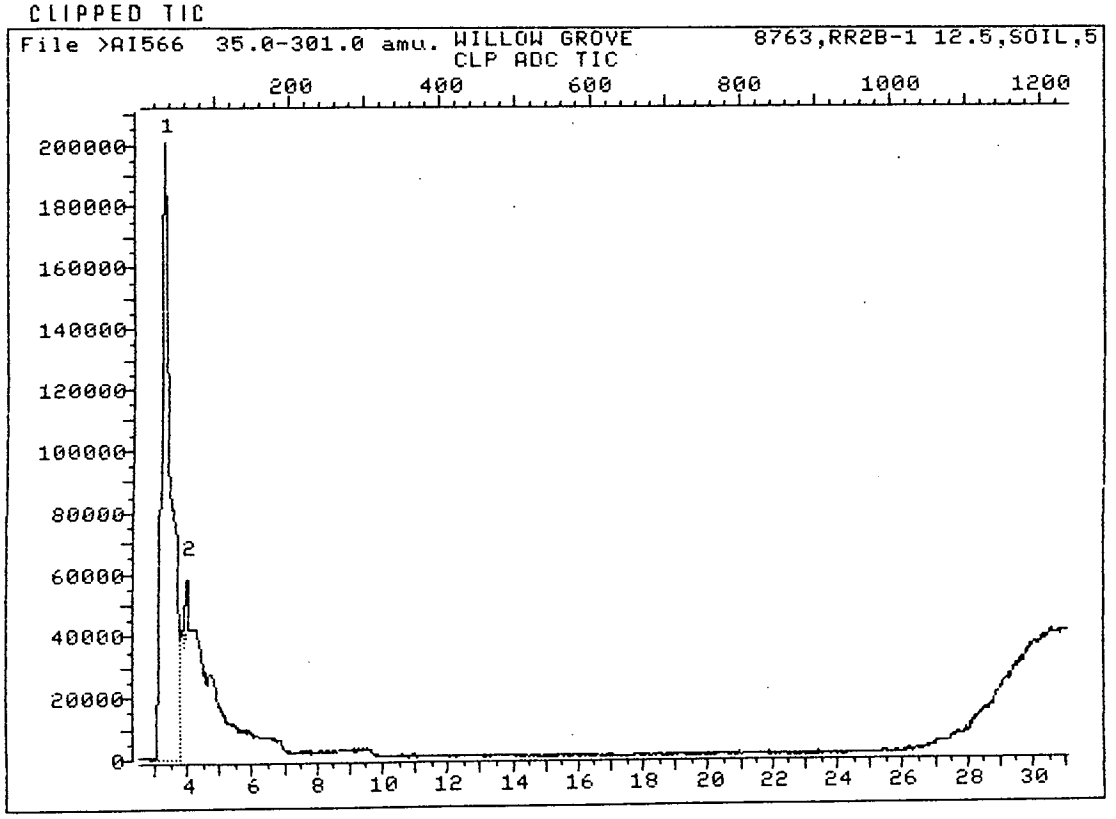
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

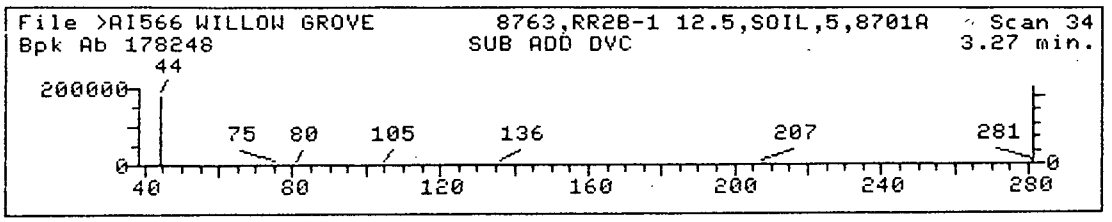
6:30 PM MON., 23 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





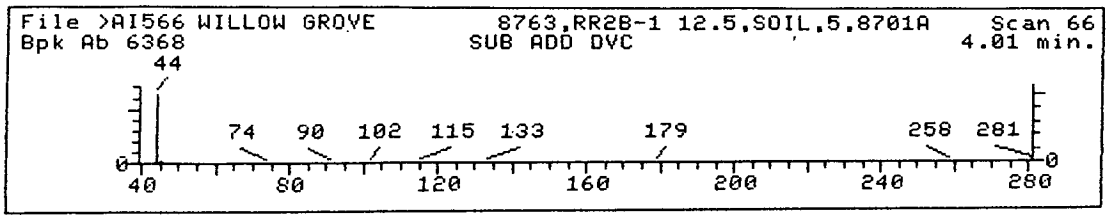
CARBON DIOXIDE
CAS # 124-38-9
09-21-91

Retention time = 3.27

Area = 4266782. Tentative Concentration is 580.00

Sample file: >AI566 Spectrum #: 34

No data base entries were retrieved.



CARBON DIOXIDE
CAS # 124-38-9
01-25-91

Retention time = 4.01

Area = 110292.0 Tentative Concentration is 15.00

Sample file: >AI566 Spectrum #: 66

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI566::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 17:21
Misc:8763,RR2B-1 12.5,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.27	4266782	37089
2	4.01	110292	37089

>AI566 WILLOW GROVE 8763,RR2B-1 12.5,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI566 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	18	34	58	200545	4319735	4266782	100.00	52.482
2	4.10	62	70	94	45503	1952637	1059497	24.83	13.032
3	11.32	371	383	394	51103	397413	370886	8.69	4.562
4	12.61	431	439	463	41545	342461	301769	7.07	3.712
5	13.61	473	482	491	66009	507940	486855	11.41	5.988
6	17.36	637	645	655	62269	478923	454753	10.66	5.594
7	21.31	804	816	828	76183	551995	525789	12.32	6.467
8	24.67	954	962	977	99945	696693	663668	15.55	8.163

Sum of corrected areas: 8129999.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2B-1_14

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8764

Sample wt/vol: 5 (g/ml) G Lab File ID: AI567

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 27 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	~~3~~ 14	~~BJ~~ U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene(Total)	7	U
67-66-3	Chloroform	7	U
107-06-02	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene(total)	7	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2B-1_14

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8764

Sample wt/vol: 5 (g/ml) G Lab File ID: AI567

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 27 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

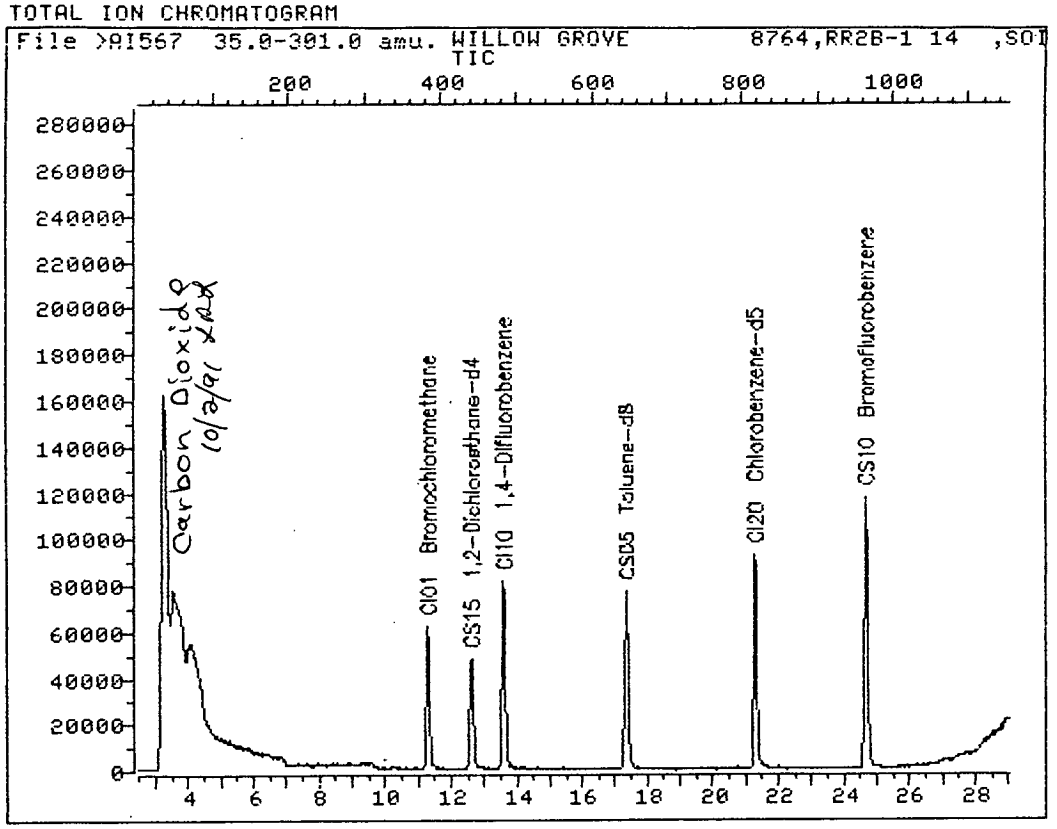
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88

6/10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI567::D4 Quant Output File: ^AI567::QT
Name: WILLOW GROVE
Misc: 8764,RR2B-1 14 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 18:31
Injected at: 910923 18:01

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 18:31
Output File: ^AI567::D4 Injected at: 910923 18:01
Data File: >AI567::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8764,RR2B-1 14 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	53217	50.00	UG/KG	84
9)	C035	Acetone	6.56	43.0	1736	NC ~~1.87~~	UG/KG	56
21)	CS15	1,2-Dichloroethane-d4	12.63	65.0	151388	51.37	UG/KG/03 %	77
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	200378	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	165962	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.35	98.0	183218	49.64	UG/KG 99 %	98
57)	CS10	Bromofluorobenzene	24.69	95.0	155481	49.39	UG/KG 99 %	95

* Compound is ISTD

10-8-91 09-25-91

300236

>AI567 WILLOW GROVE 8764,RR2B-1 14 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 42222. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI567 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	25	35	43	162336	2232002	2224455	100.00	100.000

Sum of corrected areas: 2224455.

Summary of PBM Library Search and Quantitation on file :>AI567::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	422223.	11.31	2.48 - 12.45
2	50.0	587035.	13.59	12.45 - 17.45
3	50.0	630654.	21.30	17.45 - 29.04

CALCULATIONS

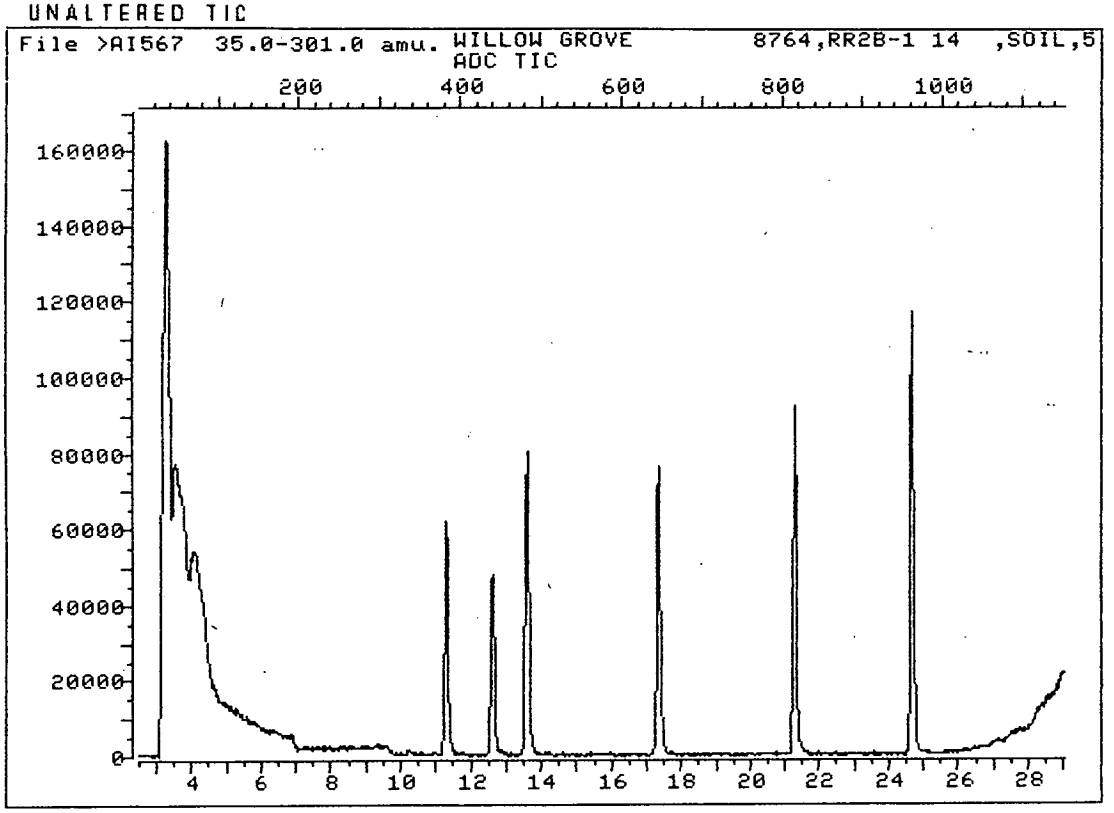
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

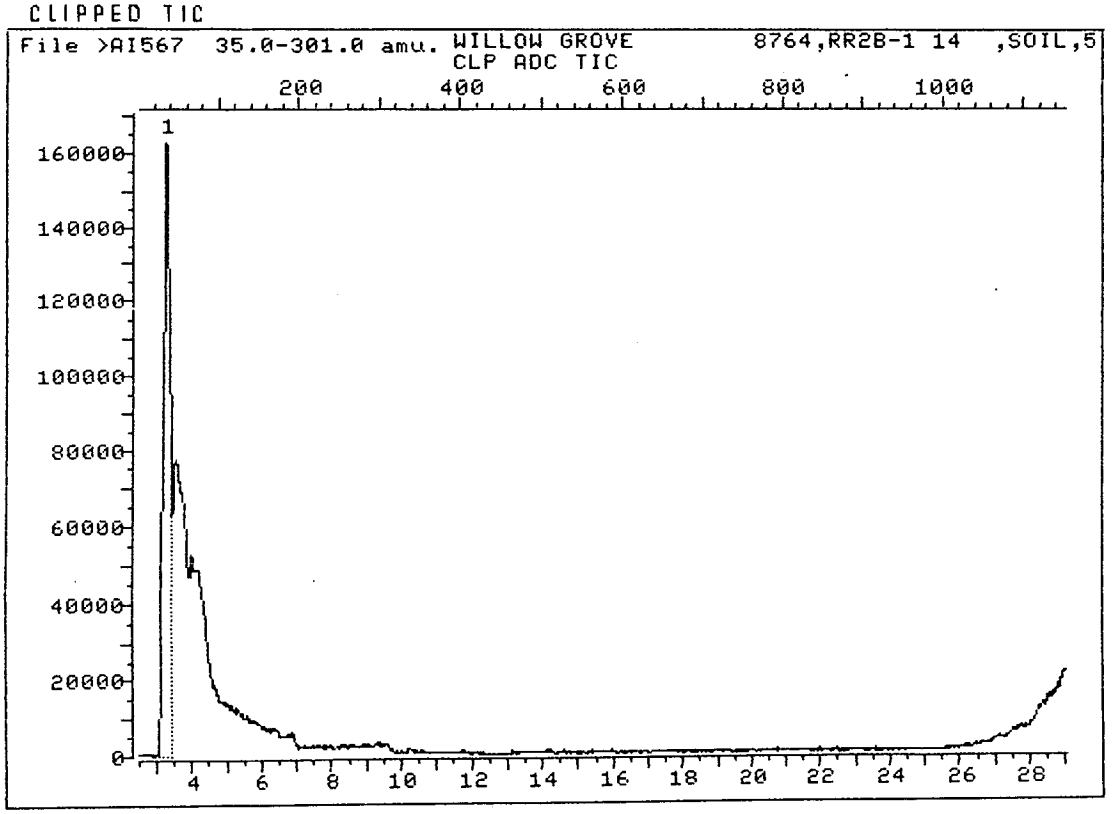
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

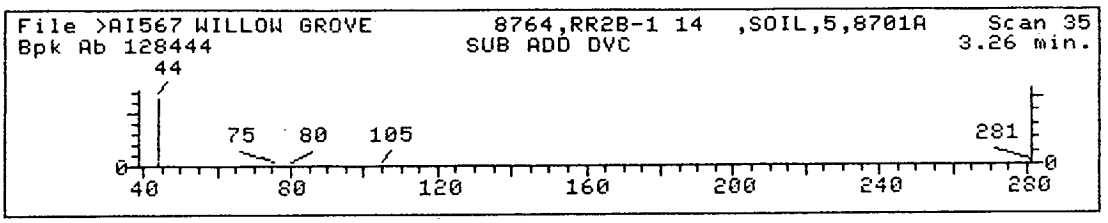
6:55 PM MON., 23 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS #124-38-9

Retention time = 3.26

Area = 2224455. Tentative Concentration is 260.00

Sample file: >AI567 Spectrum #: 35

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI567::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 18:01
Misc:8764,RR2B-1 14 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	2224455	42222

>AI567 WILLOW GROVE 8764,RR2B-1 14 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI567 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	25	35	43	162336	2245376	2224455	100.00	39.955
2	11.31	376	384	398	61686	455284	422223	18.98	7.584
3	12.63	432	441	449	47961	359570	340085	15.29	6.108
4	13.60	476	483	497	80686	615480	587035	26.39	10.544
5	17.35	634	646	664	76717	594428	563288	25.32	10.118
6	21.30	809	817	837	92326	664256	630654	28.35	11.328
7	24.69	956	964	975	117131	822698	799708	35.95	14.364

Sum of corrected areas: 5567448.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765

Sample wt/vol: 5 (g/ml) G Lab File ID: AI568

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	8	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~ 2/88 300242

10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765

Sample wt/vol: 5 (g/ml) G Lab File ID: AI568

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

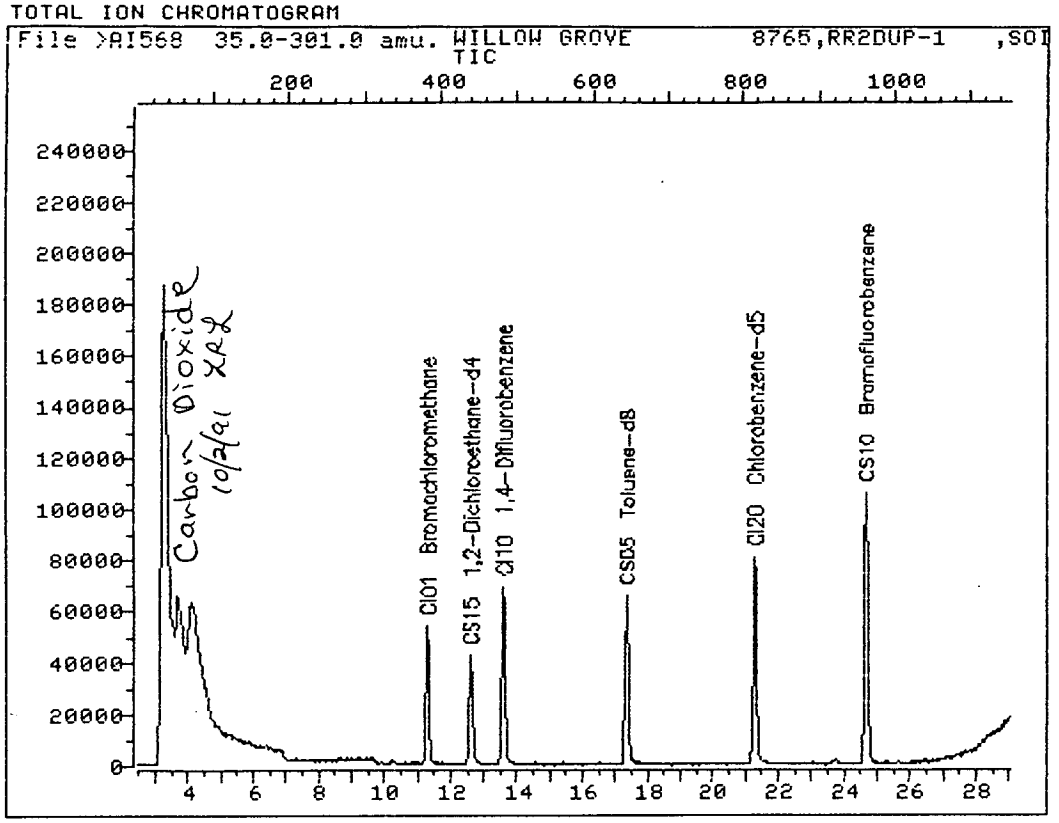
FORM I VOA-TIC

~~3/90~~
2/88

390243

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI568::D4 Quant Output File: ^AI568::QT
Name: WILLOW GROVE
Misc: 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 19:09
Injected at: 910923 18:39

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 19:09
Output File: ^AI568::D4 Injected at: 910923 18:39
Data File: >AI568::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

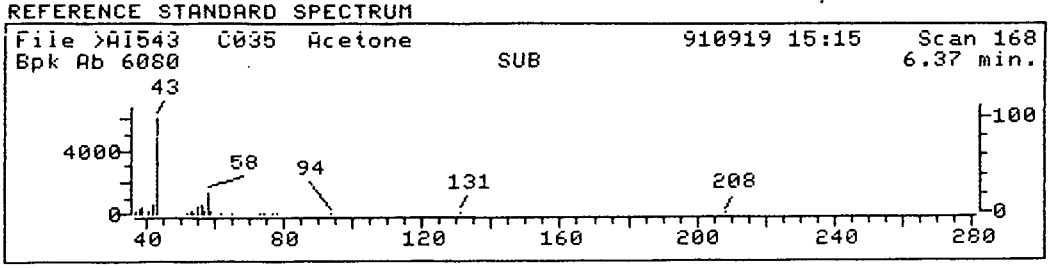
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.32	128.0	45771	50.00	UG/KG	83
9)	C035	Acetone	6.38	43.0	7705	9.64	UG/KG	83
20)	C110	2-Butanone	10.23	72.0	1121	6.97	UG/KG	87
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	134044	52.89	UG/KG 106%	78
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	168285	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	140828	50.00	UG/KG	98
48)	CS05	Toluene-d8	17.36	98.0	153694	49.07	UG/KG 98%	97
57)	CS10	Bromofluorobenzene	24.67	95.0	131903	49.38	UG/KG 99%	87

* Compound is ISTD

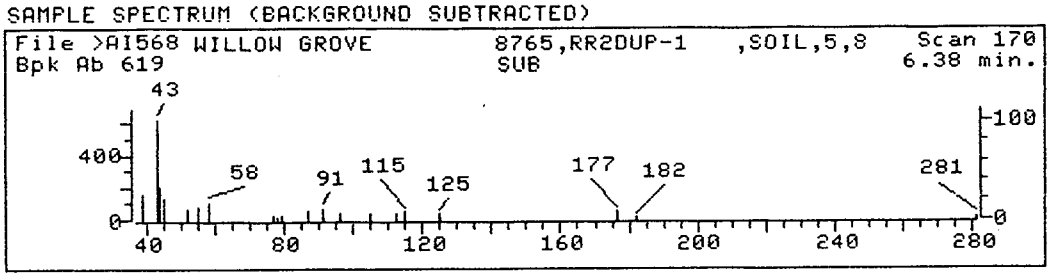
09.25.91

390245

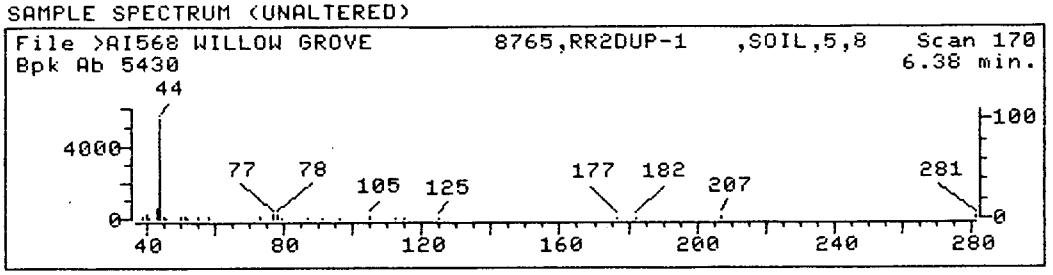
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

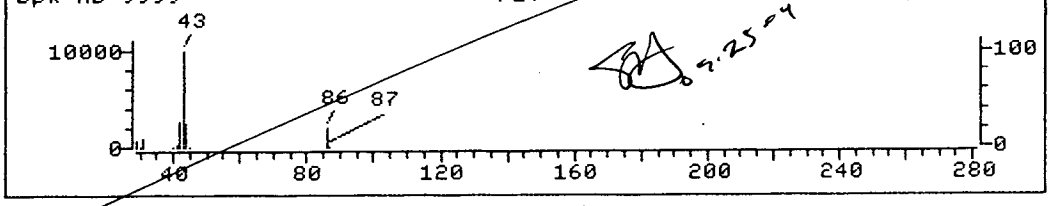


Data File: >AI568::D4 Quant Output File: ^AI568::QT
Name: WILLOW GROVE
Misc: 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH
Quant Time: 910923 19:09 Quant ID File: CCAS::BD
Injected at: 910923 18:39 Last Calibration: 910923 13:27

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 7705
Concentration: 9.64 UG/KG
q-value: 83

REFERENCE STANDARD SPECTRUM

File "BIGDB Acetic acid ethenyl ester (9CI) Scan 108054
Bpk Ab 9999 FLT 0.00 min.

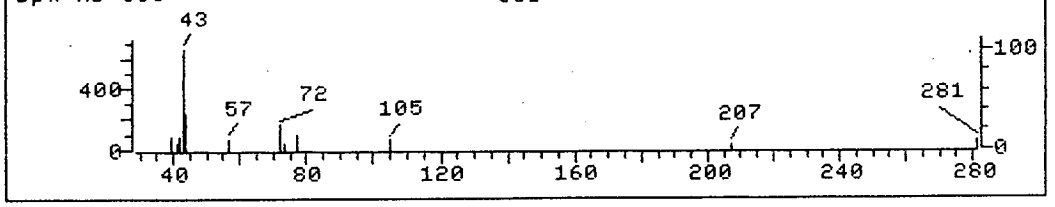


9.25.91

INCORRECT REFERENCE SPECTRUM — RB FILE HAS BEEN UPDATED

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

File >AI568 WILLOW GROVE 8765,RR2DUP-1 ,SOIL,5,8 Scan 337
Bpk Ab 655 SUB 10.23 min.

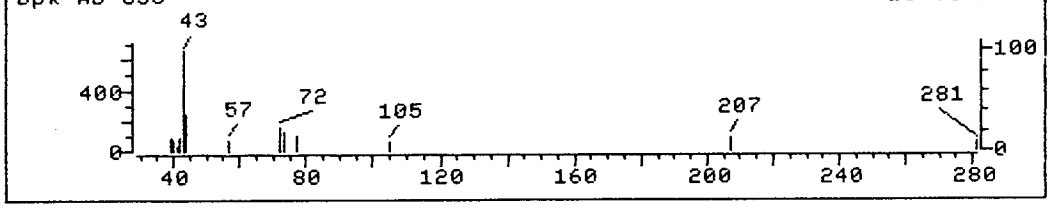


AGREE HIT OF 2-BUTANONE

09.25.91

SAMPLE SPECTRUM (UNALTERED)

File >AI568 WILLOW GROVE 8765,RR2DUP-1 ,SOIL,5,8 Scan 337
Bpk Ab 655 10.23 min.



Data File: >AI568::D4 Quant Output File: ^AI568::QT
Name: WILLOW GROVE
Misc: 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH
Quant Time: 910923 19:09 Quant ID File: CCAS::BD
Injected at: 910923 18:39 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 1121
Concentration: 6.97 UG/KG
q-value: 87

>AI568 WILLOW GROVE 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 36704. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI568 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	21	35	49	186749	2920502	2905283	100.00	100.000

Sum of corrected areas: 2905283.

Summary of PBM Library Search and Quantitation on file :>AI568::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	367043.	11.32	2.48 - 12.46
2	50.0	513182.	13.60	12.46 - 17.45
3	50.0	555757.	21.30	17.45 - 29.05

CALCULATIONS

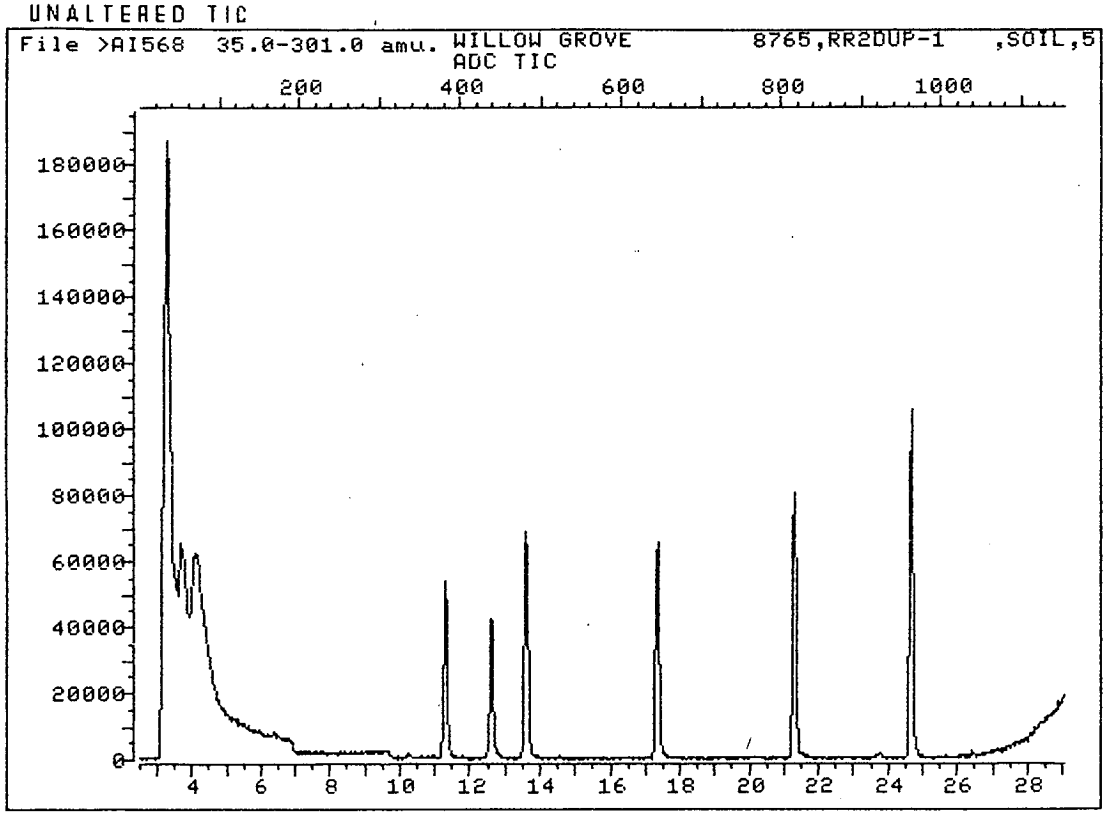
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

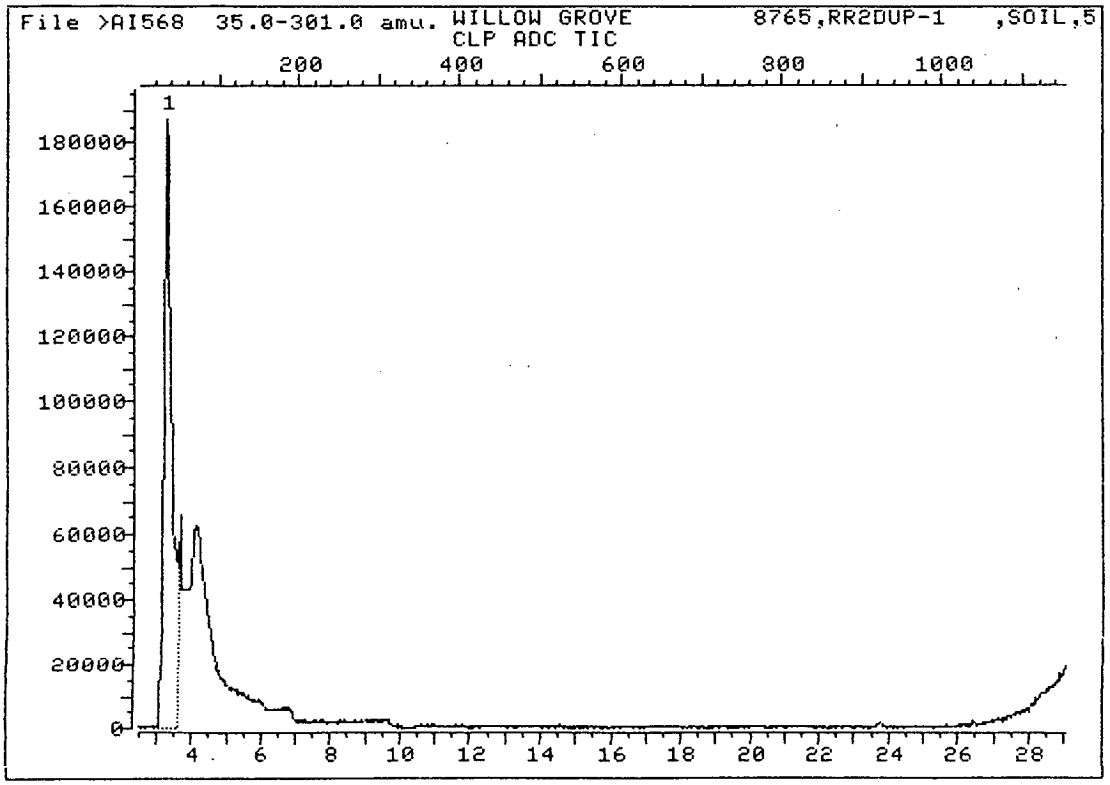
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

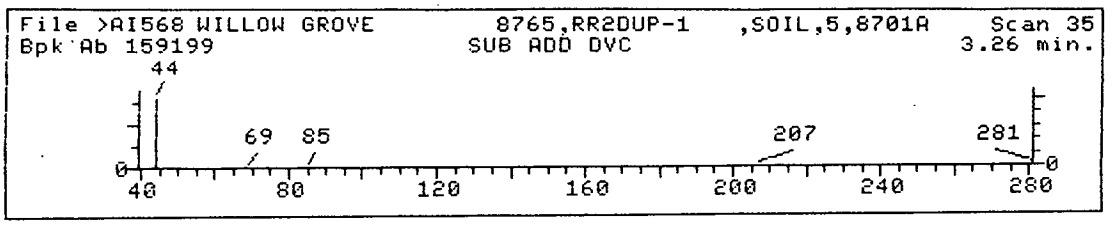
7:16 PM MON., 23 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9
09-23-91

Retention time = 3.26

Area = 2905283. Tentative Concentration is 400.00

Sample file: >AI568 Spectrum #: 35

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI568::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 18:39
Misc:8765,RR2DUP-1 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	2905283	36704

>AI568 WILLOW GROVE 8765,RR2DUP-1 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI568 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	21	35	49	186749	2933823	2905283	100.00	47.285
2	3.70	51	54	63	34185	933982	314254	10.82	5.115
3	11.32	377	384	394	53508	389672	367043	12.63	5.974
4	12.61	432	440	454	42019	329956	306188	10.54	4.983
5	13.60	471	483	496	69147	535470	513182	17.66	8.352
6	17.36	638	646	662	65706	502562	483596	16.65	7.871
7	21.30	806	817	833	80760	575297	555757	19.13	9.045
8	24.67	955	963	977	105060	727226	698869	24.06	11.375

Sum of corrected areas: 6144172.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766

Sample wt/vol: 5 (g/ml) G Lab File ID: AI569

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	5	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766

Sample wt/vol: 5 (g/ml) G Lab File ID: AI569

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
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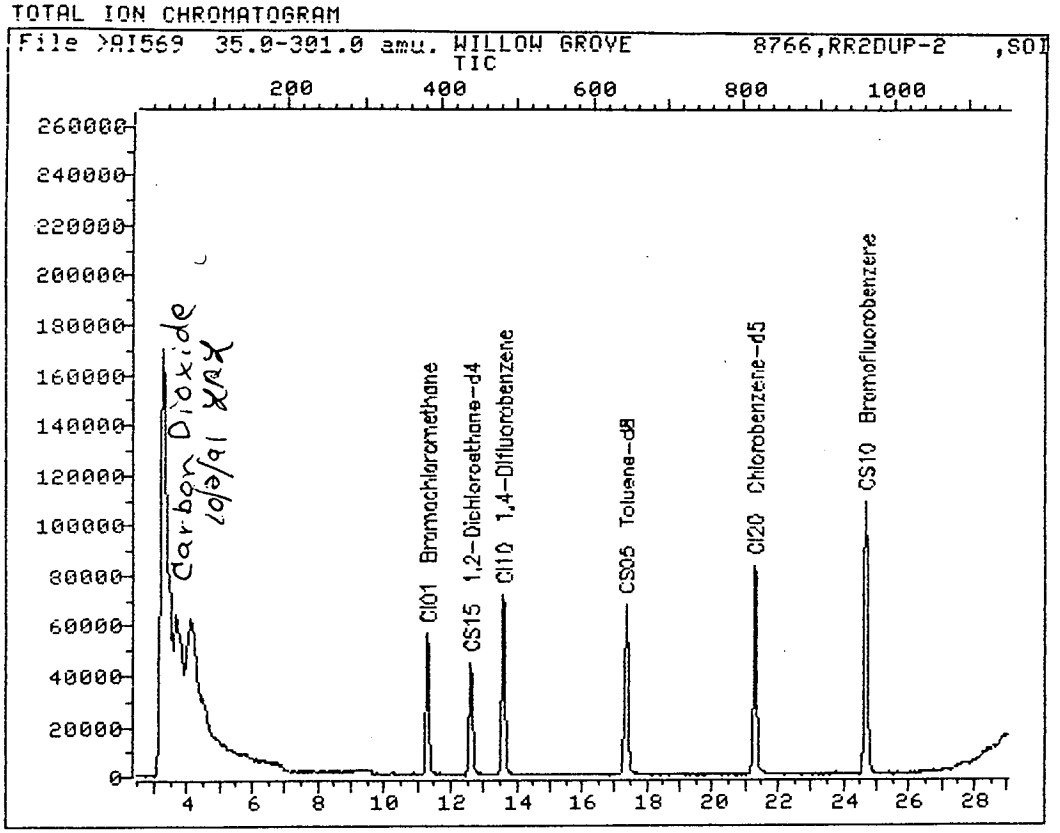
10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI569::D4 Quant Output File: ^AI569::QT
Name: WILLOW GROVE
Misc: 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 19:46
Injected at: 910923 19:16

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 19:46
Output File: ^AI569::D4 Injected at: 910923 19:16
Data File: >AI569::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH

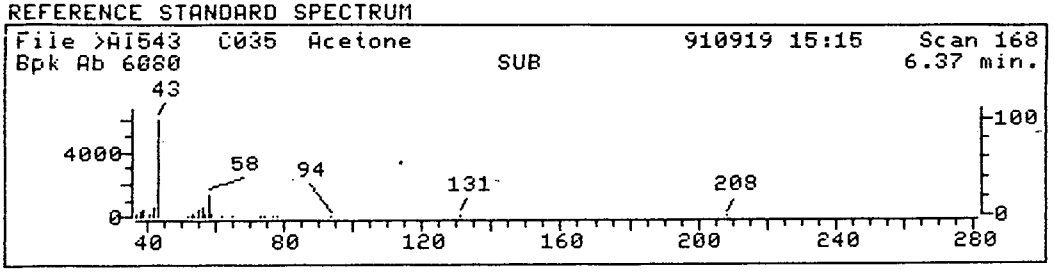
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	46563	50.00	UG/KG	84
9)	C035	Acetone	6.38	43.0	4588	5.64	UG/KG	82
20)	C110	2-Butanone	10.23	72.0	749	4.58	UG/KG	54
21)	CS15	1,2-Dichloroethane-d4	12.63	65.0	142027	55.09	UG/KG 110%	76
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	172075	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.29	117.0	142456	50.00	UG/KG	96
48)	CS05	Toluene-d8	17.35	98.0	160286	50.59	UG/KG 101%	95
57)	CS10	Bromofluorobenzene	24.68	95.0	137673	50.95	UG/KG 102%	99

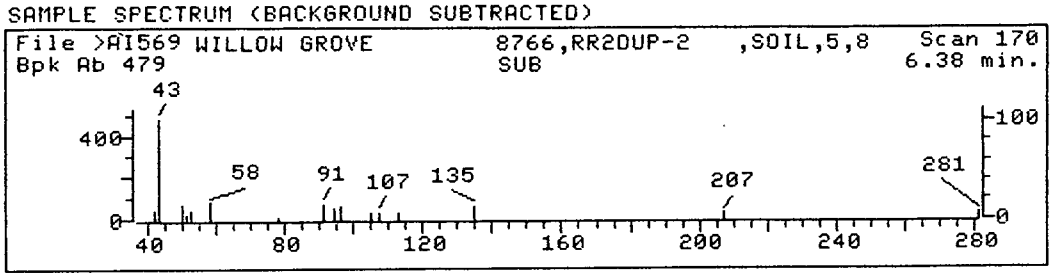
* Compound is ISTD

09-25-91

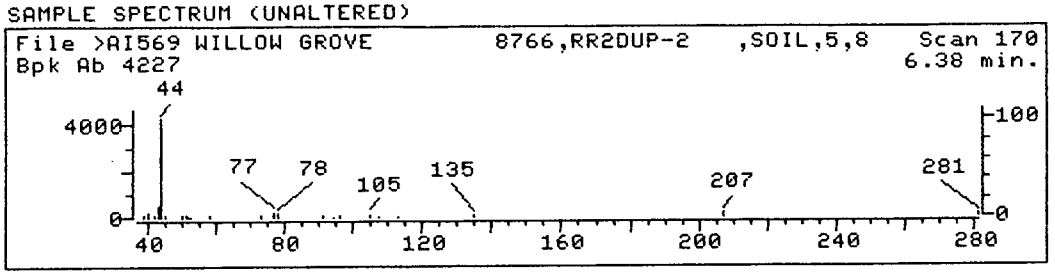
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



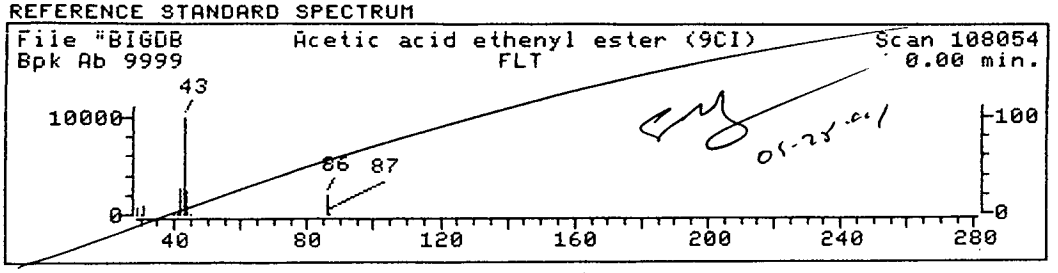
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI569::D4 Quant Output File: ^AI569::QT
Name: WILLOW GROVE
Misc: 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH
Quant Time: 910923 19:46 Quant ID File: CCAS::BD
Injected at: 910923 19:16 Last Calibration: 910923 13:27

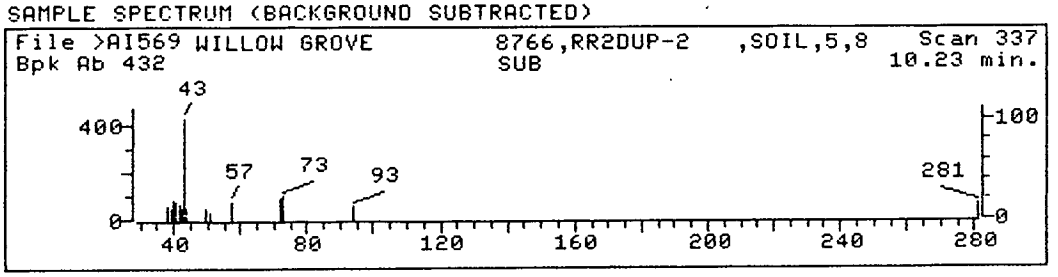
Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 4588
Concentration: 5.64 UG/KG
q-value: 82

REFERENCE STANDARD SPECTRUM



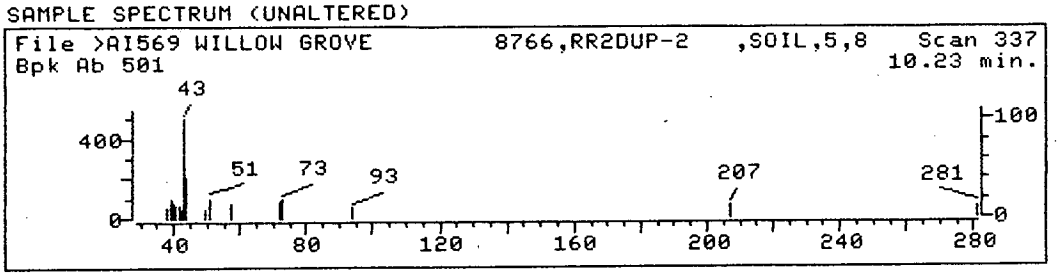
INCORRECT REFERENCE SPECTRUM IN FILE HAS BEEN UPDATE.

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OR 2-BUTANONE

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI569::D4 Quant Output File: ^AI569::QT
Name: WILLOW GROVE
Misc: 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH
Quant Time: 910923 19:46 Quant ID File: CCAS::BD
Injected at: 910923 19:16 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 337
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 749
Concentration: 4.58 UG/KG
q-value: 54

>AI569 WILLOW GROVE 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 38360. Max Peaks: 2 Bunching: -1
Dnslope: 0.00 Results File IAI569 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	24	35	49	170618	2829200	2825949	100.00	74.708
2	4.11	69	72	105	47500	1706265	956723	33.85	25.292

Sum of corrected areas: 3782672.

Summary of PBM Library Search and Quantitation on file :>AI569::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	383597.	11.31	2.48 - 12.45
2	50.0	522449.	13.59	12.45 - 17.44
3	50.0	566812.	21.29	17.44 - 29.04

CALCULATIONS

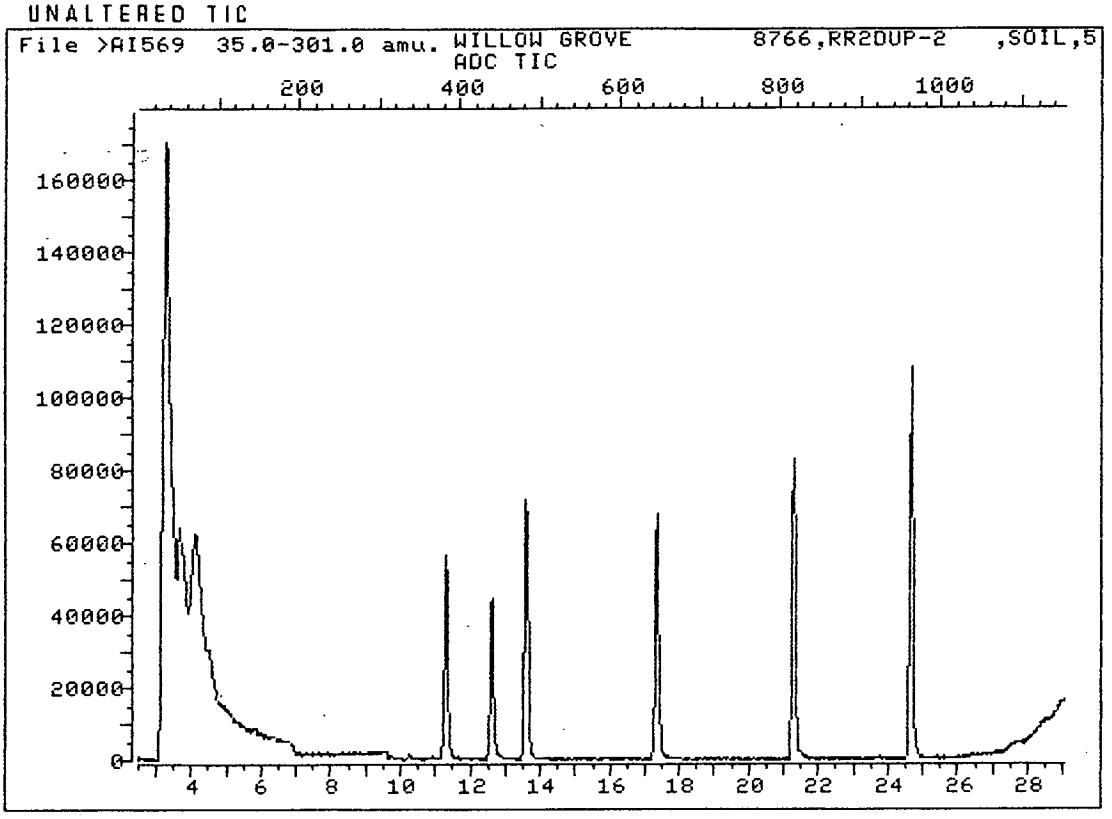
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

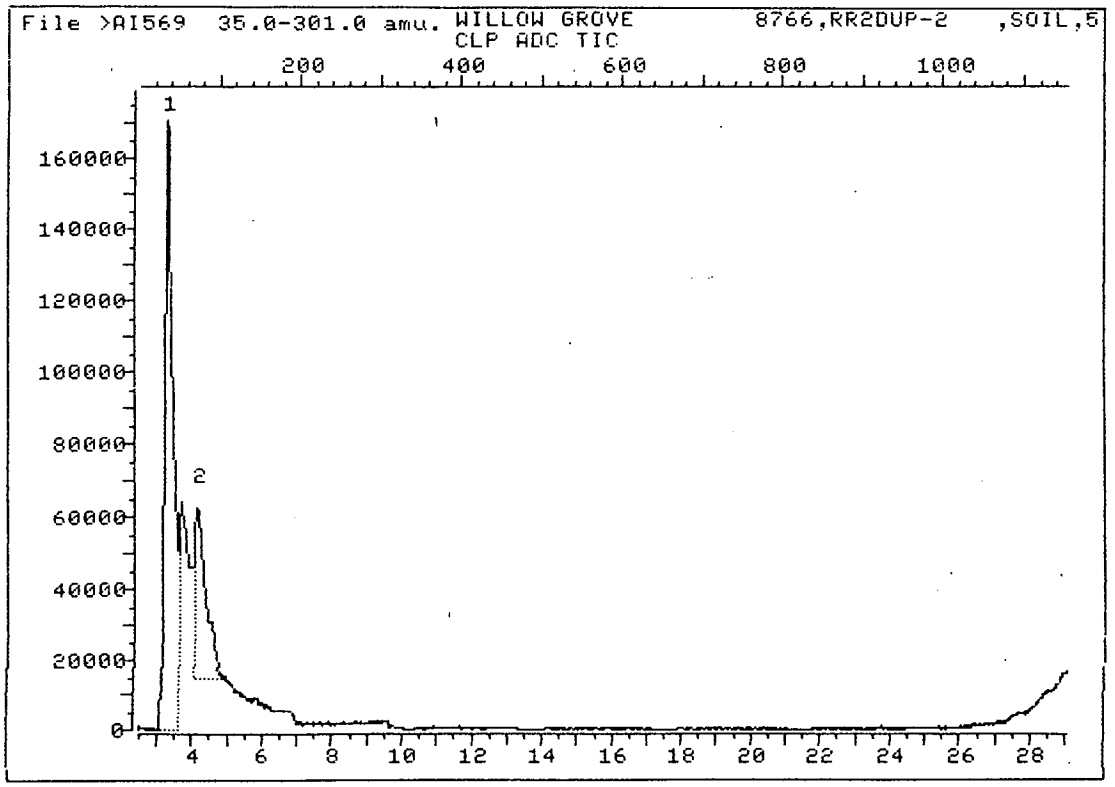
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

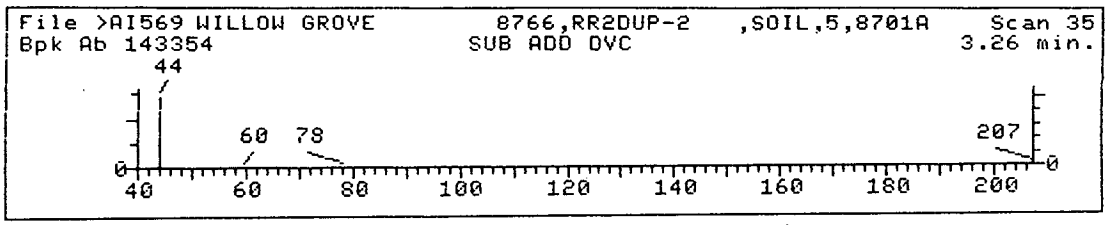
8:00 PM MON., 23 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS #124-38-9

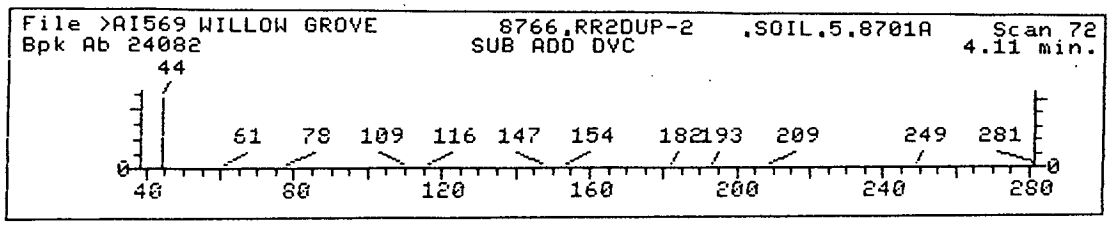
10-25-91

Retention time = 3.26

Area = 2825949. Tentative Concentration is 370.00

Sample file: >AI569 Spectrum #: 35

No data base entries were retrieved.



CARBON DISULFIDE
CAS # 12436-9

09-25-91

Retention time = 4.11

Area = 956723.0 Tentative Concentration is 120.00

Sample file: >AI569 Spectrum #: 72

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI569::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 19:16
Misc:8766,RR2DUP-2 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	2825949	38360
2	4.11	956723	38360

>AI569 WILLOW GROVE 8766,RR2DUP-2 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI569 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	24	35	49	170618	2842411	2825949	100.00	48.234
2	11.31	376	384	397	56002	407222	383597	13.57	6.547
3	12.63	433	441	458	44752	344421	328924	11.64	5.614
4	13.59	475	483	497	71764	538343	522449	18.49	8.917
5	17.35	638	646	659	67307	512081	494702	17.51	8.444
6	21.29	808	817	837	82754	591530	566812	20.06	9.675
7	24.68	955	964	982	108499	754994	736348	26.06	12.568

Sum of corrected areas: 5858781.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2S-1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8767

Sample wt/vol: 5 (g/ml) G Lab File ID: AI585

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 25 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene(Total)	7	U
67-66-3	Chloroform	7	U
107-06-02	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	5	BJ
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene(total)	7	U

~~3/90~~ 9/88

300265

10-4-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2S-1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8767

Sample wt/vol: 5 (g/ml) G Lab File ID: AI585

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 25 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

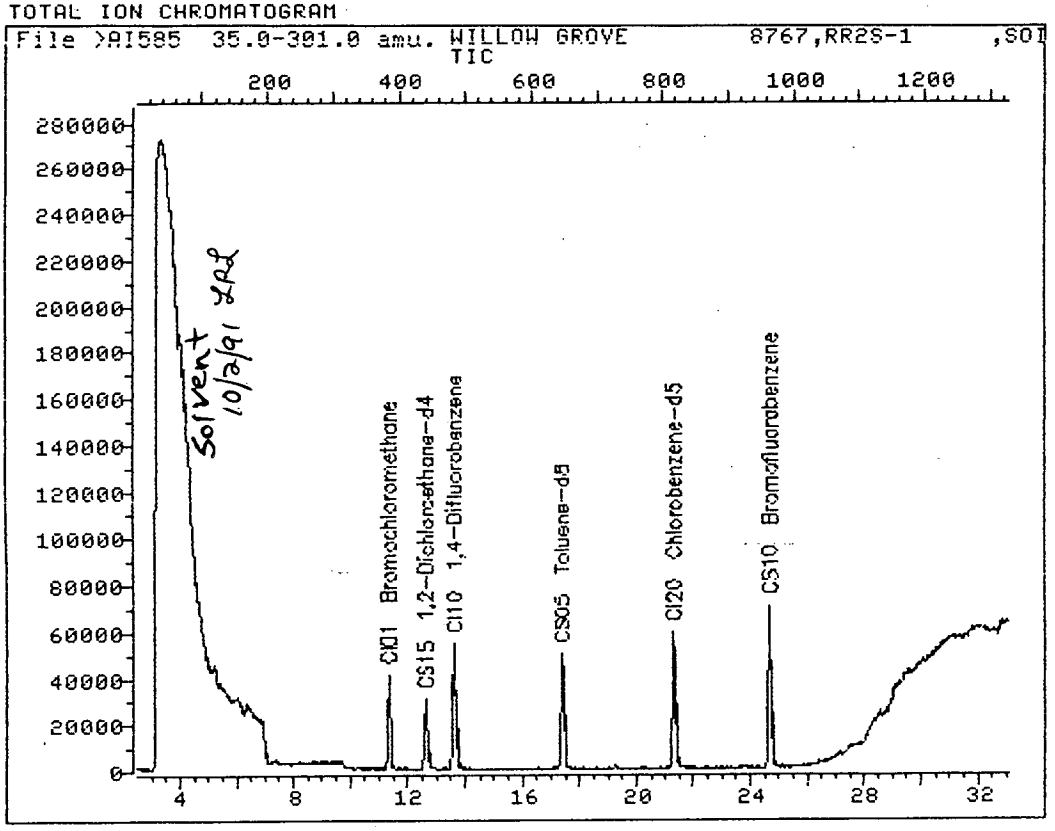
FORM I VOA-TIC

~~3/90~~
2/88

300266

10-7-91

TOTAL ION CHROMATOGRAM



Data File: >AI585::D4 Quant Output File: ^AI585::QT
Name: WILLOW GROVE
Misc: 8767,RR2S-1 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 17:33
Injected at: 910924 16:21

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 17:33
Output File: ^AI585::QT Injected at: 910924 16:21
Data File: >AI585::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8767,RR2S-1 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

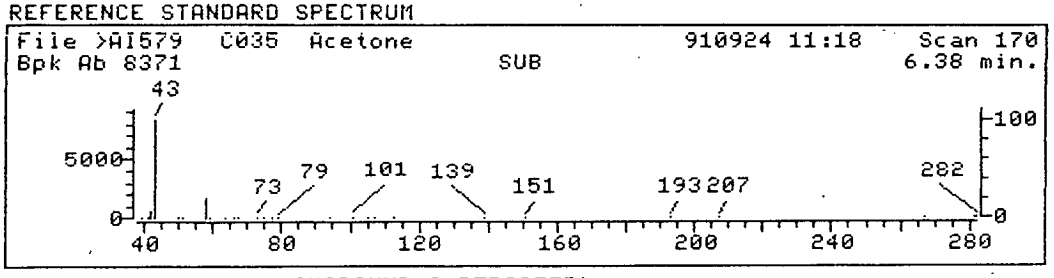
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.32	128.0	36733	50.00	UG/KG	84
9)	C035	Acetone	6.38	43.0	5440	6.66	UG/KG	82
20)	C110	2-Butanone	10.24	72.0	553	3.62	UG/KG	76
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	92221	47.56	UG/KG 95%	82
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	141090	50.00	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.30	117.0	108235	50.00	UG/KG	99
48)	CS05	Toluene-d8	17.36	98.0	124303	50.32	UG/KG 101%	99
57)	CS10	Bromofluorobenzene	24.67	95.0	89931	43.63	UG/KG 87%	87

* Compound is ISTD

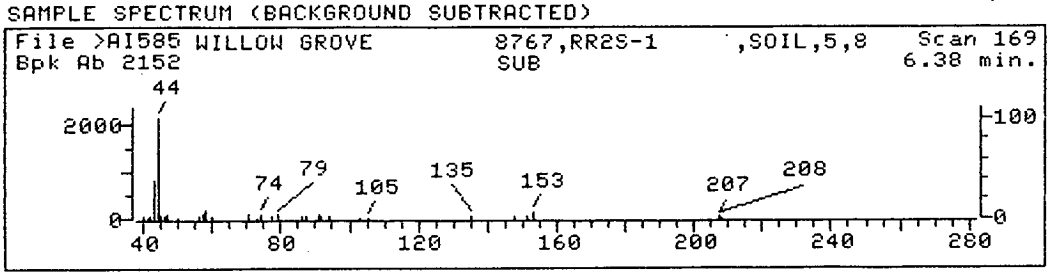
09-25-91

390268

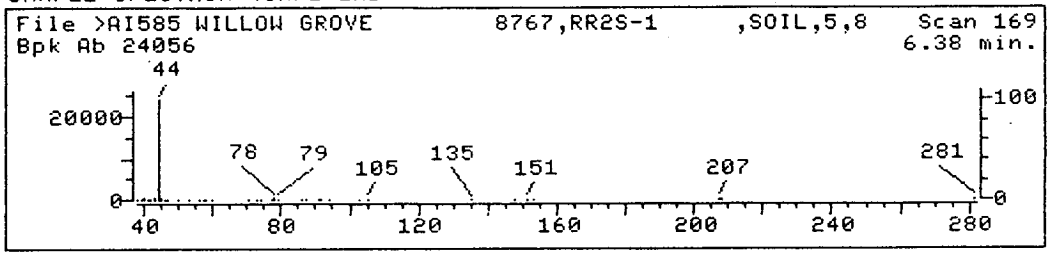
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



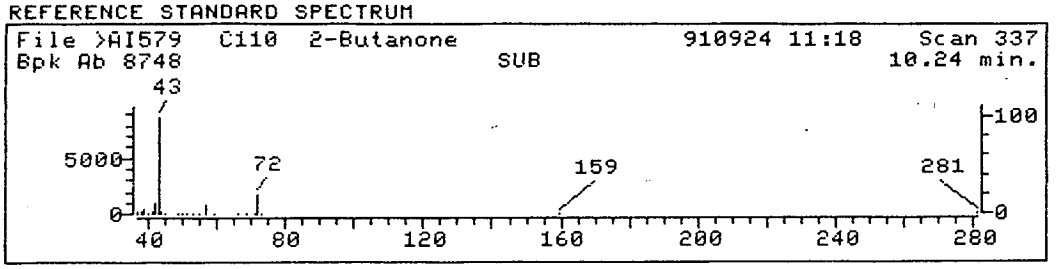
SAMPLE SPECTRUM (UNALTERED)



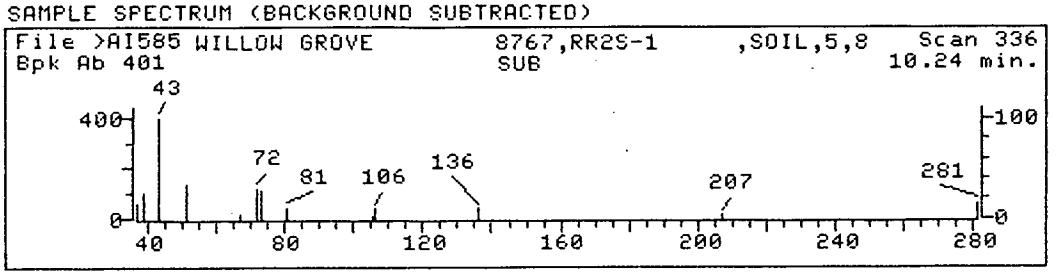
Data File: >AI585::D4 Quant Output File: ^AI585::QT
Name: WILLOW GROVE
Misc: 8767,RR2S-1 ,SOIL,5,8701A1,SPH
Quant Time: 910924 17:33 Quant ID File: CCAS::BD
Injected at: 910924 16:21 Last Calibration: 910924 12:04

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 5440
Concentration: 6.66 UG/KG
q-value: 82

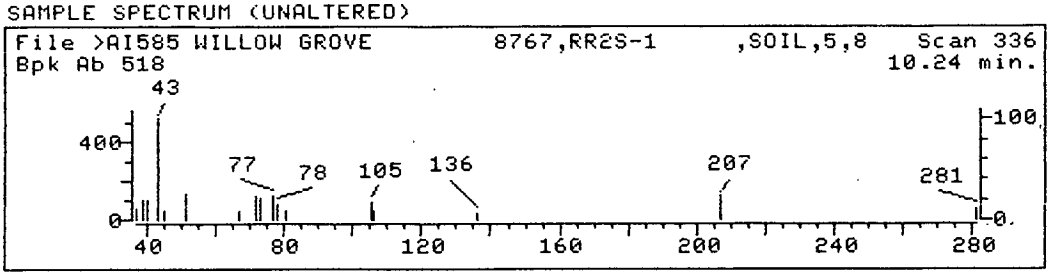
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI585::D4 Quant Output File: ^AI585::QT
Name: WILLOW GROVE
Misc: 8767,RR2S-1 ,SOIL,5,8701A1,SPH
Quant Time: 910924 17:33 Quant ID File: CCAS::BD
Injected at: 910924 16:21 Last Calibration: 910924 12:04

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.24 min.
Quant Ion: 72.0
Area: 553
Concentration: 3.62 UG/KG
q-value: 76

>AI585 WILLOW GROVE 8767,RR2S-1 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 28696. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI585 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.29	22	35	63	272156	12186756	12157258	100.00	100.000

Sum of corrected areas: 12157258.

