Appendix G

Flux Chamber Data Validation Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 10, 1998

MEMORANDUM

SUBJECT: Review of Analytical Data

FROM: Dawn Richmond, Chemist Dawn Richmond
Quality Assurance Program (QAP), PMD-3

THROUGH: Vance S. Fong, P.E., Manager Dawn Richmond for VF
Quality Assurance Program (QAP), PMD-3

TO: Janet Rosati, Remedial Project Manager
HI/NV/CA Cleanup Section, SFD-7-4

Attached are comments resulting from ESAT Region IX review of the following analytical data. The Quality Assurance Program has reviewed the data package and approve the information presented in the validation report.

If there are any questions, please contact me at (415)744-1494.

Attachment

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Janet Rosati
Remedial Project Manager
HI/NV/CA Cleanup Section, SFD-7-4

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714119

DATE: April 2, 1998

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Frontier Fertilizer
SITE ACCOUNT NO.:	4R
CERCLIS ID NO.:	CAD071530380
CASE NO.:	MR958-00 Memo #01
SDG NO.:	70454
LABORATORY:	Environmental Analytical Services (EAS)
ANALYSIS:	Volatile Organics
SAMPLES:	27 Ambient Air Samples (see Case Summary)
COLLECTION DATE:	October 8 and 9, 1997
REVIEWER:	Frank Arceneaux, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

SAMPLING ISSUES: [ ]Yes [X]No

LOCKHEED MARTIN

Data Validation Report

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Laboratory: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

I. Case Summary

SAMPLE INFORMATION:

Samples:	FLX-1, FLX-2, FLX-3, FLX-4, FLX-5, FLX-6, FLX-6R, FLX-7, FLX-8, FLX-9, FLX-10, FLX-11, FLX-12, FLX-13, FLX-14, FLX-14R, FLX-15, FLX-16, FLX-17, FLX-18, FLX-19, FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2
Matrix:	Ambient Air
Analysis:	Volatile Organics by EPA Method TO-14
Collection Date:	October 8 and 9, 1997
Sample Receipt Date:	October 10 and 14, 1997
Full Scan Analysis Date:	October 18, 20, 21, and 22, 1997
SIM Analysis Date:	November 7, 10, 11, 20, and 22, 1997

FIELD QC:

Trip Blanks (TB):	Not provided
Field Blanks (FB):	Not provided
Equipment Blanks (EB):	Not provided
Background Samples (BG):	Not provided
Field Duplicates (D1):	Not provided

METHOD BLANKS AND ASSOCIATED SAMPLES
Full Scan GC/MS:

B10187:	FLX-7, FLX-8, FLX-9, FLX-24, FLX-B1, FLX-B2, QC10187, and QC10187DUP
B10207:	FLX-1 through FLX-6, FLX-6R, FLX-10, QC10207, and QC10207DUP
B10217:	FLX-12, FLX-14, FLX-16, FLX-23, QC10217, and QC10217DUP
B10227:	FLX-11, FLX-13, FLX-14R, FLX-15, FLX-17 through FLX-20, FLX-22, QC10227, and QC10227DUP

Selected Ion Monitoring (SIM) GC/MS:

B11077:	FLX-B1, QC11077, and QC11077DUP
B11107:	FLX-6R, FLX-8, FLX-12, FLX-13, FLX-15 through FLX-20, FLX-23, FLX-24, FLX-B2, QC11107, and QC11107DUP
B11117:	FLX-3, FLX-6, FLX-9, FLX-10, FLX-11, FLX-14, FLX-14R, FLX-22, QC11117, and QC11117DUP
B11207:	FLX-2, FLX-4, FLX-5, QC11207, and QC11207DUP
B11227A:	FLX-7, QC11227A, and QC11227ADUP
B11227B:	FLX-1, QC11227C, and QC11227CDUP

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Continuing Calibrations

SAMPLING ISSUES:

None.

QC - Laboratory Control Sample; DUP - Duplicate

ADDITIONAL COMMENTS:

The laboratory inadvertently omitted target analyte 1,1,2-trichloroethane (which is listed in Table 1-10b in the CRF) in the setup of the analyses. Since 1,1,2-trichloroethane was included in the calibration standards, the data for standards and samples could be reprocessed for the identification and quantitation of 1,1,2-trichloroethane in the samples.

Although Section 8.a.1 of the CRF requires that the mass spectral tuning requirements for 4-bromofluorobenzene be met prior to the analysis of standards for sample determinations, BFB tune verifications were not performed at the start of shifts for selected ion monitoring (SIM) analyses. The laboratory stated that BFB tune checks are not necessary for SIM analyses because the masses verified in a BFB tune standard are different from the masses scanned in the SIM analyses. The effect of this omission on data quality is not known.

Although Section 8.b.1.c of the Client Request Form (CRF) specified a spiking level of 10 ppbV for the surrogate compound, the laboratory spiked d5-chlorobenzene in the full scan samples at a level of 20 ppbV. No adverse effect on data quality is expected from this deviation.

The laboratory duplicate analysis, at a frequency of one per sample delivery group as specified in Section 8.b.1.g of the CRF, was not performed. The effect of this omission on data quality is not known.

Although Section 9.a of the CRF specified that quantitations be based upon the relative response factors (RRFs) from the continuing calibrations (CCALs), the laboratory quantitated the analytes using the average RRFs from the initial calibrations (ICALs).

Each sample was analyzed by both full scan GC/MS and SIM mode GC/MS. The SIM mode analyses were necessary in order to achieve the lower detection limits required for some of the analytes. The target analytes vinyl chloride, 1,2-dichloroethane, carbon tetrachloride, bromodichloromethane, trans-1,3-dichloropropene, cis-1,3-dichloropropene, 1,2-dibromoethane, 1,2,3-trichloropropane, and 1,4-dichlorobenzene were reported from the SIM analyses. 1,1-Dichloroethene, chloroform, and 1,2-dichloropropane were reported from either full scan mode or SIM mode depending upon the level at which the analyte was present in a particular sample. The remaining 15 analytes were reported from the full scan analysis.

The certification of SUMMA canister blanks is provided only for samples: FLX-4, FLX-14, FLX-22, and FLX-B1. The cleanliness of the canisters used for the remaining samples is not known. In addition, since the Certificates of Analysis - SUMMA Canister Cleanliness do not list bromodichloromethane, bromoform, 1,2,3-trichloropropane, and 1,2-dibromo-3-chloropropane, it is not known whether the canister blanks were contaminated with any of these four compounds.

This report was prepared in accordance with the following:

- Client Request Form (Revision 05/20/94);
- USEPA Method TO-14, "Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using SUMMA® Passivated Canister Sampling and Gas Chromatographic Analysis, Revision 1.0 (June 1988); and
- "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA Acceptable/Comment	
HOLDING TIMES	[NO]	[C]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[NO]	[D,E]
FIELD QC	[N/A]	[ ]
LABORATORY BLANKS	[NO]	[B]
SURROGATES	[YES]	[ ]
LABORATORY CONTROL SAMPLE	[NO]	[F]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A,G]
SYSTEM PERFORMANCE	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following detected results from the full scan analyses are qualified as nondetected and estimated due to laboratory blank contamination. The results are flagged "U,J" in Table 1A.

- Methylene chloride in all of the samples
- Benzene in samples FLX-1 FLX-2, FLX-3, FLX-5, FLX-6, FLX-6R, FLX-8, FLX-10, FLX-11, FLX-13, FLX-14, FLX-14R, FLX-16, FLX-17, FLX-19 FLX-20, FLX-22, FLX-23, and FLX-24

Methylene chloride and benzene were found in several of the full scan laboratory method blanks (see Table 1A for concentrations). The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although 1,2-dichloropropane, trichloroethene, and toluene were found in laboratory method blanks at concentrations above the method detection limits, no qualification of data was required by the above rules for qualification of data due to blank contamination.

A laboratory method blank is zero-grade air, analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

C. The detected results and quantitation limits for the following analytes are estimated due to missed technical holding time in the SIM mode analyses. The results are flagged "J" in Table 1A.

- Vinyl chloride, 1,2-dichloroethane, carbon tetrachloride, bromodichloromethane, trans-1,3-dichloropropene, cis-1,3-dichloropropene, 1,2-dibromoethane, 1,2,3-trichloropropane, and 1,4-dichlorobenzene in all of the samples
- 1,1-Dichloroethene in samples FLX-1 through FLX-5, FLX-6R, FLX-8 through FLX-14, FLX-14R, FLX-15 through FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2
- Chloroform in samples FLX-2 through FLX-6, FLX-6R, FLX-7 through FLX-10, FLX-12, FLX-13, FLX-14, FLX-14R, FLX-15 through FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2
- 1,2-Dichloropropane in samples FLX-3, FLX-6, FLX-6R, FLX-7 through FLX-14, FLX-14R, FLX-15 through FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2

The SIM analyses exceeded the 14-day technical holding times as shown below.

Sample	Date Collected	Date Analyzed	# of days Exceeded
FLX-1	10-8-97	11-22-97	31
FLX-2	10-8-97	11-20-97	29
FLX-3	10-8-97	11-11-97	20
FLX-4	10-8-97	11-20-97	29
FLX-5	10-8-97	11-20-97	29
FLX-6	10-8-97	11-11-97	20
FLX-6R	10-8-97	11-10-97	19
FLX-7	10-8-97	11-22-97	31
FLX-8	10-8-97	11-10-97	19
FLX-9	10-8-97	11-11-97	20
FLX-10	10-8-97	11-11-97	20
FLX-11	10-8-97	11-11-97	20
FLX-12	10-8-97	11-10-97	19
FLX-13	10-8-97	11-10-97	19
FLX-14	10-8-97	11-11-97	20
FLX-14R	10-8-97	11-11-97	20
FLX-15	10-8-97	11-10-97	19
FLX-16	10-8-97	11-10-97	19
FLX-17	10-8-97	11-10-97	19
FLX-18	10-8-97	11-10-97	19
FLX-19	10-8-97	11-10-97	19
FLX-20	10-8-97	11-10-97	19
FLX-22	10-8-97	11-11-97	20
FLX-23	10-8-97	11-10-97	19
FLX-24	10-8-97	11-10-97	19
FLX-B1	10-9-97	11-07-97	15
FLX-B2	10-9-97	11-10-97	18

The detected results for the samples listed above may be biased low and are the minimum values at which these analytes may be present in the samples. Where the results are nondetected, false negatives may exist.

D. The detected results and quantitation limits for the following analytes are estimated due to large percent differences (%Ds) in the continuing calibrations for the full scan GC/MS analyses. The results are flagged "J" in Table 1A.

- Bromoform in all of the samples and the full scan method blanks
- 1,2-Dichlorobenzene in samples FLX-1 through FLX-6, FLX-6R, FLX-7 through FLX-10, FLX-24, FLX-B1, FLX-B2, and method blanks B10187 and B10207

Percent differences exceeding the ±30.0% QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed October 18, 20, 21, and 22, 1997 (see Table 2).

It should be noted that the %Ds for 1,2-dibromo-3-chloropropane were not calculated since the compound was not detected in any of the CCAL standards.

The continuing calibration checks the instrument performance daily.

E. The detected results and quantitation limits for the following analytes are estimated due to large percent differences (%Ds) in the continuing calibrations for the selected ion monitoring (SIM) analyses. The results are flagged "J" in Table 1A.

- 1,4-Dichlorobenzene in samples FLX-1, FLX-2, FLX-4, FLX-5, FLX-6R, FLX-7, FLX-8, FLX-12, FLX-13, FLX-15 through FLX-20, FLX-23, FLX-24, FLX-B1, FLX-B2, and method blanks B11077, B11107, B11207, B11227A, and B11227B

Percent differences exceeding the ±30.0% QC advisory validation criterion were observed for the analyte listed above in the continuing calibrations performed November 7, 10, 20, and 22, 1997 (see Table 2).

The continuing calibration checks the instrument performance daily.

F. The results for several SIM laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) did not meet the criteria for accuracy specified in the laboratory's case narrative. The percent recoveries for cis-1,3-dichloropropene and 1,4-dichlorobenzene are presented below.

Analyte	QC11207 %Recovery	QC11207DUP %Recovery	QC limits %Recovery
cis-1,3-Dichloropropene	108	131	70-130

Analyte	QC11227C %Recovery	QC11227CDUP %Recovery	QC limits %Recovery
1,4-Dichlorobenzene	67	53	70-130

Since the recovery for cis-1,3-dichloropropene in QC sample QC11207DUP is only slightly outside the QC limits, no adverse effect on the quality of the data is expected. The effect of the low recoveries for 1,4-dichlorobenzene on the quality of the data is not known.

Results which fall outside acceptance criteria may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis.

The purpose of the LCS and LCSD is to serve as a monitor of the overall performance of all steps in the analysis, including sample preparation.

G. The CRQLs for the following analytes have been raised to the concentration of the lowest initial calibration standard in which each analyte was detected.

- Bromoform in all of the samples and full scan method blanks
- 1,2-Dibromo-3-chloropropane in samples FLX-2, FLX-3, FLX-4, FLX-5, FLX-6, FLX-6R, FLX-7, FLX-8, FLX-9, FLX-10, FLX-11, FLX-12, FLX-13, FLX-14, FLX-14R, FLX-15, FLX-16, FLX-17, FLX-18, FLX-19, FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2 and full scan method blanks

Bromoform was recovered only in the four highest (of six) ICAL standards and 1,2-dibromo-3-chloropropane was recovered only in the two highest ICAL standards.

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-24					70454-23					70454-20				
Field Sample I.D.	FLX-1					FLX-2					FLX-3				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0 012 U			J	C	0.012 U			J	C	0.012 U			J	C
Bromomethane	0 20 U					0 21 U					0 20 U				
1,1-Dichloroethene	0 007 U			J	C	0.007 U			J	C	0.045 L	0.123	0.0047	J	AC
Methylene chloride	0.26 U	0.94	0.036	J	B	0.49 U	1.76	0.068	J	B	0.33 U	1.20	0 046	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.19 L	0 97	0 037	J	A	0 076 L	0.380	0 0149	J	AC	0 089 L	0.448	0 0172	J	AC
1,1,1-Trichloroethane	0 03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0 011 L	0 047	0.0018	J	AC	0 007 U			J	C	0.007 U			J	C
Benzene	0 17 U	0.55	0.021	J	B	0.19 U	0.64	0.024	J	B	0.16 U	0 53	0 021	J	B
Carbon tetrachloride	0 092 L	0.599	0.0231	J	AC	0.019 L	0.126	0.0048	J	AC	0.019 L	0.123	0 0047	J	AC
1,2-Dichloropropane	0.46 L	2.22	0.085	J	A	0.90	4.31	0.166			0.042 L	0.198	0.0076	J	AC
Trichloroethene	0.03 U					0 03 U					0.70 L	3 90	0.150	J	A
Bromodichloromethane	0 005 U			J	C	0.005 L	0.033	0.0013	J	AC	0.005 U			J	C
trans-1,3-Dichloropropene	0.014 L	0.067	0.0026	J	AC	0.002 U			J	C	0 002 U			J	C
cis-1,3-Dichloropropene	0.019 L	0.087	0.0034	J	AC	0.007 U			J	CF	0.007 U			J	C
Toluene	0 23 L	0 90	0 035	J	A	2.57 L	9.99	0 385	J	A	2.04 L	7 95	0.306	J	A
1,2-Dibromoethane	0 007 U			J	C	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0.06 U					0.97 L	6 83	0.263	J	A	0 08 L	0.54	0 021	J	A
Chlorobenzene	0 12 U					0.12 U					0.12 U				
Xylene (meta- & para-)	0.20 U					0 39 L	1 73	0 066	J	A	1.16 L	5 21	0 201	J	A
Bromoform	1 46 U			J	DG	1.48 U			J	DG	1.45 U			J	DG
Xylene (ortho)	0.09 U					0 09 U					0 44 L	1 98	0 076	J	A
1,2,3-Trichloropropane	0 082 U			J	C	0.083 U			J	C	0.081 U			J	C
1,4-Dichlorobenzene	0 056 U			J	CEF	0 057 U			J	CE	0.056 U			J	C
1,2-Dichlorobenzene	0 20 U			J	D	0.21 U			J	D	0.20 U			J	D
1,2-Dibromo-3-chloropropane	38.83	241.68	9.305			19.18 U				G	18 85 U				G
Xylenes (total)	0 29 U					0.39 L	1.73	0.066	J	A	1.61 L	7.19	0.277	J	A

Val-Validity Refer to Data Qualifiers in Table 1B
Com -Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR -00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-21					70454-22					70454-18				
Field Sample I.D.	FLX-4					FLX-5					FLX-6				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.012 U			J	C	0.012 U			J	C	0.014 L	0.037	0 0014	J	AC
Bromomethane	0.20 U					0.21 U					0.22 U				
1,1-Dichloroethene	0.007 U			J	C	0.007 U			J	C	0.73 L	2.00	0.077	J	A
Methylene chloride	0.31 U	1.12	0.043	J	B	0.23 U	0.82	0.031	J	B	0.40 U	1.42	0.055	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.016 L	0.080	0.0031	J	AC	0.017 L	0.084	0.0032	J	AC	0 070 L	0 350	0.0135	J	AC
1,1,1-Trichloroethane	0 03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0 007 U			J	C	0.007 U			J	C	0.007 U			J	C
Benzene	0.38 L	1.24	0.048	J	A	0.14 U	0.46	0.018	J	B	0.22 U	0 72	0 028	J	B
Carbon tetrachloride	0.042 L	0.275	0.0106	J	AC	0.021 L	0.139	0.0053	J	AC	0.030 L	0.192	0.0074	J	AC
1,2-Dichloropropane	15.23	72.68	2.798			2.02	9.66	0.372			0.121 L	0.576	0.0222	J	AC
Trichloroethene	0 03 U					0.03 U					3.74	20.67	0 796		
Bromodichloromethane	0.007 L	0.050	0.0019	J	AC	0.015 L	0.107	0.0041	J	AC	0.014 L	0.096	0.0037	J	AC
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0 002 U			J	C
cis-1,3-Dichloropropene	0.014 L	0.065	0.0025	J	ACF	0.007 U			J	CF	0.007 U			J	C
Toluene	0.93 L	3.62	0 139	J	A	0 49 L	1.89	0 073	J	A	19.66	76 46	2.944		
1,2-Dibromoethane	0 008 L	0 061	0.0023	J	AC	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0.06 U					0.06 U					0.78 L	5.49	0.211	J	A
Chlorobenzene	0.12 U					0.12 U					0.12 U				
Xylene (meta- & para-)	0 25 L	1.12	0.043	J	A	0.21 U					12.57	56 28	2 167		
Bromoform	1.46 U			J	DG	1.49 U			J	DG	1.55 U			J	DG
Xylene (ortho)	0.09 U					0.09 U					4 87 L	21 79	0 839	J	A
1,2,3-Trichloropropane	0.554	5.530	0.2129	J	C	0.083 U			J	C	0.087 U			J	C
1,4-Dichlorobenzene	0.056 U			J	CE	0.057 U			J	CE	0.060 U			J	C
1,2-Dichlorobenzene	0 20 U			J	D	0.21 U			J	D	0.22 U			J	D
1,2-Dibromo-3-chloropropane	19.01 U				G	19.34 U				G	20.15 U				G
Xylenes (total)	0.29 U					0.30 U					17.44	78.06	3.005		

Val-Validity Refer to Data Qualifiers in Table 1B
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-19					70454-8					70454-9				
Field Sample I.D.	FLX-6R					FLX-7					FLX-8				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.012 U			J	C	0.012 U			J	C	0.012 U			J	C
Bromomethane	0 22 U					0.21 U					0.22 U				
1,1-Dichloroethene	0.007 U			J	C	0.29 L	0.78	0.030	J	A	0.007 U			J	C
Methylene chloride	0.33 U	1.18	0.045	J	B	0.52 U	1.88	0.072	J	B	0.37 U	1.32	0.051	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.071 L	0.358	0.0138	J	AC	0.065 L	0.324	0.0125	J	AC	0 024 L	0.118	0.0045	J	AC
1,1,1-Trichloroethane	0.03 U					0.13 L	0.72	0.028	J	A	0.03 U				
1,2-Dichloroethane	0 007 U			J	C	0.350 L	1.465	0 0564	J	AC	0 008 L	0 032	0.0012	J	AC
Benzene	0.07 U	0.24	0.009	J	B	0.40 L	1.32	0.051	J	A	0.23 U	0.77	0.030	J	B
Carbon tetrachloride	0 034 L	0 220	0.0085	J	AC	0.113 L	0 735	0.0283	J	AC	0.053 L	0.347	0.0133	J	AC
1,2-Dichloropropane	0.130 L	0 618	0.0238	J	AC	0.030 L	0.143	0.0055	J	AC	0.018 L	0.086	0 0033	J	AC
Trichloroethene	0 03 U					1.84 L	10.16	0.391	J	A	0.03 U				
Bromodichloromethane	0.005 U			J	C	0.005 U			J	C	0.006 L	0.038	0.0015	J	AC
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Toluene	0.28 L	1.07	0.041	J	A	7.38	28.69	1.104			0.45 L	1.74	0.067	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0.06 U					1.70 L	11.91	0.459	J	A	0.06 U				
Chlorobenzene	0.12 U					0.14 L	0.68	0.026	J	A	0.12 U				
Xylene (meta- & para-)	0.22 U					2.73 L	12.21	0.470	J	A	0.25 L	1.14	0.044	J	A
Bromoform	1.55 U			J	DG	1.50 U			J	DG	1.54 U			J	DG
Xylene (ortho)	0.09 U					1.52 L	6.82	0.262	J	A	0.09 U				
1,2,3-Trichloropropane	0.087 U			J	C	0.084 U			J	C	0.086 U			J	C
1,4-Dichlorobenzene	0.060 U			J	CE	0.058 U			J	CE	0.059 U			J	CE
1,2-Dichlorobenzene	0.22 U			J	D	0.21 U			J	D	0.22 U			J	D
1,2-Dibromo-3-chloropropane	20.15 U				G	19.50 U				G	19.99 U				G
Xylenes (total)	0.31 U					4.25 L	19.03	0.733	J	A	0.31 U				

Val-Validity Refer to Data Qualifiers in Table 1B
Com -Comments Refer to the Corresponding Section in the Narrative for each letter

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MA J-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-10					70454-25					70454-12				
Field Sample I.D.	FLX-9					FLX-10					FLX-11				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0 012 U			J	C	0.012 U			J	C	0.020 L	0 054	0 0021	J	AC
Bromomethane	0 22 U					0.21 U					0.21 U				
1,1-Dichloroethene	0 026 L	0.071	0.0027	J	AC	0.007 U			J	C	0.020 L	0.054	0 0021	J	AC
Methylene chloride	0 44 U	1 56	0.060	J	B	0.32 U	1.14	0.044	J	B	0.54 U	1.94	0.075	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.219 L	1 099	0.0423	J	AC	0 026 L	0.129	0.0049	J	AC	0 58 L	2 89	0.111	J	A
1,1,1-Trichloroethane	0 03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0.007 U			J	C	0.007 U			J	C	0.010 L	0.042	0.0016	J	AC
Benzene	0.36 L	1.18	0.045	J	A	0.27 U	0.90	0.035	J	B	0.32 U	1.06	0.041	J	B
Carbon tetrachloride	0.088 L	0.569	0.0219	J	AC	0.063 L	0.412	0.0159	J	AC	0.156 L	1.014	0.0390	J	AC
1,2-Dichloropropane	0.011 L	0.054	0.0021	J	AC	0.011 L	0.054	0.0021	J	AC	0.010 U			J	C
Trichloroethene	0.03 U					0.03 U					0.03 U				
Bromodichloromethane	0.005 L	0.037	0.0014	J	AC	0.005 U			J	C	0.007 L	0.051	0.0020	J	AC
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Toluene	1.08 L	4.20	0.162	J	A	3.34 L	12.97	0.500	J	A	0.50 L	1.95	0 075	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0 06 U					0.06 U					0.06 U				
Chlorobenzene	0.12 U					0.12 U					0.12 U				
Xylene (meta- & para-)	0 64 L	2 86	0.110	J	A	0.33 L	1.49	0.057	J	A	0 27 L	1.19	0.046	J	A
Bromoform	1.55 U			J	DG	1.49 U			J	DG	1.53 U			J	DG
Xylene (ortho)	0 15 L	0.69	0.026	J	A	0 09 U					0 09 U				
1,2,3-Trichloropropane	0.087 U			J	C	0.083 U			J	C	0.085 U			J	C
1,4-Dichlorobenzene	0.060 U			J	C	0.057 U			J	C	0.059 U			J	C
1,2-Dichlorobenzene	0 22 U			J	D	0.21 U			J	D	0.21 U				
1,2-Dibromo-3-chloropropane	20.15 U				G	19.34 U				G	19.83 U				G
Xylenes (total)	0.79 L	3.55	0.137	J	A	0.33 L	1.49	0.057	J	A	0.31 U				

Val-Validity Refer to Data Qualifiers in Table 1B.
Com -Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR[illegible]-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-11					70454-15					70454-13				
Field Sample I.D.	FLX-12					FLX-13					FLX-14				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.012 U			J	C	0.017 L	0.045	0.0017	J	AC	0.013 U			J	C
Bromomethane	0.21 U					0.67 L	2.68	0.103	J	A	0.22 U				
1,1-Dichloroethene	0.020 L	0.055	0.0021	J	AC	0.019 L	0.053	0.0020	J	AC	0.008 U			J	C
Methylene chloride	0.33 U	1.18	0.046	J	B	0.86 U	3.09	0.119	J	B	0.89 U	3.19	0.123	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.016 L	0.079	0.0031	J	AC	0.109 L	0.549	0.021	J	AC	0.020 L	0.102	0.0039	J	AC
1,1,1-Trichloroethane	0.03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0.007 U			J	C	0.007 U			J	C	0.009 L	0.036	0.0014	J	AC
Benzene	0.38 L	1.27	0.049	J	A	0.27 U	0.90	0.035	J	B	0.30 U	1.00	0.038	J	B
Carbon tetrachloride	0.055 L	0.358	0.0138	J	AC	0.092 L	0.601	0.0231	J	AC	0.085 L	0.552	0.0213	J	AC
1,2-Dichloropropane	0.010 U			J	C	0.010 U			J	C	0.010 U			J	C
Trichloroethene	0.03 U					0.03 U					0.03 U				
Bromodichloromethane	0.005 U			J	C	0.005 L	0.034	0.0013	J	AC	0.005 U			J	C
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.003 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.008 U			J	C
Toluene	0.95 L	3.69	0.142	J	A	0.70 L	2.72	0.105	J	A	2.27 L	8.83	0.340	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0.008 U			J	C
Tetrachloroethene	0.06 U					0.06 U					0.06 U				
Chlorobenzene	0.12 U					0.12 U					0.13 U				
Xylene (meta- & para-)	0.98 L	4.39	0.169	J	A	0.57 L	2.55	0.098	J	A	2.86 L	12.80	0.493	J	A
Bromoform	1.51 U			J	DG	1.50 U			J	DG	1.56 U			J	DG
Xylene (ortho)	0.22 L	0.99	0.038	J	A	0.17 L	0.74	0.029	J	A	1.06 L	4.74	0.183	J	A
1,2,3-Trichloropropane	0.085 U			J	C	0.084 U			J	C	0.088 U			J	C
1,4-Dichlorobenzene	0.058 U			J	CE	0.058 U			J	CE	0.060 U			J	C
1,2-Dichlorobenzene	0.21 U					0.21 U					0.22 U				
1,2-Dibromo-3-chloropropane	19.66 U				G	19.50 U				G	20.31 U				G
Xylenes (total)	1.20 L	5.37	0.207	J	A	0.74 L	3.30	0.127	J	A	3.92 L	17.54	0.675	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESU

TABLE 1A

Case No.: MK..d-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-14					70454-17					70454-16				
Field Sample I.D.	FLX-14R					FLX-15					FLX-16				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.012 U			J	C	0.012 U			J	C	0.012 U			J	C
Bromomethane	0.21 U					0.80 L	3.21	0.124	J	A	0.21 U				
1,1-Dichloroethene	0.028 L	0.077	0.0029	J	AC	0.027 L	0.074	0.0028	J	AC	0.024 L	0.064	0.0025	J	AC
Methylene chloride	0.38 U	1.35	0.052	J	B	0.83 U	2.96	0.114	J	B	0.42 U	1.51	0.058	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0.014 L	0.071	0.0027	J	AC	0.037 L	0.186	0.0071	J	AC	0 013 L	0 066	0 0025	J	AC
1,1,1-Trichloroethane	0 03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0.007 U			J	C	0 007 U			J	C	0.007 U			J	C
Benzene	0.32 U	1.05	0.040	J	B	0.61 L	2.00	0.077	J	A	0.26 U	0.86	0.033	J	B
Carbon tetrachloride	0 065 L	0 424	0 0163	J	AC	0.100 L	0.649	0.0250	J	AC	0.074 L	0 480	0.0185	J	AC
1,2-Dichloropropane	0 010 U			J	C	0.010 U			J	C	0.010 U			J	C
Trichloroethene	0.03 U					0.03 U					0.03 U				
Bromodichloromethane	0.005 U			J	C	0.005 U			J	C	0.005 U			J	C
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Toluene	0 83 L	3.24	0.125	J	A	1.26 L	4.88	0.188	J	A	0 61 L	2.39	0 092	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0 007 U			J	C
Tetrachloroethene	0.06 U					0.06 U					0.06 U				
Chlorobenzene	0.12 U					0.12 U					0.12 U				
Xylene (meta- & para-)	0 94 L	4 22	0.162	J	A	0.43 L	1.93	0 074	J	A	0 21 U				
Bromoform	1.50 U			J	DG	1.55 U			J	DG	1.53 U			J	DG
Xylene (ortho)	0.29 L	1 29	0.050	J	A	0.90 U					0 09 U				
1,2,3-Trichloropropane	0.084 U			J	C	0.087 U			J	C	0.085 U			J	C
1,4-Dichlorobenzene	0.058 U			J	C	0.060 U			J	CE	0.059 U			J	CE
1,2-Dichlorobenzene	0.21 U					0.22 U					0.21 U				
1,2-Dibromo-3-chloropropane	19.50 U				G	20.15 U				G	19 83 U				G
Xylenes (total)	1.23 L	5.51	0.212	J	A	0.43 L	1.93	0.074	J	A	0.31 U				

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-2					70454-1					70454-4				
Field Sample I.D.	FLX-17					FLX-18					FLX-19				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.011 U			J	C	0.011 U			J	C	0.012 U			J	C
Bromomethane	0.20 U					0.20 U					0.20 U				
1,1-Dichloroethene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Methylene chloride	0.41 U	1.46	0.056	J	B	0.47 U	1.69	0 065	J	B	0.39 U	1.41	0.054	J	B
1,1-Dichloroethane	0 06 U					0.06 U					0.06 U				
Chloroform	0 015 L	0.074	0 0028	J	AC	0.013 L	0.065	0.0025	J	AC	0 015 L	0 075	0.0029	J	AC
1,1,1-Trichloroethane	0.03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0 007 U			J	C	0 007 U			J	C	0.007 U			J	C
Benzene	0.33 U	1.09	0.042	J	B	0.64 L	2.12	0.082	J	A	0.20 U	0.67	0.026	J	B
Carbon tetrachloride	0.086 L	0 559	0 0215	J	AC	0 089 L	0.580	0.0223	J	AC	0.100 L	0 649	0.0250	J	AC
1,2-Dichloropropane	0 009 U			J	C	0.009 U			J	C	0.009 U			J	C
Trichloroethene	0 03 U					0 03 U					0.03 U				
Bromodichloromethane	0.005 U			J	C	0.005 U			J	C	0.005 U			J	C
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Toluene	0.59 L	2 30	0.088	J	A	1.21 L	4 72	0.182	J	A	0.34 L	1.32	0.051	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0 06 U					0.42 L	2.96	0.114	J	A	0.06 U				
Chlorobenzene	0.11 U					0.11 U					0.12 U				
Xylene (meta- & para-)	0.22 L	0.97	0.038	J	A	0.37 L	1.64	0.063	J	A	0.20 U				
Bromoform	1.43 U			J	DG	1.43 U			J	DG	1.45 U			J	DG
Xylene (ortho)	0.09 U					0.09 L	0.41	0.016	J	A	0.09 U				
1,2,3-Trichloropropane	0.080 U			J	C	0.080 U			J	C	0.081 U			J	C
1,4-Dichlorobenzene	0.055 U			J	CE	0.055 U			J	CE	0.056 U			J	CE
1,2-Dichlorobenzene	0 20 U					0.20 U					0.20 U				
1,2-Dibromo-3-chloropropane	18.53 U				G	18.53 U				G	18.85 U				G
Xylenes (total)	0.29 U					0.46 L	2.04	0.079	J	A	0.29 U				

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com -Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULT

TABLE 1A

Case No.: MR..d-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-3					70454-7					70454-6				
Field Sample I.D.	FLX-20					FLX-22					FLX-23				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.012 U			J	C	0.011 U			J	C	0.012 U			J	C
Bromomethane	0 20 U					0.20 U					0 20 U				
1,1-Dichloroethene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Methylene chloride	0 42 U	1.50	0.058	J	B	0.23 U	0.84	0.032	J	B	0 48 U	1.74	0 067	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0 011 L	0 056	0.0022	J	AC	0.131 L	0.661	0 0254	J	AC	0 020 L	0 100	0.0038	J	AC
1,1,1-Trichloroethane	0.03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0.007 U			J	C	0 007 U			J	C	0 007 U			J	C
Benzene	0 25 U	0.83	0.032	J	B	0.13 U	0.45	0 017	J	B	0.22 U	0 71	0 027	J	B
Carbon tetrachloride	0 076 L	0 494	0 0190	J	AC	0 028 L	0 185	0.0071	J	AC	0 092 L	0 599	0 0231	J	AC
1,2-Dichloropropane	0 009 U			J	C	0.009 U			J	C	0.009 U			J	C
Trichloroethene	0.03 U					0 03 U					0 03 U				
Bromodichloromethane	0.005 U			J	C	0.005 U			J	C	0.005 U			J	C
trans-1,3-Dichloropropene	0.002 U			J	C	0.002 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Toluene	0 43 L	1.65	0.064	J	A	0.19 L	0.74	0 029	J	A	0 75 L	2 90	0 112	J	A
1,2-Dibromoethane	0.007 U			J	C	0.007 U			J	C	0.007 U			J	C
Tetrachloroethene	0 06 U					0 06 U					0.06 U				
Chlorobenzene	0.12 U					0.11 U					0.12 U				
Xylene (meta- & para-)	0 20 U					0.20 U					0.20 U				
Bromoform	1.44 U			J	DG	1.43 U			J	DG	1.46 U			J	DG
Xylene (ortho)	0 09 U					0.09 U					0 09 U				
1,2,3-Trichloropropane	0.081 U			J	C	0.080 U			J	C	0.082 U			J	C
1,4-Dichlorobenzene	0 055 U			J	CE	0.055 U			J	C	0 056 U			J	CE
1,2-Dichlorobenzene	0 20 U					0.20 U					0.20 U				
1,2-Dibromo-3-chloropropane	18 69 U				G	18.53 U				G	19.01 U				G
Xylenes (total)	0 29 U					0.29 U					0.29 U				

Val-Validity Refer to Data Qualifiers in Table 1B.

