US EPA RECORDS CENTER REGION 5
464476

July 1996 Residential Well Data Evaluation and Comparison American Chemical Services

Introduction

Black & Veatch Special Projects Corp. (BVSPC), under the Alternative Remedial Contracting Strategy, has been tasked by the U.S. Environmental Protection Agency (USEPA) to provide field oversight during the remedial design and expedited remedial action to USEPA Region V in their endeavor to complete remediation of the American Chemical Services site. The Respondents are the ACS Technical Committee, and their contractor is Montgomery Watson.

Purpose

The purpose of this document is to present BVSPC's evaluation and comparison of split sample analytical results with Montgomery Watson's data. BVSPC representatives collected split samples during sampling of four private residential wells by Montgomery Watson.

Sampling Effort

On July 17, 1996, four split samples were collected during the field oversight. Corresponding USEPA Contract Laboratory Program (CLP) numbers are shown in Table 1. Sampling was performed in accordance with the USEPA-approved field sampling plan and quality assurance project plan.

Laboratory

The USEPA split samples were analyzed by CLP analytical services in accordance with the procedures outlined in the User's Guide to the CLP, USEPA, February 1995. USEPA Region V Central Regional Laboratory (CRL), Chicago, Illinois, analyzed the samples.

Montgomery Watson's samples were analyzed by IEA for organic analyses and Montgomery Watson Laboratories for inorganic analyses.

Data Validation

USEPA Region V CRL and BVSPC validated split sample data using the USEPA CLP National Functional Guidelines for Organic Data Review (EPA 540/R-94/012, February 1994) and USEPA Contract Laboratory Program National

Functional Guidelines for Inorganic Data Review (EPA 540/R-94/013, February 1994). Montgomery Watson provided narratives to explain their validation of the data analyzed by their laboratories. Montgomery Watson stated that they also used these USEPA CLP guidelines for organic and inorganic data review.

The USEPA split sample analytical results were acceptable; however, due to minor analytical quality control problems, some of the compounds/analytes were qualified. Appendix A is a copy of raw data sheets from USEPA for split samples, including data validation and case narratives. Qualifiers are fully explained in the narratives.

Montgomery Watson reported that their sample shipper lost the semivolatile organic compound and polychlorinated biphenyl portions of sample PW01 during transit from the site to the laboratory; therefore, Montgomery Watson did not report results for these analyses for PW01. Montgomery Watson reported that the overall data quality by the laboratories was good with no significant instrument problems and the calculations were acceptable. They stated that calibration exceedances for low concentration volatile organic compounds are not unusual. Appendix B is a copy of raw data sheets for the Montgomery Watson data.

Data Comparison

BVSPC reviewed the validated data and compared it to the Montgomery Watson's data. Table 1 presents the residential well sample data comparison. Both data sets were consistent except for the following:

- Montgomery Watson assigned an R (unusable) qualifier to several volatile organic compounds, including acetone, 2-butanone, 2-hexanone, and 1,2-dibromo-3-chloropropene, because the reference factor was less than 0.05.
- Several additional volatile organic compounds (approximately 23) and semivolatile organic compounds (approximately 2) were analyzed for by CRL than was analyzed by IEA.
- The Montgomery Watson samples were not analyzed for pesticides or cyanide.
- The semivolatile organic compound and polychlorinated biphenyl portions of sample PW01 during transit from the site to the laboratory; therefore, Montgomery Watson did not report results for these analyses for PW01.
- Montgomery Watson's data used a higher detection limit for the PCB analyses.

Volatile Organic Compounds

PW01/RW01.	Consistent results.
PW02/RW02.	Montgomery Watson reported methylene chloride as 2 UJ μg/L, but CRL data indicated 1 μg/L with no qualifier. Montgomery Watson reported toluene as 0.1 J μg/L, but CRL data indicated 1 U μg/L. Montgomery Watson reported 4 tentatively identified compounds (TICs), but CRL data indicated 3 TICs.
PW03/RW03.	Comparable results.
PW04/RW04.	Montgomery Watson reported chloroform as 0.2 J μg/L, but CRL data indicated 1 U μg/L.

Semivolatile Organic Compounds

PW01/RW01.	Montgomery Watson did not report results.
PW02/RW02.	Montgomery Watson reported bis(2-chloroethyl)ether as 3 J μg/L, but CRL data indicated 2 J μg/L. Montgomery Watson reported carbazole as 2 J μg/L, but CRL data indicated 5 U μg/L. Montgomery Watson reported bis(2-ethylhexyl)phthalate as 12 μg/L, but CRL data indicated 5 U μg/L. Montgomery Watson reported 20 TICs, but CRL data indicated 16 TICs.
PW03/RW03.	Montgomery Watson reported 4 TICs, but CRL data indicated no TICs.
PW04/RW04.	Comparable results.

PCBs

PW01/RW01.	Montgomery Watson did not report results.
PW02/RW02.	Comparable results.
PW03/RW03.	Comparable results.
PW04/RW04.	Comparable results.

Inorganic Analytes

Generally, the data are comparable. Several analytes in the Montgomery Watson data were qualified as B, but an explanation of the qualifier is not included with the data. BVSPC assumes the B qualifier indicates that the reported value is less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

Precision of the laboratory analyses was assessed by comparing the detected concentrations for each sample for organic and inorganic analysis. The relative percent difference (RPD) was calculated for each pair of results using the following equation:

$$RPD = \frac{Pc - Dc}{(Pc + Dc) / 2} \times 100$$

where:

P_c = Primary Concentration (assumed USEPA's data)

D_C = Duplicate Concentration (assumed Montgomery Watson's data)

Table 2 presents the sample variation comparison for organic and inorganic analyses. Compounds/analytes that exceeded the 30% RPD criteria included bis(2-chloroethyl)ether, bis(2-ethylhexyl)phthalate, arsenic, copper, and sodium in samples PW02/RW02 and copper in samples PW01/RW01. All other compounds/analytes were consistent, comparable and within the 30% RPD range between USEPA and Montgomery Watson's data; however, BVSPC recommends that the detected compounds/analytes with higher concentrations should be viewed with caution.

Conclusions

The overall sample analytical results between USEPA and Montgomery Watson's data were comparable; however, differences in concentrations for some compounds/analytes between USEPA and Montgomery Watson's data were noted. These compounds/analytes should be viewed carefully in future sampling events.

Table 1
July 1996 Residential Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration (µg/l)							
	PW01 PRP	RW01 96ZB09S01 USEPA	PW02 PRP	RW02 96ZB09S02 USEPA	PW03 PRP	RW03 96ZB09S03 USEPA	PW04 PRP	RW04 96ZB09S04 USEPA
Volatile Organic Compounds								
Chloromethane	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ
Chloroethane	1 U	1 U	21	21	1 U	1 U	1 U	1 U
Methylene chloride	2 U	1 U	2 UJ	1	1 UJ	1 U	2 U	1 U
Acetone	5 RJ	3 U	5 UR	3 U	5 R	3 U	4 RJ	3 U
Carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	--	1 U	--	1 U	--	1 U	--	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	0.2 J	1 U
1,2-Dichloroethane	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U
2-Butanone	5 UR	3 U	5 UR	3 U	5 UR	3 U	5 UR	3 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U
1,1-Dichloropropene	--	1 U	--	1 U	--	1 U	--	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	--	1 U	--	1 U	--	1 U	--	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1	1	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	--	1 U	--	1 U	--	1 U	--	1 U
4-Methyl-2-pentanone	5 U	2 U	5 U	2 U	5 U	2 U	5 U	2 U
2-Hexanone	5 UR	2 U	5 UR	2 U	5 UR	2 U	5 UR	2 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	0.1 J	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1 U	--	1 U	--	1 U	--	1 U	--
m- and/or p-Xylene	--	1 U	--	1 U	--	1 U	--	1 U
o-Xylene	--	1 U	--	1 U	--	1 U	--	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropene	1 UR	1 U	1 UR	1 U	1 UR	1 U	1 UR	1 U
Isopropylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
Bromobenzene	--	1 U	--	1 U	--	1 U	--	1 U
1,2,3-Trichloropropane	--	1 U	--	1 U	--	1 U	--	1 U
1,1,1,2-Tetrachloroethane	--	1 U	--	1 U	--	1 U	--	1 U
n-Propylbenzene	--	1 U	--	1 U	--	1 U	--	1 U