Summary of PBM Library Search and Quantitation on file :>AI585::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	286965.	11.32	2.51 - 12.46
2	50.0	406794.	13.60	12.46 - 17.45
3	50.0	399986.	21.30	17.45 - 33.08

CALCULATIONS

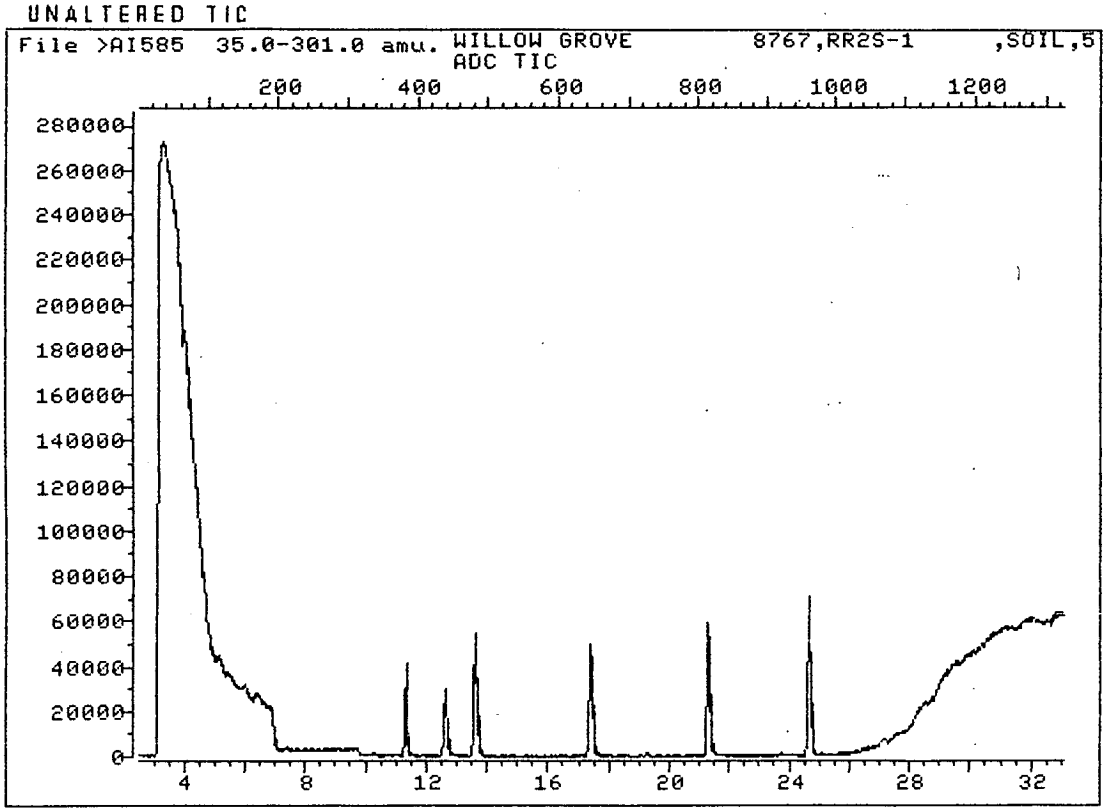
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

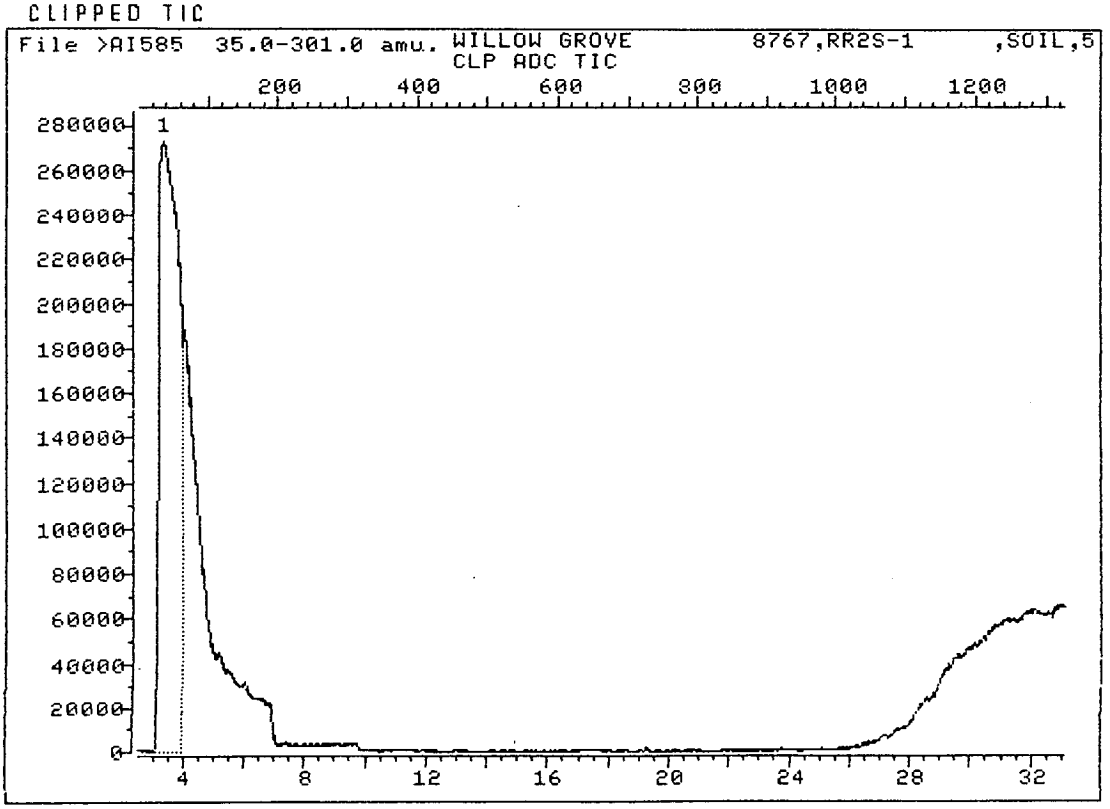
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

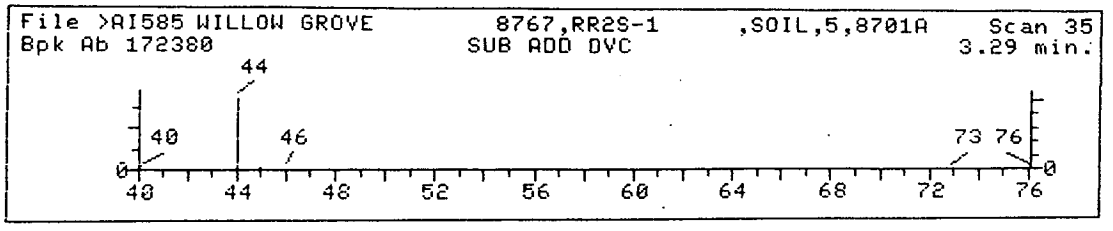
10:13 AM WED., 25 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





SOLVENT

09.25.91

Retention time = 3.29

Area = .12E+08 Tentative Concentration is 2100.00

Sample file: >AI585 Spectrum #: 35

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI585::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/24/91 16:21
Misc:8767,RR2S-1 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.29	12157258	28696

>AI585 WILLOW GROVE 8767;RR2S-1 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI585 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.29	22	35	63	272156	12224254	12157262	100.00	100.000

Sum of corrected areas: 12157262.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2S-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8768

Sample wt/vol: 5 (g/ml) G Lab File ID: AI571

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 8.0 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	14	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

10.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2S-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8768

Sample wt/vol: 5 (g/ml) G Lab File ID: AI571

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 8.0 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

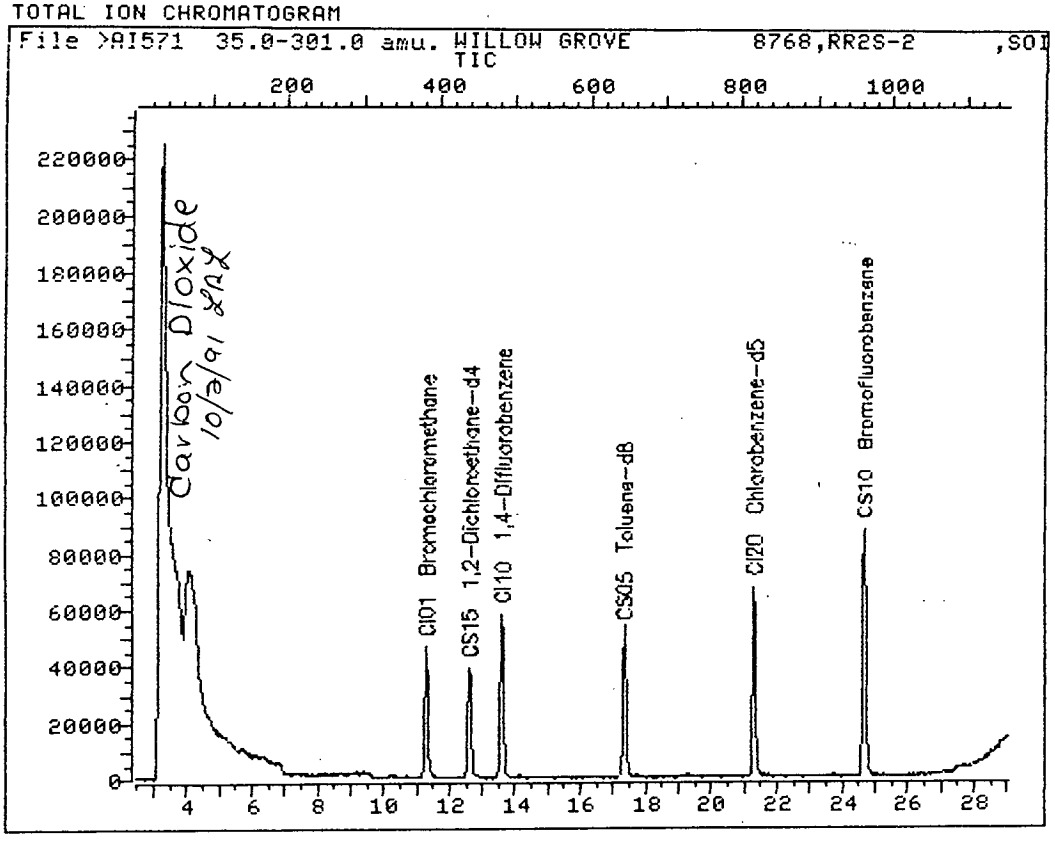
FORM I VOA-TIC

~~3/90~~
2/88

300277

Eq 10.4.91

TOTAL ION CHROMATOGRAM



Data File: >AI571::D4 Quant Output File: ^AI571::QT
Name: WILLOW GROVE
Misc: 8768,RR2S-2 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 21:01
Injected at: 910923 20:31

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 21:01
Output File: ^AI571::D4 Injected at: 910923 20:31
Data File: >AI571::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8768,RR2S-2 ,SOIL,5,8701A1,SPH

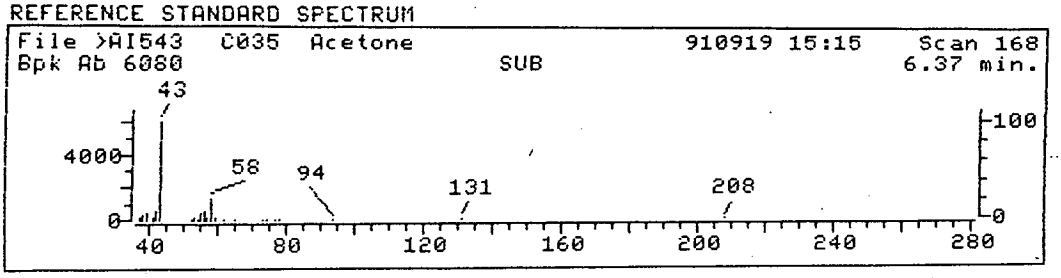
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	38661	50.00	UG/KG	85
9)	C035	Acetone	6.36	43.0	8812	13.06	UG/KG	85
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	122586	57.26	UG/KG 115%	76
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	139345	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.30	117.0	111641	50.00	UG/KG	96
48)	CS05	Toluene-d8	17.34	98.0	126359	50.89	UG/KG 102%	96
57)	CS10	Bromofluorobenzene	24.67	95.0	108033	51.02	UG/KG 102%	91

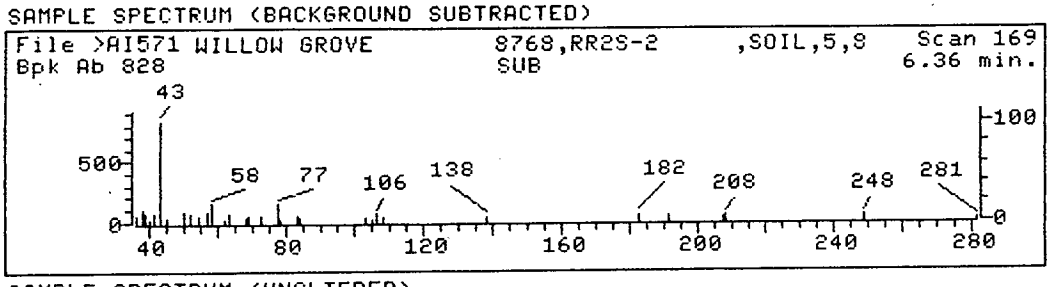
* Compound is ISTD

09-25-91

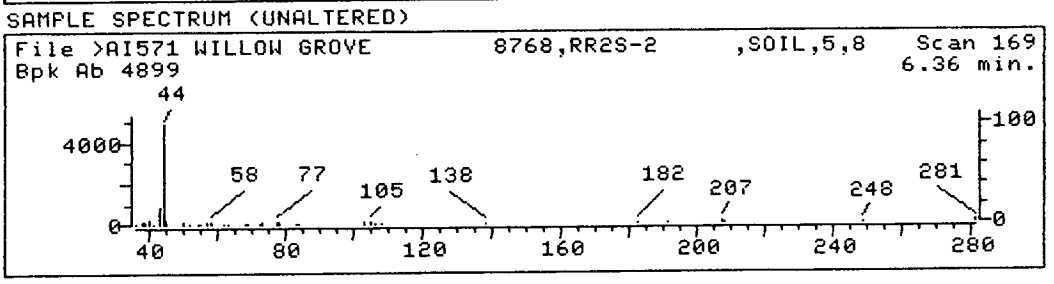
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI571::D4 Quant Output File: ^AI571::QT
Name: WILLOW GROVE
Misc: 8768,RR2S-2 ,SOIL,5,8701A1,SPH
Quant Time: 910923 21:01 Quant ID File: CCAS::BD
Injected at: 910923 20:31 Last Calibration: 910923 13:27

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.36 min.
Quant Ion: 43.0
Area: 8812
Concentration: 13.06 UG/KG
q-value: 85

>AI571 WILLOW GROVE 8768,RR2S-2 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 32180. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI571 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	34	63	225313	5033375	5026512	100.00	100.000

Sum of corrected areas: 5026512.

Summary of PBM Library Search and Quantitation on file :>AI571::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	321802.	11.30	2.48 - 12.45
2	50.0	439948.	13.60	12.45 - 17.45
3	50.0	455337.	21.30	17.45 - 29.05

CALCULATIONS

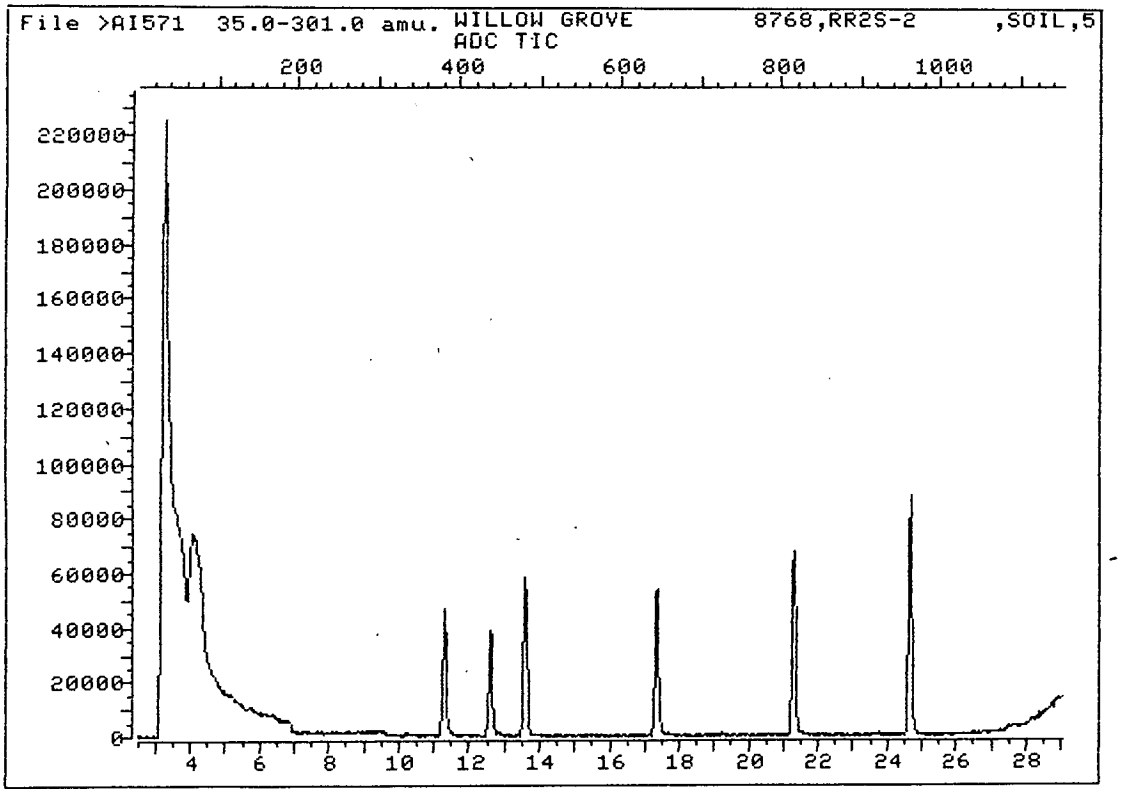
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

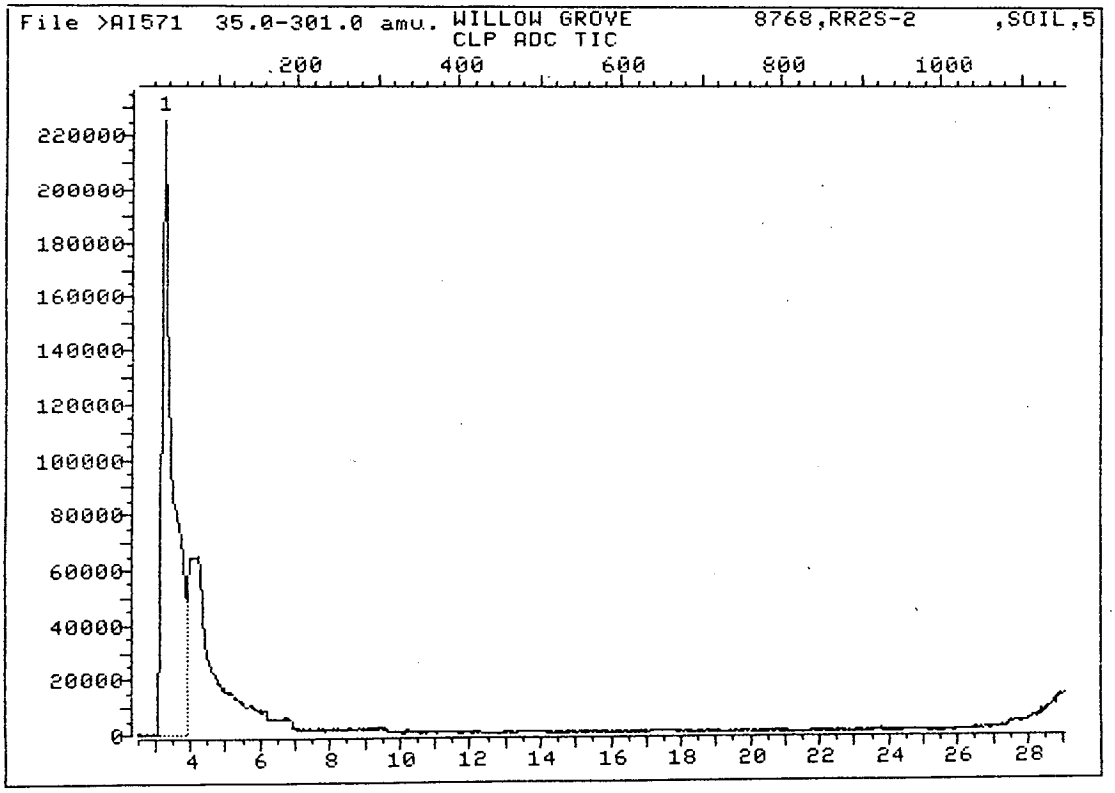
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

9:14 PM MON., 23 SEPT, 1991

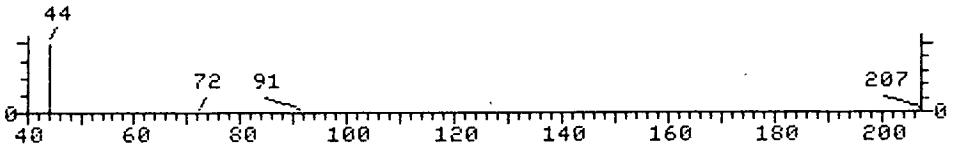
UNALTERED TIC



CLIPPED TIC



File >AI571 WILLOW GROVE 8768,RR2S-2 ,SOIL,5,8701A Scan 34
Bpk Ab 197113 SUB ADD DVC 3.24 min.



CARBON DIOXIDE
CAS # 124-38-9
07-25-91

Retention time = 3.24

Area = 5026512. Tentative Concentration is 780.00

Sample file: >AI571 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI571::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/23/91 20:31
Misc:8768,RR2S-2 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.24	5026512	32180

>AI571 WILLOW GROVE 8768,RR2S-2 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI571 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.24	23	34	63	225313	5046325	5026512	100.00	54.612
2	4.08	64	70	106	65967	2471372	1721582	34.25	18.705
3	11.30	376	383	398	46341	342287	321802	6.40	3.496
4	12.61	429	440	448	38942	282652	269454	5.36	2.928
5	13.60	472	483	496	58388	451778	439948	8.75	4.780
6	17.36	638	646	657	53665	407706	389301	7.74	4.230
7	21.30	810	817	835	67495	473635	455337	9.06	4.947
8	24.67	955	963	975	87795	594162	580043	11.54	6.302

Sum of corrected areas: 9203980.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2S-3

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8769

Sample wt/vol: 5 (g/ml) G Lab File ID: AI586

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 28 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	10	BJ
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene(Total)	7	U
67-66-3	Chloroform	7	U
107-06-02	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene(total)	7	U

10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2S-3

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8769

Sample wt/vol: 5 (g/ml) G Lab File ID: AI586

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 28 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~ No Volatiles detected	~~28.20~~	~~7~~	~~B~~

(CW 10-8-91

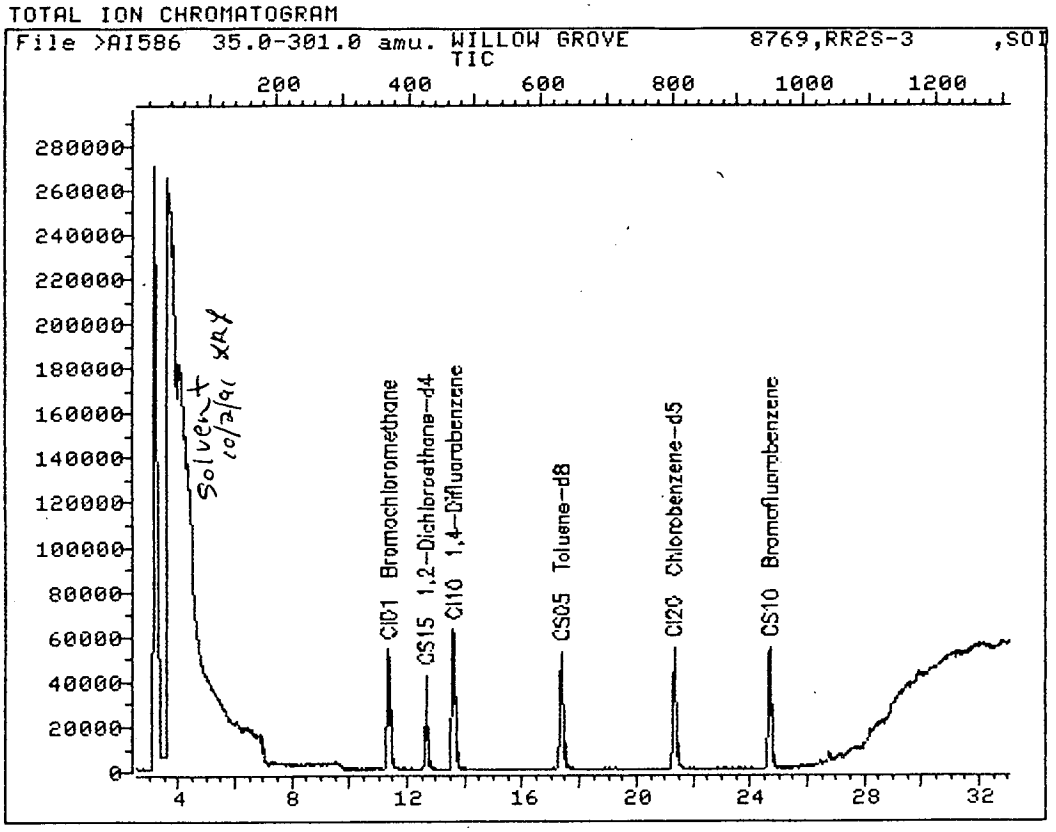
FORM I VOA-TIC

~~3/90~~
2/88

390287

(CW 10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI586::D4 Quant Output File: ^AI586::QT
Name: WILLOW GROVE
Misc: 8769,RR2S-3 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 17:37
Injected at: 910924 17:03

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 17:37
Output File: ^AI586::QT Injected at: 910924 17:03
Data File: >AI586::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8769,RR2S-3 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

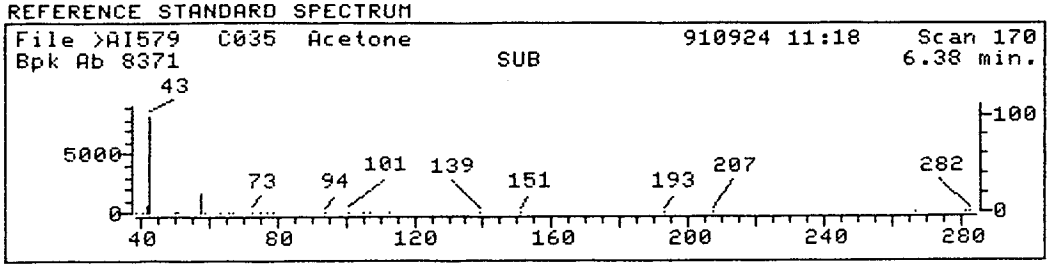
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	48347	50.00	UG/KG	86
9)	C035	Acetone	6.40	43.0	7762	7.22	UG/KG	76
21)	CS15	1,2-Dichloroethane-d4	12.63	65.0	127212	49.84	UG/KG 100%	81
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	164417	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	101024	50.00	UG/KG	97
48)	CS05	Toluene-d8	17.36	98.0	126245	54.75	UG/KG 110%	96
57)	CS10	Bromofluorobenzene	24.69	95.0	69769	36.27	UG/KG 73%	91

* Compound is ISTD

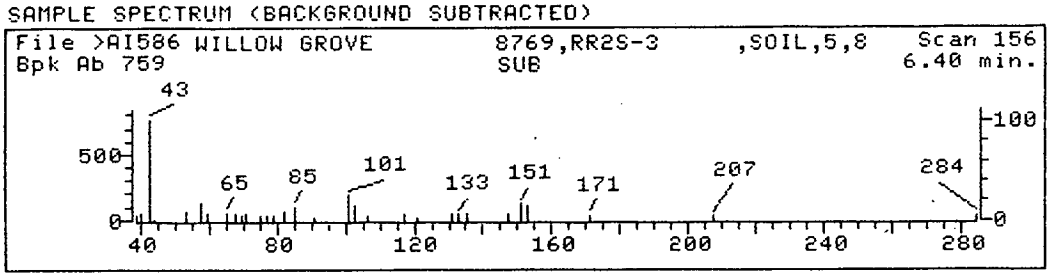
MATRIX EFFECT SEE FILE AI572

390289

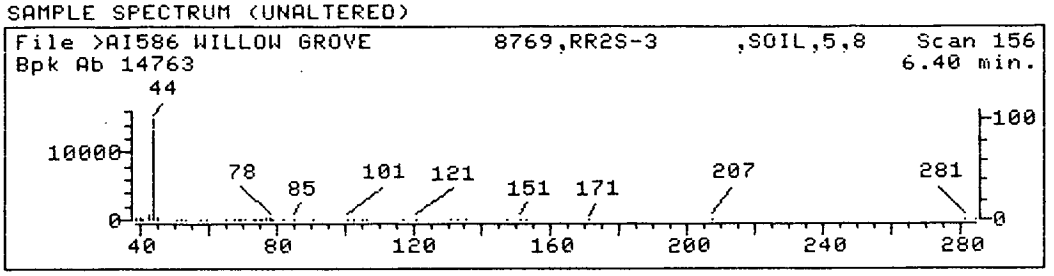
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI586::D4 Quant Output File: ^AI586::QT
Name: WILLOW GROVE
Misc: 8769,RR2S-3 ,SOIL,5,8701A1,SPH
Quant Time: 910924 17:37 Quant ID File: CCAS::BD
Injected at: 910924 17:03 Last Calibration: 910924 12:04

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 156
Retention Time: 6.40 min.
Quant Ion: 43.0
Area: 7762
Concentration: 7.22 UG/KG
q-value: 76

>AI586 WILLOW GROVE 8769,RR2S-3 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 37778. Max Peaks: 3 Bunching: -1
Dnslope: 0.00 Results File IAI586 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.14	22	27	29	270057	1283056	1277414	36.09	26.304
2	3.70	36	39	49	246307	3649669	3539168	100.00	72.877
3	28.20	1097	1101	1104	6043	161520	39751	1.12	.819

Sum of corrected areas: 4856333.

Summary of PBM Library Search and Quantitation on file :>AI586::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	377780.	11.31	2.55 - 12.45
2	50.0	477516.	13.60	12.45 - 17.45
3	50.0	391710.	21.30	17.45 - 33.05

CALCULATIONS

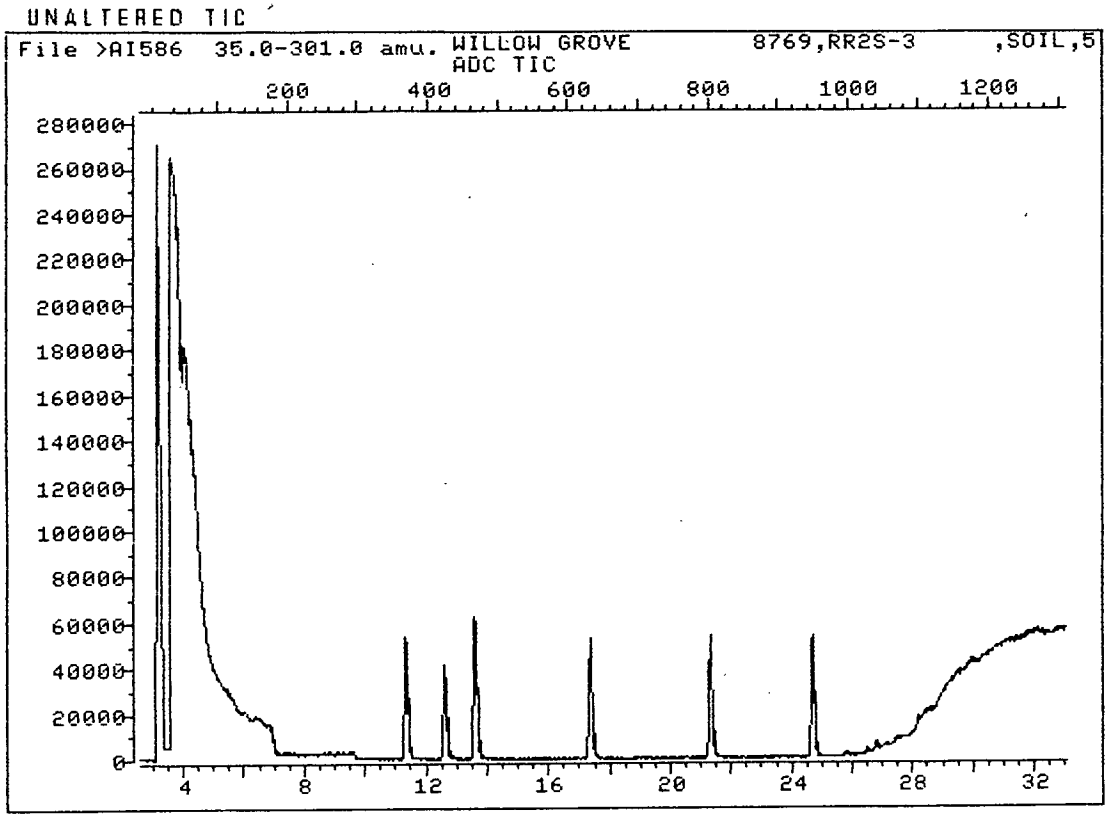
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

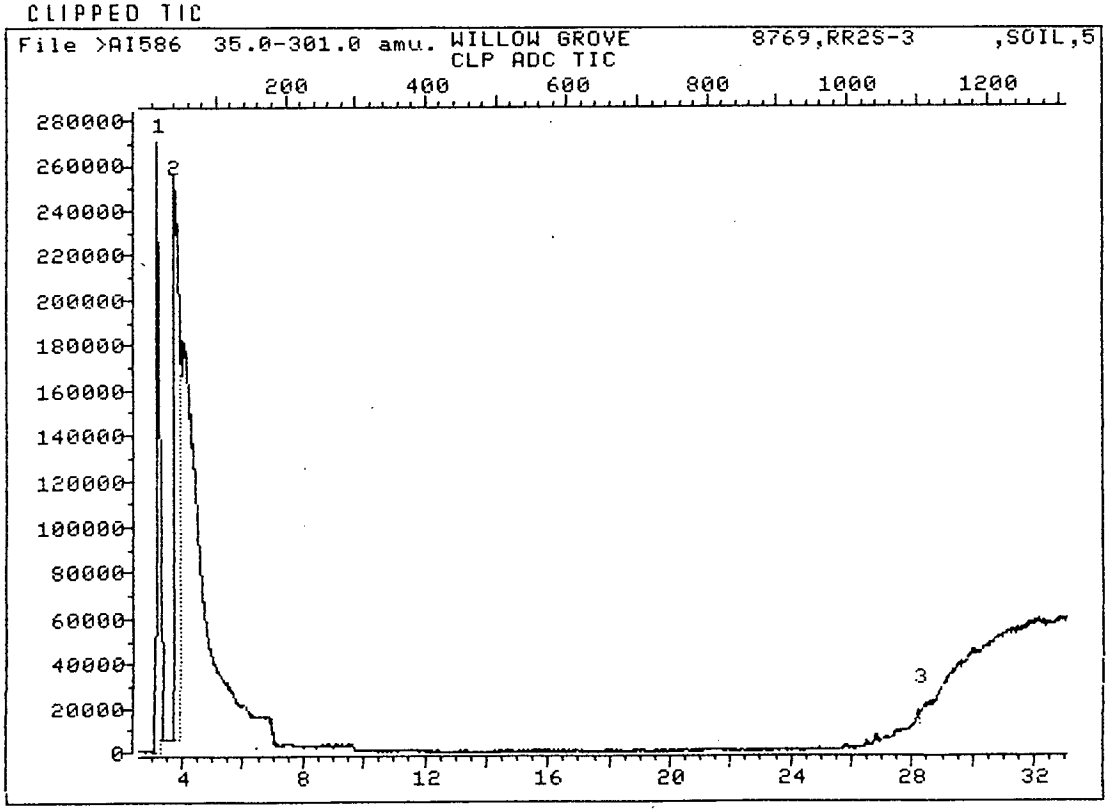
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

11:11 PM TUE., 24 SEPT, 1991

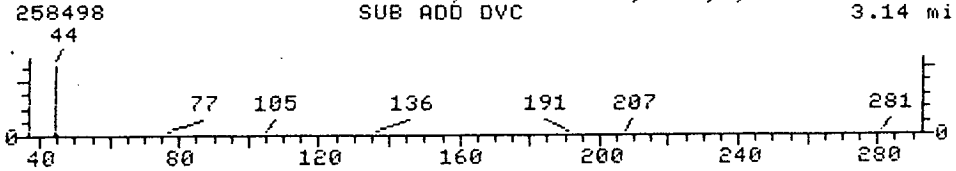
UNALTERED TIC



CLIPPED TIC



File >AI586 WILLOW GROVE 8769,RR2S-3 ,SOIL,5,8701A Scan 27
Bpk Ab 258498 SUB ADD DVC 3.14 min.



CO2 BKW 7JAN92 SOLVENT

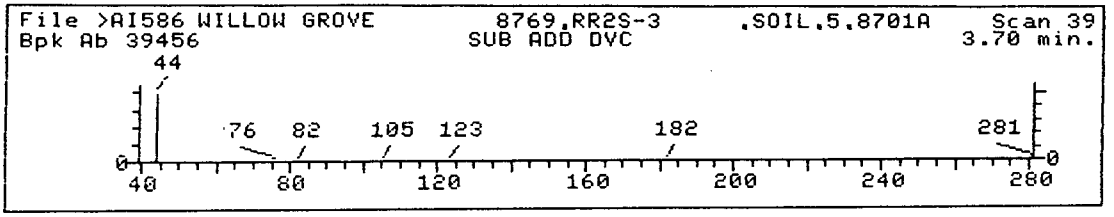
09-25-91

Retention time = 3.14

Area = 1277414. Tentative Concentration is 170.00

Sample file: >AI586 Spectrum #: 27

No data base entries were retrieved.



SOLVENT

05.25.91

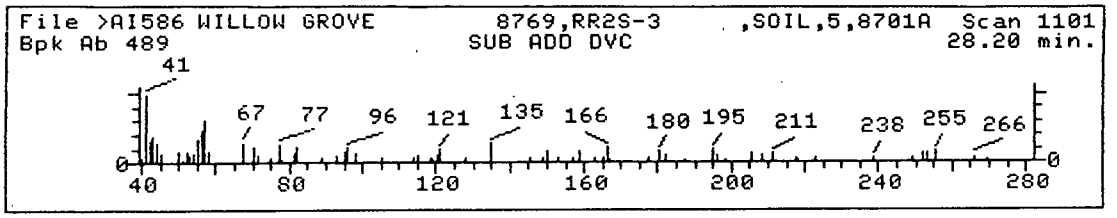
CO
BKW
7JAN92

Retention time = 3.70

Area = 3539168. Tentative Concentration is 470.00

Sample file: >AI586 Spectrum #: 39

No data base entries were retrieved.



Unknown

09-25-91

Column bleed

10-8-91 BKW TJW 92

Retention time = 28.20

Area = 39751.00 Tentative Concentration is 5.00

Sample file: >AI586 Spectrum #: 1101

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI586::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/24/91 17:03
Misc:8769,RR2S-3 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

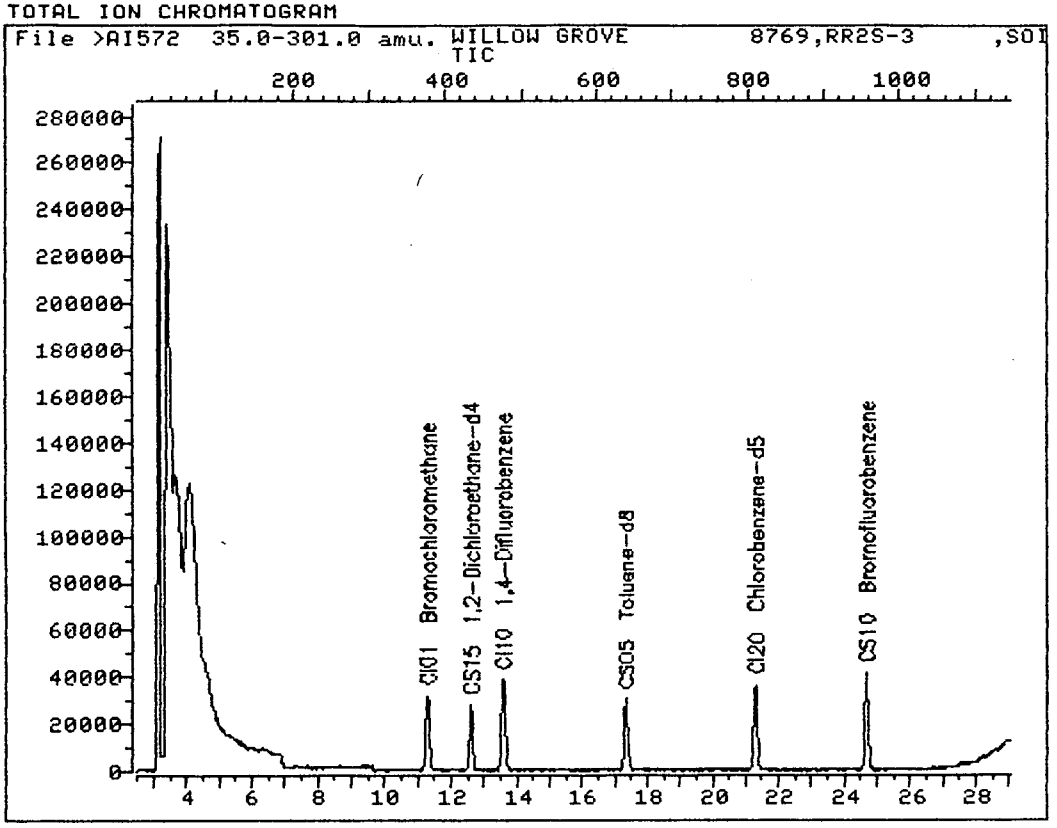
Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.14	1277414	37778
2	3.70	3539168	37778
3	28.20	39751	39171

>AI586 WILLOW GROVE 8769,RR2S-3 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 6 Bunching: -1
Dnslope: 0.00 Results File IAI586 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.14	22	27	29	270057	1291347	1277414	17.18	12.359
2	3.56	30	33	49	258593	7666226	7433417	100.00	71.917
3	11.31	363	369	383	53639	406573	377780	5.08	3.655
4	13.60	461	468	490	62411	511573	477516	6.42	4.620
5	17.36	622	631	643	52422	409910	378307	5.09	3.660
6	21.30	793	802	822	54291	421994	391710	5.27	3.790

Sum of corrected areas: 10336146.

TOTAL ION CHROMATOGRAM



Data File: >AI572::D4 Quant Output File: ^AI572::D4
Name: WILLOW GROVE
Misc: 8769,RR2S-3 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 21:38
Injected at: 910923 21:08

QUANT REPORT

Operator ID: SCOTT Quant R v: 6 Quant Time: 910923 21:38
Output File: ^AI572::D4 Injected at: 910923 21:08
Data File: >AI572::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8769,RR2S-3 ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	25886	50.00	UG/KG	86
2)	C010	Chloromethane	4.08	50.0	1986	~~5.82 UG/KG~~ F.H.		63
9)	C035	Acetone	6.37	43.0	3884	8.59	UG/KG	76
13)	C041	Trichlorofluoromethane	5.47	101.0	7608	~~4.95 UG/KG~~		81
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	88061	61.44	UG/KG 122%	73
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	89981	50.00	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.31	117.0	60689	50.00	UG/KG	99
48)	CS05	Toluene-d8	17.34	98.0	70442	52.19	UG/KG 104%	97
57)	CS10	Bromofluorobenzene	24.67	95.0	50679	44.03	UG/KG 88%	90

* Compound is ISTD

10-07-91

300299

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2S-4

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8770

Sample wt/vol: 5 (g/ml) G Lab File ID: AI587

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 35 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene(Total)	8	U
67-66-3	Chloroform	8	U
107-06-02	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene(total)	8	U

FORM I VOA

~~3/90~~
2/88

300300

10-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2S-4

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8770

Sample wt/vol: 5 (g/ml) G Lab File ID: AI587

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 35 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~ No Volatiles Detected	~~29.35~~	~~130~~	~~J~~

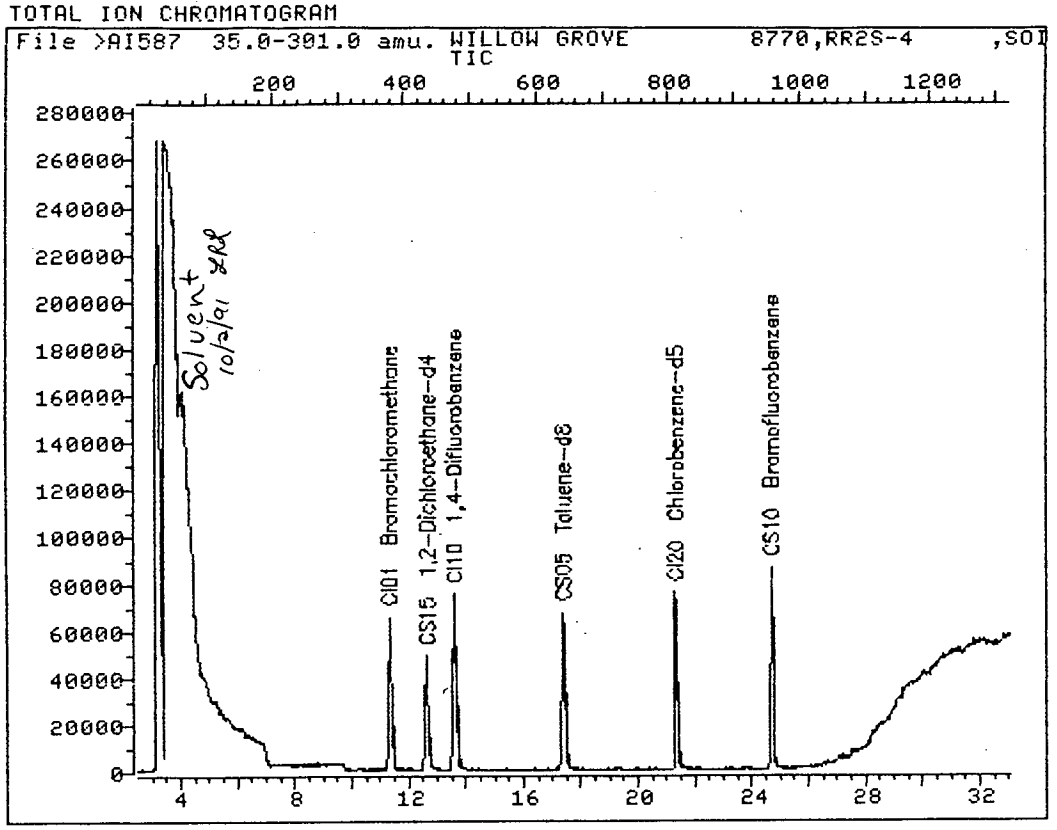
@ 10.8.91

FORM I VOA-TIC

~~3/90~~
3/88

10.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI587::D4 Quant Output File: ^AI587::QT
Name: WILLOW GROVE
Misc: 8770,RR2S-4 ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 18:20
Injected at: 910924 17:46

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 18:20
Output File: ^AI587::QT Injected at: 910924 17:46
Data File: >AI587::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8770,RR2S-4 ,SOIL,5,8701A1,SPH

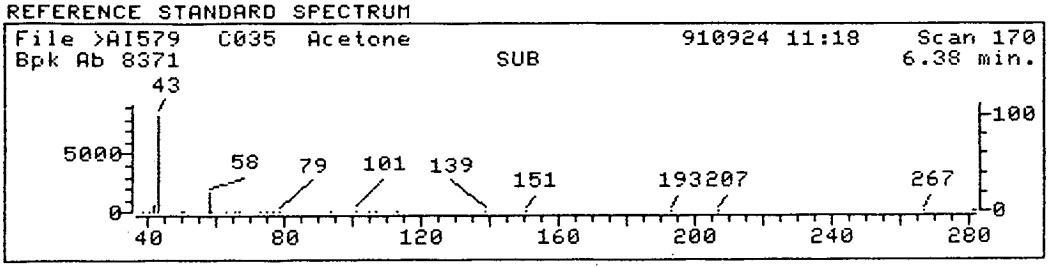
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.32	128.0	56941	50.00	UG/KG	85
9)	CO35	Acetone	6.38	43.0	5379	4.25	UG/KG	83
21)	CS15	1,2-Dichloroethane-d4	12.63	65.0	152841	50.85	UG/KG 102%	80
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	194457	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	138978	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.36	98.0	165547	52.19	UG/KG 104%	97
57)	CS10	Bromofluorobenzene	24.69	95.0	112081	42.35	UG/KG 85%	92

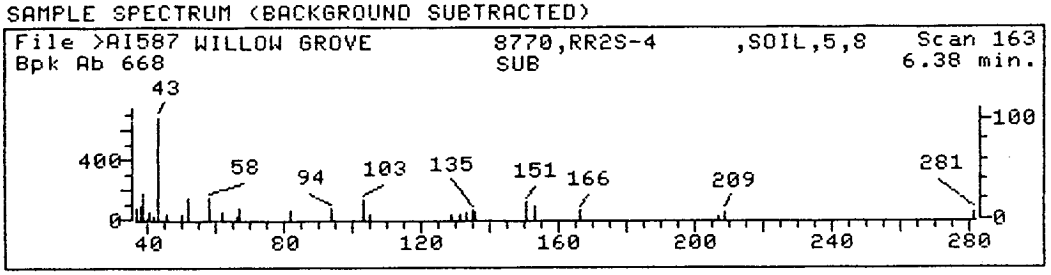
* Compound is ISTD

09-25-91

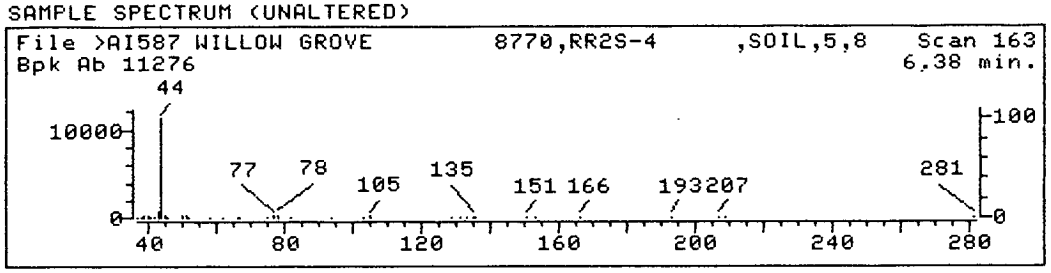
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI587::D4 Quant Output File: ^AI587::QT
Name: WILLOW GROVE
Misc: 8770,RR2S-4 ,SOIL,5,8701A1,SPH
Quant Time: 910924 18:20 Quant ID File: CCAS::BD
Injected at: 910924 17:46 Last Calibration: 910924 12:04

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 163
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 5379
Concentration: 4.25 UG/KG
q-value: 83

>AI587 WILLOW GROVE 8770,RR2S-4 ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 44266. Max Peaks: 3 Bunching: -1
Dnslope: 0.00 Results File IAI587 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	20	30	31	267651	1253457	1246215	22.70	16.444
2	3.40	32	34	45	259772	5625582	5488985	100.00	72.429
3	29.35	1106	1159	1160	22147	1763662	843237	15.36	11.127

Sum of corrected areas: 7578437.

Summary of PBM Library Search and Quantitation on file :>AI587::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	442663.	11.32	2.51 - 12.46
2	50.0	564720.	13.60	12.46 - 17.45
3	50.0	514157.	21.30	17.45 - 33.04

CALCULATIONS

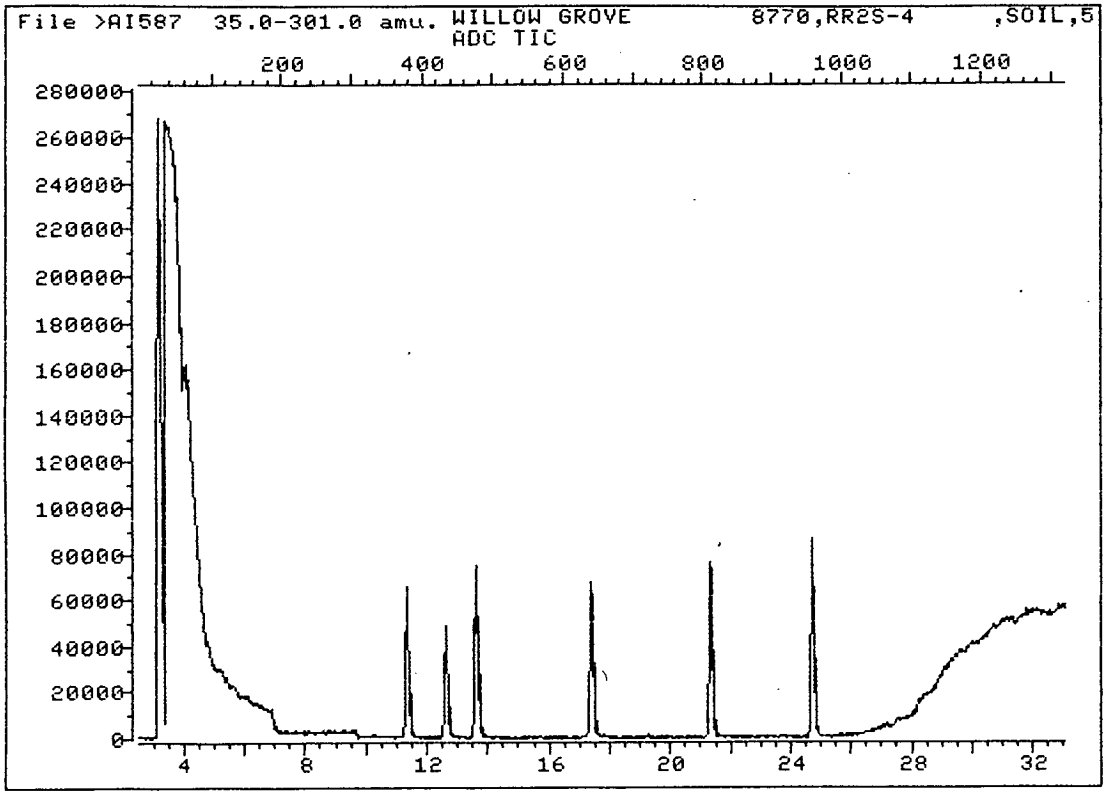
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

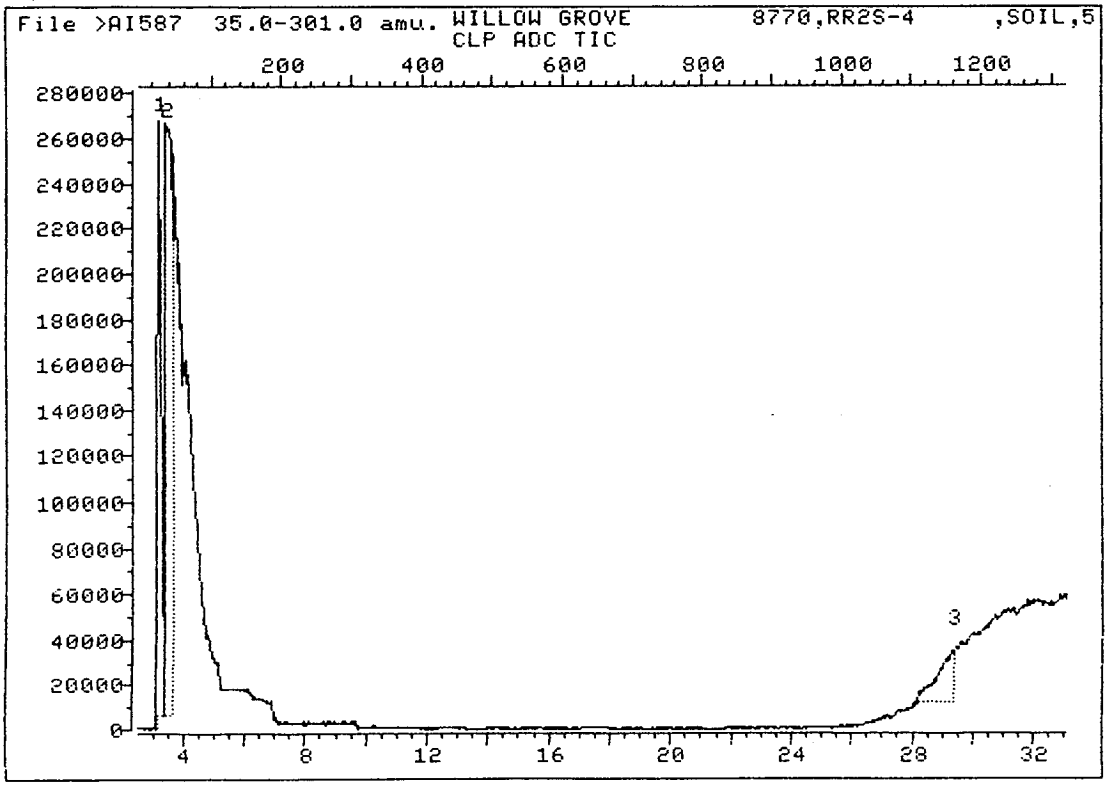
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

11:41 PM TUE., 24 SEPT, 1991

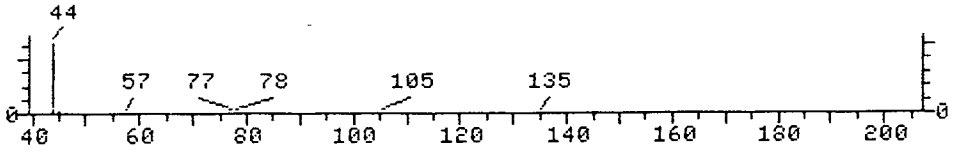
UNALTERED TIC



CLIPPED TIC



File >AI587 WILLOW GROVE 8770,RR2S-4 ,SOIL,5,8701A Scan 30
Bpk Ab 257572 SUB ADD DVC 3.17 min.