Com.-Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR[illegible]-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Lab Sample I.D.	70454-5					70463-1					70463-2				
Field Sample I.D.	FLX-24					FLX-B1					FLX-B2				
Date of Collection	10/8/97					10/9/97					10/9/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0 012 U			J	C	0.006 U			J	C	0.012 U			J	C
Bromomethane	0 20 U					0 20 U					0 21 U				
1,1-Dichloroethene	0 007 U			J	C	0.004 U			J	C	0 007 U			J	C
Methylene chloride	0 34 U	1 24	0 048	J	B	0 37 U	1 32	0 051	J	B	0 35 U	1 26	0 048	J	B
1,1-Dichloroethane	0.06 U					0.06 U					0.06 U				
Chloroform	0 013 L	0 063	0 0024	J	AC	0 002 U			J	C	0 005 U			J	C
1,1,1-Trichloroethane	0 03 U					0.03 U					0.03 U				
1,2-Dichloroethane	0 007 U			J	C	0 004 U			J	C	0 007 U			J	C
Benzene	0 19 U	0 62	0.024	J	B	0.03 U					0.03 U				
Carbon tetrachloride	0 046 L	0 297	0 0114	J	AC	0 004 U			J	C	0 016 L	0 107	0 0041	J	AC
1,2-Dichloropropane	0 009 U			J	C	0.005 U			J	C	0.010 U			J	C
Trichloroethene	0 03 U					0 03 U					0 03 U				
Bromodichloromethane	0.005 U			J	C	0.002 U			J	C	0.005 U			J	C
trans-1,3-Dichloropropene	0 002 U			J	C	0 001 U			J	C	0.002 U			J	C
cis-1,3-Dichloropropene	0.007 U			J	C	0.003 U			J	C	0.007 U			J	C
Toluene	0 27 L	1 05	0 040	J	A	0.23 L	0.90	0.035	J	A	0 62 L	2 42	0 093	J	A
1,2-Dibromoethane	0 007 U			J	C	0.004 U			J	C	0 007 U			J	C
Tetrachloroethene	0 06 U					0 06 U					0.13 L	0 89	0 034	J	A
Chlorobenzene	0 12 U					0.12 U					0.12 U				
Xylene (meta- & para-)	0 20 U					0.20 U					0.21 U				
Bromoform	1 46 U			J	DG	1.46 U			J	DG	1.49 U			J	DG
Xylene (ortho)	0 09 U					0 09 U					0 09 U				
1,2,3-Trichloropropane	0.082 U			J	C	0.041 U			J	C	0.083 U			J	C
1,4-Dichlorobenzene	0 056 U			J	CE	0.028 U			J	CE	0 057 U			J	CE
1,2-Dichlorobenzene	0 20 U			J	D	0.20 U			J	D	0.21 U			J	D
1,2-Dibromo-3-chloropropane	19 01 U				G	19.01 U				G	19.34 U				G
Xylenes (total)	0 29 U					0.29 U					0.30 U				

Val-Validity Refer to Data Qualifiers in Table 1B.
Com -Comments Refer to the Corresponding Section in the Narrative for each letter

D1, D2, etc -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULT
TABLE 1A

Case No.: M 3-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Field Sample I.D.	Full Scan GC/MS Method Blank B10187					Full Scan GC/MS Method Blank B10207					Full Scan GC/MS Method Blank B10217				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0 06 U					0.06 U					0.06 U				
Bromomethane	0 07 U					0.07 U					0.07 U				
1,1-Dichloroethene	0.04 U					0.04 U					0.04 U				
Methylene chloride	0 10 L	0.35	0.013	J	AB	0.10 L	0.36	0 014	J	AB	0.09 L	0 33	0 013	J	AB
1,1-Dichloroethane	0.02 U					0.02 U					0.02 U				
Chloroform	0.02 U					0.02 U					0.02 U				
1,1,1-Trichloroethane	0 01 U					0.01 U					0.01 U				
1,2-Dichloroethane	0 02 U					0 02 U					0.02 U				
Benzene	0.07 L	0.24	0.009	J	AB	0.03 L	0.11	0 004	J	AB	0.06 L	0 19	0 007	J	AB
Carbon tetrachloride	0 01 U					0.01 U					0 01 U				
1,2-Dichloropropane	0.02 U					0.02 U					0.02 L	0 11	0 004	J	AB
Trichloroethene	0 01 U					0 01 U					0.03 L	0 17	0.007	J	AB
Bromodichloromethane	0.10 U					0.10 U					0.10 U				
trans-1,3-Dichloropropene	0.03 U					0.03 U					0.03 U				
cis-1,3-Dichloropropene	0.03 U					0.03 U					0.03 U				
Toluene	0.01 U					0 01 U					0.01 L	0 04	0 002	J	AB
1,2-Dibromoethane	0 04 U					0.04 U					0.04 U				
Tetrachloroethene	0 02 U					0 02 U					0.02 U				
Chlorobenzene	0 04 U					0.04 U					0.04 U				
Xylene (meta- & para-)	0.07 U					0.07 U					0.07 U				
Bromoform	0.50 U			J	DG	0.50 U			J	DG	0.50 U			J	DG
Xylene (ortho)	0.03 U					0.03 U					0.03 U				
1,2,3-Trichloropropane	0 50 U					0.50 U					0.50 U				
1,4-Dichlorobenzene	0.08 U					0.08 U					0 08 U				
1,2-Dichlorobenzene	0 07 U			J	D	0.07 U			J	D	0.07 U				
1,2-Dibromo-3-chloropropane	6 50 U				G	6.50 U				G	6 50 U				G
Xylenes (total)	0.10 U					0.10 U					0.10 U				

Val-Validity. Refer to Data Qualifiers in Table 1B
Com -Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
NA-Not Available

ANALYTICAL RESULT
TABLE 1A

Case No.: MR98-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Field Sample I.D.	Full Scan GC/MS Method Blank B10227					SIM GC/MS Method Blank B11077					SIM GC/MS Method Blank B11107				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.06 U					0.005 U					0.005 U				
Bromomethane	0.07 U														
1,1-Dichloroethene	0.04 U					0.003 U					0.003 U				
Methylene chloride	0.10 L	0 37	0 014	J	AB										
1,1-Dichloroethane	0.02 U														
Chloroform	0.02 U					0.002 U					0.002 U				
1,1,1-Trichloroethane	0 01 U														
1,2-Dichloroethane	0.02 U					0.003 U					0.003 U				
Benzene	0.04 L	0.12	0.005	J	AB										
Carbon tetrachloride	0 01 U					0 003 U					0.003 U				
1,2-Dichloropropane	0.02 U					0.004 U					0.004 U				
Trichloroethene	0 01 L	0 06	0.002	J	AB										
Bromodichloromethane	0 10 U					0.002 U					0 002 U				
trans-1,3-Dichloropropene	0.03 U					0 001 U					0.001 U				
cis-1,3-Dichloropropene	0.03 U					0.003 U					0.003 U				
Toluene	0.01 U														
1,2-Dibromoethane	0.04 U					0.003 U					0.003 U				
Tetrachloroethene	0.02 U														
Chlorobenzene	0.04 U														
Xylene (meta- & para-)	0.07 U														
Bromoform	0.50 U			J	DG										
Xylene (ortho)	0.03 U														
1,2,3-Trichloropropane	0 50 U					0.035 U					0.035 U				
1,4-Dichlorobenzene	0.08 U					0.024 U			J	E	0.024 U			J	E
1,2-Dichlorobenzene	0.07 U														
1,2-Dibromo-3-chloropropane	6.50 U				G										
Xylenes (total)	0 10 U														

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com -Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
NA-Not Available

ANALYTICAL RESULTS

TABLE 1A

Case No.: Mk. 3-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Field Sample I.D.	SIM GC/MS Method Blank B11117					SIM GC/MS Method Blank B11207					SIM GC/MS Method Blank B11227A				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
Vinyl chloride	0.005 U					0.005 U					0.005 U				
Bromomethane															
1,1-Dichloroethene	0.003 U					0.003 U					0.003 U				
Methylene chloride															
1,1-Dichloroethane															
Chloroform	0 002 U					0.002 U					0.002 U				
1,1,1-Trichloroethane															
1,2-Dichloroethane	0.003 U					0.003 U					0.003 U				
Benzene															
Carbon tetrachloride	0 003 U					0.003 U					0.003 U				
1,2-Dichloropropane	0.004 U										0.004 U				
Trichloroethene															
Bromodichloromethane	0.002 U					0.002 U					0.002 U				
trans-1,3-Dichloropropene	0.001 U					0.001 U					0.001 U				
cis-1,3-Dichloropropene	0.003 U					0.003 U				F	0.003 U				
Toluene															
1,2-Dibromoethane	0.003 U					0.003 U					0.003 U				
Tetrachloroethene															
Chlorobenzene															
Xylene (meta- & para-)															
Bromoform															
Xylene (ortho)															
1,2,3-Trichloropropane	0 035 U					0.035 U					0.035 U				
1,4-Dichlorobenzene	0.024 U					0.024 U			J	E	0 024 U			J	E
1,2-Dichlorobenzene															
1,2-Dibromo-3-chloropropane															
Xylenes (total)															

Val-Validity Refer to Data Qualifiers in Table 1B.
Com.-Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
NA-Not Available

ANALYTICAL RESULT
TABLE 1A

Case No.: MR58-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

Analysis Type: Ambient Air Samples for Volatile Organics by EPA Method TO-14

Field Sample I.D.	SIM GC/MS Method Blank B11227B					Full Scan MDL	SIM MDL	CRQL						
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in ppbv	Amount in ppbv	Flux in µg/(min*m2)					
Vinyl chloride	0.005 U					0.06	0.005	2	2					
Bromomethane						0.07		5	7					
1,1-Dichloroethene	0 003 U					0.04	0.003	5	1					
Methylene chloride						0 05		5	1					
1,1-Dichloroethane						0.02		2	0.2					
Chloroform						0.02	0.002	2	0.4					
1,1,1-Trichloroethane						0.01		5	1.5					
1,2-Dichloroethane	0.003 U					0.02	0.003	2	0.4					
Benzene						0.01		2	1					
Carbon tetrachloride	0.003 U					0.01	0.003	2	1					
1,2-Dichloropropane						0.02	0.004	2	0.4					
Trichloroethene						0.01		2	0.4					
Bromodichloromethane	0.002 U					0.10	0.002	2	1					
trans-1,3-Dichloropropene	0.001 U					0.03	0 001	2	1					
cis-1,3-Dichloropropene	0.003 U					0.03	0.003	5	1					
Toluene						0.01		5	1					
1,2-Dibromoethane	0.003 U					0.04	0.003	2	0.4					
Tetrachloroethene						0 02		5	1					
Chlorobenzene						0.04		2	0.1					
Xylene (meta- & para-)						0 07		5	NA					
Bromoform						0.50		NA	1.5					
Xylene (ortho)						0.03		5	NA					
1,2,3-Trichloropropane	0 035 U					0.50	0.035	NA	NA					
1,4-Dichlorobenzene	0 024 U			J	EF	0.08	0 024	5	0.4					
1,2-Dichlorobenzene						0.07		2	0.4					
1,2-Dibromo-3-chloropropane						6 50		NA	0.4					
Xylenes (total)						0.10		5	NA					

Val-Validity Refer to Data Qualifiers in Table 1B.
Com -Comments Refer to the Corresponding Section in the Narrative for each letter.
MDL-Method Detection Limit
CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
NA-Not Available

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

LOCKHEED MARTIN

TABLE 2
Continuing Calibrations

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Laboratory: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 2, 1998

PERCENT DIFFERENCES IN THE CONTINUING CALIBRATIONS FOR THE FULL SCAN ANALYSES

	%D	%D	%D	%D
Analysis date:	10-18-97	10-20-97	10-21-97	10-22-97
Analysis time	7:46	7:20	8:00	6:49
Analyte	Cont.	Cont.	Cont.	Cont.
Bromoform	37.5	56.5	112	46.9
1,2-Dichlorobenzene	-38.9	-34.6	----	----
1,2-Dibromo-3-chloropropane	*	*	*	*

*1,2-Dibromo-3-chloropropane was not recovered in any of the continuing calibration standards. Please refer to Section III, Comment G of this report.

ASSOCIATED SAMPLES AND METHOD BLANKS

Cont. 10-18-97: FLX-7, FLX-8, FLX-9, FLX-24, FLX-B1, FLX-B2, and B10187
Cont. 10-20-97: FLX-1 through FLX-6, FLX-6R, FLX-10, and B10207
Cont. 10-21-97: FLX-12, FLX-14, FLX-16, FLX-23, and B10217
Cont. 10-22-97: FLX-11, FLX-13, FLX-14R, FLX-15, FLX-17, FLX-18, FLX-19, FLX-20, FLX-22, and B10227

PERCENT DIFFERENCES IN THE CONTINUING CALIBRATIONS FOR THE SIM ANALYSES

	%D	%D	%D	%D	%D
Analysis date:	11-7-97	11-10-97	11-20-97	11-22-97	11-22-97
Analysis time	6:33	11:17	12:24	9:34	13:25
Analyte	Cont.	Cont.	Cont.	Cont.	Cont.
1,4-Dichlorobenzene	58.9	37.4	48.7	33.0	49.1

ASSOCIATED SAMPLES AND METHOD BLANKS

Cont. 11-07-97 6:33: FLX-B1 and B11077
Cont. 11-10-97 11:17: FLX-6R, FLX-8, FLX-12, FLX-13, FLX-15 through FLX-20, FLX-23, FLX-24, FLX-B2, and B11107
Cont. 11-20-97 12:24: FLX-2, FLX-4, FLX-5, and B11207
Cont. 11-22-97 9:34: FLX-7 and B11227A
Cont. 11-22-97 13:25: FLX-1 and B11227B

LOCKHEED MARTIN

Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. MR958-00 Memo #01 LABORATORY EAS

SDG NO. 70454 SITE NAME Frontier Fertilizer

SOW TO-14 and CRF REVIEW COMPLETION DATE April 2, 1998

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Frank Arceneaux

NO. OF SAMPLES _____ WATER _____ SOIL 27 AMBIENT AIR

OTHER	VOATILES		BNA	PEST
1. HOLDING TIMES/PRESERVATION	X			
2. GC-MS TUNE/GC PERFORMANCE	O			
3. INITIAL CALIBRATIONS	O			
4. CONTINUING CALIBRATIONS	X			
5. FIELD QC	N/A			
6. LABORATORY BLANKS	X			
7. SURROGATES	O			
8. LABORATORY CONTROL SAMPLES/DUPS	O			
9. REGIONAL QC	N/A			
10. INTERNAL STANDARDS	O			
11. COMPOUND IDENTIFICATION	O			
12. COMPOUND QUANTITATION	O			
13. SYSTEM PERFORMANCE	O			
14. OVERALL ASSESSMENT	X			

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

COMMENTS: None.

In Reference to Case No(s).:
MR958-00 Memo #01

REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Environmental Analytical Service

Lab Contact: Lisa Race / FAX 805-541-4550

Region: 9

Regional Contact: Marlon Mezquita, QA Program

ESAT Reviewer: Dina David-Bailey, 12/22/97

Call Initiated By: ____ Laboratory X Region

In reference to data for the following SDGs:
70454, 70463
[TO-14: GC/MS Full Scan and GC/MS Selected Ion Monitoring]

Summary of Questions/Issues Discussed:

The following items were noted during the cursory review of the above sample delivery groups (SDGs). Note that additional issues might be identified during the full validation of the data package.

1. Since there were no mass calibration data provided for the GC/MS SIM mode, it not known whether mass calibration was performed by the laboratory for this mode. Please clarify what type of mass calibration was performed, and provide necessary data.

2. Several analytes were determined by both GC/MS Full Scan mode and GC/MS SIM mode. The case narrative (page 5) states "The other two compounds, 1,2-dibromoethane and 1,2,3-trichloropropane were analyzed by GC/MS SIM." Please clarify which analytes of concern are reported from the GC/MS SIM only.

3. The case narrative (page 6) indicates that 1,2-dichloropropane and chloroform determined by GC/MS SIM in sample FLX-7 were not reported. However, the Analytical Report (page 65) for sample FLX-7 lists both analytes. Please clarify.

4. The summary form (page 1204) for method blank B11207 lists the method blank I.D. as B11217. The correct blank I.D. appears to be B11207. Please clarify.

REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Summary of Questions/Issues Discussed: (continued)

5. The method blank summary (page 108) and the raw data for sample FLX-22 list the sample I.D. as FLX-21. The correct sample I.D. is FLX-22 per communication log provided in the data package. Please clarify.

6. The laboratory reported flux results in μg /(min × m^2) for detected results. Please provide sample calculation or a formula on how these results were obtained.

Summary of Resolution:

1. This item was not answered in the 3/17/98 response from the laboratory. Please see TRL #2.

2. This item was not answered in the 3/17/98 response from the laboratory. Please see TRL #2.

3. A replacement for page 6 was provided on 3/17/98.

4. A replacement for page 1204 was provided on 3/17/98.

5. Replacements were provided for pages 108 and 127.

6. The laboratory provided the requested formula.

_____ _____

Signature Date

Distribution: (Original), ESAT (1) Lab Copy, (2) Region Copy

EPA query followed by laboratory response:

1. Since there were no mass calibration data provided for the GC/MS SIM mode, it is not known whether mass calibration was performed by the laboratory for this mode. Please clarify what type of mass calibration was performed, and provide necessary data.

   A standard containing all of the masses present in the SIM mode was anlyzed prior to sample analysis. A replacement for case narrative, page 3 and 111, are attached for clarification. ← identical to original pg 111.

2. Several analytes were determined by both GC/MS Full Scan mode and GC/MS SIM mode. The case narrative (page 5) states, "The other two compounds, 1,2-dibromoethane and 1,2,3-trichloropropane were anlayzed by GC/MS SIM." Please clarify which analytes of concern are reported from the GC/MS SIM only.

   This item refers to the two SIM compounds that did not meet the MDL estimates of the project. There were several other SIM compounds but they met the project MDL estimates. These paragraphs explain why the projected MDL's were not met for those four compounds.

3. The case narrative (page 6) indicates that 1,2-dichloropropane and chloroform determined by GC/MS SIM in sample FLX-7 were not reported. However, the Analytical Report (page 65) for sample FLX-7 lists both analytes. Please clarify.

   A replacement for case narrative, page 6, is attached for clarification.

4. The summary form (page 1204) for method blank B11207 lists the method blank I.D. as B11217. The correct blank I.D. appears to be B11207. Please clarify.

   On page 1204 the method blank should be B11207 instead of B11217. A replacement page is attached.

5. The method blank summary (page 108) and the raw data for sample FLX-22 list the sample I.D. as FLX-21. The correct sample I.D. is FLX-22 per communication log provided in the data package. Please clarify.

   The sample number for FLX-21 was changed as per communication log, but the change occurred after the data had been entered in the run log and the blank sheet was prepared for the run log. Replacement pages are provided for page 108 and 127.

6. The laboratory reported flux results in ~~?g~~ µg/(min × m²) (min ? m2) for detected results please provide sample calculation or a formula on how these results were obtained.

   The calculation is as follows:

   Measured concentration ($\mu g/m^3$) x (0.0385 m^3/min-m^2) = $\mu g/m^2$-min.

   Where the conversion factor of 0.0385 is the sweep air flow rate (m^3/min) divided by the flux chamber area (m^2).

TRL #2

In reference to the following data:

Site: Frontier Fertilizer; Case: MR958-00; SDG: 70454

TO-14: GC/MS Full Scan and GC/MS Selected Ion Monitoring (SIM)

The following issues were not adequately addressed in the laboratory's response to the previous TRL.

1. TRL issue: Since there were no mass calibration data provided for the GC/MS SIM mode, it not known whether mass calibration was performed by the laboratory for this mode. Please clarify what type of mass calibration was performed, and provide necessary data.

   Laboratory's response: "A standard containing all of the masses present in the SIM mode was analyzed prior to sample analysis. A replacement for case narrative, page 3 and 111, are attached for clarification."

   The laboratory's response is irrelevant to instrument tuning for the SIM analyses. Raw data for GC/MS tune check at the start of each SIM shift are needed in order to document the instrument's tune performance.

   During a telephone conversation with Mr. Steve Hoyt of Environmental Analytical Services on March 24, 1998, Mr. Hoyt stated that BFB tune checks were not performed at the start of the SIM instrument shifts because it was felt that it was not relevant.

2. TRL issue: Several analytes were determined by both GC/MS Full Scan mode and GC/MS SIM mode. The case narrative (page 5) states "The other two compounds, 1,2-dibromoethane and 1,2,3-trichloropropane were analyzed by GC/MS SIM." Please clarify which analytes of concern are reported from the GC/MS SIM only.

   Laboratory's response: "This item refers to the two SIM compounds that did not meet the MDL estimates of the project. There were several other SIM compounds but they met the project MDL estimates. These paragraphs explain why the projected MDL's were not met for those four compounds."

   The laboratory's response only referred to the two analytes which did not meet the project MDLs and why the MDLs were not met.

   Please list analytes, other than 1,2-dibromoethane and 1,2,3-trichloropropane, which are to be reported only from the GC/MS SIM mode analyses.

   During a telephone conversation with Mr. Steve Hoyt of Environmental Analytical Services on March 24, 1998, Mr. Hoyt stated that all analytes on the summary forms for the SIM analyses are to be reported except for those results that are off-scale. The remaining analytes are to be reported from the full scan analyses. The SIM analyses were performed in order to achieve lower detection limits for some of the target analytes.

TRL #3

In reference to the following data:

Site: Frontier Fertilizer; Case: MR958-00; SDG: 70454

TO-14: GC/MS Full Scan and GC/MS Selected Ion Monitoring (SIM)

Additional issue which arose during the validation of this data:

1. The compound 1,1,2-trichloroethane is listed in Table 1-10b, "Determination of Volatile Organic Compounds in Soil Gas and Flux Chamber Samples by Method TO-14," which is attached to the Regional Analytical Program Client Request. However, this target compound is not listed in any quantitation report or summary form in the data package. Please explain whether the samples were analyzed for this target compound.

Summary of resolution:

1. Per a telephone conversation with Mr. Steve Hoyt of Environmental Analytical Services on March 24, 1998, the analyte 1,1,2-trichloroethane was inadvertently omitted in the setup of the analyses. Since the compound was in the calibration standard solutions, the data could be reprocessed for analyte 1,1,2-trichloroethane, if necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 10, 1998

MEMORANDUM

SUBJECT: Review of Analytical Data

FROM: Dawn Richmond, Chemist Dawn Richmond
Quality Assurance Program (QAP), PMD-3

THROUGH: Vance S. Fong, P.E., Manager Dawn Richmond for VF
Quality Assurance Program (QAP), PMD-3

TO: Janet Rosati, Remedial Project Manager
HI/NV/CA Cleanup Section, SFD-7-4

Attached are comments resulting from ESAT Region IX review of the following analytical data. The Quality Assurance Program has reviewed the data package and approve the information presented in the validation report.

If there are any questions, please contact me at (415)744-1494.

Attachment

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Janet Rosati
Remedial Project Manager
HI/NV/CA Cleanup Section, SFD-7-4

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-98-2-4
Technical Direction No.: 9824001

DATE: April 6, 1998

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Frontier Fertilizer
SITE ACCOUNT NO.:	4R
CERCLIS ID NO.:	CAD071530380
CASE NO.:	MR958-00 Memo #01
SDG NO.:	70454 and 70463
LABORATORY:	Environmental Analytical Services (EAS)
ANALYSIS:	Volatile Organics (1,1,2-Trichloroethane)
SAMPLES:	27 Ambient Air Samples (see Case Summary)
COLLECTION DATE:	October 8 and 9, 1997
REVIEWER:	Frank Arceneaux, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

SAMPLING ISSUES: [ ]Yes [X]No

LOCKHEED MARTIN

Data Validation Report

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Laboratory: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 6, 1998

I. Case Summary

SAMPLE INFORMATION:

Samples:	FLX-1, FLX-2, FLX-3, FLX-4, FLX-5, FLX-6, FLX-6R, FLX-7, FLX-8, FLX-9, FLX-10, FLX-11, FLX-12, FLX-13, FLX-14, FLX-14R, FLX-15, FLX-16, FLX-17, FLX-18, FLX-19, FLX-20, FLX-22, FLX-23, FLX-24, FLX-B1, and FLX-B2
Matrix:	Ambient Air
Analysis:	Volatile Organics (1,1,2-Trichloroethane) by EPA Method TO-14
Collection Date:	October 8 and 9, 1997
Sample Receipt Date:	October 10 and 14, 1997
Full Scan Analysis Date:	October 18, 20, 21, and 22, 1997

FIELD QC:

Trip Blanks (TB):	Not provided
Field Blanks (FB):	Not provided
Equipment Blanks (EB):	Not provided
Background Samples (BG):	Not provided
Field Duplicates (D1):	Not provided

METHOD BLANKS AND ASSOCIATED SAMPLES
Full Scan GC/MS:

B10187:	FLX-7, FLX-8, FLX-9, FLX-24, FLX-B1, FLX-B2, QC10187, and QC10187DUP
B10207:	FLX-1 through FLX-6, FLX-6R, FLX-10, QC10207, and QC10207DUP
B10217:	FLX-12, FLX-14, FLX-16, FLX-23, QC10217, and QC10217DUP
B10227:	FLX-11, FLX-13, FLX-14R, FLX-15, FLX-17 through FLX-20, FLX-22, QC10227, and QC10227DUP

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

SAMPLING ISSUES:

None.

QC - Laboratory Control Sample; DUP - Duplicate

ADDITIONAL COMMENTS:

Although Section 8.b.1.c of the Client Request Form (CRF) specified a spiking level of 10 ppbV for the surrogate compound, the laboratory spiked d5-chlorobenzene in the full scan samples at a level of 20 ppbV. No adverse effect on data quality is expected from this deviation.

The laboratory duplicate analysis, at a frequency of one per sample delivery group as specified in Section 8.b.1.g of the CRF, was not performed. The effect of this omission on data quality is not known.

The certification of SUMMA canister blanks is provided only for samples: FLX-4, FLX-14, FLX-22, and FLX-B1. The cleanliness of the canisters used for the remaining samples is not known. In addition, since the Certificates of Analysis - SUMMA Canister Cleanliness do not list bromodichloromethane, bromoform, 1,2,3-trichloropropane, and 1,2-dibromo-3-chloropropane, it is not known whether the canister blanks were contaminated with any of these four compounds.

This report was prepared in accordance with the following:

- Client Request Form (Revision 05/20/94);
- USEPA Method TO-14, "Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using SUMMA® Passivated Canister Sampling and Gas Chromatographic Analysis, Revision 1.0 (June 1988); and
- "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA Acceptable/Comment	
HOLDING TIMES	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[YES]	[ ]
FIELD QC	[N/A]	[ ]
LABORATORY BLANKS	[YES]	[ ]
SURROGATES	[YES]	[ ]
LABORATORY CONTROL SAMPLE	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[ ]
SYSTEM PERFORMANCE	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

All method requirements specified in the Client Request Form (CRF) have been met. The results for 1,1,2-trichloroethane in all of the samples were reported correctly.

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 6, 1998

Analysis Type: Ambient Air Samples for Volatile Organics (1,1,2-Trichloroethane) by EPA Method TO-14

Lab Sample I.D.	70454-24					70454-23					70454-20				
Field Sample I.D.	FLX-1					FLX-2					FLX-3				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Lab Sample I.D.	70454-21					70454-22					70454-18				
Field Sample I.D.	FLX-4					FLX-5					FLX-6				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Lab Sample I.D.	70454-19					70454-8					70454-9				
Field Sample I.D.	FLX-6R					FLX-7					FLX-8				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Val-Validity Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 6, 1998

Analysis Type: Ambient Air Samples for Volatile Organics (1,1,2-Trichloroethane) by EPA Method TO-14

Lab Sample I.D.	70454-10					70454-25					70454-12				
Field Sample I.D.	FLX-9					FLX-10					FLX-11				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Lab Sample I.D.	70454-11					70454-15					70454-13				
Field Sample I.D.	FLX-12					FLX-13					FLX-14				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Lab Sample I.D.	70454-14					70454-17					70454-16				
Field Sample I.D.	FLX-14R					FLX-15					FLX-16				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 6, 1998

Analysis Type: Ambient Air Samples for Volatile Organics (1,1,2-Trichloroethane) by EPA Method TO-14

Lab Sample I.D.	70454-2					70454-1					70454-4				
Field Sample I.D.	FLX-17					FLX-18					FLX-19				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Lab Sample I.D.	70454-3					70454-7					70454-6				
Field Sample I.D.	FLX-20					FLX-22					FLX-23				
Date of Collection	10/8/97					10/8/97					10/8/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0 030 U				

Lab Sample I.D.	70454-5					70463-1					70463-2				
Field Sample I.D.	FLX-24					FLX-B1					FLX-B2				
Date of Collection	10/8/97					10/9/97					10/9/97				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.030 U					0.030 U					0.030 U				

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: MR958-00 Memo #01
Site: Frontier Fertilizer
Lab.: Environmental Analytical Services (EAS)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: April 6, 1998

Analysis Type: Ambient Air Samples for Volatile Organics (1,1,2-Trichloroethane) by EPA Method TO-14

Lab Sample I.D.	Full Scan GC/MS					Full Scan GC/MS					Full Scan GC/MS				
Field Sample I.D.	Method Blank					Method Blank					Method Blank				
Date of Collection	B10187					B10207					B10217				
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com
1,1,2-Trichloroethane	0.010 U					0.010 U					0.010 U				

Lab Sample I.D.	Full Scan GC/MS						Full Scan								
Field Sample I.D.	Method Blank						MDL	CRQL							
Date of Collection	B10227														
Parameter	Amount in ppbv	Amount in µg/m3	Flux in µg/(min*m2)	Val	Com		Amount in ppbv	Amount in ppbv	Flux in µg/(min*m2)						
1,1,2-Trichloroethane	0.010 U						0.010	2	1						

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

LOCKHEED MARTIN

Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. MR958-00 Memo #01 LABORATORY EAS

SDG NO. 70454 and 70463 SITE NAME Frontier Fertilizer

SOW TO-14 and CRF REVIEW COMPLETION DATE April 6, 1998

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Frank Arceneaux

NO. OF SAMPLES _____ WATER _____ SOIL 27 AMBIENT AIR

OTHER	VOLATILES		BNA	PEST
1. HOLDING TIMES/PRESERVATION	O			
2. GC-MS TUNE/GC PERFORMANCE	O			
3. INITIAL CALIBRATIONS	O			
4. CONTINUING CALIBRATIONS	O			
5. FIELD QC	N/A			
6. LABORATORY BLANKS	O			
7. SURROGATES	O			
8. LABORATORY CONTROL SAMPLES/DUPS	O			
9. REGIONAL QC	N/A			
10. INTERNAL STANDARDS	O			
11. COMPOUND IDENTIFICATION	O			
12. COMPOUND QUANTITATION	O			
13. SYSTEM PERFORMANCE	O			
14. OVERALL ASSESSMENT	O			

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

COMMENTS: None.