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2-Chlorotoluene	--	1 U	--	1 U	--	1 U	--	1 U
4-Chlorotoluene	--	1 U	--	1 U	--	1 U	--	1 U
1,3,5-Trimethylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
tert-Butylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
1,2,4-Trimethylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
sec-Butylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
p-Isopropyltoluene	--	1 U	--	1 U	--	1 U	--	1 U
n-Butylbenzene	--	1 U	--	1 U	--	1 U	--	1 U
1,2,4-Trichlorobenzene	--	1 U	--	1 U	--	1 U	--	1 U
Naphthalene	--	1 U	--	1 U	--	1 U	--	1 U
Hexachlorobutadiene	--	1 U	--	1 U	--	1 U	--	1 U
1,2,3-Trichlorobenzene	--	1 U	--	1 U	--	1 U	--	1 U
VOA TICs	0	0	4	3	0	0	0	0
Semivolatile Organic Compounds								
Phenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
bis(2-Chloroethyl)ether	--	5 U	3 J	2 J	10 U	5 U	10 U	5 U
2-Chlorophenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,3-Dichlorobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,4-Dichlorobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzyl alcohol	--	5 U	--	5 U	--	5 U	--	5 U
1,2-Dichlorobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Methylphenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
bis(2-Chloroisopropyl)ether	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
4-Methylphenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
N-Nitroso-di-n-propylamine	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Hexachloroethane	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U

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Nitrobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Isophorone	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Nitrophenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,4-Dimethylphenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzoic acid	--	20 UJ	--	20 UJ	--	20 UJ	--	20 UJ
bis(2-Chloroethoxy)methane	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,4-Dichlorophenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2,4-Trichlorobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Naphthalene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
4-Chloroaniline	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Hexachlorobutadiene	--	5 U	10 U	5 U	10 U	5 U	10 U	5`U
4-Chloro-3-methylphenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Methylnaphthalene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Hexachlorocyclopentadiene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,4,6-Trichlorophenol	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,4,5-Trichlorophenol	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
2-Chloronaphthalene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Nitroaniline	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
Dimethylphthalate	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Acenaphthylene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,6-Dinitrotoluene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
3-Nitroaniline	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
Acenaphthene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2,4-Dinitrophenol	--	20 UJ	25 U	20 U	25 U	20 U	25 U	20 U
4-Nitrophenol	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
Dibenzofuran	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U

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2,4-Dinitrotoluene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Diethylphthalate	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
4-Chlorophenyl-phenylether	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Fluorene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
4-Nitroaniline	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
4,6-Dinitro-2-methylphenol	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
N-Nitrosodiphenylamine	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
4-Bromophenyl-phenylether	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Hexachlorobenzene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Pentachlorophenol	--	20 U	25 U	20 U	25 U	20 U	25 U	20 U
Phenanthrene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Anthracene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbazole	--	5 U	2 J	5 U	10 U	5 U	10 U	5 U
Di-n-butylphthalate	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Fluoranthene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Pyrene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Butylbenzylphthalate	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
3,3'-Dichlorobenzidine	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzo(a)anthracene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chrysene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
bis(2-Ethylhexyl)phthalate	--	5 U	12	5 U	10 U	5 U	10 U	5 U
Di-n-octylphthalate	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzo(b)fluoranthene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzo(k)fluoranthene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzo(a)pyrene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Indeno(1,2,3-cd)pyrene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U

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	PW01 PRP	RW01 96ZB09S01 USEPA	PW02 PRP	RW02 96ZB09S02 USEPA	PW03 PRP	RW03 96ZB09S03 USEPA	PW04 PRP	RW04 96ZB09S04 USEPA
Dibenzo(a,h)anthracene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Benzo(g,h,i)perylene	--	5 U	10 U	5 U	10 U	5 U	10 U	5 U
SVOA TICs		0	20	16	4	0	0	0
Pesticides								
Alpha-BHC	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Lindane	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Heptachlor	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Aldrin	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Heptachlor Epoxide	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Endosulfan I	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Dieldrin	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Endrin	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Endosulfan II	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
p,p'-DDT	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Methoxychlor	--	0.1 U	--	0.1 U	--	0.1 U	--	0.1 U
Beta-BHC	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Delta-BHC	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Gamma-chlordane	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
Alpha-chlordane	--	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U
p,p'-DDE	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
p,p'-DDD	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Endrin Aldehyde	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Endosulfan Sulfate	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Endrin Ketone	--	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U
Technical Chlordane	--	0.2 U	--	0.2 U	--	0.2 U	--	0.2 U
Toxaphene	--	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U

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PCBs								
Aroclor 1016	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Aroclor 1221	--	0.2 U	2.0 UJ	0.2 U	2.0 UJ	0.2 U	2.0 UJ	0.2 U
Aroclor 1232	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Aroclor 1242	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Aroclor 1248	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Aroclor 1254	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Aroclor 1260	--	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U	1.0 UJ	0.2 U
Inorganic Analytes								
Aluminum	79.0 UB	80 U	50.0 U	80 U	72.0 UB	80 U	70.0 UB	80 U
Antimony	2.0 U	1 U	2.0 U	1 U	2.0 U	1 U	2.0 U	1 U
Arsenic	1.0 U	2 U	1.0 B	2	1.0 U	2 U	1.0 U	2 U
Barium	132 B	128	594	581	25.0 B	22.8	10.0 U	9.8
Beryllium	0.20 U	1 U	0.20 U	1 U	0.20 U	1 U	0.20 U	1 U
Cadmium	0.20 U	0.2 U	0.20 U	0.4 U	0.20 U	0.2 U	0.20 U	0.2 U
Calcium	79,700	83,300	90,800	92,900	69,800	71,400	44,200	44,800
Chromium	10.0 U	10 U	10.0 U	10 U	10.0 U	10 U	10.0 U	10 U
Cobalt	50.0 U	6 U	50.0 U	6 U	50.0 U	6 U	50.0 U	6 U
Copper	14.5 B	6 U	12.5 B	6 U	21.0 B	27.9	10.0 U	6 U
Iron	3,650	3,710	3,850	3,900	20.0 U	80 U	20.0 U	80 U
Lead	1.5 U	2 U	1.5 U	2 U	1.5 U	2 U	1.5 U	2 U
Magnesium	40,600	41,800	75,300	80,600	29,200	27,700	16,400	16,200
Manganese	40.5	37.1	122	144	10.0 U	5 U	10.0 U	5 U
Mercury	0.20 U	0.2 U	0.20 U	0.2	0.20 U	0.2 U	0.20 U	0.2 U
Nickel	20.0 U	20 U	51.0	41.7	20.0 U	20 U	20.0 U	20 U
Potassium	2,220 B	5,000 U	72,800	82,900	7,800	7,760	2,420 B	5,000 U