SOLVENT CO2 7JAN92

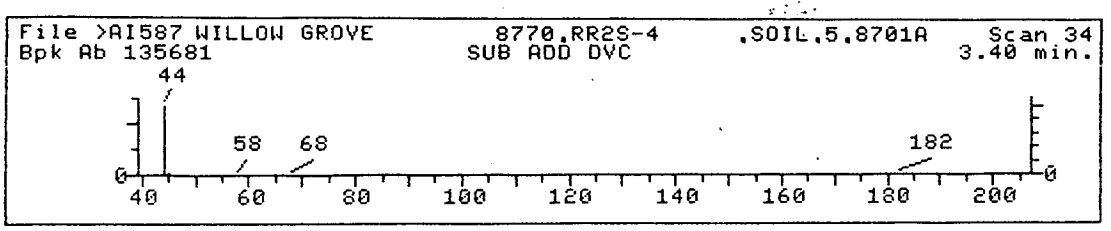
09-25-91

Retention time = 3.17

Area = 1246215. Tentative Concentration is 140.00

Sample file: >AI587 Spectrum #: 30

No data base entries were retrieved.



SOLVENT COV 13MAY92 BFW

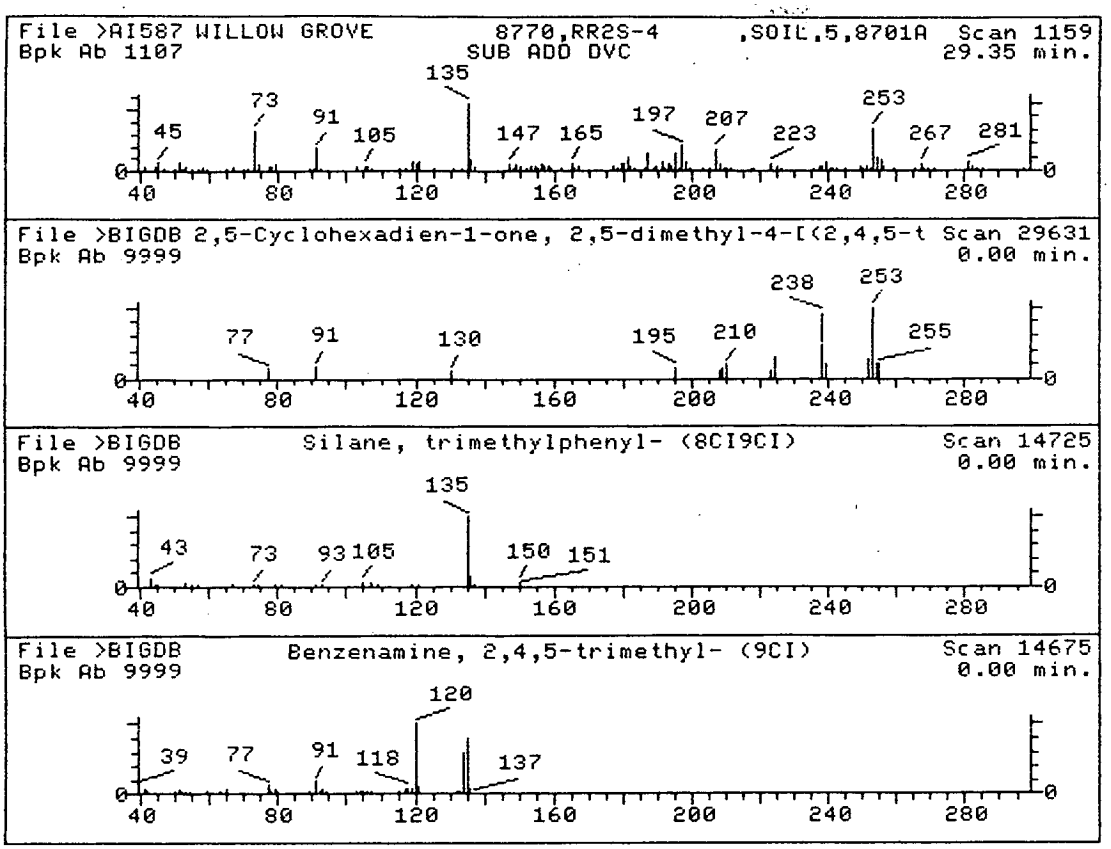
WS 25-04

Retention time = 3.40

Area = 5488985. Tentative Concentration is 620.00

Sample file: >AI587 Spectrum #: 34

No data base entries were retrieved.



unknown

Column bleed

10.8.91

Retention time = 29.35

Area = 843237.0 Tentative Concentration is 82.00

1.	2,5-Cyclohexadien-1-one, 2,5-dimethyl-4-[(2,4,5-trimethylphenyl)imino]- (9CI)	253	C17H19NO
2.	Silane, trimethylphenyl- (8CI9CI)	150	C9H14Si
3.	Benzenamine, 2,4,5-trimethyl- (9CI)	135	C9H13N
4.	Benzenamine, 2,4,6-trimethyl- (9CI)	135	C9H13N
5.	Benzene, (1-methoxy-1-methylethyl)- (9CI)	150	C10H14O
6.	Ethanedione, (4-methoxyphenyl)phenyl- (9CI)	240	C15H12O3
7.	Benzenemethanol, .alpha.,.alpha.,4-trimethyl- (9CI)	150	C10H14O

Sample file: >AI587 Spectrum #: 1159
Search speed: 2 Tilting option: S No. of ion ranges searched: 62

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	21*	54245931	29631	"BIGDB	60	73	2	2	100	57	5	31
2.	11*	768321	14725	"BIGDB	37	43	1	0	100	65	2	19
3.	11*	137177	14675	"BIGDB	46	58	3	0	127	65	2	13
4.	11*	88051	14673	"BIGDB	41	63	3	0	122	65	2	13
5.	11*	935671	14685	"BIGDB	38	62	2	0	67	65	2	14
6.	11*	22711213	14695	"BIGDB	35	62	2	0	100	65	2	14
7.	11*	1197019	14726	"BIGDB	30	60	2	0	188	65	2	15

LIBRARY SEARCH SUMMARY

MS Data File:>AI587::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/24/91 17:46
Misc:8770,RR2S-4 ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.17	1246215	44266
2	3.40	5488985	44266
3	29.35	843237	51416

>AI587 WILLOW GROVE 8770,RR2S-4 ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 8 Bunching: -1
Dnslope: 0.00 Results File IAI587 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.17	20	30	31	267651	1262023	1246215	14.17	9.254
2	3.40	32	34	57	259772	9056682	8795654	100.00	65.317
3	11.32	370	377	392	65252	481144	442663	5.03	3.287
4	13.60	465	476	497	74956	605105	564720	6.42	4.194
5	17.36	632	639	654	67040	523042	485010	5.51	3.602
6	21.30	800	810	819	75739	534588	514157	5.85	3.818
7	24.69	949	957	968	86141	600684	574481	6.53	4.266
8	29.35	1106	1159	1160	22147	1805888	843237	9.59	6.262

Sum of corrected areas: 13466142.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RINSATE-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8771

Sample wt/vol: 5 (g/ml) G Lab File ID: AI535

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	6	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

Dp 9-9-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RINSATE-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8771

Sample wt/vol: 5 (g/ml) G Lab File ID: AI535

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

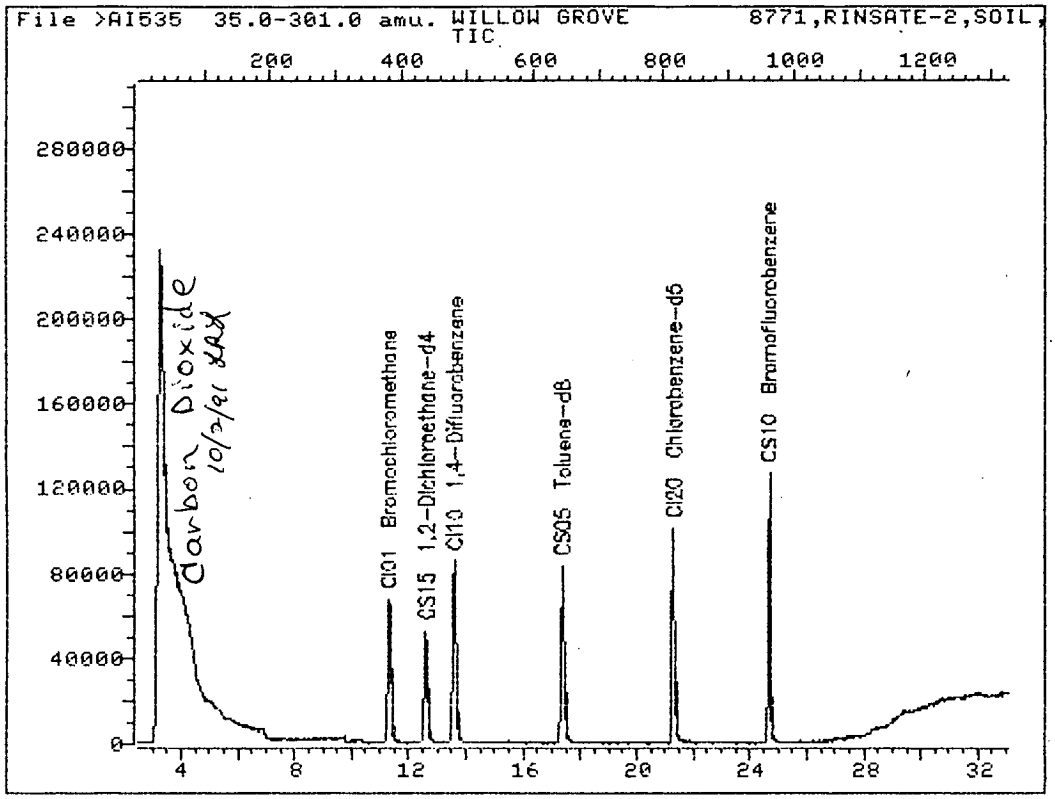
Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

~~3/90~~
2/88

TOTAL ION CHROMATOGRAM



Data File: >AI535::D4 Quant Output File: ^AI535::QT
Name: WILLOW GROVE
Misc: 8771,RINSATE-2,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 17:49
Injected at: 910918 17:14

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 17:49
Output File: ^AI535::D4 Injected at: 910918 17:14
Data File: >AI535::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8771,RINSATE-2,SOIL,5,8701A1,SPH

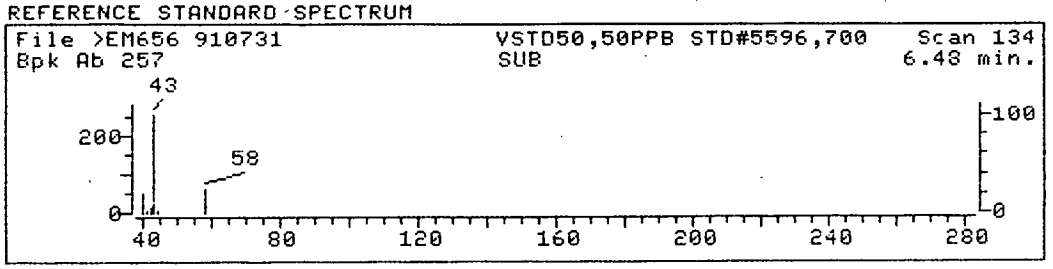
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.28	128.0	58052	50.00	UG/KG	80
9)	C035	Acetone	6.36	43.0	5669	5.98	UG/KG	80
20)	C110	2-Butanone	10.22	72.0	1332	5.73	UG/KG	85
21)	CS15	1,2-Dichloroethane-d4	12.59	65.0	160026	52.79	UG/KG 106%	80
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	216289	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.28	117.0	180063	50.00	UG/KG	98
48)	CS05	Toluene-d8	17.34	98.0	199242	48.88	UG/KG 98%	98
57)	CS10	Bromofluorobenzene	24.65	95.0	167933	47.64	UG/KG 95%	99

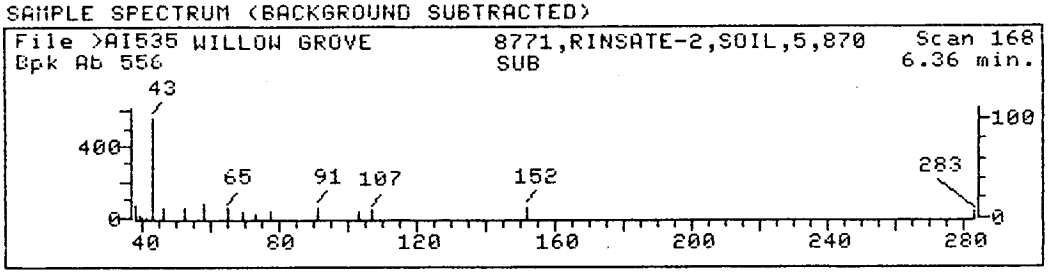
* Compound is ISTD

09/26/91

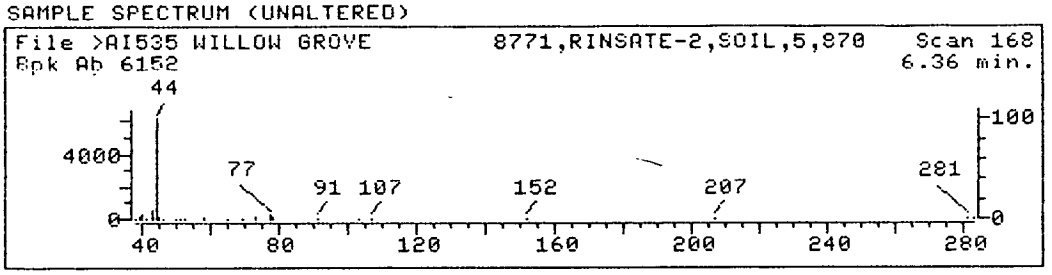
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



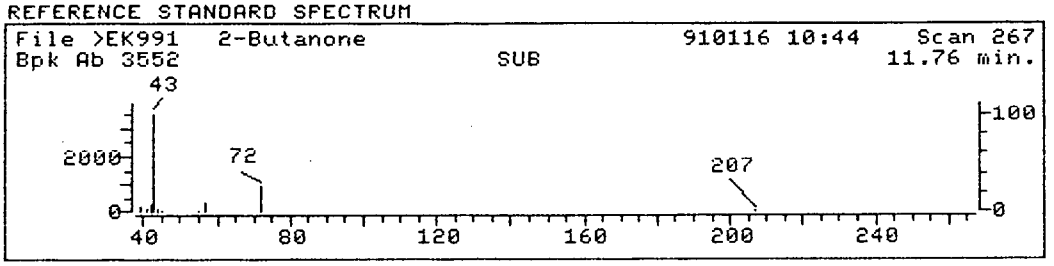
SAMPLE SPECTRUM (UNALTERED)



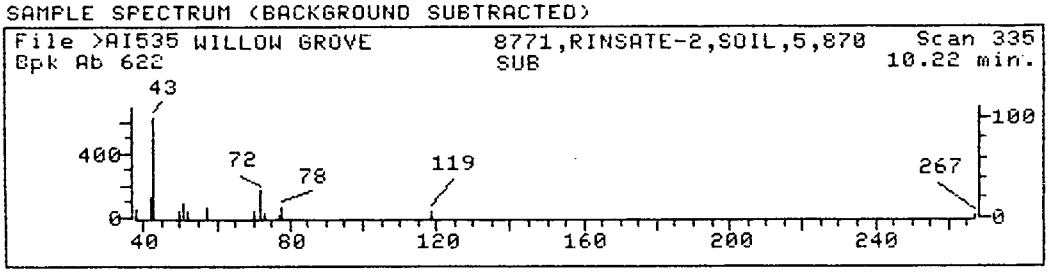
Data File: >AI535::D4 Quant Output File: ^AI535::QT
Name: WILLOW GROVE
Misc: 8771,RINSATE-2,SOIL,5,8701A1,SPH
Quant Time: 910918 17:49 Quant ID File: CCAS::BD
Injected at: 910918 17:14 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 168
Retention Time: 6.36 min.
Quant Ion: 43.0
Area: 5669
Concentration: 5.98 UG/KG
q-value: 80

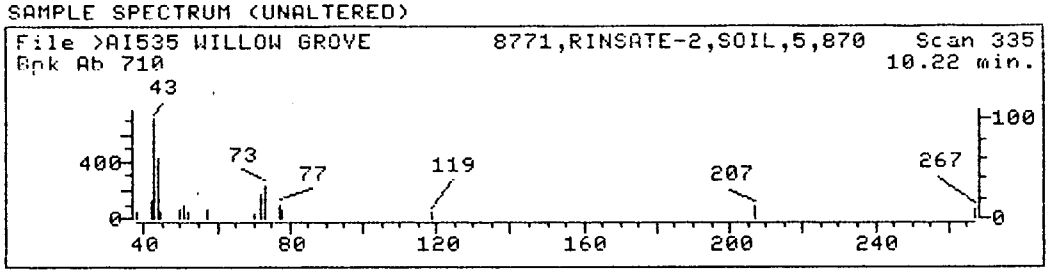
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI535::D4 Quant Output File: ^AI535::QT
Name: WILLOW GROVE
Misc: 8771,RINSATE-2,SOIL,5,8701A1,SPH
Quant Time: 910918 17:49 Quant ID File: CCAS::BD
Injected at: 910918 17:14 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 335
Retention Time: 10.22 min.
Quant Ion: 72.0
Area: 1332
Concentration: 5.73 UG/KG
q-value: 85

AI535 WILLOW GROVE 8771,RINSATE-2,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 47143. Max Peaks: 1 Bunching: -1
Onslope: 0.00 Results File IAI535 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	22	33	49	231685	4267953	4247900	100.00	100.000

Sum of corrected areas: 4247900.

Summary of PBM Library Search and Quantitation on file :>AI535::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	471426.	11.28	2.51 - 12.43
2	50.0	631045.	13.58	12.43 - 17.43
3	50.0	680821.	21.28	17.43 - 33.06

CALCULATIONS

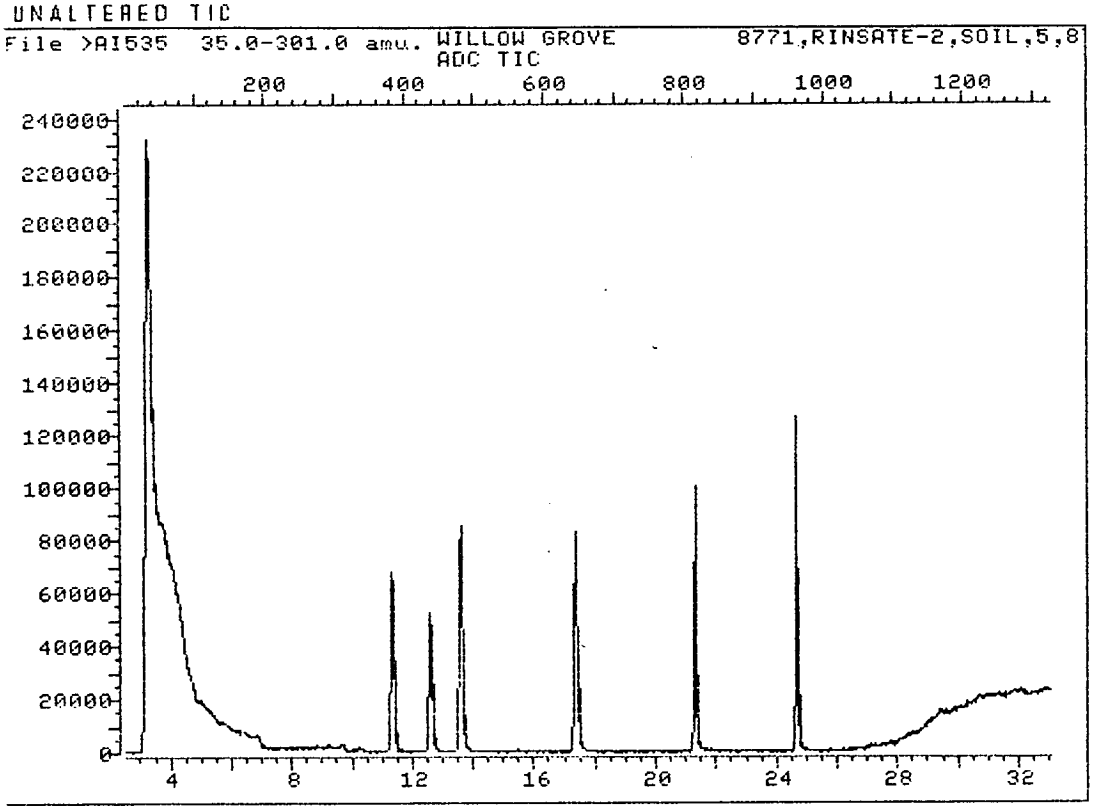
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

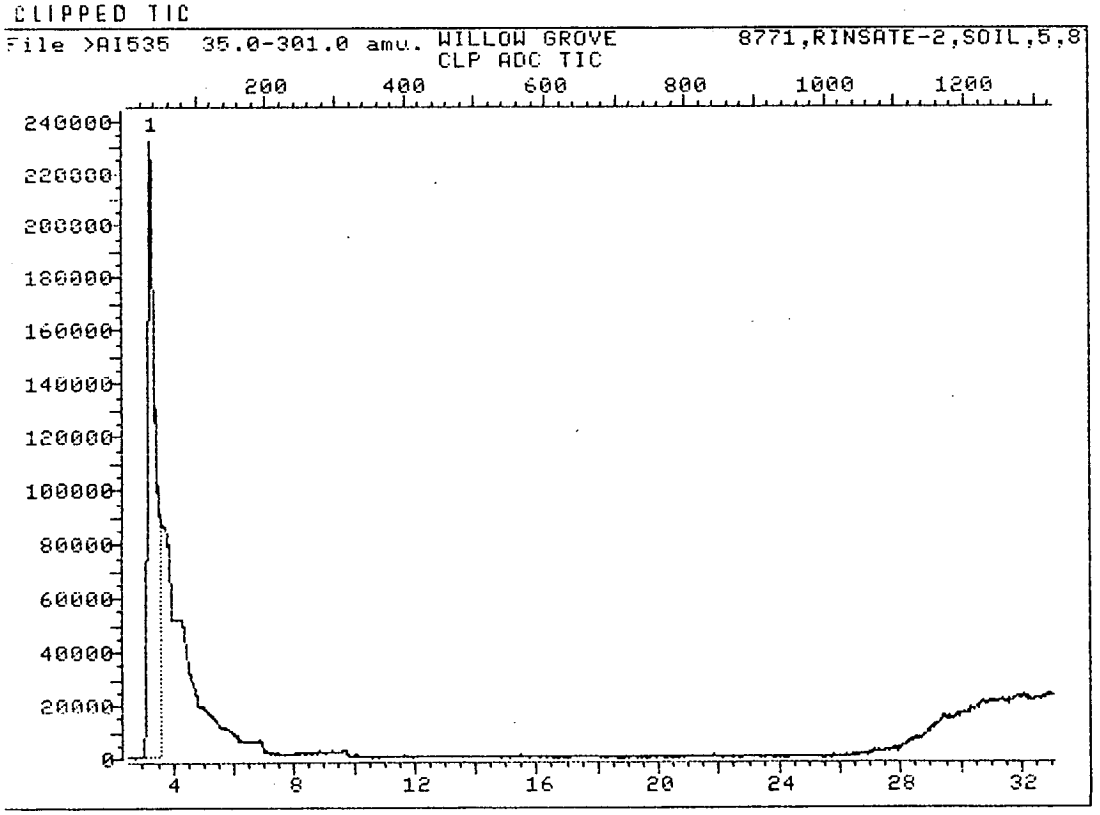
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

5:58 PM WED., 18 SEPT, 1991

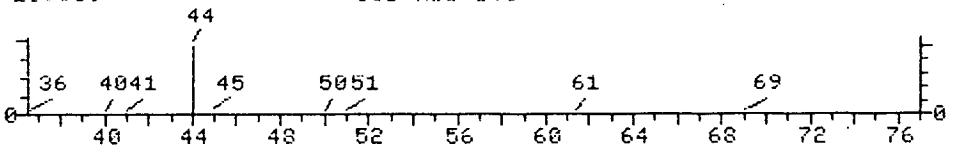
UNALTERED TIC



CLIPPED TIC



File >AI535 WILLOW GROVE 8771,RINSATE-2,SOIL,5,870101, Scan 33
Bpk Ab 185589 SUB ADD DVC 3.25 min.



CARBON DIOXIDE
SOLVENT
CAS #124-38-9
09.19.91

Retention time = 3.25

Area = 4247900. Tentative Concentration is 450.00

Sample file: >AI535 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI535::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 17:14
Misc:8771,RINSATE-2,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.25	4247900	47143

>AI535 WILLOW GROVE 8771,RINSATE-2,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI535 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	22	33	49	231685	4277588	4247900	100.00	54.011
2	11.28	374	381	393	67155	495355	471426	11.10	5.994
3	12.59	431	438	448	52340	386140	364783	8.59	4.638
4	13.58	473	481	493	85401	654466	631045	14.86	8.024
5	17.34	635	644	661	82991	640998	616925	14.52	7.844
6	21.28	805	815	825	100797	696159	680821	16.03	8.656
7	24.65	954	961	977	127112	872638	851975	20.06	10.833

Sum of corrected areas: 7864875.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

FIELD-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8772

Sample wt/vol: 5 (g/ml) G Lab File ID: AI536

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	2	J
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	3	J
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

FIELD-2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8772

Sample wt/vol: 5 (g/ml) G Lab File ID: AI536

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

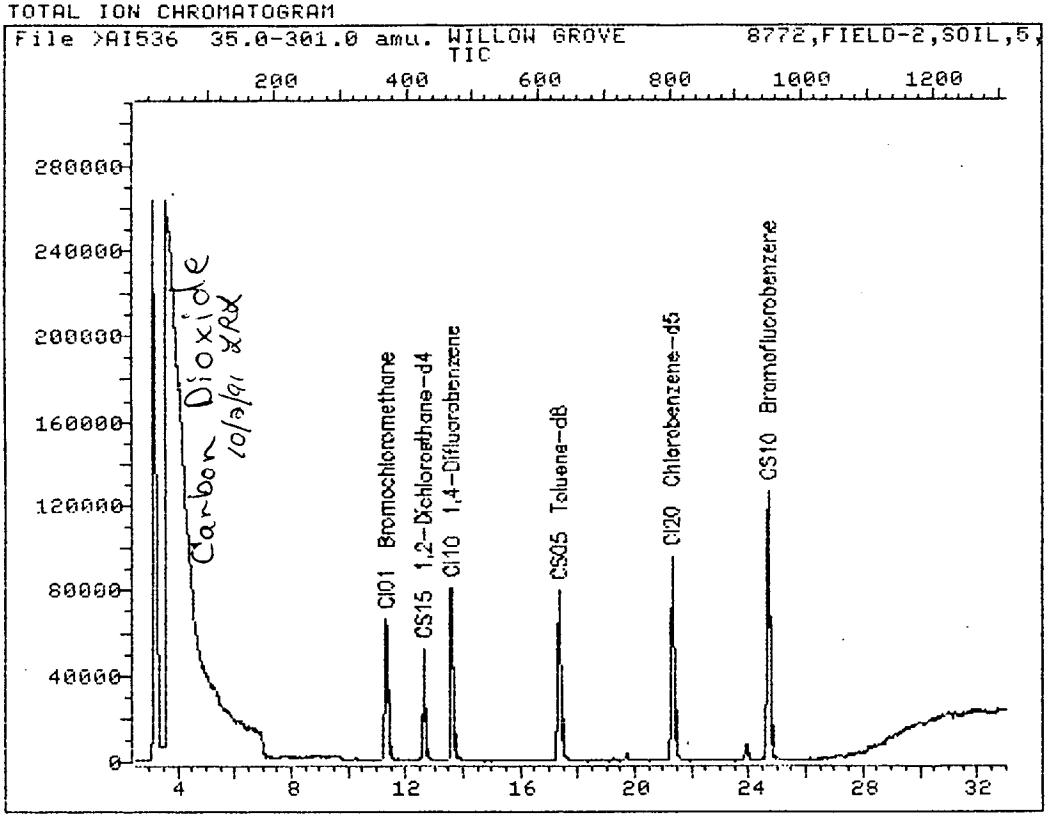
FORM I VOA-TIC

~~3/90~~
2/88

300324

10.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI536::D4 Quant Output File: ^AI536::QT
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 18:31
Injected at: 910918 17:57

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 18:31
Output File: ^AI536::D4 Injected at: 910918 17:57
Data File: >AI536::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

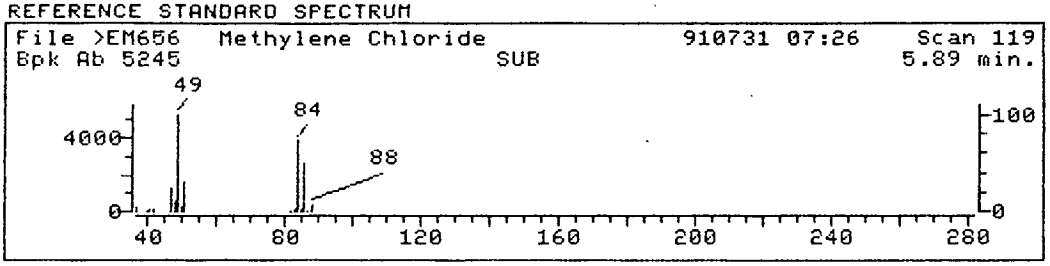
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	55781	50.00	UG/KG	80
8)	C030	Methylene Chloride	7.70	84.0	2862	1.84	UG/KG	89
9)	C035	Acetone	6.40	43.0	3426	3.76	UG/KG	80
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	156769	53.82	UG/KG 108%	79
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	209500	50.00	UG/KG	91
32)	C155	Dibromochloromethane	19.69	129.0	6373	1.68	UG/KG	97
39)	C180	Bromoform	23.88	173.0	11229	3.32	UG/KG	97
40)	*CI20	Chlorobenzene-d5	21.28	117.0	174539	50.00	UG/KG	95
48)	CS05	Toluene-d8	17.33	98.0	194663	49.27	UG/KG 99%	98
57)	CS10	Bromofluorobenzene	24.67	95.0	165341	48.39	UG/KG 97%	99

* Compound is ISTD

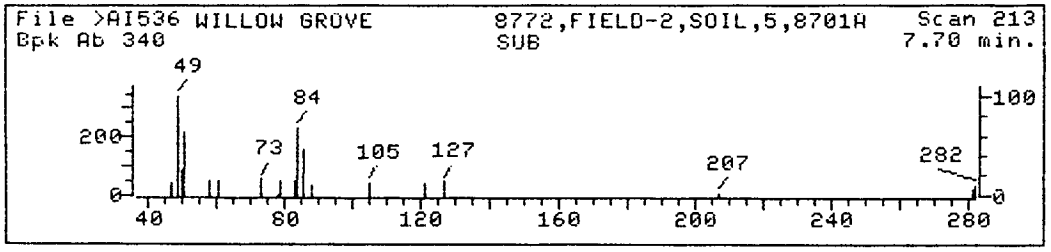
09.26.91

390326

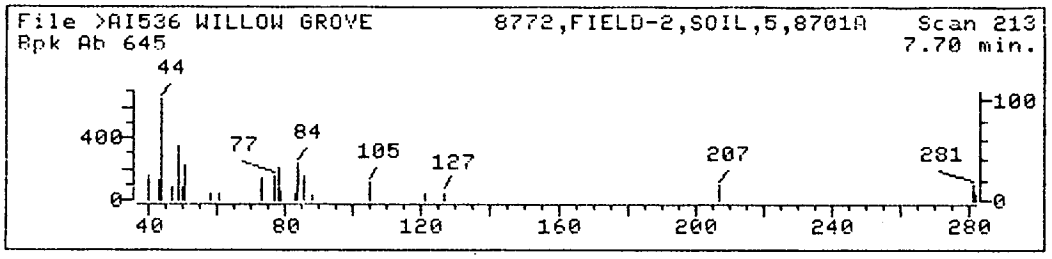
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



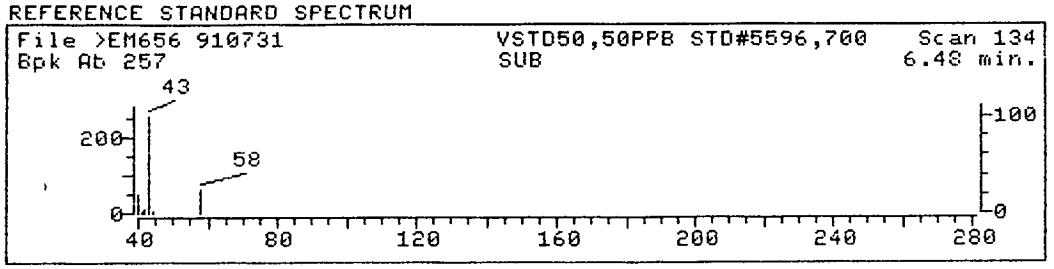
SAMPLE SPECTRUM (UNALTERED)



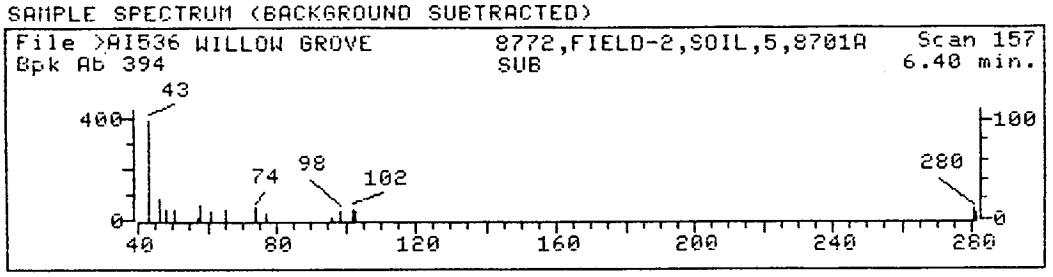
Data File: >AI536::D4 Quant Output File: ^AI536::QT
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH
Quant Time: 910918 18:31 Quant ID File: CCAS::BD
Injected at: 910918 17:57 Last Calibration: 910918 14:28

Compound No: 8
Compound Name: C030 Methylene Chloride
Scan Number: 213
Retention Time: 7.70 min.
Quant Ion: 84.0
Area: 2862
Concentration: 1.84 UG/KG
q-value: 89

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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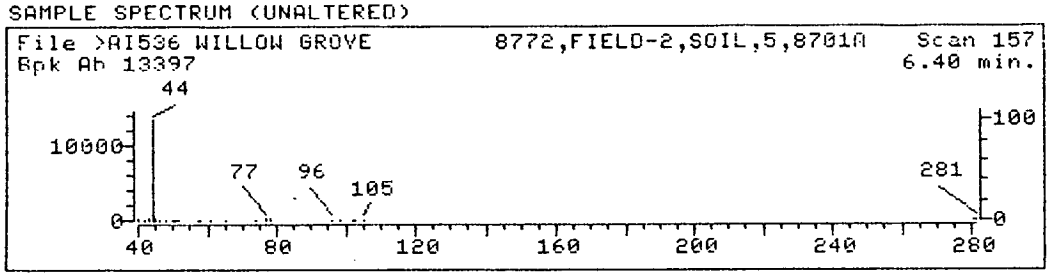
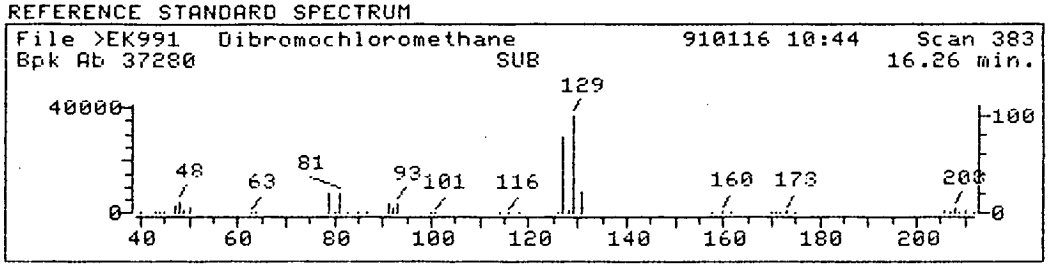


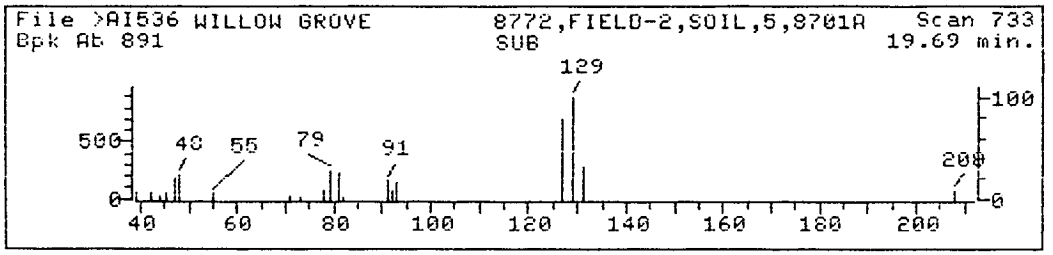
Data File: >AI536::D4 Quant Output File: ^AI536::QT
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH
Quant Time: 910918 18:31 Quant ID File: CCAS::BD
Injected at: 910918 17:57 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 157
Retention Time: 6.40 min.
Quant Ion: 43.0
Area: 3426
Concentration: 3.76 UG/KG
q-value: 80

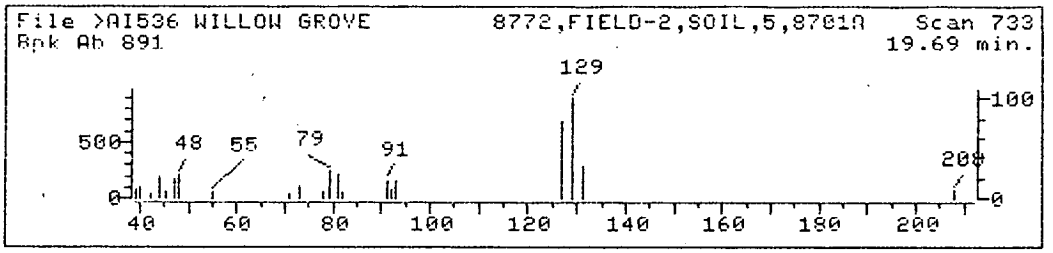
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



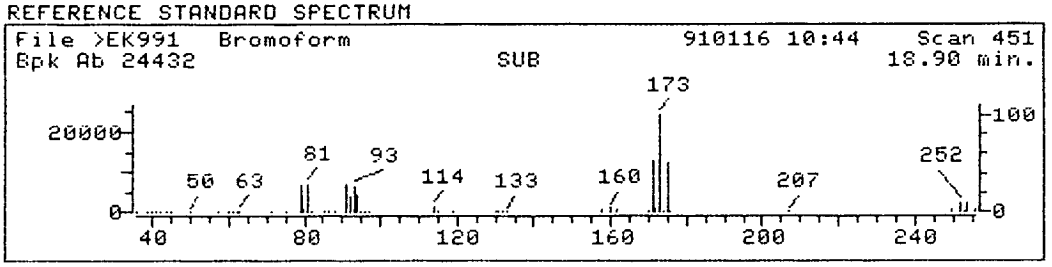
SAMPLE SPECTRUM (UNALTERED)



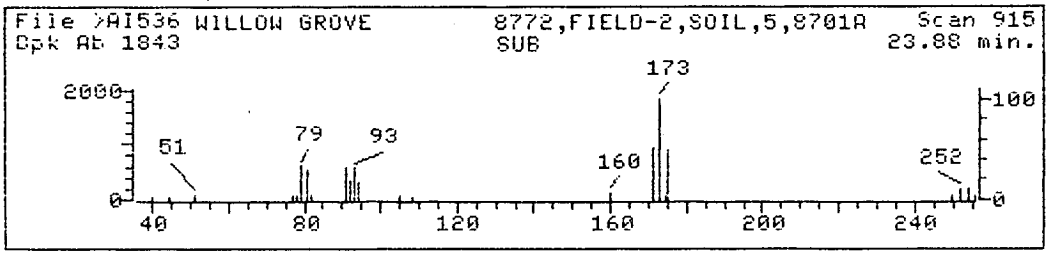
Data File: >AI536::D4 Quant Output File: ^AI536::QT
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH
Quant Time: 910918 18:31 Quant ID File: CCAS::BD
Injected at: 910918 17:57 Last Calibration: 910918 14:28

Compound No: 32
Compound Name: C155 Dibromochloromethane
Scan Number: 733
Retention Time: 19.69 min.
Quant Ion: 129.0
Area: 6373
Concentration: 1.68 UG/KG
q-value: 97

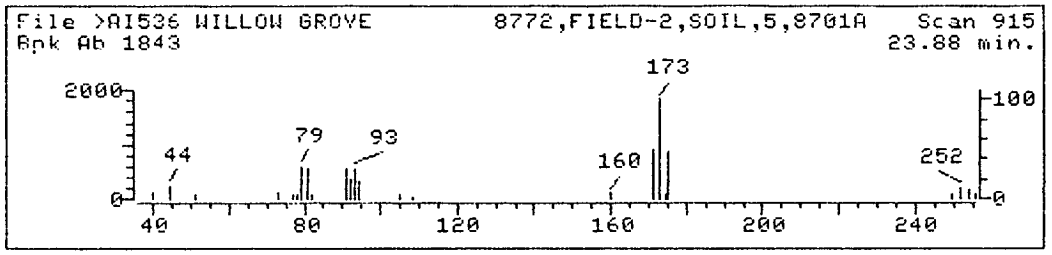
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI536::D4 Quant Output File: ^AI536::QT
Name: WILLOW GROVE
Misc: 8772,FIELD-2,SOIL,5,8701A1,SPH
Quant Time: 910918 18:31 Quant ID File: CCAS::BD
Injected at: 910918 17:57 Last Calibration: 910918 14:28

Compound No: 39
Compound Name: C180 Bromoform
Scan Number: 915
Retention Time: 23.88 min.
Quant Ion: 173.0
Area: 11229
Concentration: 3.32 UG/KG
q-value: 97

AI536 WILLOW GROVE 8772,FIELD-2,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Ipslope: .20 Area Reject: 45693. Max Peaks: 2 Bunching: -1
Inslope: 0.00 Results File IAI536 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.13	22	27	29	263026	808056	801352	11.21	10.083
2	3.54	30	33	48	256529	7355197	7146234	100.00	89.917

Sum of corrected areas: 7947586.

Summary of PBM Library Search and Quantitation on file :>AI536::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	456932.	11.29	2.53 - 12.44
2	50.0	617130.	13.58	12.44 - 17.43
3	50.0	662765.	21.28	17.43 - 33.03

CALCULATIONS

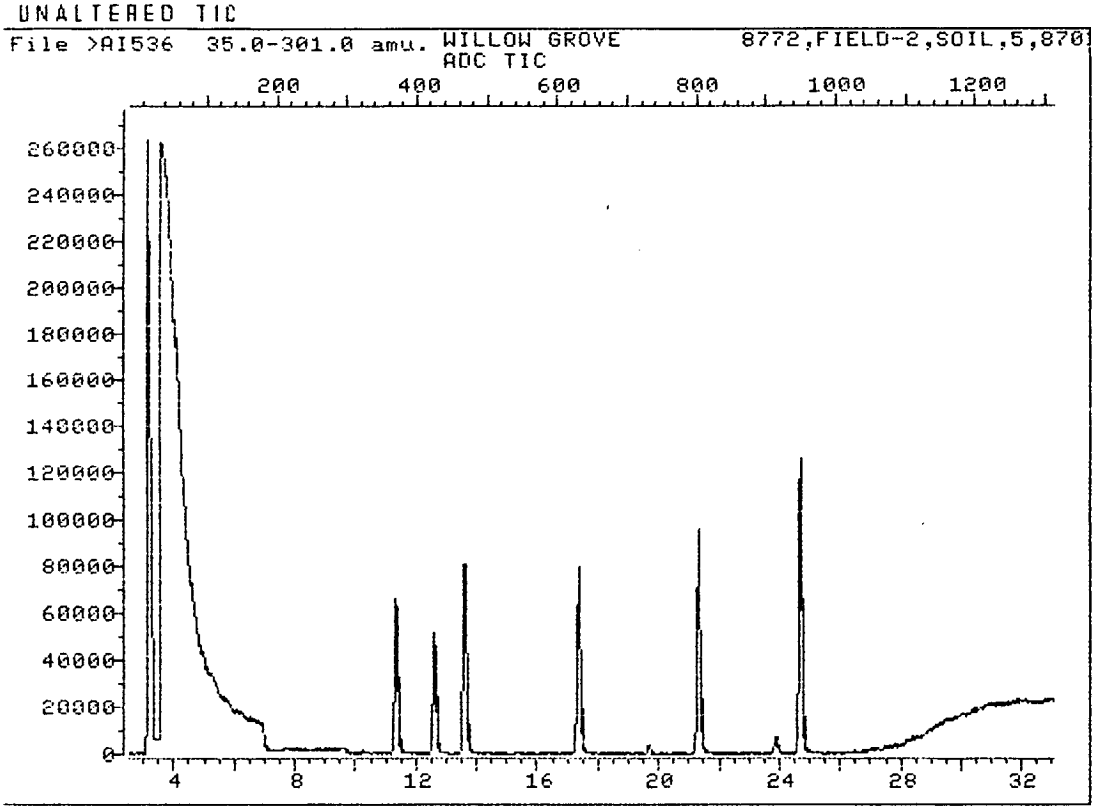
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

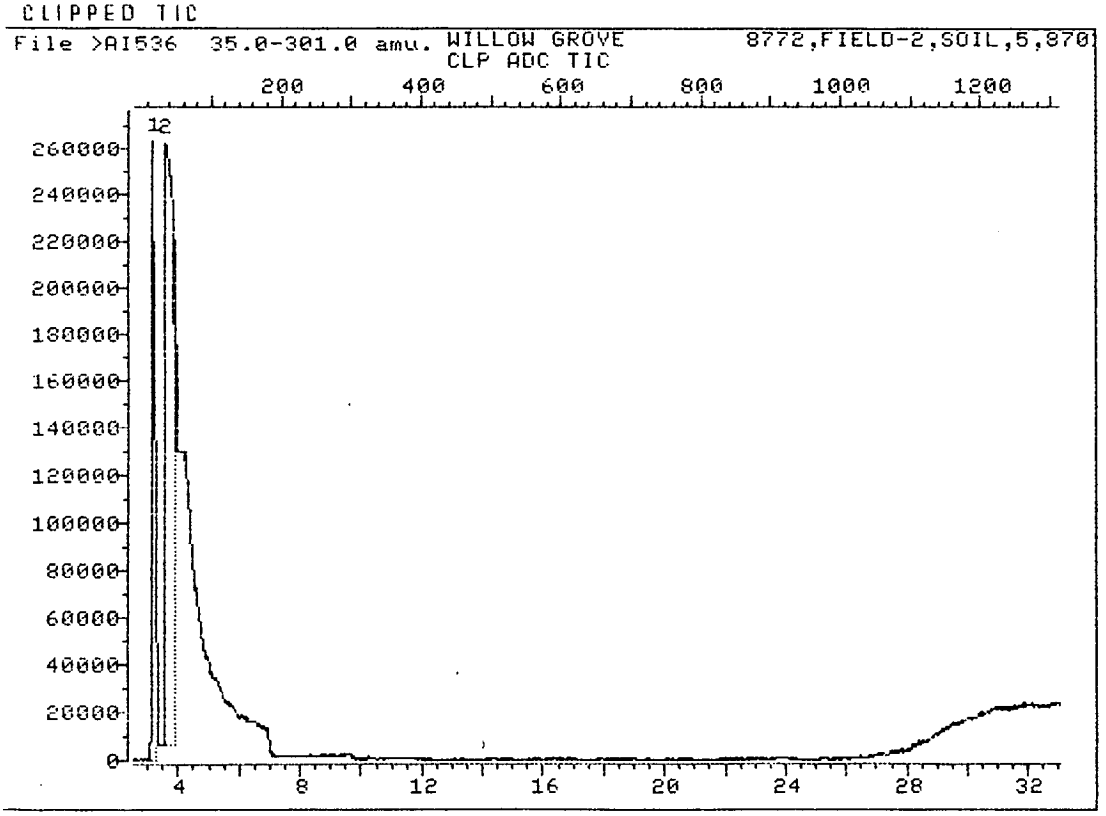
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

6:53 PM WED., 18 SEPT, 1991

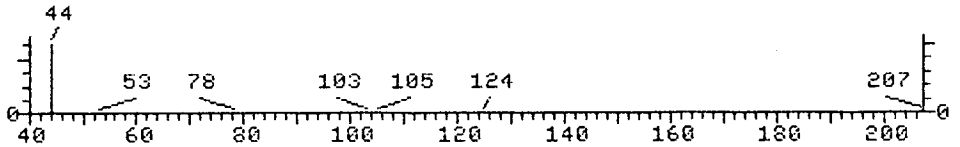
UNALTERED TIC



CLIPPED TIC



File >AI536 WILLOW GROVE 8772,FIELD-2,SOIL,5,8701A1,SP Scan 27
Bpk Ab 255943 SUB ADD DVC 3.13 min.



CARBON DISULFIDE
~~SOLVENT~~
CAS #75-15-0
05.19.91

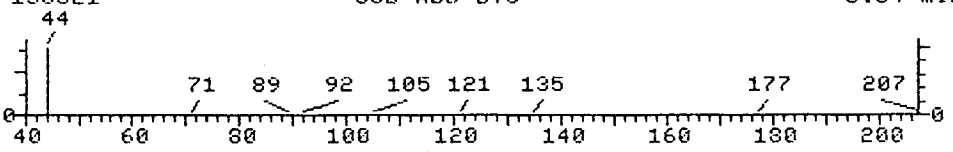
Retention time = 3.13

Area = 801352.0 Tentative Concentration is 88.00

Sample file: >AI536 Spectrum #: 27

No data base entries were retrieved.

File >AI536 WILLOW GROVE 8772,FIELD-2,SOIL,5,8701A1,SP Scan 33
Bpk Ab 156321 SUB ADD DVC 3.54 min.



CHROM DIVISION
CAS # 12436-9
SOLVENTS
07-15-91

Retention time = 3.54

Area = 7146234. Tentative Concentration is 780.00

Sample file: >AI536 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI536::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 17:57
Misc:8772,FIELD-2,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.13	801352	45693
2	3.54	7146234	45693

>AI536 WILLOW GROVE 8772,FIELD-2,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 3 Bunching: -1
Dnslope: 0.00 Results File IAI536 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.13	22	27	29	263026	814332	801352	5.74	5.141
2	3.54	30	33	140	261177	14661522	13951666	100.00	89.509
3	24.67	939	949	960	126450	857326	833893	5.98	5.350

Sum of corrected areas: 15586912.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

TRIP BLANK

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8773

Sample wt/vol: 5 (g/ml) G Lab File ID: AI537

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

FORM I VOA

~~3/90~~
2/88
10-9-91

300337

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

TRIP BLANK

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8773

Sample wt/vol: 5 (g/ml) G Lab File ID: AI537

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 1.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.----------	~~Unknown~~ No Volatiles detected	~~28.53~~	~~9~~	~~B~~

(a) 10-8-91

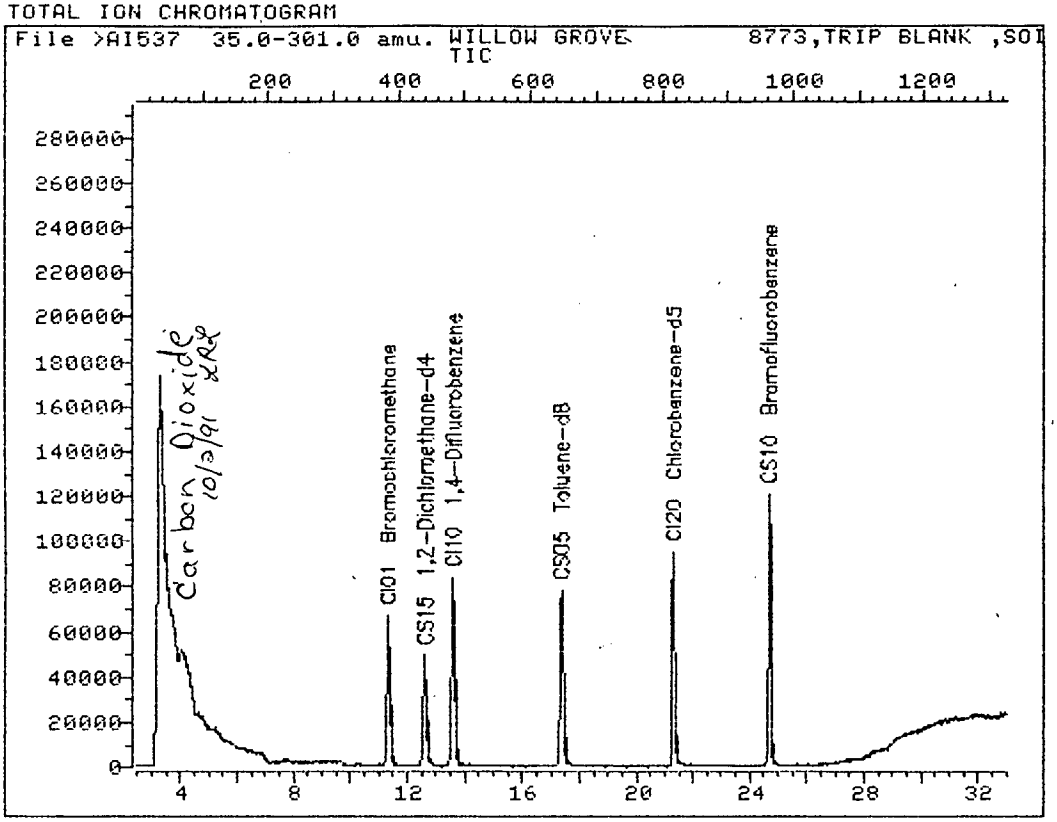
FORM I VOA-TIC

~~3/90~~
2/90

10-9-91

390338

TOTAL ION CHROMATOGRAM



Data File: >AI537::D4 Quant Output File: ^AI537::QT
Name: WILLOW GROVE
Misc: 8773,TRIP BLANK ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 19:15
Injected at: 910918 18:40

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 19:15
Output File: ^AI537::QT Injected at: 910918 18:40
Data File: >AI537::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8723,TRIP BLANK ,SOIL,5,8701A1,SPH

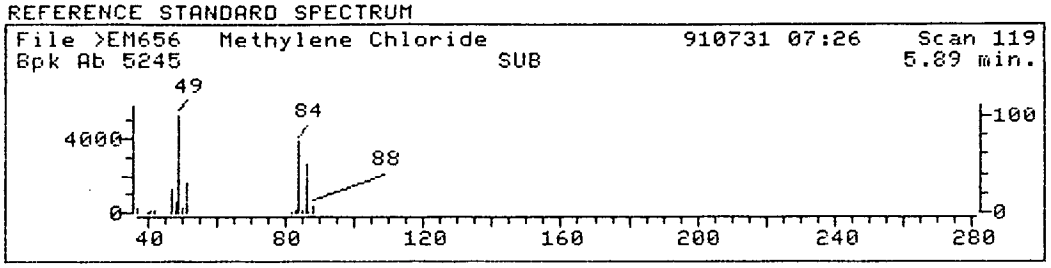
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	55178	50.00	UG/KG	75
8)	C030	Methylene Chloride	7.66	84.0	3652^	2.37	UG/KG	56
9)	C035	Acetone	6.37	43.0	4288	4.76	UG/KG	88
20)	C110	2-Butanone	10.25	72.0	1114	5.04	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	152303	52.86	UG/KG 106%	80
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	204601	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.29	117.0	166602	50.00	UG/KG	97
48)	CS05	Toluene-d8	17.35	98.0	185644	49.23	UG/KG 98%	98
57)	CS10	Bromofluorobenzene	24.66	95.0	158022	48.45	UG/KG 97%	97

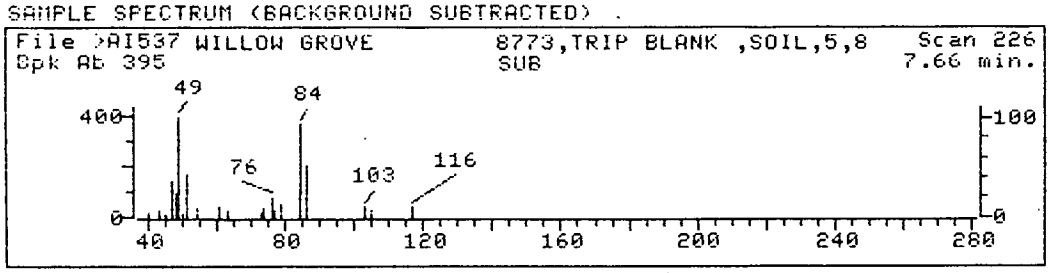
* Compound is ISTD

09-19-91

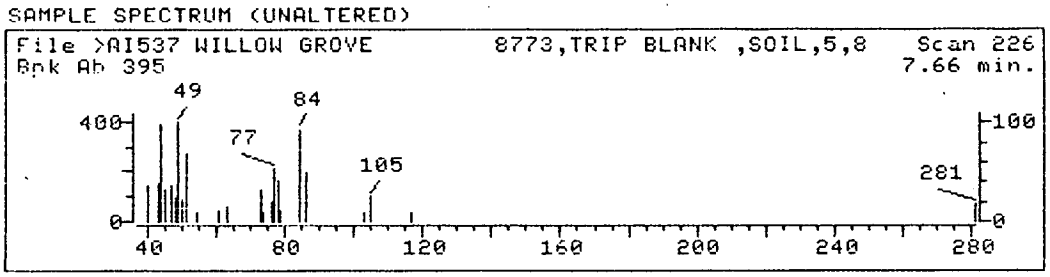
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



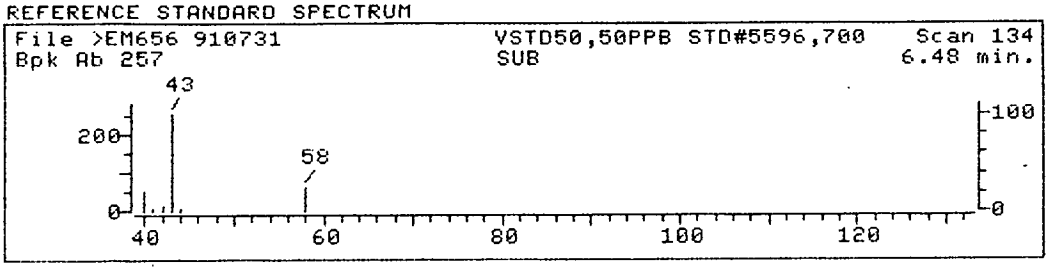
SAMPLE SPECTRUM (UNALTERED)



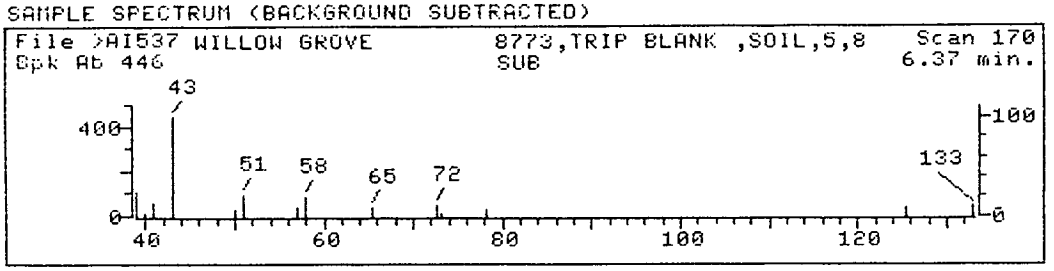
Data File: >AI537::D4 Quant Output File: ^AI537::QT
Name: WILLOW GROVE
Misc: 8773,TRIP BLANK ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:15 Quant ID File: CCAS::8D
Injected at: 910918 18:40 Last Calibration: 910918 14:28

Compound No: 8
Compound Name: C030 Methylene Chloride
Scan Number: 226
Retention Time: 7.66 min.
Quant Ion: 84.0
Area: 3652^
Concentration: 2.37 UG/KG
q-value: 56

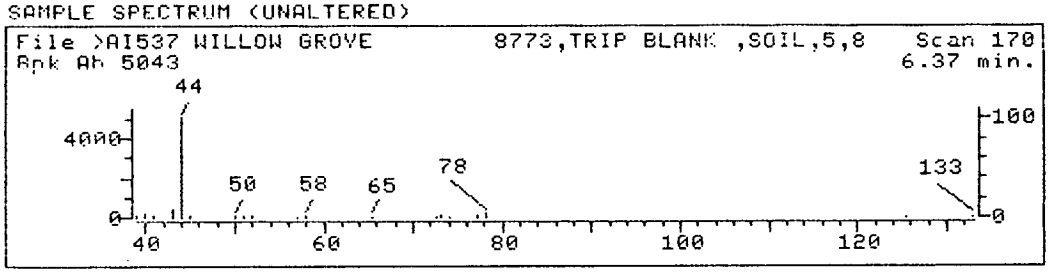
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



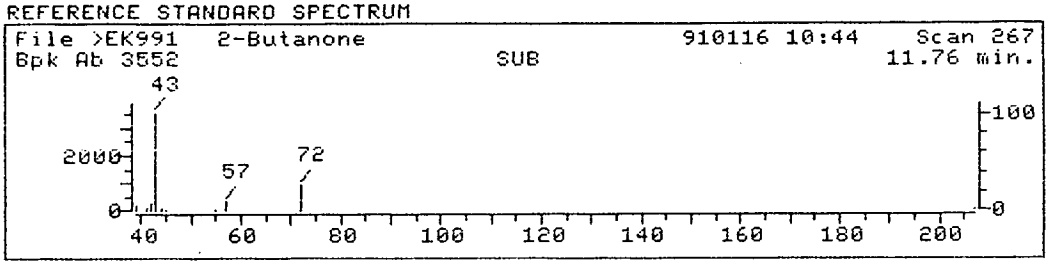
SAMPLE SPECTRUM (UNALTERED)



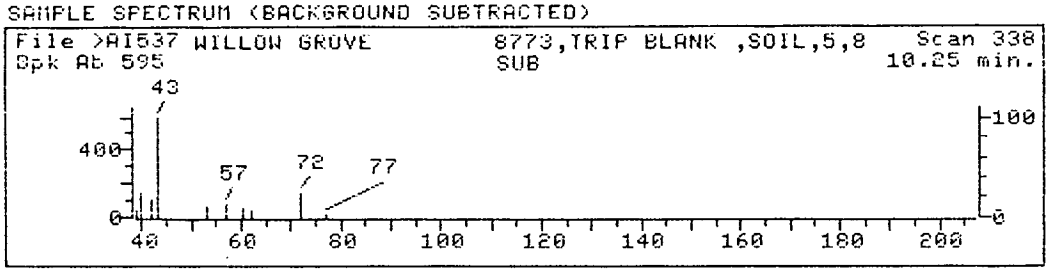
Data File: >AI537::D4 Quant Output File: ^AI537::QT
Name: WILLOW GROVE
Misc: 8773,TRIP BLANK ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:15 Quant ID File: CCAS::BD
Injected at: 910918 18:40 Last Calibration: 910918 14:28

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.37 min.
Quant Ion: 43.0
Area: 4288
Concentration: 4.76 UG/KG
q-value: 88

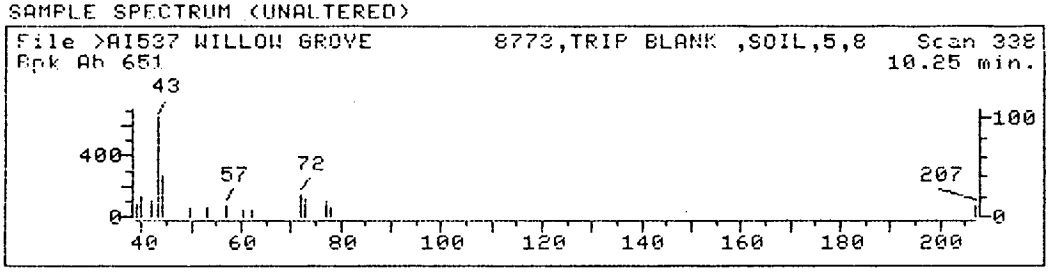
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI537::D4 Quant Output File: ^AI537::QT
Name: WILLOW GROVE
Misc: 8773,TRIP BLANK ,SOIL,5,8701A1,SPH
Quant Time: 910918 19:15 Quant ID File: CCAS::BD
Injected at: 910918 18:40 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 338
Retention Time: 10.25 min.
Quant Ion: 72.0
Area: 1114
Concentration: 5.04 UG/KG
q-value: 88

AI537 WILLOW GROVE 8773,TRIP BLANK ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Ipslope: .20 Area Reject: 45675. Max Peaks: 2 Bunching: -1
Inslope: 0.00 Results File IAI537 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	35	67	173023	4528219	4495900	100.00	97.520
2	28.53	1104	1131	1132	4560	232170	114346	2.54	2.480

Sum of corrected areas: 4610246.