C.E. SCHMIDT, Ph.D
Environmental Consultant

TECHNICAL MEMORANDUM

RESULTS OF THE FLUX CHAMBER TESTING AT THE FRONTIER FERTILIZER SITE LOCATED IN DAVIS, CALIFORNIA

DRAFT

December, 1997

Prepared for:

Sierra Environmental Services
P.O. Box 2546
Martinez, California 94553

Prepared by:

CE Schmidt
19200 Live Oak Road
Red Bluff, California 96080

CES#34/IT.TM

TABLE OF CONTENTS

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Attachments

A- Emissions Measurement Data Sheets
B- Chain-of-Custody
C- Laboratory Data

EXECUTIVE SUMMARY

Field measurements were conducted at selected locations over a groundwater contamination plume in an industrial/agricultural/residential neighborhood located in Davis, California. The purpose of the testing was to determine the flux of a selected target list of volatile organic compounds (VOCs) through the soil column to the atmosphere at 23 test locations: 9 locations centered near the source of contamination area; and 14 locations in a transect from the source area onsite to the offsite residential neighborhood. Field data were collected on October 8, 1997.

The sampling strategy included testing at 23 locations over known locations of groundwater co-located with soil gas testing. Quality control testing was performed in order to determine the analytical system blank levels of VOCs and to establish system precision. Gas samples were collected from the flux chamber in evacuated stainless steel canisters and analyzed for a project specific target list of VOCs offsite by EPA Method TO-14. The target list included 27 VOCs.

Surface flux testing showed a detect for 18 of the 26 target compounds (27 counting total xylenes) at one or more of the 23 locations tested. The most frequently detected compounds were: methylene chloride (15 of 23 but compound is also a lab contaminant "B"), chloroform (19 of 23), benzene (23 of 23, B), carbon tetrachloride (17 of 23), and toluene (13 of 23, B). Higher levels of target compounds were typically found at the FLX-1 through FLX-11 locations which were at or near the location of the contamination source as compared to the locations along the transect from the source to the neighborhood. Flux levels above 1 ug/m2,min-1 were found at: FLX-1, 1,2-dibromo-3-chloropropane @ 9.3 ug/m2,min-1; FLX-4, 1,2-dichloropropane @ 2.8 ug/m2,min-1; and FLX-6, toluene @ 2.9 ug/m2,min-1, m,p-xylene @ 2.2 ug/m2,min-1, total xylenes @ 3.0 ug/m2,min-1.

Flux levels generally decreased and the occurrence of compounds decreased at test locations along the transect for sample locations FLX-10 to FLX-24. The occurrence of 5 target compounds persisted offsite at measurable levels including: methylene chloride, chloroform, benzene, carbon tetrachloride, and toluene.

1. INTRODUCTION

This technical memorandum describes the field testing that was conducted in order to assess flux of target VOCs to the atmosphere over a contaminated groundwater plume. Testing was conducted by Dr. C.E. Schmidt on October 8, 1997 with representatives of Sierra Environmental Services.

The objective of this study was to assess the flux of target VOCs from the subsurface contamination at the land surface in an industrial/residential neighborhood. The measured data are reported as compound specific flux expressed as micrograms per square meter per minute (ug/m2,min-1) per sampling location tested. A description of sampling locations is provided in Table 1.

This memorandum includes a discussion of the testing methodology, quality control procedures, results, discussion of the results, and summary statements.

II. TEST METHODOLOGY

Testing for surface flux was conducted using the EPA recommended Surface Isolation Flux Chamber (flux chamber) as the emission assessment tool to collect emissions data. The primary reference for this section is the document entitled "Measurement of Gaseous Emission Rates From Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide." EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, EPA Contract No. 68-02-3889, Work Assignment No. 18, February 1986.

The operation of the surface flux chamber is given below:

1) Flux chamber, sweep air, sample collection equipment, and field documents were located on-site and at the test location.

2) The site information, location information, equipment information, date, and proposed time of testing were documented on the Emissions Measurement Field Data Sheet.

3) The exact test location was selected and the chamber was placed about 1/4" into the land surface sealing the chamber. Thermocouples were placed in order to monitor surface/air temperatures outside of the chamber.

4) The sweep air flow rate was initiated and the rotometer was set at 5.0 liters per minute. Constant sweep air flow rate was maintained throughout the measurement.

5) The chamber was operated at 5.0 liters per minute and data were recorded every residence time (6 minutes) for five residence times or 30 minutes. The sample line was purged with a hand pump.

6) At steady-state (greater than 5 residence times or more), the canister sample was collected by interfacing the canister to the sample line of the chamber, pulling a vacuum on line with the canister, and collecting a 6 liter canister sample.

7) After sample collection, all field data were documented on the data sheet.

8) After sampling, the flux measurement was discontinued by shutting off the sweep air, removing the chamber, and securing the equipment.

9) Sampling locations were recorded on the field data sheet. The equipment was then relocated to the next test location and steps 1) through 8) were repeated.

The area source flux data are representative of selected VOC emissions from a locations selected to represent VOC emissions from two areas associated with the site: area considered the source of the subsurface contamination from a random grid (FLX-1 through

FLX-9; and the area defined by the subsurface contamination plume on a vector along the centerline of the down-gradient path of the plume (FLX-10 through FLX-24 but not FLX-22). Data were collected from 9 locations in the grid/source area and 13 locations along the plume centerline. Twenty three (23) samples were collected from scientifically selected locations onsite and down-gradient across the agricultural field to the north of the site.

Surface flux sample collection also included system blank testing for (both of the flux chambers used) at the end of the field test and two replicate samples. System blank testing was performed as the field samples are collected following the EPA protocol, however, the chamber was placed on a clean, teflon surface. The compounds found in the blank sample can come from the sweep air gas (<0.01 ppmv VOCs as methane), the teflon tubing, and the flux chamber. Replicate sample collection and analysis was used to determine the overall system precision, which includes sampling and analytical variability. A replicate field sample was collected from the flux chamber at equilibrium conditions by collecting a second sample immediately after the field sample. These data will help to establish contamination of sample in the storage container on shipping. A trip blank was not performed for VOCs, as trip blanks are not necessary for canister samples.

VOC samples were analyzed by Environmental Analytical Services located in San Luis Obispo, California. Samples were analyzed in the full scan mode (0.2 ppbv method detection limit) and the selective ion mode for a target list of project compounds (<0.2 ppbv method detection limits).

III. QUALITY CONTROL

Quality control procedures that were used to assure quality data are listed and described below. The application and frequency of these procedures were developed to meet the program objectives and the data quality objectives.

- Field Documentation -- A field notebook with data forms complete with sample chain-of-custody was maintained for the testing program. (See Attachment A for a copy of the data forms and Attachment B for a copy of the sample chain-of-custody log).

- Chain-of-Custody -- Chain-of-custody forms are provided in Attachment B.

- Method Blank -- Six method blank samples were analyzed. Five target compounds were detected above method detection limits in one or more blank samples. Compounds detected in the blank samples are summarized below.

Compound	Occurrence	Range of Detection (ppbv)
Methylene Chloride	6 of 6	0.09-to-0.17
Benzene	6 of 6	0.03-to-0.07
Toluene	4 of 6	0.0-to-0.04
1,2-Dichloropropane	1 of 6	0.0-to-0.02
Trichloroethene	1 of 6	0.0-to-0.03

  The occurrence of target compounds around or below standard method detection limits (0.2 ppbv) is typical and these data represent acceptable method performance. Laboratory qualifiers for blank sample detection has been included in the reporting of field data.

- Method Spike Report -- Ten method spike samples was analyzed; 3 for SIM and 7 for full scan. All method spike compounds (16 compounds) were recovered within the quality control criteria of $\pm$30%. These data indicate acceptable method performance.

- Laboratory Method Precision -- Ten method spike samples were analyzed in duplicate in order to obtain laboratory precision data. All spike sample compounds showed a relative percent difference (RPD) of $\pm$30%, the quality control criteria for this method. These data indicate acceptable method performance.

- System Blank Sample -- Two system blank samples (FLX-B1, FLX-B2; one blank for each chamber used in the testing) were obtained by placing the clean chamber on a clean Teflon surface and conducting a flux measurement. The chamber was operated as described and the blank sample was collected and submitted for analysis.

Blank testing was conducted at the end of the field testing. Four compounds were detected in one or more of the blank samples as indicated below. These data indicate acceptable performance. System blank levels have been subtracted from the data set.

COMPOUNDS	FLX-B1 (ug/m2,min-1)	FLX-B2 (ug/m2,min-1)
Methylene Chloride	0.051	0.048
Carbon Tetrachloride	ND	0.0041
Toluene	0.035	0.093
Tetrachloroethene	ND	0.034

- o Replicate Sample -- Two replicate flux measurement for VOCs were performed by collecting a second sample during a flux measurement immediately after the sample at the same location. The surface flux replicate pairs (FLX-6/6R and FLX-14/14R) showed poor agreement. Sample FLX-6 and replicate had 6 pairs of compounds detected with an additional 8 compounds detected in the sample but not replicated and, in general, at higher levels. The range of relative percent difference (RPD) for these pairs was 20-to-190 with an average RPD of 89. The QC criteria for precision is an RPD of ± 50. Sample FLX-14 and replicate had 8 pairs of compounds detected with one compound not replicated. The range of relative percent difference (RPD) for these pairs was 5.1-to-110 with an average RPD of 69. Although sample FLX-14 showed better precision, these data indicate unacceptable method performance. There is no obvious explanation for this imprecision but it may be related to the low levels detected (since uncertainty increases near the detection limit) and/or the air emission source. No data qualification is necessary for precision outside of criteria. Data near the method detection limit are inherently less certain. This observation should be considered in data usage.

- o Laboratory Quality Control Data -- Laboratory quality control data for the analytical method is available upon request.

IV. RESULTS AND DISCUSSIONS

All field data for the flux chamber testing are presented in Table 2 in flux units (ug/m2/min-1). The complete laboratory report is included in Attachment C. Twelve compounds were reported at lower method detection limits (typically less than 0.01 ppbv), including: vinyl chloride, 1,1-dichloroethene, chloroform, 1,2-dichloroethane, carbon tetrachloride, 1,2-dichloropropane, bromodichloromethane, t-1,2-dichloropropene, c-1,2-dichloropropene, 1,2-dibromomethane, 1,2,3-trichloropropane, and 1,4-dichlorobenzene. Twenty seven compound are reported in Table 2 and the compounds detected at higher sensitivity are indicated (*) in Table 2. Method detection limit information for each compound per analysis are found in Attachment C.

Surface flux data are calculated using measured target compound concentrations and flux chamber operating parameter data (sweep air flow rate 5.0 liters per minute, surface area 0.13 m^2). Emission can be calculated by multiplying flux by the surface area of the source. The flux of species, Fi (micrograms per minute per square meter), is calculated by knowing the sweep air flow rate, Q (cubic meter/ minute), species concentration Yi (micrograms/cubic meter) and exposed (to the chamber) surface area A (square meter) as follows:

$$Fi = \frac{Q \cdot Yi}{A}$$

The flux of compounds not detected above method detection limit can be calculated by inserting method detection limit or one-half method detection limit (in ug/m3 units) into the equation provided above. Emissions from the area source can be calculated by multiplying the area average or maximum flux per area by the total surface area of the source.

V. SUMMARY

Surface flux measurements were measured at 23 locations on unique surfaces over the groundwater plume. The following summary statements are provided:

- Surface flux measurements for VOCs were performed at selected locations on site and in the adjacent properties using the EPA recommended surface isolation flux chamber technology. This technology quantitatively measures flux from any emitting surface. Emission rate for the area can be calculated by multiplying the area of the source .

- Field blank and laboratory quality control data (Attachment C) indicate acceptable sampling method performance with the exception of exceedance of method precision standards. Compounds found in the blank samples were baseline subtracted from the field data. The reason for the poor precision may be related to the variability of the low-level source and sampling/analyzing low level gas samples. These results do not necessarily indicate data use limitations.

- The occurrence of 5 compounds in the numerous laboratory method blank samples is documented in Table 2. The highest occurrence of these compounds in the method blank samples is summarized below. Data below these levels are suspect as indicated by the qualifiers in Table 2. Due to the low-levels of these compounds, subtraction is not recommended.

COMPOUNDS	**BASELINE FLUX (ug/m2,min-1)**
Methylene Chloride	0.020
Benzene	0.0084
Toluene	0.0057
1,2-Dichloropropane	0.0040
Trichloroethene	0.0070

- Surface flux testing showed a detect for 18 of the 26 target compounds (27 counting total xylenes) at one or more of the 23 locations tested. The most frequently detected compounds were: methylene chloride (15 of 23, B), chloroform (19 of 23), benzene (23 of 23), carbon tetrachloride (17 of 23, B), and toluene (13 of 23, B).

- Higher levels of target compounds were typically found at the FLX-1 through FLX-11 locations which were at or near the location of the contamination source as compared to the locations on the transect from the source to the neighborhood. Flux levels above 1 ug/m2,min-1 were found at: FLX-1, 1,2-dibromo-3-chloropropane @ 9.3 ug/m2,min-1; FLX-4, 1,2-dichloropropane @ 2.8 ug/m2,min-1; and FLX-6, toluene @ 2.9 ug/m2,min-1, m,p-xylene @ 2.2 ug/m2,min-1, total xylenes @ 3.0 ug/m2,min-1.

- Flux levels generally decreased and the occurrence of compounds decreased along the transect sample locations from FLX-10 to FLX-24. The occurrence of 5 target compounds persisted offsite, including: methylene chloride, chloroform, benzene, carbon tetrachloride, and toluene.

Table 1. Summary of Field Data Collection Information For October 8, 1997.

LOCATION	TIME	CANISTER ID	CANISTER ID	COMMENT
FLX-1	1149	FLX-1	#366	GRAVEL; DRY
FLX-2	1150	FLX-2	#357	DIRT; DRY
FLX-3	1030	FLX-3	#S022	GRAVEL; DRY
FLX-4	1112	FLX-4	#3006	DIRT; DRY
FLX-5	1110	FLX-5	#336	SOIL; DRY
FLX-6	1032	FLX-6	#A039	SOIL/GRASS; DRY
FLX-6R	1036	FLX-6R	#370	REPLICATE SAMPLE
FLX-7	1233	FLX--7	#3110	DIRT PILE; DRY
FLX-8	1316	FLX-8	#335	SOIL; DRY
FLX-9	1315	FLX-9	#391	SOIL; DRY
FLX-10	1234	FLX-10	#325	DIRT PILE; DRY
FLX-11	1400	FLX-11	#304	DIRT PILE; DRY
FLX-12	1401	FLX-12	#349	DIRT; DRY
FLX-13	1449	FLX-13	#328	SOIL; DRY
FLX-14	1448	FLX-14	#340	SOIL; DRY
FLX-14R	1452	FLX-14R	#S074	REPLICATE
FLX-15	1528	FLX-15	#397	SOIL; DRY
FLX-16	1530	FLX-16	#351	SOIL; DRY
FLX-17	1612	FLX-17	#6281	SOIL; DRY
FLX-18	1610	FLX-18	#4413	SOIL; DRY
FLX-19	1700	FLX-19	#6150	SOIL; DRY
FLX-20	1658	FLX-20	#6204	SOIL; DRY

FLX-21	1833	FLX-21	#6320	SOIL; DRY
FLX-23	1802	FLX-23	#6287	SOIL; DRY
FLX-24	1800	FLX-24	#6323	SOIL; DRY
FLX-B1 (10/9/97)	1450	FLX-B1	#S317	TEFLON
FLX-B2 (10/9/97)	1448	FLX-B2	#6354	TEFLON

Table 2. Summary of Surface Flux Data, ug/m2,min-1.

COMPOUNDS	FLX-B1	FLX-B2	FLX-1	FLX-2	FLX-3	FLX-4	FLX-5	FLX-6	FLX-6R	FLX-7
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	0.0014	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	0.0047* Q	ND	ND	0.077 a	ND	0.045*
Methylene Chloride	0.051 B	0.048 B	<SB, B	0.068 B	<SB, B	<SB, B	<SB, B	0.055 B	<SB, B	0.072 B
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	0.037 Q	0.015*	0.017*	0.0031*	0.0032*	0.014*	0.0014*	0.013*
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.028 Q
1,2-Dichloroethane	ND	ND	0.0018*	ND	ND	ND	ND	ND	ND	0.056*
Benzene	ND	ND	0.085 B	0.024 B	0.021 B	0.048 B	0.018 B	0.028 B	0.009 B	0.051 B
Carbon Tetrachloride	ND	0.0041* Q	0.023*	0.0048*	0.0047*	0.011*	0.0053*	0.0074*	0.0085*	0.028*
1,2-Dichloropropane	ND	ND	ND Q	0.17 Q	0.0076* Q	2.8	0.37 Q	0.041 a,B	0.024*	0.016 Q
Trichloroethene	ND	ND	ND	ND	0.15	ND	ND	0.80	ND	0.39
Bromodichloromethane	ND	ND	ND	0.0013*	ND	0.0019* Q	0.0041* Q	0.0037*	ND	ND
t-1,3-Dichloropropene	ND	ND	0.0026*	ND	ND	ND	ND	ND	ND	ND
c-1,3-Dichloropropene	ND	ND	0.0034*	ND	ND	0.0025*	ND	ND	ND	ND
Toluene	0.035	0.093	<SB	0.39	0.31	0.14	<SB	2.9	<SB	1.1
1,2-Dibromoethane	ND	ND	ND	ND	ND	0.0023*	ND	ND	ND	ND
Tetrachloroethane	ND	0.034 Q	ND	0.26	<SB	ND	ND	0.21	ND	0.46
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.026 Q
m,p-Xylene	ND	ND	ND	0.066	0.20	0.043 Q	ND	2.2	ND	0.47
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	0.076	ND	ND	0.84	ND	0.25
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.21*	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	ND	ND	9.3	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	0.066	0.28	ND	ND	3.0	ND	0.73

*- Reported at Higher Sensitivity.

a- Found at Higher Concentration in the Full Scan Run.

ND- Less Than Method Detection Limit.

B- Compound Found in Lab Blank.

Q- Ion Qualifiers Outside of Calibration Standard.

<SB- Value Found at or Below System Blank Levels.

Table 2. Summary of Surface Flux Data, ug/m2,min-1.

COMPOUNDS	FLX-8	FLX-9	FLX-10	FLX-11	FLX-12	FLX-13	FLX-14	FLX-14R	FLX-15	FLX-16
Vinyl Chloride	ND	ND	ND	0.0021* Q	ND	0.0017* Q	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	0.10	ND	ND	0.12	ND
1,1-Dichloroethene	ND	0.0027*	ND	0.0021*	0.0021*	0.0020*	ND	0.0029*	0.0028*	0.0025*
Methylene Chloride	<SB, B	0.060 B	<SB, B	0.075 B	<SB, B	0.12 B	0.12 B	0.052 B	0.11 B	0.058 B
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.0045*	0.042* Q	0.0049* Q	0.18*	0.0031*	0.021*	0.0039*	0.0027*	0.0071*	0.0025* Q
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.0012* Q	ND	ND	0.0016* Q	ND	ND	0.0014*	ND	ND	ND
Benzene	0.030 B	0.045 B	0.035 B	0.041 B	0.049 B	0.035 B	0.038 B	0.040 B	0.077 B	0.033 B
Carbon Tetrachloride	<SB	0.022*	0.016*	0.039*	0.014*	0.023*	0.021* Q	0.016* Q	0.025*	0.019*
1,2-Dichloropropane	0.0033*	0.0021*	0.0021* Q	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.0015* Q	0.0014* Q	ND	0.0020*	ND	0.0013*	ND	ND	ND	ND
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
c-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	<SB	0.16	0.50	<SB	0.14 B	0.11	0.34 B	0.13	0.19	<SB
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	0.044 Q	0.11	0.057 Q	0.046 Q	0.17 Q	0.098 Q	0.49	0.16	0.074 Q	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	0.26 Q	ND	ND	0.038	0.029 Q	0.18	0.050	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	0.14 Q	0.057 Q	ND	0.21 Q	0.13 Q	0.68	0.21	0.074 Q	ND

*- Reported at Higher Sensitivity.

a- Found at Higher Concentration in the Full Scan Run.

ND- Less Than Method Detection Limit.

B- Compound Found in Lab Blank.

Q- Ion Qualifiers Outside of Calibration Standard.

<SB- Value Found at or Below System Blank Levels.

Table 2. Summary of Surface Flux Data, ug/m2,min-1.

COMPOUNDS	FLX-17	FLX-18	FLX-19	FLX-20	FLX-21	FLX-23	FLX-24
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.056 B	0.065 B	0.054 B	0.058 B	0.032 B	0.067 B	<SB
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.0028*	0.0025* Q	0.0029* Q	0.0022*	0.030 a,Q	0.0038*	0.0024*
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	0.019*	ND	ND	ND
Benzene	0.042 B	0.082 B	0.026 B	0.032 B	0.017 B	0.027 B	0.024 B
Carbon Tetrachloride	0.022*	0.022*	0.025*	ND	0.0071*	0.023*	0.011*
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	ND	ND	DN	ND	ND	ND	ND
c-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Toluene	<SB	0.18	<SB	<SB	<SB	<SB	<SB
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane	ND	0.11	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	0.038 Q	0.063	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	0.016 Q	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	0.079 Q	ND	ND	ND	ND	ND
*- Reported at Higher Sensitivity.							
a- Found at Higher Concentration in the Full Scan Run.							
ND- Less Than Method Detection Limit.							
B- Compound Found in Lab Blank.							
Q- Ion Qualifiers Outside of Calibration Standard.							
<SB- Value Found at or Below System Blank Levels.							

ATTACHMENT A

EMISSION MEASUREMENT DATA SHEETS

SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT. LOCATION FLX-1

SURFACE DESCRIPTION GRAVEL, DRY

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ (SHADED) Cloudy ☒ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☐ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

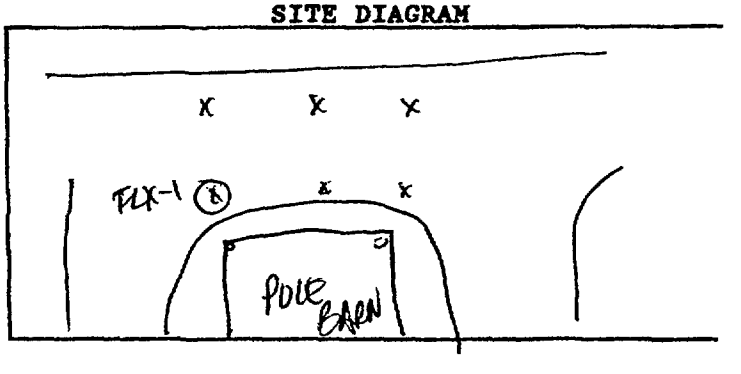
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START >1700 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1119	5.0	0								
1125	↓	1								
1131	↓	2								
1137		3								
1143		4								-29"
1149		5	72°	70°	72°	70			FLX-1	366

COMMENTS: TEG RIG RUNNING IN AREA THROUGHOUT

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FEST. FLX-2

SURFACE DESCRIPTION DIRT, DRY

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ (SHADED) Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP 71° RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

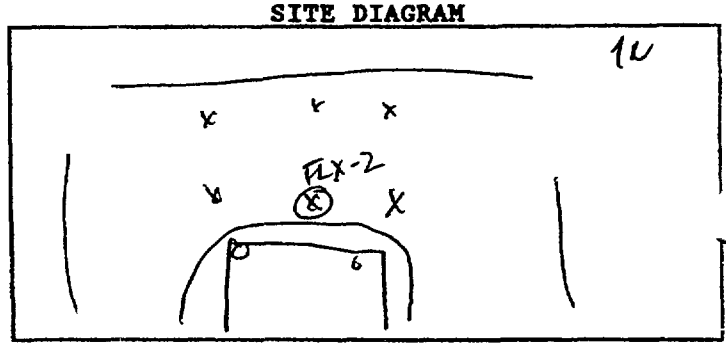
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START >1700 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1120	5.0	0								
1126	↓	1								
1132	↓	2								
1138		3								
1144		4	71°	71°	72°	70°				-28" Hg
1150		5							FLX-2	~~366~~
										357

COMMENTS: TRG IN AREA

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT. ; FLX-3 LOCATION

SURFACE DESCRIPTION GRAVEL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP 71° RAIN: Yes ☒ No ☒ Comment LIGHT (3 RAIN DROPS)

PRIOR CHAMBER CLEANING: Full Wash ☒ Wet Wipe ☐ Dry Wipe ☐ None ☐ ____

SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC 60/40 SUPPLIER SCOTT MARIN PSIG START ____ PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv) NA	Sample Number	Comments
1000	5.0	0								
1006	↓	1								
1012	↓	2								
1018		3								
1024		4								-29" Hg
1030		5	68°	68°	68°	71°			FLX-3	5022

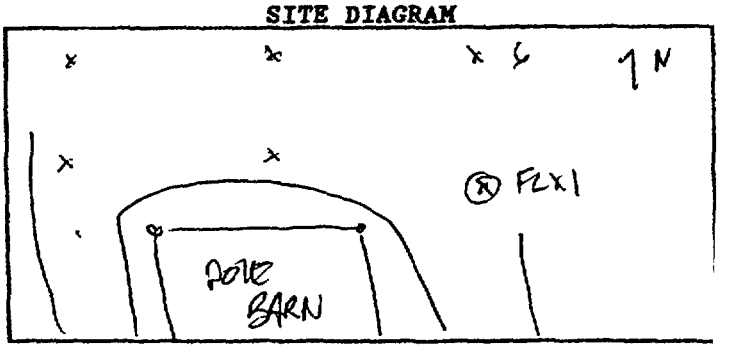
COMMENTS: ~~SFS~~ FLX 1-24

CHECK (510) 697-8344 -R

TRG IN AFER B1, B2--

RUNWIND

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FEST. FLX-4

SURFACE DESCRIPTION DRY, DRY

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 3-7 mph Wind at Seal, ____ mph

TEMP 67° RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

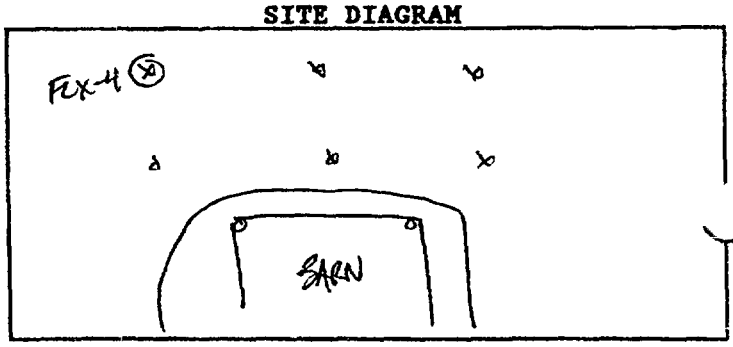
SWEEP AIR UHP CC — SUPPLIER Scott M PSIG START >1700 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1042	5.0	0								
1048	↓	1								
1054	↓	2								
1100		3								
1106		4	70°	68°	68°	67°				-29" Hg
1112		5							FLX-4	3006

COMMENTS:

TEG IN ALCA

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CBS

LOCATION FRONTIER FORT LOC FLX-5

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 3-5 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment WANTS TO

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

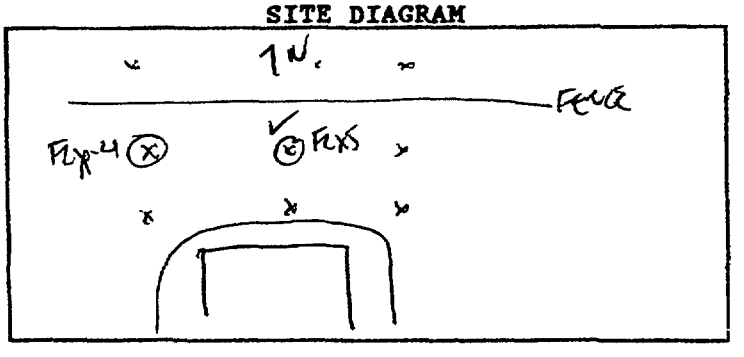
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START ____ PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1040	5.0	0								
1046	↓	1								
1052	↓	2								
1058		3								
1104		4	70°	67°	70°	69°				-29 "Hg
1110		5							FLX-5	336
11										

COMMENTS: TEB IN AREA

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/7/97 SAMPLERS CES

LOCATION PANTHER FORT LOC FLX-6

SURFACE DESCRIPTION Dry GRASS / Dry SOIL (PINE OF SOIL)

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP 68° RAIN: Yes ☒ No ☒ Comment LIGHT (3 RAIN DROPS @ 1000)

PRIOR CHAMBER CLEANING: Full Wash ☒ Wet Wipe ☐ Dry Wipe ☐ None ☐ ____

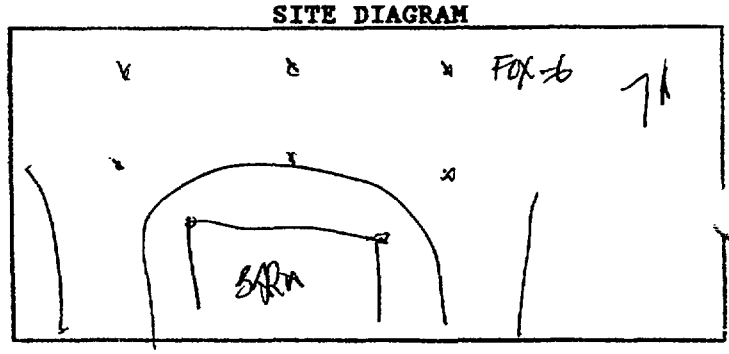
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☐ PURGED PRIOR TO SAMPLING ☐ New ☐ Used ☐

SWEEP AIR UHP CC 60440 SUPPLIER SCOTT MARIN PSIG START 2000 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1002	50	0								
1008	↓	1								
1014	↓	2								
1020		3								
1026		4								-29"Hg
1032		5	70°	68°	71°	68°			FLX-6	A039
1036									FLX-6R	370 -29"Hg

COMMENTS:

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT LOC FLX-7

SURFACE DESCRIPTION DIRT PILE ~ 2'-3' THICK ABOVE GRADE

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. _____ TYPE _____ ID NO. _____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ _____

CHAMBER SEAL ✓ CONDENSATION: Yes ☐ No ☒ BARM PRESS _____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5-10 mph Wind at Seal, ____ mph

TEMP 69° RAIN: Yes ☐ No ☒ Comment LIGHT SPRINKLE EARLIER, NO WETTING

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ _____

SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

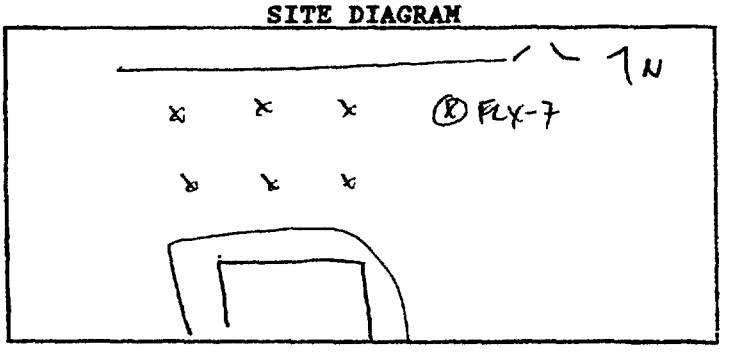
SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1700 PSIG STOP _____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1203	5.0	0								
1209	↓	1								
1215	↓	2								
1221		3								
1227		4								-29" Hg
1233		5	82°	77°	81°	69°			FLX-7	3110

COMMENTS:

TEG IN AREA

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER PERT FLX-8

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. _____ TYPE _____ ID NO. _____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS _____

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ _____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS _____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', ___ mph Wind at Seal, ___ mph

TEMP 70° RAIN: Yes ☒ No ☐ Comment LIGHT (FEW DROPS)

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ _____

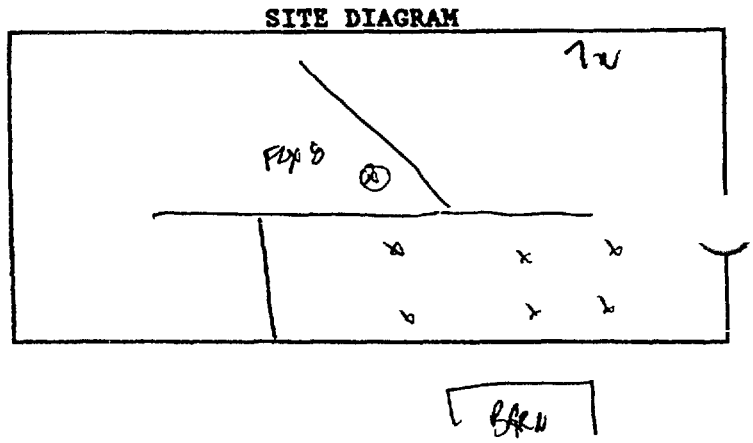
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START — PSIG STOP _____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1246	5.0	0								
1252		1								
1258		2								
1304		3								
1310		4								29"Hg
1316		5	75°	71°	74°	70°			FLX-3	335

COMMENTS: TRG IN AREA I'm UPWIND

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT LOC FLX-9

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5-7 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☒ No ☐ Comment FEW DROPS

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

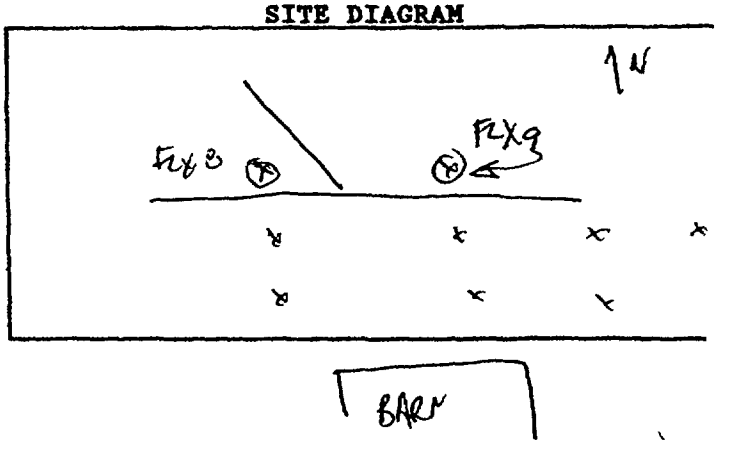
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START — PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1245	5.0	0								
1251	↓	1								
1257		2								
1303		3								
1309		4								-29" Hg
1315		5	76°	72°	76°	70°			FLX-9	391

COMMENTS: UPWIND OF TEG

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS

LOCATION FRONTIER FERT. LOC FLX-10

SURFACE DESCRIPTION DIRT - 1'-2' PILE ABOVE GRADE

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. TYPE ID NO.