Table 1
July 1996 Residential Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration (µg/l)							
	PW01 PRP	RW01 96ZB09S01 USEPA	PW02 PRP	RW02 96ZB09S02 USEPA	PW03 PRP	RW03 96ZB09S03 USEPA	PW04 PRP	RW04 96ZB09S04 USEPA
Selenium	2.0 U	2 U	2.0 U	4 U	2.0 U	2 U	2.0 US	2 U
Silver	10.0 U	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U	6 U
Sodium	19,800	20,500	1,390,000	1,010,000	35,700	36,900	9,280	8,850
Thallium	1.0 U	2 U	1.0 US	2 U	1.0 U	2 U	1.0 U	2 U
Vanadium	20.0 U	5 U	20.0 U	5 U	20.0 U	5 U	20.0 U	5 U
Zinc	39.0 U	40 U	15.5 UB	40 U	127	121	54.5 U	41.7
Cyanide	--	8 U	--	8 U	--	8 U	--	8 U

t:\projects\acs\data\july96\table1

Table 2
Relative Percent Difference Comparison
July 1996 Residential Well Sample Data
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration (µg/l)					
	PW01 PRP	RW01 96ZB09S01 USEPA	%RPD	PW02 PRP	RW02 96ZB09S02 USEPA	%RPD
Semivolatile Organic Compounds						
bis(2-Chloroethyl)ether	--	--	--	3 J	2 J	40%
bis(2-Ethylhexyl)phthalate	--	--	--	12	5 U	82%
Inorganic Analytes						
Arsenic	--	--	--	1.0 B	2	67%
Copper	14.5 B	6 U	83%	12.5 B	6 U	70%
Sodium	--	--	--	1,390,000	1,010,000	32%

t:\projects\acs\data\july96\table2

Appendix A

USEPA Organic and Inorganic Analysis Data Sheets

BLACK & VEATCH

MEMORANDUM

Data Validation Review
CRL Case # 960129

August 30, 1996
71670.600
I.7

To: File

Routing: S. Mrkvicka

From: Jeff Albano

Case Description
The CRL lab received seven preserved water samples from Case # 96ZB09S01 to S04, D01, R01 and R02 on 7/18/96. Samples delivered on 7/17/96; samples met delivery and testing time requirement (7 days).

Instrument Quality Controls
No problems with instrument performance check or initial calibrations. One continuing calibration required for this case; all quality control criteria met except chloromethane (31.7%) and vinyl chloride (32.6%). These constituents were not detected in samples. No problems with the internal standard or retention times.
Method Quality Control
Acetone was detected in the lab blank at 2.5 ug/l. No other constituents or tentatively identified compounds (TICs) noted. Acetone was not detected in any of the samples. No problems with surrogate spike samples. The laboratory control sample was within the required 60% to 140%. The performance evaluation sample (960013S01) was within acceptable limits.

NOTE
The hard copy sheets of the initial calibration checks, spike recoveries, and continuing calibration checks were not provided with the data package, therefore, sample calculations are not attached. Since few exception were noted in the case narrative and the exceptions were not detected in any samples, there may be no need to verify calculations.

Case 960129 Semivolatiles

Case Description
Lab received six residential well samples (96ZB09S01 to S04, D01, and R01) on July 18, 1996. Samples collected July 17, 1996. Samples analyzed with holding times.

Instrument Quality Controls
No problems encountered with Instrument Performance Check. Initial calibration %RSDs for benzoic acid (39.6%) and 2,4-dinitrophenol (42.2%)

were outside CRL requirements. The above constituents were flagged J. The results were greater than the CRL requirement of <30%.
The continuing calibration were acceptable except for 4-nitrophenol (50.1% D), 2,4,6-tribromophenol (28.2% D). These constituents were flagged J for detected compounds, UJ for non-detect.

Internal standards were within acceptable limits.

Method Quality Control
No problems with the method blank. The surrogate spike recovery for 2-fluorobiphenyl was low, however, one surrogate outlier is allowed per fraction. Data qualification not necessary. The laboratory control spike samples recoveries were within quality control limits. The laboratory performance Evaluation sample recoveries were within quality control limits with the exception of 4-chloroaniline, but the constituent was not detected. No data qualification necessary.

Sample Results
2,4-dinitrophenol and 4-nitrophenol were reported outside the upper calibration range for the lab spike sample. The sample was diluted (D) and the reanalysis samples are within the calibration range and are therefore to be used.

NOTE
The hard copy sheets of the initial calibration checks, spike recoveries, and continuing calibration checks were not provided with the data package, therefore, sample calculations are not attached.

Case SF 960129 Pesticides/PCBs

Case Description
The lab received six residential well water samples (96ZB09s01-s04, r01, and D01) on July 18, 1996. The samples were shipped July 17, 1996, therefore analysis within holding times.

Instrument Quality Controls

The instrument performance check, initial calibration check, and continuing calibration check were within acceptable limits. The Retention times were outside quality control limits, both under and over. All analyses undetected, therefore, no qualification necessary.

Method Quality Control

The method blank results, surrogate spike recoveries, and performance evaluation samples were within acceptable limits.

NOTE
The hard copy sheets of the initial calibration checks, spike recoveries, and continuing calibration checks were not provided with the data package, therefore, sample calculations are not attached.

Case 960129 Mercury (Hg)

Six residential well water samples were received and sampled within the 28 day holding time for mercury.

The matrix spike recovery on sample 96ZB09S02 (75.5%) was outside control limits (85-115%). Reanalysis revealed the same result.

All other sample were analyzed and are acceptable.

NOTE
The hard copy sheets of the initial calibration checks, spike recoveries, and continuing calibration checks were not provided with the data package, therefore, sample calculations are not attached.

All samples, except 96ZB09S02, were undetected.

Case 960129 Cyanide (CN)

All samples non-detect, below the detection limit (0.008 ug/l). All samples within quality control limits and are acceptable.

Case 960129 Antimony, Arsenic, Cadmium, Lead, Selenium, and Thallium

The matrix spike recovery for selenium was 122%, outside CRL 100±15% criterion, however, samples were below the detection limit, so qualification is not necessary.

The MCL for drinking water is 0.05 As/L. The lifetime exposure is 10^{-4} for 0.002 mg As/L. Sample 96ZB09s02 (2 ug/l) may be significant.

All samples within quality control limits.

NOTE

The hard copy sheets of the initial calibration checks, spike recoveries, and continuing calibration checks were not provided with the data package, therefore, sample calculations are not attached.

Case 960129 Inorganics

No exceptions, all sample results acceptable. No qualification necessary.

ENVIRONM TAL PROTECTION AGENCY
C e of Enforcement

REGION 5
230 So Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 71670
PROJECT NAME: AMERICAN CHEMICAL SERVICE
SAMPLERS: (Signature) Matt Mastronardi MATT MASTRONARDI

SF960129 SHEET 1 OF 3

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1-L POLY						REMARKS
S01	7/17/96	1115		X	AC-RW01-001 PW01	2	2						S-181978,79 962809501
S02	7/17/96	1035		X	AC-RW02-001 PW02	2	2						S-181972,73 962809502
S03	7/17/96	1000		X	AC-RW03-001 PW03	2	2						S-181966,67 962809503
S04	7/17/96	1430		X	AC-RW04-001 PW04	6	6						S-181998,9-180435,37,36,38 962809504
D01	7/17/96	1115		X	AC-RW01-101	2	2						S-181983,82 962809D01
B01	7/17/96	1230		X	AC-FB01-201	2	2						FIELD BLANK S-180444,180443 962809B01

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Matt Mastronardi	7/18/96 1120	William [illegible]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) William [illegible]	Date / Time 7/18/96 11:27am	Remarks	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5-06658

ENVIRONMF AL PROTECTION AGENCY
Office of Enforcement

P GION 5
230 Sou earborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 71670
PROJECT NAME: AMERICAN CHEMICAL SERVICE
SAMPLERS: (Signature) Matt Mastronardi

SF960129
SHEET 2 OF 3

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	80-OZ AMBER						REMARKS
S01	7/17	1115		X	AC-RW01-001	2	2						962B09S01 5-181985,84
D01	7/17	1115		X	AC-RW01-101	2	2						962B09D01 5-181976,7 DUPE
S04	7/17	1430		X	AC-RW04-001	6	6						962B09S04 5-181992-7 MS/MSD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Matt Mastronardi	7/18/96 1120	MAM 7/18/96 Matt M			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) William Sayo	Date / Time 7/18/96 11:27 AM	Remarks	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5 06660