Summary of PBM Library Search and Quantitation on file :>AI537::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	456745.	11.31	2.47 - 12.45
2	50.0	597924.	13.59	12.45 - 17.44
3	50.0	652349.	21.29	17.44 - 33.02

CALCULATIONS

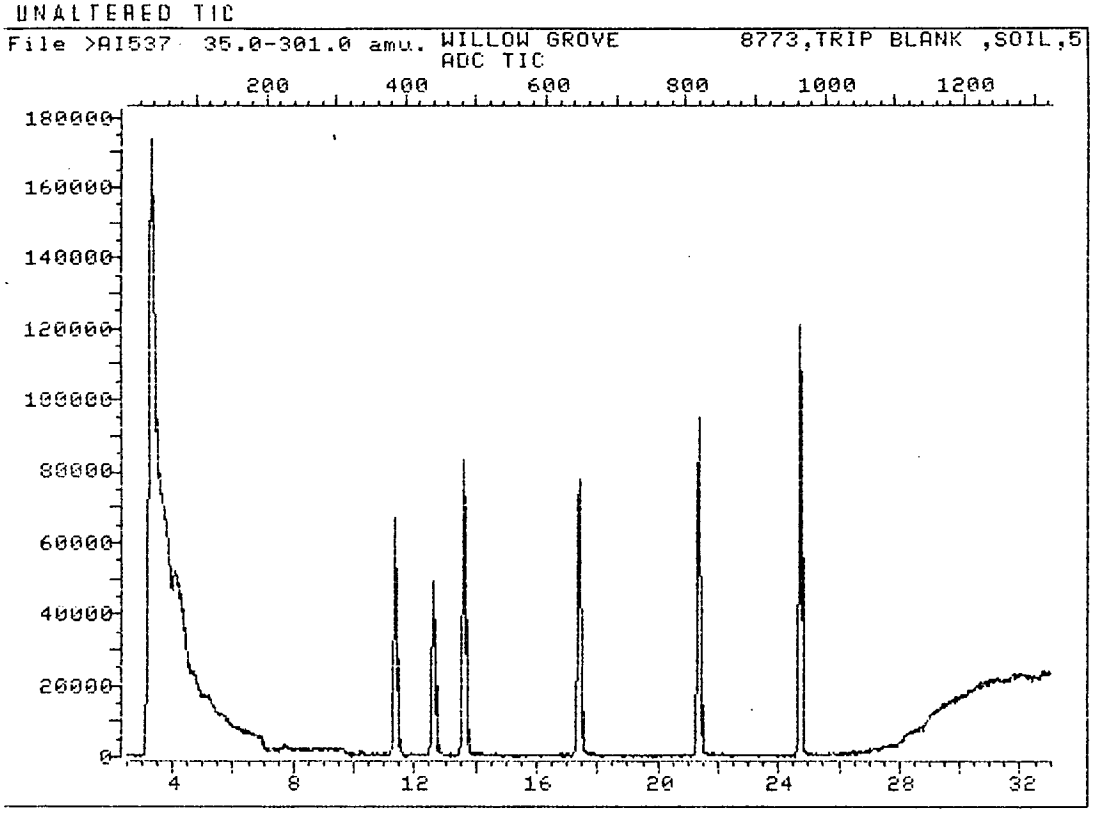
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

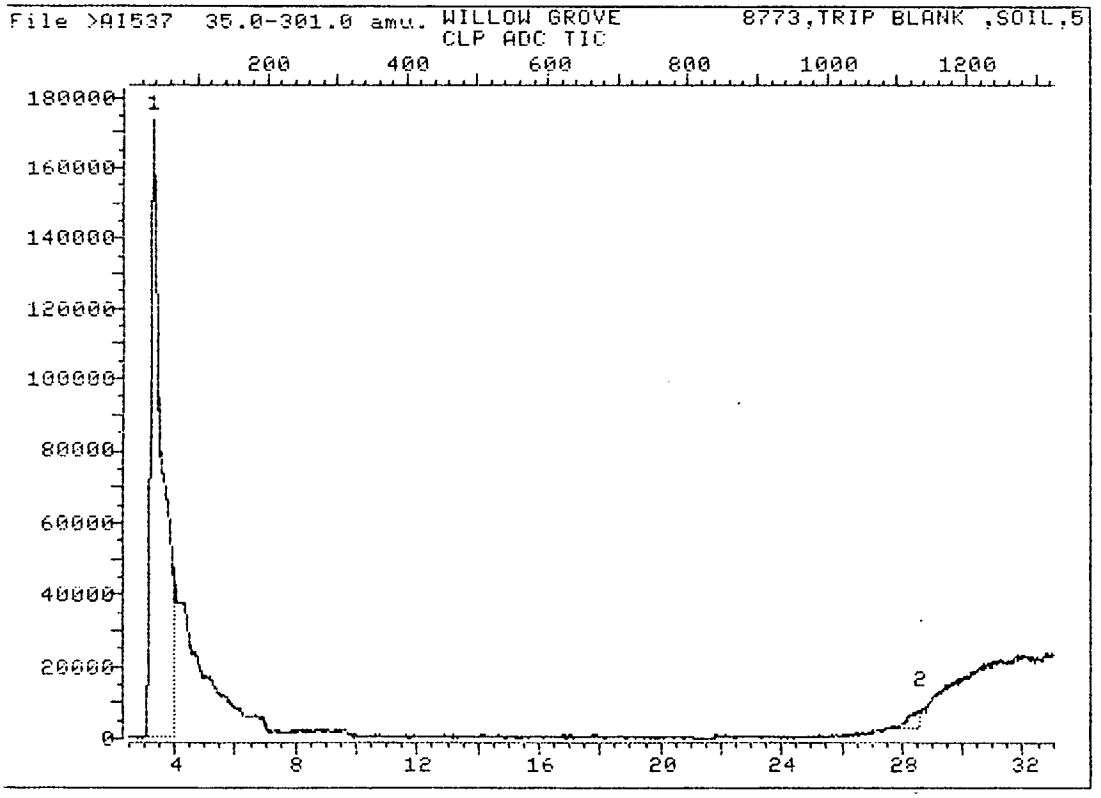
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

7:31 PM WED., 18 SEPT, 1991

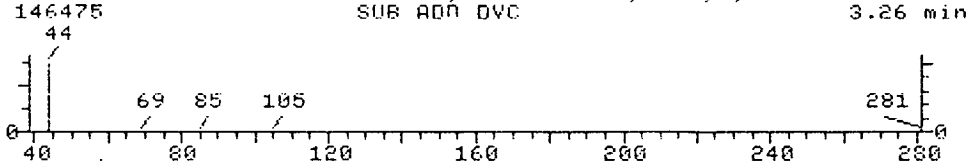
UNALTERED TIC



CLIPPED TIC



File >AI537 WILLOW GROVE 8773,TRIP BLANK ,SOIL,5,8701A Scan 35
Rpk Ah 146475 SUB ADD DVC 3.26 min.



CARBON DISULFIDE
~~SOLVENT~~
CAS # 124-38-9
09/19/91

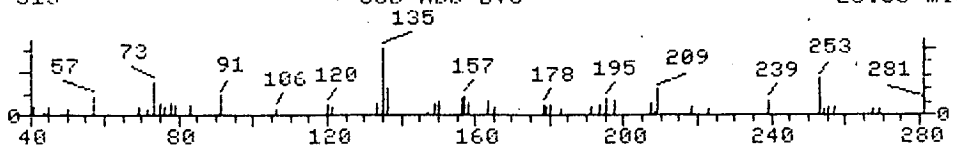
Retention time = 3.26

Area = 4495900. Tentative Concentration is 490.00

Sample file: >AI537 Spectrum #: 35

No data base entries were retrieved.

File >AI537 WILLOW GROVE 8773,TRIP BLANK ,SOIL,5,8701A Scan 1131
Bpk Ab 313 SUB ADD DVC 28.53 min.



background

09-4-91

Column bleed (a) 10.8.91

Retention time = 28.53

Area = 114346.0 Tentative Concentration is 9.00

Sample file: >AI537 Spectrum #: 1131

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI537::D4 Analyst:SCOTT MS

Name:WILLOW GROVE Date/Time: 9/18/91 18:40
Misc:8773,TRIP BLANK ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	4495900	45675
2	28.53	114346	65235

>AI537 WILLOW GROVE 8773,TRIP BLANK ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI537 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	23	35	64	173023	4378676	4327298	100.00	55.807
2	11.31	373	384	395	66540	486167	456745	10.55	5.890
3	12.62	432	441	451	48901	380285	357461	8.26	4.610
4	13.59	475	483	493	83048	619240	597924	13.82	7.711
5	17.35	636	646	655	77739	587153	566131	13.08	7.301
6	21.29	806	817	836	95196	672322	652349	15.08	8.413
7	24.66	956	963	979	120600	819386	796081	18.40	10.267

Sum of corrected areas: 7753989.

C. Standards Data

390350

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: 8701A1

Contractor: EA LABS Calibration Date: 09/18/91

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>AI532	>AI531	>AI530	>AI529	>AI528					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	100.00	150.00	200.00	$\overline{RF}$	% RSD	CCC	SPCC	
C010 Chloromethane	.70431	.66607	.57051	.62025	.67068	.64636	8.029		**	
C015 Bromomethane	1.43535	1.43359	1.33110	1.41022	1.52820	1.42769	4.932			
C016 Dichlorodifluoromethane	1.72571	1.85431	1.53837	1.76936	2.04617	1.78679	10.380			
C020 Vinyl Chloride	.93062	.96576	.78343	.83225	.90128	.88267	8.391	*		
C025 Chloroethane	.65207	.71265	.63902	.70798	.77785	.69791	7.938			
C030 Methylene Chloride	1.42078	1.39610	1.35929	1.42169	1.50008	1.41959	3.639			
C035 Acetone	1.06610	.81642	.79609	.85390	.73258	.85302	14.885			
C036 Acrolein	.14443	.14064	.14646	.14555	.13672	.14276	2.829			(Conc=120.0,300.0,600.0,900.0,120
C040 Carbon Disulfide	3.43084	3.68677	3.36839	3.74407	4.13161	3.67234	8.248			
C037 Acrylonitrile	.37721	.36542	.40189	.41614	.38536	.38921	5.156			(Conc=120.0,300.0,600.0,900.0,120
C041 Trichlorofluoromethane	2.25222	2.43266	2.02525	2.22379	2.49284	2.28535	8.107			
C045 1,1-Dichloroethene	1.30378	1.38656	1.20409	1.36991	1.52422	1.35771	8.653	*		
C050 1,1-Dichloroethane	2.83852	2.90485	2.78968	2.98484	3.21931	2.94744	5.725		**	
C056 1,2-Dichloroethene (tot*	1.28802	1.34256	1.24855	1.36644	1.52205	1.35352	7.749			
C060 Chloroform	3.67326	3.67306	3.58551	3.77488	4.00625	3.74259	4.326	*		
C110 2-Butanone	.22820	.20014	.20546	.21598	.18638	.20723	7.647			
CS15 1,2-Dichloroethane-d4	2.70210	2.61096	2.60189	2.55763	2.62292	2.61910	2.006			(Conc=50.0,50.0,50.0,50.0,50.0)
C065 1,2-Dichloroethane	3.25936	3.16597	3.22100	3.27116	3.31660	3.24682	1.744			
C111 Methyl tertiary butyl e*	.68359	.65628	.66491	.65201	.66162	.66368	1.835			
C125 Vinyl Acetate	.21836	.28121	.34856	.30099	.37864	.30555	20.311			
C115 1,1,1-Trichloroethane	.78965	.84118	.78960	.83839	.89541	.83085	5.291			
C120 Carbon Tetrachloride	.60888	.69096	.64698	.69697	.76205	.68117	8.460			
C130 Bromodichloromethane	1.00041	1.01555	1.06187	1.04928	1.07557	1.04054	3.036			
C140 1,2-Dichloropropane	.34592	.35221	.37116	.37094	.38305	.36466	4.173	*		
C143 cis-1,3-Dichloropropene	.66734	.68166	.73230	.73599	.75616	.71469	5.335			
C150 Trichloroethene	.44663	.43882	.43095	.46943	.47598	.45236	4.314			
C155 Dibromochloromethane	.87464	.90700	.97036	.94422	.94187	.92762	4.011			
C160 1,1,2-Trichloroethane	.39936	.41046	.43456	.42570	.42813	.41964	3.426			
C165 Benzene	.75418	.79257	.80877	.83176	.90093	.81765	6.663			
C176 Diisopropyl ether	1.09376	1.06092	1.10324	1.08168	1.12888	1.09370	2.307			
C145 trans-1,3-Dichloroprope*	.53234	.55477	.60275	.61785	.61081	.58370	6.489			
C175 2-Chloroethylvinylether	.01273	.02783	.04995	.05874	.06302	.04245	50.543			

RF - Response Factor (Subscript is amount in UG/KG)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: 8701A1

Contractor: EA LABS Calibration Date: 09/18/91

Contract No:

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

	Laboratory ID:	>AI532	>AI531	>AI530	>AI529	>AI528				
	Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
C179	1,2-Dibromoethane	.68310	.68327	.74526	.71853	.71033	.70810	3.693		
C180	Bromoform	.79662	.80779	.89345	.85214	.82785	.83557	4.625		**
C205	4-Methyl-2-Pentanone	.78895	.76178	.88264	.89102	.80347	.82557	7.021		
C210	2-Hexanone	.65022	.58789	.67000	.66879	.56096	.62757	7.976		
C220	Tetrachloroethene	.45076	.48523	.45023	.47116	.51671	.47482	5.825		
C225	1,1,2,2-Tetrachloroetha*	.98518	1.01485	1.11222	1.02598	1.05386	1.03842	4.626		**
C230	Toluene	.62564	.64630	.63634	.66647	.70712	.65637	4.892	*	
CS05	Toluene-d8	1.14387	1.13177	1.11631	1.10699	1.12820	1.12543	1.265		(Conc=50.0,50.0,50.0,50.0,50.0)
C235	Chlorobenzene	.94032	.97270	.98012	.98930	1.03136	.98276	3.341		**
C240	Ethylbenzene	.36619	.39383	.38607	.40140	.42748	.39499	5.671	*	
C245	Styrene	.82912	.85156	.88386	.88764	.92319	.87507	4.126		
C261	m&p-Xylenes	.47252	.49427	.48839	.50795	.53842	.50031	4.959		(Conc=40.0,100.0,200.0,300.0,400.
C262	o-Xylene	.46556	.48603	.48150	.48921	.50958	.48637	3.257		
C253	1,3-Dichlorobenzene	.78434	.80353	.79601	.79362	.80157	.79581	.951		
C254	1,2-Dichlorobenzene	.85047	.84100	.82946	.81276	.81878	.83049	1.868		
C255	1,4-Dichlorobenzene	.87042	.88992	.89557	.87915	.88703	.88442	1.109		
CS10	Bromofluorobenzene	.95338	.97887	.98975	.95533	.97963	.97139	1.663		(Conc=50.0,50.0,50.0,50.0,50.0)

ALL CCC & SPCC ARE WITHIN QC LIMITS
QCAL el 09-18-91 15:00
09-18-91

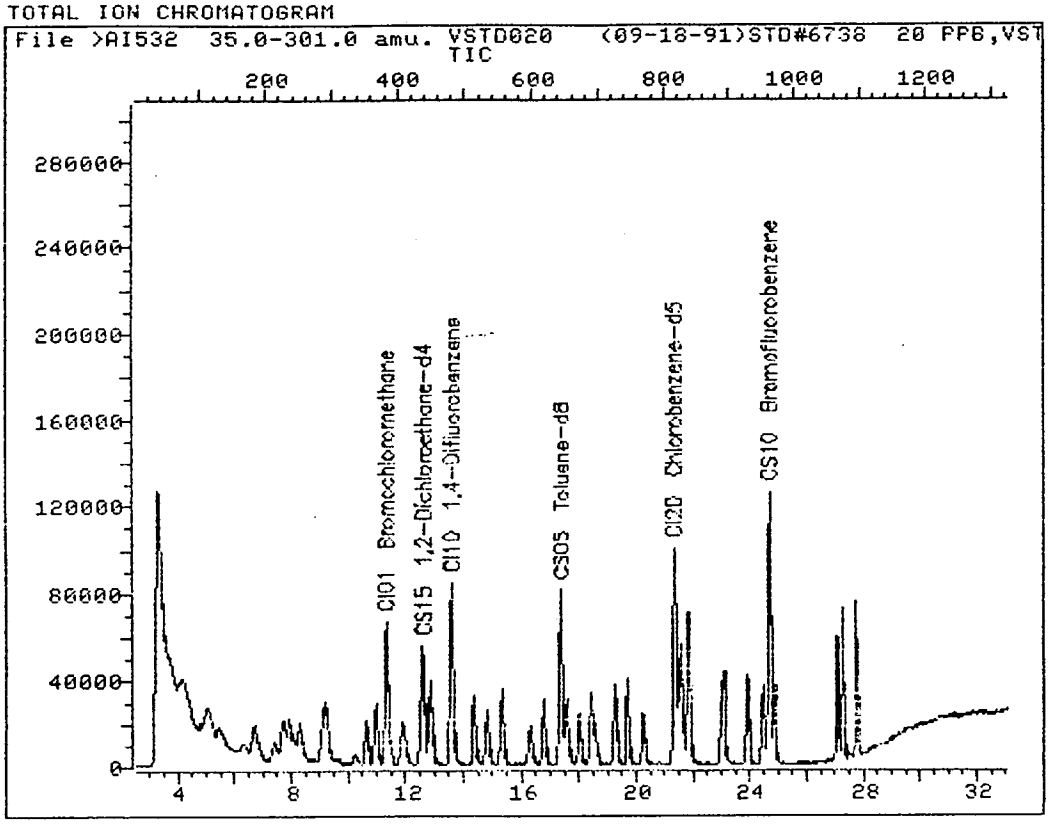
RF - Response Factor (Subscript is amount in UG/KG)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

TOTAL ION CHROMATOGRAM



Data File: >AI532::D4 Quant Output File: ^AI532::QT
Name: VSTD020 (09-18-91)
Misc: STD#6738 20 PPB,VSTD020,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 14:58
Injected at: 910918 14:24

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 14:58
Output File: ^AI532::QT Injected at: 910918 14:24
Data File: >AI532::D4 Dilution Factor: 1.00000
Name: VSTD020 (09-18-91)
Misc: STD#6738 20 PPB,VSTD020,SOIL,5,8701A1,SPH

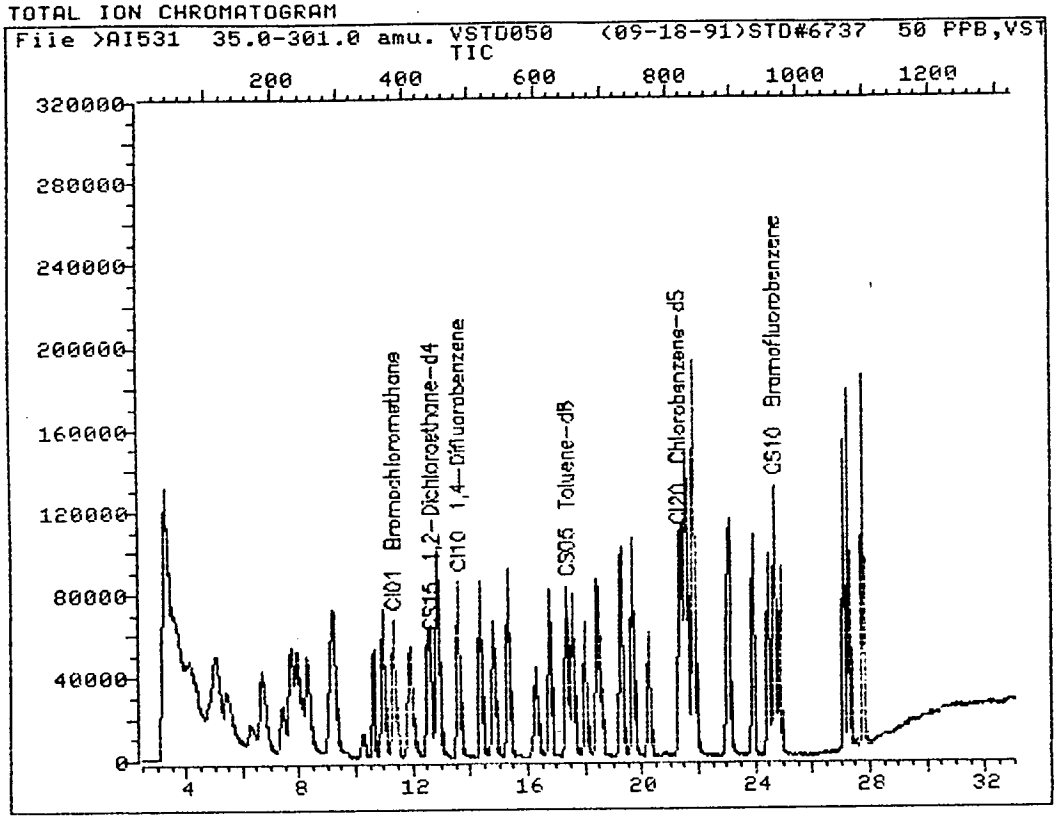
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	56946	50.00	UG/KG	77
2)	C010	Chloromethane	4.04	50.0	16043	21.15	UG/KG	99
3)	C015	Bromomethane	4.89	94.0	32695	20.02	UG/KG	88
4)	C016	Dichlorodifluoromethane	3.58	85.0	39309	18.61	UG/KG	95
5)	C017	Dichlorofluoromethane	5.06	67.0	82675	19.28	UG/KG	98
6)	C020	Vinyl Chloride	4.22	62.0	21198	19.27	UG/KG	99
7)	C025	Chloroethane	4.96	64.0	14853	18.30	UG/KG	83
8)	C030	Methylene Chloride	7.69	84.0	32363	20.35	UG/KG	87
9)	C035	Acetone	6.37	43.0	24284	26.12	UG/KG	92
10)	C036	Acrolein	6.23	56.0	19739	123.23	UG/KG	84
11)	C040	Carbon Disulfide	7.71	76.0	78149	18.61	UG/KG	100
12)	C037	Acrylonitrile	7.89	53.0	51554	123.87	UG/KG	96
13)	C041	Trichlorofluoromethane	5.45	101.0	51302	18.52	UG/KG	99
14)	C045	1,1-Dichloroethene	6.67	96.0	29698	18.81	UG/KG	85
15)	C046	3-Chloro-1-propene	7.41	41.0	28099	19.50	UG/KG	85
16)	C050	1,1-Dichloroethane	9.23	63.0	64657	19.54	UG/KG	94
17)	C051	Tetrahydrofuran	11.45	42.0	10821	20.16	UG/KG	95
18)	C056	1,2-Dichloroethene (tot*	8.29	96.0	29339	19.19	UG/KG	85
19)	C060	Chloroform	10.96	83.0	83671	20.00	UG/KG	99
20)	C110	2-Butanone	10.25	72.0	5198	22.80	UG/KG	98
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	153874	51.75	UG/KG	83
22)	C065	1,2-Dichloroethane	12.83	62.0	74243	20.59	UG/KG	92
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	209753	50.00	UG/KG	90
24)	C111	Methyl tertiary butyl e*	8.10	73.0	57354	20.83	UG/KG	95
25)	C125	Vinyl Acetate	9.21	43.0	18321M	15.53	UG/KG	
26)	C115	1,1,1-Trichloroethane	11.91	97.0	66253	18.77	UG/KG	92
27)	C120	Carbon Tetrachloride	12.49	117.0	51086	17.62	UG/KG	87
28)	C130	Bromodichloromethane	15.32	83.0	83936	19.70	UG/KG	95
29)	C140	1,2-Dichloropropane	14.77	63.0	29023	19.64	UG/KG	92
30)	C143	cis-1,3-Dichloropropene	16.73	75.0	55991	19.58	UG/KG	97
31)	C150	Trichloroethene	14.35	130.0	37473	20.36	UG/KG	88
32)	C155	Dibromochloromethane	19.68	129.0	73383	19.29	UG/KG	98
33)	C160	1,1,2-Trichloroethane	18.39	97.0	33507	19.46	UG/KG	94
34)	C165	Benzene	12.88	78.0	63277	19.03	UG/KG	80
35)	C176	Diisopropyl ether	9.14	45.0	91768	20.62	UG/KG	98
36)	C145	trans-1,3-Dichloroprope*	18.02	75.0	44664	19.19	UG/KG	88
37)	C175	2-Chloroethylvinylether	16.18	63.0	1068	9.15	UG/KG	92
38)	C179	1,2-Dibromoethane	20.21	107.0	57313	20.00	UG/KG	94
39)	C180	Bromoform	23.88	173.0	66837	19.72	UG/KG	99
40)	*CI20	Chlorobenzene-d5	21.29	117.0	169726	50.00	UG/KG	94
41)	C181	1,2,3-Trichloropropane	18.02	75.0	44664	19.38	UG/KG	60
42)	C205	4-Methyl-2-Pentanone	16.29	43.0	53562	20.71	UG/KG	92
43)	C210	2-Hexanone	18.53	43.0	44144	22.12	UG/KG	83

		Compound	R.T.	Q ion	Area	Conc	Units	q
44)	C211	1,1,1,2-Tetrachloroetha*	21.53	131.0	39296	19.82	UG/KG	90
45)	C220	Tetrachloroethene	19.24	164.0	30602	18.58	UG/KG	95
46)	C225	1,1,2,2-Tetrachloroetha*	24.46	83.0	66884	19.42	UG/KG	99
47)	C230	Toluene	17.54	92.0	42475	19.36	UG/KG	99
48)	CS05	Toluene-d8	17.35	98.0	194144	50.53	UG/KG	97
49)	C235	Chlorobenzene	21.39	112.0	63839	19.33	UG/KG	90
50)	C240	Ethylbenzene	21.59	106.0	24861	18.60	UG/KG	94
51)	C245	Styrene	23.07	104.0	56289	19.47	UG/KG	80
52)	C261	m&p-Xylenes	21.80	106.0	64159	38.24	UG/KG	89
53)	C262	o-Xylene	22.98	106.0	31607M	19.16	UG/KG	
54)	C253	1,3-Dichlorobenzene	27.06	146.0	53249	19.52	UG/KG	92
55)	C254	1,2-Dichlorobenzene	27.75	146.0	57739	20.23	UG/KG	85
56)	C255	1,4-Dichlorobenzene	27.25	146.0	59093	19.56	UG/KG	93
57)	CS10	Bromofluorobenzene	24.66	95.0	161813	48.70	UG/KG	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AI531::D4 Quant Output File: ^AI531::QT
Name: VSTD050 (09-18-91)
Misc: STD#6737 50 PPB,VSTD050,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 14:38
Injected at: 910918 13:41

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 14:38
Output File: ^AI531::QT Injected at: 910918 13:41
Data File: >AI531::D4 Dilution Factor: 1.00000
Name: VSTD050 (09-18-91)
Misc: STD#6737 50 PPB,VSTD050,SOIL,5,8701A1,SPH

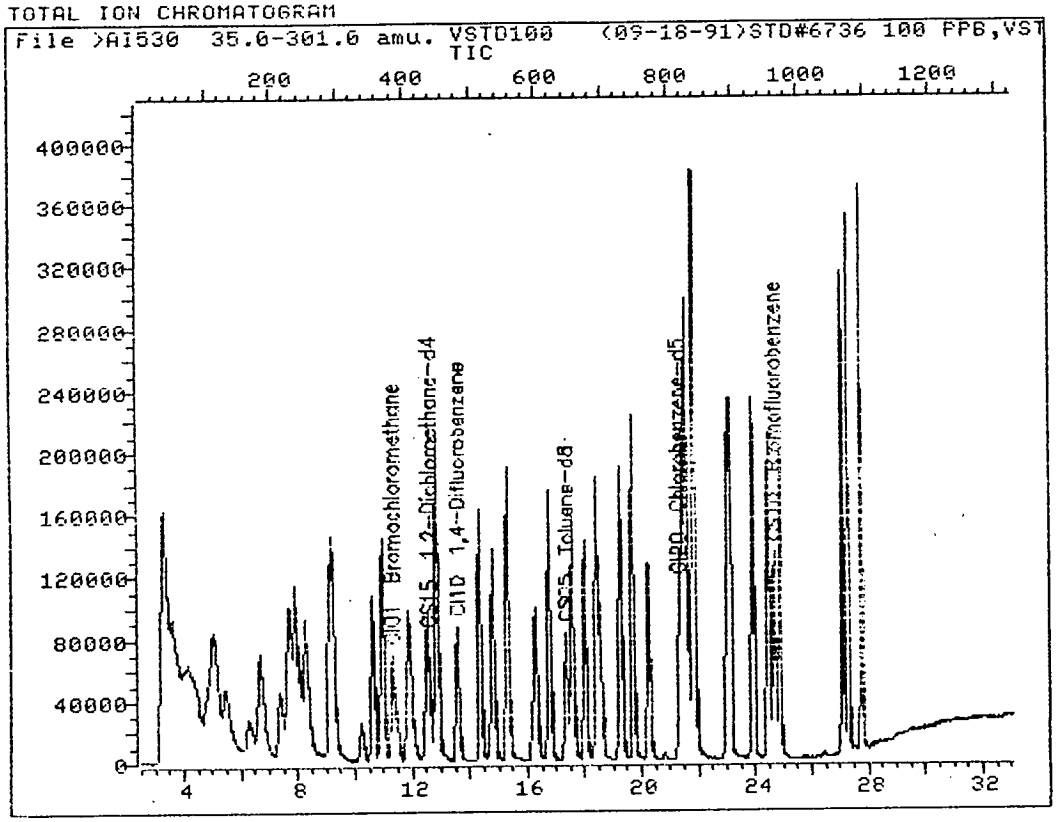
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	57919	50.00	UG/KG	78
2)	C010	Chloromethane	4.01	50.0	38578	50.00	UG/KG	98
3)	C015	Bromomethane	4.91	94.0	83032	50.00	UG/KG	96
4)	C016	Dichlorodifluoromethane	3.57	85.0	107400	50.00	UG/KG	93
5)	C017	Dichlorofluoromethane	5.05	67.0	218070	50.00	UG/KG	94
6)	C020	Vinyl Chloride	4.22	62.0	55936	50.00	UG/KG	96
7)	C025	Chloroethane	4.96	64.0	41276	50.00	UG/KG	97
8)	C030	Methylene Chloride	7.68	84.0	80861	50.00	UG/KG	77
9)	C035	Acetone	6.36	43.0	47286	50.00	UG/KG	85
10)	C036	Acrolein	6.20	56.0	48874	300.00	UG/KG	86
11)	C040	Carbon Disulfide	7.70	76.0	213534	50.00	UG/KG	100
12)	C037	Acrylonitrile	7.89	53.0	126989	300.00	UG/KG	96
13)	C041	Trichlorofluoromethane	5.46	101.0	140897	50.00	UG/KG	95
14)	C045	1,1-Dichloroethene	6.66	96.0	80308	50.00	UG/KG	88
15)	C046	3-Chloro-1-propene	7.43	41.0	73266	50.00	UG/KG	89
16)	C050	1,1-Dichloroethane	9.20	63.0	168246	50.00	UG/KG	94
17)	C051	Tetrahydrofuran	11.44	42.0	27303	50.00	UG/KG	93
18)	C056	1,2-Dichloroethene (tot*	8.28	96.0	77760	50.00	UG/KG	84
19)	C060	Chloroform	10.96	83.0	212740	50.00	UG/KG	96
20)	C110	2-Butanone	10.22	72.0	11592	50.00	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	151224	50.00	UG/KG	78
22)	C065	1,2-Dichloroethane	12.83	62.0	183370	50.00	UG/KG	97
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	213214	50.00	UG/KG	90
24)	C111	Methyl tertiary butyl e*	8.10	73.0	139928	50.00	UG/KG	93
25)	C125	Vinyl Acetate	9.23	43.0	59957M	50.00	UG/KG	74
26)	C115	1,1,1-Trichloroethane	11.90	97.0	179351	50.00	UG/KG	93
27)	C120	Carbon Tetrachloride	12.50	117.0	147323	50.00	UG/KG	88
28)	C130	Bromodichloromethane	15.32	83.0	216530	50.00	UG/KG	91
29)	C140	1,2-Dichloropropane	14.79	63.0	75096	50.00	UG/KG	92
30)	C143	cis-1,3-Dichloropropene	16.72	75.0	145340	50.00	UG/KG	94
31)	C150	Trichloroethene	14.35	130.0	93563	50.00	UG/KG	89
32)	C155	Dibromochloromethane	19.68	129.0	193385	50.00	UG/KG	97
33)	C160	1,1,2-Trichloroethane	18.39	97.0	87516	50.00	UG/KG	99
34)	C165	Benzene	12.87	78.0	168988	50.00	UG/KG	84
35)	C176	Diisopropyl ether	9.13	45.0	226204	50.00	UG/KG	96
36)	C145	trans-1,3-Dichloroprope*	18.02	75.0	118284	50.00	UG/KG	90
37)	C175	2-Chloroethylvinylether	16.17	63.0	5934	50.00	UG/KG	90
38)	C179	1,2-Dibromoethane	20.21	107.0	145682	50.00	UG/KG	94
39)	C180	Bromoform	23.88	173.0	172232	50.00	UG/KG	99
40)	*CI20	Chlorobenzene-d5	21.29	117.0	174241	50.00	UG/KG	95
41)	C181	1,2,3-Trichloropropane	18.02	75.0	118284	50.00	UG/KG	61
42)	C205	4-Methyl-2-Pentanone	16.29	43.0	132733	50.00	UG/KG	88
43)	C210	2-Hexanone	18.52	43.0	102435	50.00	UG/KG	83

		Compound	R.T.	Q ion	Area	Conc	Units	q
44)	C211	1,1,1,2-Tetrachloroetha*	21.52	131.0	101767	50.00	UG/KG	81
45)	C220	Tetrachloroethene	19.22	164.0	84547	50.00	UG/KG	99
46)	C225	1,1,2,2-Tetrachloroetha*	24.45	83.0	176828	50.00	UG/KG	91
47)	C230	Toluene	17.53	92.0	112612	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.35	98.0	197200	50.00	UG/KG	98
49)	C235	Chlorobenzene	21.38	112.0	169485	50.00	UG/KG	87
50)	C240	Ethylbenzene	21.59	106.0	68622	50.00	UG/KG	95
51)	C245	Styrene	23.07	104.0	148376	50.00	UG/KG	81
52)	C261	m&p-Xylenes	21.80	106.0	172244	100.00	UG/KG	89
53)	C262	o-Xylene	22.98	106.0	84687	50.00	UG/KG	86
54)	C253	1,3-Dichlorobenzene	27.06	146.0	140008	50.00	UG/KG	96
55)	C254	1,2-Dichlorobenzene	27.75	146.0	146536	50.00	UG/KG	87
56)	C255	1,4-Dichlorobenzene	27.24	146.0	155060	50.00	UG/KG	92
57)	CS10	Bromofluorobenzene	24.66	95.0	170559	50.00	UG/KG	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AI530::D4 Quant Output File: ^AI530::QT
Name: VSTD100 (09-18-91)
Misc: STD#6736 100 PPB,VSTD100,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 14:35
Injected at: 910918 12:59

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 14:35
Output File: ^AI530::QT Injected at: 910918 12:59
Data File: >AI530::D4 Dilution Factor: 1.00000
Name: VSTD100 (09-18-91)
Misc: STD#6736 100 PPB,VSTD100,SOIL,5,8701A1,SPH

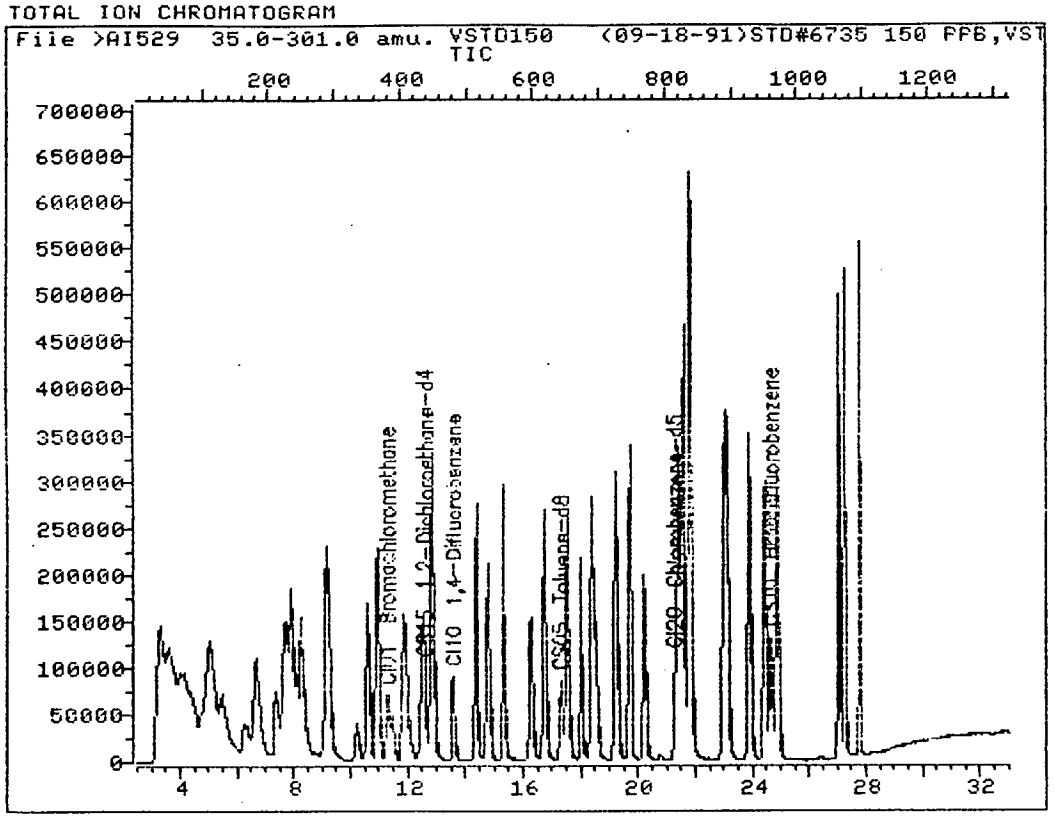
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	59677	50.00	UG/KG	78
2)	C010	Chloromethane	4.00	50.0	68093	85.65	UG/KG	96
3)	C015	Bromomethane	4.88	94.0	158872	92.85	UG/KG	91
4)	C016	Dichlorodifluoromethane	3.59	85.0	183611	82.96	UG/KG	94
5)	C017	Dichlorofluoromethane	5.07	67.0	405529	90.24	UG/KG	95
6)	C020	Vinyl Chloride	4.19	62.0	93505	81.12	UG/KG	91
7)	C025	Chloroethane	4.95	64.0	76270	89.67	UG/KG	91
8)	C030	Methylene Chloride	7.67	84.0	162237	97.36	UG/KG	81
9)	C035	Acetone	6.38	43.0	95017	97.51	UG/KG	89
10)	C036	Acrolein	6.22	56.0	104886	624.85	UG/KG	86
11)	C040	Carbon Disulfide	7.70	76.0	402031	91.36	UG/KG	100
12)	C037	Acrylonitrile	7.88	53.0	287802	659.88	UG/KG	98
13)	C041	Trichlorofluoromethane	5.46	101.0	241722	83.25	UG/KG	94
14)	C045	1,1-Dichloroethene	6.66	96.0	143713	86.84	UG/KG	89
15)	C046	3-Chloro-1-propene	7.40	41.0	140813	93.27	UG/KG	91
16)	C050	1,1-Dichloroethane	9.22	63.0	332959	96.04	UG/KG	93
17)	C051	Tetrahydrofuran	11.44	42.0	61288	108.93	UG/KG	97
18)	C056	1,2-Dichloroethene (tot*	8.27	96.0	149019	93.00	UG/KG	85
19)	C060	Chloroform	10.95	83.0	427945	97.62	UG/KG	92
20)	C110	2-Butanone	10.21	72.0	24522	102.66	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.59	65.0	155273	49.83	UG/KG	80
22)	C065	1,2-Dichloroethane	12.82	62.0	384439	101.74	UG/KG	93
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	212079	50.00	UG/KG	90
24)	C111	Methyl tertiary butyl e*	8.09	73.0	282028	101.32	UG/KG	94
25)	C125	Vinyl Acetate	9.24	43.0	147844	123.95	UG/KG	91
26)	C115	1,1,1-Trichloroethane	11.90	97.0	334915	93.87	UG/KG	94
27)	C120	Carbon Tetrachloride	12.47	117.0	274422	93.63	UG/KG	89
28)	C130	Bromodichloromethane	15.31	83.0	450400	104.56	UG/KG	91
29)	C140	1,2-Dichloropropane	14.78	63.0	157430	105.38	UG/KG	93
30)	C143	cis-1,3-Dichloropropene	16.72	75.0	310609	107.43	UG/KG	95
31)	C150	Trichloroethene	14.34	130.0	182793	98.21	UG/KG	90
32)	C155	Dibromochloromethane	19.67	129.0	411587	106.99	UG/KG	98
33)	C160	1,1,2-Trichloroethane	18.38	97.0	184320	105.87	UG/KG	93
34)	C165	Benzene	12.87	78.0	343048	102.04	UG/KG	84
35)	C176	Diisopropyl ether	9.13	45.0	467946	103.99	UG/KG	98
36)	C145	trans-1,3-Dichloroprope*	18.01	75.0	255661	108.65	UG/KG	93
37)	C175	2-Chloroethylvinylether	16.17	63.0	21186	179.47	UG/KG	99
38)	C179	1,2-Dibromoethane	20.20	107.0	316106	109.07	UG/KG	94
39)	C180	Bromoform	23.87	173.0	378966	110.60	UG/KG	98
40)	*CI20	Chlorobenzene-d5	21.29	117.0	176746	50.00	UG/KG	99
41)	C181	1,2,3-Trichloropropane	18.01	75.0	255661	106.54	UG/KG	64
42)	C205	4-Methyl-2-Pentanone	16.28	43.0	312007	115.87	UG/KG	88
43)	C210	2-Hexanone	18.52	43.0	236838	113.97	UG/KG	85

		Compound	R.T.	Q ion	Area	Conc	Units	q
44)	C211	1,1,1,2-Tetrachloroetha*	21.52	131.0	211504	102.44	UG/KG	82
45)	C220	Tetrachloroethene	19.24	164.0	159153	92.79	UG/KG	95
46)	C225	1,1,2,2-Tetrachloroetha*	24.45	83.0	393162	109.60	UG/KG	92
47)	C230	Toluene	17.53	92.0	224941	98.46	UG/KG	93
48)	CS05	Toluene-d8	17.34	98.0	197304	49.32	UG/KG	96
49)	C235	Chlorobenzene	21.38	112.0	346463	100.76	UG/KG	87
50)	C240	Ethylbenzene	21.59	106.0	136471	98.03	UG/KG	96
51)	C245	Styrene	23.07	104.0	312439	103.79	UG/KG	82
52)	C261	m&p-Xylenes	21.80	106.0	345286	197.62	UG/KG	87
53)	C262	o-Xylene	22.97	106.0	170205	99.07	UG/KG	85
54)	C253	1,3-Dichlorobenzene	27.06	146.0	281383	99.06	UG/KG	94
55)	C254	1,2-Dichlorobenzene	27.75	146.0	293207	98.63	UG/KG	84
56)	C255	1,4-Dichlorobenzene	27.22	146.0	316577	100.64	UG/KG	96
57)	CS10	Bromofluorobenzene	24.66	95.0	174935	50.56	UG/KG	96

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AI529::D4 Quant Output File: ^AI529::QT
Name: VSTD150 (09-18-91)
Misc: STD#6735 150 PPB,VSTD150,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 14:32
Injected at: 910918 12:16

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 14:32
Output File: ^AI529::QT Injected at: 910918 12:16
Data File: >AI529::D4 Dilution Factor: 1.00000
Name: VSTD150 (09-18-91)
Misc: STD#6735 150 PPB,VSTD150,SOIL,5,8701A1,SPH

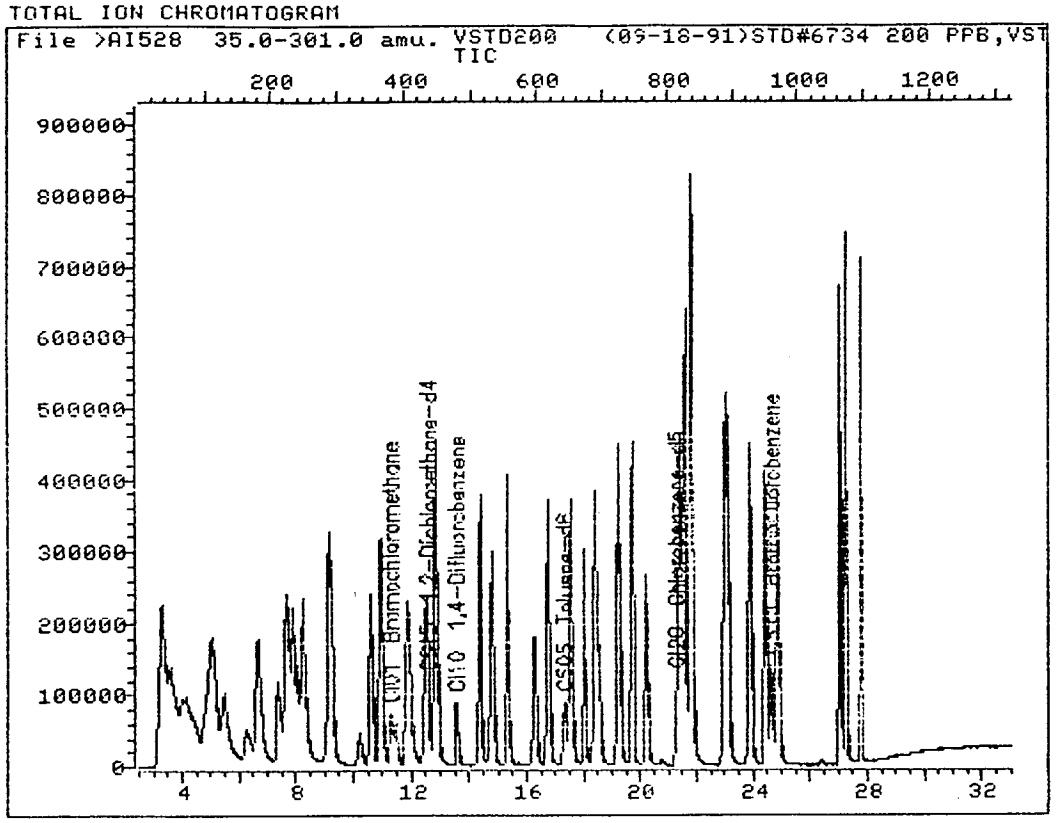
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.28	128.0	59945	50.00	UG/KG	80
2)	C010	Chloromethane	4.03	50.0	111543	139.68	UG/KG	92
3)	C015	Bromomethane	4.90	94.0	253607	147.55	UG/KG	94
4)	C016	Dichlorodifluoromethane	3.61	85.0	318192	143.13	UG/KG	97
5)	C017	Dichlorofluoromethane	5.07	67.0	652066	144.46	UG/KG	94
6)	C020	Vinyl Chloride	4.28	62.0	149668	129.26	UG/KG	94
7)	C025	Chloroethane	4.93	64.0	127320	149.02	UG/KG	93
8)	C030	Methylene Chloride	7.65	84.0	255669	152.75	UG/KG	77
9)	C035	Acetone	6.38	43.0	153562	156.89	UG/KG	86
10)	C036	Acrolein	6.20	56.0	157052	931.44	UG/KG	84
11)	C040	Carbon Disulfide	7.70	76.0	673314	152.33	UG/KG	100
12)	C037	Acrylonitrile	7.88	53.0	449023	1024.92	UG/KG	97
13)	C041	Trichlorofluoromethane	5.46	101.0	399916	137.12	UG/KG	91
14)	C045	1,1-Dichloroethene	6.66	96.0	246358	148.20	UG/KG	89
15)	C046	3-Chloro-1-propene	7.40	41.0	236102	155.68	UG/KG	88
16)	C050	1,1-Dichloroethane	9.20	63.0	536778	154.13	UG/KG	93
17)	C051	Tetrahydrofuran	11.44	42.0	97500	172.52	UG/KG	94
18)	C056	1,2-Dichloroethene (tot*	8.28	96.0	245734	152.67	UG/KG	84
19)	C060	Chloroform	10.95	83.0	678855	154.16	UG/KG	93
20)	C110	2-Butanone	10.21	72.0	38840	161.87	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.59	65.0	153317	48.98	UG/KG	80
22)	C065	1,2-Dichloroethane	12.82	62.0	588270	154.98	UG/KG	94
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	222476	50.00	UG/KG	91
24)	C111	Methyl tertiary butyl e*	8.07	73.0	435172	149.02	UG/KG	93
25)	C125	Vinyl Acetate	9.25	43.0	200890	160.55	UG/KG	88
26)	C115	1,1,1-Trichloroethane	11.90	97.0	559567	149.50	UG/KG	93
27)	C120	Carbon Tetrachloride	12.48	117.0	465180	151.30	UG/KG	88
28)	C130	Bromodichloromethane	15.31	83.0	700317	154.98	UG/KG	92
29)	C140	1,2-Dichloropropane	14.76	63.0	247574	157.98	UG/KG	93
30)	C143	cis-1,3-Dichloropropene	16.72	75.0	491220	161.95	UG/KG	94
31)	C150	Trichloroethene	14.35	130.0	313311	160.46	UG/KG	88
32)	C155	Dibromochloromethane	19.68	129.0	630200	156.16	UG/KG	99
33)	C160	1,1,2-Trichloroethane	18.38	97.0	284126	155.57	UG/KG	93
34)	C165	Benzene	12.85	78.0	555139	157.42	UG/KG	83
35)	C176	Diisopropyl ether	9.13	45.0	721941	152.93	UG/KG	99
36)	C145	trans-1,3-Dichloroprope*	17.99	75.0	412372	167.06	UG/KG	93
37)	C175	2-Chloroethylvinylether	16.17	63.0	39203	316.57	UG/KG	96
38)	C179	1,2-Dibromoethane	20.21	107.0	479570	157.74	UG/KG	95
39)	C180	Bromoform	23.88	173.0	568745	158.24	UG/KG	98
40)	*C120	Chlorobenzene-d5	21.27	117.0	185775	50.00	UG/KG	93
41)	C181	1,2,3-Trichloropropane	17.99	75.0	412372	163.49	UG/KG	64
42)	C205	4-Methyl-2-Pentanone	16.28	43.0	496588	175.45	UG/KG	89
43)	C210	2-Hexanone	18.52	43.0	372732	170.64	UG/KG	82

		Compound	R.T.	Q ion	Area	Conc	Units	q
44)	C211	1,1,1,2-Tetrachloroetha*	21.52	131.0	325391	149.94	UG/KG	87
45)	C220	Tetrachloroethene	19.21	164.0	262587	145.65	UG/KG	99
46)	C225	1,1,2,2-Tetrachloroetha*	24.45	83.0	571805	151.65	UG/KG	93
47)	C230	Toluene	17.53	92.0	371439	154.68	UG/KG	93
48)	CS05	Toluene-d8	17.32	98.0	205651	48.91	UG/KG	99
49)	C235	Chlorobenzene	21.38	112.0	551359	152.56	UG/KG	86
50)	C240	Ethylbenzene	21.59	106.0	223709	152.88	UG/KG	95
51)	C245	Styrene	23.07	104.0	494702	156.36	UG/KG	88
52)	C261	m&p-Xylenes	21.80	106.0	566184	308.30	UG/KG	89
53)	C262	o-Xylene	22.98	106.0	272648	150.98	UG/KG	86
54)	C253	1,3-Dichlorobenzene	27.06	146.0	442303	148.15	UG/KG	95
55)	C254	1,2-Dichlorobenzene	27.75	146.0	452974	144.96	UG/KG	86
56)	C255	1,4-Dichlorobenzene	27.22	146.0	489974	148.19	UG/KG	96
57)	CS10	Bromofluorobenzene	24.64	95.0	177477	48.80	UG/KG	95

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AI528::D4 Quant Output File: ^AI528::QT
Name: VSTD200 (09-18-91)
Misc: STD#6734 200 PPB,VSTD200,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 14:28
Injected at: 910918 11:34