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☐ Wind at 5', 5-D mph Wind at Seal, ___ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐

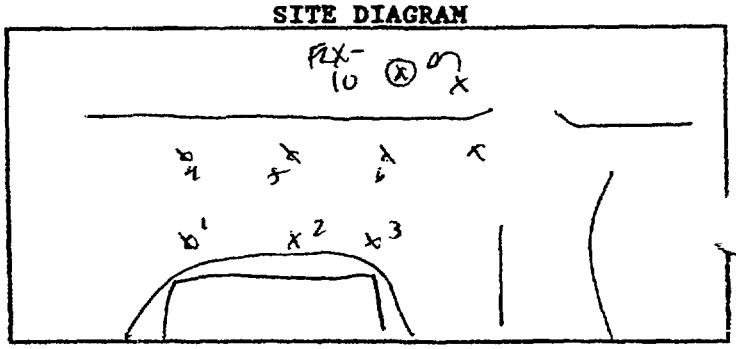
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 71700 PSIG STOP

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1204	5.0	0								
1210		1								
1216		2								
1222		3								
1228		4								-29'
1234		5	82°	77°	80	73			FLX-10	225
~~1238~~										

COMMENTS: NOTE - ABOUT 3' SOUTH OF STAKE ON FLAT GROUND OFF DIRT PILE TEB IN AREA

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT. LOC # 11

SURFACE DESCRIPTION DIRT, ON DIRT PILE ~1' ABOVE GRADE (AREA FILLED & LEVELED)

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 3-7 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

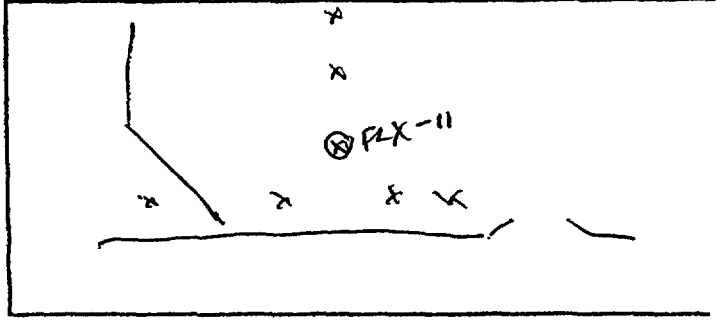
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1500 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1330	5.0	0								
1336	↓	1								
1342	↓	2								
1348		3								
1354		4	74°	71°	75°	70°				~29"
1400		5							FLX-11	304

COMMENTS: DOWNWIND OF TEG SOME TIME

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT. LOC #12

SURFACE DESCRIPTION DIRT, DRY

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 3-7 mph Wind at Seal, ____ mph

TEMP 68° RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

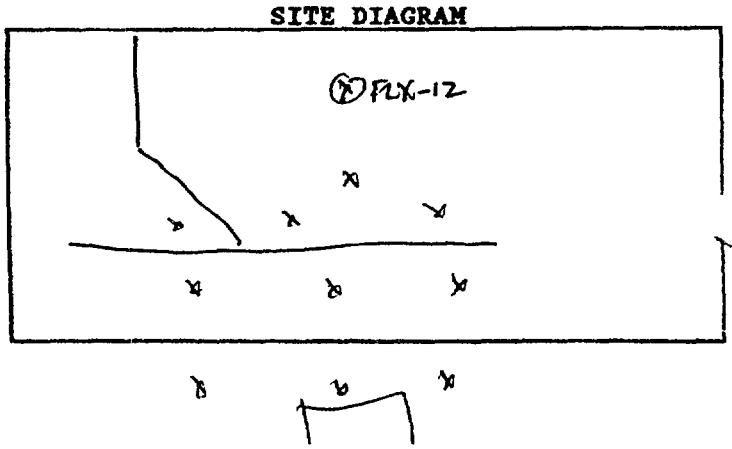
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1500 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1331	50	0								
1337	↓	1								
1343		2								
1349		3								
1355		4	75°	71°	75°	68°				-29" Hg
1401		5							FLX-12	349

COMMENTS: UPWIND OF TEG

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CB

LOCATION FRONTIER FORT

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE N

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 7-10 mph Wind at Seal, ____ mph

TEMP ____ RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

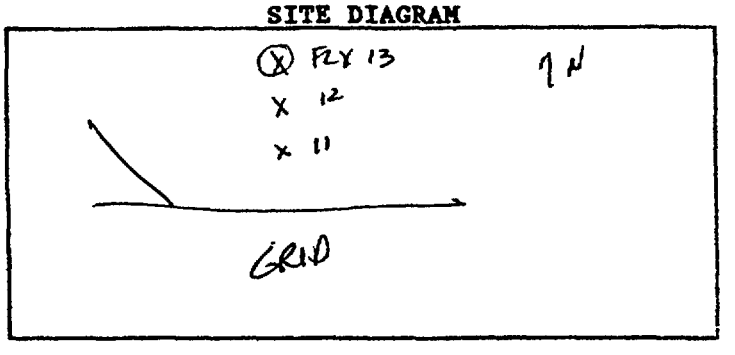
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1100 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1419	5.0	0								
1425	↓	1								
1431		2								
1437	↓	3								
1443		4								~~29~~ Hg
1449		5							FLX-13	328

COMMENTS: UPWIND OF TEG

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT LOC FLX-14

SURFACE DESCRIPTION Dry SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS ____

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 7-10 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment LIGHT RAIN STARTING 1450

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

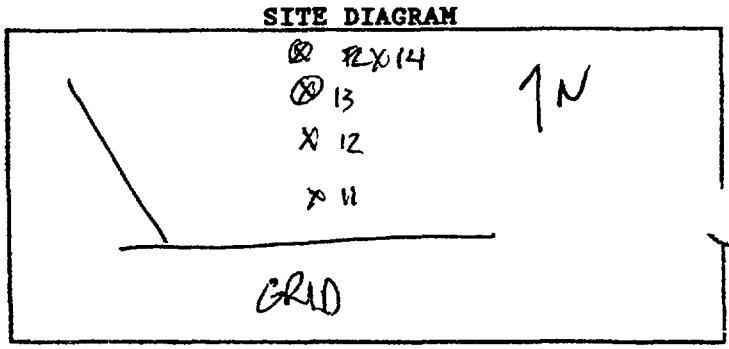
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1100 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv)		Sample Number	Comments
1418	510	0								
1424	↓	1								
1430		2								
1436		3								
1442		4								-29" Hg
1448		5	72°	70°	73°	70°			FLX-14	340
										-29" Hg
1452									FLX-14-R	507

COMMENTS: VARIED DEPTH

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/18/97 SAMPLERS CES

LOCATION FRONTIER PART LOC # FLX-15

SURFACE DESCRIPTION Dry Soil

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. A PHOTO TAKEN: Yes ☒ No ☐

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 0-12 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☐ Comment Few Drops

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐

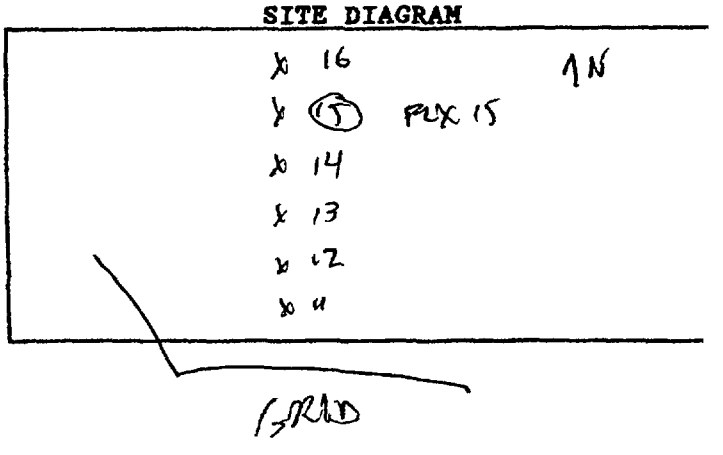
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 1000 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv)		Sample Number	Comments
1458	5.0	0					NA			
1504		1								
1510		2								
1516		3								
1522		4								-29" Hg
1528		5	72°	70°	72°	70°			FLX-15	397

COMMENTS: UPWIND OF TEG

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION Frontier Fert. LOC # FLX-16

SURFACE DESCRIPTION Dry soil

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS; Sun ☐ P.Sun ☐ Cloudy ☐ Wind at 5', 10-12 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment Few Drops

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

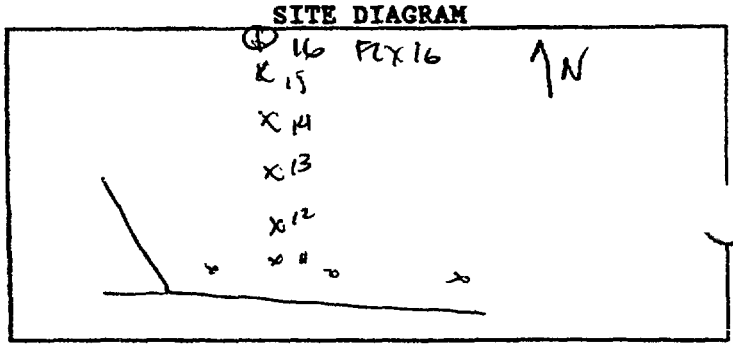
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START — PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1500	5.0	0								
1506		1								
1512		2								
1518		3								
1524		4								-29" Hg
1530		5	72°	70°	72	70°			FLX-16	351

COMMENTS: Ground Dry Test

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION Frontier Pert. Loc #17 PLX 17

SURFACE DESCRIPTION Dry Soil

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. _____ TYPE _____ ID NO. _____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS _____

CHAMBER I.D. _____ PHOTO TAKEN: Yes ☒ No ☐ _____

CHAMBER SEAL _____ CONDENSATION: Yes ☐ No ☒ BARM PRESS _____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5-10 mph Wind at Seal, ____ mph

TEMP _____ RAIN: Yes ☒ No ☐ Comment Light RAIN @ 1530, Front Sa Coming

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ _____

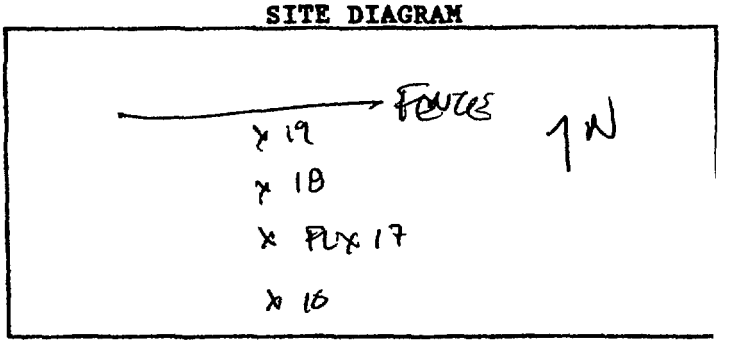
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 800 PSIG STOP _____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1542	5.0	0								
1548	↓	1								
1554	↓	2								
1600		3								
1606		4								-29" Hg
1612		5							FLX17	6281

COMMENTS:

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION Frontier Fort, LOC FLX-18

SURFACE DESCRIPTION Dry soil

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☒ Cloudy ☐ Wind at 5', 5-10 mph Wind at Seal, ____ mph

TEMP ____ RAIN: Yes ☒ No ☐ Comment Light rain, no accum, points covered

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

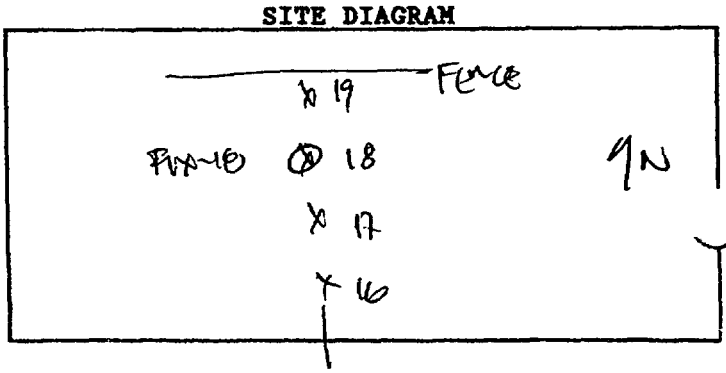
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER Scott M PSIG START 800 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1540	5.0	0								
1546	↓	1								
1552		2								
1558		3								
1604		4								-29" Hg
1610		5							FLX-18	4413

COMMENTS: Light rain @ 1530

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CBS

LOCATION FRONTIER FORT.

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5-7 mph Wind at Seal, ____ mph

TEMP ____ RAIN: Yes ☒ No ☐ Comment LIGHT RAIN

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

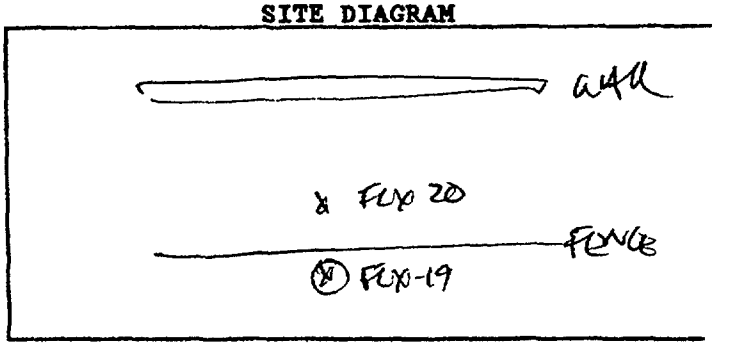
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 70 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1630	5.0	0								
1636	↓	1								
1642	↓	2								
1648	↓	3								
1654		4								-29"
1700		5							FLX-19	6150

COMMENTS:

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT

SURFACE DESCRIPTION PLOWED FIELD, DRY

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5+ mph Wind at Seal, ____ mph

TEMP ____ RAIN: Yes ☒ No ☐ Comment LIGHT RAIN

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

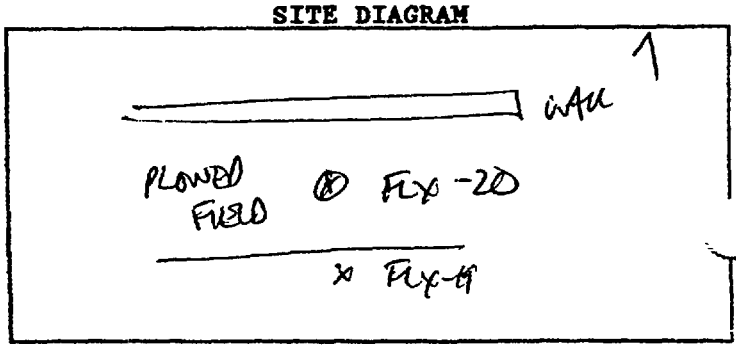
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☐

SWEEP AIR UHP CC — SUPPLIER SM PSIG START 700 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1628	5.0	0								
1634	↓	1								
1640	↓	2								
1646		3								
1652		4								-24"
1658		5							FLX-20	6204

COMMENTS:

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CBS

LOCATION FRONTIER FLUX FLX-~~22~~ 21

SURFACE DESCRIPTION DITCH BETWEEN FIELD AND WALL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL V CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☒ P.Sun ☐ Cloudy ☐ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP 66° RAIN: Yes ☐ No ☐ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC 703 SUPPLIER SM PSIG START ____ PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1803	5.0	0								
1809	↓	1								
1815	↓	2								
1821		3								
1827		4							-21	-24" Hg
1833		5	65°	64°	65°	65°			FLX-~~22~~	6320

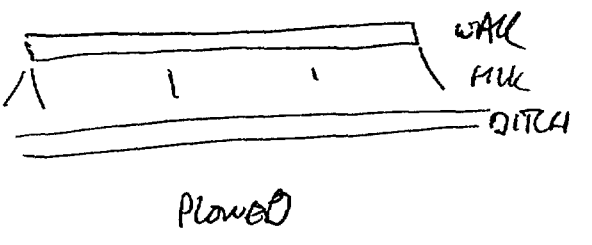
COMMENTS:

CHAMBER BOTTLE

* NO AIR LEFT FOR FLX-22

* RAIN AGAIN 1826

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT. LOC FLX-23

SURFACE DESCRIPTION Dry Soil

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☒ No ☐ ____

CHAMBER SEAL ✓ CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', 5-10 mph Wind at Seal, ____ mph

TEMP 68° RAIN: Yes ☐ No ☒ Comment PRIOR LIGHT RAIN

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ ____

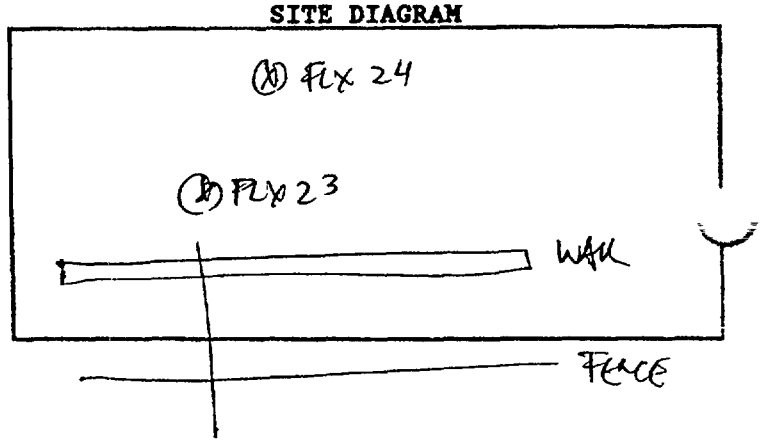
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC — SUPPLIER SA PSIG START 400 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1732	5.0	0								
1738	↓	1								
1744	↓	2								
1750		3								
1756		4	70°	~~70~~	70°				↓	
1802		5		68°			68		FLX-23	6237

COMMENTS: BLINDS COVERED DURING RAIN

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/8/97 SAMPLERS CES

LOCATION FRONTIER FORT FLX-24

SURFACE DESCRIPTION DRY SOIL

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☒

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☒ No ☐

CHAMBER SEAL Y CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☐ Wind at 5', 5-10 mph Wind at Seal, ____ mph

TEMP 70° RAIN: Yes ☐ No ☒ Comment PRIOR LIGHT RAIN, NO WETTING

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐

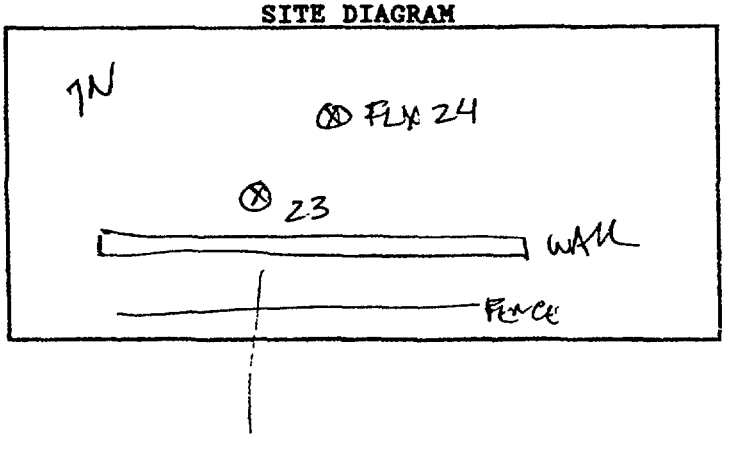
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC ____ SUPPLIER SM PSIG START 500 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Chamber Air	Ambient Surf	Ambient Air	Real-Time (ppmv) NA		Sample Number	Comments
1730	5.0	0								
1736		1								
1742		2								
1748		3								
1754		4	69°	69°	70°	69°				-29" Hg
1800		5							FLX-24	6323

COMMENTS: POINTS COVERED DURING RAIN

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/9/97 SAMPLERS CBS

LOCATION RED BLUFF - IN VAN

SURFACE DESCRIPTION TEFLON

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. _____ TYPE _____ ID NO. _____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. H PHOTO TAKEN: Yes ☐ No ☒

CHAMBER SEAL NO - IN VAN CONDENSATION: Yes ☐ No ☒ BARM PRESS _____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP _____ RAIN: Yes ☐ No ☒ Comment _____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ AS TESTED

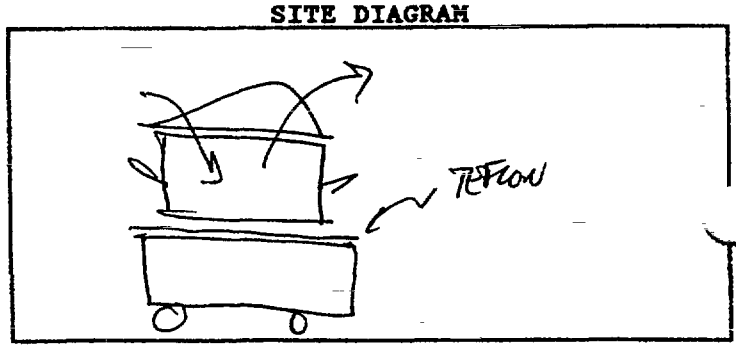
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☐ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR UHP CC 3120 SUPPLIER SCOTT MARRIN PSIG START 2000 PSIG STOP _____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv)		Sample Number	Comments
1420	5.0	0					NA			
1426	↓	1								
1432		2		NA						
1438	↓	3								
1444		4								-29" Hg
1450		5							FLX-B1	S317

COMMENTS:

SITE DIAGRAM



SURFACE FLUX MEASUREMENT DATA FORM

DATE 10/9/97 SAMPLERS CBS

LOCATION RED BLUFF - SYSTEM BLANK

SURFACE DESCRIPTION TEFLON

CURRENT ACTIVITY NA

INSTRUMENT TYPE NA I.D. NO. ____ TYPE ____ ID NO. ____

INSTRUMENT BASELINE NA

PROJECT QC: BACKGROUND MEASUREMENTS ☐ BLANK MEASUREMENTS ☒ REPLICATE MEASUREMENTS ☐

AMBIENT CONCENTRATIONS NA

CHAMBER I.D. B PHOTO TAKEN: Yes ☐ No ☒ ____

CHAMBER SEAL NO -INVAN CONDENSATION: Yes ☐ No ☒ BARM PRESS ____

AMBIENT CONDITIONS: Sun ☐ P.Sun ☐ Cloudy ☒ Wind at 5', ____ mph Wind at Seal, ____ mph

TEMP ____ RAIN: Yes ☐ No ☒ Comment ____

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ AS TESTED

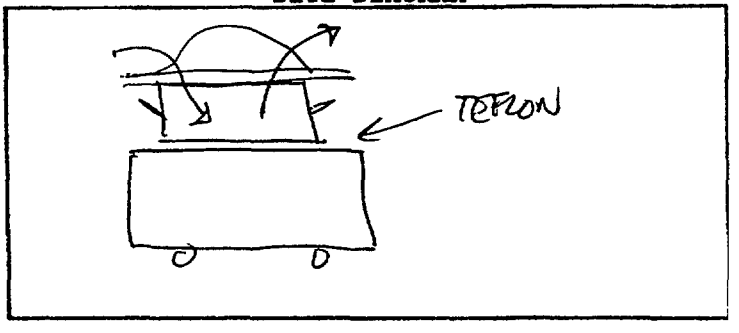
SAMPLE LINE: BACK FLUSHED PRIOR TO START ☒ PURGED PRIOR TO SAMPLING ☒ New ☐ Used ☒

SWEEP AIR ~~X~~ UHP CC 3120 SUPPLIER SCOTT MARRIN PSIG START 2000 PSIG STOP ____

Time	Sweep Air (L/min)	Residence Number	Temperature (°F) Chamber Surf	Temperature (°F) Chamber Air	Temperature (°F) Ambient Surf	Temperature (°F) Ambient Air	Real-Time (ppmv) NA	Real-Time (ppmv)	Sample Number	Comments
1418	5.0	0								
1424	↓	1								
1430		2		NA						
1436		3								
1442		4								-294
1448		5							FLX-B2	6354

COMMENTS:

SITE DIAGRAM



ATTACHMENT B

CHAIN OF CUSTODY

TEL:5103707959

ENVIRONMENTAL
Analytical Service, Inc.

CHAIN OF CUSTODY RECORD

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3586
Fax 805.541.4550

Project Number:
Project Name:
Quote Number:

REPORT TO:

Company: CE SCHMIDT
Address: 19200 LIVE OAK RD
City/State/Zip: RED BLUFF CA 96080
Phone: 916 529-4256 FAX -4979
ATTENTION: CES

TO-14 - SEE DETECTION LIMIT TABLES

FLX-6	10/8/97	1032		X						X	A039	-29"			X						CARC
FLX-6R	↓	1036		↓						↓	370	"			↓						FLUX TOO
FLX-3		1030		↓						↓	5022	"			↓						µg/m³ X 0.0305
FLX-4		1112									3006	"									
FLX-5		1110									336	"									
FLX-2		1150									357	-28"									
FLX-1		1149									366	-29"									
FLX-10		1234									325	"									

COMMENTS: PLS REPORT ppbv, µg/m³, µg/m², MN-1

BILLING INFORMATION

Company: CES
Address: SAME
City/State/Zip:
ATTENTION:
Purchase Order/Billing Reference:

SAMPLED BY:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received for lab by:	Date	Time

ENVIRONMENTAL
Analytical Service, Inc.

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

Project Number:	Project Name: SIERRA - FRONTIER FORT	Quote Number:

REPORT TO

Company: CES[illegible]
Address: 19700 LIVE OAK RD
City/State/Zip: RED BLUFF CA 96080
Phone: 916 529-4256 FAX -4373
ATTENTION: CES

TO-14 - SEE MDL TABLE

FLX-16	10/3/97	1530	✓	✓	351				μg/m³
TLX-15	↓	1573	↓	↓	397				TLUX 15 <0.0385
~~FLX-18~~	↓	~~1610~~	↓	↓	~~4473~~				~~μg/m³ TO 0.0295~~
~~FLX-17~~		~~1612~~			~~6231~~				

COMMENTS: PLS REPORT ppbv, μg/m³, μg/m³, ...

BILLING INFORMATION

Company: [illegible]
Address: SAME
City/State/Zip:
ATTENTION
Purchase Order/Billing Reference:

SAMPLED BY:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received for lab by:	Date	Time

TEL·5103707959

ENVIRONMENTAL
Analytical Service, Inc.

CHAIN OF CUSTODY RECORD

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3586
Fax 805.641.4550

Project Number: | Project Name: RA - FRANKLIN PLT | Quote Number:

RECEIVED FROM

Company: CE SHAMILI
Address: 19200 LAKE OAK RD
City/State/Zip: RED BLUFF, CA 96080
Phone: 916 529-4216 FAX: -4978
ATTENTION: CES

SAMPLE DESCRIPTION	DATE	TIME																						
FLY-18	10/8/97	1610		X						X	4413	-29			X									
TLX-17	↓	1612		↓						↓	6291	↓			↓								TLX 15	
FLY-20		1653									6204												0.0381 X	µg/m³
FLY-19		1700									6150													
FLY-24		1800									6323													
TLX-23		1802									6297													
FLY-21		1833									6320													
X	X	X									X													

TO-14 - SEE TABLE (6) SUBMITTED 1 MIL

COMMENTS: KS RA 1000, µg/m³, µg/m² min

RELINQUISHED BY

Company: CES
Address: SAML
City/State/Zip:
ATTENTION:
Purchase Order/Billing Reference:

SAMPLED BY:	Date	Time	Received by:	Date	Time
CE SHAMILI	10/8/97		UPS		
Relinquished by: CE SHAMILI	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received for lab by:	Date	Time

ENVIRONMENTAL
Analytical Service, Inc.

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3685
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

FLUNTER

Project Number:
Project Name: SCRA - FLUNTER
Quote Number:

CLIENT INFORMATION

Company: CF SCHMIDT
Address: 19200 LWE OAK RD
City/State/Zip: RED BLUFF CA 96080
Phone: 916 529-4256 FAX: -4870
ATTENTION: CFS

FLX-7	10/9/97	1233		X						X	3110	-29"		X								1-LWX =
FLX-8	"	1316		↓						↓	335	"		↓								µg/m³ x 0.0305
FLX-9	"	1315		↓						↓	391	"										
FLX-12	"	1401									349	"										
FLX-11	"	1400									304	"										
FLX-14	"	1448									340	"										
FLX-14R	"	1452									5074	"										
FLX-13	"	1449									328	"										

TO-14, SEE TABLE 1 & MDLS

COMMENTS: PLS REPORT ppbV, µg/m³, TLWX µg/m², min⁻¹

BILLING INFORMATION

Company: CFS
Address: CAME
City/State/Zip:
ATTENTION:
Purchase Order/Billing Reference:

	Date	Time		Date	Time
SAMPLED BY:			Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received for lab by:		

ENVIRONMENTAL
Analytical Service, Inc.