ENVIRONM[illegible]TAL PROTECTION AGENCY
[illegible]e of Enforcement

REGION 5
230 So[illegible] Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 71670
PROJECT NAME: AMERICAN CHEMICAL SERVICE
SAMPLERS: (Signature) Matt Mastronardi

SF 960129
REMARKS SHEET 3 OF 3

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ML VOA	80 OZ AMBER					REMARKS
RW02	7/17	1035		X	AC-RW02-001	4	2	2					962B09S02 5-181970,1;68,69
RW03	7/17	1000		X	AC-RW03-001	4	2	2					962B09S03 5-181964,5;62,63
B01	7/17	1230		X	AC-FB01-201	4	2	2					962B09B01 5-180441,2;39,40
B02	7/17	1235		X	AC-TB01-201	2	2						962B09B02 5-180446,45
RW01	7/17	1115		X	AC-RW01-001	2	2						962B09S01 5-180980,81 MAM 7/17/96
D01	7/17	1115		X	AC-RW01-101	2	2						962B09D01 5-181974,975
RW04	7/17	1430		X	AC-RW04-001	6	6						962B09S04 5-181986-91

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Matt Mastronardi	7/18/96 1120	William [signature]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) William [signature]	Date / Time 7/18/96 11:27AM	Remarks	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5 06659

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 1 9 1996

Subject: Review of Region 5 Data for AMERICAN CHEMICAL

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: B&V

Attached are the results for: **AMERICAN CHEMICAL**
CRL request number: **960129**
Analyzed for: **VOA (Organic)**
Results are reported for sample designations: 96ZB09S01 to S04, D01, R01 and R02 (seven samples)

Results Status:
(X) Acceptable for Use .
(X) Data Qualified but acceptable for use for chloromethane and vinyl chloride
( ) Data Unacceptable for Use.

(X) Sewer Disposal Criteria Met; Exceptions: none
Comments on Data Quality by Reviewer:

- Please see narrative for QC and case description.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for **AMERICAN CHEMICAL 960129 VOA**

Nidia Fuentes 08/13/96

Peer and Task Monitor Date (✓) Reviewed ( ) Unreviewed

Chi Fang 8/15/96

Organic Team Leader and Date (✓) Reviewed ( ) Unreviewed

Chuck Elby 8/16/96

QC Coordinator(VACANT) and Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin AUG 1 9 1996

Data Management Coordinator and Date Received

Date Transmitted AUG 1 9 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date
Comments:

CASE NARRATIVE

DATE: August 8, 1996

PROJECT NAME: American Chemical Service Samples - CRL Case # 960129
Analysis of Volatile Organic Analytes (VOA)

ANALYST: Anthony Gugliotta, Lockheed/ESAT ag

REVIEWERS: Ziyad Rajabi, Lockheed/ESAT Organic Group Leader
Dennis Miller, Lockheed/ESAT Team Manager DMiller
Nidia Fuentes, EPA CRL Task Monitor NF

I. CASE DESCRIPTION:

The laboratory received seven preserved water samples from the American Chemical Service site (96ZB09S01 to S04, -D01, -R01 and -R02) on 7/18/96 for volatile organic analyte (VOA) analysis. All samples were analyzed by CRL Method 624VOA (revised 12/15/95) using GC/MS#7 on 7/24/96. All site samples were analyzed within the sample holding time requirements. The QC criterion for sample holding times is 14 days for acid-preserved water samples. These samples were received at the laboratory in good condition. No problems were observed.

II. INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Checks (IPC):** On 7/10/96 and 7/24/96, a GC/MS IPC using *p*-BFB was made on GC/MS#7 to determine if acceptable EPA tuning criteria were met. The QC criteria are the same as those found in the Statement of Work under the EPA's Contract Laboratory Program. All criteria were met, no problems were observed.

2. **Initial Calibrations (IC):** An acceptable five-point IC is required for all target compounds before samples can be analyzed. The QC criterion for the IC states that each analyte's %RSD must be ≤30%.

The initial calibration was generated on GC/MS#7 on 7/10/96. All QC criteria were acceptable for all target compounds in the initial calibration. No problems were observed with the initial calibration.

3. **Continuing Calibrations (CC):** One continuing calibration was required for this case (file >B2540 on 7/24/96). All QC criteria were acceptable for all target compounds in the continuing calibration except chloromethane (31.7 %D) and vinyl chloride (32.6 %D). Chloromethane and vinyl chloride were not detected in any of the associated samples; therefore,

the detection limits of these two compounds were flagged as estimated (UJ). No other problems were observed.

4. **Internal Standard (IS) Area and Retention Time (RT) Summary:** The QC criterion states that the areas of ISs must be within a factor of two of the IS area of the corresponding CC. The RT of the IS for samples must also be within 30 seconds of the RT of the IS for the corresponding CC.

All internal standard areas and retention times met the QC requirements on all samples analyzed on GC/MS#7. No problems were observed.

III. METHOD QUALITY CONTROL:

1. **Method Blank Results:** A Lab Blank (reagent water spiked with internal standards and surrogates) was analyzed to check the GC/MS, purge and trap systems and reagents for laboratory contamination (see Form I VOA). All QC data for the Lab Blank were acceptable.

In the Lab Blank analyzed on 7/24/96, acetone was detected at an estimated concentration of 2.5 µg/L. No other analytes and no TICs were detected. Acetone was not detected in any of the associated samples of this data set. No other problems were observed.

2. **Surrogate Spike Compound Results:** The surrogate spike compound recovery data were within the QC limits for all water samples on GC/MS#7. No problems were observed. (See Form II VOA-1).

3. **Laboratory Control Sample (LCS):** The laboratory generated acceptable results for the LCS. See Form XI VOA. All compounds had recoveries within the range of 60% to 140%.

4. **Performance Evaluation Sample (PES):** The laboratory analyzed a Performance Evaluation Sample (960013S01) for July 1996. The QC criteria for the PES are the control limits established by EMSL-LV. The results were submitted to the EPA WAM for scoring. For the July 1996 PES, all reported target compound values were within acceptable limits.

IV. SAMPLE RESULTS:

The laboratory met the qualitative and quantitative analysis requirements for TCLs and TICs.

2A
WATER VOLATILE SURROGATE RECOVERY

La Name: CRL REGION V Contract:

Lab code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (BEN)#	S2 (BFB)#	S3 (TOL)#	S4 ( )#	TOT OUT
01	LAB BLANK	101	95	99		0
02	96ZB09R01	101	99	99		0
03	96ZB09R02	102	101	100		0
04	96ZB09S01	104	100	103		0
05	96ZB09D01	102	101	100		0
06	96ZB09S02	98	96	98		0
07	96ZB09S03	102	102	102		0
08	96ZB09S04	102	102	101		0
09						
10						
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30						

		QC LIMITS
S1 (BEN)	= BENZENE-D6	(70-130)
S2 (BFB)	= p-BROMOFLUOROBENZENE	(70-130)
S3 (TOL)	= TOLUENE-D8	(70-130)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

FORM II VOA-1 1/87 Rev

4A
VOLATILE METHOD BLANK SUMMARY

La Name: CRL REGION V Contract:

Lab code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

Lab File ID: >B2542 Lab Sample ID: LAB BLANK

Date Analyzed: 07/24/96 Time Analyzed: 13:24

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: GCMS#7

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	96ZB09R01	96ZB09R01	>B2549	17:47
2	96ZB09R02	96ZB09R02	>B2550	18:25
3	96ZB09S01	96ZB09S01	>B2551	19:02
4	96ZB09D01	96ZB09D01	>B2552	19:40
5	96ZB09S02	96ZB09S02	>B2553	20:17
6	96ZB09S03	96ZB09S03	>B2554	20:54
7	96ZB09S04	96ZB09S04	>B2555	21:32
8				
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COMMENTS: _____

FORM IV VOA 1/87 Rev.