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 14:28
Output File: ^AI528::QT Injected at: 910918 11:34
Data File: >AI528::D4 Dilution Factor: 1.00000
Name: VSTD200 (09-18-91)
Misc: STD#6734 200 PPB,VSTD200,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.28	128.0	60067	50.00	UG/KG	84
2)	C010	Chloromethane	3.98	50.0	161144	201.39	UG/KG	98
3)	C015	Bromomethane	4.86	94.0	367178	213.20	UG/KG	97
4)	C016	Dichlorodifluoromethane	3.56	85.0	491629	220.69	UG/KG	95
5)	C017	Dichlorofluoromethane	5.04	67.0	954893	211.11	UG/KG	95
6)	C020	Vinyl Chloride	4.16	62.0	216549	186.65	UG/KG	95
7)	C025	Chloroethane	4.93	64.0	186892	218.30	UG/KG	92
8)	C030	Methylene Chloride	7.65	84.0	360421	214.89	UG/KG	81
9)	C035	Acetone	6.36	43.0	176015	179.46	UG/KG	87
10)	C036	Acrolein	6.20	56.0	197099	1166.58	UG/KG	87
11)	C040	Carbon Disulfide	7.68	76.0	992693	224.13	UG/KG	100
12)	C037	Acrylonitrile	7.88	53.0	555544	1265.49	UG/KG	96
13)	C041	Trichlorofluoromethane	5.46	101.0	598950	204.95	UG/KG	91
14)	C045	1,1-Dichloroethene	6.64	96.0	366221	219.86	UG/KG	92
15)	C046	3-Chloro-1-propene	7.40	41.0	356043	234.29	UG/KG	86
16)	C050	1,1-Dichloroethane	9.20	63.0	773498	221.65	UG/KG	93
17)	C051	Tetrahydrofuran	11.44	42.0	112925	199.40	UG/KG	98
18)	C056	1,2-Dichloroethene (tot*	8.28	96.0	365699	226.74	UG/KG	86
19)	C060	Chloroform	10.95	83.0	962573	218.14	UG/KG	94
20)	C110	2-Butanone	10.21	72.0	44780	186.24	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.59	65.0	157551	50.23	UG/KG	81
22)	C065	1,2-Dichloroethane	12.82	62.0	796873	209.52	UG/KG	94
23)	*CI10	1,4-Difluorobenzene	13.56	114.0	225378	50.00	UG/KG	90
24)	C111	Methyl tertiary butyl e*	8.07	73.0	596462	201.63	UG/KG	92
25)	C125	Vinyl Acetate	9.25	43.0	341346	269.30	UG/KG	90
26)	C115	1,1,1-Trichloroethane	11.90	97.0	807223	212.89	UG/KG	92
27)	C120	Carbon Tetrachloride	12.48	117.0	687001	220.58	UG/KG	84
28)	C130	Bromodichloromethane	15.31	83.0	969636	211.82	UG/KG	93
29)	C140	1,2-Dichloropropane	14.76	63.0	345327	217.51	UG/KG	93
30)	C143	cis-1,3-Dichloropropene	16.70	75.0	681684	221.86	UG/KG	95
31)	C150	Trichloroethene	14.35	130.0	429099	216.93	UG/KG	88
32)	C155	Dibromochloromethane	19.68	129.0	849109	207.69	UG/KG	99
33)	C160	1,1,2-Trichloroethane	18.38	97.0	385963	208.61	UG/KG	93
34)	C165	Benzene	12.85	78.0	812203	227.34	UG/KG	85
35)	C176	Diisopropyl ether	9.13	45.0	1017702	212.81	UG/KG	98
36)	C145	trans-1,3-Dichloroprope*	17.99	75.0	550651	220.20	UG/KG	93
37)	C175	2-Chloroethylvinylether	16.15	63.0	56813	452.87	UG/KG	94
38)	C179	1,2-Dibromoethane	20.21	107.0	640374	207.92	UG/KG	95
39)	C180	Bromoform	23.88	173.0	746313	204.97	UG/KG	97
40)	*CI20	Chlorobenzene-d5	21.27	117.0	186227	50.00	UG/KG	93
41)	C181	1,2,3-Trichloropropane	17.99	75.0	550651	217.79	UG/KG	64
42)	C205	4-Methyl-2-Pentanone	16.28	43.0	598508	210.94	UG/KG	88
43)	C210	2-Hexanone	18.50	43.0	417866	190.84	UG/KG	86

		Compound	R.T.	Q ion	Area	Conc	Units	q
44)	C211	1,1,1,2-Tetrachloroetha*	21.52	131.0	445817	204.94	UG/KG	86
45)	C220	Tetrachloroethene	19.22	164.0	384899	212.97	UG/KG	99
46)	C225	1,1,2,2-Tetrachloroetha*	24.43	83.0	785032	207.69	UG/KG	96
47)	C230	Toluene	17.53	92.0	526743	218.82	UG/KG	91
48)	CS05	Toluene-d8	17.32	98.0	210101	49.84	UG/KG	99
49)	C235	Chlorobenzene	21.38	112.0	768265	212.06	UG/KG	86
50)	C240	Ethylbenzene	21.57	106.0	318431	217.08	UG/KG	94
51)	C245	Styrene	23.07	104.0	687688	216.82	UG/KG	88
52)	C261	m&p-Xylenes	21.80	106.0	802151	435.73	UG/KG	96
53)	C262	o-Xylene	22.98	106.0	379588	209.69	UG/KG	85
54)	C253	1,3-Dichlorobenzene	27.06	146.0	597097	199.51	UG/KG	93
55)	C254	1,2-Dichlorobenzene	27.76	146.0	609913	194.72	UG/KG	87
56)	C255	1,4-Dichlorobenzene	27.23	146.0	660753	199.35	UG/KG	97
57)	CS10	Bromofluorobenzene	24.64	95.0	182434	50.04	UG/KG	99

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 09/19/91

Contractor: EA LABS | Time: 15:15

Contract No: | Laboratory ID: >AI543

Instrument ID: 8701A1 | Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 | Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C010	Chloromethane	.64636	.58397	9.65		**	
C015	Bromomethane	1.42769	1.45119	1.65			
C016	Dichlorodifluoromethane	1.78679	1.80456	.99			
C020	Vinyl Chloride	.88267	.96731	9.59	*		
C025	Chloroethane	.69791	.72499	3.88			
C030	Methylene Chloride	1.41959	1.47258	3.73			
C035	Acetone	.85302	.95543	12.01			
C036	Acrolein	.14276	.14315	.27			(Conc=300.00)
C040	Carbon Disulfide	3.67234	3.89389	6.03			
C037	Acrylonitrile	.38921	.37752	3.00			(Conc=300.00)
C041	Trichlorofluoromethane	2.28535	2.27828	.31			
C045	1,1-Dichloroethene	1.35771	1.50326	10.72	*		
C050	1,1-Dichloroethane	2.94744	2.93924	.28		**	
C056	1,2-Dichloroethene (tot*	1.35352	1.43373	5.93			
C060	Chloroform	3.74259	3.64420	2.63	*		
C110	2-Butanone	.20723	.21553	4.00			(Conc=50.00)
CS15	1,2-Dichloroethane-d4	2.61910	2.38006	9.13			(Conc=50.00)
C065	1,2-Dichloroethane	3.24682	2.95666	8.94			
C111	Methyl tertiary butyl e*	.66368	.62819	5.35			
C125	Vinyl Acetate	.30555	.25007	18.16			
C115	1,1,1-Trichloroethane	.83085	.80956	2.56			
C120	Carbon Tetrachloride	.68117	.63472	6.82			
C130	Bromodichloromethane	1.04054	.97824	5.99			
C140	1,2-Dichloropropane	.36466	.36780	.86	*		
C143	cis-1,3-Dichloropropene	.71469	.68891	3.61			(Conc=50.00)
C150	Trichloroethene	.45236	.45730	1.09			
C155	Dibromochloromethane	.92762	.86350	6.91			
C160	1,1,2-Trichloroethane	.41964	.41437	1.26			
C165	Benzene	.81765	.86738	6.08			
C176	Diisopropyl ether	1.09370	1.08412	.88			
C145	trans-1,3-Dichloroprope*	.58370	.52016	10.89			(Conc=50.00)
C175	2-Chloroethylvinylether	.04245	.03797	10.56			

RF - Response Factor from daily standard file at 50.00 UG/KG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

390368

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 09/19/91

Contractor: EA LABS | Time: 15:15

Contract No: | Laboratory ID: >AI543

Instrument ID: 8701A1 | Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 | Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C179	1,2-Dibromoethane	.70810	.68179	3.71			
C180	Bromoform	.83557	.75468	9.68		**	
C205	4-Methyl-2-Pentanone	.82557	.73763	10.65			
C210	2-Hexanone	.62757	.53869	14.16			
C220	Tetrachloroethene	.47482	.50187	5.70			
C225	1,1,2,2-Tetrachloroetha*	1.03842	.99851	3.84		**	
C230	Toluene	.65637	.69592	6.02	*		
CS05	Toluene-d8	1.12543	1.11406	1.01			(Conc=50.00)
C235	Chlorobenzene	.98276	.98318	.04		**	
C240	Ethylbenzene	.39499	.40662	2.94	*		
C245	Styrene	.87507	.85946	1.78			
C261	m&p-Xylenes	.50031	.50289	.51			(Conc=100.00)
C262	o-Xylene	.48637	.49014	.77			
C253	1,3-Dichlorobenzene	.79581	.79815	.29			
C254	1,2-Dichlorobenzene	.83049	.80759	2.76			
C255	1,4-Dichlorobenzene	.88442	.87116	1.50			
CS10	Bromofluorobenzene	.97139	.90523	6.81			(Conc=50.00)

ALL CCC & SPCC COMPOUNDS WITHIN QC LIMITS
QC'ed 09.19.91, 16:00
09.19.91

RF - Response Factor from daily standard file at 50.00 UG/KG

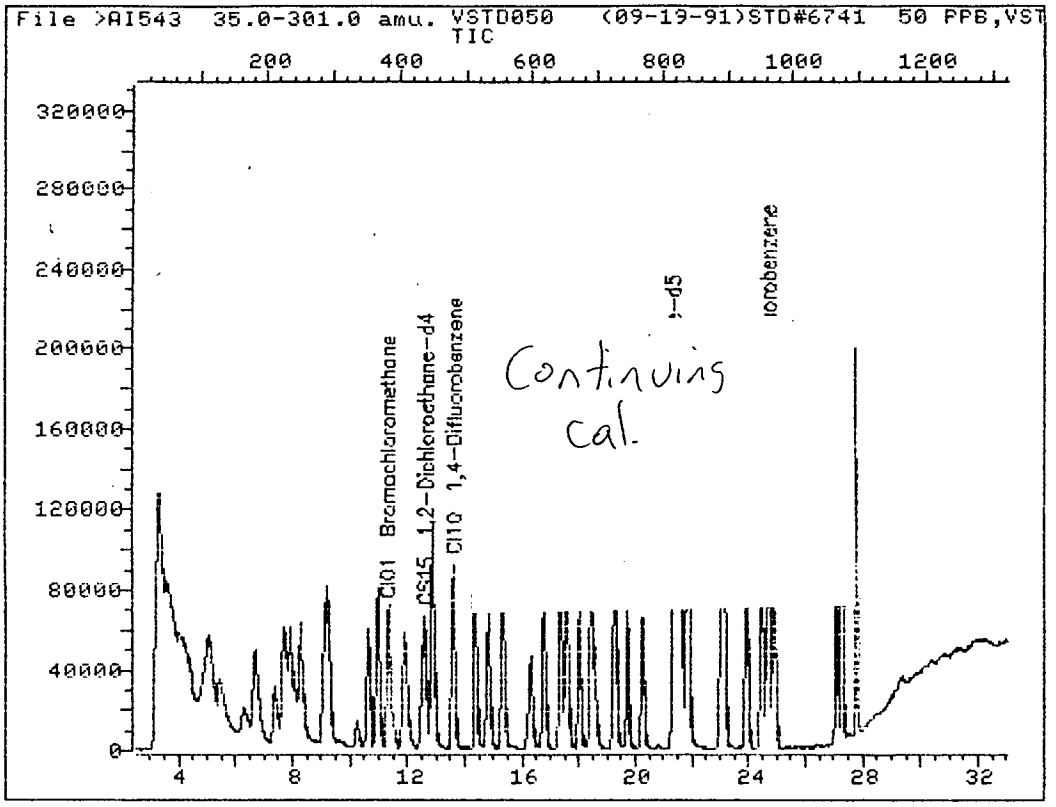
$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

300369

TOTAL ION CHROMATOGRAM



Data File: >AI543::D4 Quant Output File: ^AI543::QT
Name: VSTD050 (09-19-91)
Misc: STD#6741 50 PPB,VSTD050,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 ~~16:00~~ 16:59
Injected at: 910919 ~~15:15~~ 11:15
BG 09/12/91

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 16:59
Output File: ^AI543::QT Injected at: 910919 15:15
Data File: >AI543::D4 Dilution Factor: 1.00000
Name: VSTD050 (09-19-91)
Misc: STD#6741 50 PPB,VSTD050,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.28	128.0	65161	50.00	UG/KG	8
2)	C010	Chloromethane	3.99	50.0	38052	50.00	UG/KG	9
3)	C015	Bromomethane	4.89	94.0	94561	50.00	UG/KG	9
4)	C016	Dichlorodifluoromethane	3.58	85.0	117587	50.00	UG/KG	9
5)	C017	Dichlorofluoromethane	5.08	67.0	242384	50.00	UG/KG	9
6)	C020	Vinyl Chloride	4.22	62.0	63031	50.00	UG/KG	9
7)	C025	Chloroethane	4.94	64.0	47241	50.00	UG/KG	9
8)	C030	Methylene Chloride	7.66	84.0	95955	50.00	UG/KG	7
9)	C035	Acetone	6.37	43.0	62257	50.00	UG/KG	9
10)	C036	Acrolein	6.21	56.0	55966	300.00	UG/KG	9
11)	C040	Carbon Disulfide	7.68	76.0	253730	50.00	UG/KG	10
12)	C037	Acrylonitrile	7.89	53.0	147597	300.00	UG/KG	9
13)	C041	Trichlorofluoromethane	5.45	101.0	148455	50.00	UG/KG	9
14)	C045	1,1-Dichloroethene	6.67	96.0	97954	50.00	UG/KG	9
15)	C046	3-Chloro-1-propene	7.11	41.0	574	.37	UG/KG	5
16)	C050	1,1-Dichloroethane	9.23	63.0	191524	50.00	UG/KG	9
17)	C051	Tetrahydrofuran	11.45	42.0	30446	50.00	UG/KG	9
18)	C056	1,2-Dichloroethene (tot*	8.28	96.0	93423	50.00	UG/KG	8
19)	C060	Chloroform	10.96	83.0	237460	50.00	UG/KG	9
20)	C110	2-Butanone	10.22	72.0	14044	50.00	UG/KG	9
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	155087	50.00	UG/KG	8
22)	C065	1,2-Dichloroethane	12.83	62.0	192659	50.00	UG/KG	9
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	241145	50.00	UG/KG	8
24)	C111	Methyl tertiary butyl e*	8.08	73.0	151485	50.00	UG/KG	9
25)	C125	Vinyl Acetate	9.21	43.0	60302M	50.00	UG/KG	
26)	C115	1,1,1-Trichloroethane	11.91	97.0	195221	50.00	UG/KG	9
27)	C120	Carbon Tetrachloride	12.48	117.0	153059	50.00	UG/KG	8
28)	C130	Bromodichloromethane	15.32	83.0	235897	50.00	UG/KG	9
29)	C140	1,2-Dichloropropane	14.77	63.0	88694	50.00	UG/KG	9
30)	C143	cis-1,3-Dichloropropene	16.73	75.0	166126	50.00	UG/KG	9
31)	C150	Trichloroethene	14.35	130.0	110275	50.00	UG/KG	9
32)	C155	Dibromochloromethane	19.68	129.0	208229	50.00	UG/KG	9
33)	C160	1,1,2-Trichloroethane	18.39	97.0	99924	50.00	UG/KG	9
34)	C165	Benzene	12.88	78.0	209165	50.00	UG/KG	9
35)	C176	Diisopropyl ether	9.12	45.0	261431	50.00	UG/KG	9
36)	C145	trans-1,3-Dichloroprope*	18.02	75.0	125433	50.00	UG/KG	9
37)	C175	2-Chloroethylvinylether	16.17	63.0	9156	50.00	UG/KG	9
38)	C179	1,2-Dibromoethane	20.23	107.0	164411	50.00	UG/KG	9
39)	C180	Bromoform	23.88	173.0	181988	50.00	UG/KG	9
40)	*CI20	Chlorobenzene-d5	21.30	117.0	196772	50.00	UG/KG	9
41)	C181	1,2,3-Trichloropropane	18.02	75.0	125433	50.00	UG/KG	6
42)	C205	4-Methyl-2-Pentanone	16.29	43.0	145144	50.00	UG/KG	9
43)	C210	2-Hexanone	18.53	43.0	106000	50.00	UG/KG	8

45)	C220	Tetrachloroethene	19.24	164.0	98754	50.00	UG/KG	9
46)	C225	1,1,2,2-Tetrachloroetha*	24.46	83.0	196479	50.00	UG/KG	9
47)	C230	Toluene	17.54	92.0	136937	50.00	UG/KG	9
48)	CS05	Toluene-d8	17.35	98.0	219215	50.00	UG/KG	9
49)	C235	Chlorobenzene	21.39	112.0	193463	50.00	UG/KG	9
50)	C240	Ethylbenzene	21.60	106.0	80011	50.00	UG/KG	9
51)	C245	Styrene	23.07	104.0	169117	50.00	UG/KG	8
52)	C261	m&p-Xylenes	21.80	106.0	197908	100.00	UG/KG	8
53)	C262	o-Xylene	22.98	106.0	96445	50.00	UG/KG	8
54)	C253	1,3-Dichlorobenzene	27.06	146.0	157053	50.00	UG/KG	9
55)	C254	1,2-Dichlorobenzene	27.76	146.0	158911	50.00	UG/KG	8
56)	C255	1,4-Dichlorobenzene	27.25	146.0	171419	50.00	UG/KG	9
57)	CS10	Bromofluorobenzene	24.66	95.0	178123	50.00	UG/KG	9

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 09/23/91

Contractor: EA LABS

Time: 12:15

Contract No:

Laboratory ID: >AI560

Instrument ID: 8701A1

Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C010	Chloromethane	.64636	.65919	1.98		**	
C015	Bromomethane	1.42769	1.44339	1.10			
C016	Dichlorodifluoromethane	1.78679	1.99670	11.75			
C020	Vinyl Chloride	.88267	1.05774	19.83	*		
C025	Chloroethane	.69791	.65226	6.54			
C030	Methylene Chloride	1.41959	1.33079	6.26			
C035	Acetone	.85302	.87293	2.33			
C036	Acrolein	.14276	.12106	15.20			(Conc=300.00)
C040	Carbon Disulfide	3.67234	3.48159	5.19			
C037	Acrylonitrile	.38921	.32499	16.50			(Conc=300.00)
C041	Trichlorofluoromethane	2.28535	2.96998	29.96			
C045	1,1-Dichloroethene	1.35771	1.39587	2.81	*		
C050	1,1-Dichloroethane	2.94744	2.95733	.34		**	
C056	1,2-Dichloroethene (tot*	1.35352	1.37137	1.32			
C060	Chloroform	3.74259	3.75696	.38	*		
C110	2-Butanone	.20723	.17557	15.28			(Conc=50.00)
CS15	1,2-Dichloroethane-d4	2.61910	2.76861	5.71			(Conc=50.00)
C065	1,2-Dichloroethane	3.24682	3.38907	4.38			
C111	Methyl tertiary butyl e*	.66368	.71457	7.67			
C125	Vinyl Acetate	.30555	.24208	20.77			
C115	1,1,1-Trichloroethane	.83085	.95895	15.42			
C120	Carbon Tetrachloride	.68117	.79993	17.43			
C130	Bromodichloromethane	1.04054	1.08981	4.74			
C140	1,2-Dichloropropane	.36466	.32904	9.77	*		
C143	cis-1,3-Dichloropropene	.71469	.69291	3.05			(Conc=50.00)
C150	Trichloroethene	.45236	.47216	4.38			
C155	Dibromochloromethane	.92762	.98509	6.20			
C160	1,1,2-Trichloroethane	.41964	.39572	5.70			
C165	Benzene	.81765	.77068	5.74			
C176	Diisopropyl ether	1.09370	1.00305	8.29			
C145	trans-1,3-Dichloroprope*	.58370	.56923	2.48			(Conc=50.00)
C175	2-Chloroethylvinylether	.04245	.00563	86.74			

RF - Response Factor from daily standard file at 50.00 UG/KG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 09/23/91

Contractor: EA LABS Time: 12:15

Contract No: Laboratory ID: >AI560

Instrument ID: 8701A1 Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C179	1,2-Dibromoethane	.70810	.69063	2.47			
C180	Bromoform	.83557	.87765	5.04		**	
C205	4-Methyl-2-Pentanone	.82557	.62304	24.53			
C210	2-Hexanone	.62757	.48649	22.48			
C220	Tetrachloroethene	.47482	.54373	14.51			
C225	1,1,2,2-Tetrachloroetha*	1.03842	.91229	12.15		**	
C230	Toluene	.65637	.62610	4.61	*		
CS05	Toluene-d8	1.12543	1.11201	1.19			(Conc=50.00)
C235	Chlorobenzene	.98276	.94958	3.38		**	
C240	Ethylbenzene	.39499	.38678	2.08	*		
C245	Styrene	.87507	.79476	9.18			
C261	m&p-Xylenes	.50031	.49148	1.77			(Conc=100.00)
C262	o-Xylene	.48637	.45725	5.99			
C253	1,3-Dichlorobenzene	.79581	.80320	.93			
C254	1,2-Dichlorobenzene	.83049	.82109	1.13			
C255	1,4-Dichlorobenzene	.88442	.88900	.52			
CS10	Bromofluorobenzene	.97139	.94838	2.37			(Conc=50.00)

ALL CCC & SPCC COMPOUNDS WITHIN QC LIMITS
QCALab 09-23-91 1813-15

09-23-91

RF - Response Factor from daily standard file at 50.00 UG/KG

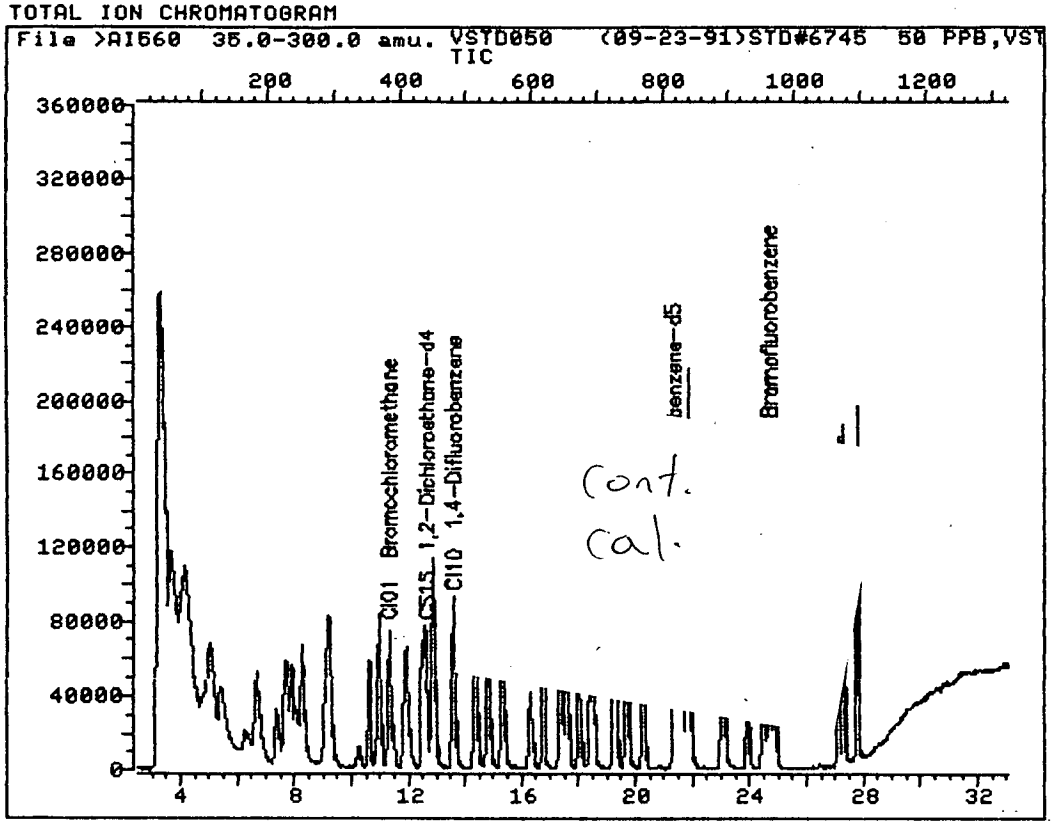
$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

390374

TOTAL ION CHROMATOGRAM



Data File: >AI560::SC Quant Output File: ^AI560::QT
Name: VSTD050 (09-23-91)
Misc: STD#6745 50 PPB,VSTD050,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 13:34
Injected at: 910923 12:15

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 13:34
Output File: ^AI560::QT Injected at: 910923 12:15
Data File: >AI560::SC Dilution Factor: 1.00000
Nam : VSTD050 (09-23-91)
Misc: STD#6745 50 PPB,VSTD050,SOIL,5,8701A1,SPH

ID Fil : CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	65552	50.00	UG/KG	86
2)	C010	Chloromethane	4.03	50.0	43211	50.00	UG/KG	96
3)	C015	Bromomethane	4.88	94.0	94617	50.00	UG/KG	90
4)	C016	Dichlorodifluoromethane	3.57	85.0	130888	50.00	UG/KG	88
5)	C017	Dichlorofluoromethane	5.07	67.0	266986	50.00	UG/KG	96
6)	C020	Vinyl Chloride	4.21	62.0	69337	50.00	UG/KG	99
7)	C025	Chloroethane	4.95	64.0	42757	50.00	UG/KG	62
8)	C030	Methylene Chloride	7.67	84.0	87236	50.00	UG/KG	75
9)	C035	Acetone	6.38	43.0	57222	50.00	UG/KG	87
10)	C036	Acrolein	6.22	56.0	47615	300.00	UG/KG	85
11)	C040	Carbon Disulfide	7.67	76.0	228225	50.00	UG/KG	100
12)	C037	Acrylonitrile	7.88	53.0	127822	300.00	UG/KG	93
13)	C041	Trichlorofluoromethane	5.46	101.0	194688	50.00	UG/KG	97
14)	C045	1,1-Dichloroethene	6.68	96.0	91502	50.00	UG/KG	87
16)	C050	1,1-Dichloroethane	9.22	63.0	193859	50.00	UG/KG	95
17)	C051	Tetrahydrofuran	11.46	42.0	24093	50.00	UG/KG	97
18)	C056	1,2-Dichloroethene (tot*	8.27	96.0	89896	50.00	UG/KG	87
19)	C060	Chloroform	10.95	83.0	246276	50.00	UG/KG	94
20)	C110	2-Butanone	10.24	72.0	11509	50.00	UG/KG	99
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	181488	50.00	UG/KG	79
22)	C065	1,2-Dichloroethane	12.84	62.0	222160	50.00	UG/KG	95
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	229908	50.00	UG/KG	92
24)	C111	Methyl tertiary butyl e*	8.09	73.0	164286	50.00	UG/KG	89
25)	C125	Vinyl Acetate	9.24	43.0	55655M	50.00	UG/KG	
26)	C115	1,1,1-Trichloroethane	11.92	97.0	220470	50.00	UG/KG	95
27)	C120	Carbon Tetrachloride	12.50	117.0	183911	50.00	UG/KG	89
28)	C130	Bromodichloromethane	15.33	83.0	250555	50.00	UG/KG	94
29)	C140	1,2-Dichloropropane	14.78	63.0	75650	50.00	UG/KG	87
30)	C143	cis-1,3-Dichloropropene	16.72	75.0	159305	50.00	UG/KG	94
31)	C150	Trichloroethene	14.36	130.0	108553	50.00	UG/KG	87
32)	C155	Dibromochloromethane	19.69	129.0	226479	50.00	UG/KG	98
33)	C160	1,1,2-Trichloroethane	18.40	97.0	90980	50.00	UG/KG	94
34)	C165	Benzene	12.87	78.0	177185	50.00	UG/KG	90
35)	C176	Diisopropyl ether	9.13	45.0	230609	50.00	UG/KG	97
36)	C145	trans-1,3-Dichloroprope*	18.01	75.0	130871	50.00	UG/KG	92
37)	C175	2-Chloroethylvinylether	16.51	63.0	1294	50.00	UG/KG	88
38)	C179	1,2-Dibromoethane	20.22	107.0	158781	50.00	UG/KG	91
39)	C180	Bromoform	23.89	173.0	201779	50.00	UG/KG	98
40)	*CI20	Chlorobenzene-d5	21.31	117.0	191467	50.00	UG/KG	96
41)	C181	1,2,3-Trichloropropane	18.01	75.0	130871	50.00	UG/KG	63
42)	C205	4-Methyl-2-Pentanone	16.30	43.0	119292	50.00	UG/KG	92
43)	C210	2-Hexanone	18.54	43.0	93146	50.00	UG/KG	85
45)	C220	Tetrachloroethen	19.23	164.0	104106	50.00	UG/KG	99

		Compound	R.T.	Q ion	Area	Conc	Units	q
46)	C225	1,1,2,2-T trachloroetha*	24.47	83.0	174673	50.00	UG/KG	88
47)	C230	Toluene	17.55	92.0	119877	50.00	UG/KG	91
48)	CS05	Toluene-d8	17.34	98.0	212914	50.00	UG/KG	98
49)	C235	Chlorobenzene	21.40	112.0	181814	50.00	UG/KG	89
50)	C240	Ethylbenzene	21.61	106.0	74056	50.00	UG/KG	92
51)	C245	Styrene	23.08	104.0	152171	50.00	UG/KG	79
52)	C261	m&p-Xylenes	21.82	106.0	188204	100.00	UG/KG	88
53)	C262	o-Xylene	22.99	106.0	87548M	50.00	UG/KG	
54)	C253	1,3-Dichlorobenzene	27.07	146.0	153786	50.00	UG/KG	95
55)	C254	1,2-Dichlorobenzene	27.77	146.0	157212	50.00	UG/KG	83
56)	C255	1,4-Dichlorobenzene	27.24	146.0	170214	50.00	UG/KG	96
57)	CS10	Bromofluorobenzene	24.68	95.0	181583	50.00	UG/KG	85

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 09/24/91

Contractor: EA LABS | Time: 11:18

Contract No: | Laboratory ID: >AI579

Instrument ID: 8701A1 | Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 | Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C010	Chloromethane	.64636	.60223	6.83		**	
C015	Bromomethane	1.42769	1.49753	4.89			
C016	Dichlorodifluoromethane	1.78679	1.99377	11.58			
C020	Vinyl Chloride	.88267	1.08735	23.19	*		
C025	Chloroethane	.69791	.68857	1.34			
C030	Methylene Chloride	1.41959	1.67172	17.76			
C035	Acetone	.85302	1.11127	30.28			
C036	Acrolein	.14276	.12841	10.05			(Conc=300.00)
C040	Carbon Disulfide	3.67234	3.66768	.13			
C037	Acrylonitrile	.38921	.33263	14.54			(Conc=300.00)
C041	Trichlorofluoromethane	2.28535	2.76757	21.10			
C045	1,1-Dichloroethene	1.35771	1.48805	9.60	*		
C050	1,1-Dichloroethane	2.94744	3.05471	3.64		**	
C056	1,2-Dichloroethene (tot*	1.35352	1.39583	3.13			
C060	Chloroform	3.74259	3.75991	.46	*		
C110	2-Butanone	.20723	.20812	.43			(Conc=50.00)
CS15	1,2-Dichloroethane-d4	2.61910	2.63952	.78			(Conc=50.00)
C065	1,2-Dichloroethane	3.24682	3.31285	2.03			
C111	Methyl tertiary butyl e*	.66368	.71729	8.08			
C125	Vinyl Acetate	.30555	.27266	10.77			
C115	1,1,1-Trichloroethane	.83085	.94963	14.30			
C120	Carbon Tetrachloride	.68117	.73888	8.47			
C130	Bromodichloromethane	1.04054	1.07214	3.04			
C140	1,2-Dichloropropane	.36466	.34112	6.45	*		
C143	cis-1,3-Dichloropropene	.71469	.71970	.70			(Conc=50.00)
C150	Trichloroethene	.45236	.48261	6.69			
C155	Dibromochloromethane	.92762	.95955	3.44			
C160	1,1,2-Trichloroethane	.41964	.41892	.17			
C165	Benzene	.81765	.81776	.01			
C176	Diisopropyl ether	1.09370	1.02780	6.02			
C145	trans-1,3-Dichloroprope*	.58370	.58161	.36			(Conc=50.00)
C175	2-Chloroethylvinylether	.04245	.01524	64.11			

RF - Response Factor from daily standard file at 50.00 UG/KG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

390378

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 09/24/91

Contractor: EA LABS | Time: 11:18

Contract No: | Laboratory ID: >AI579

Instrument ID: 8701A1 | Initial Calibration Date: 09/19/91

Minimum $\overline{RF}$ for SPCC is .30 | Maximum % Diff for CCC is 25%

	Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
C179	1,2-Dibromoethane	.70810	.69173	2.31			
C180	Bromoform	.83557	.84698	1.37		**	
C205	4-Methyl-2-Pentanone	.82557	.62326	24.51			
C210	2-Hexanone	.62757	.53030	15.50			
C220	Tetrachloroethene	.47482	.56643	19.30			
C225	1,1,2,2-Tetrachloroetha*	1.03842	.97205	6.39		**	
C230	Toluene	.65637	.68543	4.43	*		
CS05	Toluene-d8	1.12543	1.14119	1.40			(Conc=50.00)
C235	Chlorobenzene	.98276	1.01200	2.97		**	
C240	Ethylbenzene	.39499	.41786	5.79	*		
C245	Styrene	.87507	.88764	1.44			
C261	m&p-Xylenes	.50031	.52176	4.29			(Conc=100.00)
C262	o-Xylene	.48637	.50099	3.00			
C253	1,3-Dichlorobenzene	.79581	.85993	8.06			
C254	1,2-Dichlorobenzene	.83049	.87921	5.87			
C255	1,4-Dichlorobenzene	.88442	.93469	5.68			
CS10	Bromofluorobenzene	.97139	.95218	1.98			(Conc=50.00)

ALL CCC & SPEC COMPOUNDS ARE WITHIN LIMITS
QCALed 09.24.91 12:45

09.24.91

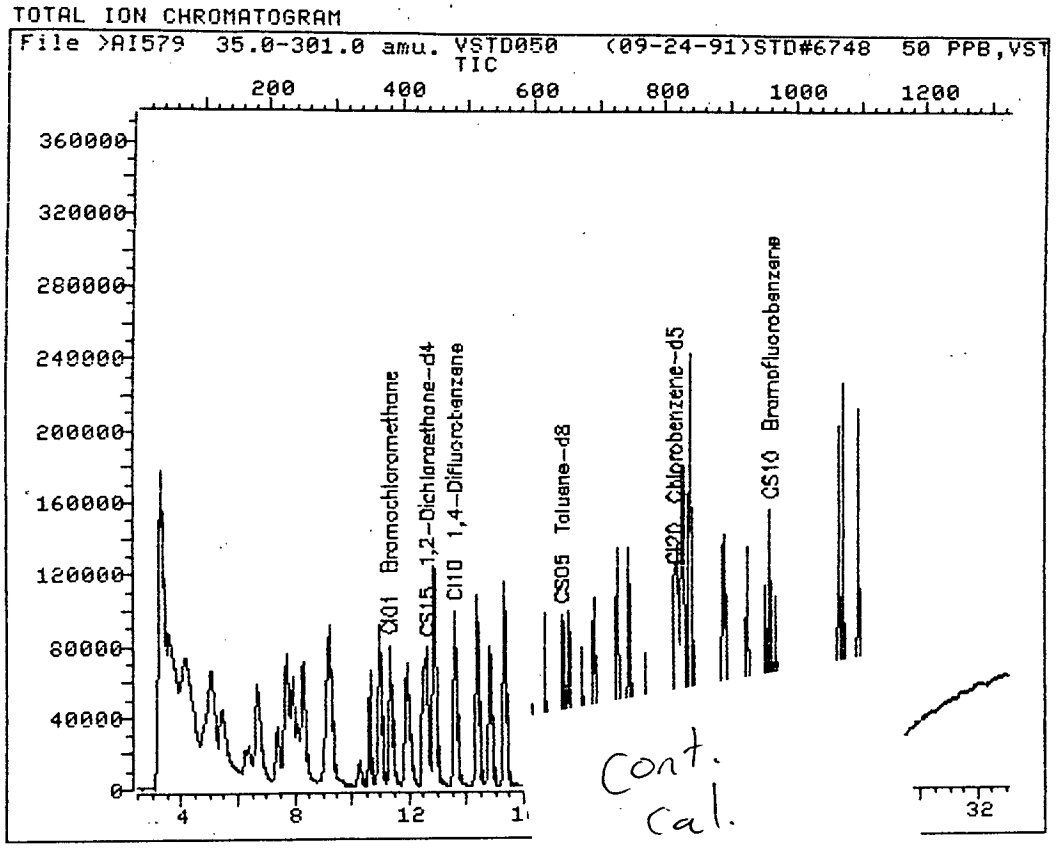
RF - Response Factor from daily standard file at 50.00 UG/KG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

TOTAL ION CHROMATOGRAM



Data File: >AI579::D4 File: ^AI579::QT
Name: VSTD050 (09-24-91
Misc: STD#6748 50 PPB,VS[illegible],5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 17:05
Injected at: 910924 11:18

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 17:05
Output File: ^AI579::QT Injected at: 910924 11:18
Data File: >AI579::D4 Dilution Factor: 1.00000
Name: VSTD050 (09-24-91)
Misc: STD#6748 50 PPB,VSTD050,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	71268	50.00	UG/KG	85
2)	C010	Chloromethane	4.01	50.0	42920	50.00	UG/KG	76
3)	C015	Bromomethane	4.88	94.0	106726	50.00	UG/KG	94
4)	C016	Dichlorodifluoromethane	3.57	85.0	142092	50.00	UG/KG	95
5)	C017	Dichlorofluoromethane	5.07	67.0	292316	50.00	UG/KG	94
6)	C020	Vinyl Chloride	4.19	62.0	77493	50.00	UG/KG	96
7)	C025	Chloroethane	4.95	64.0	49073	50.00	UG/KG	80
8)	C030	Methylene Chloride	7.68	84.0	119140	50.00	UG/KG	77
9)	C035	Acetone	6.38	43.0	79198	50.00	UG/KG	88
10)	C036	Acrolein	6.22	56.0	54909	300.00	UG/KG	88
11)	C040	Carbon Disulfide	7.68	76.0	261388	50.00	UG/KG	100
12)	C037	Acrylonitrile	7.88	53.0	142234	300.00	UG/KG	92
13)	C041	Trichlorofluoromethane	5.46	101.0	197239	50.00	UG/KG	94
14)	C045	1,1-Dichloroethene	6.68	96.0	106050	50.00	UG/KG	87
16)	C050	1,1-Dichloroethane	9.22	63.0	217703	50.00	UG/KG	98
17)	C051	Tetrahydrofuran	11.46	42.0	24856	50.00	UG/KG	89
18)	C056	1,2-Dichloroethene (tot*	8.30	96.0	99478	50.00	UG/KG	84
19)	C060	Chloroform	10.95	83.0	267961	50.00	UG/KG	92
20)	C110	2-Butanone	10.24	72.0	14832	50.00	UG/KG	97
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	188113	50.00	UG/KG	81
22)	C065	1,2-Dichloroethane	12.85	62.0	236100	50.00	UG/KG	96
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	250917	50.00	UG/KG	91
24)	C111	Methyl tertiary butyl e*	8.09	73.0	179980	50.00	UG/KG	92
25)	C125	Vinyl Acetate	9.27	43.0	68414M	50.00	UG/KG	
26)	C115	1,1,1-Trichloroethane	11.92	97.0	238279	50.00	UG/KG	95
27)	C120	Carbon Tetrachloride	12.50	117.0	185397	50.00	UG/KG	89
28)	C130	Bromodichloromethane	15.34	83.0	269019	50.00	UG/KG	95
29)	C140	1,2-Dichloropropane	14.78	63.0	85593	50.00	UG/KG	94
30)	C143	cis-1,3-Dichloropropene	16.72	75.0	180584	50.00	UG/KG	95
31)	C150	Trichloroethene	14.37	130.0	121096	50.00	UG/KG	91
32)	C155	Dibromochloromethane	19.70	129.0	240767	50.00	UG/KG	98
33)	C160	1,1,2-Trichloroethane	18.41	97.0	105115	50.00	UG/KG	94
34)	C165	Benzene	12.87	78.0	205191	50.00	UG/KG	93
35)	C176	Diisopropyl ether	9.15	45.0	257893	50.00	UG/KG	98
36)	C145	trans-1,3-Dichloroprope*	18.01	75.0	145936	50.00	UG/KG	92
37)	C175	2-Chloroethylvinylether	16.19	63.0	3823	50.00	UG/KG	86
38)	C179	1,2-Dibromoethane	20.23	107.0	173568	50.00	UG/KG	92
39)	C180	Bromoform	23.90	173.0	212522	50.00	UG/KG	99
40)	*CI20	Chlorobenzene-d5	21.29	117.0	205069	50.00	UG/KG	96
41)	C181	1,2,3-Trichloropropane	18.01	75.0	145936	50.00	UG/KG	63
42)	C205	4-Methyl-2-Pentanone	16.31	43.0	127812	50.00	UG/KG	91
43)	C210	2-Hexanone	18.55	43.0	108749	50.00	UG/KG	85
45)	C220	Tetrachloroethene	19.24	164.0	116158	50.00	UG/KG	95

		Compound	R.T.	Q ion	Area	Conc	Units	q
46)	C225	1,1,2,2-Tetrachloroetha*	24.48	83.0	199337	50.00	UG/KG	91
47)	C230	Toluene	17.55	92.0	140560	50.00	UG/KG	92
48)	CS05	Toluene-d8	17.35	98.0	234023	50.00	UG/KG	99
49)	C235	Chlorobenzene	21.41	112.0	207529	50.00	UG/KG	93
50)	C240	Ethylbenzene	21.61	106.0	85690	50.00	UG/KG	95
51)	C245	Styrene	23.09	104.0	182027	50.00	UG/KG	84
52)	C261	m&p-Xylenes	21.82	106.0	213994	100.00	UG/KG	88
53)	C262	o-Xylene	23.00	106.0	102737	50.00	UG/KG	84
54)	C253	1,3-Dichlorobenzene	27.08	146.0	176344	50.00	UG/KG	96
55)	C254	1,2-Dichlorobenzene	27.75	146.0	180298	50.00	UG/KG	88
56)	C255	1,4-Dichlorobenzene	27.24	146.0	191676	50.00	UG/KG	95
57)	CS10	Bromofluorobenzene	24.68	95.0	195262	50.00	UG/KG	88

* Compound is ISTD

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No.: RR2B-2_2.5

Lab File ID (Standard): AI531 Date Analyzed: 09/18/91

Instrument ID: A1 Time Analyzed: 13:41

GC Column: RTX502.2 ID: .53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DBF) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	57919	11.30	213214	13.59	174241	21.29
	UPPER LIMIT	115838	11.80	426428	14.09	348482	21.79
	LOWER LIMIT	28960	10.80	106607	13.09	87121	20.79
	EPA SAMPLE NO.						
1	VBLK1	60014	11.29	216125	13.60	177245	21.30
2	LCS_V0834	55409	11.29	204162	13.57	166529	21.27
3	RINSATE-2	58052	11.28	216289	13.58	180063	21.28
4	FIELD-2	55781	11.29	209500	13.58	174539	21.28
5	TRIP BLANK	55178	11.31	204601	13.59	166602	21.29
6	RR2B-2_2.5	41229	11.30	148509	13.59	112481	21.29
7	RR2B-2_5	43418	11.29	162310	13.60	125772	21.28
8	RR2B-2_7.5	38832	11.30	131410	13.58	97605	21.28
9	RR2B-2_10	43868	11.31	155178	13.59	118263	21.29

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = -0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No.: RR2B-2_2.5

Lab File ID (Standard): AI543 Date Analyzed: 09/19/91

Instrument ID: A1 Time Analyzed: 15:15

GC Column: RTX502.2 ID: .53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DBF) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	65161	11.28	241145	13.59	196772	21.30
	UPPER LIMIT	130322	11.78	482290	14.09	393544	21.80
	LOWER LIMIT	32581	10.78	120573	13.09	98386	20.80
	EPA SAMPLE NO.						
1	VBLK2	67804	11.30	260237	13.58	211929	21.28
2	LCS_V08~~45~~ 837	61337	11.29	226329	13.59	189380	21.29
3	RR2B-2_12.5	53445	11.29	192825	13.58	157671	21.28
4	RR2B-3_2.5	51254	11.30	193678	13.58	160104	21.28
5	RR2B-3_5	52780	11.29	202790	13.59	168957	21.29
6	RR2B-3_7.5	53234	11.30	196921	13.58	163301	21.28
7	RR2B-3_10	44619	11.30	171228	13.58	140418	21.28
8	RR2B-3_12	42968	11.28	161008	13.59	130275	21.29
9	RR2B-4_2.5	44353	11.27	165943	13.58	132572	21.27
10	RR2B-4_5	53162	11.31	198289	13.59	161912	21.29
11	RR2B-4_7.5	48434	11.29	181772	13.59	148186	21.29
12	RR2B-4_10	43471	11.29	160602	13.59	130412	21.29
13	RR2B-4_12.5	49730	11.29	178567	13.59	148255	21.29
14	RR2B-1_5	50662	11.29	182466	13.59	148249	21.29

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = -0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

P 10.8.91

390384

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No.: RR2B-2_2.5

Lab File ID (Standard): AI560 Date Analyzed: 09/23/91

Instrument ID: A1 Time Analyzed: 12:15

GC Column: RTX502.2 ID: .53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DBF) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	65552	11.30	229908	13.58	191467	21.31
	UPPER LIMIT	131104	11.80	459816	14.08	382934	21.81
	LOWER LIMIT	32776	10.80	114954	13.08	95734	20.81
	EPA SAMPLE NO.						
1	VBLK3	80830	11.29	287896	13.60	242572	21.30
2	LCS_V0842	71420	11.30	258308	13.60	218698	21.30
3	RR2B-1_7.5	63334	11.30	227930	13.60	188738	21.30
4	RR2B-1_10	64985	11.30	241216	13.60	199643	21.30
5	RR2B-1_12.5	46130	11.30	170592	13.61	139859	21.31
6	RR2B-1_14	53217	11.31	200378	13.60	165962	21.30
7	RR2DUP-1	45771	11.32	168285	13.60	140828	21.30
8	RR2DUP-2	46563	11.31	172075	13.59	142456	21.29
~~9~~	~~RR2S-1~~	~~31449*~~	~~11.31~~	~~112258*~~	~~13.59~~	~~88117*~~	~~21.29~~
10	RR2S-2	38661	11.30	139345	13.60	111641	21.30
11	RR2DUP-1MS	34031	11.30	123305	13.58	103701	21.31
12	RR2DUP-1MSD	34133	11.31	122463	13.59	101177	21.29

(a) 10-8-91

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = -0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No: SDG No.: RR2B-2_2.5

Lab File ID (Standard): AI579 Date Analyzed: 09/24/91

Instrument ID: A1 Time Analyzed: 11:18

GC Column: RTX502.2 ID: .53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DBF) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	71268	11.30	250917	13.59	205069	21.29
	UPPER LIMIT	142536	11.80	501834	14.09	410138	21.79
	LOWER LIMIT	35634	10.80	125459	13.09	102535	20.79
	EPA SAMPLE NO.						
1	VBLK4	74500	11.30	262231	13.60	225003	21.30
2	LCS_V0846	71587	11.30	260578	13.58	216568	21.29
3	RR2S-1	36733	11.32	141090	13.60	108235	21.30
4	RR2S-3	48347	11.31	164417	13.60	101024*	21.30
5	RR2S-4	56941	11.32	194457	13.60	138978	21.30
6	RR2DUP-2MS	47737	11.32	179028	13.60	145651	21.30
7	RR2DUP-2MSD	49212	11.30	186773	13.60	156518	21.30

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = -0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

D. Raw QC Data

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

VBLK1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI533

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	3	J
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

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390388

9/04.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

VBLK1

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI533

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

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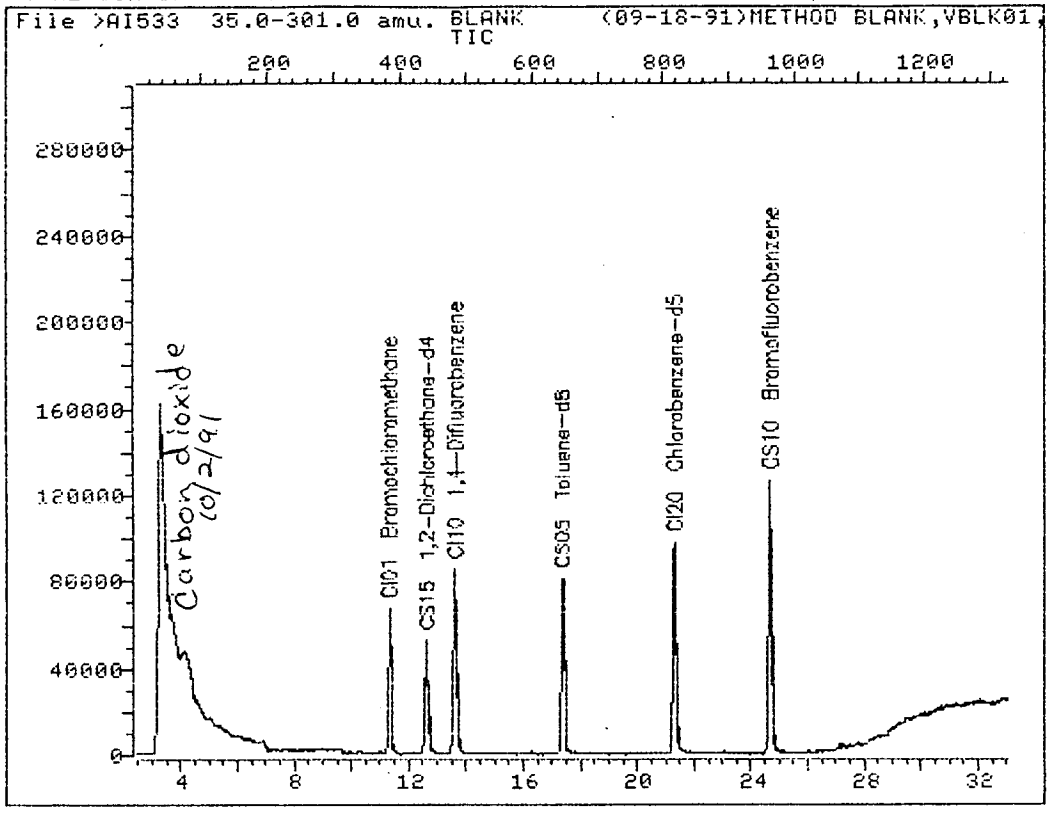
10.9.91 390389

TOTAL ION CHROMATOGRAM



Data File: >AI533::D4 Quant Output File: ^AI533::QT
Name: BLANK (09-18-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 15:50
Injected at: 910918 15:16

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 15:50
Output File: ^AI533::QT Injected at: 910918 15:16
Data File: >AI533::D4 Dilution Factor: 1.00000
Name: BLANK (09-18-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

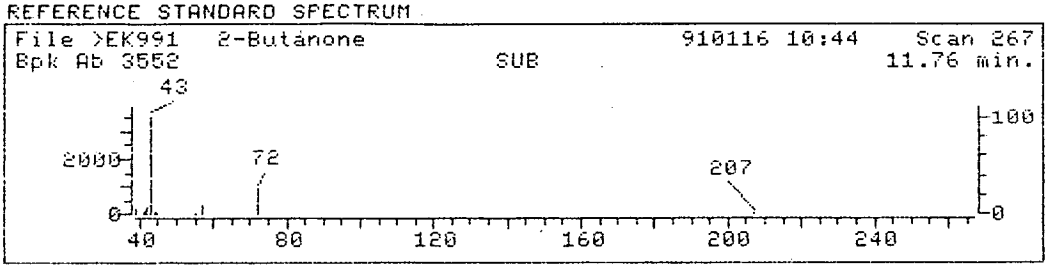
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	60014	50.00	UG/KG	84
20)	CI10	2-Butanone	10.28	72.0	647	2.69	UG/KG	79
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	157807	50.36	UG/KG 101%	82
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	216125	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.30	117.0	177245	50.00	UG/KG	97
48)	CS05	Toluene-d8	17.33	98.0	197746	49.29	UG/KG 99%	98
57)	CS10	Bromofluorobenzene	24.66	95.0	165436	47.68	UG/KG 95%	97

* Compound is ISTD

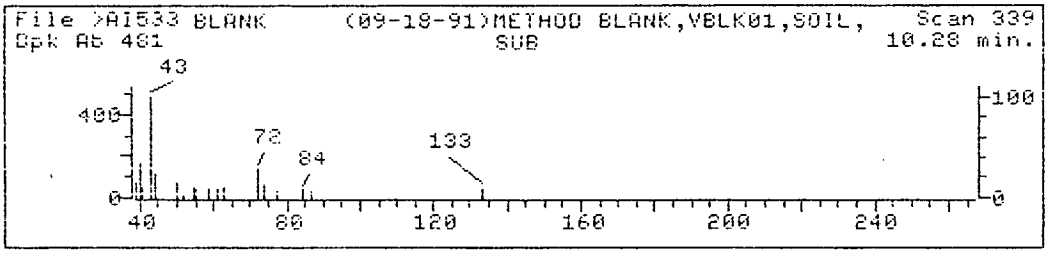
09-19-91

390391

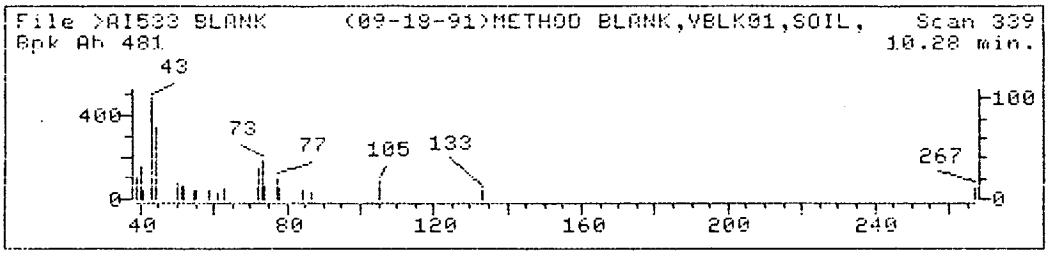
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI533::D4 Quant Output File: ^AI533::QT
Name: BLANK (09-18-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
Quant Time: 910918 15:50 Quant TD File: CCAS::SD
Injected at: 910918 15:16 Last Calibration: 910918 14:28

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 339
Retention Time: 10.28 min.
Quant Ion: 72.0
Area: 647
Concentration: 2.69 UG/KG
q-value: 79

·AI533 BLANK (09-18-91)METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Ipslope: .20 Area Reject: 49233. Max Peaks: 1 Bunching: -1
Ins lope: 0.00 Results File IAI533 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	25	35	64	161971	3975430	3963021	100.00	100.000

Sum of corrected areas: 3963021.

Summary of PRM Library Search and Quantitation on file :>AI533::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	492333.	11.29	2.48 - 12.44
2	50.0	639396.	13.60	12.44 - 17.45
3	50.0	662794.	21.30	17.45 - 33.05

CALCULATIONS

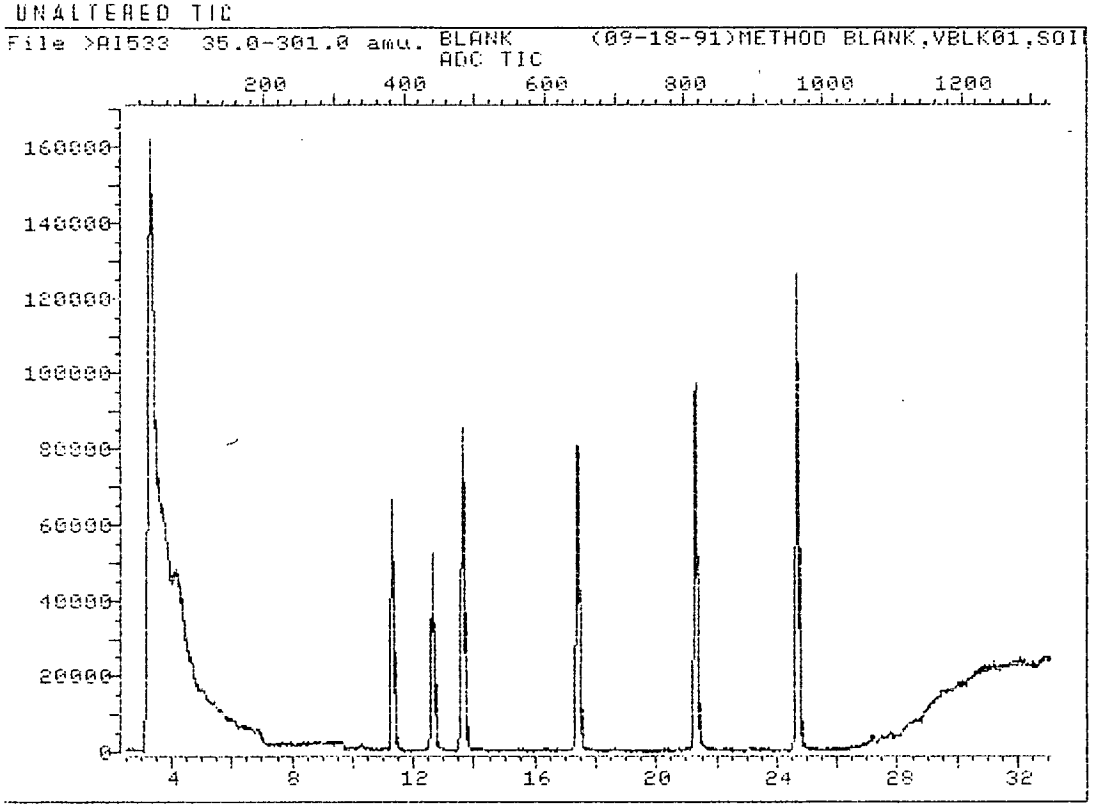
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

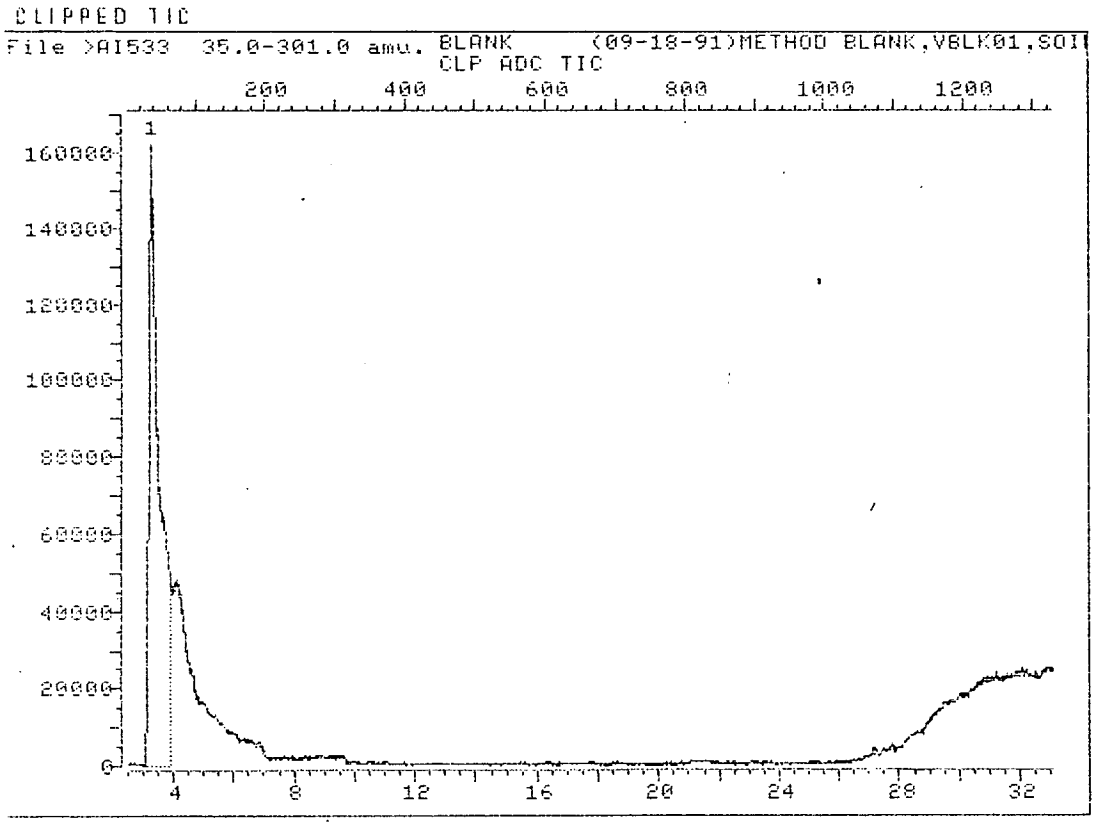
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

5:38 PM WED., 18 SEPT, 1991

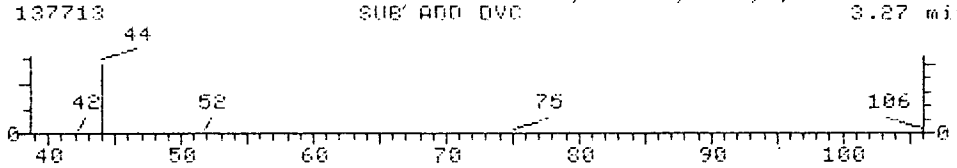
UNALTERED TIC



CLIPPED TIC



File >AI533 BLANK (09-18-91)METHOD BLANK,VBLK01,SOIL,5,87 Scan 35
Apk Ah 137713 SUB' ADD DVC 3.27 min.