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

FCR1

Project Number:
Project Name: [illegible] - TRENCH
Quote Number:

REPORT TO:

Company: [illegible]
Address: 1720 LONE OAK RD
City/State/Zip: [illegible] SLOTE CA 93420
Phone: 916 524-4256 FAX: -4579
ATTENTION: [illegible]

MATRIX LEGEND
W - Water
SL - Soil
S - Source Air, High Level
A - Ambient Air, Low Level

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	COMP	GRAB	ACID	BASE	MATRIX W	MATRIX SL	MATRIX S	MATRIX A	CONTAINER/CANISTER NUMBER	INITIAL PRESSURE	EAS LABORATORY ID	ANALYTICAL TESTS: TO-14 - [illegible]	TO-15 - [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	REMARKS
PLX-B1	10/9/07	1450		Y						X	5317	-24"		Y						[illegible]
PLX-B2	"	1448		X						X	6354	-24"		X						[illegible]

COMMENTS: [illegible]

BILLING INFORMATION:

Company: [illegible]
Address: [illegible]
City/State/Zip:
ATTENTION:
Purchase Order/Billing Reference:

SAMPLED BY:	Date	Time	Received by:	Date	Time
[illegible]	[illegible]		[illegible]		
Relinquished by: [illegible]	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received for lab by:	Date	Time

ATTACHMENT C

LABORATORY DATA REPORTS

METHOD BLANK REPORT

EPA TO-14 Full Scan GC/MS				SDG Laboratory Number:	LABQC B10157
File:	B10157A.D	Date Sampled:	NA		
Client:	SIERRA ENV.	Date Received:	NA		
Description:	ZERO AIR BLANK 500 ML + 2 ML IS	Date Analyzed:	10/15/1997		
Analyst:	YL	Dilution Factor:	2.00	Can#:	NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3
75-01-4	vinyl chloride	0.06	0.06	U	
74-83-9	bromomethane	0.07	0.07	U	
75-35-4	1,1-dichloroethene	0.04	0.04	U	
75-09-2	methylene chloride	0.05	0.17		0.60
75-34-3	1,1-dichloroethane	0.02	0.02	U	
67-66-3	chloroform	0.02	0.02	U	
71-55-6	1,1,1-trichloroethane	0.01	0.01	U	
107-06-2	1,2-dichloroethane	0.02	0.02	U	
71-43-2	benzene	0.01	0.05		0.16
56-23-5	carbon tetrachloride	0.01	0.01	U	
78-87-5	1,2-dichloropropane	0.02	0.02	U	
79-01-6	trichloroethene	0.01	0.01	U	
75-27-4	bromodichloromethane	0.10	0.10	U	
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U	
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U	
108-88-3	toluene	0.01	0.03	Q	0.11
106-93-4	1,2-dibromoethane	0.04	0.04	U	
127-18-4	tetrachloroethene	0.02	0.02	U	
108-90-7	chlorobenzene	0.04	0.04	U	
108-38-3	m,p-xylene	0.07	0.07	U	
75-25-2	bromoform	0.50	0.50	U	
95-47-6	o-xylene	0.03	0.03	U	
96-18-4	1,2,3-trichloropropane	0.50	0.50	U	
106-46-7	1,4-dichlorobenzene	0.08	0.08	U	
95-50-1	1,2-dichlorobenzene	0.07	0.07	U	
96-12-8	1,2-dibromo-3-chloropropane	6.50	6.50	U	
	total xylenes	0.10	0.10	U	

	Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
	d5-chlorobenzene	20	20	102	70-150

METHOD BLANK REPORT

EPA TO-14 Full Scan GC/MS		SDG Laboratory Number:	LABQC B10167
File:	B10167A.D	Date Sampled: NA	
Client:	SIERRA ENV.	Date Received: NA	
Description:	ZERO AIR BLANK	Date Analyzed: 10/16/1997	
Analyst:	YL	Dilution Factor: 2.00	Can#: NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3
75-01-4	vinyl chloride	0.06	0.06	U	
74-83-9	bromomethane	0.07	0.07	U	
75-35-4	1,1-dichloroethene	0.04	0.04	U	
75-09-2	methylene chloride	0.05	0.11		0.39
75-34-3	1,1-dichloroethane	0.02	0.02	U	
67-66-3	chloroform	0.02	0.02	U	
71-55-6	1,1,1-trichloroethane	0.01	0.01	U	
107-06-2	1,2-dichloroethane	0.02	0.02	U	
71-43-2	benzene	0.01	0.06		0.19
56-23-5	carbon tetrachloride	0.01	0.01	U	
78-87-5	1,2-dichloropropane	0.02	0.02	U	
79-01-6	trichloroethene	0.01	0.01	U	
75-27-4	bromodichloromethane	0.10	0.10	U	
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U	
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U	
108-88-3	toluene	0.01	0.04	Q	0.15
106-93-4	1,2-dibromoethane	0.04	0.04	U	
127-18-4	tetrachloroethene	0.02	0.02	U	
108-90-7	chlorobenzene	0.04	0 04	U	
108-38-3	m,p-xylene	0.07	0.07	U	
75-25-2	bromoform	0.50	0.50	U	
95-47-6	o-xylene	0.03	0.03	U	
96-18-4	1,2,3-trichloropropane	0.50	0.50	U	
106-46-7	1,4-dichlorobenzene	0.08	0.08	U	
95-50-1	1,2-dichlorobenzene	0.07	0.07	U	
96-12-8	1,2-dibromo-3-chloropropane	6.50	6.50	U	
	total xylenes	0.10	0.10	U	

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	102	70-150

METHOD BLANK REPORT

				SDG	LABQC
EPA TO-14 Full Scan GC/MS				Laboratory Number:	B10187
File:	B10187A.D	Date Sampled:	NA		
Client:	C. E. SCHMIDT	Date Received:	NA		
Description:	ZERO AIR BLANK 500 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	YL	Dilution Factor:	2.00	Can#:	NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.06	0.06	U		
74-83-9	bromomethane	0.07	0.07	U		
75-35-4	1,1-dichloroethene	0 04	0.04	U		
75-09-2	methylene chloride	0.05	0.10		0.35	0 013
75-34-3	1,1-dichloroethane	0.02	0.02	U		
67-66-3	chloroform	0.02	0.02	U		
71-55-6	1,1,1-trichloroethane	0.01	0.01	U		
107-06-2	1,2-dichloroethane	0.02	0.02	U		
71-43-2	benzene	0.01	0.07		0.24	0.009
56-23-5	carbon tetrachloride	0 01	0.01	U		
78-87-5	1,2-dichloropropane	0.02	0.02	U		
79-01-6	trichloroethene	0.01	0.01	U		
75-27-4	bromodichloromethane	0.10	0.10	U		
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U		
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U		
108-88-3	toluene	0.01	0.01	U		
106-93-4	1,2-dibromoethane	0.04	0.04	U		
127-18-4	tetrachloroethene	0.02	0.02	U		
108-90-7	chlorobenzene	0.04	0.04	U		
108-38-3	m,p-xylene	0.07	0.07	U		
75-25-2	bromoform	0.50	0.50	U		
95-47-6	o-xylene	0.03	0.03	U		
96-18-4	1,2,3-trichloropropane	0.50	0.50	U		
106-46-7	1,4-dichlorobenzene	0.08	0.08	U		
95-50-1	1,2-dichlorobenzene	0.07	0.07	U		
96-12-8	1,2-dibromo-3-chloropropane	6.50	6 50	U		
	total xylenes	0 10	0.10	U		

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	22	110	70-150

FORM I-AAVC

METHOD BLANK REPORT

				SDG	LABOC
EPA TO-14 Full Scan GC/MS				Laboratory Number:	B10207
File:	B10207A.D	Date Sampled:	NA		
Client:	C. E. SCHMIDT	Date Received:	NA		
Description:	ZERO AIR BLANK 500ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL	Dilution Factor:	2.00	Can#:	NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.06	0.06	U		
74-83-9	bromomethane	0.07	0.07	U		
75-35-4	1,1-dichloroethene	0.04	0.04	U		
75-09-2	methylene chloride	0.05	0.10		0.36	0.014
75-34-3	1,1-dichloroethane	0.02	0.02	U		
67-66-3	chloroform	0.02	0.02	U		
71-55-6	1,1,1-trichloroethane	0.01	0.01	U		
107-06-2	1,2-dichloroethane	0.02	0.02	U		
71-43-2	benzene	0.01	0.03		0.11	0.004
56-23-5	carbon tetrachloride	0.01	0.01	U		
78-87-5	1,2-dichloropropane	0.02	0.02	U		
79-01-6	trichloroethene	0.01	0.01	U		
75-27-4	bromodichloromethane	0.10	0.10	U		
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U		
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U		
108-88-3	toluene	0.01	0.01	U		
106-93-4	1,2-dibromoethane	0.04	0.04	U		
127-18-4	tetrachloroethene	0.02	0.02	U		
108-90-7	chlorobenzene	0.04	0.04	U		
108-38-3	m,p-xylene	0.07	0.07	U		
75-25-2	bromoform	0.50	0.50	U		
95-47-6	o-xylene	0.03	0.03	U		
96-18-4	1,2,3-trichloropropane	0.50	0.50	U		
106-46-7	1,4-dichlorobenzene	0.08	0.08	U		
95-50-1	1,2-dichlorobenzene	0.07	0.07	U		
96-12-8	1,2-dibromo-3-chloropropane	6.50	6.50	U		
	total xylenes	0.10	0.10	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	22	110	70-150

FORM I-AAVC

METHOD BLANK REPORT

EPA TO-14 Full Scan GC/MS		SDG Laboratory Number:	LABQC B10217
File:	B10217A.D	Date Sampled: NA	
Client:	C. E. SCHMIDT	Date Received: NA	
Description:	ZERO AIR BLANK 500ML + 2ML IS	Date Analyzed: 10/21/1997	
Analyst:	YL	Dilution Factor: 2.00	Can#: NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.06	0.06	U		
74-83-9	bromomethane	0.07	0.07	U		
75-35-4	1,1-dichloroethene	0.04	0.04	U		
75-09-2	methylene chloride	0.05	0.09		0.33	0.013
75-34-3	1,1-dichloroethane	0.02	0.02	U		
67-66-3	chloroform	0.02	0.02	U		
71-55-6	1,1,1-trichloroethane	0.01	0.01	U		
107-06-2	1,2-dichloroethane	0.02	0.02	U		
71-43-2	benzene	0.01	0.06		0.19	0.007
56-23-5	carbon tetrachloride	0.01	0.01	U		
78-87-5	1,2-dichloropropane	0.02	0.02		0.11	0.004
79-01-6	trichloroethene	0.01	0.03	Q	0.17	0.007
75-27-4	bromodichloromethane	0.10	0.10	U		
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U		
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U		
108-88-3	toluene	0.01	0.01	Q	0.04	0.002
106-93-4	1,2-dibromoethane	0.04	0.04	U		
127-18-4	tetrachloroethene	0.02	0.02	U		
108-90-7	chlorobenzene	0.04	0.04	U		
108-38-3	m,p-xylene	0.07	0.07	U		
75-25-2	bromoform	0.50	0.50	U		
95-47-6	o-xylene	0.03	0.03	U		
96-18-4	1,2,3-trichloropropane	0.50	0.50	U		
106-46-7	1,4-dichlorobenzene	0.08	0.08	U		
95-50-1	1,2-dichlorobenzene	0.07	0.07	U		
96-12-8	1,2-dibromo-3-chloropropane	6.50	6.50	U		
	total xylenes	0.10	0.10	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec	QC Limits
d5-chlorobenzene	20	20	100	70-150

FORM I-AAVC

METHOD BLANK REPORT

EPA TO-14 Full Scan GC/MS				SDG Laboratory Number:	LABQC B10227
File:	B10227A.D	Date Sampled:	NA		
Client:	C. E. SCHMIDT	Date Received:	NA		
Description:	ZERO AIR BLANK 500ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	2.00	Can#:	NA

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.06	0.06	U		
74-83-9	bromomethane	0.07	0.07	U		
75-35-4	1,1-dichloroethene	0.04	0.04	U		
75-09-2	methylene chloride	0.05	0.10		0.37	0.014
75-34-3	1,1-dichloroethane	0.02	0.02	U		
67-66-3	chloroform	0.02	0.02	U		
71-55-6	1,1,1-trichloroethane	0.01	0.01	U		
107-06-2	1,2-dichloroethane	0.02	0.02	U		
71-43-2	benzene	0.01	0.04		0.12	0.005
56-23-5	carbon tetrachloride	0.01	0.01	U		
78-87-5	1,2-dichloropropane	0.02	0.02	U		
79-01-6	trichloroethene	0.01	0.01		0.06	0.002
75-27-4	bromodichloromethane	0.10	0.10	U		
10061-02-6	t-1,3-dichloropropene	0.03	0.03	U		
10061-01-5	c-1,3-dichloropropene	0.03	0.03	U		
108-88-3	toluene	0.01	0.01	U		
106-93-4	1,2-dibromoethane	0.04	0.04	U		
127-18-4	tetrachloroethene	0.02	0.02	U		
108-90-7	chlorobenzene	0.04	0.04	U		
108-38-3	m,p-xylene	0.07	0.07	U		
75-25-2	bromoform	0.50	0.50	U		
95-47-6	o-xylene	0.03	0.03	U		
96-18-4	1,2,3-trichloropropane	0.50	0.50	U		
106-46-7	1,4-dichlorobenzene	0.08	0.08	U		
95-50-1	1,2-dichlorobenzene	0.07	0.07	U		
96-12-8	1,2-dibromo-3-chloropropane	6.50	6.50	U		
	total xylenes	0.10	0.10	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	19	93	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70463
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70463-1
File:	7046301A.D	Date Sampled.	10/09/1997		
Client:	C. E. SCHMIDT	Date Received:	10/14/1997		
Description:	FLX-B1 CAN# S317 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	5.85	Can#:	S317

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.37	B	1.32	0.051
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.03	U		
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.23		0.90	0.035
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.46	1.46	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.46	1.46	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	19.01	19.01	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	19	94	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70463
EPA TO-14	GC/MS SIM			Laboratory Number:	70463-1
File	70463018 D	Date Sampled	10/09/1997		
Client:	C. E. SCHMIDT	Date Received:	10/14/1997		
Description.	FLX-B1 CAN #S317 1000 ML + IS	Date Analyzed:	11/07/1997		
Analyst:	YL/LR/TH	Dilution Factor:	1.17	Can#:	S317

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.006	0.006	U		
75-35-4	1,1-dichloroethene	0.004	0.004	U		
67-66-3	chloroform	0.002	0.002	U		
107-06-2	1,2-dichloroethane	0.004	0.004	U		
56-23-5	carbon tetrachloride	0.004	0.004	U		
78-87-5	1,2-dichloropropane	0.005	0.005	U		
75-27-4	bromodichloromethane	0.002	0.002	U		
10061-02-6	t-1,3-dichloropropene	0.001	0.001	U		
10061-01-5	c-1,3-dichloropropene	0.004	0.003	U		
106-93-4	1,2-dibromoethane	0.004	0.004	U		
96-18-4	1,2,3-trichloropropane	0.041	0.041	U		
106-46-7	1,4-dichlorobenzene	0.029	0.028	U		

FORM I-AAVC

ANALYTICAL REPORT

EPA TO-14 Full Scan GC/MS				SDG Laboratory Number:	70463 70463-2
File:	7046302A.D	Date Sampled:	10/09/1997		
Client:	C. E. SCHMIDT	Date Received:	10/14/1997		
Description:	FLX-B2 CAN# 6354 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	5.95	Can#.	6354

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.35	B	1.26	0.048
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.03	U		
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0 62		2.42	0 093
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.13	Q	0.89	0 034
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.21	U		
75-25-2	bromoform	1.49	1.49	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.49	1.49	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.34	19.34	U		
	total xylenes	0.30	0.30	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	99	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70463
EPA TO-14 GC/MS SIM				Laboratory Number:	70463-2
File:	7046302B.D	Date Sampled:	10/09/1997		
Client:	C. E. SCHMIDT	Date Received:	10/14/1997		
Description:	FLX-B2 CAN# 6354 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR	Dilution Factor	2.38	Can#:	6354

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.005	U		
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.016	Q	0.107	0.0041
78-87-5	1,2-dichloropropane	0.010	0.010	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.083	0.083	U		
106-46-7	1,4-dichlorobenzene	0.057	0.057	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-24
File:	7045424A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-1 CAN# 366 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL/LR	Dilution Factor:	5.85	Can#:	366

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.26	B	0.94	0.036
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.19	Q	0.97	0.037
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.17	B	0.55	0.021
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.46	Q	2.22	0.085
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.23		0.90	0.036
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.46	1.46	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.46	1.46	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	19.01	38.83		241.68	9.305
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	89	70-150

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ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-24
File:	7045424A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-1 CAN# 366 500 ML + IS	Date Analyzed:	11/22/1997		
Analyst:	LR	Dilution Factor:	2.34	Can#:	366

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
107-06-2	1,2-dichloroethane	0.007	0.011		0.047	0.0018
56-23-5	carbon tetrachloride	0.007	0.092		0.599	0.0231
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.014		0.067	0.0026
10061-01-5	c-1,3-dichloropropene	0.007	0.019		0.087	0.0034
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.082	0.082	U		
106-46-7	1,4-dichlorobenzene	0.056	0.056	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-23
File:	7045423A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-2 CAN# 357 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL/LR	Dilution Factor:	5.80	Can#:	357

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.49	B	1.76	0.068
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.19	B	0.64	0.024
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.90	Q	4.31	0.166
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	2.57		9.99	0.385
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.97		6.83	0.263
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.39		1.73	0.066
75-25-2	bromoform	1.48	1.48	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.48	1.48	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.18	19.18	U		
	total xylenes	0.30	0.39		1.73	0.066

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	91	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-23
File:	7045423A D	Date Sampled:	10/08/1997		
Client.	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-2 CAN# 357 500 ML + IS	Date Analyzed:	11/20/1997		
Analyst:	LR	Dilution Factor:	2.36	Can#	357

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.076		0.380	0.0146
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.019		0.126	0.0048
75-27-4	bromodichloromethane	0.005	0.005	Q	0.033	0.0013
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.083	0.083	U		
106-46-7	1,4-dichlorobenzene	0.057	0.057	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-20
File:	7045420A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-3 CAN#S022 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL	Dilution Factor:	5.80	Can#:	S022

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0.17	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.33	B	1.20	0.046
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.16	B	0.53	0.021
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.70		3.90	0.150
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	2.04		7.95	0.306
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.08	Q	0.54	0.021
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	1.16		5.21	0.201
75-25-2	bromoform	1.45	1.45	U		
95-47-6	o-xylene	0.09	0.44		1.98	0.076
96-18-4	1,2,3-trichloropropane	1.45	1.45	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18.85	18.85	U		
	total xylenes	0.29	1.61		7.19	0.277

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	17	86	70-150

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ANALYTICAL REPORT

SDG 70454

EPA TO-14 GC/MS SIM Laboratory Number: 70454-20

File:	7045420A.D	Date Sampled	10/08/1997		
Client:	C E. SCHMIDT	Date Received.	10/10/1997		
Description:	FLX-3 CAN# S022 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR	Dilution Factor:	2.32	Can#:	S022

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0 012	U		
75-35-4	1,1-dichloroethene	0 007	0 045	Q	0.123	0.0047
67-66-3	chloroform	0.005	0 089		0.448	0.0172
107-06-2	1,2-dichloroethane	0.007	0 007	U		
56-23-5	carbon tetrachloride	0.007	0.019		0.123	0.0047
78-87-5	1,2-dichloropropane	0.009	0.042	Q	0.198	0.0076
75-27-4	bromodichloromethane	0.005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0 007	0 007	U		
106-93-4	1,2-dibromoethane	0 007	0.007	U		
96-18-4	1,2,3-trichloropropane	0 081	0 081	U		
106-46-7	1,4-dichlorobenzene	0 056	0 056	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-21
File:	7045421A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-4 CAN#3006 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL	Dilution Factor:	5.85	Can#:	3006

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.31	B	1.12	0.043
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.38	B	1.24	0.048
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	15.23		72.68	2.798
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.93		3.62	0.139
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.25	Q	1.12	0.043
75-25-2	bromoform	1.46	1.46	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.46	1.46	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	19.01	19.01	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	88	70-150

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ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-21
File:	7045421A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-4 CAN# 3006 500 ML + IS	Date Analyzed:	11/20/1997		
Analyst:	LR	Dilution Factor:	2.34	Can#:	3006

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.016		0.080	0.0031
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.042		0.275	0.0106
75-27-4	bromodichloromethane	0.005	0.007	Q	0.050	0.0019
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.014		0.065	0.0025
106-93-4	1,2-dibromoethane	0.007	0.008		0.061	0.0023
96-18-4	1,2,3-trichloropropane	0.082	0.554		5.530	0.2129
106-46-7	1,4-dichlorobenzene	0.056	0.056	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-22
File:	7045422A.D	Date Sampled.	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-5 CAN#336 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL	Dilution Factor:	5.95	Can#:	336

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0 12	U		
75-09-2	methylene chloride	0.15	0.23	B	0.82	0.031
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.14	B	0.46	0.018
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	2.02	Q	9.66	0.372
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.49		1.89	0.073
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.21	U		
75-25-2	bromoform	1.49	1.49	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.49	1.49	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.34	19.34	U		
	total xylenes	0.30	0.30	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	19	93	70-150

FORM I-AAVC

ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-22
File:	7045422A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-5 CAN# 336 500 ML + IS	Date Analyzed:	11/20/1997		
Analyst:	LR	Dilution Factor:	2.38	Can#:	336

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.017		0.084	0.0032
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.021		0.139	0.0053
75-27-4	bromodichloromethane	0.005	0.015	Q	0.107	0.0041
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.083	0.083	U		
106-46-7	1,4-dichlorobenzene	0.057	0.057	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-18
File:	7045418A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-6 CAN#A039 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL	Dilution Factor:	6.20	Can#:	A039

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.19	0.19	U		
74-83-9	bromomethane	0.22	0.22	U		
75-35-4	1,1-dichloroethene	0.12	0.73		2.00	0.077
75-09-2	methylene chloride	0.16	0.40	B	1.42	0.055
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.22	B	0.72	0.028
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.22		1.06	0.041
79-01-6	trichloroethene	0.03	3.74		20.67	0.798
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	19.66		76.46	2.944
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.78		5.49	0.211
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.22	12.57		56.28	2.167
75-25-2	bromoform	1.55	1.55	U		
95-47-6	o-xylene	0.09	4.87		21.79	0.839
96-18-4	1,2,3-trichloropropane	1.55	1.55	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0.22	U		
96-12-8	1,2-dibromo-3-chloropropane	20.15	20.15	U		
	total xylenes	0.31	17.44		78.06	3.005

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	17	85	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-18
File:	7045418A.D	Date Sampled	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-6 CAN# A039 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR/CC	Dilution Factor	2.48	Can#:	A039

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.014		0.037	0.0014
75-35-4	1,1-dichloroethene	0.007	0.650		1.771	0.0682
67-66-3	chloroform	0.005	0.070		0.350	0.0135
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.030		0.192	0.0074
78-87-5	1,2-dichloropropane	0.010	0.121	Q	0.576	0.0222
75-27-4	bromodichloromethane	0.005	0.014		0.096	0.0037
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c 1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.087	0.087	U		
106-46-7	1,4-dichlorobenzene	0.060	0.060	U		

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-19
File:	7045419B.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-6R CAN# 370 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL/LR	Dilution Factor:	6.20	Can#:	370

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.19	0.19	U		
74-83-9	bromomethane	0.22	0.22	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.16	0.33	B	1.18	0.045
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.07	B	0.24	0.009
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.28		1.07	0.041
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.22	0.22	U		
75-25-2	bromoform	1.55	1.55	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.55	1.55	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0.22	U		
96-12-8	1,2-dibromo-3-chloropropane	20.15	20.15	U		
	total xylenes	0.31	0.31	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	99	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number.	70454-19
File.	7045419A.D	Date Sampled	10/08/1997		
Client.	C. E SCHMIDT	Date Received.	10/10/1997		
Description:	FLX-6R CAN# 370 500 ML + IS	Date Analyzed.	11/10/1997		
Analyst	LR/JK	Dilution Factor	2 48	Can#	370

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 012	0 012	U		
75-35-4	1,1-dichloroethene	0 007	0 007	U		
67-66-3	chloroform	0 005	0.071		0.358	0.0138
107-06-2	1,2-dichloroethane	0 007	0 007	U		
56-23-5	carbon tetrachloride	0.007	0.034		0.220	0.0085
78-87-5	1,2-dichloropropane	0 010	0.130		0.618	0.0238
75-27-4	bromodichloromethane	0.005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0 002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0 007	U		
96-18-4	1,2,3-trichloropropane	0.087	0 087	U		
106-46-7	1,4-dichlorobenzene	0.060	0 060	U		

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-8
File:	7045408A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-7 CAN# 3110 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	6.00	Can#:	3110

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.29		0.78	0.030
75-09-2	methylene chloride	0.15	0.52	B	1.88	0.072
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.13	Q	0.72	0.028
107-06-2	1,2-dichloroethane	0.06	0.31		1.29	0.050
71-43-2	benzene	0.03	0.40	B	1.32	0.051
56-23-5	carbon tetrachloride	0.03	0.05	Q	0.34	0.013
78-87-5	1,2-dichloropropane	0.06	0.09	Q	0.43	0.016
79-01-6	trichloroethene	0.03	1.84		10.16	0.391
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	7.38		28.69	1.104
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	1.70		11.91	0.459
108-90-7	chlorobenzene	0.12	0.14	Q	0.68	0.026
108-38-3	m,p-xylene	0.21	2.73		12.21	0.470
75-25-2	bromoform	1.50	1.50	U		
95-47-6	o-xylene	0.09	1.52		6.82	0.262
96-18-4	1,2,3-trichloropropane	1.50	1.50	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.50	19.50	U		
	total xylenes	0.30	4.25		19.03	0.733

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	100	70-150

FORM I-AAVC

ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-8
File:	7045408A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-7 CAN# 3110 500 ML + IS	Date Analyzed:	11/22/1997		
Analyst:	LR	Dilution Factor:	2.40	Can#:	3110

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.429		1.169	0.0450
67-66-3	chloroform	0.005	0.065		0.324	0.0125
107-06-2	1,2-dichloroethane	0.007	0.350		1.465	0.0564
56-23-5	carbon tetrachloride	0.007	0.113		0.735	0.0283
78-87-5	1,2-dichloropropane	0.010	0.030	Q	0.143	0.0055
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.084	0.084	U		
106-46-7	1,4-dichlorobenzene	0.058	0.058	U		

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-9
File:	7045409A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-8 CAN# 335 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	6.15	Can#:	335

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.22	0.22	U		
75-35-4	1,1-dichloroethene	0.12	0 12	U		
75-09-2	methylene chloride	0.15	0 37	B	1.32	0.051
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.23	B	0.77	0.030
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.45		1.74	0.067
106-93-4	1,2-dibromoethane	0 12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.22	0.25	Q	1.14	0.044
75-25-2	bromoform	1.54	1.54	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.54	1.54	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0 22	U		
96-12-8	1,2-dibromo-3-chloropropane	19.99	19 99	U		
	total xylenes	0.31	0.31	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	21	104	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number:	70454-9
File:	7045409A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-8 CAN# 335 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR/JK	Dilution Factor:	2.46	Can#	335

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.024		0.118	0.0045
107-06-2	1,2-dichloroethane	0.007	0.008	Q	0.032	0.0012
56-23-5	carbon tetrachloride	0.007	0.053		0.347	0.0133
78-87-5	1,2-dichloropropane	0.010	0.018		0.086	0.0033
75-27-4	bromodichloromethane	0.005	0.006	Q	0.038	0.0015
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.086	0.086	U		
106-46-7	1,4-dichlorobenzene	0.059	0.059	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-10
File:	7045410A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-9 CAN# 391 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	6.20	Can#:	391

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.19	0.19	U		
74-83-9	bromomethane	0.22	0.22	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.16	0.44	B	1.56	0.060
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.14	Q	0.73	0.028
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.36	B	1.18	0.045
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	1.08		4.20	0.162
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.22	0.64		2.86	0.110
75-25-2	bromoform	1.55	1.55	U		
95-47-6	o-xylene	0.09	0.15	Q	0.69	0.026
96-18-4	1,2,3-trichloropropane	1.55	1.55	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0.22	U		
96-12-8	1,2-dibromo-3-chloropropane	20.15	20.15	U		
	total xylenes	0.31	0.79	Q	3.55	0.137

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	100	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number:	70454-10
File:	7045410A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-9 CAN# 391 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR/CC	Dilution Factor:	2.48	Can#	391

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethane	0.007	0.026		0.071	0.0027
67-66-3	chloroform	0.005	0.219		1.099	0.0423
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.088		0.569	0.0219
78-87-5	1,2-dichloropropane	0.010	0.011		0.054	0.0021
75-27-4	bromodichloromethane	0.005	0.005	Q	0.037	0.0014
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.087	0.087	U		
106-46-7	1,4-dichlorobenzene	0.060	0.060	U		

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-25
File:	7045425A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-10 CAN# 325 200ML + 2ML IS	Date Analyzed:	10/20/1997		
Analyst:	YL/LR	Dilution Factor:	5.95	Can#:	325

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.32	B	1.14	0.044
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.27	B	0.90	0.035
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	3.34		12.97	0.500
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.33	Q	1.49	0.057
75-25-2	bromoform	1.49	1.49	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.49	1.49	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.34	19.34	U		
	total xylenes	0.30	0.33	Q	1.49	0.057

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	19	94	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number:	70454-25
File:	7045425A.D	Date Sampled.	10/08/1997		
Client.	C. E. SCHMIDT	Date Received.	10/10/1997		
Description:	FLX-10 CAN# 325 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR	Dilution Factor	2.38	Can#:	325

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0 007	U		
67-66-3	chloroform	0.005	0 026	Q	0.129	0.0049
107-06-2	1,2-dichloroethane	0.007	0 007	U		
56-23-5	carbon tetrachloride	0.007	0.063		0.412	0.0159
78-87-5	1,2-dichloropropane	0.010	0 011	Q	0.054	0.0021
75-27-4	bromodichloromethane	0 005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0 007	U		
106-93-4	1,2-dibromoethane	0 007	0 007	U		
96-18-4	1,2,3-trichloropropane	0.083	0 083	U		
106-46-7	1,4-dichlorobenzene	0 057	0.057	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-12
File:	7045412A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-11 CAN# 304 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	6.10	Can#:	304

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.54	B	1.94	0.075
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.58		2.89	0.111
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.32	B	1.06	0.041
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.50		1.95	0.075
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.27	Q	1.19	0.046
75-25-2	bromoform	1.53	1.53	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.53	1.53	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.83	19.83	U		
	total xylenes	0.31	0.31	U		

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec	QC Limits
d5-chlorobenzene	20	22	109	70-150

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ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-12
File:	7045412A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received.	10/10/1997		
Description:	FLX-11 CAN# 304 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR/CC	Dilution Factor:	2.44	Can#:	304

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 012	0.020	Q	0.054	0.0021
75-35-4	1,1-dichloroethene	0.007	0.020		0.054	0.0021
67-66-3	chloroform	0.005	0 930		4.673	0.1799
107-06-2	1,2-dichloroethane	0 007	0.010	Q	0.042	0.0016
56-23-5	carbon tetrachloride	0.007	0.156		1.014	0.0390
78-87-5	1,2-dichloropropane	0.010	0 010	U		
75-27-4	bromodichloromethane	0.005	0 007		0 051	0.0020
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0 007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.085	0 085	U		
106-46-7	1,4-dichlorobenzene	0.059	0 059	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-11
File:	7045411A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-12 CAN# 349 200ML + 2ML IS	Date Analyzed:	10/21/1997		
Analyst:	YL	Dilution Factor:	6.05	Can#:	349

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.33	B	1.18	0.046
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.38	B	1.27	0.049
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.95	B	3.69	0.142
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.98		4.39	0.169
75-25-2	bromoform	1.51	1.51	U		
95-47-6	o-xylene	0.09	0.22	Q	0.99	0.038
96-18-4	1,2,3-trichloropropane	1.51	1.51	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.66	19.66	U		
	total xylenes	0.30	1.20	Q	5.37	0.207

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec	QC Limits
d5-chlorobenzene	20	17	86	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-11
File:	7045411A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-12 CAN# 349 500 ML + IS	Date Analyzed	11/10/1997		
Analyst:	LR/JK	Dilution Factor	2.42	Can#	349

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.020		0.055	0.0021
67-66-3	chloroform	0.005	0.016		0.079	0.0031
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.055		0.358	0.0138
78-87-5	1,2-dichloropropane	0.010	0.010	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.085	0.085	U		
106-46-7	1,4-dichlorobenzene	0.058	0.058	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-15
File:	7045415A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-13 CAN# 328 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	6.00	Can#:	328

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.67		2.68	0.103
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.86	B	3.09	0.119
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.27	B	0.90	0.035
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.70		2.72	0.105
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.57	Q	2.55	0.098
75-25-2	bromoform	1.50	1.50	U		
95-47-6	o-xylene	0.09	0.17	Q	0.74	0.029
96-18-4	1,2,3-trichloropropane	1.50	1.50	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.50	19.50	U		
	total xylenes	0.30	0.74	Q	3.30	0.127

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	20	98	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-15
File:	7045415A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received	10/10/1997		
Description:	FLX-13 CAN# 328 500 ML + IS	Date Analyzed	11/10/1997		
Analyst:	LR/JK	Dilution Factor:	2.40	Can#:	328

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.017	Q	0.045	0.0017
75-35-4	1,1-dichloroethane	0.007	0.019		0.053	0.0020
67-66-3	chloroform	0.005	0.109		0.549	0.0211
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.092		0.601	0.0231
78-87-5	1,2-dichloropropane	0.010	0.010	U		
75-27-4	bromodichloromethane	0.005	0.005		0.034	0.0013
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.084	0.084	U		
106-46-7	1,4-dichlorobenzene	0.058	0.058	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-13
File:	7045413A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-14 CAN# 340 200ML + 2ML IS	Date Analyzed:	10/21/1997		
Analyst:	YL	Dilution Factor:	6.25	Can#:	340

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.19	0.19	U		
74-83-9	bromomethane	0.22	0.22	U		
75-35-4	1,1-dichloroethene	0.13	0.13	U		
75-09-2	methylene chloride	0.16	0.89	B	3.19	0.123
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.30	B	1.00	0.038
56-23-5	carbon tetrachloride	0.03	0.04	Q	0.25	0.010
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	2.27	B	8.83	0.340
106-93-4	1,2-dibromoethane	0.13	0.13	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.13	0.13	U		
108-38-3	m,p-xylene	0.22	2.86		12.80	0.493
75-25-2	bromoform	1.56	1.56	U		
95-47-6	o-xylene	0.09	1.06		4.74	0.183
96-18-4	1,2,3-trichloropropane	1.56	1.56	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0.22	U		
96-12-8	1,2-dibromo-3-chloropropane	20.31	20.31	U		
	total xylenes	0.31	3.92		17.54	0.675

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	90	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-13
File	7045413A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-14 CAN# 340 500 ML + IS	Date Analyzed.	11/11/1997		
Analyst:	LR/CC	Dilution Factor:	2 50	Can#:	340