11A
VOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LAB SPIKE

La Name: CRL REGION V Contract:

Lab Code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: LAB SPIKE

Sample wt/vol: 25 (g/ml) ML Lab File ID: >B2475

Level: (low/med) LOW Date Received: 07/10/96

% Moisture: not dec. Date Analyzed: 07/10/96

Column: (pack/cap) CAP Dilution Factor: 1.0

COMPOUND	Conc	Spike	Recovery
Vinyl chloride	5	5	100
Carbon tetrachloride	5	5	105
Benzene	5	5	97
1,2-Dichloroethane	5	5	98
Trichloroethene	5	5	102
1,2-Dichloropropane	5	5	101
cis-1,3-Dichloropropene	5	5	99
Tetrachloroethene	5	5	100
1,1,2-Trichloroethane	5	5	92
1,2-Dibromoethane	5	5	100
Bromoform	5	5	95
1,4-Dichlorobenzene	5	5	96

QC LIMITS: 60% - 140%

LOW CON ORGANIC

EPA SAMPLE NUMBER: PY009

Lab Name: NOT LISTED
Contract:
Lab Code: Case No: SAS No: SDG No:
Lab Sample ID:
Date Received: 07/12/96
Lab File ID:
Date Analyzed: / /

TCL HITS

CHLOROETHANE	IN WINDOW	2.580
1,1,1 TRICHLOROETHANE	IN WINDOW	3.620
BROMODICHLOROMETHANE	IN WINDOW	6.700
2-HEXANONE	IN WINDOW	13.350
1,1,2,2-TETRACHLOROETHANE	IN WINDOW	12.350
ETHYLBENZENE	IN WINDOW	8.970
STYRENE	IN WINDOW	13.350
XYLENES (TOTAL)	IN WINDOW	1.560
1,2-DIBROMOETHANE	IN WINDOW	0.660

TCL MISSES

TCL CONTAMINANTS

TRICHLOROETHENE	1.350

TIC HITS

2-CHLOROTOLUENE	0.000

TIC MISSES

TIC CONTAMINANTS

SPIKED INTERFERENTS (concentrations not evaluated)

L. Finkelberg

07-15-96

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

LAB BLANK

Sit Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2542

Level: (low/med) LOW Date Received: 07/24/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	J
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |__| NO |_X_|

1A-2

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

LAB BLANK

:e N :AMERICAN CHEMICAL SERVICE Contract:CRL

) Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

:rix: (soil/water) WATER Lab Sample ID: LAB BLANK

ıple wt/vol: 25 (g/mL) mL Lab File ID: >B2542

vel: (low/med) LOW Date Received: 07/24/96

Moisture: not dec.100 Date Analyzed: 7/24/96

lumn: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

FORM I-2 VOA 1/89 Rev.

ta Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09R01

Sit Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09R01

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2549

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09R02

Si Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09R02

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2550

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	.5	J
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |__| NO |_X_|

1A-2

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09R02

Si Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09R02

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2550

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1A

EPA SAMPLE NO.

RW01

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S01

Si Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S01

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2551

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |__| NO |_X_|

1A-2

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S01

Site Name: AMERICAN CHEMICAL SERVICE Contract: CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S01

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2551

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	~~1,3-Dichlorobenzene~~	1.	U
106-46-7	~~1,4-Dichlorobenzene~~	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	~~1,2-Dichlorobenzene~~	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	~~1,2-Dibromo-3-chloropropane~~	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09D01

Si Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09D01

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2552

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES [ ] NO [X]

1A-2

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09D01

Sit Name: AMERICAN CHEMICAL SERVICE Contract: CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09D01

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2552

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S02

Sit Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2553

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	21.	
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |_X| NO |___|

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S02

Si Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2553

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

96ZB09S02

Site Name: AMERICAN CHEMICAL SERVICE Contract:ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 25 (g/mL) ML Lab File ID: >B2553

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.----- Date Analyzed: 7/24/96

Column: CAP Dilution Factor: 1.0

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	75456	Chlorodifluoromethane	5.52	16	J
2.	593704	Chlorofluoromethane	5.95	3	J
3.	60297	Diethyl ether	7.29	3	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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29.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S03

Sit Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S03

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2554

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |__| NO |_X_|

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S03

Si' Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S03

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2554

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S04

Sit Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S04

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2555

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	1.	UJ
75-01-4	Vinyl chloride	1.	UJ
74-83-9	Bromomethane	1.	U
75-00-3	Chloroethane	1.	U
75-35-4	1,1-Dichloroethene	1.	U
67-64-1	Acetone	3.	U
75-15-0	Carbon disulfide	1.	U
75-09-2	Methylene chloride	1.	U
156-60-5	trans-1,2-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
594-20-7	2,2-Dichloropropane	1.	U
156-59-2	cis-1,2-Dichloroethene	1.	U
78-93-3	2-Butanone	3.	U
74-97-5	Bromochloromethane	1.	U
67-66-3	Chloroform	1.	U
71-55-6	1,1,1-trichloroethane	1.	U
56-23-5	Carbon tetrachloride	1.	U
563-58-6	1,1-Dichloropropene	1.	U
71-43-2	Benzene	1.	U
107-06-2	1,2-Dichloroethane	1.	U
79-01-6	Trichloroethene	1.	U
78-87-5	1,2-Dichloropropane	1.	U
74-95-3	Dibromomethane	1.	U
75-27-4	Bromodichloromethane	1.	U
10061-01-5	cis-1,3-dichloropropene	1.	U
108-88-3	Toluene	1.	U
108-10-1	4-Methyl-2-pentanone	2.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
127-18-4	Tetrachloroethene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
142-28-9	1,3-Dichloropropane	1.	U
591-78-6	2-Hexanone	2.	U
124-48-1	Dibromochloromethane	1.	U
106-93-4	1,2-Dibromoethane	1.	U
108-90-7	Chlorobenzene	1.	U
630-20-6	1,1,1,2-Tetrachloroethane	1.	U
100-41-4	Ethylbenzene	1.	U

Are there any TICs ? (Please check a box) YES |__| NO |_X_|

FORM I VOA 1/89 Rev.

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

96ZB09S04

Si' Name:AMERICAN CHEMICAL SERVICE Contract:CRL

Lab Code: SL-10C Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S04

Sample wt/vol: 25 (g/mL) mL Lab File ID: >B2555

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 Date Analyzed: 7/24/96

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	Q
1083836423	m &/or p-Xylene	1.	U
95-47-6	o-Xylene	1.	U
100-42-5	Styrene	1.	U
75-25-2	Bromoform	1.	U
98-82-8	Isopropylbenzene	1.	U
108-86-1	Bromobenzene	1.	U
96-18-4	1,2,3-Trichloropropane	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
103-65-1	n-Propylbenzene	1.	U
95-49-8	2-Chlorotoluene	1.	U
106-43-4	4-Chlorotoluene	1.	U
108-67-8	1,3,5-Trimethylbenzene	1.	U
98-06-6	tert-Butylbenzene	1.	U
95-63-6	1,2,4-Trimethylbenzene	1.	U
135-98-8	sec-Butylbenzene	1.	U
541-73-1	1,3-Dichlorobenzene	1.	U
106-46-7	1,4-Dichlorobenzene	1.	U
99-87-6	p-Isopropyltoluene	1.	U
95-50-1	1,2-Dichlorobenzene	1.	U
104-51-8	n-Butylbenzene	1.	U
96-12-8	1,2-Dibromo-3-chloropropane	1.	U
120-82-1	1,2,4-Trichlorobenzene	1.	U
91-20-3	Naphthalene	1.	U
87-68-3	Hexachlorobutadiene	1.	U
87-61-6	1,2,3-Trichlorobenzene	1.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 1 9 1996

Subject: Review of Region 5 Data for AMERICAN CHEMICAL SERVICE
From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: B&V

Attached are the results for **American Chemical Service**
CRL request number: **960129**
Analyzed for: **ABN (Organics)**
Results are reported for sample designations: 96ZB09S01 - -S04, -D01 and -R01 (Six water samples)

Results Status:
(X) Acceptable for Use **except** the compound results qualified **J** and **UJ**. Please see attached case narrative.