CARBON DIOXIDE
CAS# 124-38-9

Retention time = 3.27

Area = 3963021. Tentative Concentration is 400.00

Sample file: >AI533 Spectrum #: 35

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI533::D4 Analyst:SCOTT MS

Name:BLANK (09-18-91) Date/Time: 9/18/91 15:16
Misc:METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PRM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.27	3963021	49233

390356

>AI533 BLANK (09-18-91)METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI533 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	25	35	64	161971	3999545	3963021	100.00	52.278
2	11.29	374	383	402	66619	514184	492333	12.42	6.495
3	12.61	430	440	458	52366	406595	373128	9.42	4.922
4	13.60	473	483	499	85266	662964	639396	16.13	8.435
5	17.33	637	645	662	80820	635733	607607	15.33	8.015
6	21.30	809	817	830	96683	698693	662794	16.72	8.743
7	24.66	954	963	984	126432	872896	842339	21.25	11.112

Sum of corrected areas: 7580618.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

VBLK2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI544

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	4	J
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

~~3/90~~ 2/88 390398
10.9.91

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No.: WGV8744 SAS No.: _____ SDG No.: RK2B-2 2.5

Matrix: (soil/water) SOIL Lab Sample ID: VBLK

Sample wt/vol: 5 (g/mL) g Lab File ID: AIS44

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. _____ Date Analyzed: 9/19/91

Column: (pack/cap) CAP Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO VOLATILES DETECTED			
2.				
3.				
4.				
5.				
6.				
7.				
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27.				
28.				
29.				
30.				

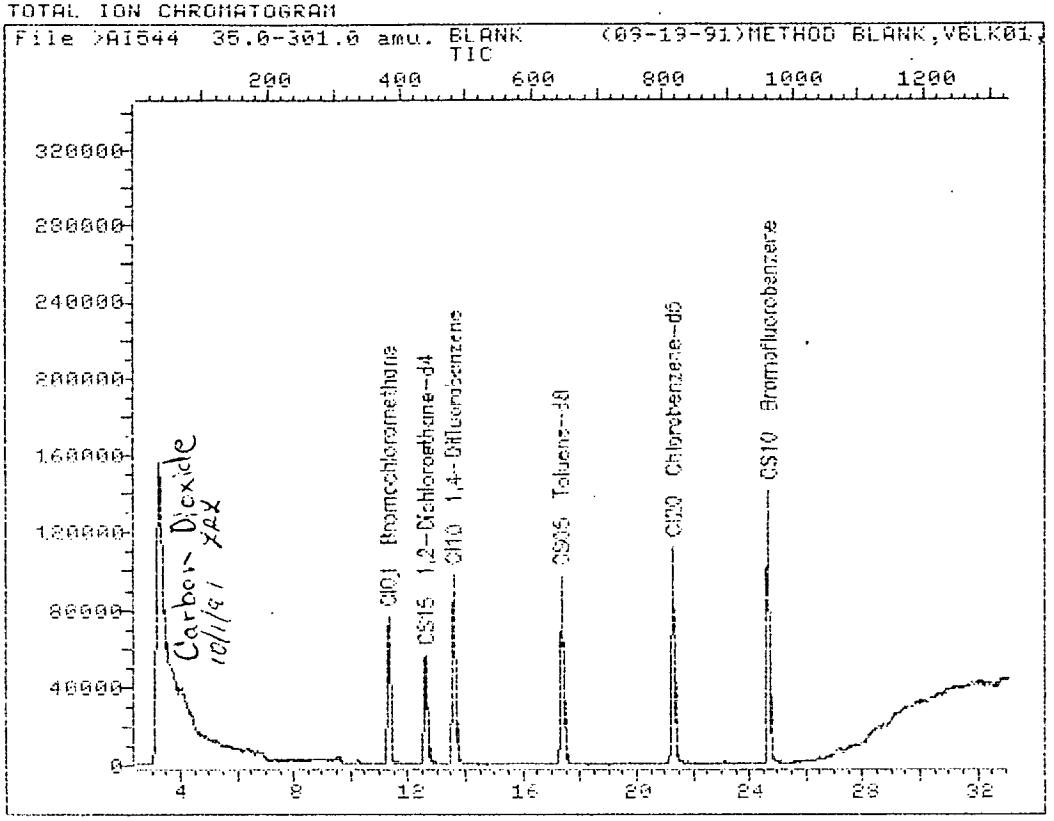
390399

FORM I VOA-TIC

1/87 Rev.

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI544::D4 Quant Output File: ^AI544::QT
Name: BLANK (09-19-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

Id File: CCAS::AD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 18:04
Injected at: 910919 16:10

QUANT REPORT

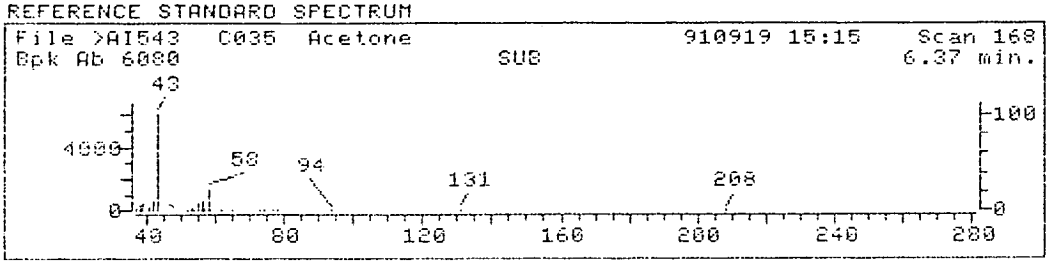
Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 18:04
Output File: ^AI544::QT Injected at: 910919 16:10
Data File: >AI544::D4 Dilution Factor: 1.00000
Name: BLANK (09-19-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

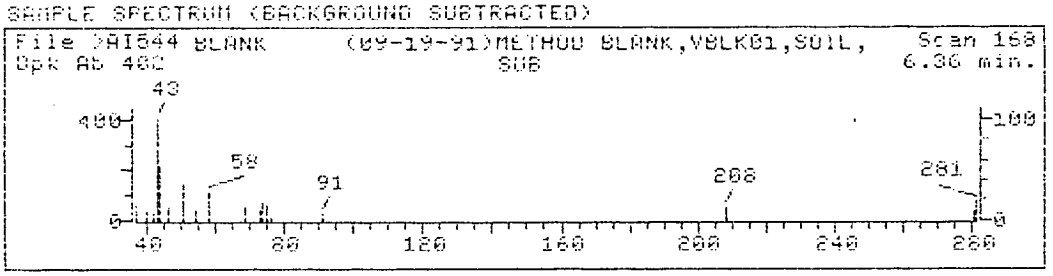
		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	67804	50.00	UG/KG	81
9)	C035	Acetone	6.36	43.0	5037	3.89	UG/KG	95
20)	C110	2-Butanone	10.21	72.0	1102	3.77	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	148411	52.18	UG/KG 104%	83
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	260237	50.00	UG/KG	90
40)	*CI20	Chlorobenzene-d5	21.28	117.0	211929	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.34	98.0	233413	49.43	UG/KG 99%	99
57)	CS10	Bromofluorobenzene	24.67	95.0	191382	49.88	UG/KG 100%	97

* Compound is ISTD

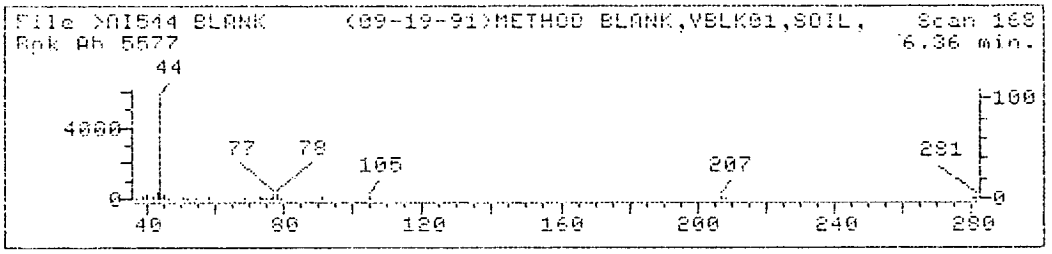
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



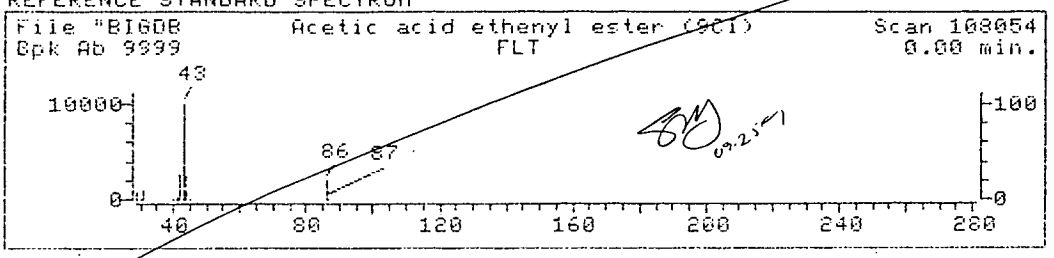
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI544::D4 Quant Output File: ^AI544::QT
Name: BLANK (09-19-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
Quant Time: 910919 18:04 Quant ID File: CCAS::ID
Injected at: 910919 16:10 Last Calibration: 910919 15:59

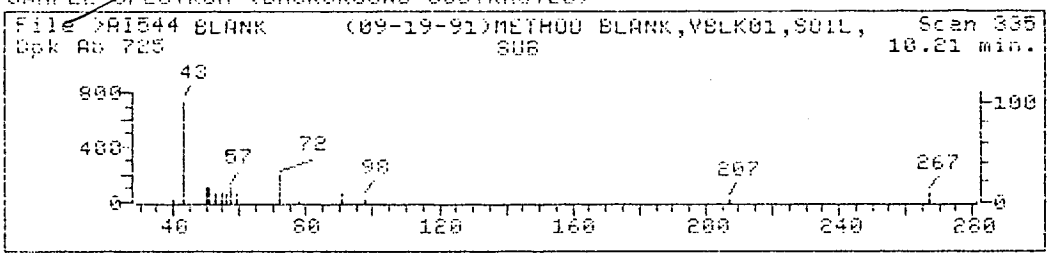
Compound No: 9
Compound Name: C035 Acetone
Scan Number: 168
Retention Time: 6.36 min.
Quant Ion: 43.0
Area: 5037
Concentration: 3.89 UG/KG
q-value: 95

REFERENCE STANDARD SPECTRUM



INCORRECT REFERENCE SPECTRUM ID FILE HAS BEEN UPDATED

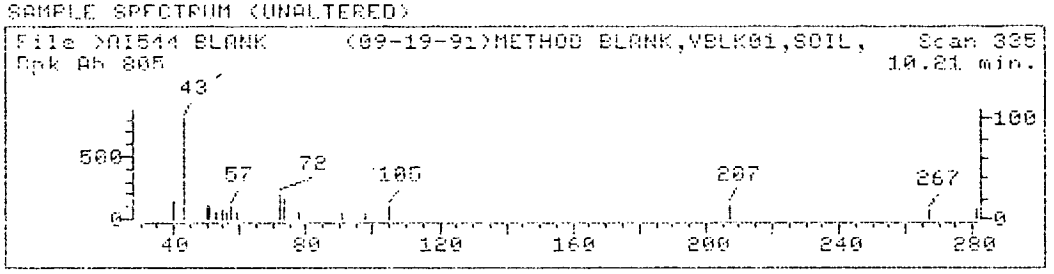
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



ACTUAL HIT OF 2-BUTANONE

09-25-91

SAMPLE SPECTRUM (UNALTERED)



Data File: >AI544::D4 Quant Output File: ^AI544::QT
Name: BLANK (09-19-91)
Misc: METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
Quant Time: 910919 18:04 Quant ID File: CC05::RO
Injected at: 910919 16:10 Last Calibration: 910919 15:59

Compound No: 90
Compound Name: C110 2-Butanone
Scan Number: 335
Retention Time: 10.21 min.
Quant Ion: 72.0
Area: 1102
Concentration: 3.77 UG/KG
q-value: 88

>AI544 BLANK (09-19-91)METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 53376. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI544 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	17	33	62	156434	3624968	3616378	100.00	100.000

Sum of corrected areas: 3616378.

Summary of PBM Library Search and Quantitation on file :>AI544::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	533760.	11.30	2.51 - 12.44
2	50.0	712084.	13.58	12.44 - 17.43
3	50.0	769090.	21.28	17.43 - 33.07

CALCULATIONS

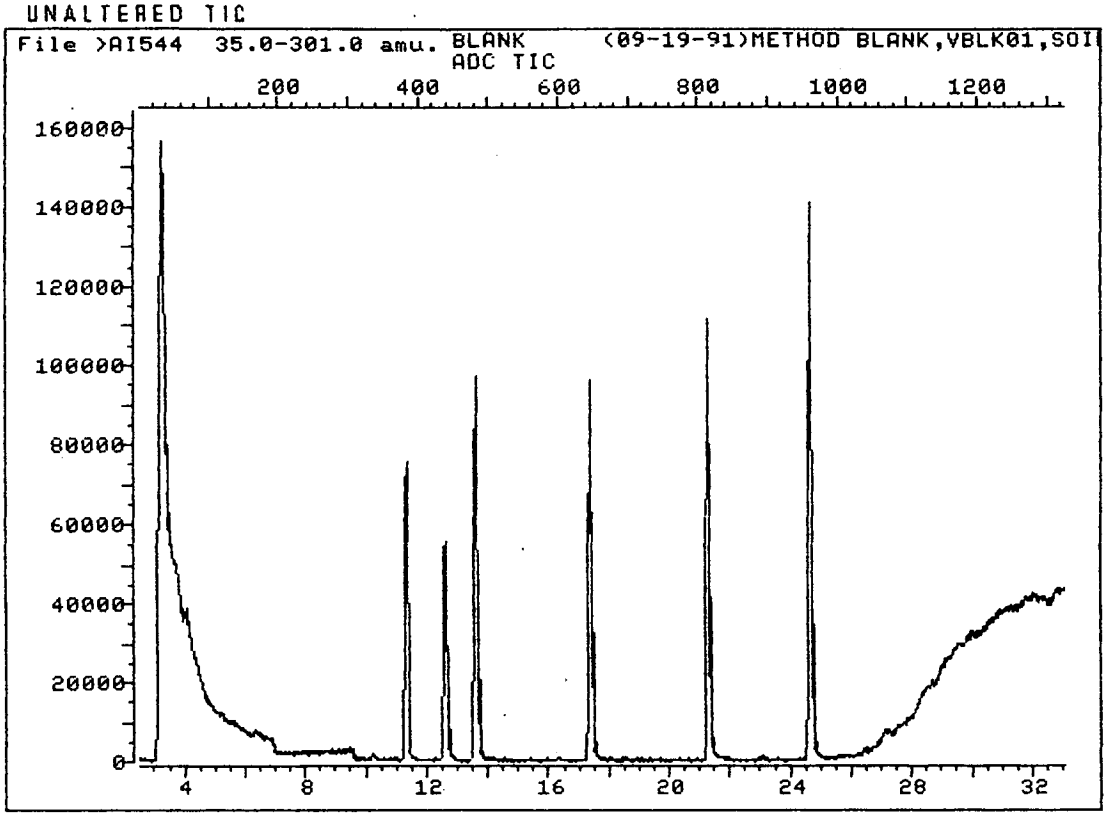
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

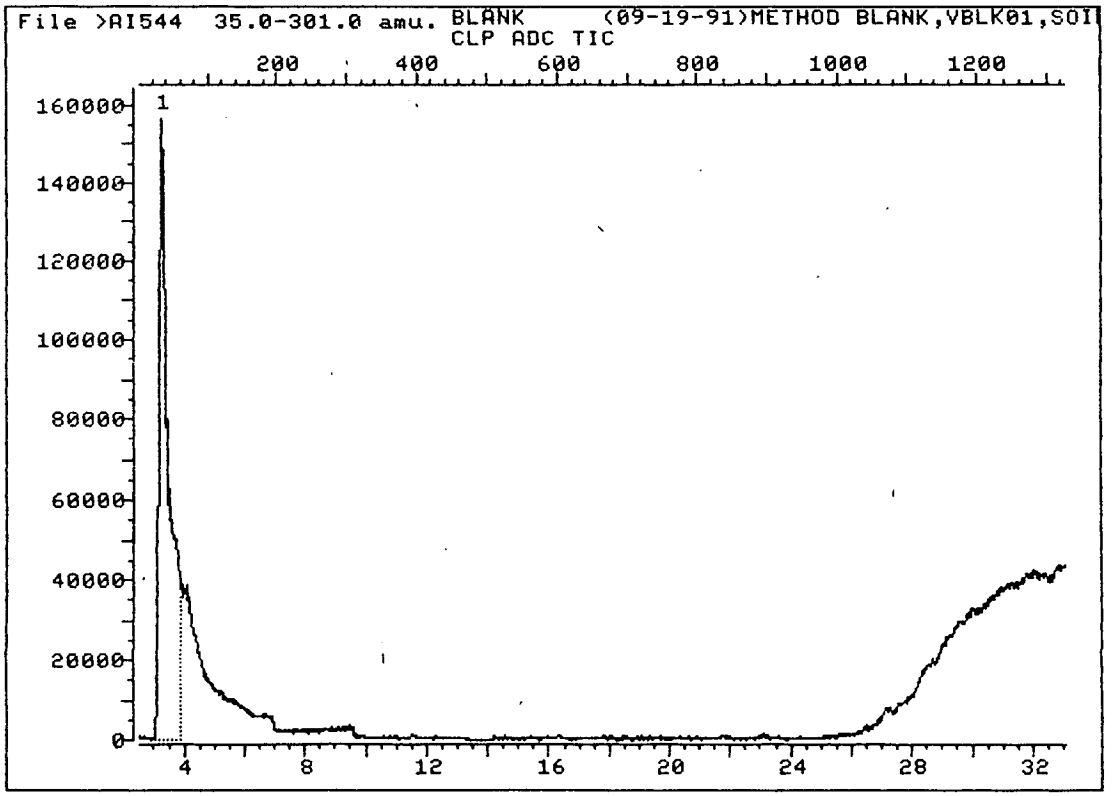
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

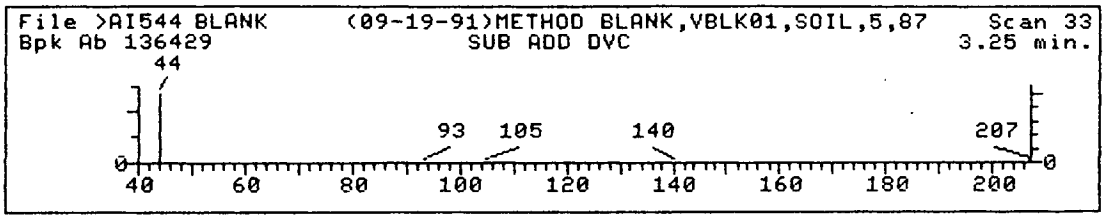
2:41 PM WED., 25 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
CAS # 124-38-9

Retention time = 3.25

Area = 3616378. Tentative Concentration is 340.00

Sample file: >AI544 Spectrum #: 33

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI544::D4 Analyst:SCOTT MS

Name:BLANK (09-19-91) Date/Time: 9/19/91 16:10
Misc:METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.25	3616378	53376

>AI544 BLANK (09-19-91)METHOD BLANK,VBLK01,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI544 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.25	17	33	62	156434	3660134	3616378	100.00	47.112
2	11.30	375	382	393	75342	559479	533760	14.76	6.954
3	12.61	432	439	454	55358	434123	403622	11.16	5.258
4	13.58	473	481	495	96780	742918	712084	19.69	9.277
5	17.34	635	644	660	96077	725899	693063	19.16	9.029
6	21.28	807	815	833	111247	804498	769090	21.27	10.019
7	24.67	955	962	985	140555	992404	948097	26.22	12.351

Sum of corrected areas: 7676094.

390408

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

VBLK3

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI562

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	J
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

10.4.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

VBLK3

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI562

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

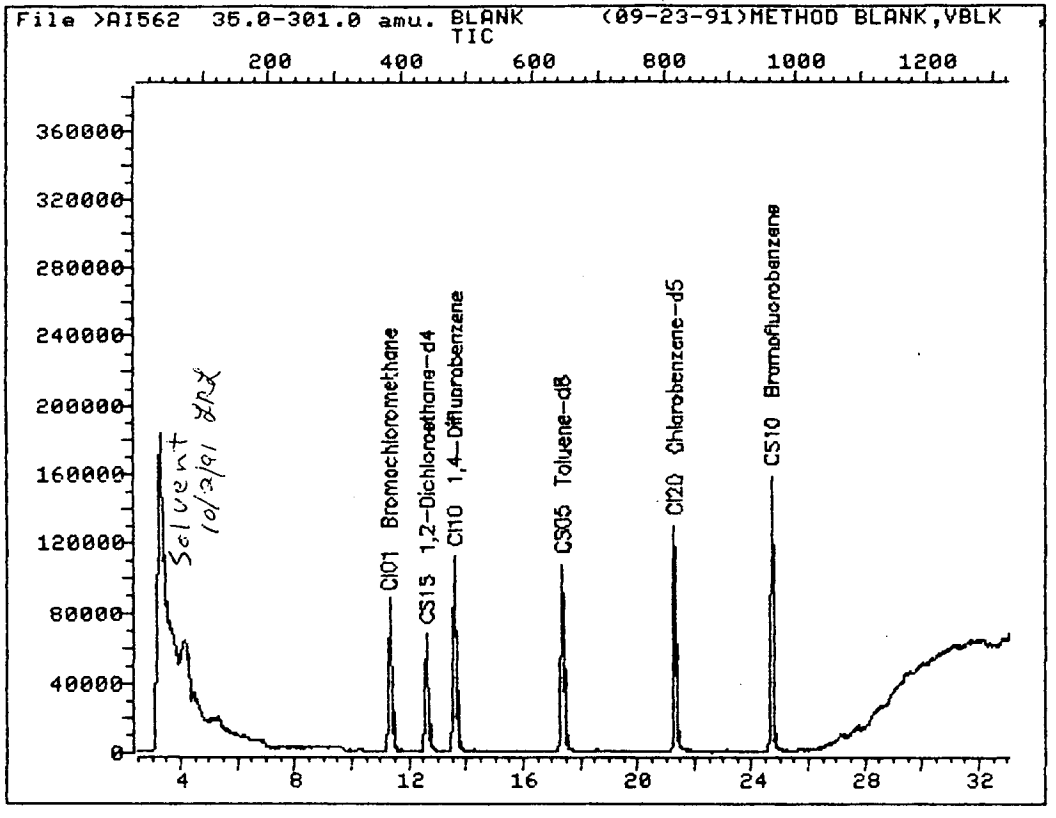
FORM I VOA-TIC

~~3/90~~
2/88

300410

(4) 10.7.91

TOTAL ION CHROMATOGRAM



Data File: >AI562::D4 Quant Output File: ^AI562::QT
Name: BLANK (09-23-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 14:33
Injected at: 910923 13:59

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 14:33
Output File: ^AI562::QT Injected at: 910923 13:59
Data File: >AI562::D4 Dilution Factor: 1.00000
Name: BLANK (09-23-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH

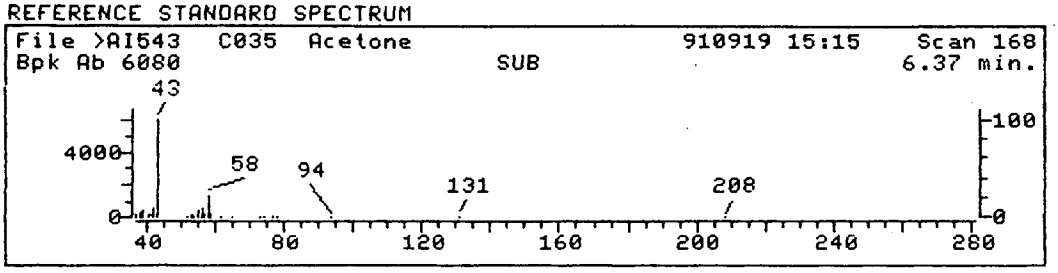
ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	80830	50.00	UG/KG	85
9)	C035	Acetone	6.38	43.0	4522	3.20	UG/KG	87
20)	C110	2-Butanone	10.23	72.0	1494	5.26	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	205947	46.01	UG/KG 92%	79
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	287896	50.00	UG/KG	91
40)	*CI20	Chlorobenzene-d5	21.30	117.0	242572	50.00	UG/KG	94
48)	CS05	Toluene-d8	17.35	98.0	263126	48.77	UG/KG 98%	98
57)	CS10	Bromofluorobenzene	24.69	95.0	211057	45.87	UG/KG 92%	95

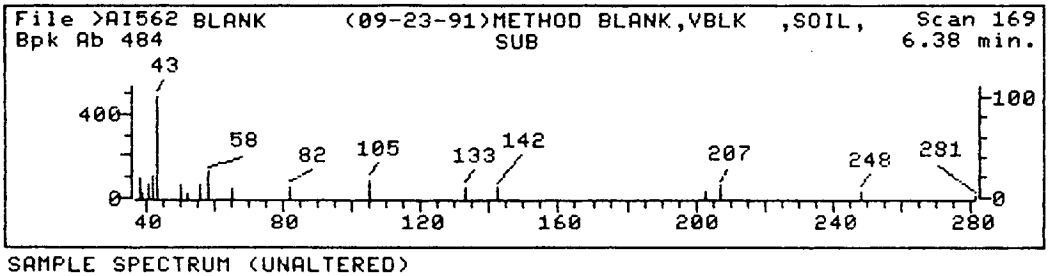
* Compound is ISTD

09-27-91

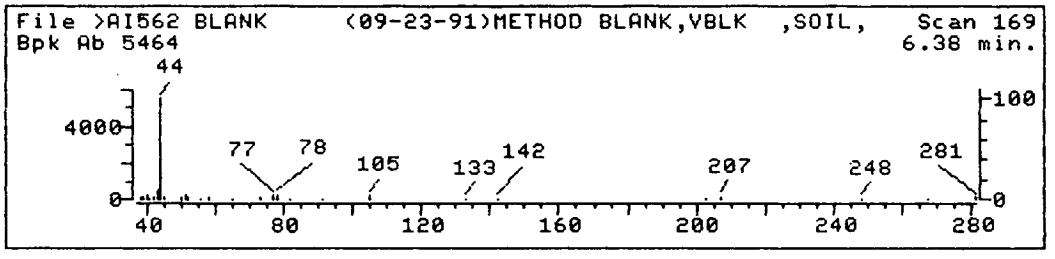
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



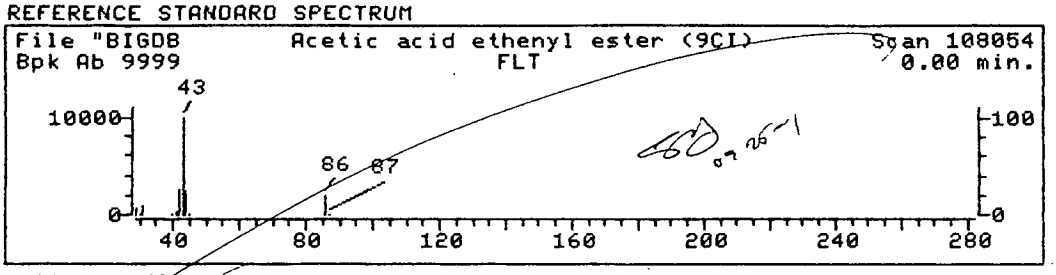
SAMPLE SPECTRUM (UNALTERED)



Data File: >AI562::D4 Quant Output File: ^AI562::QT
Name: BLANK (09-23-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
Quant Time: 910923 14:33 Quant ID File: CCAS::BD
Injected at: 910923 13:59 Last Calibration: 910923 13:27

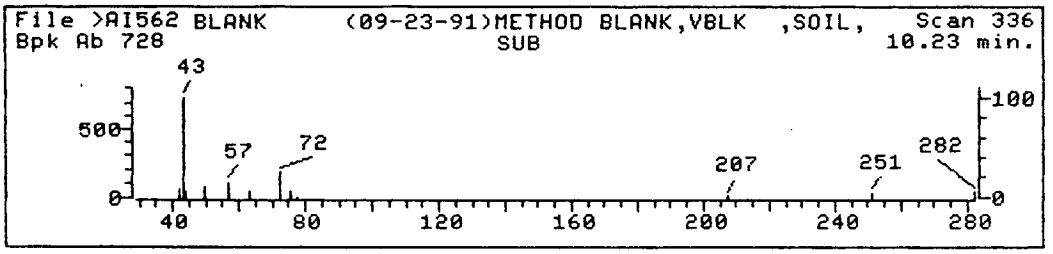
Compound No: 9
Compound Name: C035 Acetone
Scan Number: 169
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 4522
Concentration: 3.20 UG/KG
q-value: 87

REFERENCE STANDARD SPECTRUM

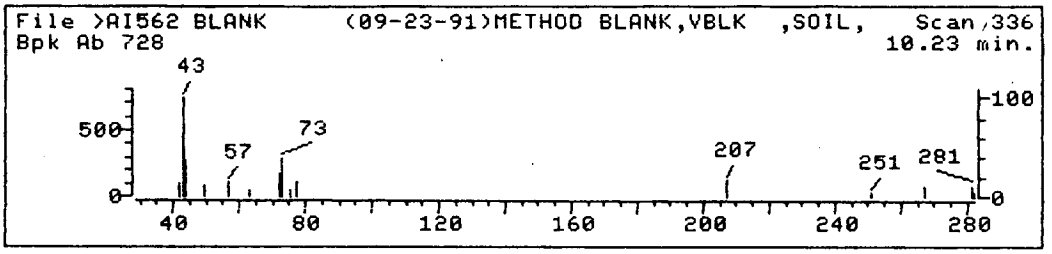


INCORRECT REF SPEC, BUT IS A ~~HIT~~ POSITIVE HIT FOR 2-BUT.
REF SPEC HAS BEEN UPDATED
09-25-91

SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI562::D4 Quant Output File: ^AI562::QT
Name: BLANK (09-23-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
Quant Time: 910923 14:33 Quant ID File: CCAS::BD
Inj cted at: 910923 13:59 Last Calibration: 910923 13:27

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 336
Retention Time: 10.23 min.
Quant Ion: 72.0
Area: 1494
Concentration: 5.26 UG/KG
q-value: 88

>AI562 BLANK (09-23-91)METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 61563. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI562 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	24	34	62	182074	4391825	4370745	100.00	100.000

Sum of corrected areas: 4370745.

Summary of PBM Library Search and Quantitation on file :>AI562::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	615626.	11.29	2.50 - 12.44
2	50.0	813617.	13.60	12.44 - 17.45
3	50.0	889279.	21.30	17.45 - 33.04

CALCULATIONS

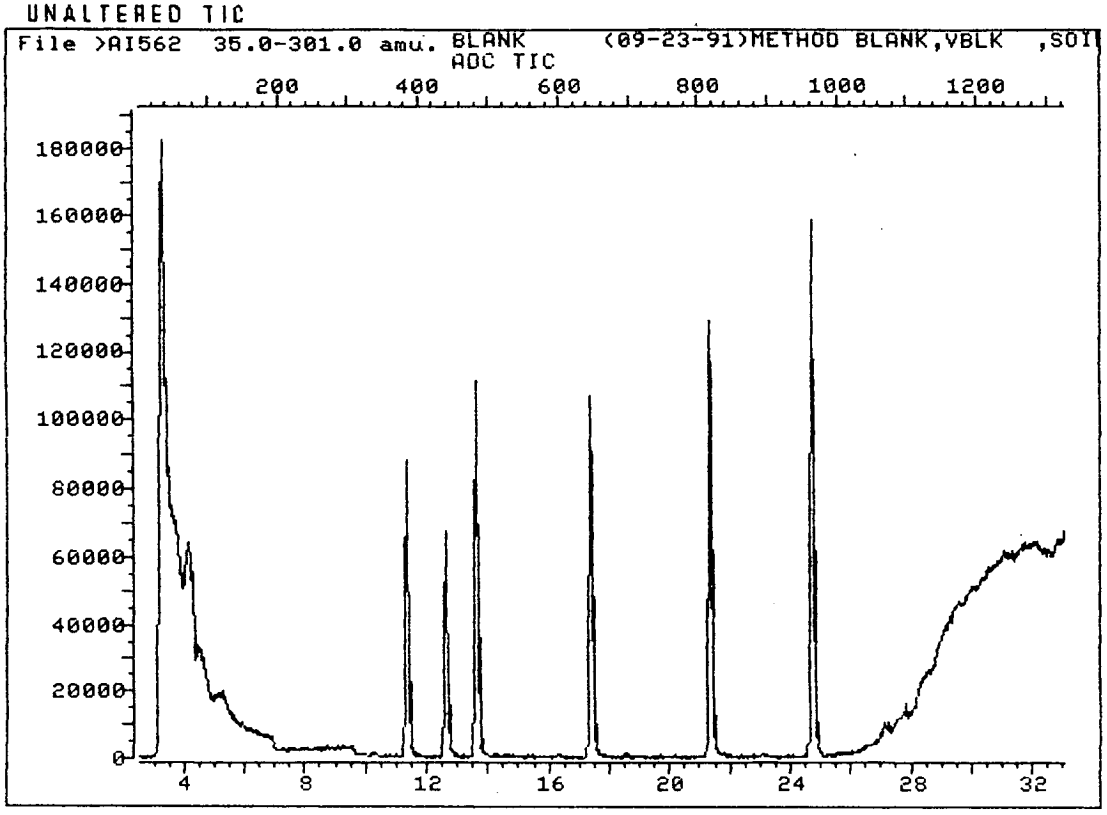
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

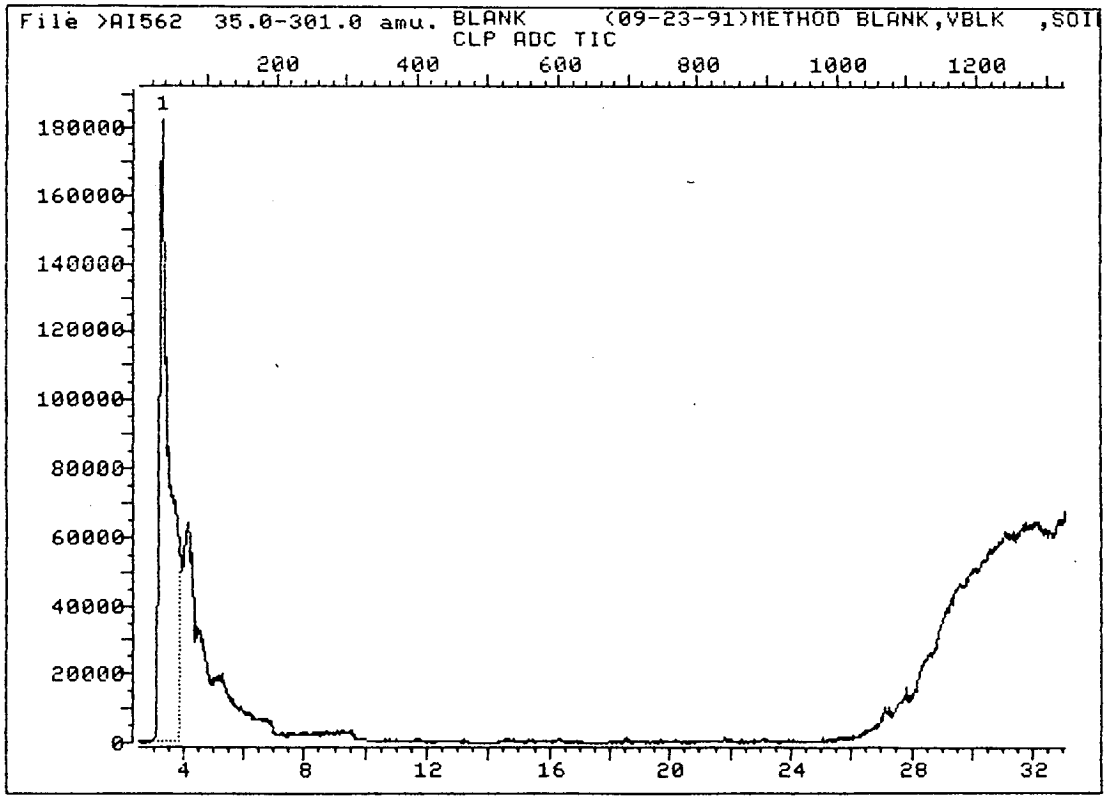
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

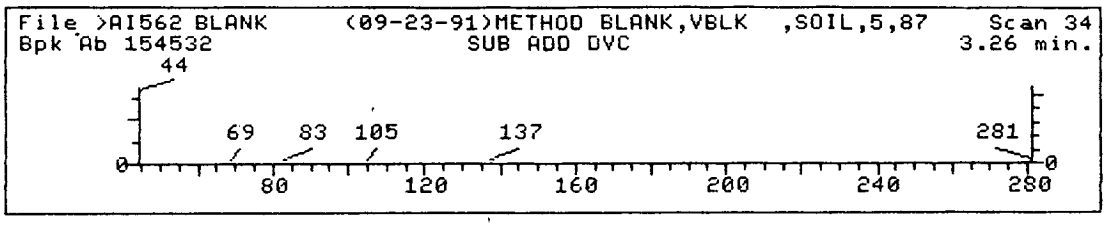
2:52 PM MON., 23 SEPT, 1991

UNALTERED TIC



CLIPPED TIC





SOLVENT

Retention time = 3.26

Area = 4370745. Tentative Concentration is 350.00

Sample file: >AI562 Spectrum #: 34

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI562::D4 Analyst:SCOTT MS

Name:BLANK (09-23-91) Date/Time: 9/23/91 13:59
Misc:METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.26	4370745	61563

390418

>AI562 BLANK (09-23-91)METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI562 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.26	24	34	62	182074	4427151	4370745	100.00	48.103
2	11.31	374	383	397	87768	659365	615626	14.09	6.775
3	12.60	431	439	453	67013	514967	489084	11.19	5.383
4	13.60	473	482	502	111100	861387	813617	18.62	8.954
5	17.35	636	645	661	107157	821735	795223	18.19	8.752
6	21.30	806	816	833	128918	932592	889279	20.35	9.787
7	24.69	948	963	981	157866	1170137	1112667	25.46	12.246

Sum of corrected areas: 9086242.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

VBLK4

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI580

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	J
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

VBLK4

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI580

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/24/91

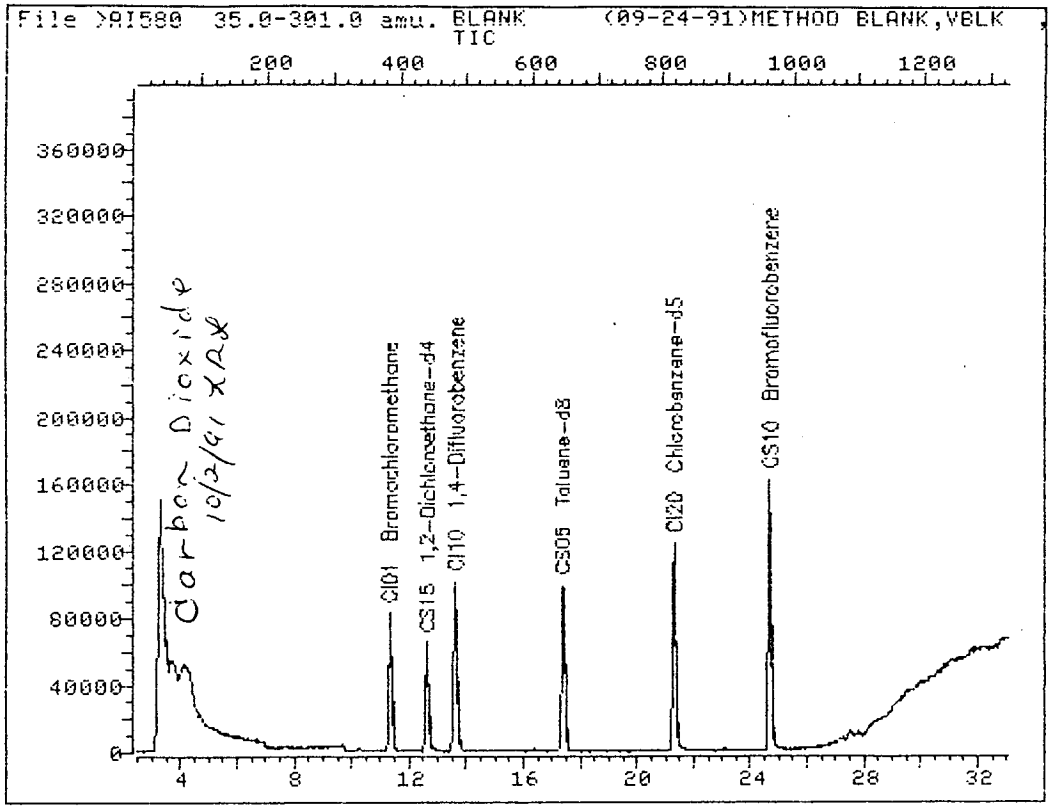
GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM

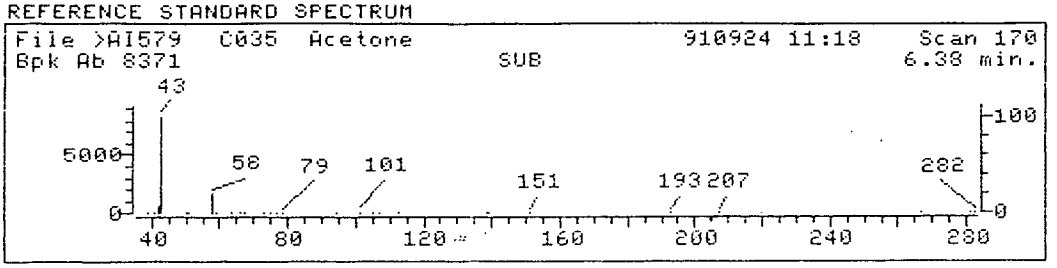


Data File: >AI580::D4 Quant Output File: ^AI580::QT
Name: BLANK (09-24-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH

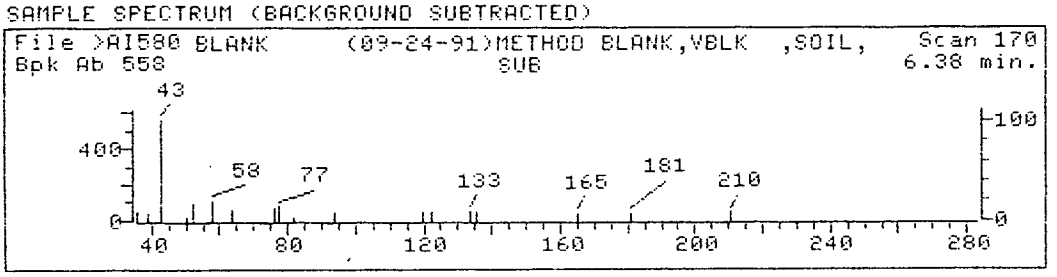
Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 17:31
Injected at: 910924 12:13

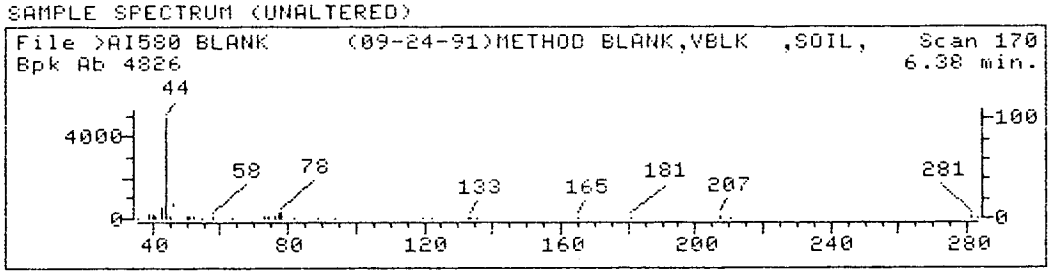
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



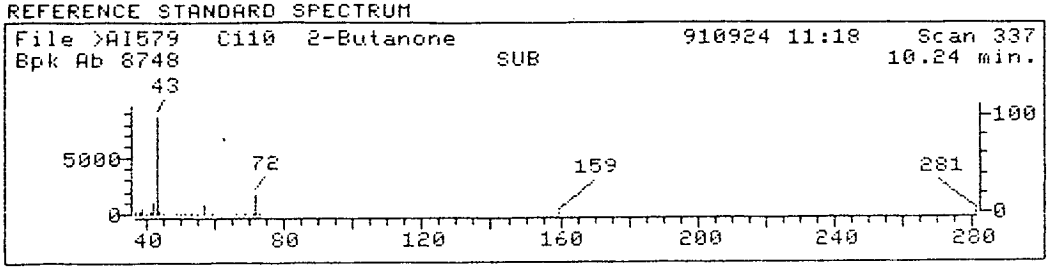
SAMPLE SPECTRUM (UNALTERED)



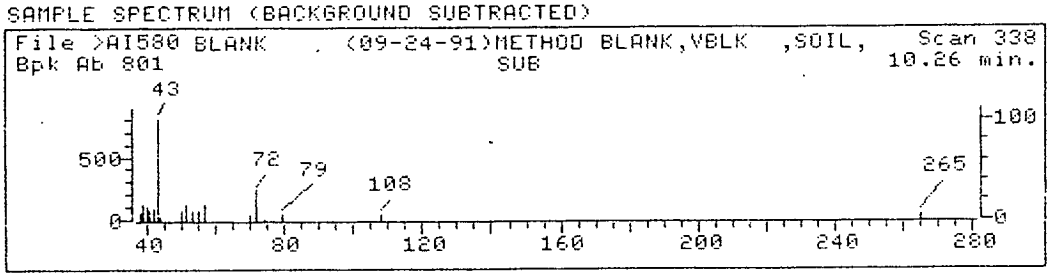
Data File: >AI580::D4 Quant Output File: ^AI580::QT
Name: BLANK (09-24-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
Quant Time: 910924 17:31 Quant ID File: CCAS::BD
Injected at: 910924 12:13 Last Calibration: 910924 12:04

Compound No: 9
Compound Name: C035 Acetone
Scan Number: 170
Retention Time: 6.38 min.
Quant Ion: 43.0
Area: 6301
Concentration: 3.81 UG/KG
q-value: 93

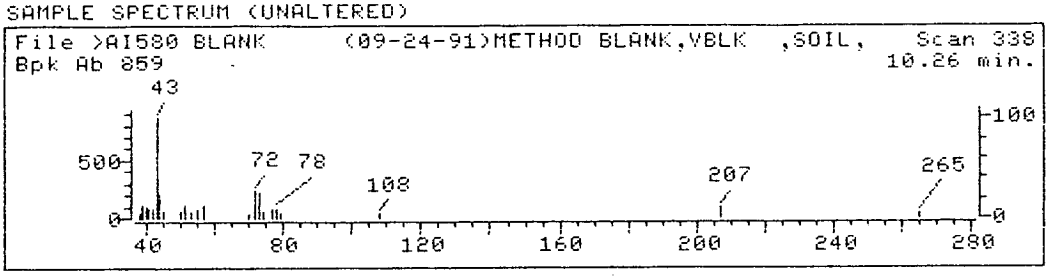
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI580::D4 Quant Output File: ^AI580::QT
Name: BLANK (09-24-91)
Misc: METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
Quant Time: 910924 17:31 Quant ID File: CCAS::BD.
Injected at: 910924 12:13 Last Calibration: 910924 12:04

Compound No: 20
Compound Name: C110 2-Butanone
Scan Number: 338
Retention Time: 10.26 min.
Quant Ion: 72.0
Area: 1742
Concentration: 5.62 UG/KG
q-value: 79

>AI580 BLANK (09-24-91)METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
35.01 301.0 CLP ADC TIC
Upslope: .20 Area Reject: 57330. Max Peaks: 1 Bunching: -1
Dnslope: 0.00 Results File IAI580 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max/ scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	24	35	48	150518	2291303	2276925	100.00	100.000

Sum of corrected areas: 2276925.

Summary of PBM Library Search and Quantitation on file :>AI580::D4

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	573301.	11.30	2.48 - 12.45
2	50.0	769004.	13.60	12.45 - 17.45
3	50.0	836817.	21.30	17.45 - 33.05

CALCULATIONS

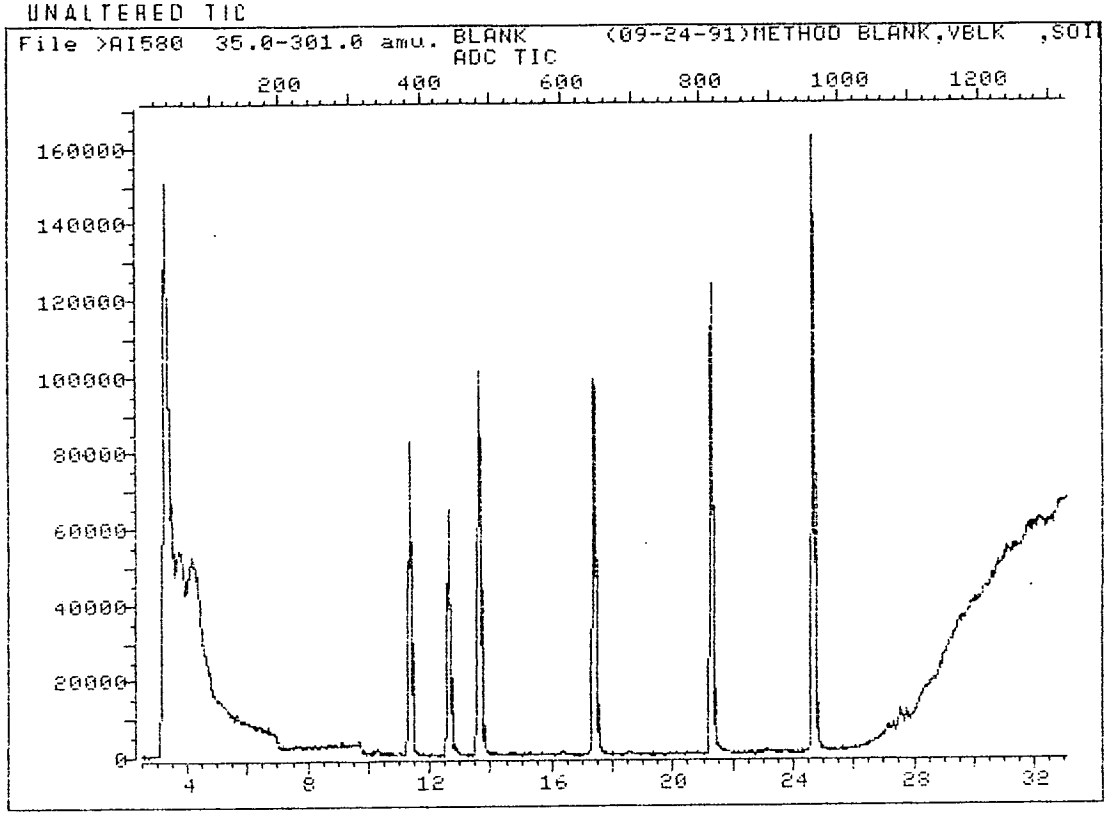
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 5.00 Amount Used (AU) = 5.00

Correction Factor = 1.00 = (AM / AU) / (DF * FS)

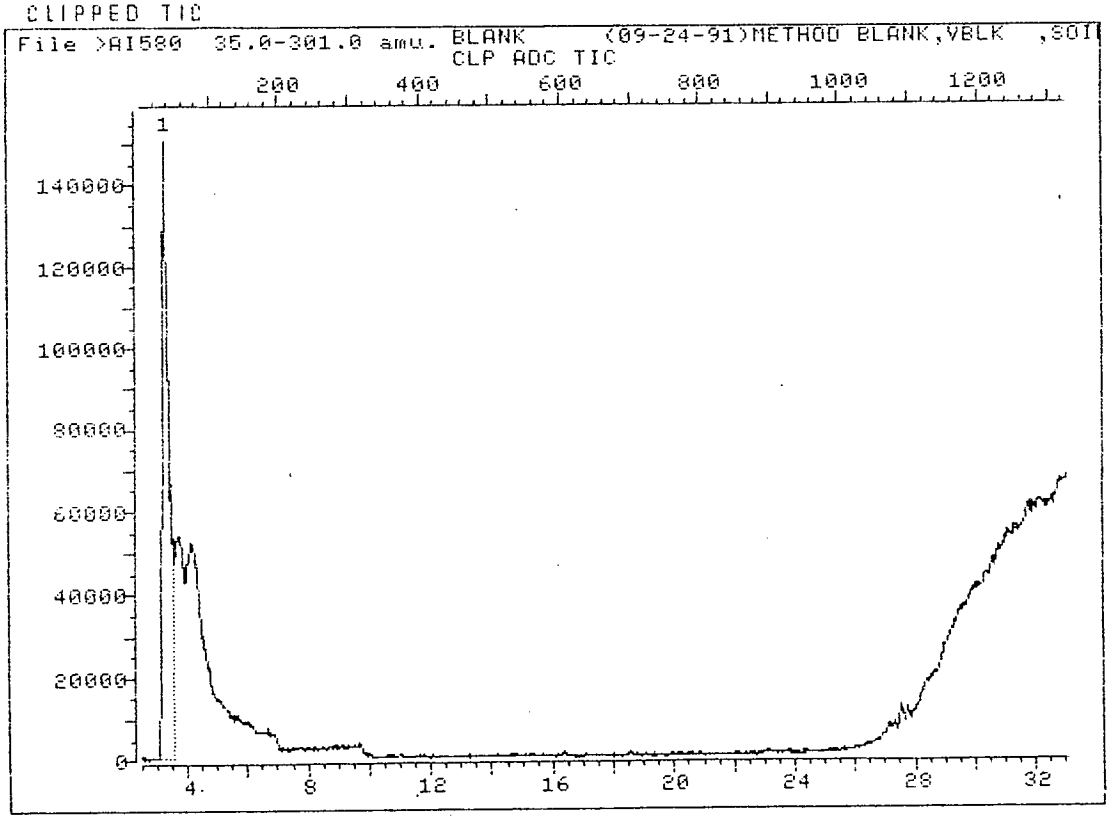
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

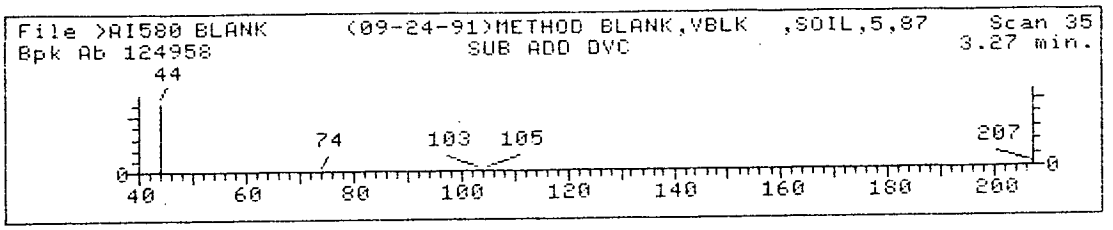
3:34 PM WED., 2 OCT., 1991

UNALTERED TIC



CLIPPED TIC





CARBON DIOXIDE
EXS #124-39-9
10-02-91

Retention time = 3.27

Area = 2276925. Tentative Concentration is 200.00

Sample file: >AI580 Spectrum #: 35

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>AI580::D4 Analyst:SCOTT MS

Name:BLANK (09-24-91) Date/Time: 9/24/91 12:13
Misc:METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.27	2276925	57330

300429

>AI580 BLANK (09-24-91)METHOD BLANK,VBLK ,SOIL,5,8701A1,SPH
35.01 301.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 7 Bunching: -1
Dnslope: 0.00 Results File IAI580 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.27	24	35	48	150518	2307872	2276925	100.00	34.037
2	11.30	376	383	402	82423	605758	573301	25.18	8.570
3	12.61	431	440	461	64836	495301	458463	20.14	6.853
4	13.60	474	483	500	101385	795061	769004	33.77	11.496
5	17.34	637	645	659	98811	754941	726045	31.89	10.853
6	21.30	808	817	836	123568	877781	836817	36.75	12.509
7	24.67	955	963	975	161572	1089838	1049002	46.07	15.681

Sum of corrected areas: 6689557.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-1MS

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765MS

Sample wt/vol: 5 (g/ml) G Lab File ID: AI574

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	10	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene		
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-1MS

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765MS

Sample wt/vol: 5 (g/ml) G Lab File ID: AI574

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

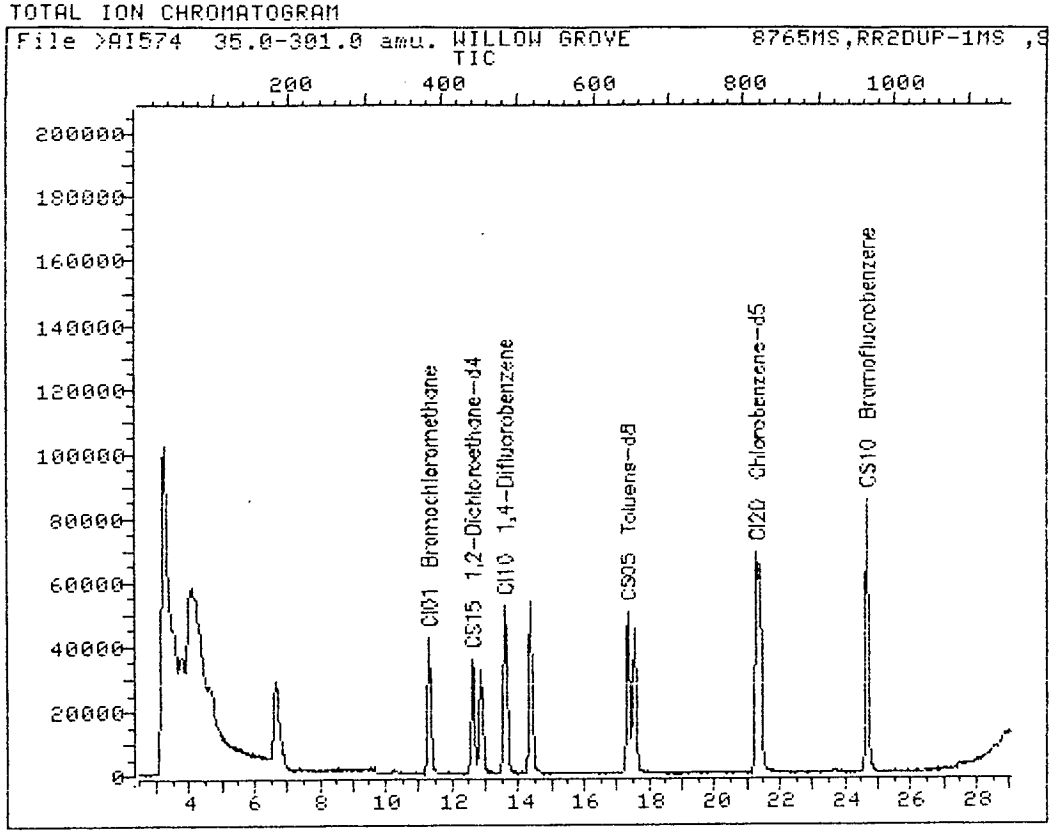
GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM



Data File: >AI574::D4 Quant Output File: ^AI574::QT
Name: WILLOW GROVE
Misc: 8765MS,RR2DUP-1MS ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 22:53
Injected at: 910923 22:23

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 22:53
Output File: ^AI574::D4 Injected at: 910923 22:23
Data File: >AI574::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8765MS,RR2DUP-1MS ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	34031	50.00	UG/KG	84
14)	C045	1,1-Dichloroethene 101%	6.66	96.0	47827	50.34	UG/KG	84
20)	C110	2-Butanone	10.22	72.0	1027	8.59	UG/KG	93
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	113538	60.25	UG/KG 120%	76
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	123305	50.00	UG/KG	91
31)	C150	Trichloroethene 95%	14.37	130.0	55411	47.59	UG/KG	88
34)	C165	Benzene 91%	12.87	78.0	86299	45.41	UG/KG	93
40)	*CI20	Chlorobenzene-d5	21.31	117.0	103701	50.00	UG/KG	97
47)	C230	Toluene 91%	17.55	92.0	58899	45.36	UG/KG	92
48)	CS05	Toluene-d8	17.34	98.0	113575	49.24	UG/KG 98%	97
49)	C235	Chlorobenzene 91%	21.40	112.0	89267	45.33	UG/KG	83
57)	CS10	Bromofluorobenzene	24.68	95.0	100541	51.12	UG/KG 102%	96