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.013	0 013	U		
75-35-4	1,1-dichloroethene	0 008	0 008	U		
67-66-3	chloroform	0 005	0.020		0.102	0.0039
107-06-2	1,2-dichloroethane	0.008	0.009		0.036	0.0014
56-23-5	carbon tetrachloride	0 008	0.085		0.552	0.0213
78-87-5	1,2-dichloropropene	0.010	0.010	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.003	0.003	U		
10061-01-5	c-1,3-dichloropropene	0.008	0.008	U		
106-93-4	1,2-dibromoethane	0.008	0 008	U		
96-18-4	1,2,3-trichloropropane	0.088	0 088	U		
106-46-7	1,4-dichlorobenzene	0 060	0.060	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-14
File:	7045414A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-14R CAN# S074 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	6.00	Can#:	S074

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.38	B	1.35	0.052
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.32	B	1.05	0.040
56-23-5	carbon tetrachloride	0.03	0.04	Q	0.23	0.009
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.30	0.30	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.83		3.24	0.125
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.94		4.22	0.162
75-25-2	bromoform	1.50	1.50	U		
95-47-6	o-xylene	0.09	0.29		1.29	0.050
96-18-4	1,2,3-trichloropropane	1.50	1.50	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.50	19.50	U		
	total xylenes	0.30	1.23		5.51	0.212

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	17	87	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number:	70454-14
File:	7045414A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description.	FLX-14R CAN# S074 500 ML + IS	Date Analyzed:	11/11/1997		
Analyst:	LR/CC	Dilution Factor:	2.40	Can#:	S074

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0.012	U		
75-35-4	1,1-dichloroethene	0.007	0.028		0.077	0.0029
67-66-3	chloroform	0.005	0.014		0.071	0.0027
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.065		0.424	0.0163
78-87-5	1,2-dichloropropane	0.010	0.010	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.084	0.084	U		
106-46-7	1,4-dichlorobenzene	0.058	0.058	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-17
File:	7045417A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-15 CAN# 397 200 ML + 2 ML IS	Date Analyzed:	10/22/1997		
Analyst:	LR/JK	Dilution Factor:	6.20	Can#:	397

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.19	0.19	U		
74-83-9	bromomethane	0.22	0.80		3.21	0.124
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.16	0.83	B	2.96	0.114
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.61	B	2.00	0.077
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	1.26		4.88	0.188
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.22	0.43	Q	1.93	0.074
75-25-2	bromoform	1.55	1.55	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.55	1.55	U		
106-46-7	1,4-dichlorobenzene	0.25	0.25	U		
95-50-1	1,2-dichlorobenzene	0.22	0.22	U		
96-12-8	1,2-dibromo-3-chloropropane	20.15	20.15	U		
	total xylenes	0.31	0.43	Q	1.93	0.074

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	89	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14	GC/MS SIM			Laboratory Number.	70454-17
File:	7045417A D	Date Sampled	10/08/1997		
Client:	C. E SCHMIDT	Date Received.	10/10/1997		
Description:	FLX-15 CAN# 397 500 ML + 15	Date Analyzed:	11/10/1997		
Analyst.	LR/JK	Dilution Factor:	2 48	Can#:	397

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 012	0 012	U		
75-35-4	1,1-dichloroethene	0 007	0 027		0.074	0 0028
67-66-3	chloroform	0.005	0 037		0.186	0.0071
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.100		0.649	0.0250
78-87-5	1,2-dichloropropane	0.010	0 010	U		
75-27-4	bromodichloromethane	0.005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0 002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0 007	0 007	U		
106-93-4	1,2-dibromoethane	0 007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.087	0.087	U		
106-46-7	1,4-dichlorobenzene	0 060	0.060	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-16
File:	7045416A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-16 CAN# 351 200ML + 2ML IS	Date Analyzed:	10/21/1997		
Analyst:	YL	Dilution Factor:	6.10	Can#:	351

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.21	0.21	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.42	B	1.51	0.058
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.26	B	0.86	0.033
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.31	0.31	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.61	B	2.39	0.092
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.21	0.21	U		
75-25-2	bromoform	1.53	1.53	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.53	1.53	U		
106-46-7	1,4-dichlorobenzene	0.24	0.24	U		
95-50-1	1,2-dichlorobenzene	0.21	0.21	U		
96-12-8	1,2-dibromo-3-chloropropane	19.83	19.83	U		
	total xylenes	0.31	0.31	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	17	85	70-150

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-16
File:	7045416A.D	Date Sampled.	10/08/1997		
Client:	C. E. SCHMIDT	Date Received	10/10/1997		
Description:	FLX-16 CAN# 351 500 ML + IS	Date Analyzed.	11/10/1997		
Analyst.	LR/JK	Dilution Factor:	2.44	Can#.	351

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 012	0 012	U		
75-35-4	1,1-dichloroethene	0.007	0 024		0 064	0.0025
67-66-3	chloroform	0.005	0 013	Q	0 066	0 0025
107-06-2	1,2-dichloroethane	0.007	0 007	U		
56-23-5	carbon tetrachloride	0 007	0 074		0.480	0.0185
78-87-5	1,2-dichloropropane	0.010	0 010	U		
75-27-4	bromodichloromethane	0.005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0 002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0 007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.085	0.085	U		
106-46-7	1,4-dichlorobenzene	0 059	0 059	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-2
File:	7045402A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-17 CAN# 6281 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	5.70	Can#:	6281

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0.17	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.11	0.11	U		
75-09-2	methylene chloride	0.14	0.41	B	1.46	0.056
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.33	B	1.09	0.042
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.59		2.30	0.088
106-93-4	1,2-dibromoethane	0.11	0.11	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0 11	0.11	U		
108-38-3	m,p-xylene	0 20	0.22	Q	0.97	0.038
75-25-2	bromoform	1 43	1.43	U		
95-47-6	o-xylene	0 09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.43	1.43	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18 53	18.53	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	91	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number.	70454-2
File:	70454028 D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-17 CAN# 6281 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR	Dilution Factor:	2.28	Can#:	6281

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.011	0.011	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.015		0.074	0.0028
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.086		0.559	0.0215
78-87-5	1,2-dichloropropane	0.009	0.009	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.080	0.080	U		
106-46-7	1,4-dichlorobenzene	0.055	0.055	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-1
File:	7045401A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-18 CAN# 4413 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	5.70	Can#:	4413

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0.17	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.11	0.11	U		
75-09-2	methylene chloride	0.14	0.47	B	1.69	0.065
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.64	B	2.12	0.082
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	1.21		4.72	0.182
106-93-4	1,2-dibromoethane	0.11	0.11	U		
127-18-4	tetrachloroethene	0.06	0.42		2.96	0.114
108-90-7	chlorobenzene	0.11	0.11	U		
108-38-3	m,p-xylene	0.20	0.37		1.64	0.063
75-25-2	bromoform	1.43	1.43	U		
95-47-6	o-xylene	0.09	0.09	Q	0.41	0.016
96-18-4	1,2,3-trichloropropane	1.43	1.43	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18.53	18.53	U		
	total xylenes	0.29	0.46	Q	2.04	0.079

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	89	70-150

FORM I-AAVC

ANALYTICAL REPORT

EPA TO-14 GC/MS SIM				SDG Laboratory Number:	70454 70454-1
File:	70454018.D	Date Sampled	10/08/1997		
Client:	C E. SCHMIDT	Date Received	10/10/1997		
Description:	FLX-18 CAN# 4413 500 ML + IS	Date Analyzed	11/10/1997		
Analyst:	LR	Dilution Factor	2 28	Can#:	4413

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 011	0 011	U		
75-35-4	1,1-dichloroethene	0 007	0 007	U		
67-66-3	chloroform	0.005	0 013	Q	0.065	0.0025
107-06-2	1,2-dichloroethane	0 007	0 007	U		
56-23-5	carbon tetrachloride	0 007	0.089		0.580	0.0223
78-87-5	1,2-dichloropropane	0 009	0 009	U		
75-27-4	bromodichloromethane	0 005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0 002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0 007	U		
106-93-4	1,2-dibromoethane	0.007	0 007	U		
96-18-4	1,2,3-trichloropropane	0.080	0 080	U		
106-46-7	1,4-dichlorobenzene	0.055	0 055	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-4
File:	7045404A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-19 CAN# 6150 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	5.80	Can#:	6150

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0.17	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.39	B	1.41	0.054
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.20	B	0.67	0.026
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.34		1.32	0.051
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.45	1.45	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.45	1.45	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18.85	18.85	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	89	70-150

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-4
File:	7045404A.D	Date Sampled:	10/08/1997		
Client:	C. E SCHMIDT	Date Received:	10/10/1997		
Description.	FLX-19 CAN# 6150 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR/JK	Dilution Factor:	2.32	Can#:	6150

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0 012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.015	Q	0.075	0.0029
107-06-2	1,2-dichloroethane	0 007	0 007	U		
56-23-5	carbon tetrachloride	0.007	0 100		0.649	0.0250
78-87-5	1,2-dichloropropane	0.009	0.009	U		
75-27-4	bromodichloromethane	0 005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0 007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0 081	0.081	U		
106-46-7	1,4-dichlorobenzene	0.056	0 056	U		

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ANALYTICAL REPORT

EPA TO-14 Full Scan GC/MS				SDG Laboratory Number:	70454 70454-3
File:	7045403A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-20 CAN# 6204 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	5.75	Can#:	6204

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0 17	U		
74-83-9	bromomethane	0.20	0 20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.14	0.42	B	1.50	0.058
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0 06	U		
71-55-6	1,1,1-trichloroethane	0.03	0 03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.25	B	0.83	0.032
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0 06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0 29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.43		1.65	0.064
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.44	1.44	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.44	1.44	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18.69	18 69	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	88	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-3
File:	7045403B D	Date Sampled.	10/08/1997		
Client:	C. E. SCHMIDT	Date Received..	10/10/1997		
Description.	FLX-20 CAN# 6204 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR	Dilution Factor:	2 30	Can#:	6204

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0 012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.011		0.056	0.0022
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0 076		0 494	0.0190
78-87-5	1,2-dichloropropane	0 009	0.009	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0 002	0 002	U		
10061-01-5	c-1,3-dichloropropene	0 007	0.007	U		
106-93-4	1,2-dibromoethane	0.007	0 007	U		
96-18-4	1,2,3-trichloropropane	0.081	0 081	U		
106-46-7	1,4-dichlorobenzene	0 055	0.055	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-7
File:	7045407A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-21 CAN# 6320 200ML + 2ML IS	Date Analyzed:	10/22/1997		
Analyst:	YL	Dilution Factor:	5.70	Can#:	6320

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.17	0.17	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.11	0.11	U		
75-09-2	methylene chloride	0 14	0.23	B	0.84	0.032
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.15	Q	0.77	0.030
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.13	B	0.45	0.017
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.19		0.74	0.029
106-93-4	1,2-dibromoethane	0.11	0.11	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.11	0.11	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.43	1.43	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.43	1.43	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	18.53	18.53	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	17	87	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number:	70454-7
File:	7045407A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description.	FLX-21 CAN# 6320 500 ML + IS	Date Analyzed	11/11/1997		
Analyst:	LR/CC	Dilution Factor:	2.28	Can#:	6320

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.011	0.011	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.131		0.661	0.0254
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.028		0 185	0.0071
78-87-5	1,2-dichloropropane	0.009	0.009	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0 007	0.007	U		
96-18-4	1,2,3-trichloropropane	0 080	0 080	U		
106-46-7	1,4-dichlorobenzene	0 055	0 055	U		

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ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-6
File:	7045406A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-23 CAN# 6287 200ML + 2ML IS	Date Analyzed:	10/21/1997		
Analyst:	YL	Dilution Factor:	5.85	Can#:	6287

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.48	B	1.74	0.067
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.22	B	0.71	0.027
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.75	B	2.90	0.112
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.46	1.46	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.46	1.46	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	19.01	19.01	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt. ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	18	89	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SOG	70454
EPA TO-14	GC/MS SIM			Laboratory Number	70454-6
File:	7045406A D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description	FLX-23 CAN# 6287 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR/JK	Dilution Factor:	2 34	Can#:	6287

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0 012	0 012	U		
75-35-4	1,1-dichloroethene	0.007	0.007	U		
67-66-3	chloroform	0.005	0.020		0 100	0.0038
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0.092		0.599	0.0231
78-87-5	1,2-dichloropropane	0.009	0.009	U		
75-27-4	bromodichloromethane	0.005	0.005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0.007	U		
106-93-4	1,2-dibromoethane	0 007	0.007	U		
96-18-4	1,2,3-trichloropropane	0.082	0.082	U		
106-46-7	1,4-dichlorobenzene	0 056	0.056	U		

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 Full Scan GC/MS				Laboratory Number:	70454-5
File:	7045405A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-24 CAN# 6323 200 ML + 2ML IS	Date Analyzed:	10/18/1997		
Analyst:	LR	Dilution Factor:	5.85	Can#:	6323

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(min*m2)
75-01-4	vinyl chloride	0.18	0.18	U		
74-83-9	bromomethane	0.20	0.20	U		
75-35-4	1,1-dichloroethene	0.12	0.12	U		
75-09-2	methylene chloride	0.15	0.34	B	1.24	0.048
75-34-3	1,1-dichloroethane	0.06	0.06	U		
67-66-3	chloroform	0.06	0.06	U		
71-55-6	1,1,1-trichloroethane	0.03	0.03	U		
107-06-2	1,2-dichloroethane	0.06	0.06	U		
71-43-2	benzene	0.03	0.19	B	0.62	0.024
56-23-5	carbon tetrachloride	0.03	0.03	U		
78-87-5	1,2-dichloropropane	0.06	0.06	U		
79-01-6	trichloroethene	0.03	0.03	U		
75-27-4	bromodichloromethane	0.29	0.29	U		
10061-02-6	t-1,3-dichloropropene	0.09	0.09	U		
10061-01-5	c-1,3-dichloropropene	0.09	0.09	U		
108-88-3	toluene	0.03	0.27		1.05	0.040
106-93-4	1,2-dibromoethane	0.12	0.12	U		
127-18-4	tetrachloroethene	0.06	0.06	U		
108-90-7	chlorobenzene	0.12	0.12	U		
108-38-3	m,p-xylene	0.20	0.20	U		
75-25-2	bromoform	1.46	1.46	U		
95-47-6	o-xylene	0.09	0.09	U		
96-18-4	1,2,3-trichloropropane	1.46	1.46	U		
106-46-7	1,4-dichlorobenzene	0.23	0.23	U		
95-50-1	1,2-dichlorobenzene	0.20	0.20	U		
96-12-8	1,2-dibromo-3-chloropropane	19.01	19.01	U		
	total xylenes	0.29	0.29	U		

Surrogate Recovery	Spike Amt ppbV	Amount ppbV	% Rec.	QC Limits
d5-chlorobenzene	20	19	95	70-150

FORM I-AAVC

ANALYTICAL REPORT

				SDG	70454
EPA TO-14 GC/MS SIM				Laboratory Number.	70454-5
File:	7045405A.D	Date Sampled:	10/08/1997		
Client:	C. E. SCHMIDT	Date Received:	10/10/1997		
Description:	FLX-24 CAN# 6323 500 ML + IS	Date Analyzed:	11/10/1997		
Analyst:	LR/JK	Dilution Factor:	2.34	Can#:	6323

CAS#	Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3	Flux ug/(m2*min)
75-01-4	vinyl chloride	0.012	0 012	U		
75-35-4	1,1-dichloroethene	0.007	0 007	U		
67-66-3	chloroform	0.005	0.013		0 063	0.0024
107-06-2	1,2-dichloroethane	0.007	0.007	U		
56-23-5	carbon tetrachloride	0.007	0 046		0 297	0 0114
78-87-5	1,2-dichloropropane	0 009	0 009	U		
75-27-4	bromodichloromethane	0.005	0 005	U		
10061-02-6	t-1,3-dichloropropene	0.002	0.002	U		
10061-01-5	c-1,3-dichloropropene	0.007	0 007	U		
106-93-4	1,2-dibromoethane	0.007	0.007	U		
96-18-4	1,2,3-trichloropropane	0 082	0 082	U		
106-46-7	1,4-dichlorobenzene	0 056	0 056	U		

FORM I-AAVC

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike QC11077
Spike Dup. QC11077DUP
QC Lot: 11/7/97 Method: EPA TO-14 GC/MS SIM

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
vinyl chloride	0.007	0.007	0.006	96	89	7	70-130%
1,1-dichloroethene	0.009	0.009	0.010	95	104	9	70-130%
chloroform	0.007	0.007	0.007	104	100	3	70-130%
1,2-dichloroethane	0.008	0.008	0.008	95	104	10	70-130%
carbon tetrachloride	0.009	0.009	0.008	102	98	4	70-130%
1,2-dichloropropane	0.007	0.007	0.007	103	96	7	70-130%
bromodichloromethane	0.008	0.008	0.008	98	102	4	70-130%
t-1,3-dichloropropene	0.007	0.007	0.008	101	102	2	70-130%
c-1,3-dichloropropene	0.009	0.009	0 010	97	102	5	70-130%
1,2-dibromoethane	0.008	0.008	0.008	98	101	3	70-130%
1,2,3-trichloropropane	0.095	0.098	0.094	102	98	4	70-130%
1,4-dichlorobenzene	0.060	0.064	0.059	107	99	8	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC11107
Spike Dup.: QC11107DUP
QC Lot: 11/10/97 Method: EPA TO-14 GC/MS SIM

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
vinyl chloride	0.007	0.008	0.008	120	110	8	70-130%
1,1-dichloroethene	0.009	0.008	0.009	87	96	10	70-130%
chloroform	0.007	0.007	0.007	97	101	4	70-130%
1,2-dichloroethane	0.008	0.008	0.008	100	101	1	70-130%
carbon tetrachloride	0.009	0.009	0.009	107	109	2	70-130%
1,2-dichloropropane	0.007	0.007	0.007	104	104	0	70-130%
bromodichloromethane	0.008	0.008	0.008	98	101	3	70-130%
t-1,3-dichloropropene	0.007	0.007	0.008	92	102	10	70-130%
c-1,3-dichloropropene	0.009	0.009	0.012	96	128	29	70-130%
1,2-dibromoethane	0 008	0.008	0.009	91	104	13	70-130%
1,2,3-trichloropropane	0.095	0.071	0.093	75	97	26	70-130%
1,4-dichlorobenzene	0.060	0.044	0.051	74	85	14	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC11117
Spike Dup.: QC11117DUP
QC Lot: 11/11/97 Method: EPA TO-14 GC/MS SIM

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
vinyl chloride	0.007	0.008	0.008	108	119	9	70-130%
1,1-dichloroethene	0.009	0.008	0.008	91	84	7	70-130%
chloroform	0.007	0.007	0.007	97	101	4	70-130%
1,2-dichloroethane	0.008	0.008	0.008	97	104	7	70-130%
carbon tetrachloride	0.009	0.007	0.007	86	87	1	70-130%
1,2-dichloropropane	0.007	0.007	0 008	97	108	10	70-130%
bromodichloromethane	0.008	0.007	0.008	95	98	4	70-130%
t-1,3-dichloropropene	0.007	0.007	0.007	90	98	9	70-130%
c-1,3-dichloropropene	0.009	0.009	0.012	95	129	30	70-130%
1,2-dibromoethane	0.008	0.007	0.008	83	100	19	70-130%
1,2,3-trichloropropane	0.095	0.068	0.092	71	96	30	70-130%
1,4-dichlorobenzene	0.060	0.044	0.049	74	82	10	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10157
Spike Dup · QC10157DUP
QC Lot: 10/15/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec Limits
Vinyl Chloride	0.52	0.53	0.53	101	101	0	70-130%
1,1-Dichloroethene	0.48	0.49	0.56	102	116	13	70-130%
Dichloromethane	0.48	0.55	0.60	116	124	7	70-130%
1,1-Dichloroethane	0 62	0 53	0.54	86	87	2	70-130%
Chloroform	0.56	0.54	0.53	96	95	1	70-130%
1,1,1-Trichloroethane	0.49	0.56	0.49	114	99	14	70-130%
1,2-Dichloroethane	0.57	0.56	0.56	97	98	1	70-130%
Benzene	0.55	0.53	0.56	97	101	4	70-130%
Carbon Tetrachloride	0.43	0.45	0.42	104	98	6	70-130%
Trichloroethene	0.52	0.53	0.62	102	119	15	70-130%
Toluene	0.56	0 63	0.56	112	100	12	70-130%
1,2-Dibromoethane	0.47	0 50	0.45	107	95	12	70-130%
Tetrachloroethene	0.48	0.58	0.55	122	116	5	70-130%
Chlorobenzene	0.59	0.61	0.62	104	105	1	70-130%
m,p-Xylene	1.12	1.18	1.00	106	89	17	70-130%
o-Xylene	0.57	0.59	0.51	103	90	13	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10167
Spike Dup.: QC10167DUP
QC Lot: 10/16/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.52	0.54	0.53	104	102	2	70-130%
1,1-Dichloroethene	0.48	0.56	0.52	117	108	8	70-130%
Dichloromethane	0.48	0.57	0.55	119	115	4	70-130%
1,1-Dichloroethane	0.62	0.54	0.56	87	90	3	70-130%
Chloroform	0.56	0.53	0.56	94	99	6	70-130%
1,1,1-Trichloroethane	0.49	0.57	0.57	116	117	1	70-130%
1,2-Dichloroethane	0.57	0.51	0.54	90	95	6	70-130%
Benzene	0.55	0.52	0.55	95	100	5	70-130%
Carbon Tetrachloride	0.43	0.45	0.45	104	104	0	70-130%
Trichloroethene	0.52	0.62	0.56	119	108	9	70-130%
Toluene	0.56	0.61	0.63	109	113	4	70-130%
1,2-Dibromoethane	0.47	0.48	0.50	102	107	5	70-130%
Tetrachloroethene	0.48	0.59	0.58	122	121	1	70-130%
Chlorobenzene	0.59	0.65	0.65	111	111	0	70-130%
m,p-Xylene	1.12	1.06	1.06	95	94	0	70-130%
o-Xylene	0.57	0.53	0.55	94	96	2	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike· QC10177
Spike Dup . QC10177DUP
QC Lot 10/17/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup	%RPD	% Rec Limits
Vinyl Chloride	0 52	0 59	0 52	114	100	14	70-130%
1,1-Dichloroethene	0 48	0.57	0 56	118	117	0	70-130%
Dichloromethane	0.48	0.62	0.60	129	125	3	70-130%
1,1-Dichloroethane	0.62	0.60	0.58	97	94	3	70-130%
Chloroform	0.56	0.58	0 56	104	100	4	70-130%
1,1,1-Trichloroethane	0 49	0.57	0 55	117	112	4	70-130%
1,2-Dichloroethane	0.57	0.59	0 55	104	97	7	70-130%
Benzene	0 55	0.54	0.54	98	98	0	70-130%
Carbon Tetrachloride	0.43	0.45	0.43	105	100	5	70-130%
Trichloroethene	0.52	0.54	0 55	103	106	3	70-130%
Toluene	0 56	0.63	0 62	113	112	1	70-130%
1,2-Dibromoethane	0.47	0.48	0 47	102	99	2	70-130%
Tetrachloroethene	0.48	0 58	0 60	122	125	3	70-130%
Chlorobenzene	0.59	0.60	0 62	101	105	3	70-130%
m,p-Xylene	1 12	1.37	1.27	122	113	7	70-130%
o-Xylene	0.57	0.72	0 65	126	114	10	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10187
Spike Dup.: QC10187DUP
QC Lot: 10/18/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.52	0.52	0.50	99	95	4	70-130%
1,1-Dichloroethene	0.48	0.50	0.51	104	106	2	70-130%
Dichloromethane	0.48	0.54	0 54	112	112	0	70-130%
1,1-Dichloroethane	0.62	0.56	0.52	90	84	7	70-130%
Chloroform	0.56	0.54	0.53	96	95	1	70-130%
1,1,1-Trichloroethane	0.49	0.56	0.57	115	115	0	70-130%
1,2-Dichloroethane	0.57	0.58	0.57	101	100	1	70-130%
Benzene	0.55	0.55	0.54	100	99	1	70-130%
Carbon Tetrachloride	0.43	0.46	0.45	107	104	2	70-130%
Trichloroethene	0.52	0.51	0.55	98	106	8	70-130%
Toluene	0.56	0.57	0.55	101	98	3	70-130%
1,2-Dibromoethane	0.47	0.46	0.48	99	102	3	70-130%
Tetrachloroethene	0.48	0.53	0.54	110	112	2	70-130%
Chlorobenzene	0.59	0.59	0.59	100	100	0	70-130%
m,p-Xylene	1.12	1.28	1.17	114	105	9	70-130%
o-Xylene	0.57	0.64	0.60	113	106	6	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10207
Spike Dup.: QC10207DUP
QC Lot: 10/20/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.52	0.54	0.57	103	110	6	70-130%
1,1-Dichloroethene	0.48	0.55	0.61	115	128	10	70-130%
Dichloromethane	0.48	0.58	0 62	122	129	6	70-130%
1,1-Dichloroethane	0.62	0.59	0.54	95	88	8	70-130%
Chloroform	0.56	0.59	0.57	105	102	3	70-130%
1,1,1-Trichloroethane	0.49	0.55	0.47	113	97	15	70-130%
1,2-Dichloroethane	0.57	0.56	0.51	97	89	9	70-130%
Benzene	0.55	0.62	0.57	112	104	8	70-130%
Carbon Tetrachloride	0.43	0.44	0.38	103	89	15	70-130%
Trichloroethene	0.52	0.58	0.63	111	120	8	70-130%
Toluene	0.56	0.55	0.56	98	99	2	70-130%
1,2-Dibromoethane	0.47	0.43	0.40	92	85	8	70-130%
Tetrachloroethene	0.48	0.52	0.54	108	112	4	70-130%
Chlorobenzene	0.59	0.53	0.55	90	94	4	70-130%
m,p-Xylene	1.12	1.05	0.90	94	81	15	70-130%
o-Xylene	0.57	0.54	0.47	95	83	14	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10217
Spike Dup.: QC10217DUP
QC Lot: 10/21/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.52	0.55	0.50	106	96	10	70-130%
1,1-Dichloroethene	0.48	0.55	0.51	114	106	7	70-130%
Dichloromethane	0.48	0.61	0.53	127	110	14	70-130%
1,1-Dichloroethane	0.62	0.55	0.55	89	89	0	70-130%
Chloroform	0.56	0.56	0.56	100	100	0	70-130%
1,1,1-Trichloroethane	0.49	0.51	0.57	104	117	12	70-130%
1,2-Dichloroethane	0.57	0.57	0.63	101	110	9	70-130%
Benzene	0.55	0.56	0.54	102	98	4	70-130%
Carbon Tetrachloride	0.43	0.41	0.45	95	104	9	70-130%
Trichloroethene	0.52	0.57	0.48	109	93	17	70-130%
Toluene	0.56	0.54	0.57	96	102	5	70-130%
1,2-Dibromoethane	0.47	0.40	0.47	85	100	17	70-130%
Tetrachloroethene	0.48	0.55	0.54	114	112	1	70-130%
Chlorobenzene	0.59	0.53	0.57	90	97	8	70-130%
m,p-Xylene	1.12	0.98	1.18	88	106	19	70-130%
o-Xylene	0.57	0.46	0.60	81	104	26	70-130%

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC10227
Spike Dup.: QC10227DUP
QC Lot: 10/22/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.52	0.48	0.53	93	103	10	70-130%
1,1-Dichloroethene	0.48	0.48	0.52	100	109	8	70-130%
Dichloromethane	0.48	0.54	0.58	113	120	6	70-130%
1,1-Dichloroethane	0.62	0.51	0.55	82	89	9	70-130%
Chloroform	0.56	0.55	0.55	99	98	1	70-130%
1,1,1-Trichloroethane	0.49	0.58	0.51	118	104	13	70-130%
1,2-Dichloroethane	0.57	0.59	0.56	104	98	6	70-130%
Benzene	0.55	0.55	0.52	100	95	5	70-130%
Carbon Tetrachloride	0.43	0.48	0.41	111	96	14	70-130%
Trichloroethene	0.52	0.52	0.58	99	111	11	70-130%
Toluene	0.56	0.58	0.58	103	104	1	70-130%
1,2-Dibromoethane	0.47	0.47	0.44	101	93	8	70-130%
Tetrachloroethene	0.48	0.56	0.56	117	116	1	70-130%
Chlorobenzene	0.59	0.60	0.57	101	97	5	70-130%
m,p-Xylene	1.12	1.22	1.00	109	89	20	70-130%
o-Xylene	0.57	0.62	0.51	109	90	20	70-130%

Appendix H-1

City of Davis Well Nos. 22 and 29 Driller's Reports

File with DWR
Page 1 of 2

WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 460820

Owner's Well No. 29
Date Work Began 11-8-96 Ended 1-12-97
Local Permit Agency City of Davis, Public Works
Permit No. 6850 Permit Date 11-6-96

STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION
0	12	Dark brown silty clay
12	42	Tan clay & wet sand
42	100	Hard brown clay
100	250	Coarse sand & gravel
250	390	Soft blue clay
390	480	Coarse sand & gravel
480	690	Soft clay
690	770	Coarse sand & gravel
770	810	Sand & gravel
810	870	silty green sand
870	980	Brown clay
980	990	Sand & gravel
990	1100	Coarse sand & gravel
1100	1230	Hard blue clay
1230	1340	Coarse sand
1340	1460	Blue clay & sand
1460	1530	Sand & gravel
1530	1620	Blue clay
1620	1650	Sand & gravel
1650	1680	Black sand
1680	1690	Sandy clay
1690	1720	Black sand
1720	1740	Clay

TOTAL DEPTH OF BORING 1740 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1624 (Feet)

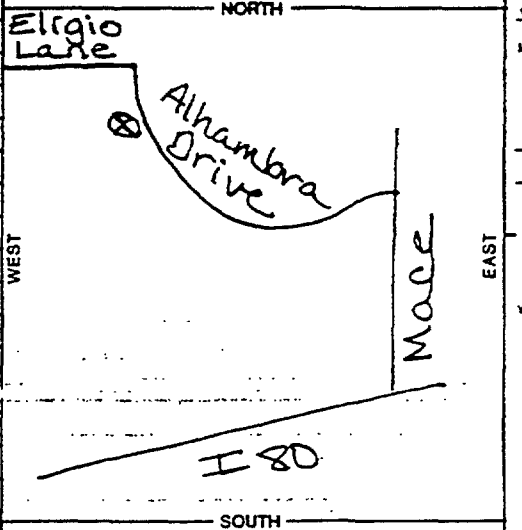
WELL OWNER

Name City of Davis
Mailing Address 23 Russell Blvd.
Davis CA 95616 (STATE ZIP)

WELL LOCATION

Address 100' S. of Alhambra & 800' E. of Loyola
City Davis
County Yolo
APN Book 71 Page 100 Parcel 04
or Township ___ Range ___ Section ___
Latitude ___ (DEG. MIN. SEC.) NORTH Longitude ___ (DEG. MIN. SEC.) WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
✓ Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse rotary FLUID Mud

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 36' (Ft.) & DATE MEASURED 1-9-97
ESTIMATED YIELD* 1400 (GPM) & TEST TYPE Constant rate
TEST LENGTH 8 (Hrs.) TOTAL DRAWDOWN 102 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
See Attached									

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
See Attached				

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

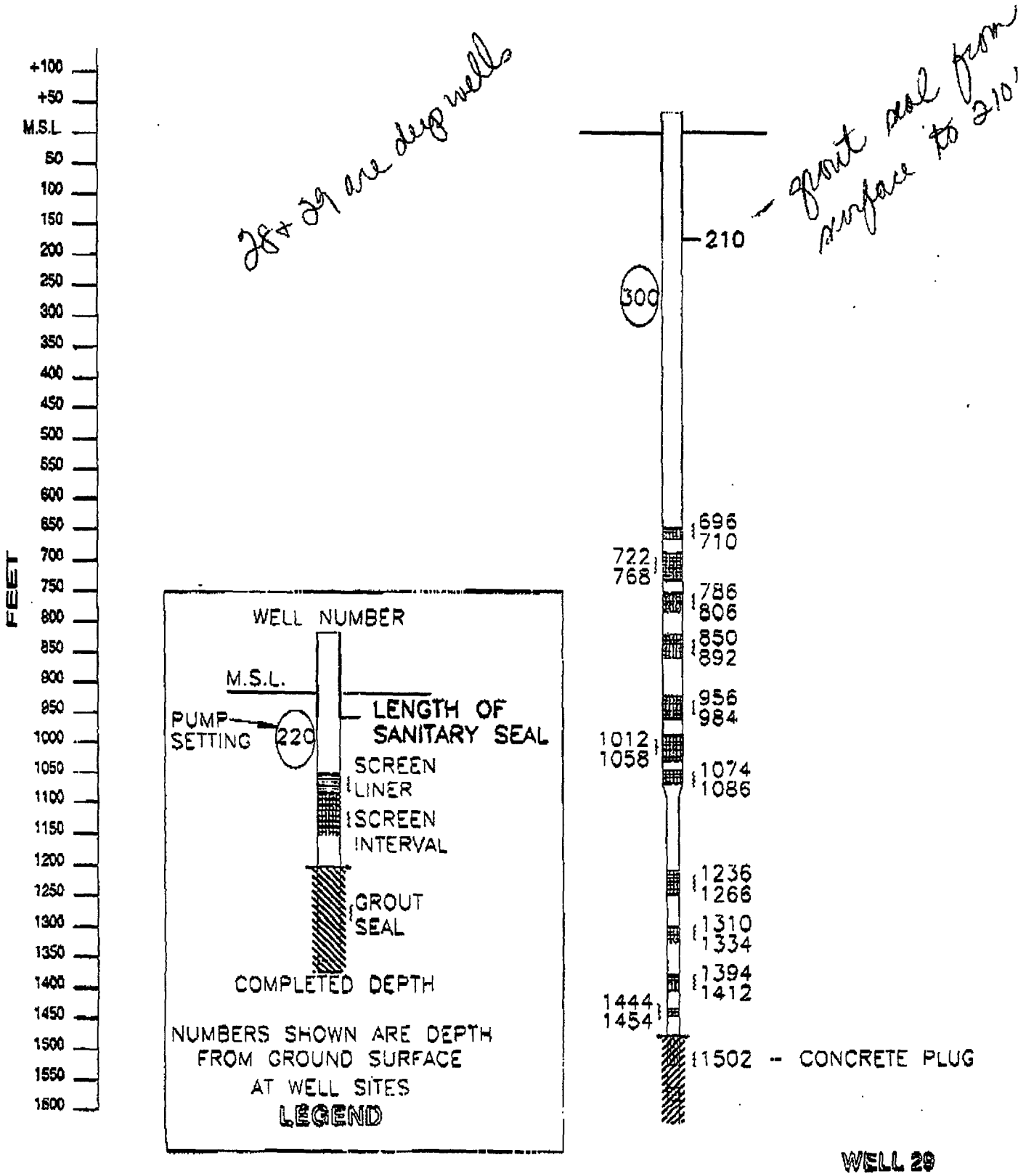
NAME Zim Industries, Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 4545 E. Lincoln Ave. CITY Fresno STATE CA ZIP 93725
Signed Robert J. Zimmer (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 9/9/97 C57 LICENSE NUMBER 440537

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL NO. 29

WELL DEPTH, SCREEN INTERVAL AND PUMP SETTING



WELL 29

Owner's Copy

THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

No. 10108

State Well No.
Other Well No.