(X) Data Qualified but acceptable for Use for the compounds qualified **J** and **UJ**. See the attached case narrative.

( ) Data Unacceptable for Use.

(X) Sewer Disposal Criteria Met; Exceptions: none
Comments on Data Quality by Reviewer:

- Please see the attached case narrative.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for **American Chemical Service** **960129** **ABN (Organics)**

Babu Parmchuri 08/15/96

Task Monitor Date (X) Reviewed ( ) Unreviewed

Chi Fang 08/15/96

Team Leader Date (X) Reviewed ( ) Unreviewed

Chuck Elly 8/16/96

QC Coordinator (**VACANT**) Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin AUG 19 1996

Data Management Coordinator and Date Received

Date Transmitted AUG 19 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML - 10C

Received by and Date

Comments:

960129

TFA301

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

DIVISION/BRANCH SUPERFUND SAMPLE DATE 7/17/96 LAB ARRIVAL DATE 7/18/96 DUE DATE 8/8/96

DU NUMBER TFA DATA SET NUMBER 960129 STUDY AMERICAN CHEMICAL SERVICE PRIORITY N CONTRACTOR BLACK & VEATCH

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17684	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 216622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 216722
96ZB09S01	5-181980-981 AC-RW01-001	X			
96ZB09D01	5-181974-975 AC-RW01-101	X			
96ZB09S02	5-181968-969 AC-RW02-001	X			
96ZB09S03	5-181962-963 AC-RW03-001	X			
96ZB09S04	5-181986-87-88-89-90-91 AC-RW04-001 MS/MSD	X			
96ZB09R01	5-180439-440 AC-FB01-201	X			
96ZB09R02	5-180445-446 AC-TB01-201	X			
96ZB09S01	5-181985 AC-RW01-001		X		
96ZB09D01	5-181976 AC-RW01-101		X		
96ZB09S02	5-181970 AC-RW02-001		X		
96ZB09S03	5-181964 AC-RW03-001		X		
96ZB09S04	5-181995-996-997 AC-RW04-001 MS/MSD		X		
96ZB09R01	5-180441 AC-FB01-201		X		

7-24-96

CASE NARRATIVE

DATE: August 6, 1996

PROJECT NAME: American Chemical Service
CRL Case #: 960129 Analysis of Semivolatile Organic Analytes (SVOA)

ANALYST: Ziyad Rajabi, Lockheed/ESAT Organic Group Leader

REVIEWERS: Ira Wilson, ESAT Organic Supervisor
Dennis Miller, Lockheed/ESAT Team Manager
Babu Paruchuri, EPA Task Monitor

I. CASE DESCRIPTION:

The laboratory received, in good condition, six residential well water samples (96ZB09S01 to -S04, D01, and -R01) on July 18, 1996 for Semivolatile Organic Analytes (SVOA) analysis. The samples were collected on July 17, 1996 and were extracted on July 23, 1996 which is within the holding time requirements for water samples. [QC Criteria for holding time: Seven days from the date of collection]. The sample extracts were analyzed within the holding time requirements. [QC Criteria for sample holding time: Forty days from the date of the extraction]. No problems were observed.

II. INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Check:** Performance checks using decafluorotriphenylphosphine (DFTPP) were made to determine if acceptable EPA tuning criteria were met. The QC criteria are the same as the CLP IFB's criteria. No problems were observed.

2. **Initial Calibrations (IC):** An acceptable five-point initial calibration (IC) is required for all target compounds before samples can be analyzed. (QC criteria for IC: %RSD must be ≤ 30%).

The initial calibration was generated on July 23, 1996 on the HP5996. All of the target compounds %RSDs were acceptable except for benzoic acid (%RSD=39.6) and 2,4-dinitrophenol (%RSD=42.2). Results for benzoic acid and 2,4-dinitrophenol will be flagged as estimated (J) for detected compounds while all non-detects will be flagged as estimated (UJ). No other problems were observed.

3. **Continuing Calibrations (CC):** The QC criteria for the continuing calibration are (CC: %D must be ≤ 25%).

For the continuing calibration generated on July 25, 1996, all of the target compounds %Ds were acceptable. No problems were observed.

For the continuing calibration generated on July 26, 1996. All of the target compounds %Ds were acceptable except 4-nitrophenol (%D=50.1) and 2,4,6-tribromophenol (%D=28.2), therefore, results for 4-nitrophenol will be flagged as estimated (J) for detected compounds while all non-detects will be flagged as estimated (UJ). 2,4,6-Tribromophenol is a surrogate, therefore, data qualification is not applicable for it. No other problems were observed.

4. **Internal Standard (IS) Area and Retention Time (RT) Summary:** The QC criterion states that the IS area of samples must be within 50% of the IS area of the corresponding CC. The RT of the IS for samples must also be within 30 seconds of the RT of the IS for the corresponding CC.

All internal standard areas met the QC requirements; therefore, results are acceptable. No problems were observed. [See Form VIII]

III. METHOD QUALITY CONTROL:

1. **Method Blank Results:** One Lab Blank (de-ionized water spiked with surrogates) was extracted with this data set to check for contamination. The Lab Blank contained no TCLs or TICS. No problems were observed. [See Form I SVOA].

2. **Surrogate Spike Compound Results:** The surrogate spike compound recovery data are within the QC limits except low 2-fluorobiphenyl recovery in samples 96ZB09R01 and 96ZB09D01. One surrogate outlier is allowed per fraction; therefore, data qualification is not necessary. No other problems were observed. See Form II

3. **Laboratory Control Sample (LCS):** Laboratory control samples were prepared by spiking deionized water with 750 µL of the ABN spike standard which contained all of the target analytes except 2,4-dinitrotoluene. The final concentration in the extracted sample was expected to be 75 µg/L for all target analytes. ESAT was instructed by the Task Monitor to substitute 2,6-dinitrotoluene for 2,4-dinitrotoluene on form 3LCA.

For the LAB SPIKE, all recoveries were within their QC limit. No problems were observed.

4. **Performance Evaluation Sample (PES):** ESAT analyzed the July PES. The QC criteria for the PES are the control limits

established by EMSL-LV. All recoveries were within the QC limits except for 4-chloroaniline which was not detected in the PE sample. 4-Chloroaniline recovery was within the QC criteria for the LAB Spike; therefore, no data qualification is necessary. No other problems were observed.

IV. SAMPLE RESULTS

2,4-Dinitrophenol and 4-nitrophenol were reported outside the upper calibration range for the lab spike sample. The lab spike sample was diluted and reanalyzed (D). The reanalysis results were within the calibration range; therefore, result of 2,4-dinitrophenol and 4-nitrophenol will be obtained from the diluted sample. A summary form reflecting reportable values was prepared and submitted in this data package.