* Compound is ISTD

09-25-91

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-2MS

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766MS

Sample wt/vol: 5 (g/ml) G Lab File ID: AI588

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	BJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	B
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene		
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~
2/88

390435

9-29-91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-2MS

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766MS

Sample wt/vol: 5 (g/ml) G Lab File ID: AI588

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

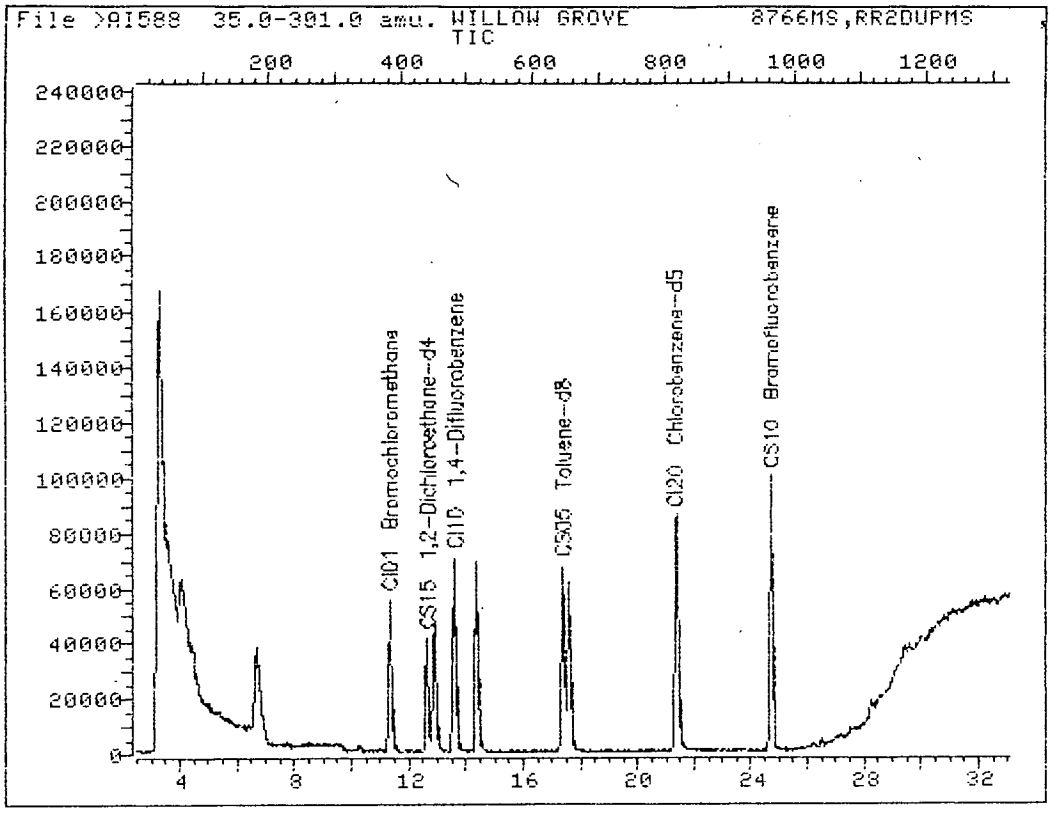
FORM I VOA-TIC

~~3/90~~ 2/92

Exp 9-4-91

300436

TOTAL ION CHROMATOGRAM



Data File: >AI588::D4 Quant Output File: ^AI588::QT
Name: WILLOW GROVE
Misc: 8766MS,RR2DUPMS ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 19:02
Injected at: 910924 18:29

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 19:02
Output File: ^AI588::QT Injected at: 910924 18:29
Data File: >AI588::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8766MS,RR2DUPMS ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.32	128.0	47737	50.00	UG/KG	84
9)	C035	Acetone	6.40	43.0	10363	9.77	UG/KG	92
14)	C045	1,1-Dichloroethene 94%	6.68	96.0	66805	47.02	UG/KG	90
20)	C110	2-Butanone	10.26	72.0	2040	10.27	UG/KG	89
21)	CS15	1,2-Dichloroethane-d4	12.63	65.0	126441	50.17	UG/KG 100%	80
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	179028	50.00	UG/KG	90
31)	C150	Trichloroethene 90%	14.36	130.0	77568	44.89	UG/KG	89
34)	C165	Benzene 93%	12.89	78.0	136776	46.71	UG/KG	86
40)	*CI20	Chlorobenzene-d5	21.30	117.0	145651	50.00	UG/KG	95
47)	C230	Toluene 88%	17.54	92.0	87751	43.95	UG/KG	94
48)	CS05	Toluene-d8	17.36	98.0	160527	48.29	UG/KG 97%	98
49)	C235	Chlorobenzene 88%	21.39	112.0	129786	44.03	UG/KG	91
57)	CS10	Bromofluorobenzene	24.69	95.0	130543	47.06	UG/KG 94%	95

* Compound is ISTD

390438

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-1MSD

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765MSD

Sample wt/vol: 5 (g/ml) G Lab File ID: AI575

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	10	BJ
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene		
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-1MSD

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8765MSD

Sample wt/vol: 5 (g/ml) G Lab File ID: AI575

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 15 Date Analyzed: 09/23/91

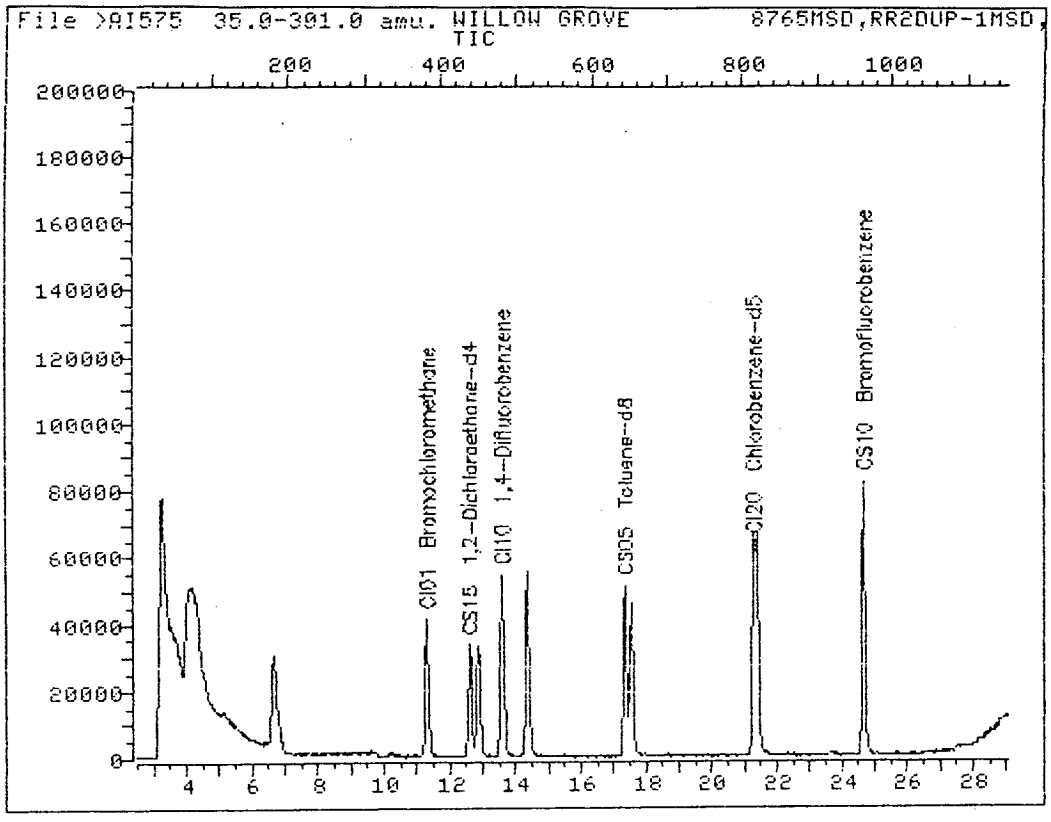
GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM



Data File: >AI575::D4 Quant Output File: ^AI575::QT
Name: WILLOW GROVE
Misc: 8765MSD,RR2DUP-1MSD,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 23:31
Injected at: 910923 23:01

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 23:31
Output File: ^AI575::D4 Injected at: 910923 23:01
Data File: >AI575::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8765MSD,RR2DUP-1MSD,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.31	128.0	34133	50.00	UG/KG	84
14)	C045	1,1-Dichloroethene 105%	6.65	96.0	50039	52.51	UG/KG	84
20)	C110	2-Butanone	10.25	72.0	1059	8.84	UG/KG	96
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	112087	59.30	UG/KG 119%	74
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	122463	50.00	UG/KG	90
31)	C150	Trichloroethene 99%	14.35	130.0	57149	49.42	UG/KG	85
34)	C165	Benzene 93%	12.88	78.0	87687	46.45	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.29	117.0	101177	50.00	UG/KG	95
47)	C230	Toluene 95%	17.56	92.0	59942	47.31	UG/KG	91
48)	CS05	Toluene-d8	17.35	98.0	113659	50.51	UG/KG	93
49)	C235	Chlorobenzene 96%	21.41	112.0	91899	47.83	UG/KG 96%	78
57)	CS10	Bromofluorobenzene	24.68	95.0	98452	51.30	UG/KG 103%	95

* Compound is ISTD

09-25-91

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

RR2DUP-2MSD

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766MSD

Sample wt/vol: 5 (g/ml) G Lab File ID: AI589

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene(Total)	6	U
67-66-3	Chloroform	6	U
107-06-02	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	15	B
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene		
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene(total)	6	U

FORM I VOA

~~3/90~~
2/88

390443

9/10.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

RR2DUP-2MSD

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 8766MSD

Sample wt/vol: 5 (g/ml) G Lab File ID: AI589

Level: (low/med) LOW Date Received: 09/14/91

% Moisture: not dec. 13 Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC

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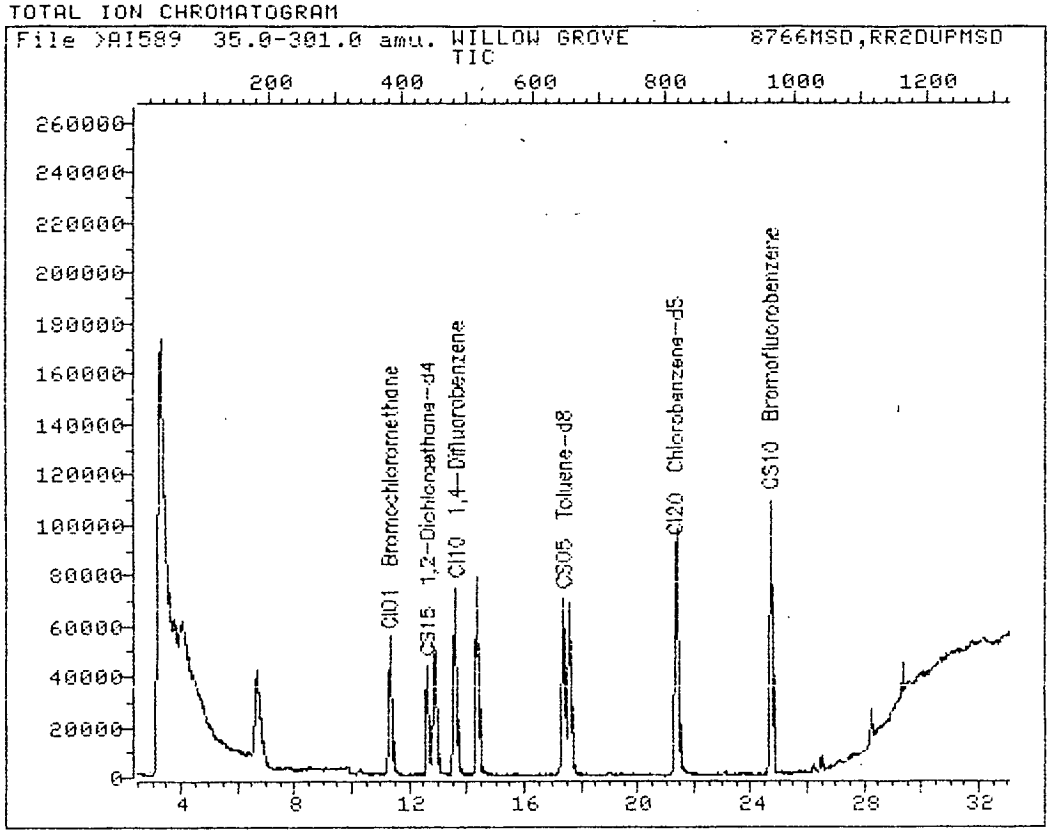
2/88

10-9-91

TOTAL ION CHROMATOGRAM



Data File: >AI589::D4 Quant Output File: ^AI589::QT
Name: WILLOW GROVE
Misc: 8766MSD,RR2DUPMSD ,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 19:45
Injected at: 910924 19:11

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 19:45
Output File: ^AI589::QT Injected at: 910924 19:11
Data File: >AI589::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: 8766MSD,RR2DUPMSD ,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	49212	50.00	UG/KG	82
9)	C035	Acetone	6.41	43.0	13987	12.79	UG/KG	86
14)	C045	1,1-Dichloroethene 102%	6.66	96.0	74473	50.85	UG/KG	92
20)	C110	2-Butanone	10.26	72.0	2594	12.66	UG/KG	88
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	133667	51.45	UG/KG 103%	79
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	186773	50.00	UG/KG	91
31)	C150	Trichloroethene 97%	14.36	130.0	87322	48.44	UG/KG	89
34)	C165	Benzene 97%	12.89	78.0	148798	48.71	UG/KG	87
40)	*CI20	Chlorobenzene-d5	21.30	117.0	156518	50.00	UG/KG	94
47)	C230	Toluene 95%	17.54	92.0	101633	47.37	UG/KG	96
48)	CS05	Toluene-d8	17.36	98.0	170694	47.78	UG/KG 96%	99
49)	C235	Chlorobenzene 93%	21.39	112.0	146907	46.37	UG/KG	87
57)	CS10	Bromofluorobenzene	24.67	95.0	140798	47.24	UG/KG 94%	91

* Compound is ISTD

09.25.91

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

LCS_V0834

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI534

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	52	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	52	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	49	
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

FORM I VOA

~~3/90~~ 2/88 390447

Q09-9-4

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

LCS_V0834

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: ~~WGV8744~~ SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI534

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/18/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

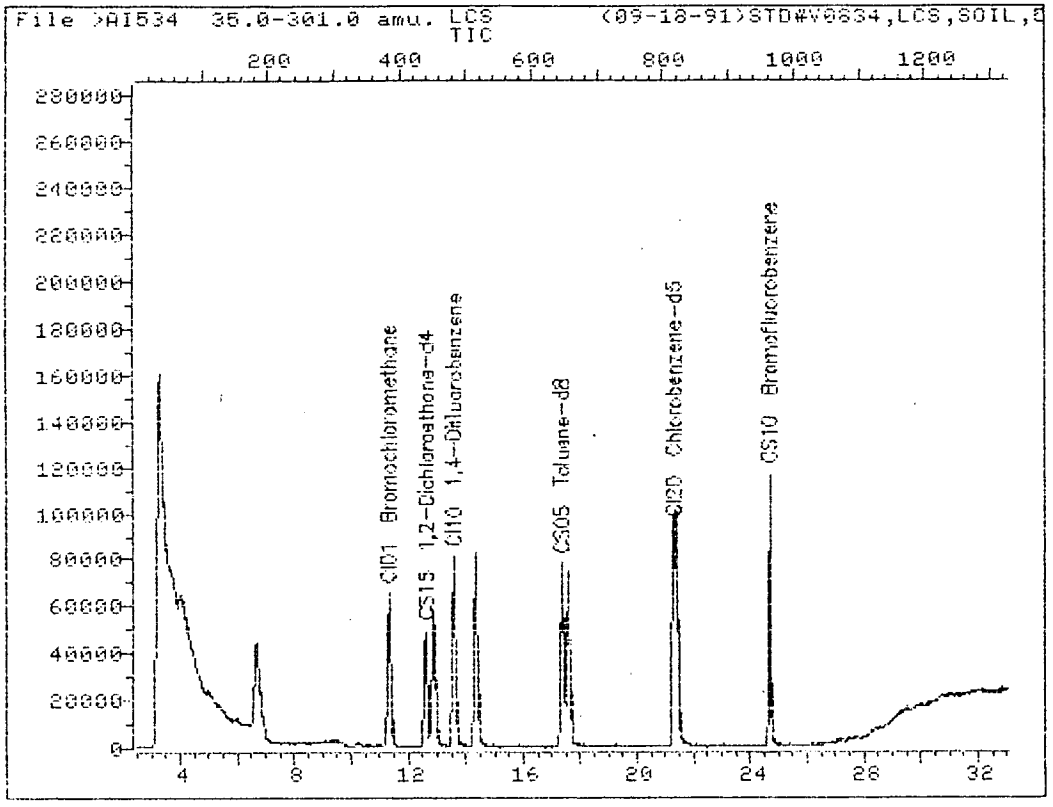
FORM I VOA-TIC

~~3/90~~
2/88

90.9-91

390448

TOTAL ION CHROMATOGRAM



Data File: >AI534::D4 Quant Output File: ^AI534::QT
Name: LCS (09-18-91)
Misc: STD#V0834,LCS,SOIL,5,8701A1,SPH

IA File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910918 14:28

Operator ID: SCOTT
Quant Time: 910918 16:43
Injected at: 910918 16:09

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910918 16:43
Output File: ^AI534::QT Injected at: 910918 16:09
Data File: >AI534::D4 Dilution Factor: 1.00000
Name: LCS (09-18-91)
Misc: STD#V0834,LCS,SOIL,5,8701A1,SPH

ID File: CCAS::RD
Title: CLP protocol-5pt calibration, 8701A1
ast Calibration: 910918 14:28

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	55409	50.00	UG/KG	79
14)	CO45	1,1-Dichloroethene 101%	6.48	96.0	79449	51.71	UG/KG	91
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	148888	51.46	UG/KG 103%	79
23)	*CI10	1,4-Difluorobenzene	13.57	114.0	204162	50.00	UG/KG	92
31)	CI50	Trichloroethene 104%	14.36	130.0	92781	51.78	UG/KG	88
34)	CI65	Benzene 99%	12.86	78.0	159761	49.37	UG/KG	88
40)	*CI20	Chlorobenzene-d5	21.27	117.0	166529	50.00	UG/KG	94
47)	CP30	Toluene 99%	17.54	92.0	106082	49.28	UG/KG	93
48)	CS05	Toluene-d8	17.33	98.0	184544	48.96	UG/KG 98%	98
49)	CP35	Chlorobenzene 94%	21.39	112.0	153034	47.24	UG/KG	84
57)	CS10	Bromofluorobenzene	24.66	95.0	152306	46.72	UG/KG 93%	96

* Compound is ISTD

09-19-91

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

LCS_V0~~845~~ 837

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI545

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	47	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	50	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	49	
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	48	
108-90-7	Chlorobenzene	48	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

FORM I VOA

~~3/90~~ 2/88

10.8.91

300452

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

LCS_V0~~845~~ 837

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI545

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/19/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

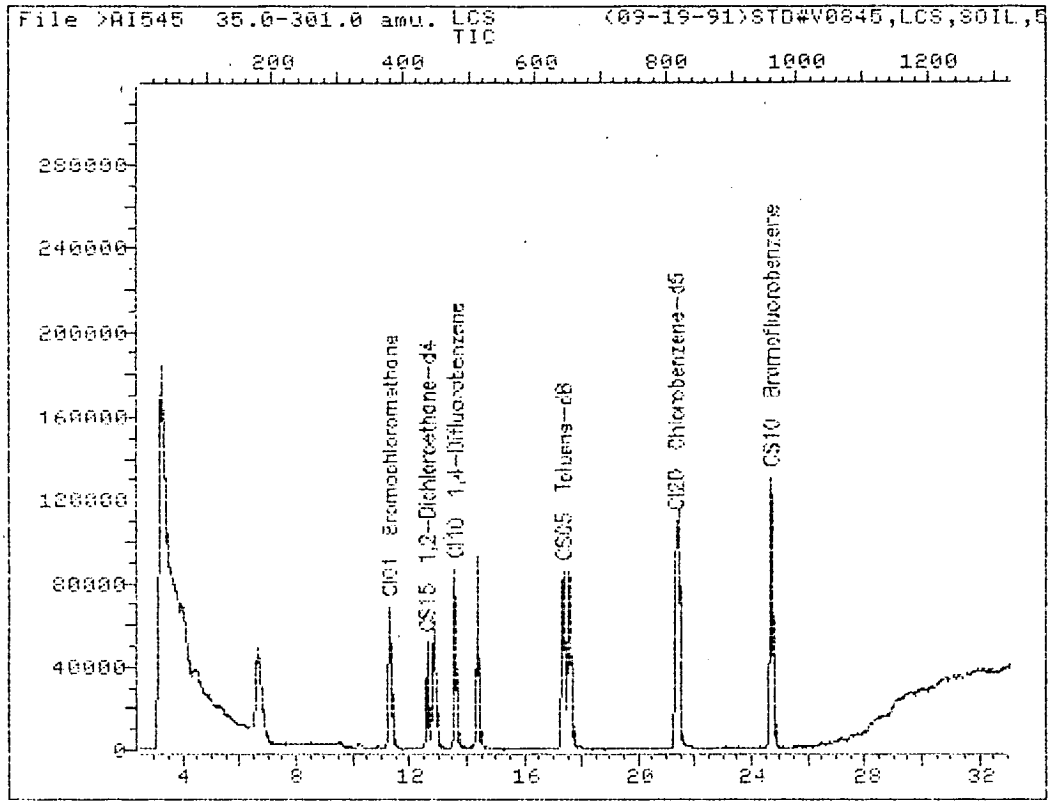
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC ~~3/90~~ 2/88

390453

10-8-91

TOTAL ION CHROMATOGRAM



Data File: >AI545::D4 Quant Output File: ^AI545::QT
Name: LCS (09-19-91)
Misc: STD#V0~~845~~ 837,LCS,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

Operator ID: SCOTT
Quant Time: 910919 18:06
Injected at: 910919 16:53

10-8-91

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910919 18:06
Output File: ^AI545::QT Injected at: 910919 16:53
Data File: >AI545::D4 Dilution Factor: 1.00000
Name: LCS (09-19-91)
Misc: STD#V0~~845~~ 337,LCS,SOIL,5,8701A1,SPH

ID File: CCAS::RD 10/8/91
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910919 15:59

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.29	128.0	61337	50.00	UG/KG	87
14)	CB45	1,1-Dichloroethene 95%	6.45	96.0	87466	47.43	UG/KG	93
21)	CS15	1,2-Dichloroethane-d4	12.60	65.0	150569	51.57	UG/KG 103%	83
23)	*CI10	1,4-Difluorobenzene	13.59	114.0	226329	50.00	UG/KG	90
31)	CI50	Trichloroethene 100%	14.35	130.0	103551	50.09	UG/KG	88
34)	CI65	Benzene 97%	12.88	78.0	191178	48.48	UG/KG	86
40)	*CI20	Chlorobenzene-d5	21.29	117.0	189380	50.00	UG/KG	96
47)	CZ30	Toluene 95%	17.54	92.0	195339	47.55	UG/KG	94
48)	CS05	Toluene-d8	17.35	98.0	208097	49.32	UG/KG 99%	98
49)	CZ35	Chlorobenzene 96%	21.39	112.0	179099	48.09	UG/KG	87
57)	CS10	Bromofluorobenzene	24.66	95.0	174161	50.80	UG/KG 102%	99

* Compound is ISTD

05-25-91

390455

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

LCS_V0842

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI563

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	48	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	50	
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

~~3/90~~ 2/88

390457

10.9.91

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

LCS_V0842

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI563

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/23/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

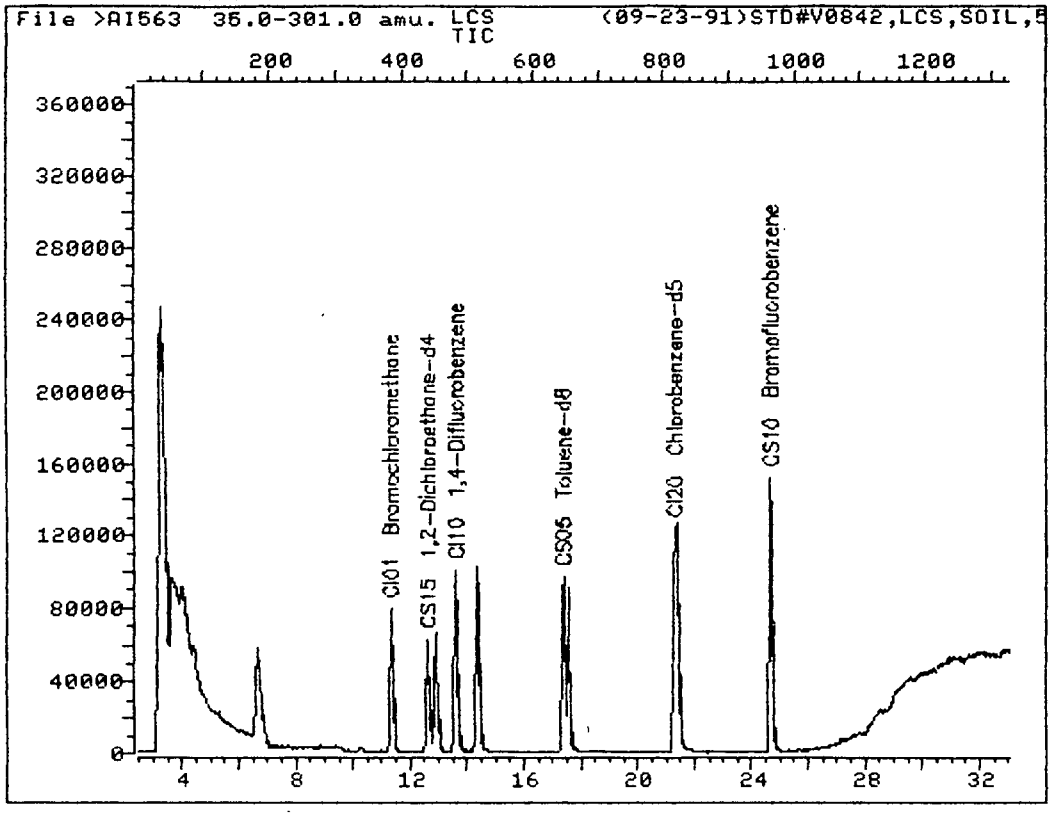
FORM I VOA-TIC

~~3/90~~
2/88

300458

Q10.9.91

TOTAL ION CHROMATOGRAM



Data File: >AI563::D4 Quant Output File: ^AI563::QT
Name: LCS (09-23-91)
Misc: STD#V0842,LCS,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

Operator ID: SCOTT
Quant Time: 910923 15:28
Injected at: 910923 14:54

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910923 15:28
Output File: ^AI563::QT Injected at: 910923 14:54
Data File: >AI563::D4 Dilution Factor: 1.00000
Name: LCS (09-23-91)
Misc: STD#V0842,LCS,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910923 13:27

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	71420	50.00	UG/KG	85
14)	C045	1,1-Dichloroethene 101%	6.66	96.0	100410	50.36	UG/KG	89
21)	CS15	1,2-Dichloroethane-d4	12.61	65.0	190339	48.13	UG/KG 96%	82
23)	*CI10	1,4-Difluorobenzene	13.60	114.0	258308	50.00	UG/KG	90
31)	C150	Trichloroethene 98%	14.36	130.0	116066	47.58	UG/KG	88
34)	C165	Benzene 100%	12.86	78.0	198575	49.88	UG/KG	89
40)	*CI20	Chlorobenzene-d5	21.30	117.0	218698	50.00	UG/KG	94
47)	C230	Toluene 98%	17.54	92.0	133783	48.85	UG/KG	95
48)	CS05	Toluene-d8	17.36	98.0	238156	48.96	UG/KG 98%	99
49)	C235	Chlorobenzene 93%	21.39	112.0	193438	46.57	UG/KG	87
57)	CS10	Bromofluorobenzene	24.67	95.0	195634	47.16	UG/KG 94%	88

* Compound is ISTD

09-23-91

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO:

LCS_V0846

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI582

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/24/91

GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	51	
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene(Total)	5	U
67-66-3	Chloroform	5	U
107-06-02	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	48	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	48	
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	48	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene(total)	5	U

IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO:

LCS_V0846

Lab Name: EA LABS Contract: 10388.08

Lab Code: EAENG Case No: WGV8744 SAS No.: SDG No:RR2B-2_2.5

Matrix: (soil/water) SOIL Lab Sample ID: 0

Sample wt/vol: 5 (g/ml) G Lab File ID: AI582

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 09/24/91

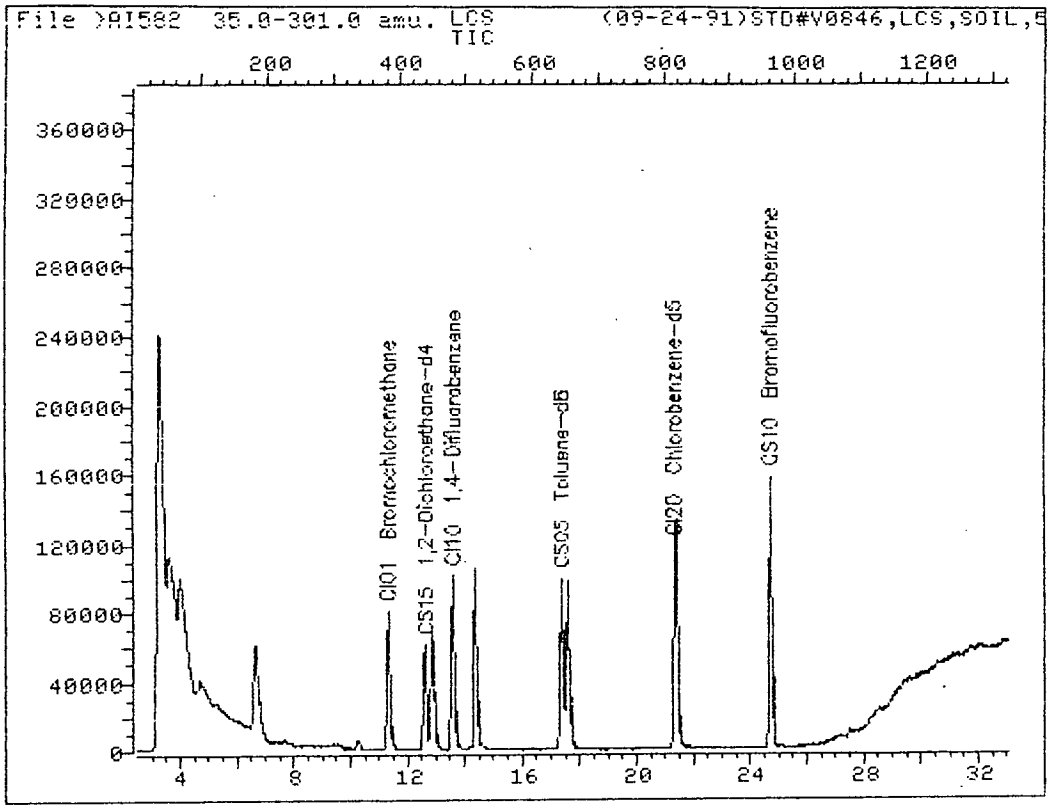
GC Column: RTX502.2 ID: .53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume:_____ (uL)

Number TICS found: 0.0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

TOTAL ION CHROMATOGRAM



Data File: >AI582::D4 Quant Output File: ^AI582::QT
Name: LCS (09-24-91)
Misc: STD#V0846,LCS,SOIL,5,8701A1,SPH

Id File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

Operator ID: SCOTT
Quant Time: 910924 14:27
Injected at: 910924 13:53

QUANT REPORT

Operator ID: SCOTT Quant Rev: 6 Quant Time: 910924 14:27
Output File: ^AI582::QT Injected at: 910924 13:53
Data File: >AI582::D4 Dilution Factor: 1.00000
Name: LCS (09-24-91)
Misc: STD#V0846,LCS,SOIL,5,8701A1,SPH

ID File: CCAS::BD
Title: CLP protocol-5pt calibration, 8701A1
Last Calibration: 910924 12:04

		Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*CI01	Bromochloromethane	11.30	128.0	71587	50.00	UG/KG	86
14)	C045	1,1-Dichloroethene 103%	6.66	96.0	109287	51.30	UG/KG	91
21)	CS15	1,2-Dichloroethane-d4	12.62	65.0	190744	50.47	UG/KG 101%	79
23)	*CI10	1,4-Difluorobenzene	13.58	114.0	260578	50.00	UG/KG	91
31)	C150	Trichloroethene 97%	14.35	130.0	121722	48.40	UG/KG	87
34)	C165	Benzene 96%	12.87	78.0	204076	47.88	UG/KG	92
40)	*CI20	Chlorobenzene-d5	21.29	117.0	216568	50.00	UG/KG	97
47)	C230	Toluene 95%	17.55	92.0	141707	47.73	UG/KG	94
48)	CS05	Toluene-d8	17.34	98.0	237544	48.06	UG/KG 96%	99
49)	C235	Chlorobenzene 93%	21.40	112.0	204093	46.56	UG/KG	85
57)	CS10	Bromofluorobenzene	24.67	95.0	198644	48.17	UG/KG 96%	90

* Compound is ISTD

09-25-91

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E. Quality Assurance Summary

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove

Analysis: TCL volatiles

EA Laboratories Report No. 911433

Method: U.S. EPA-CLP

Reviewed by: Uris Kommalan

Date: 10/15/91

1. The 10-day holding time requirement from sample receipt to analysis was met for all samples.

   ✓ Yes ____ No

2. The 14-day holding time requirement from sample collection to analysis was met for all samples.

   ✓ Yes ____ No

3. The 12-hour tuning period for BFB was met for all samples.

   ✓ Yes ____ No

4. Initial calibration criteria were met for all samples: the RSD is ≤30% for all CCC compounds, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   ✓ Yes ____ No

5. Continuing calibration criteria were met for all samples: the response factor percent deviation from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   ✓ Yes ____ No

6. Surrogate recovery limits were met for all samples.

   * SEE COMMENTS ____ Yes ✓ No

7. MS and MSD criteria were met for all samples.

   ✓ Yes ____ No

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(Revised December 27, 1989)

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: WILLOW GROVE

Analysis: TCL volatiles

EA Laboratories Report No. 9114133

Method: U.S. EPA-CLP

Reviewed by: URIS KOMMALAN

Date: 10/15/91

8. Method blank criteria were met for all samples: common laboratory contaminants are ≤5X CRQL, all other compounds are <CRQL.

✓ Yes _____ No

9. Laboratory control sample criteria were met for all samples.

✓ Yes _____ No

10. Field and equipment blanks: no target compounds were detected the samples at concentrations <5X the concentration found in the highest associated blank.

✓ Yes _____ No

Comments: BROMOFLUOROBENZENE WAS BELOW THE LOWER QC LIMIT BY 1% IN THE SAMPLE RR2S-3. THE SAMPLE WAS RUN TWICE AND THE SAME RESULT WAS OBTAINED. THEREFORE, THE SURROGATE WAS OUTSIDE OF THE QC LIMITS DUE TO MATRIX INTERFERENCES. BOTH SETS OF DATA FOR SAMPLE RR2S-3 ARE INCLUDED.

(Revised December 27, 1989)

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4. INORGANIC DATA

Report #
911433

U.S. EPA CLP INORGANIC ANALYSIS DATA QUALIFIERS (SOW 7/88) FOR INORGANIC ANALYSES

1. C (Concentration) qualifiers:

B Reported value less than Contract Required Detection Limit (CRDL) but greater than Instrument Detection Limit (IDL).

U Analyte analyzed for but not detected (concentration less than IDL).

2. Q (Quality control) qualifiers:

E Reported value estimated because of presence of interference.

M Duplicate injection precision not met.

N Spiked sample recovery not within control limits.

S Reported value determined by method of standard additions (MSA).

W Postdigestion spike for furnace AAS analysis out of control limits (85-115%) and sample absorbance less than 50% of spike absorbance.

***** Duplicate analyses not within control limits.

+ Correlation coefficient for MSA less than 0.995.

3. M (Method) qualifiers:

P Inductively Coupled Plasma (ICP)

A Flame Atomic Absorption Spectrophotometric (AAS)

F Furnace AAS

CV Cold Vapor AAS

AV Automated Cold Vapor AAS

AS Semiautomated Spectrophotometric

C Manual Spectrophotometric

T Titrimetric

NR Analyte not required to be determined.

A. Analytical Results

ENVIROFORMS/CLP 788

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

SOW No.: 3/90

Sample No.	Lab Sample ID.
ET8744	RR2B-2 2.5
ET8744D	RR2B-22.5D
ET8744S	RR2B-22.5S
ET8745	RR2B-2 5
ET8746	RR2B-2 7.5
ET8748	RR2B-2 10
ET8749	RR2B-212.5
ET8750	RR2B-3 2.5
ET8751	RR2B-3 5
ET8752	RR2B-3 7.5
ET8753	RR2B-3 10
ET8754	RR2B-3 12
ET8755	RR2B-4 2.5
ET8756	RR2B-4 5
ET8757	RR2B-4 7.5
ET8758	RR2B-4 10
ET8759	RR2B-412.5
ET8760	RR2B-1 5
ET8761	RR2B-1 7.5
ET8762	RR2B-1 10

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms, and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mary Ann Luttrell Name: MARY ANN LUTTRELL

Date: 10-15-91 Title: METALS SUPERVISOR

ENVIROFORMS/CLP 788

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

SOW No.: 3/90

Sample No.	Lab Sample ID.
ET8763	RR2B-112.5
ET8764	RR2B-1 14

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES

If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms, and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mary Ann Luttrell Name: MARY ANN LUTTRELL

Date: 10-15-91 Title: METALS SUPERVISOR

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8744

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-2 2.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 95.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10300			P
7440-36-0	Antimony	2.7	U	N	P
7440-38-2	Arsenic	4.2			F
7440-39-3	Barium	79.2			P
7440-41-7	Beryllium	0.79			P
7440-43-9	Cadmium	3.9			P
7440-70-2	Calcium	15800		*	P
7440-47-3	Chromium	23.5			P
7440-48-4	Cobalt	7.7			P
7440-50-8	Copper	21.7		E	P
7439-89-6	Iron	22000			P
7439-92-1	Lead	32.6		*	F
7439-95-4	Magnesium	6720			P
7439-96-5	Manganese	516			P
7439-97-6	Mercury	0.08	U	N	CV
7440-02-0	Nickel	20.7		*	P
7440-09-7	Potassium	1870			P
7782-49-2	Selenium	0.10	B	NW	F
7440-22-4	Silver	1.3		N	P
7440-23-5	Sodium	187	B		P
7440-28-0	Thallium	0.15	U		F
7440-62-2	Vanadium	26.4			P
7440-66-6	Zinc	59.7		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8745

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-2 5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 83.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15600			P
7440-36-0	Antimony	4.0	B	N	P
7440-38-2	Arsenic	3.5		S	F
7440-39-3	Barium	85.1			P
7440-41-7	Beryllium	0.95			P
7440-43-9	Cadmium	4.5			P
7440-70-2	Calcium	2290		*	P
7440-47-3	Chromium	20.8			P
7440-48-4	Cobalt	11.2			P
7440-50-8	Copper	12.4		E	P
7439-89-6	Iron	23200			P
7439-92-1	Lead	18.0		*	F
7439-95-4	Magnesium	2590			P
7439-96-5	Manganese	595			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	13.4		*	P
7440-09-7	Potassium	820			P
7782-49-2	Selenium	0.84	U	NW	F
7440-22-4	Silver	0.94	B	N	P
7440-23-5	Sodium	71.3	B		P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	30.9			P
7440-66-6	Zinc	38.9		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8746

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-2 7.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 92.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15700			P
7440-36-0	Antimony	2.6	U	N	P
7440-38-2	Arsenic	2.9			F
7440-39-3	Barium	139			P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	3.8			P
7440-70-2	Calcium	41700		*	P
7440-47-3	Chromium	22.0			P
7440-48-4	Cobalt	8.0			P
7440-50-8	Copper	23.0		E	P
7439-89-6	Iron	18700			P
7439-92-1	Lead	33.5		S*	F
7439-95-4	Magnesium	13900			P
7439-96-5	Manganese	1250			P
7439-97-6	Mercury	0.10		N	CV
7440-02-0	Nickel	15.4		*	P
7440-09-7	Potassium	2690			P
7782-49-2	Selenium	0.91	U	NW	F
7440-22-4	Silver	2.0		N	P
7440-23-5	Sodium	726			P
7440-28-0	Thallium	0.18	U		F
7440-62-2	Vanadium	34.2			P
7440-66-6	Zinc	55.1		EN	P
	Cyanide				

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8748

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-2 10

Level (low/med): LOW Date Received: 09/14/91

% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13800			P
7440-36-0	Antimony	3.1	U	N	P
7440-38-2	Arsenic	20.9		S	F
7440-39-3	Barium	80.8			P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	4.2			P
7440-70-2	Calcium	11700		*	P
7440-47-3	Chromium	25.0			P
7440-48-4	Cobalt	8.5			P
7440-50-8	Copper	25.3		E	P
7439-89-6	Iron	20400			P
7439-92-1	Lead	30.9		*	F
7439-95-4	Magnesium	5860			P
7439-96-5	Manganese	468			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	16.3		*	P
7440-09-7	Potassium	1680			P
7782-49-2	Selenium	0.07	B	NW	F
7440-22-4	Silver	0.88	B	N	P
7440-23-5	Sodium	139	B		P
7440-28-0	Thallium	0.15	U		F
7440-62-2	Vanadium	33.6			P
7440-66-6	Zinc	57.8		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8749

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-212.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 87.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6120			P
7440-36-0	Antimony	2.6	U	N	P
7440-38-2	Arsenic	3.2			F
7440-39-3	Barium	31.6			P
7440-41-7	Beryllium	0.50			P
7440-43-9	Cadmium	2.9			P
7440-70-2	Calcium	613		*	P
7440-47-3	Chromium	10.6			P
7440-48-4	Cobalt	4.2			P
7440-50-8	Copper	9.2		E	P
7439-89-6	Iron	15700			P
7439-92-1	Lead	30.7		*	F
7439-95-4	Magnesium	957			P
7439-96-5	Manganese	252			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	6.1		*	P
7440-09-7	Potassium	387			P
7782-49-2	Selenium	0.10	U	N	F
7440-22-4	Silver	0.43	B	N	P
7440-23-5	Sodium	28.7	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	16.7			P
7440-66-6	Zinc	24.3		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8750

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-3 2.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 88.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16800			P
7440-36-0	Antimony	4.4	B	N	P
7440-38-2	Arsenic	14.1		S	F
7440-39-3	Barium	96.6			P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	4.9			P
7440-70-2	Calcium	2290		*	P
7440-47-3	Chromium	22.3			P
7440-48-4	Cobalt	9.3			P
7440-50-8	Copper	16.8		E	P
7439-89-6	Iron	22600			P
7439-92-1	Lead	13.3		*	F
7439-95-4	Magnesium	2280			P
7439-96-5	Manganese	466			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	14.8		*	P
7440-09-7	Potassium	758			P
7782-49-2	Selenium	0.11	B	NW	F
7440-22-4	Silver	0.68	B	N	P
7440-23-5	Sodium	50.2	B		P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	31.5			P
7440-66-6	Zinc	39.4		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

ET8751

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-3 5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 83.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	3.4	U	N	P
7440-38-2	Arsenic	1.7			F
7440-39-3	Barium	69.2			P
7440-41-7	Beryllium	0.98			P
7440-43-9	Cadmium	2.8			P
7440-70-2	Calcium	355	B	*	P
7440-47-3	Chromium	7.0			P
7440-48-4	Cobalt	14.2			P
7440-50-8	Copper	11.4		E	P
7439-89-6	Iron	16200			P
7439-92-1	Lead	5.2		S*	F
7439-95-4	Magnesium	1390			P
7439-96-5	Manganese	568			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	13.9		*	P
7440-09-7	Potassium	530			P
7782-49-2	Selenium	0.11	U	NW	F
7440-22-4	Silver	0.20	U	N	P
7440-23-5	Sodium	28.6	B		P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	17.1		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8752

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-3 7.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 85.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8430			P
7440-36-0	Antimony	3.2	U	N	P
7440-38-2	Arsenic	0.17	B		F
7440-39-3	Barium	106			P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	2.2			P
7440-70-2	Calcium	234	B	*	P
7440-47-3	Chromium	2.7			P
7440-48-4	Cobalt	14.4			P
7440-50-8	Copper	1.5	B	E	P
7439-89-6	Iron	13400			P
7439-92-1	Lead	0.91		*	F
7439-95-4	Magnesium	717			P
7439-96-5	Manganese	1510			P
7439-97-6	Mercury	0.08	U	N	CV
7440-02-0	Nickel	9.9		*	P
7440-09-7	Potassium	137	B		P
7782-49-2	Selenium	0.11	U	NW	F
7440-22-4	Silver	0.47	B	N	P
7440-23-5	Sodium	47.7	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	7.0			P
7440-66-6	Zinc	22.6		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8753

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-3 10

Level (low/med): LOW Date Received: 09/14/91

% Solids: 83.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8180			P
7440-36-0	Antimony	3.0	B	N	P
7440-38-2	Arsenic	0.53	B		F
7440-39-3	Barium	190			P
7440-41-7	Beryllium	1.9			P
7440-43-9	Cadmium	2.7			P
7440-70-2	Calcium	525		*	P
7440-47-3	Chromium	5.8			P
7440-48-4	Cobalt	16.7			P
7440-50-8	Copper	2.2		E	P
7439-89-6	Iron	15700			P
7439-92-1	Lead	1.2		*	F
7439-95-4	Magnesium	915			P
7439-96-5	Manganese	1590			P
7439-97-6	Mercury	0.09	U	N	CV
7440-02-0	Nickel	15.9		*	P
7440-09-7	Potassium	112	B		P
7782-49-2	Selenium	0.08	U	NW	F
7440-22-4	Silver	0.75	B	N	P
7440-23-5	Sodium	57.3	B		P
7440-28-0	Thallium	0.16	U	W	F
7440-62-2	Vanadium	9.3			P
7440-66-6	Zinc	34.4		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8754

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-3 12

Level (low/med): LOW Date Received: 09/14/91

% Solids: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10500			P
7440-36-0	Antimony	4.9	B	N	P
7440-38-2	Arsenic	0.11	B		F
7440-39-3	Barium	225			P
7440-41-7	Beryllium	1.9			P
7440-43-9	Cadmium	2.5			P
7440-70-2	Calcium	492	B	*	P
7440-47-3	Chromium	4.6			P
7440-48-4	Cobalt	14.7			P
7440-50-8	Copper	5.2		E	P
7439-89-6	Iron	14300			P
7439-92-1	Lead	2.7		*	F
7439-95-4	Magnesium	877			P
7439-96-5	Manganese	869			P
7439-97-6	Mercury	0.09	U	N	CV
7440-02-0	Nickel	20.5		*	P
7440-09-7	Potassium	393	B		P
7782-49-2	Selenium	0.10	U	NW	F
7440-22-4	Silver	0.21	U	N	P
7440-23-5	Sodium	72.2	B		P
7440-28-0	Thallium	0.20	U		F
7440-62-2	Vanadium	6.6			P
7440-66-6	Zinc	19.0		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8755

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-4 2.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16000			P
7440-36-0	Antimony	3.6	U	N	P
7440-38-2	Arsenic	4.7			F
7440-39-3	Barium	141			P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	3.2			P
7440-70-2	Calcium	826		*	P
7440-47-3	Chromium	16.1			P
7440-48-4	Cobalt	7.8			P
7440-50-8	Copper	14.9		E	P
7439-89-6	Iron	17100			P
7439-92-1	Lead	17.7		*	F
7439-95-4	Magnesium	1590			P
7439-96-5	Manganese	1110			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	12.3		*	P
7440-09-7	Potassium	285	B		P
7782-49-2	Selenium	0.23	B	NW	F
7440-22-4	Silver	0.85	B	N	P
7440-23-5	Sodium	33.4	B		P
7440-28-0	Thallium	0.21	B	W	F
7440-62-2	Vanadium	22.2			P
7440-66-6	Zinc	36.6		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8756

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-4 5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 84.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18600			P
7440-36-0	Antimony	6.1		N	P
7440-38-2	Arsenic	2.4			F
7440-39-3	Barium	48.9			P
7440-41-7	Beryllium	0.81			P
7440-43-9	Cadmium	5.2			P
7440-70-2	Calcium	584		*	P
7440-47-3	Chromium	21.6			P
7440-48-4	Cobalt	8.3			P
7440-50-8	Copper	14.0		E	P
7439-89-6	Iron	26900			P
7439-92-1	Lead	5.9		S*	F
7439-95-4	Magnesium	2670			P
7439-96-5	Manganese	262			P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	14.5		*	P
7440-09-7	Potassium	717			P
7782-49-2	Selenium	0.10	U	NW	F
7440-22-4	Silver	0.38	B	N	P
7440-23-5	Sodium	28.7	B		P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	37.8			P
7440-66-6	Zinc	33.4		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8757

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-4 7.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 84.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12900			P
7440-36-0	Antimony	3.7	B	N	P
7440-38-2	Arsenic	2.2			F
7440-39-3	Barium	57.3			P
7440-41-7	Beryllium	0.81			P
7440-43-9	Cadmium	3.3			P
7440-70-2	Calcium	456		*	P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	6.7			P
7440-50-8	Copper	10.6		E	P
7439-89-6	Iron	17600			P
7439-92-1	Lead	6.6		S*	F
7439-95-4	Magnesium	1930			P
7439-96-5	Manganese	315			P
7439-97-6	Mercury	0.08	U	N	CV
7440-02-0	Nickel	12.0		*	P
7440-09-7	Potassium	613			P
7782-49-2	Selenium	0.08	U	NW	F
7440-22-4	Silver	0.58	B	N	P
7440-23-5	Sodium	44.9	B		P
7440-28-0	Thallium	0.19	B	W	F
7440-62-2	Vanadium	22.2			P
7440-66-6	Zinc	23.9		EN	P
	Cyanide				

Color Before: RED Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8758

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-4 10

Level (low/med): LOW Date Received: 09/14/91

% Solids: 82.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12800			P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	0.16	B		F
7440-39-3	Barium	257			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	2.2			P
7440-70-2	Calcium	839		*	P
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt	11.5			P
7440-50-8	Copper	2.5		E	P
7439-89-6	Iron	17400			P
7439-92-1	Lead	10.4		*	F
7439-95-4	Magnesium	2160			P
7439-96-5	Manganese	858			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	15.1		*	P
7440-09-7	Potassium	2300			P
7782-49-2	Selenium	0.99	U	N	F
7440-22-4	Silver	0.74	B	N	P
7440-23-5	Sodium	79.2	B		P
7440-28-0	Thallium	0.37	B	W	F
7440-62-2	Vanadium	12.0			P
7440-66-6	Zinc	22.8		EN	P
	Cyanide				

Color Before: RED Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8759

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-412.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 87.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13000			P
7440-36-0	Antimony	3.1	U	N	P
7440-38-2	Arsenic	0.15	B		F
7440-39-3	Barium	125			P
7440-41-7	Beryllium	1.9			P
7440-43-9	Cadmium	2.9			P
7440-70-2	Calcium	921		*	P
7440-47-3	Chromium	11.4			P
7440-48-4	Cobalt	11.2			P
7440-50-8	Copper	1.5	B	E	P
7439-89-6	Iron	14800			P
7439-92-1	Lead	11.2		*	F
7439-95-4	Magnesium	2950			P
7439-96-5	Manganese	180			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	16.1		*	P
7440-09-7	Potassium	3560			P
7782-49-2	Selenium	0.86	U	NW	F
7440-22-4	Silver	0.19	B	N	P
7440-23-5	Sodium	87.5	B		P
7440-28-0	Thallium	0.20	B	W	F
7440-62-2	Vanadium	12.6			P
7440-66-6	Zinc	28.4		EN	P
	Cyanide				

Color Before: RED Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8760

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-1 5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 81.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	3.9	U	N	P
7440-38-2	Arsenic	3.3		S	F
7440-39-3	Barium	43.7			P
7440-41-7	Beryllium	0.79			P
7440-43-9	Cadmium	5.6			P
7440-70-2	Calcium	674		*	P
7440-47-3	Chromium	24.5			P
7440-48-4	Cobalt	8.5			P
7440-50-8	Copper	14.9		E	P
7439-89-6	Iron	30900			P
7439-92-1	Lead	9.4		*	F
7439-95-4	Magnesium	2510			P
7439-96-5	Manganese	245			P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	12.9		*	P
7440-09-7	Potassium	634			P
7782-49-2	Selenium	0.86	U	N	F
7440-22-4	Silver	0.78	B	N	P
7440-23-5	Sodium	37.6	B		P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	43.4			P
7440-66-6	Zinc	37.4		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

ET8761

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-1 7.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 80.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18600			P
7440-36-0	Antimony	4.0	B	N	P
7440-38-2	Arsenic	3.5		S	F
7440-39-3	Barium	54.9			P
7440-41-7	Beryllium	0.85			P
7440-43-9	Cadmium	5.6			P
7440-70-2	Calcium	504	B	*	P
7440-47-3	Chromium	28.6			P
7440-48-4	Cobalt	8.0			P
7440-50-8	Copper	15.2		E	P
7439-89-6	Iron	28400			P
7439-92-1	Lead	9.3		*	F
7439-95-4	Magnesium	3060			P
7439-96-5	Manganese	263			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	14.5		*	P
7440-09-7	Potassium	912			P
7782-49-2	Selenium	0.09	U	NW	F
7440-22-4	Silver	1.0	B	N	P
7440-23-5	Sodium	60.7	B		P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	43.6			P
7440-66-6	Zinc	45.0		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8762

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-1 10

Level (low/med): LOW Date Received: 09/14/91

% Solids: 88.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10800			P
7440-36-0	Antimony	2.5	U	N	P
7440-38-2	Arsenic	1.8			F
7440-39-3	Barium	118			P
7440-41-7	Beryllium	1.0			P
7440-43-9	Cadmium	3.6			P
7440-70-2	Calcium	646		*	P
7440-47-3	Chromium	12.6			P
7440-48-4	Cobalt	9.9			P
7440-50-8	Copper	22.0		E	P
7439-89-6	Iron	18600			P
7439-92-1	Lead	4.8		S*	F
7439-95-4	Magnesium	1490			P
7439-96-5	Manganese	765			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	13.6		*	P
7440-09-7	Potassium	714			P
7782-49-2	Selenium	0.09	U	NW	F
7440-22-4	Silver	0.39	B	N	P
7440-23-5	Sodium	38.9	B		P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	14.9			P
7440-66-6	Zinc	25.2		EN	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8763

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-112.5

Level (low/med): LOW Date Received: 09/14/91

% Solids: 88.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15400			P
7440-36-0	Antimony	6.6		N	P
7440-38-2	Arsenic	0.18	B		F
7440-39-3	Barium	226			P
7440-41-7	Beryllium	2.3			P
7440-43-9	Cadmium	5.1			P
7440-70-2	Calcium	887		*	P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	12.6			P
7440-50-8	Copper	16.2		E	P
7439-89-6	Iron	31600			P
7439-92-1	Lead	5.7		S*	F
7439-95-4	Magnesium	1780			P
7439-96-5	Manganese	936			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	16.5		*	P
7440-09-7	Potassium	2600			P
7782-49-2	Selenium	0.78	U	N	F
7440-22-4	Silver	0.95		N	P
7440-23-5	Sodium	74.8	B		P
7440-28-0	Thallium	0.20	B	W	F
7440-62-2	Vanadium	20.7			P
7440-66-6	Zinc	45.0		EN	P
	Cyanide				

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

ENVIROFORMS/CLP 788

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

ET8764

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Lab Sample ID: RR2B-1 14

Level (low/med): LOW Date Received: 09/14/91

% Solids: 73.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14000			P
7440-36-0	Antimony	4.0	U	N	P
7440-38-2	Arsenic	0.20	B		F
7440-39-3	Barium	296			P
7440-41-7	Beryllium	2.3			P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	1760		*	P
7440-47-3	Chromium	18.5			P
7440-48-4	Cobalt	14.0			P
7440-50-8	Copper	23.0		E	P
7439-89-6	Iron	30800			P
7439-92-1	Lead	4.9		*	F
7439-95-4	Magnesium	3010			P
7439-96-5	Manganese	361			P
7439-97-6	Mercury	0.13	U	N	CV
7440-02-0	Nickel	15.1		*	P
7440-09-7	Potassium	3390			P
7782-49-2	Selenium	1.2	U	NW	F
7440-22-4	Silver	0.67	B	N	P
7440-23-5	Sodium	70.5	B		P
7440-28-0	Thallium	0.33	B	W	F
7440-62-2	Vanadium	23.3			P
7440-66-6	Zinc	54.1		EN	P
	Cyanide				

Color Before: RED Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:

B. Quality Control Data

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	9074.30	90.7	10000.0	9221.20	92.2	9669.00	96.7	P
Antimony	3000.0	2812.10	93.7	3000.0	2902.90	96.8	2988.70	99.6	P
Arsenic	40.0	40.37	100.9	40.0	38.87	97.2	39.02	97.6	F
Barium	10000.0	9629.80	96.3	10000.0	9844.30	98.4	10402.00	104.0	P
Beryllium	250.0	240.56	96.2	250.0	244.38	97.8	256.23	102.5	P
Cadmium	2500.0	2420.10	96.8	2500.0	2452.10	98.1	2559.60	102.4	P
Calcium	25000.0	23272.00	93.1	25000.0	23677.00	94.7	25346.00	101.4	P
Chromium	1000.0	960.55	96.1	1000.0	985.74	98.6	1035.10	103.5	P
Cobalt	2500.0	2468.80	98.8	2500.0	2530.60	101.2	2666.60	106.7	P
Copper	1250.0	1225.10	98.0	1250.0	1242.80	99.4	1298.00	103.8	P
Iron	5000.0	4869.70	97.4	5000.0	4929.80	98.6	5199.60	104.0	P
Lead	50.0	52.84	105.7	50.0	52.14	104.3	53.13	106.3	F
Magnesium	25000.0	23543.00	94.2	25000.0	23821.00	95.3	24891.00	99.6	P
Manganese	2500.0	2414.10	96.6	2500.0	2454.60	98.2	2585.70	103.4	P
Mercury	3.0	2.99	99.7	3.0	3.00	100.0	3.00	100.0	CV
Nickel	2500.0	2391.30	95.7	2500.0	2436.20	97.4	2577.30	103.1	P
Potassium	25000.0	24788.00	99.2	25000.0	24485.00	97.9	24638.00	98.6	P
Selenium	40.0	40.90	102.2	40.0	36.57	91.4	39.92	99.8	F
Silver	250.0	259.26	103.7	250.0	258.97	103.6	250.82	100.3	P
Sodium	25000.0	24875.00	99.5	25000.0	24838.00	99.4	24565.00	98.3	P
Thallium	50.0	48.45	96.9	50.0	48.96	97.9	48.28	96.6	F
Vanadium	2500.0	2310.80	92.4	2500.0	2363.80	94.6	2486.90	99.5	P
Zinc	2500.0	2392.40	95.7	2500.0	2437.80	97.5	2543.30	101.7	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				10000.0	9569.50	95.7	9262.20	92.6	P
Antimony				3000.0	3013.30	100.4	2906.20	96.9	P
Arsenic									
Barium				10000.0	10390.00	103.9	10047.00	100.5	P
Beryllium				250.0	254.43	101.8	247.39	99.0	P
Cadmium				2500.0	2547.40	101.9	2492.00	99.7	P
Calcium				25000.0	25312.00	101.2	24271.00	97.1	P
Chromium				1000.0	1031.00	103.1	1004.80	100.5	P
Cobalt				2500.0	2667.20	106.7	2561.60	102.5	P
Copper				1250.0	1286.60	102.9	1244.70	99.6	P
Iron				5000.0	5172.60	103.5	4993.20	99.9	P
Lead				50.0	49.01	98.0	49.19	98.4	F
Magnesium				25000.0	24801.00	99.2	23922.00	95.7	P
Manganese				2500.0	2572.70	102.9	2485.90	99.4	P
Mercury				3.0	3.01	100.3	3.14	104.7	CV
Nickel				2500.0	2564.80	102.6	2481.80	99.3	P
Potassium				25000.0	24266.00	97.1	24354.00	97.4	P
Selenium				40.0	39.36	98.4			F
Silver				250.0	253.07	101.2	251.83	100.7	P
Sodium				25000.0	24671.00	98.7	24247.00	97.0	P
Thallium				50.0	49.89	99.8	49.67	99.3	F
Vanadium				2500.0	2480.60	99.2	2394.80	95.8	P
Zinc				2500.0	2536.60	101.5	2472.10	98.9	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				50.0	48.62	97.2	52.99	106.0	F
Magnesium									
Manganese									
Mercury				3.0	3.19	106.3			CV
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	47.46	94.9	53.86	107.7	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	54.18	108.4	53.58	107.2	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	51.46	102.9	50.02	100.0	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	50.55	101.1	45.26	90.5	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	10072.00	100.7	10000.0	9878.80	98.8	9678.80	96.8	P
Antimony									
Arsenic	40.0	39.14	97.8	40.0	38.82	97.0	36.38	91.0	F
Barium									
Beryllium									
Cadmium									
Calcium	25000.0	26522.00	106.1	25000.0	22997.00	92.0	24258.00	97.0	P
Chromium	1000.0	998.11	99.8	1000.0	995.79	99.6	1047.00	104.7	P
Cobalt									
Copper	1250.0	1275.40	102.0	1250.0	1270.70	101.7	1305.70	104.5	P
Iron	5000.0	5368.70	107.4	5000.0	4873.80	97.5	4968.60	99.4	P
Lead	50.0	50.77	101.5	50.0	50.41	100.8	47.37	94.7	F
Magnesium	25000.0	24590.00	98.4	25000.0	23946.00	95.8	24264.00	97.1	P
Manganese	2500.0	2500.90	100.0	2500.0	2504.20	100.2	2510.00	100.4	P
Mercury									
Nickel									
Potassium									
Selenium	40.0	38.49	96.2	40.0	36.23	90.6	41.55	103.9	F
Silver	250.0	256.30	102.5	250.0	250.80	100.3	250.73	100.3	P
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				10000.0	9592.40	95.9	9805.50	98.1	P
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron				5000.0	5026.40	100.5	5099.70	102.0	P
Lead				50.0	48.15	96.3			F
Magnesium									
Manganese				2500.0	2597.90	103.9			P
Mercury									
Nickel									
Potassium									
Selenium				40.0	38.36	95.9	38.30	95.8	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0	40.05	100.1	38.73	96.8	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic	40.0	39.33	98.3	40.0	38.54	96.4	37.83	94.6	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	50.0	50.10	100.2	50.0	50.80	101.6	51.50	103.0	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	40.0	40.51	101.3	40.0	43.34	108.4			F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	36.83	92.1			F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0	43.76	109.4			F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic	40.0	39.13	97.8	40.0	39.51	98.8	39.54	98.8	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	50.0	50.43	100.9	50.0	50.54	101.1	49.33	98.7	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	40.0	40.57	101.4	40.0	39.06	97.6	36.00	90.0	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	38.58	96.4	38.52	96.3	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				50.0	50.59	101.2	50.74	101.5	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	37.78	94.4			F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic	40.0	39.33	98.3	40.0	37.90	94.8	40.34	100.8	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	50.0	51.00	102.0	50.0	52.30	104.6	50.30	100.6	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic	40.0	39.53	98.8	40.0	41.27	103.2	39.89	99.7	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony				120.0	115.50	96.2	84.02	70.0
Arsenic	10.0	9.77	97.7					
Barium								
Beryllium				10.0	10.64	106.4	10.32	103.2
Cadmium				10.0	9.94	99.4	8.33	83.3
Calcium								
Chromium				20.0	23.98	119.9	20.39	102.0
Cobalt				100.0	111.57	111.6	108.92	108.9
Copper				50.0	60.72	121.4	59.25	118.5
Iron					224.13		220.48	
Lead	3.0	2.57	85.7					
Magnesium								
Manganese				30.0	33.12	110.4	32.44	108.1
Mercury								
Nickel				80.0	88.25	110.3	82.45	103.1
Potassium								
Selenium								
Silver				20.0	24.49	122.4	18.96	94.8
Sodium								
Thallium	5.0	4.47	89.4					
Vanadium				100.0	105.14	105.1	101.24	101.2
Zinc				40.0	44.96	112.4	40.89	102.2

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.71	107.1					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium				20.0	18.56	92.8	20.78	103.9
Cobalt								
Copper				50.0	57.73	115.5	60.36	120.7
Iron								
Lead	3.0	2.89	96.3					
Magnesium								
Manganese				30.0	32.28	107.6	33.10	110.3
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.38	107.6					
Silver				20.0	24.90	124.5	27.67	138.4
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.18	101.8					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	2.30	76.7					
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.60	112.0					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	9.98	99.8					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	2.70	90.0					
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

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CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	9.74	97.4					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	3.70	123.3					
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	12.0	U	12.0	U	16.8	B	12.0	U	3.031	B	P
Antimony	34.0	U	34.0	U	34.0	U	34.0	U	3.400	U	P
Arsenic	1.0	B	1.0	U	1.1	B			0.100	U	F
Barium	5.0	U	5.0	U	5.0	U	5.7	B	0.500	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	0.500	U	P
Calcium	18.0	U	18.0	U	18.0	U	18.0	U	7.163	B	P
Chromium	4.0	U	4.0	U	4.0	U	4.0	U	0.400	U	P
Cobalt	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Copper	2.0	U	2.0	U	6.4	B	4.9	B	0.380	B	P
Iron	3.0	U	3.0	U	3.9	B	3.0	U	0.312	B	P
Lead	-1.4	B	-1.6	B	-1.5	B	-1.4	B	-0.130	B	F
Magnesium	30.0	U	30.0	U	77.7	B	55.4	B	4.575	B	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U			CV
Nickel	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Potassium	-100.3	B	110.0	B	-356.8	B	-133.8	B	6.900	U	P
Selenium	1.1	B	1.0	U	1.0	U	1.0	U	0.100	U	F
Silver	2.0	U	2.0	U	2.0	U	-2.2	B	0.200	U	P
Sodium	136.0	U	136.0	U	136.0	U	-212.9	B	19.944	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.200	U	F
Vanadium	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	1.793	B	P
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			12.0	U							P
Antimony			34.0	U							P
Arsenic											
Barium			5.0	U							P
Beryllium			1.0	U							P
Cadmium			5.0	U							P
Calcium			18.0	U							P
Chromium			4.0	U							P
Cobalt			9.0	U							P
Copper			2.0	U							P
Iron			3.0	U							P
Lead			-1.0	B	-1.1	B	-1.3	B			F
Magnesium			30.0	U							P
Manganese			1.0	U							P
Mercury			0.2	U	0.2	U					CV
Nickel			9.0	U							P
Potassium			-86.8	B							P
Selenium											
Silver			2.0	U							P
Sodium			136.0	U							P
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium			3.0	U							P
Zinc			5.0	U							P
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U	2.1	B			F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	12.0	U	12.0	U	12.0	U	12.0	U			P
Antimony											
Arsenic	1.0	U	1.0	U	1.0	U					F
Barium											
Beryllium											
Cadmium											
Calcium	20.7	B	18.0	U	19.7	B					P
Chromium	4.0	U	-4.1	B	4.0	U					P
Cobalt											
Copper	2.0	U	2.0	U	4.6	B					P
Iron	3.0	U	3.0	U	3.2	B	3.0	U			P
Lead	1.0	U	1.0	U	1.0	U	1.0	U			F
Magnesium	38.7	B			47.9	B					P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U			P
Mercury											
Nickel											
Potassium											
Selenium	1.0	U	1.0	U	1.0	U	1.0	U			F
Silver	3.1	B	2.0	U	5.3	B					P
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			12.0	U							P
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron			3.0	U							P
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U	1.0	U	1.0	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.0	U	1.0	U	1.0	U	1.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	-1.9	B	-1.7	B	-1.5	B					F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	1.0	U	1.0	U			1.0	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.0	U	1.2	B	2.9	B	4.2	B			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	18.3		1.0	U	1.0	U	1.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	1.0	U	1.0	U	1.0	U					F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			3.6	B	2.5	B					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			1.0	U							F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	-2.4	B	-1.9	B	-3.0	B					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U					F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.0	U	1.0	U	1.0	U					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	432790	430590.0	86.1	433950	429710.0	85.9
Antimony								
Arsenic								
Barium	0	500	77	533.4	106.7	81	536.9	107.4
Beryllium	0	500	1	445.0	89.0	1	445.5	89.1
Cadmium	0	1000	44	926.6	92.7	41	933.1	93.3
Calcium	500000	500000	470540	459820.0	92.0	474970	463300.0	92.7
Chromium	0	500	9	459.9	92.0	8	465.5	93.1
Cobalt	0	500	-2	434.8	87.0	-6	441.9	88.4
Copper	0	500	19	494.7	98.9	19	492.8	98.6
Iron	200000	200000	179800	176530.0	88.3	180060	176870.0	88.4
Lead								
Magnesium	500000	500000	471240	465710.0	93.1	473400	466260.0	93.3
Manganese	0	500	71	521.0	104.2	71	521.4	104.3
Mercury								
Nickel	0	1000	12	880.4	88.0	8	884.3	88.4
Potassium								
Selenium								
Silver	0	1000	25	953.1	95.3	18	939.2	93.9
Sodium								
Thallium								
Vanadium	0	500	-3	448.0	89.6	-1	447.7	89.5
Zinc	0	1000	32	932.2	93.2	27	936.1	93.6

ENVIROFORMS/CLP 788

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	455450	454570.0	90.9	441620	446570.0	89.3
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium	500000	500000	452540	445910.0	89.2	453630	459660.0	91.9
Chromium	0	500	3	461.3	92.3	3	484.0	96.8
Cobalt								
Copper	0	500	18	494.9	99.0	20	509.3	101.9
Iron	200000	200000	175070	173410.0	86.7	177090	179000.0	89.5
Lead								
Magnesium	500000	500000	462970	460660.0	92.1	458050	462880.0	92.6
Manganese	0	500	50	497.8	99.6	51	518.4	103.7
Mercury								
Nickel								
Potassium								
Selenium								
Silver	0	1000	26	951.9	95.2	25	946.4	94.6
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8744S

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 95.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	17.7275		2.7025	U	49.61	35.7	N	P
Arsenic	75-125	7.2181		4.1695		3.95	77.2		F
Barium	75-125	275.2395		79.1551		198.45	98.8		P
Beryllium	75-125	5.5501		0.7877		4.96	96.0		P
Cadmium	75-125	8.5840		3.9296		4.96	93.8		P
Calcium									NR
Chromium	75-125	42.0207		23.4979		19.84	93.4		P
Cobalt	75-125	55.8506		7.7437		49.61	97.0		P
Copper	75-125	41.9363		21.7127		24.81	81.5		P
Iron									NR
Lead		23.2733		32.6140		1.98	-471.8		F
Magnesium									NR
Manganese		538.3935		515.6138		49.61	45.9		P
Mercury	75-125	0.5640		0.0819	U	0.38	148.4	N	CV
Nickel	75-125	62.0065		20.6818		49.61	83.3		P
Potassium									NR
Selenium	75-125	0.7498		0.0986	B	0.99	65.8	N	F
Silver	75-125	3.3512		1.2826		4.96	41.7	N	P
Sodium									NR
Thallium	75-125	5.1160		0.1517	U	4.94	103.6		F
Vanadium	75-125	75.7541		26.3728		49.61	99.5		P
Zinc	75-125	92.0161		59.7371		49.61	65.1	N	P
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8744A

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)		Spike Added (SA)	%R	Q	M
Aluminum							109.4		NR
Antimony		2188.50		34.00	U	2000.0 ~~1000.0~~	~~218.8~~		P
Arsenic								10/15/94	NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver		68.90		16.14		50.0	105.5		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc		2969.60		751.56		1000.0	221.8		P
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

6
DUPLICATES

SAMPLE NO.

ET8744D

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 95.9 % Solids for Duplicate: 95.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		10297.1740		9924.8399		3.7		P
Antimony		2.7025	U	2.7746	U			P
Arsenic		4.1695		3.7389		10.9		F
Barium	15.9	79.1551		73.9516		6.8		P
Beryllium	0.4	0.7877		0.7568		4.0		P
Cadmium		3.9296		3.8038		3.3		P
Calcium	397.4	15823.7090		19654.6430		21.6	*	P
Chromium		23.4979		21.2035		10.3		P
Cobalt	4.0	7.7437		7.8192		1.0		P
Copper		21.7127		24.8668		13.5		P
Iron		22005.9880		20028.3950		9.4		P
Lead		32.6140		21.6401		40.5	*	F
Magnesium		6718.4792		7764.2572		14.4		P
Manganese		515.6138		532.8012		3.3		P
Mercury	0.1	0.0819	U	0.1016	U			CV
Nickel	3.2	20.6818		13.4779		42.2	*	P
Potassium	397.4	1867.6396		1692.6577		9.8		P
Selenium		0.0986	B	0.1057	B	7.0		F
Silver	0.8	1.2826		1.1084		14.6		P
Sodium		187.2806	B	157.6044	B	17.2		P
Thallium		0.1517	U	0.1347	U			F
Vanadium		26.3728		25.7400		2.4		P
Zinc		59.7371		57.4803		3.9		P
Cyanide								

ENVIROFORMS/CLP 788

8

STANDARD ADDITION RESULTS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
ET8745	As	0.113	10	0.145	20.	0.166	30.	0.196	42.4	0.9971	
ET8748	As	0.130	10	0.156	20.	0.176	30.	0.200	57.0	0.9989	
ET8750	As	0.081	10	0.110	20.	0.137	30.	0.163	30.0	0.9997	
ET8760	As	22.87	10	36.64	20.	48.84	30.	59.84	19.2	0.9987	
ET8761	As	44.28	10	57.71	20.	69.32	30.	80.87	36.9	0.9993	
ET8746	Pb	31.20	10	40.10	20.	49.70	30.	56.60	36.7	0.9979	
ET8751	Pb	4.600	10	16.20	20.	26.90	30.	36.80	4.7	0.9994	
ET8756	Pb	6.200	10	17.20	20.	27.50	30.	37.80	6.1	0.9999	
ET8757	Pb	8.200	10	19.20	20.	29.00	30.	39.00	8.3	0.9997	
ET8762	Pb	5.700	10	17.00	20.	27.50	30.	37.90	5.6	0.9998	
ET8763	Pb	7.200	10	18.70	20.	28.30	30.	38.60	7.4	0.9994	

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: 4P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200.0		P
Antimony	206.83		60.0	27.0	P
Arsenic	188.98		10.0	46.0	P
Barium	455.40		200.0		
Beryllium	313.04		5.0	1.0	P
Cadmium	214.44		5.0	4.0	P
Calcium	317.93		5000.0		
Chromium	267.72		10.0		
Cobalt	228.62		50.0		
Copper	324.76		25.0		
Iron	259.94		100.0		
Lead	220.35		3.0	42.0	P
Magnesium	279.55		5000.0		
Manganese	257.61		15.0		
Mercury			0.2		
Nickel	231.60		40.0		
Potassium	766.49		5000.0		
Selenium	196.03		5.0	48.0	P
Silver	328.07		10.0		
Sodium	589.00		5000.0	61.0	P
Thallium	190.80		10.0	82.0	P
Vanadium	292.40		50.0		
Zinc	213.86		20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 4F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium	276.80	BZ	10.0	2.0	F
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 3F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.70	BD	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BD	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.2	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide					

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: 5P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	396.15		200.0	12.0	P
Antimony	206.83		60.0	34.0	P
Arsenic	193.70		10.0	90.0	P
Barium	233.53		200.0	5.0	P
Beryllium	313.04		5.0	1.0	P
Cadmium	226.50		5.0	5.0	P
Calcium	317.93		5000.0	18.0	P
Chromium	267.72		10.0	4.0	P
Cobalt	228.62		50.0	9.0	P
Copper	324.75		25.0	2.0	P
Iron	259.94		100.0	3.0	P
Lead	220.35		3.0	65.0	P
Magnesium	279.08		5000.0	30.0	P
Manganese	257.61		15.0	1.0	P
Mercury			0.2		
Nickel	231.60		40.0	9.0	P
Potassium	766.49		5000.0	69.0	P
Selenium	196.03		5.0	90.0	P
Silver	328.07		10.0	2.0	P
Sodium	589.59		5000.0	136.0	P
Thallium	190.80		10.0	54.0	P
Vanadium	292.40		50.0	3.0	P
Zinc	213.86		20.0	5.0	P

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0	10.0	AS

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 5F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.70	BZ	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8744

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 2F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BZ	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

C. Quality Assurance Summary

400072

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR U.S. EPA CLP PROTOCOLS

Project: Willow Grove Analysis: Metals

EA Laboratories Report No. _____ Method: U.S. EPA CLP SOW 7/88

Reviewed by: M A. Fitzwell Date: 10-15-91

1. All metals (except mercury) were determined within six months of sample collection. Mercury was analyzed within 26 days.

   ✓ Yes ____ No

2. ICP initial calibration: A calibration blank and at least one standard were analyzed daily, and the initial calibration verification standard was within 90% to 110% recovery.

   ✓ Yes ____ No

3. AA calibration: A calibration blank and at least three standards were used to establish the curve, and the initial calibration verification standard was within 90% to 110% recovery (80% to 120% for mercury).

   ✓ Yes ____ No

4. Calibration verification (CV): A CV standard prepared from a source other than that of the initial calibration was used, and the result was within 90 to 110% of the true value for both ICP and AA work (80% to 120% for mercury). ACCV was run at a frequency of 10%, or every two hours, and at the end of the run.

   ✓ Yes ____ No

5. A preparation blank was run with each batch, and all analytes were below the detection limits.

   ✓ Yes ____ No

6. Matrix spike and duplicate criteria were met for all samples.

   ✓ Yes ____ No

(Issued January 29, 1991)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR U.S. EPA CLP PROTOCOLS

Project: Willow Grove Analysis: Metals

EA Laboratories Report No.: _____ Method: U.S. EPA CLP SOW 7/88

Reviewed by: M.A. Futtell Date: 10-15-91

7. Laboratory control sample (LCS) criteria were met for all samples.

✓ Yes ____ No

Comments: _____

(Issued January 29, 1991)

5. INORGANIC DATA

Report #
911433

A. Analytical Results

ENVIROFORMS/CLP 788

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

SOW No.: 3/90

Sample No.	Lab Sample ID.
ET8765	RR2DUP-1
ET8765D	RR2DUP-1D
ET8765S	RR2DUP-1S
ET8766	RR2DUP-2
ET8766D	RR2DUP-2D
ET8766S	RR2DUP-2S
ET8767	RR2S-1
ET8768	RR2S-2
ET8769	RR2S-3
ET8770	RR2S-4

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms, and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mary Ann Luttrell Name: MARY ANN LUTTRELL

Date: 10-10-91 Title: METALS SUPERVISOR

ENVIROFORMS/CLP 788

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

SOW No.: 3/90

Sample No.	Lab Sample ID.
ET8771	RINSATE-2
ET8771D	RINSATE-2D
ET8771S	RINSATE-2S
ET8772	FIELD-2

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms, and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mary Ann Luttrell Name: MARY ANN LUTTRELL

Date: 10-11-91 Title: METALS SUPERVISOR

500003

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8765

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2DUP-1

Level (low/med): LOW Date Received: 09/14/91

% Solids: 84.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8020		*	P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic	8.3		N	F
7440-39-3	Barium	73.8			P
7440-41-7	Beryllium	0.89			P
7440-43-9	Cadmium	2.3			P
7440-70-2	Calcium	236	B		P
7440-47-3	Chromium	2.9		*	P
7440-48-4	Cobalt	12.6			P
7440-50-8	Copper	1.7	B	E	P
7439-89-6	Iron	12300			P
7439-92-1	Lead	1.5		N*	F
7439-95-4	Magnesium	631			P
7439-96-5	Manganese	1080			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	14.4			P
7440-09-7	Potassium	117	B	E	P
7782-49-2	Selenium	0.16	B	N	F
7440-22-4	Silver	0.44	B	N	P
7440-23-5	Sodium	77.7	B		P
7440-28-0	Thallium	0.19	U	NW	F
7440-62-2	Vanadium	7.1			P
7440-66-6	Zinc	24.0		E	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts: NO

Comments:
RR2DUP-1

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8766

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2DUP-2

Level (low/med): LOW Date Received: 09/14/91

% Solids: 87.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7920		*	P
7440-36-0	Antimony	3.8	U	N	P
7440-38-2	Arsenic	6.5		N	F
7440-39-3	Barium	157			P
7440-41-7	Beryllium	2.4			P
7440-43-9	Cadmium	1.7			P
7440-70-2	Calcium	1590			P
7440-47-3	Chromium	6.0		*	P
7440-48-4	Cobalt	7.3			P
7440-50-8	Copper	25.9		E	P
7439-89-6	Iron	9820			P
7439-92-1	Lead	2.0		N*	F
7439-95-4	Magnesium	1960			P
7439-96-5	Manganese	157			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	12.8			P
7440-09-7	Potassium	2920		E	P
7782-49-2	Selenium	0.11	U	N	F
7440-22-4	Silver	0.37	B	N	P
7440-23-5	Sodium	112	B		P
7440-28-0	Thallium	0.21	U	NW	F
7440-62-2	Vanadium	6.8			P
7440-66-6	Zinc	27.5		E	P
	Cyanide				

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: YES

Comments:
RR2DUP-2

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8767

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2S-1

Level (low/med): LOW Date Received: 09/14/91

% Solids: 74.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23000		*	P
7440-36-0	Antimony	6.0	B	N	P
7440-38-2	Arsenic	9.9		N	F
7440-39-3	Barium	128			P
7440-41-7	Beryllium	2.4			P
7440-43-9	Cadmium	5.4			P
7440-70-2	Calcium	1680			P
7440-47-3	Chromium	18.2		*	P
7440-48-4	Cobalt	14.8			P
7440-50-8	Copper	30.5		E	P
7439-89-6	Iron	29300			P
7439-92-1	Lead	18.3		N*	F
7439-95-4	Magnesium	2890			P
7439-96-5	Manganese	669			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	20.4			P
7440-09-7	Potassium	2570		E	P
7782-49-2	Selenium	0.14	B	N	F
7440-22-4	Silver	1.1		N	P
7440-23-5	Sodium	104	B		P
7440-28-0	Thallium	0.24	U	NW	F
7440-62-2	Vanadium	26.4			P
7440-66-6	Zinc	64.1		E	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: YES

Comments:
RR2S-1

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8768

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2S-2

Level (low/med): LOW Date Received: 09/14/91

% Solids: 92.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8930		*	P
7440-36-0	Antimony	3.1	U	N	P
7440-38-2	Arsenic	8.1		N	F
7440-39-3	Barium	148			P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	2.9			P
7440-70-2	Calcium	992			P
7440-47-3	Chromium	11.2		*	P
7440-48-4	Cobalt	12.0			P
7440-50-8	Copper	21.7		E	P
7439-89-6	Iron	15900			P
7439-92-1	Lead	15.9		N*	F
7439-95-4	Magnesium	2850			P
7439-96-5	Manganese	877			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	17.7			P
7440-09-7	Potassium	3100		E	P
7782-49-2	Selenium	0.11	U	N	F
7440-22-4	Silver	0.72	B	N	P
7440-23-5	Sodium	78.3	B		P
7440-28-0	Thallium	0.21	U	N	F
7440-62-2	Vanadium	11.0			P
7440-66-6	Zinc	59.6		E	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: YES

Comments:
RR2S-2

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8769

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2S-3

Level (low/med): LOW Date Received: 09/14/91

% Solids: 72.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6910		*	P
7440-36-0	Antimony	3.4	U	N	P
7440-38-2	Arsenic	0.50	U	N	F
7440-39-3	Barium	183			P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	2.6			P
7440-70-2	Calcium	7320			P
7440-47-3	Chromium	8.6		*	P
7440-48-4	Cobalt	6.7			P
7440-50-8	Copper	20.4		E	P
7439-89-6	Iron	12600			P
7439-92-1	Lead	30.3		N*+	F
7439-95-4	Magnesium	2200			P
7439-96-5	Manganese	841			P
7439-97-6	Mercury	0.15			CV
7440-02-0	Nickel	13.9			P
7440-09-7	Potassium	973		E	P
7782-49-2	Selenium	0.27	B	NW	F
7440-22-4	Silver	0.60	B	N	P
7440-23-5	Sodium	63.2	B		P
7440-28-0	Thallium	0.20	U	N	F
7440-62-2	Vanadium	15.7			P
7440-66-6	Zinc	78.7		E	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:
RR2S-3

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8770

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Lab Sample ID: RR2S-4

Level (low/med): LOW Date Received: 09/14/91

% Solids: 65.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6560		*	P
7440-36-0	Antimony	5.0	U	N(R)	P
7440-38-2	Arsenic	9.7		N(L)	F
7440-39-3	Barium	258			P
7440-41-7	Beryllium	1.9			P
7440-43-9	Cadmium	3.6			P
7440-70-2	Calcium	10400			P
7440-47-3	Chromium	12.0		*	P
7440-48-4	Cobalt	25.6			P
7440-50-8	Copper	41.7		E	P
7439-89-6	Iron	16300			P
7439-92-1	Lead	395		N*(L)	F
7439-95-4	Magnesium	2440			P
7439-96-5	Manganese	1480			P
7439-97-6	Mercury	0.16			CV
7440-02-0	Nickel	24.1			P
7440-09-7	Potassium	1860		E	P
7782-49-2	Selenium	0.28	B	NW(L)	F
7440-22-4	Silver	0.97	B	N(BT)(L)	P
7440-23-5	Sodium	110	B		P
7440-28-0	Thallium	0.27	U	N(L)	F
7440-62-2	Vanadium	12.5			P
7440-66-6	Zinc	1100		E	P
	Cyanide				

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:
RR2S-4

ENVIROFORMS/CLP 788

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

ET8771

Lab Name: EA LABORATORIES | Contract:

Lab Code: Case No.: | SAS No.: SDG No.: ET8771

Matrix (soil/water): WATER | Lab Sample ID: RINSATE-2

Level (low/med): LOW | Date Received: 09/14/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25.5	B		P
7440-36-0	Antimony	34.0	U		P
7440-38-2	Arsenic	1.5	B		F
7440-39-3	Barium	5.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	217	B		P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	9.0	U		P
7440-50-8	Copper	8.2	B		P
7439-89-6	Iron	20.9	B		P
7439-92-1	Lead	1.1	B		F
7439-95-4	Magnesium	75.0	B		P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	9.0	U		P
7440-09-7	Potassium	69.0	U		P
7782-49-2	Selenium	1.0	B		F
7440-22-4	Silver	8.3	B	N	P
7440-23-5	Sodium	136	U		P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	3.4	B		P
7440-66-6	Zinc	17.5	B		P
	Cyanide				

Color Before: COLORLESS | Clarity Before: CLEAR | Texture:

Color After: COLORLESS | Clarity After: CLEAR | Artifacts:

Comments:
RINSEATE-2

ENVIROFORMS/CLP 788

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ET8772

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Matrix (soil/water): WATER Lab Sample ID: FIELD-2

Level (low/med): LOW Date Received: 09/14/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	287			P
7440-36-0	Antimony	34.0	U		P
7440-38-2	Arsenic	3.1	B		F
7440-39-3	Barium	218			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	45500			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	9.0	U		P
7440-50-8	Copper	15.4	B		P
7439-89-6	Iron	3450			P
7439-92-1	Lead	2.7	B		F
7439-95-4	Magnesium	23700			P
7439-96-5	Manganese	105			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	9.0	U		P
7440-09-7	Potassium	1440	B		P
7782-49-2	Selenium	1.9	B		F
7440-22-4	Silver	10.6		N	P
7440-23-5	Sodium	13200			P
7440-28-0	Thallium	2.0	U		F
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	39.0			P
	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
FIELD-2

B. Quality Control Data

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	9095.40	91.0	10000.0	9196.10	92.0	9317.50	93.2	P
Antimony	3000.0	2999.30	100.0	3000.0	3023.70	100.8	3022.90	100.8	P
Arsenic	40.0	42.13	105.3	40.0	39.88	99.7	38.67	96.7	F
Barium	10000.0	10102.00	101.0	10000.0	10204.00	102.0	10238.00	102.4	P
Beryllium	250.0	249.97	100.0	250.0	251.81	100.7	257.59	103.0	P
Cadmium	2500.0	2525.30	101.0	2500.0	2542.70	101.7	2519.10	100.8	P
Calcium	25000.0	24411.00	97.6	25000.0	24682.00	98.7	24691.00	98.8	P
Chromium	1000.0	1002.50	100.2	1000.0	1024.00	102.4	1015.90	101.6	P
Cobalt	2500.0	2593.90	103.8	2500.0	2620.60	104.8	2616.90	104.7	P
Copper	1250.0	1272.50	101.8	1250.0	1280.10	102.4	1293.90	103.5	P
Iron	5000.0	5086.60	101.7	5000.0	5135.70	102.7	5123.90	102.5	P
Lead	50.0	50.77	101.5	50.0	50.41	100.8	47.37	94.7	F
Magnesium	25000.0	24579.00	98.3	25000.0	24696.00	98.8	25053.00	100.2	P
Manganese	2500.0	2522.60	100.9	2500.0	2552.10	102.1	2550.80	102.0	P
Mercury	3.0	2.97	99.0	3.0	3.00	100.0	3.02	100.7	CV
Nickel	2500.0	2507.00	100.3	2500.0	2538.60	101.5	2543.20	101.7	P
Potassium	25000.0	25331.00	101.3	25000.0	25368.00	101.5	26175.00	104.7	P
Selenium	40.0	41.31	103.3	40.0	41.21	103.0	41.74	104.4	F
Silver	250.0	257.02	102.8	250.0	262.69	105.1	263.09	105.2	P
Sodium	25000.0	24997.00	100.0	25000.0	25437.00	101.7	26687.00	106.7	P
Thallium	50.0	48.45	96.9	50.0	48.96	97.9	48.28	96.6	F
Vanadium	2500.0	2420.00	96.8	2500.0	2449.50	98.0	2455.10	98.2	P
Zinc	2500.0	2503.40	100.1	2500.0	2528.50	101.1	2544.80	101.8	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				10000.0	9155.60	91.6			P
Antimony				3000.0	2976.90	99.2			P
Arsenic				40.0	39.07	97.7	38.06	95.2	F
Barium				10000.0	10113.00	101.1			P
Beryllium				250.0	258.26	103.3			P
Cadmium				2500.0	2514.50	100.6			P
Calcium				25000.0	24346.00	97.4			P
Chromium				1000.0	1002.30	100.2			P
Cobalt				2500.0	2584.70	103.4			P
Copper				1250.0	1276.80	102.1			P
Iron				5000.0	5069.50	101.4			P
Lead				50.0	48.15	96.3	48.09	96.2	F
Magnesium				25000.0	24643.00	98.6			P
Manganese				2500.0	2525.70	101.0			P
Mercury				3.0	3.00	100.0			CV
Nickel				2500.0	2517.70	100.7			P
Potassium				25000.0	25915.00	103.7			P
Selenium				40.0	36.07	90.2			F
Silver				250.0	258.21	103.3			P
Sodium				25000.0	26664.00	106.7			P
Thallium				50.0	49.89	99.8	49.67	99.3	F
Vanadium				2500.0	2423.10	96.9			P
Zinc				2500.0	2516.80	100.7			P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				50.0	48.94	97.9			F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	47.46	94.9	53.86	107.7	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	54.18	108.4	53.58	107.2	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	51.46	102.9	50.02	100.0	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	50.55	101.1	45.26	90.5	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	46.77	93.5			F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	10131.00	101.3	10000.0	10304.00	103.0	10251.00	102.5	P
Antimony	3000.0	2982.70	99.4	3000.0	2955.90	98.5	2930.10	97.7	P
Arsenic	40.0	40.80	102.0	40.0	41.43	103.6	38.89	97.2	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron	5000.0	5124.50	102.5	5000.0	5052.60	101.1	5001.90	100.0	P
Lead	50.0	50.43	100.9	50.0	50.54	101.1	49.33	98.7	F
Magnesium									
Manganese	2500.0	2554.00	102.2	2500.0	2526.50	101.1	2522.20	100.9	P
Mercury									
Nickel									
Potassium									
Selenium	40.0	40.90	102.2	40.0	36.57	91.4	39.92	99.8	F
Silver	250.0	256.30	102.5	250.0	250.80	100.3	250.73	100.3	P
Sodium									
Thallium	50.0	48.60	97.2	50.0	49.14	98.3	50.23	100.5	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	37.56	93.9	37.24	93.1	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron				5000.0	5034.70	100.7			P
Lead				50.0	50.59	101.2			F
Magnesium									
Manganese				2500.0	2516.20	100.6			P
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	37.83	94.6	38.27	95.7	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	50.0	50.70	101.4	50.0	51.60	103.2	51.90	103.8	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	9877.30	98.8	10000.0	9922.90	99.2	9939.70	99.4	P
Antimony	3000.0	2788.60	93.0	3000.0	2852.10	95.1	2867.90	95.6	P
Arsenic	40.0	40.48	101.2	40.0	40.65	101.6	38.40	96.0	F
Barium	10000.0	9341.50	93.4	10000.0	9704.10	97.0	9648.70	96.5	P
Beryllium	250.0	232.83	93.1	250.0	240.48	96.2	238.81	95.5	P
Cadmium	2500.0	2329.00	93.2	2500.0	2399.00	96.0	2369.50	94.8	P
Calcium	25000.0	22666.00	90.7	25000.0	23586.00	94.3	23370.00	93.5	P
Chromium	1000.0	928.04	92.8	1000.0	968.93	96.9	956.63	95.7	P
Cobalt	2500.0	2401.90	96.1	2500.0	2496.00	99.8	2471.60	98.9	P
Copper	1250.0	1199.10	95.9	1250.0	1231.60	98.5	1220.40	97.6	P
Iron	5000.0	4710.40	94.2	5000.0	4867.40	97.3	4805.10	96.1	P
Lead	50.0	50.77	101.5	50.0	50.41	100.8	47.37	94.7	F
Magnesium	25000.0	22948.00	91.8	25000.0	23388.00	93.6	23194.00	92.8	P
Manganese	2500.0	2335.30	93.4	2500.0	2423.00	96.9	2400.70	96.0	P
Mercury	3.0	2.61	87.0	3.0	2.63	87.7	2.75	91.7	CV
Nickel	2500.0	2330.00	93.2	2500.0	2405.70	96.2	2384.60	95.4	P
Potassium	25000.0	23990.00	96.0	25000.0	24220.00	96.9	24838.00	99.4	P
Selenium	40.0	41.31	103.3	40.0	41.21	103.0	41.74	104.4	F
Silver	250.0	238.60	95.4	250.0	248.98	99.6	247.46	99.0	P
Sodium	25000.0	23925.00	95.7	25000.0	24347.00	97.4	25558.00	102.2	P
Thallium	50.0	48.45	96.9	50.0	48.96	97.9	48.28	96.6	F
Vanadium	2500.0	2249.00	90.0	2500.0	2338.10	93.5	2311.90	92.5	P
Zinc	2500.0	2320.70	92.8	2500.0	2378.40	95.1	2364.80	94.6	P
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				50.0	48.15	96.3	48.09	96.2	F
Magnesium									
Manganese									
Mercury				3.0	2.97	99.0	3.15	105.0	CV
Nickel									
Potassium									
Selenium				40.0	36.07	90.2			F
Silver									
Sodium									
Thallium				50.0	49.89	99.8	49.67	99.3	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				50.0	48.94	97.9	49.47	98.9	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium				50.0	47.46	94.9			F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/INORGANIC CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver	250.0	248.60	99.4	250.0	250.88	100.4	258.89	103.6	P
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits : Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found	%R
Aluminum								
Antimony				120.0	99.53	82.9	104.62	87.2
Arsenic	10.0	9.32	93.2					
Barium								
Beryllium				10.0	10.23	102.3	10.44	104.4
Cadmium				10.0	9.63	96.3	10.31	103.1
Calcium								
Chromium				20.0	19.21	96.0	18.81	94.0
Cobalt				100.0	111.54	111.5	103.91	103.9
Copper				50.0	56.76	113.5	57.06	114.1
Iron								
Lead	3.0	2.89	96.3					
Magnesium								
Manganese				30.0	32.72	109.1	33.36	111.2
Mercury								
Nickel				80.0	89.52	111.9	87.18	109.0
Potassium								
Selenium	5.0	5.77	115.4					
Silver				20.0	19.76	98.8	21.18	105.9
Sodium								
Thallium	5.0	4.47	89.4					
Vanadium				100.0	102.12	102.1	102.90	102.9
Zinc				40.0	42.16	105.4	43.43	108.6

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony				120.0	131.53	109.6	118.98	99.2
Arsenic	10.0	9.18	91.8					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	2.70	90.0					
Magnesium								
Manganese				30.0	32.75	109.2	32.97	109.9
Mercury								
Nickel								
Potassium								
Selenium								
Silver				20.0	24.90	124.5	27.67	138.4
Sodium								
Thallium	5.0	5.16	103.2					
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	3.0	3.50	116.7					
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony				120.0	122.93	102.4	126.40	105.3
Arsenic	10.0	10.42	104.2					
Barium								
Beryllium				10.0	10.80	108.0	11.05	110.5
Cadmium				10.0	12.21	122.1	13.36	133.6
Calcium								
Chromium				20.0	21.58	107.9	22.51	112.6
Cobalt				100.0	104.90	104.9	105.36	105.4
Copper				50.0	60.30	120.6	63.16	126.3
Iron								
Lead	3.0	2.89	96.3					
Magnesium								
Manganese				30.0	33.96	113.2	34.32	114.4
Mercury								
Nickel				80.0	85.05	106.3	89.19	111.5
Potassium								
Selenium	5.0	5.77	115.4					
Silver				20.0	22.52	112.6	27.78	138.9
Sodium								
Thallium	5.0	4.47	89.4					
Vanadium				100.0	108.38	108.4	108.35	108.4
Zinc				40.0	50.19	125.5	45.31	113.3

ENVIROFORMS/CLP 788

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

AA CRDL Standard Source:

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Found Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver				20.0	19.49	97.4	24.37	121.8
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.5	B	20.7	B	28.4	B	76.9	B	2.174	B	P
Antimony	34.0	U	35.5	B	34.0	U	34.0	U	3.400	U	P
Arsenic	-1.6	B	-2.2	B	-3.1	B	-2.5	B	-0.200	B	F
Barium	5.0	U	5.0	U	5.0	U	5.0	U	0.500	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	0.500	U	P
Calcium	18.0	U	18.0	U	19.5	B	18.0	U	7.114	B	P
Chromium	4.0	U	4.0	U	4.0	U	4.0	U	0.400	U	P
Cobalt	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	0.200	U	P
Iron	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	F
Magnesium	30.0	U	30.0	U	40.7	B	30.0	U	3.000	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U			CV
Nickel	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Potassium	92.7	B	69.0	U	-245.5	B	-108.5	B	6.900	U	P
Selenium	1.0	U	1.0	U	1.3	B	1.0	U	0.100	U	F
Silver	2.0	U	2.0	U	4.2	B	2.0	U	0.425	B	P
Sodium	136.0	U	136.0	U	136.0	U	515.0	B	14.397	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.200	U	F
Vanadium	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	1.977	B	P
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			-1.8	B							F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			1.0	U	1.0	U					F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U	2.1	B			F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U	2.0	U			F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U							F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	12.0	U	12.0	U	12.0	U					P
Antimony	34.0	U	34.0	U	34.0	U					P
Arsenic	-1.0	B	1.0	B	1.0	U	1.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron	3.0	U	3.0	U	3.0	U	3.4	B			P
Lead	1.0	U	1.0	U	1.0	U	1.0	U			F
Magnesium											
Manganese	1.0	U	1.0	U	1.0	U	1.0	U			P
Mercury											
Nickel											
Potassium											
Selenium	1.1	B	1.0	U	1.0	U					F
Silver	3.1	B	2.0	U	5.3	B					P
Sodium											
Thallium	2.0	U	2.0	U	2.0	U					F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			1.0	U	~~1.2~~	B	1.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U					F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	12.0	U	12.0	U	12.0	U			12.0	U	P
Antimony	34.0	U	34.0	U	34.0	U			34.0	U	P
Arsenic	1.0	U	1.0	U	1.0	U	1.2	B	1.0	U	F
Barium	5.0	U	5.0	U	5.0	U			5.0	U	P
Beryllium	1.0	U	1.0	U	1.0	U			1.0	U	P
Cadmium	5.0	U	5.0	U	5.0	U			5.0	U	P
Calcium	38.5	B	18.0	U	18.0	U			25.1	B	P
Chromium	4.0	U	4.0	U	4.0	U			4.0	U	P
Cobalt	9.0	U	9.0	U	9.0	U			9.0	U	P
Copper	2.0	U	2.0	U	2.8	B			5.0	B	P
Iron	3.0	U	3.6	B	3.6	B			3.0	U	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	F
Magnesium	30.0	U	31.3	B	43.0	B			72.2	B	P
Manganese	1.0	U	1.0	U	1.0	U			1.0	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U			CV
Nickel	9.0	U	9.0	U	9.0	U			9.0	U	P
Potassium	-99.5	B	-174.6	B	-129.1	B			69.0	U	P
Selenium	1.0	U	1.0	U	1.3	B	1.0	U	1.0	U	F
Silver	2.0	U	4.3	B	5.9	B			8.6	B	P
Sodium	-674.8	B	-804.5	B	-333.9	B			-835.0	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium	3.0	U	3.0	U	3.0	U			3.3	B	P
Zinc	5.0	U	5.0	U	5.0	U			8.2	B	P
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			1.0	U	1.0	U	1.0	U			F
Magnesium											
Manganese											
Mercury			0.2	U							CV
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium			2.0	U	2.0	U					F
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

3
BLANKS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver	2.8	B	4.8	B	2.9	B					P
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

ENVIROFORMS/CLP 788

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	416080	414600.0	82.9	419910	416220.0	83.2
Antimony								
Arsenic								
Barium	0	500	81	536.4	107.3	80	537.4	107.5
Beryllium	0	500	1	453.9	90.8	1	462.7	92.5
Cadmium	0	1000	41	933.7	93.4	45	932.9	93.3
Calcium	500000	500000	471280	463320.0	92.7	470830	464320.0	92.9
Chromium	0	500	5	463.1	92.6	6	469.7	93.9
Cobalt	0	500	-6	440.3	88.1	-9	440.7	88.1
Copper	0	500	16	497.5	99.5	16	496.5	99.3
Iron	200000	200000	181290	178650.0	89.3	180240	178270.0	89.1
Lead								
Magnesium	500000	500000	474890	470620.0	94.1	477390	471790.0	94.4
Manganese	0	500	51	507.4	101.5	52	507.8	101.6
Mercury								
Nickel	0	1000	15	880.5	88.0	12	897.0	89.7
Potassium								
Selenium								
Silver	0	1000	24	955.5	95.6	23	957.1	95.7
Sodium								
Thallium								
Vanadium	0	500	-4	446.4	89.3	-2	449.1	89.8
Zinc	0	1000	30	942.8	94.3	31	949.3	94.9

ENVIROFORMS/CLP 788

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	464760	463890.0	92.8	454490	458710.0	91.7
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron	200000	200000	178780	178090.0	89.0	177550	176270.0	88.1
Lead								
Magnesium								
Manganese	0	500	31	486.7	97.3	30	482.5	96.5
Mercury								
Nickel								
Potassium								
Selenium								
Silver	0	1000	26	951.9	95.2	25	946.4	94.6
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	492310	495440.0	99.1	485800	487110.0	97.4
Antimony								
Arsenic								
Barium	0	500	82	555.8	111.2	84	550.2	110.0
Beryllium	0	500	1	470.4	94.1	1	460.6	92.1
Cadmium	0	1000	46	959.3	95.9	47	948.5	94.8
Calcium	500000	500000	481950	482640.0	96.5	499540	475120.0	95.0
Chromium	0	500	4	488.2	97.6	6	476.7	95.3
Cobalt	0	500	-7	451.9	90.4	-6	438.6	87.7
Copper	0	500	17	523.9	104.8	21	509.8	102.0
Iron	200000	200000	184610	184870.0	92.4	188400	181070.0	90.5
Lead								
Magnesium	500000	500000	487470	488780.0	97.8	490120	477170.0	95.4
Manganese	0	500	48	521.4	104.3	50	512.9	102.6
Mercury								
Nickel	0	1000	9	910.8	91.1	9	906.2	90.6
Potassium								
Selenium								
Silver	0	1000	24	987.0	98.7	30	964.4	96.4
Sodium								
Thallium								
Vanadium	0	500	-6	469.8	94.0	-4	458.5	91.7
Zinc	0	1000	35	974.0	97.4	33	959.0	95.9

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: 5P ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver	0	1000	23	958.1	95.8	25	987.5	98.8
Sodium								
Thallium								
Vanadium								
Zinc								

ENVIROFORMS/CLP 788

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8765S

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 84.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	3.9977	B	3.7531	U	58.21	6.9	N	P
Arsenic	75-125	9.1412		8.3414		4.55	17.6	N	F
Barium	75-125	286.7906		73.8025		232.82	91.5		P
Beryllium	75-125	6.2896		0.8945		5.82	92.7		P
Cadmium	75-125	8.0579		2.2800		5.82	99.3		P
Calcium									NR
Chromium	75-125	26.2216		2.9027		23.28	100.2		P
Cobalt	75-125	67.0785		12.6192		58.21	93.6		P
Copper	75-125	29.2762		1.7111	B	29.10	94.7		P
Iron									NR
Lead	75-125	3.0964		1.4847		2.28	70.7	N	F
Magnesium									NR
Manganese		977.7957		1077.1390		58.21	-170.7		P
Mercury	75-125	0.6246		0.1134	U	0.58	107.7		CV
Nickel	75-125	65.4568		14.4240		58.21	87.7		P
Potassium									NR
Selenium	75-125	1.0018		0.1577	B	1.14	74.0	N	F
Silver	75-125	2.6457		0.4410	B	5.82	37.9	N	P
Sodium									NR
Thallium	75-125	3.8933		0.1934	U	5.69	68.4	N	F
Vanadium	75-125	60.5792		7.1075		58.21	91.9		P
Zinc	75-125	75.4542		23.9503		58.21	88.5		P
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8766S

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 87.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	6.0645	B	3.8303	U	51.48	11.8	N	P
Arsenic	75-125	8.8136		6.5318		3.90	58.5	N	F
Barium	75-125	350.2735		156.6467		205.93	94.0		P
Beryllium	75-125	7.5581		2.3881		5.15	100.4		P
Cadmium	75-125	6.9378		1.7023		5.15	101.7		P
Calcium									NR
Chromium	75-125	30.7482		5.9691		20.59	120.3		P
Cobalt	75-125	55.4843		7.3462		51.48	93.5		P
Copper	75-125	56.4120		25.9489		25.74	118.3		P
Iron									NR
Lead	75-125	4.8265		1.9767		1.95	146.1	N	F
Magnesium									NR
Manganese	75-125	232.0090		156.6692		51.48	146.3	N	P
Mercury	75-125	0.5599		0.1039	U	0.53	105.6		CV
Nickel	75-125	64.5379		12.7694		51.48	100.6		P
Potassium									NR
Selenium	75-125	0.6344		0.1069	U	0.98	64.7	N	F
Silver	75-125	2.9434		0.3689	B	5.15	50.0	N	P
Sodium									NR
Thallium	75-125	3.3478		0.2138	U	4.88	68.6	N	F
Vanadium	75-125	56.9247		6.7665		51.48	97.4		P
Zinc	75-125	79.8188		27.4720		51.48	101.7		P
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8771S

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Matrix (soil/water): WATER Level (low/med): LOW
% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2074.6000		25.4830	B	2000.00	102.5		P
Antimony	75-125	503.4000		34.0000	U	500.00	100.7		P
Arsenic	75-125	41.0200		1.4700	B	40.00	98.9		F
Barium	75-125	2153.6000		5.0000	U	2000.00	107.7		P
Beryllium	75-125	52.0640		1.0000	U	50.00	104.1		P
Cadmium	75-125	56.9690		5.0000	U	50.00	113.9		P
Calcium									NR
Chromium	75-125	217.3400		4.0000	U	200.00	108.7		P
Cobalt	75-125	539.4100		9.0000	U	500.00	107.9		P
Copper	75-125	284.9300		8.2216	B	250.00	110.7		P
Iron	75-125	1106.0000		20.9200	B	1000.00	108.5		P
Lead	75-125	19.4100		1.1300	B	20.00	91.4		F
Magnesium									NR
Manganese	75-125	547.8000		1.4070	B	500.00	109.3		P
Mercury	75-125	1.2300		0.2000	U	1.00	123.0		CV
Nickel	75-125	544.1400		9.0000	U	500.00	108.8		P
Potassium									NR
Selenium	75-125	11.1700		1.0300	B	10.00	101.4		F
Silver	75-125	33.4040		8.3007	B	50.00	50.2	N	P
Sodium									NR
Thallium	75-125	58.9600		2.0000	U	50.00	117.9		F
Vanadium	75-125	517.4500		3.3783	B	500.00	102.8		P
Zinc	75-125	539.3500		17.4870	B	500.00	104.4		P
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8765A

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)		Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		1084.90		34.00	U	1000.0	108.5		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver		65.94		3.99	B	50.0	123.9		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5B
POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8766A

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)		Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		1033.80		34.00	U	1000.0	103.4		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese		2265.90		1390.70		1000.0	87.5		P
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver		62.15		3.27	B	50.0	117.8		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

5B
POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

ET8771A

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)		Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver		61.78		8.30	B	50.0	107.0		P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

ENVIROFORMS/CLP 788

6
DUPLICATES

SAMPLE NO.

ET8765D

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 84.8 % Solids for Duplicate: 84.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M	
Aluminum		8018.1615		9806.7242		20.1	*	P	R
Antimony		3.7531	U	3.5551	U			P	
Arsenic	1.0	8.3414		8.7541		4.8		F	S-D
Barium	22.1	73.8025		74.0484		0.3		P	S-D
Beryllium	0.6	0.8945		0.9108		1.8		P	S-D
Cadmium	0.6	2.2800		2.8511		22.3		P	S-D
Calcium		235.5731	B	232.3881	B	1.4		P	
Chromium	1.1	2.9027		4.3298		39.5	*	P	S-D
Cobalt	5.5	12.6192		14.7034		15.3		P	S-D
Copper		1.7111	B	2.1626	B	23.3		P	
Iron		12290.2900		14570.6530		17.0		P	R
Lead	0.3	1.4847		1.1576		24.8	*	F	S-D
Magnesium	551.9	631.3814		686.9067		8.4		P	S-D
Manganese		1077.1390		1092.3023		1.4		P	S-D
Mercury	0.1	0.1134	U	0.1119	U			CV	
Nickel	4.4	14.4240		11.2749		24.5		P	S-D
Potassium		117.0194	B	126.3731	B	7.7		P	
Selenium		0.1577	B	0.1150	U	200.0		F	
Silver		0.4410	B	0.3550	B	21.6		P	
Sodium		77.7101	B	78.2915	B	0.7		P	
Thallium		0.1934	U	0.2299	U			F	
Vanadium	5.5	7.1075		8.2140		14.4		P	S-D
Zinc		23.9503		21.2385		12.0		P	S-D
Cyanide									

ENVIROFORMS/CLP 788

6
DUPLICATES

SAMPLE NO.

ET8766D

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 87.3 % Solids for Duplicate: 87.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								P
Antimony								P
Arsenic								F
Barium								P
Beryllium								P
Cadmium								P
Calcium								P
Chromium								P
Cobalt								P
Copper								P
Iron								P
Lead								F
Magnesium								P
Manganese								P
Mercury	0.1	0.1039	U	0.1092	U			CV
Nickel								P
Potassium								P
Selenium								F
Silver								P
Sodium								P
Thallium								F
Vanadium								P
Zinc								P
Cyanide								

ENVIROFORMS/CLP 788

6
DUPLICATES

SAMPLE NO.

ET8771D

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		25.4830	B	34.4730	B	30.0		P
Antimony		34.0000	U	34.0000	U			P
Arsenic		1.4700	B	1.0000	U	200.0		F
Barium		5.0000	U	5.0000	U			P
Beryllium		1.0000	U	1.0000	U			P
Cadmium		5.0000	U	5.0000	U			P
Calcium		216.8900	B	3361.9000	B	175.8		P
Chromium		4.0000	U	4.0000	U			P
Cobalt		9.0000	U	9.0000	U			P
Copper		8.2216	B	17.7610	B	73.4		P
Iron		20.9200	B	29.8680	B	35.2		P
Lead		1.1300	B	1.0800	B	4.5		F
Magnesium		75.0310	B	62.7760	B	17.8		P
Manganese		1.4070	B	2.0564	B	37.5		P
Mercury		0.2000	U	0.2000	U			CV
Nickel		9.0000	U	9.0000	U			P
Potassium		69.0000	U	69.0000	U			P
Selenium		1.0300	B	1.0000	U	200.0		F
Silver		8.3007	B	4.1341	B	67.0		P
Sodium		136.0000	U	194.8600	B	200.0		P
Thallium		2.0000	U	2.0000	U			F
Vanadium		3.3783	B	3.0000	U	200.0		P
Zinc	20.0	17.4870	B	32.0120		58.7		P
Cyanide								

ENVIROFORMS/CLP 788

8

STANDARD ADDITION RESULTS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
ET8769	Pb	28.00	0.	0.062	10.	37.20	10.	0.087	30.4	0.1391	+
ET87692	Pb	46.60	20	0.118	30.	55.00	30.	0.140	35.5	0.0825	+

ENVIROFORMS/CLP 788

8

STANDARD ADDITION RESULTS

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

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ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: 4P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200.0		P
Antimony	206.83		60.0	27.0	P
Arsenic	188.98		10.0	46.0	P
Barium	455.40		200.0		
Beryllium	313.04		5.0	1.0	P
Cadmium	214.44		5.0	4.0	P
Calcium	317.93		5000.0		
Chromium	267.72		10.0		
Cobalt	228.62		50.0		
Copper	324.76		25.0		
Iron	259.94		100.0		
Lead	220.35		3.0	42.0	P
Magnesium	279.55		5000.0		
Manganese	257.61		15.0		
Mercury			0.2		
Nickel	231.60		40.0		
Potassium	766.49		5000.0		
Selenium	196.03		5.0	48.0	P
Silver	328.07		10.0		
Sodium	589.00		5000.0	61.0	P
Thallium	190.80		10.0	82.0	P
Vanadium	292.40		50.0		
Zinc	213.86		20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 4F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium	276.80	BZ	10.0	2.0	F
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 3F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.70	BD	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BD	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.2	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide					

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: 5P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	396.15		200.0	12.0	P
Antimony	206.83		60.0	34.0	P
Arsenic	193.70		10.0	90.0	P
Barium	233.53		200.0	5.0	P
Beryllium	313.04		5.0	1.0	P
Cadmium	226.50		5.0	5.0	P
Calcium	317.93		5000.0	18.0	P
Chromium	267.72		10.0	4.0	P
Cobalt	228.62		50.0	9.0	P
Copper	324.75		25.0	2.0	P
Iron	259.94		100.0	3.0	P
Lead	220.35		3.0	65.0	P
Magnesium	279.08		5000.0	30.0	P
Manganese	257.61		15.0	1.0	P
Mercury			0.2		
Nickel	231.60		40.0	9.0	P
Potassium	766.49		5000.0	69.0	P
Selenium	196.03		5.0	90.0	P
Silver	328.07		10.0	2.0	P
Sodium	589.59		5000.0	136.0	P
Thallium	190.80		10.0	54.0	P
Vanadium	292.40		50.0	3.0	P
Zinc	213.86		20.0	5.0	P

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 5F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8765

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 2F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BZ	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: 4P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200.0		P
Antimony	206.83		60.0	27.0	P
Arsenic	188.98		10.0	46.0	P
Barium	455.40		200.0		
Beryllium	313.04		5.0	1.0	P
Cadmium	214.44		5.0	4.0	P
Calcium	317.93		5000.0		
Chromium	267.72		10.0		
Cobalt	228.62		50.0		
Copper	324.76		25.0		
Iron	259.94		100.0		
Lead	220.35		3.0	42.0	P
Magnesium	279.55		5000.0		
Manganese	257.61		15.0		
Mercury			0.2		
Nickel	231.60		40.0		
Potassium	766.49		5000.0		
Selenium	196.03		5.0	48.0	P
Silver	328.07		10.0		
Sodium	589.00		5000.0	61.0	P
Thallium	190.80		10.0	82.0	P
Vanadium	292.40		50.0		
Zinc	213.86		20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 4F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium	276.80	BZ	10.0	2.0	F
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 3F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.70	BD	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BD	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.2	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide					

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: 5P Date: 08/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	396.15		200.0	12.0	P
Antimony	206.83		60.0	34.0	P
Arsenic	193.70		10.0	90.0	P
Barium	233.53		200.0	5.0	P
Beryllium	313.04		5.0	1.0	P
Cadmium	226.50		5.0	5.0	P
Calcium	317.93		5000.0	18.0	P
Chromium	267.72		10.0	4.0	P
Cobalt	228.62		50.0	9.0	P
Copper	324.75		25.0	2.0	P
Iron	259.94		100.0	3.0	P
Lead	220.35		3.0	65.0	P
Magnesium	279.08		5000.0	30.0	P
Manganese	257.61		15.0	1.0	P
Mercury			0.2		
Nickel	231.60		40.0	9.0	P
Potassium	766.49		5000.0	69.0	P
Selenium	196.03		5.0	90.0	P
Silver	328.07		10.0	2.0	P
Sodium	589.59		5000.0	136.0	P
Thallium	190.80		10.0	54.0	P
Vanadium	292.40		50.0	3.0	P
Zinc	213.86		20.0	5.0	P

Comments:

ENVIROFORMS/CLP 788

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0	10.0	AS

Comments:

ENVIROFORMS/CLP 788

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 5F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.70	BZ	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead	283.30	BZ	3.0	1.0	F
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

ENVIROFORMS/CLP 788

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: EA LABORATORIES Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET8771

ICP ID Number: Date: 09/03/91

Flame AA ID Number:

Furnace AA ID Number: 2F

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.00	BZ	5.0	1.0	F
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

C. Quality Assurance Summary

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR U.S. EPA CLP PROTOCOLS

Project: Willow Grove Analysis: Metals

EA Laboratories Report No. 911433 Method: U.S. EPA CLP SOW 7/88

Reviewed by: MA-Littell Date: 10-10-91

1. All metals (except mercury) were determined within six months of sample collection. Mercury was analyzed within 26 days.

   ✓ Yes ____ No

2. ICP initial calibration: A calibration blank and at least one standard were analyzed daily, and the initial calibration verification standard was within 90% to 110% recovery.

   ✓ Yes ____ No

3. AA calibration: A calibration blank and at least three standards were used to establish the curve, and the initial calibration verification standard was within 90% to 110% recovery (80% to 120% for mercury).

   ✓ Yes ____ No

4. Calibration verification (CV): A CV standard prepared from a source other than that of the initial calibration was used, and the result was within 90 to 110% of the true value for both ICP and AA work (80% to 120% for mercury). A CV was run at a frequency of 10%, or every two hours, and at the end of the run.

   ✓ Yes ____ No

5. A preparation blank was run with each batch, and all analytes were below the detection limits.

   ✓ Yes ____ No

6. Matrix spike and duplicate criteria were met for all samples.

   ____ Yes ✓ No

See attached case narrative

(Issued January 29, 1991)

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR U.S. EPA CLP PROTOCOLS

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Method: U.S. EPA CLP SOW 7/88

Reviewed by: M.A. Fitterer

Date: 10-10-91

7. Laboratory control sample (LCS) criteria were met for all samples.

✓ Yes _____ No

Comments:

(Issued January 29, 1991)

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove Analysis: Miscellaneous

EA Laboratories Report No. 911433 Method: Total Solids - 160.3

Reviewed by: Christine A. Grant-Hayslade Date: 4 Oct 91

X Yes ____ No Were samples found to be properly preserved?

X Yes ____ No Was the temperature in the cooler 4 ± 1C upon arrival in the laboratory?

____ Yes X No Were preparation blank analyses performed for each batch of samples for this project or for each set of 20 samples within this project?

____ Yes X No Were spiked sample analyses and duplicate sample analyses performed for each concentration and matrix for this project or for each set of 20 samples of a similar matrix within this project?

Comments: No preparation blank was analyzed, however, a method blank was. No spiked sample was performed, however, a duplicate was.