Intent No.
Permit No. or Date

(1) OWNER: Name City of Davis
Address 226 E St.
City Davis, CA Zip 95616

(2) LOCATION OF WELL (See instructions):
County Yolo Owner's Well Number 22
Well address if different from above
Township 8N Range 2E Section 11 (A1)
Distance from cities, roads, railroads, fences, etc. Tulip lane in city park
WELL # 22

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☒
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size pea gravel
Diameter of bore 24"
Packed from 0 to 540 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS: stainless
Type of perforation or screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
+2	345	16	5/16	312	334	100
348	510	12	5/16	426	446	100
				478	498	100

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Conductor pipe & pumped grout

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 540 ft. Depth of completed well 510 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	6	Top soil
6	7	Sand
7	9	Sandy clay
9	11	Sand
11	14	Sandy clay
14	26	Sticky gray clay
26	37	Sticky brown clay
37	48	Gray clay
48	56	Blue clay
56	71	Yellow clay
71	77	Sand & fine gravel
77	81	Gray clay
81	99	Sticky brown clay
99	115	Gravel/some sand
115	165	Soft brown clay, sandy
165	200	Sticky clay
200	220	Sandy clay, trace of gravel
220	244	Sticky clay
244	249	Clay & gravel mix
249	312	Hard, sticky brown clay
312	313	Shale
313	334	Sand, gravel
334	333	Gray clay
333	395	Blue clay
395	408	Loose, brittle clay
408	426	Gray clay
426	447	Small gravel
447	466	Gray clay
466	480	Sandy gray clay
480	484	Sand
484	498	Sand & fine gravel
498	500	Sandy clay
500	504	Red wood
504	540	Gray clay

Work started 6-19 19 77 Completed 7-15 19 77

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Ben-Barrow Co., Inc. (Person, firm, or corporation) (Typed or printed)
Address 220 N. East St.
City Woodland, CA Zip 95695
License No. 203326 Date of this report 7-20-77

OWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

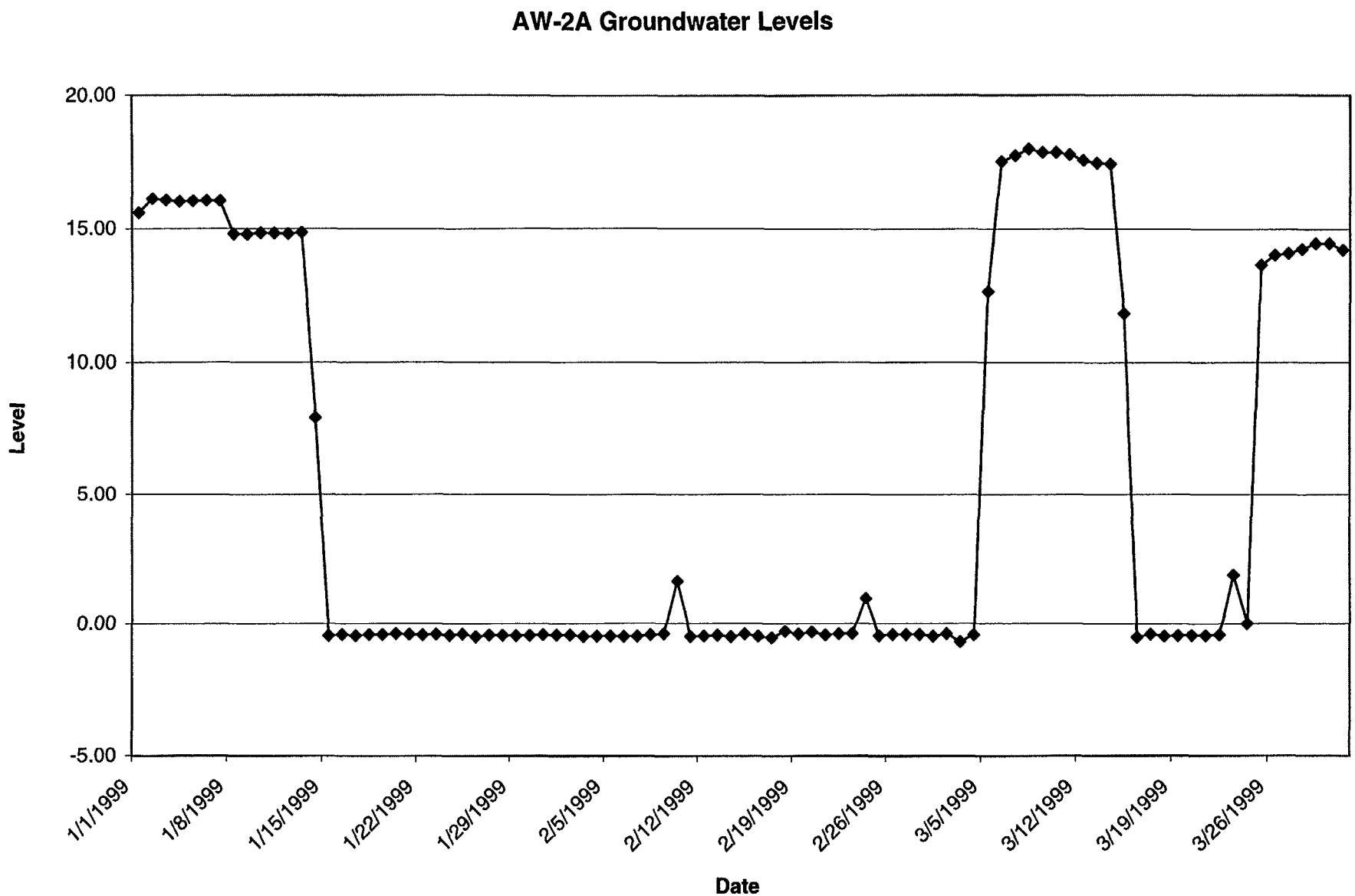
SLOT SIZE INSTALLED WAS ALL #110 P.F. 8-1-77

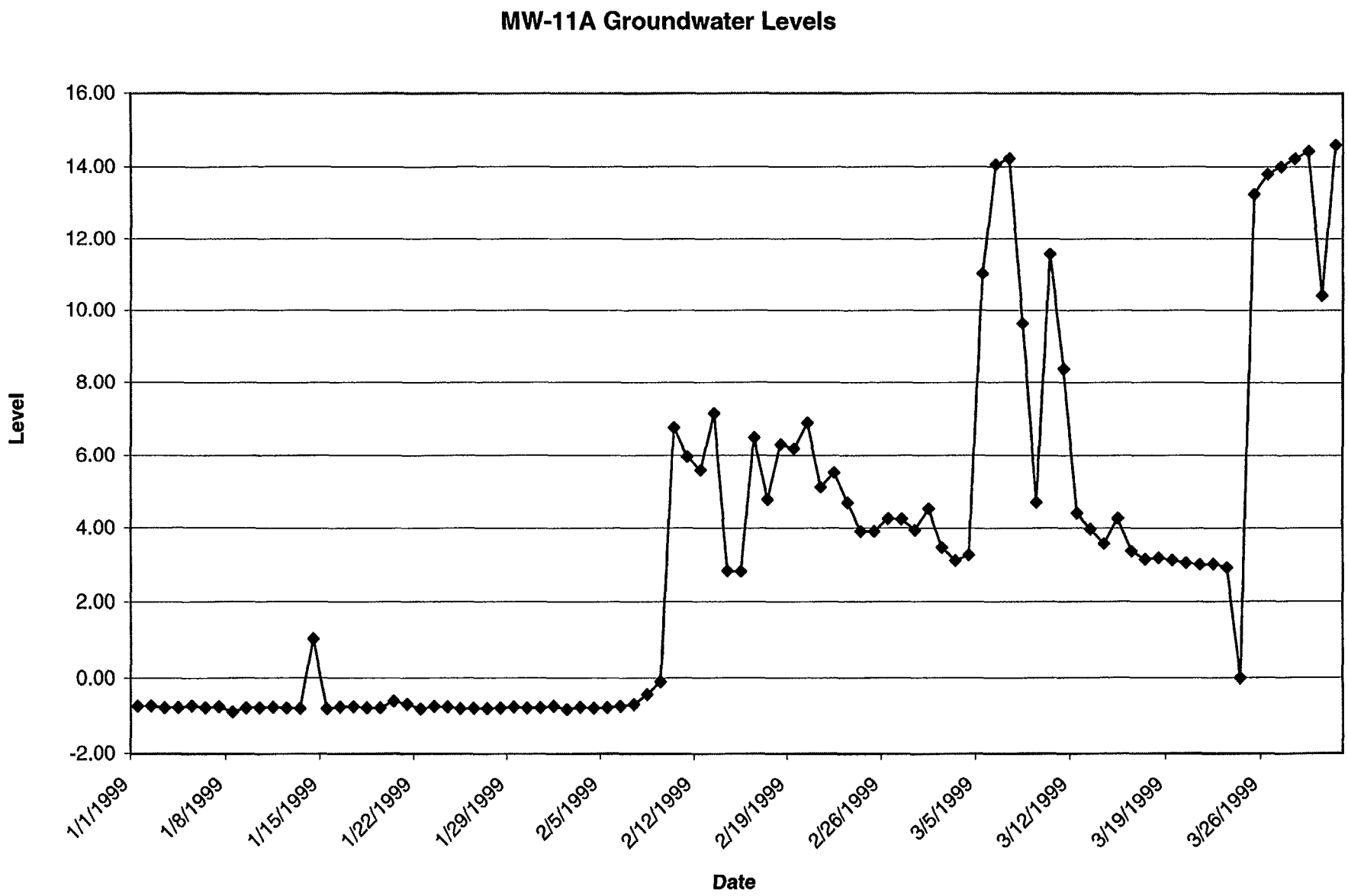
Appendix H-2

First Quarter 1999 Extraction Well Groundwater Levels

S-1 Zone

Extraction Wells
Daily Groundwater Levels
First Quarter 1999


AW-2A Groundwater Levels
20.00
15.00
10.00
5.00
0.00
-5.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date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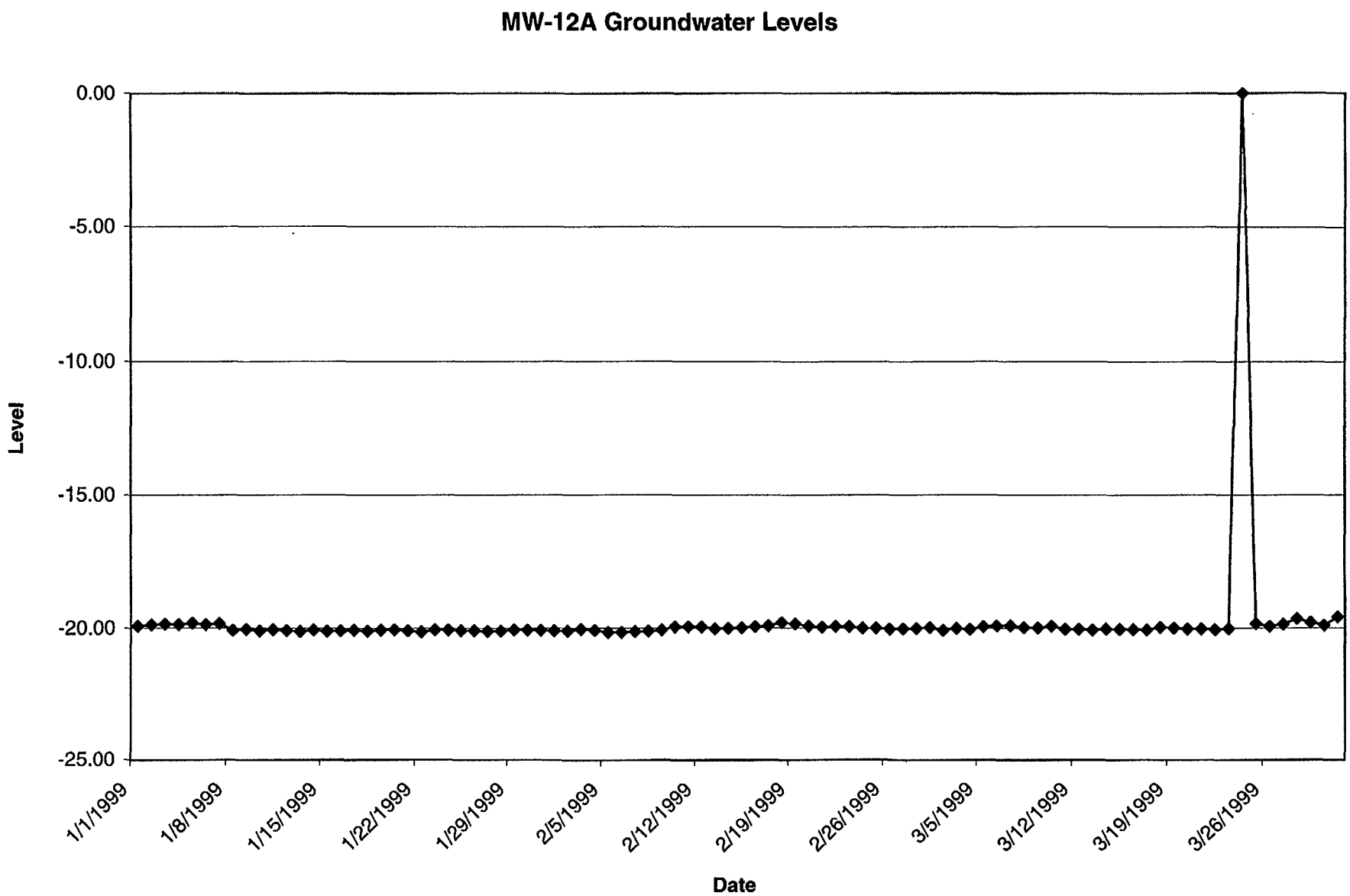
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


MW-12A Groundwater Levels
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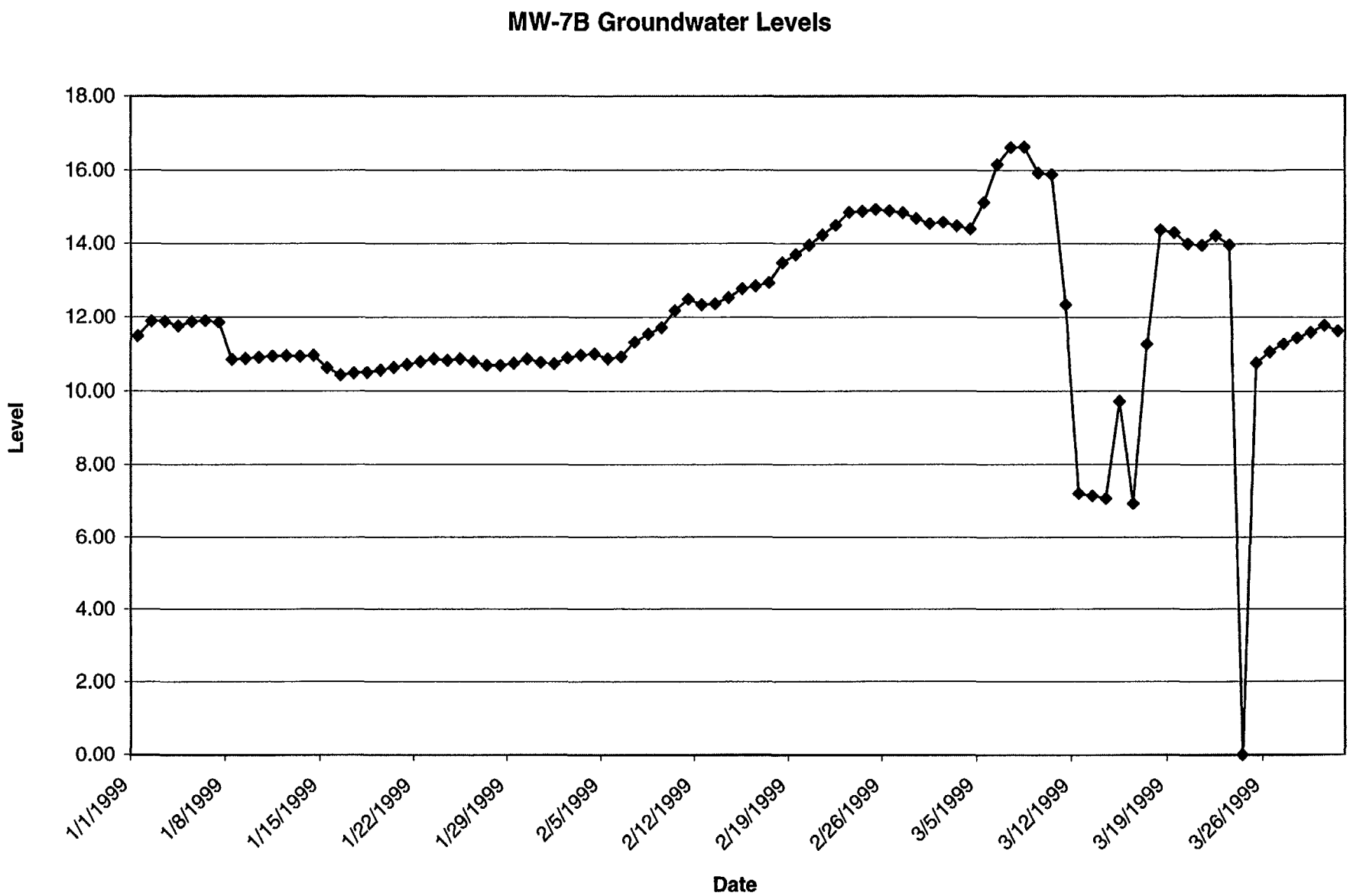
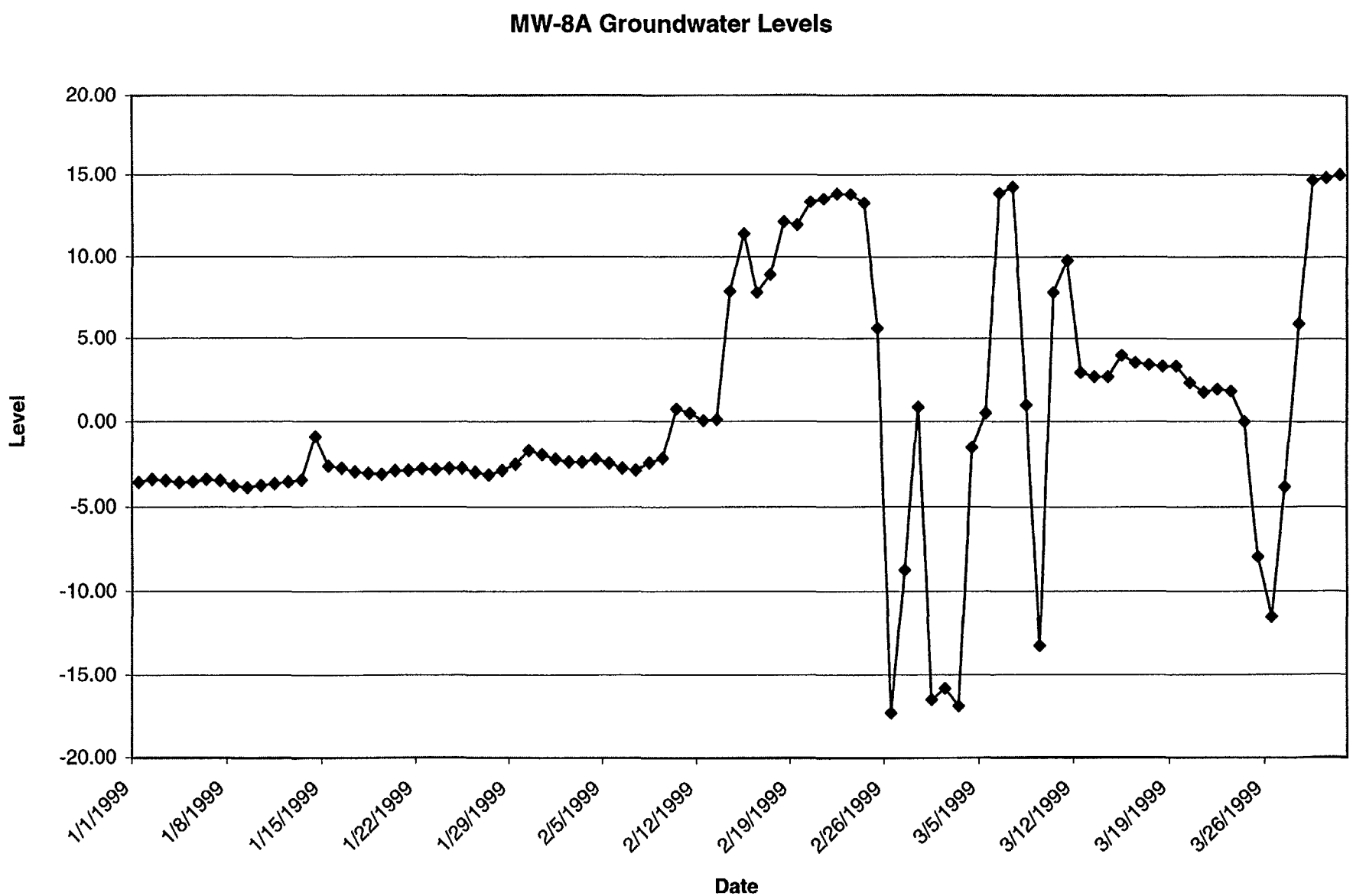
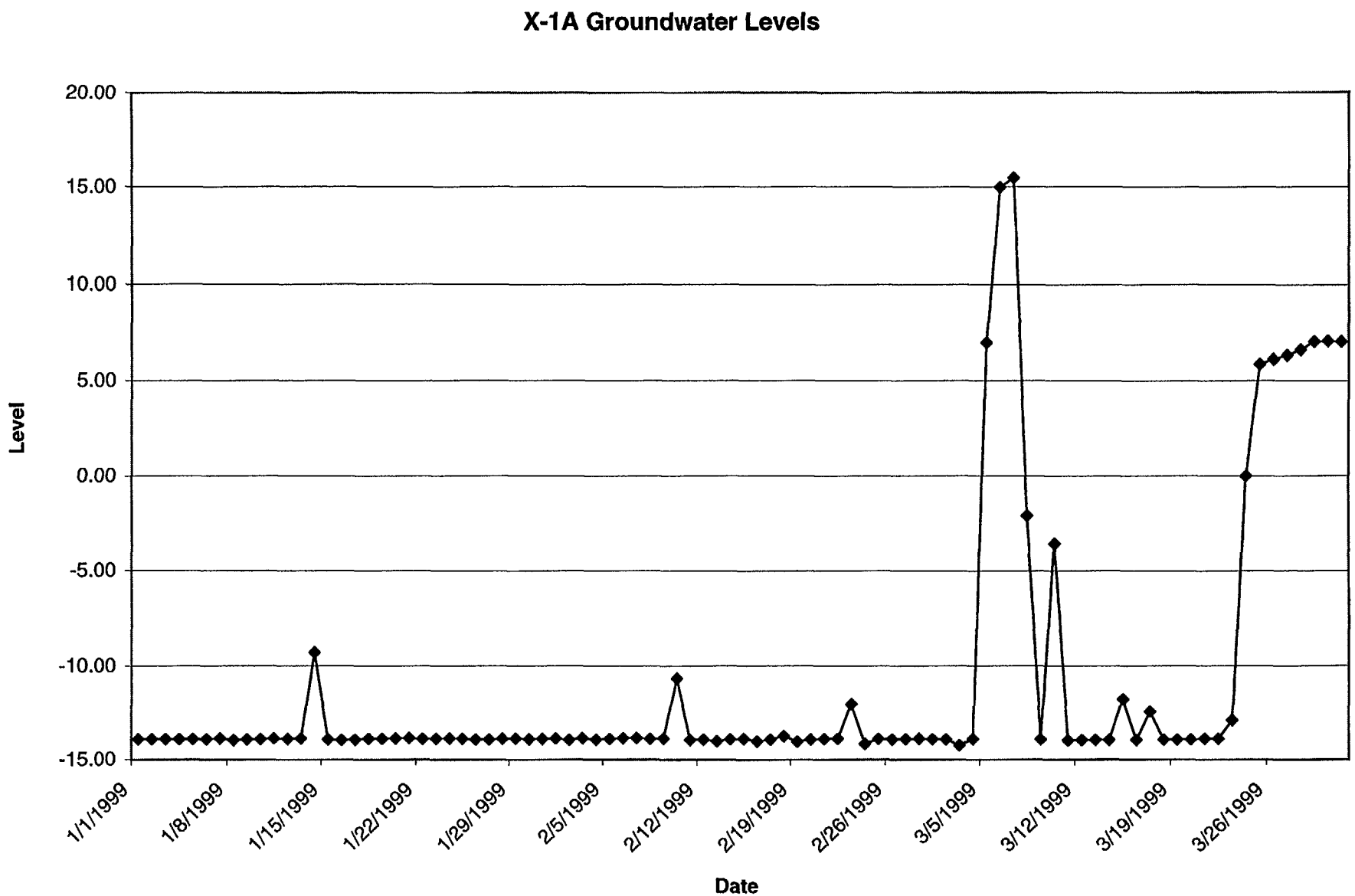
-5.00
-10.00
-15.00
-20.00
-25.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