The laboratory met the qualitative and quantitative analysis requirements for TCLs and TICs.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

La Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1288

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [X] NO [ ]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

La ame: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1288

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

LAB BLANK

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >E1288

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec.100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 7/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.00000

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	11.04	6.	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09R01

La ame: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09R01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1290

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [ ] NO [X]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09R01

La Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09R01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1290

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S01

La 'ame: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1291

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [ ] NO [X]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S01

La 'ame: AMERICAN CHEMICAL SERVICE 'Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1291

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09D01

La' Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09D01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1292

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [ ] NO [X]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09D01

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09D01

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1292

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S02

La Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1293

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	2	J
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [X] NO [ ]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S02

La' 'ame: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1293

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

96ZB09S02

Lab Name:AMERICAN CHEMICAL SERVICE Contract:ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S02

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >E1293

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec.100 dec. --- Date Extracted:07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 7/25/96

GPC Cleanup: (Y/N) N pH:--- Dilution Factor: 1.00000

Number TICs found: 16

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Ethane, oxybismethoxy-	3.50	6.	J
2.	Unknown	5.74	14.	J
3.	Unknown	6.72	280.	J
4.	Unknown	6.91	7.	J
5.	Unknown	7.87	7.	J
6.	Unknown	8.01	8.	J
7.	Unknown	8.11	8.	J
8.	Pentene, methyl	9.22	7.	J
9.	Unknown	11.15	19.	J
10.	Unknown	11.23	19.	J
11.	Unknown	11.72	41.	J
12.	Benzoic acid, dimethylethyl	13.16	28.	J
13.	Propanoic acid, chlorophenox	14.57	100.	J
14.	Unknown	16.90	5.	J
15.	Unknown	19.94	8.	J
16.	Unknown	23.42	14.	J
17.				
18.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S03

La' 'ame: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S03

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1294

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [ ] NO [X]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S03

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S03

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1294

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S04

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S04

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1295

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	20	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

TENTATIVELY IDENTIFIED COMPOUNDS (TICs): YES [ ] NO [X]

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

96ZB09S04

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 96ZB09S04

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1295

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	UJ
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
86-74-8	Carbazole	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

L Name: REGION V CRL Contract: ESAT

Lab code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 ( )#	TOT OUT
01	LAB BLANK	79	75	87	65	74	78		0
02	LAB SPIKE	78	75	81	60	74	94		0
03	96ZB09R01	35	37 *	46	30	36	36		1
04	96ZB09S01	67	66	84	61	73	86		0
05	96ZB09D01	40	41 *	54	33	40	44		1
06	96ZB09S02	61	61	71	58	64	75		0
07	96ZB09S03	74	69	91	65	75	97		0
08	96ZB09S04	95	81	106	78	87	104		0
09									
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29									
30									

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-100)
S5 (2FP)	= 2-Fluorophenol	(21-110)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

L- Name: REGION V CRL Contract: ESAT

Lab code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 ( ) #	TOT OUT
01	LAB SPKDD	78	75	88	67	67	84		0
02									
03									
04									
05									
06									
07									
08									
09									
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29									
30									

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-100)
S5 (2FP)	= 2-Fluorophenol	(21-110)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

11B
SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LAB SPIKE

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB SPIKE

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1289

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

COMPOUND	Conc	Spike	Recovery
Phenol	57	75	76
bis(2-Chloroethyl)ether	55	75	73
2-Chlorophenol	58	75	78
1,3-Dichlorobenzene	54	75	73
1,4-Dichlorobenzene	60	75	80
Benzyl alcohol	57	75	76
1,2-Dichlorobenzene	55	75	73
2-Methylphenol	52	75	70
bis(2-Chloroisopropyl)ether	60	75	80
4-Methylphenol	48	75	64
N-Nitroso-di-n-propylamine	57	75	76
Hexachloroethane	51	75	68
Nitrobenzene	65	75	86
Isophorone	57	75	76
2-Nitrophenol	58	75	78
2,4-Dimethylphenol	39	75	52
Benzoic acid	81	75	107
bis(2-Chloroethoxy)methane	60	75	80
2,4-Dichlorophenol	59	75	78
1,2,4-Trichlorobenzene	55	75	73
Naphthalene	52	75	69
4-Chloroaniline	45	75	60
Hexachlorobutadiene	57	75	75
4-Chloro-3-methylphenol	62	75	82
2-Methylnaphthalene	57	75	77
Hexachlorocyclopentadiene	26	75	35
2,4,6-Trichlorophenol	60	75	80
2,4,5-Trichlorophenol	57	75	76
2-Chloronaphthalene	54	75	71
2-Nitroaniline	67	75	90
Dimethylphthalate	59	75	78
Acenaphthylene	52	75	69
2,6-Dinitrotoluene	62	75	82

11C
SEMIVOLATILE ORGANICS LAB CONTROL SPIKE

EPA SAMPLE NO.

LAB SPIKE

Lab Name: AMERICAN CHEMICAL SERVICE Contract: ESAT

Lab Code: 5SCRL Case No.: 960129 SAS No.: ------ SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB SPIKE

Sample wt/vol: 1000 (g/ml) mL Lab File ID: >E1289

Level: (low/med) LOW Date Received: 07/23/96

% Moisture: not dec. 100 dec. --- Date Extracted: 07/23/96

Extraction: (Sepf/Cont/Sonc) CONT Date Analyzed: 07/25/96

GPC Cleanup: (Y/N) N pH: --- Dilution Factor: 1.0

COMPOUND	Conc	Spike	Recovery
3-Nitroaniline	64	75	85
Acenaphthene	52	75	69
2,4-Dinitrophenol	110	75	149
4-Nitrophenol	105	75	139
Dibenzofuran	52	75	70
2,4-Dinitrotoluene			
Diethylphthalate	62	75	83
4-Chlorophenyl-phenylether	57	75	76
Fluorene	57	75	76
4-Nitroaniline	72	75	97
4,6-Dinitro-2-methylphenol	82	75	109
N-Nitrosodiphenylamine	69	75	91
4-Bromophenyl-phenylether	53	75	71
Hexachlorobenzene	55	75	73
Pentachlorophenol	89	75	118
Phenanthrene	57	75	76
Anthracene	61	75	81
Di-n-butylphthalate	59	75	78
Fluoranthene	63	75	84
Pyrene	62	75	83
Butylbenzylphthalate	65	75	87
3,3'-Dichlorobenzidine	55	75	73
Carbazole	60	75	80
Benzo(a)anthracene	67	75	89
Chrysene	64	75	85
bis(2-Ethylhexyl)phthalate	66	75	89
Di-n-octylphthalate	65	75	86
Benzo(b)fluoranthene	61	75	82
Benzo(k)fluoranthene	63	75	84
Benzo(a)pyrene	65	75	86
Indeno(1,2,3-cd)pyrene	73	75	98
Dibenzo(a,h)anthracene	64	75	85
Benzo(g,h,i)perylene	65	75	87

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: REGION V CRL Contract: ESAT

Lab code: 5SCRL Case No.: 960129 SAS No.: SDG No.:

Lab File ID: >E1288 Lab Sample ID: LAB BLANK

Date Extracted: 07/23/96 Extraction:(Sepf/Cont/Sonc) CONT

Date Analyzed: 07/25/96 Time Analyzed: 13:28

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: HP5996

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	LAB SPIKE	LAB SPIKE	>E1289	07/25/96
2	96ZB09R01	96ZB09R01	>E1290	07/25/96
3	96ZB09S01	96ZB09S01	>E1291	07/25/96
4	96ZB09D01	96ZB09D01	>E1292	07/25/96
5	96ZB09S02	96ZB09S02	>E1293	07/25/96
6	96ZB09S03	96ZB09S03	>E1294	07/25/96
7	96ZB09S04	96ZB09S04	>E1295	07/25/96
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COMMENTS: _____

_____

page __ of __.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 1 9 1996

Subject: Review of Region 5 Data for SF 960129 AMERICAN CHEMICAL SERVICE

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: B&V

Attached are the results for SF 960129 AMERICAN CHEMICAL SERVICE
CRL request number 960129
for analyses for PCB/PESTICIDES IN WATER
Results are reported for sample designations: 96ZB09S01, 96ZB09D01, 96ZB09S02, 96ZB09S03, 96ZB09S04, 96ZB09R01

Results Status:
(X) Acceptable for Use ;
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

( ) Sewer Disposal Criteria Met; Exceptions: none

Comments on Data Quality by Reviewer

Instrument performance audits and QC data (Method blank, LCS/LCS DUP recoveries, surrogate recoveries, Florisil cartridge check, PE sample) were generally acceptable. There were no target analytes detected in the samples. See data case narrative for more details.