MW-7B Groundwater Levels
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


MW-8A Groundwater Levels
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-1A Groundwater Levels
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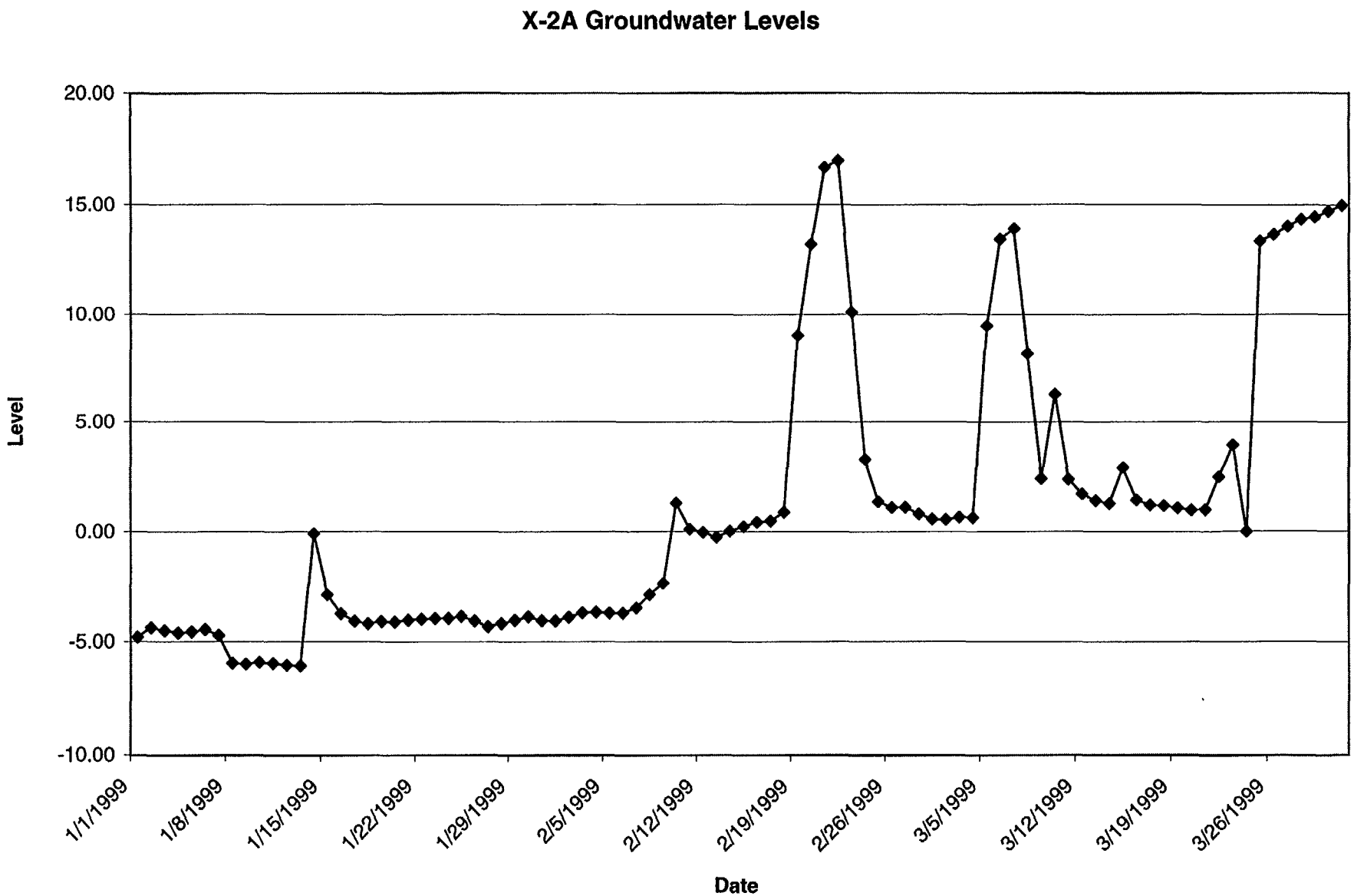
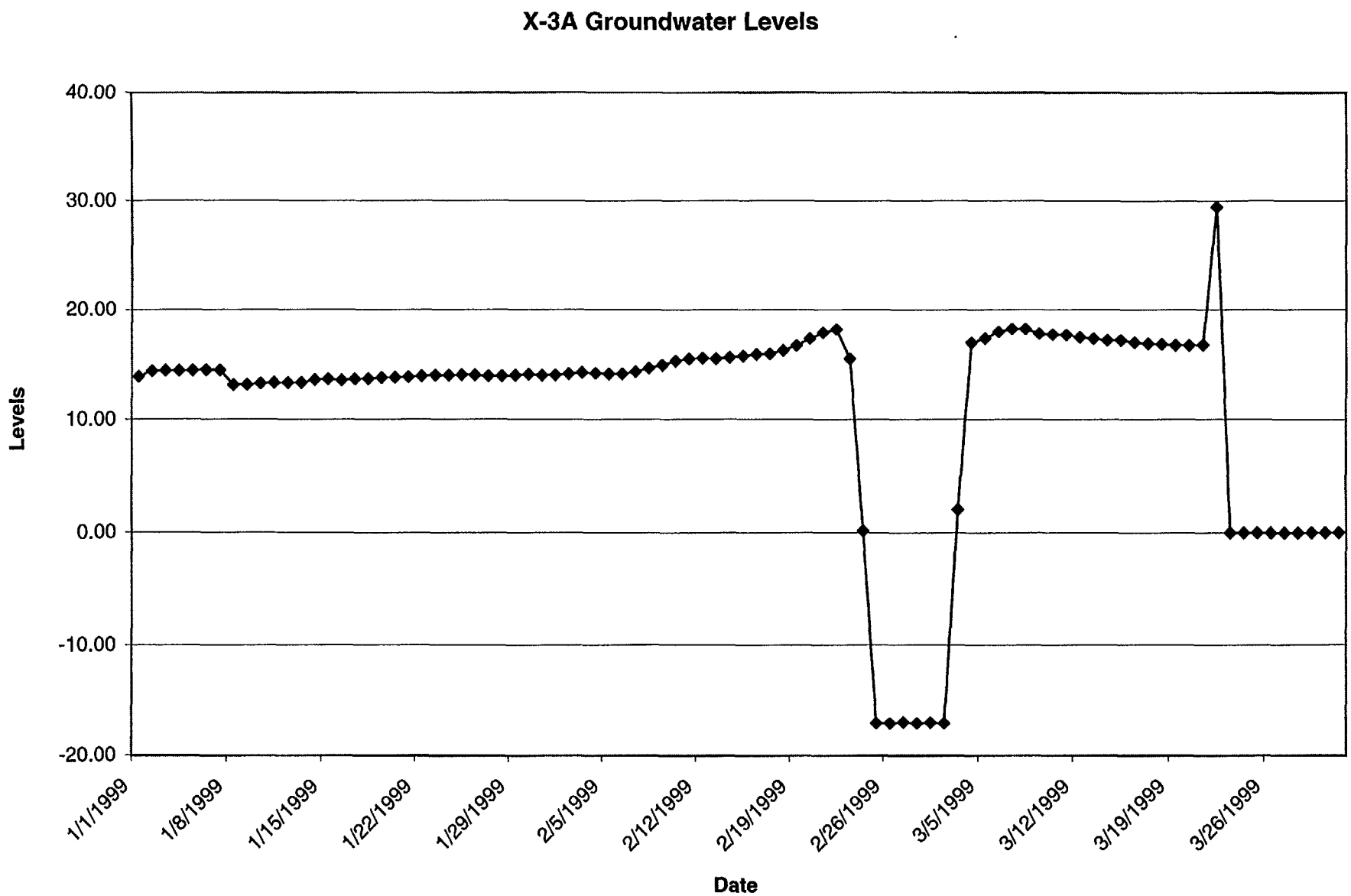
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-2A Groundwater Levels
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-3A Groundwater Levels
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
Levels
1/1/1999
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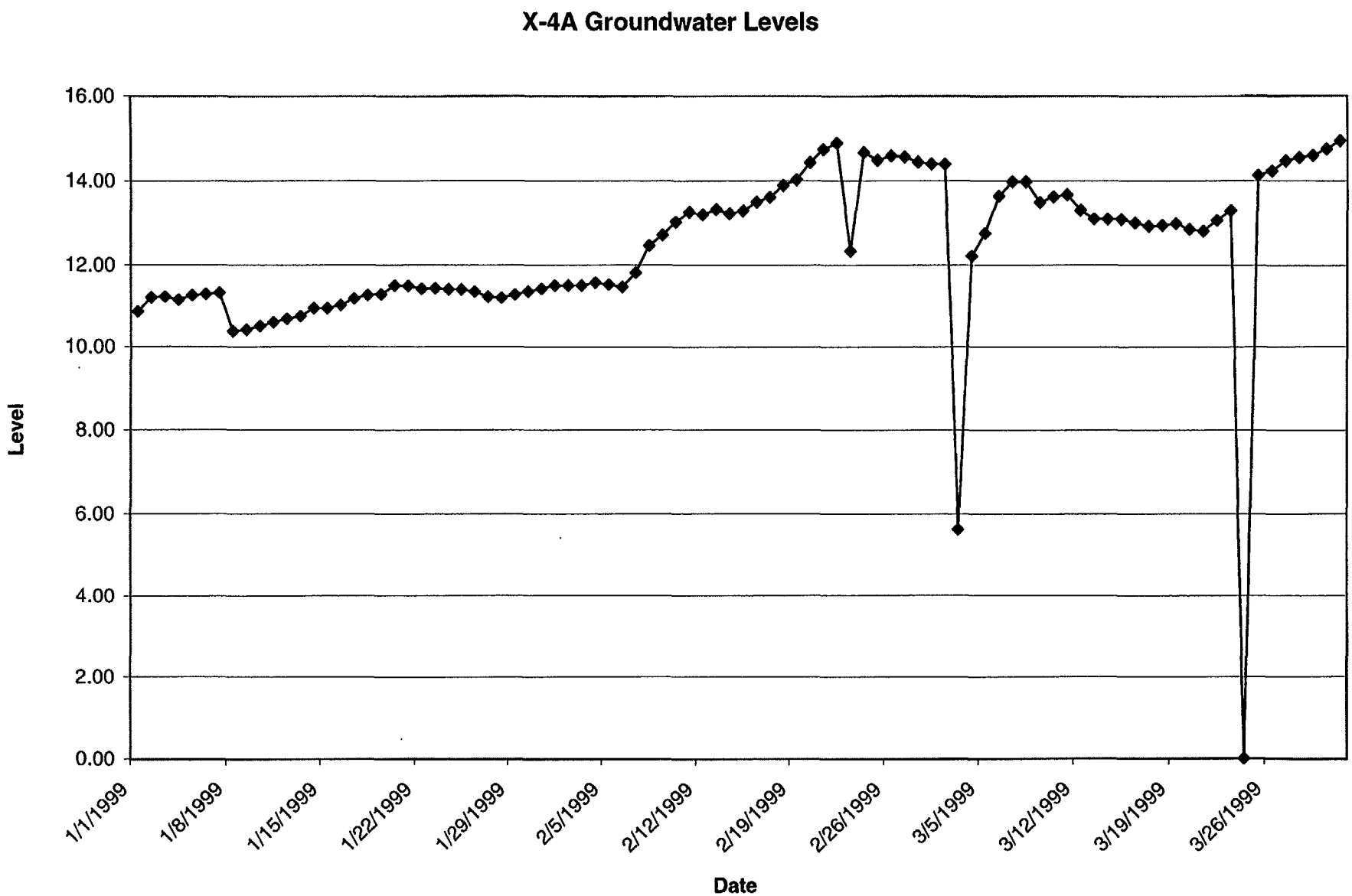
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-4A Groundwater Levels
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Level
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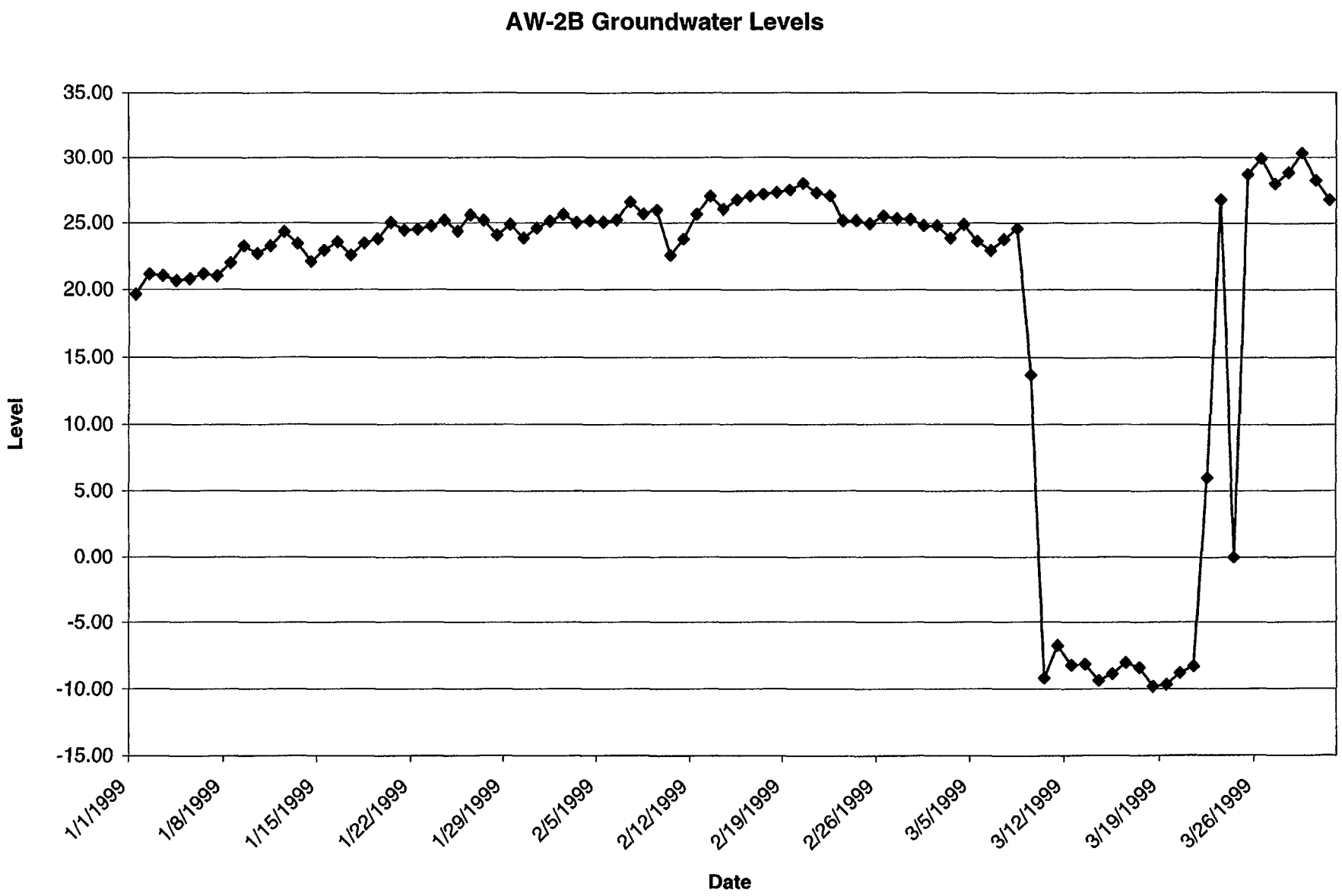
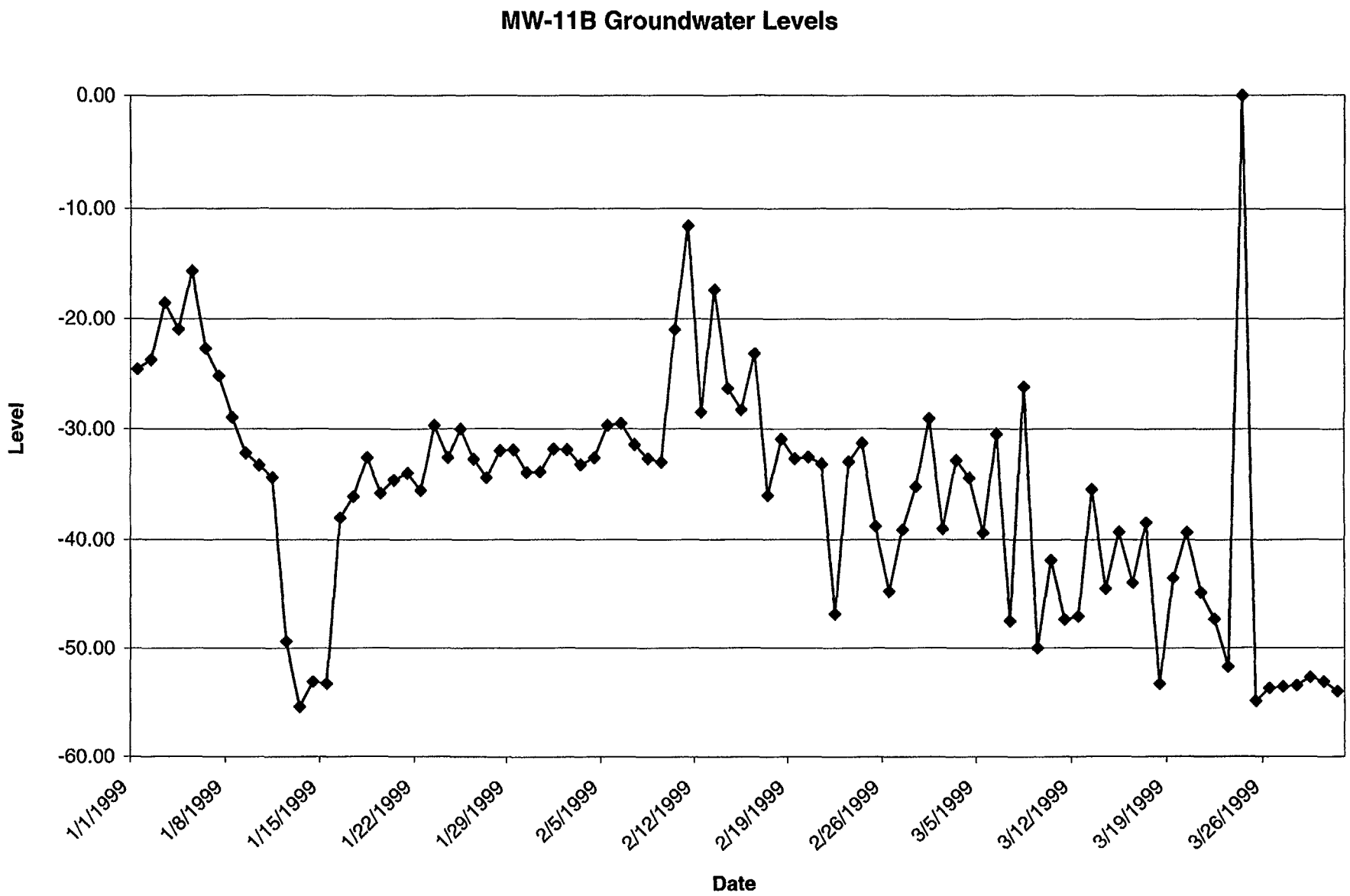
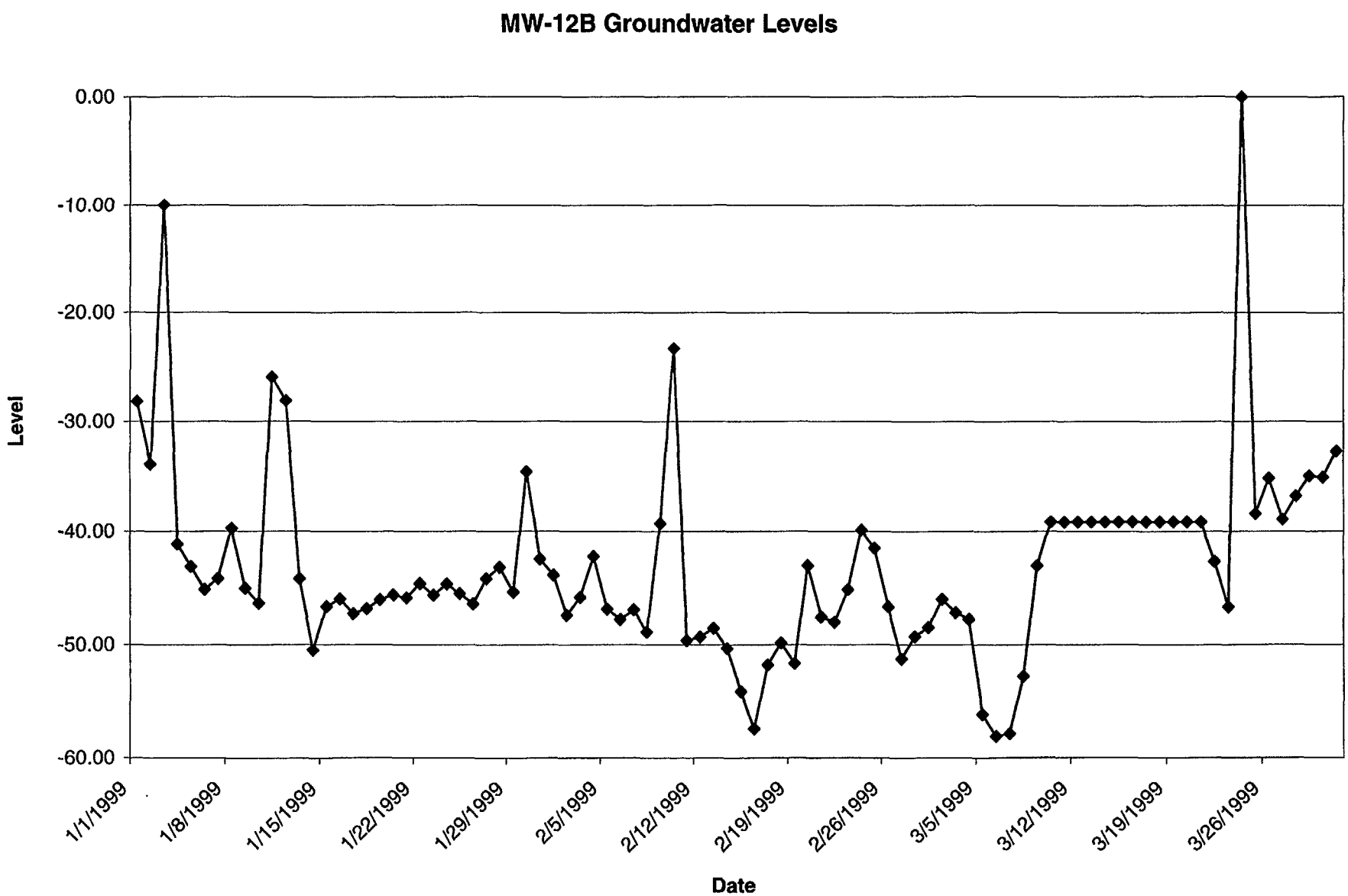
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date

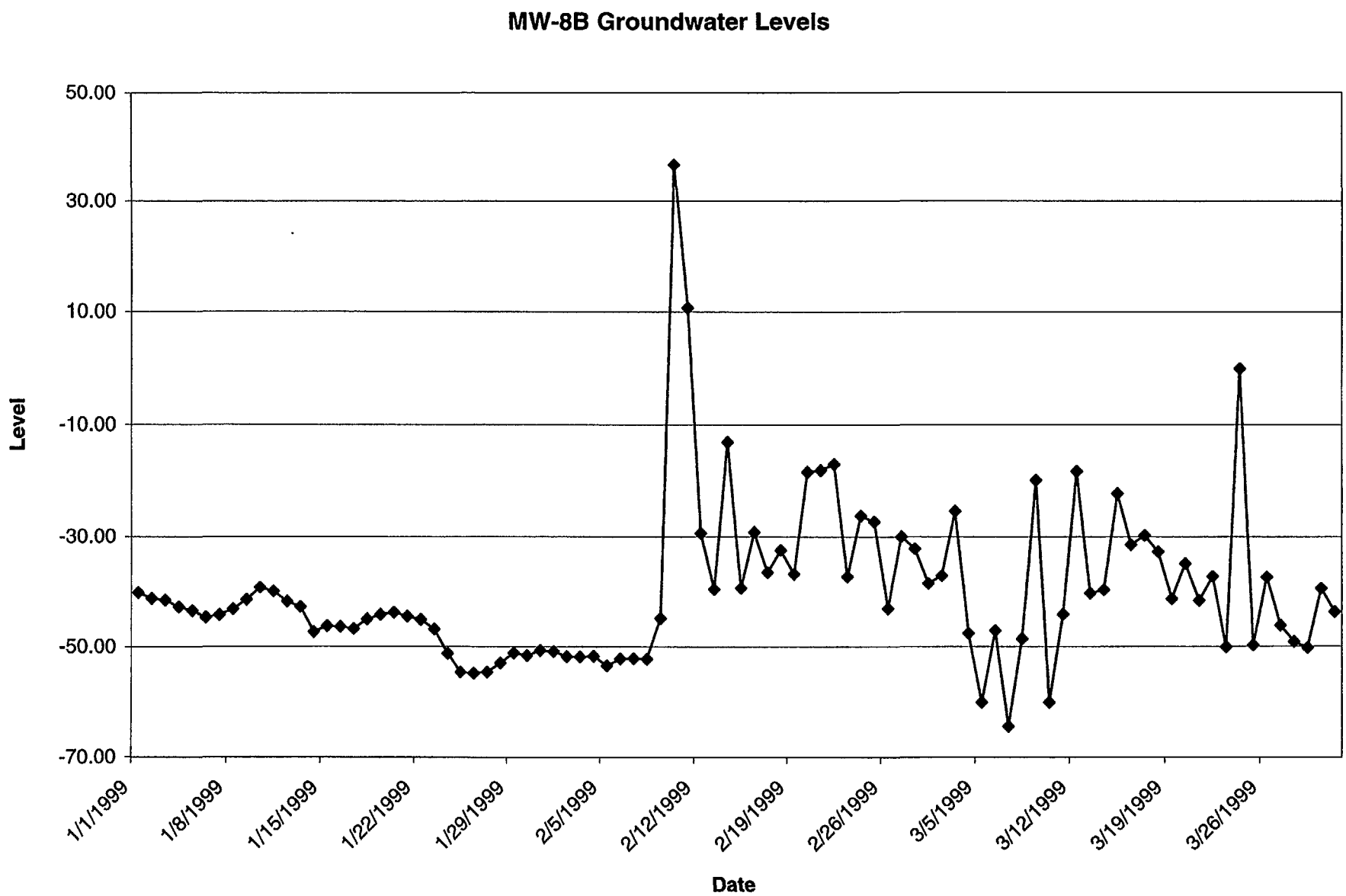
S-2 Zone

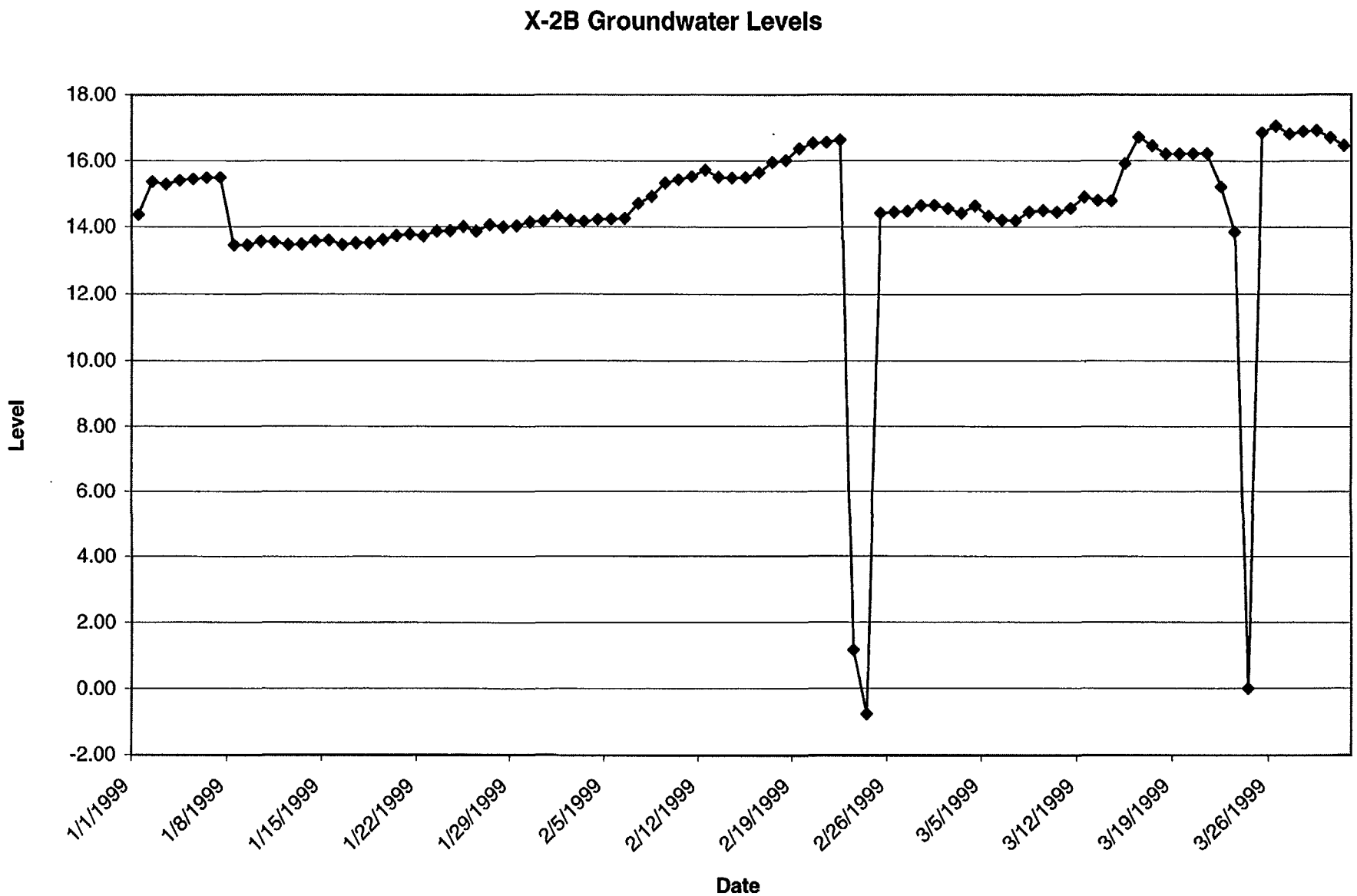
Extraction Wells
Daily Groundwater Levels
First Quarter 1999

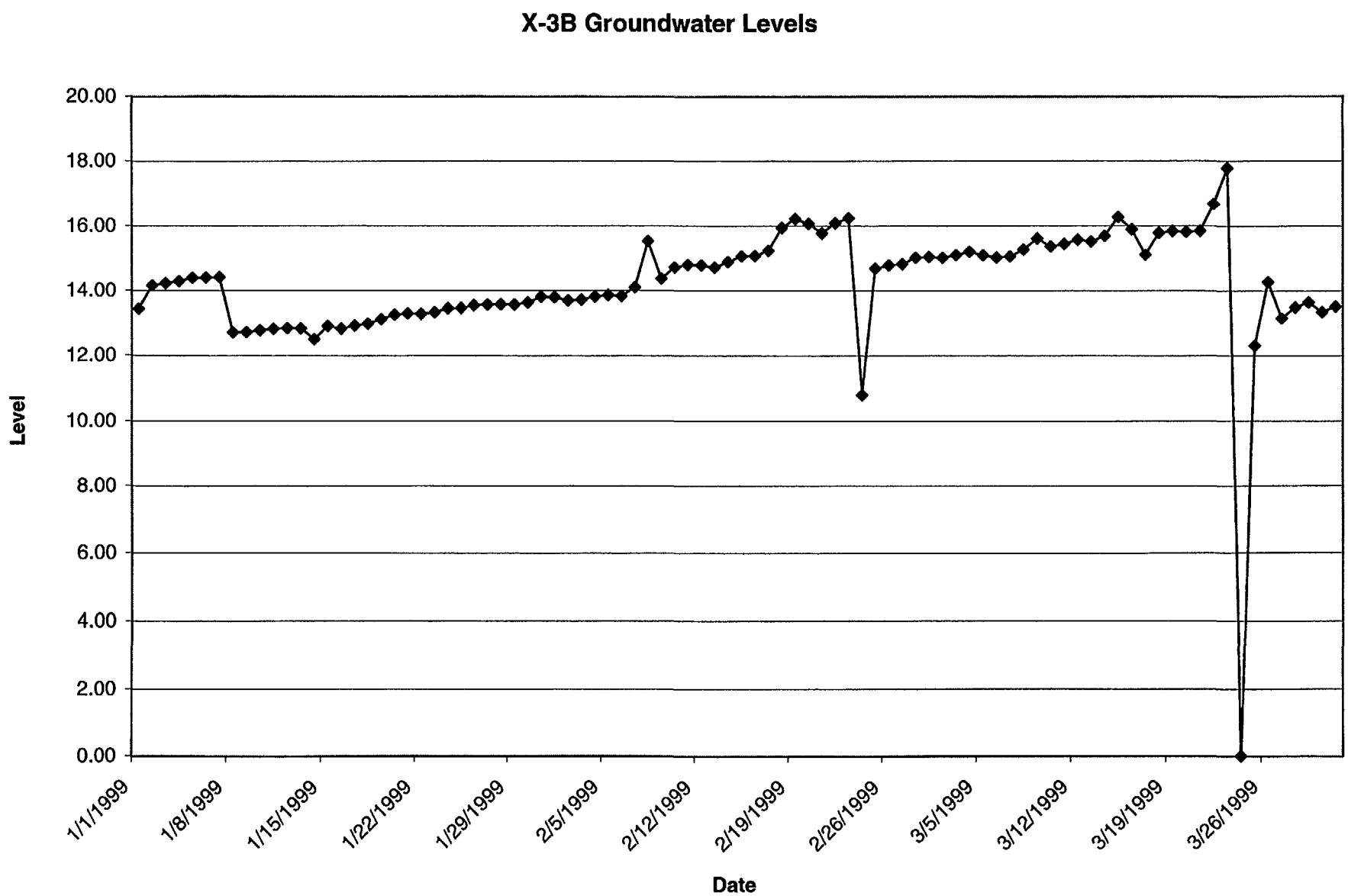

AW-2B Groundwater Levels
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date

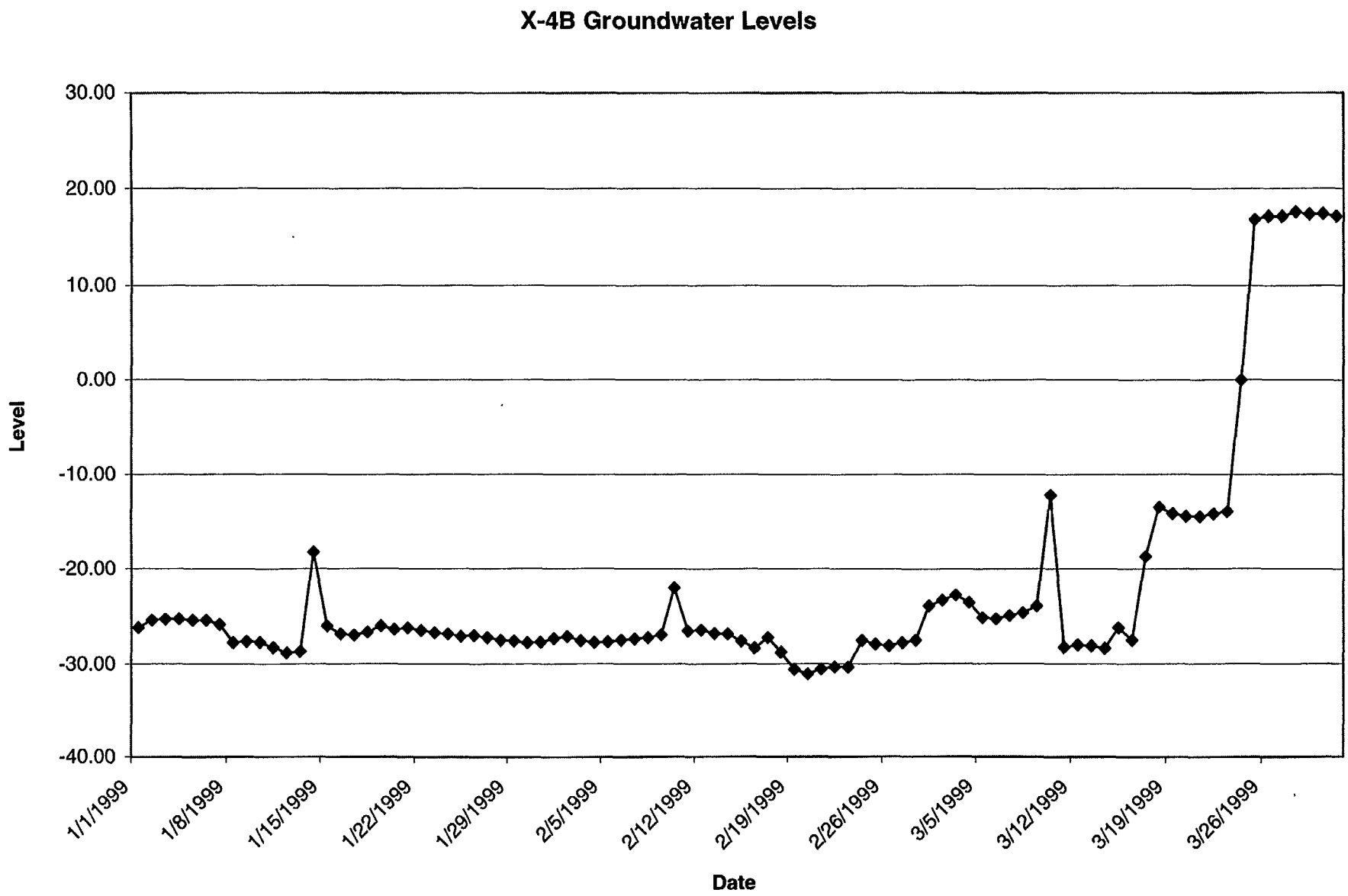

MW-11B Groundwater Levels
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


MW-12B Groundwater Levels
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


MW-8B Groundwater Levels
50.00
30.00
10.00
-10.00
-30.00
-50.00
-70.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-2B Groundwater Levels
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-3B Groundwater Levels
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date


X-4B Groundwater Levels
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
Level
1/1/1999
1/8/1999
1/15/1999
1/22/1999
1/29/1999
2/5/1999
2/12/1999
2/19/1999
2/26/1999
3/5/1999
3/12/1999
3/19/1999
3/26/1999
Date