Data are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for data set SF 960129 AMERICAN CHEMICAL SERVICE

Erlinda Evangelista

E. Evangelista 8/13/96

Task Monitor/Peer Review and Date (X) Reviewed ( ) Unreviewed

Chi M. Tang Chi Tang 8/15/96

Team Leader and Date (✓) Reviewed ( ) Unreviewed

Vacant Chuck E. Ely 8/16/96

QC Coordinator and Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin AUG 1 9 1996

Data Management Coordinator and Date Received

Date Transmitted AUG 1 9 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

960129

TFA301

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

requestor MATT MASTRONAR

DIVISION/BRANCH SUPERFUND SAMPLE DATE 7/17/96 LAB ARRIVAL DATE 7/18/96 DUE DATE 8/8/96

DU NUMBER TFA DATA SET NUMBER 960129 STUDY AMERICAN CHEMICAL SERVICE PRIORITY N CONTRACTOR BLACK & VEATCH

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17430
96ZB09S01	AC-RW01-001 5-181984		X	X		
96ZB09D01	AC-RW01-101 5-181977		X	X		
96ZB09S02	AC-RW02-001 5-181971		X	X		
96ZB09S03	AC-RW03-001 5-181965		X	X		
96ZB09S04	AC-RW04-001 5-181992-993-994 MS/MSD		X	X		
96ZB04R01	AC-FB01-201 5-180442		X	X		

7/29/96

To: Babu Paruchuri, Work Assignment Manager

For: Linda Evangelista, Pesticide/PCB Group Leader

Thru: Dennis Miller, ESAT Team Manager Dennis Miller

From: Steffanie N. Tobin, ESAT Chemist

Date: 08/01/96

Subject: Pesticide/PCB Analysis for American Chemical Service (Data Set SF 960129) by continuous liquid-liquid extraction (Work Assignment 05-96-0-03)

CASE NARRATIVE

DATE: August 1, 1996

PROJECT NAME: American Chemical Service, CRL Case #: SF 960129, Analysis of Pesticides/PCBs

ANALYST: Steffanie N. Tobin, ESAT Chemist

REVIEWERS: Ziyad Rajabi, Lockheed/ESAT Organic Group Leader
W.Ira Wilson, Lockheed/ESAT Organic Supervisor
Dennis Miller, Lockheed/ESAT Team Manager
Babu Paruchuri, EPA CRL Work Assignment Manager

I. CASE DESCRIPTION:

The laboratory received six (6) residential water samples (96ZB09S01-96ZB09S04, 96ZB09R01, 96ZB09D01) for pesticide/PCB analysis using CRL method 608 ~~Pest/PCB DNS2 on~~ DNS 07/18/96.

The water samples were extracted on 07/22/96 utilizing continuous liquid-liquid extraction per CRL method 608 Pest/PCB DNS2 methodology. The samples were extracted within the holding time of seven (7) days for water samples. Florisil clean-up was performed for the sample extracts. The samples were analyzed for pesticides between 07/24/96 and 07/25/96 utilizing the HP5890 GC/EC#4. Acid clean up was performed for samples 96ZB09S01, 96ZB09D01 and 96ZB09S02 after the extracts were analyzed for pesticides and screened for Aroclors on 07/29/96. No Aroclors were detected in sample 96ZB09S02. Samples 96ZB09S01 and 96ZB09D01 were analyzed for Aroclor 1254 on 07/30/96 and Aroclor 1254 was detected below the detection limit for 96ZB09S01 and 96ZB09D01. The extracts were analyzed within forty (40) days of sample extraction.

II. INSTRUMENT QUALITY CONTROLS:

1. **Instrument Performance Check:** The Endrin and p,p'-DDT degradation check for the primary column was within the CRL QC limit of <15%.

2. **Initial Calibration Check (IC):** An acceptable initial calibration is required before samples can be analyzed. For the primary and confirmatory columns, correlation coefficients generated for Pest A, Pest B, Aroclor 1242 and Aroclor 1254 standards using five calibration levels were 0.995 or greater.

3. **Continuing Calibration Check (CC):** Continuing calibration check standards (Level 3 Pest A, Pest B, Aroclor 1242 and Aroclor 1254) were within the acceptable limit of <15% on the primary and confirmatory columns.

4. **Retention Time (RT) Summary:** For the primary column, the retention time %Ds for TCMX (0.29%) for 1AMC041 and DCB (0.27% & 0.34%) for Pest B standards 1AMC022 & 1AMC041 were above the

QC limit of <0.25%. The retention time %Ds for a-BHC (0.35% & 0.35%), Lindane (0.32% & 0.32) and methoxychlor (0.40% & 0.30%) for Pest A standards (1AMC031 and 1AMC040) were above the QC limit. The retention time %Ds of Endo I (0.30%), Dieldrin (0.28%) and p,p'-DDD (0.26%) for Pest A standard 1AMC031 were above the QC limit. The retention time %Ds for AR1242-A (0.29%), AR1242-B (0.28%), AR1242-C (0.27%) and AR1242-D (0.26%) for Aroclor 1242 standard 1AMC032 were above the QC limit.

For the confirmatory column, the retention time %Ds for the standards of Pest A, Pest B, Aroclor 1242 and Aroclor 1254 were within the QC limits of <0.25%.

III. METHOD QUALITY CONTROL:

1. **Method Blank Results:** Reagent water was used as the method blank for the samples and was spiked with surrogates. No target analytes were detected above the method detection limit.

2. **Surrogate Spike Compound Results:** The TCMX and DCB recoveries for all samples were within the QC limit of 50%-150% for both primary and confirmatory columns.

3. **Laboratory Control Spike (LCS) and Laboratory Control Sample Duplicate (LCSD):** The spike recoveries for the LCS were within the QC limits for both primary and confirmatory columns. The recovery of methoxychlor (154%) for confirmatory column was above the QC limit. The RPDs of dieldrin, p,p'-DDT and methoxychlor for the primary column were above the QC limits. The RPDs of dieldrin and 4,4'-DDT for confirmatory column were above the QC limits.

4. **Performance Evaluation Samples (PEs):** PR561 was assigned to ESAT for the month of July. Alpha-BHC was quantitated in action low range. All other target compounds were within the acceptable limits.

5. **Florisil Cartridge Check:** Florisil Cartridge Check was within the acceptable percent recoveries (80-120%) on the primary and confirmatory columns.

IV. SAMPLE RESULTS: No target analytes were detected above the detection limit for the samples.

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09S01
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stephanie Tohn/Lockheed/ESAT

Team Leader:

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09R01
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stephanie Tobin /Lockheed/ESAT

Team Leader: [signature]

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09D01
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stefanie Tobin /Lockheed/ESAT

Team Leader: [signature]

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09S02
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stephanie Johnson /Lockheed/ESAT

Team Leader: [signature]

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09S03
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stephanie Tobin /Lockheed/ESAT

Team Leader: [illegible]

CRL REGION V
FINAL RESULTS REPORT
Parameter:PEST/PCB

Sample organization: Black & Veatch
Sample requestor: Matt Mastronardi
Facility: American Chemical Services
Matrix: Water
Date Collected: 16-Jul-96
Date Extracted: 22-Jul-96

Sample Batch ID: 960129
Account Number: TFA
Sample ID: 96ZB09S04
Units: µg/L
Date Received: 18-Jul-96
Date Analyzed: 24-Jul-96

Method:608_P/P_DNS2

CAS NUMBER	COMPOUND	AMOUNT	QUALIFIERS
319846	Alpha-BHC	.01	U
58899	Lindane	.01	U
76443	Heptachlor	.01	U
309002	Aldrin	.01	U
1024573	Heptachlor Epoxide	.01	U
959988	Endosulfan I	.01	U
60571	Dieldrin	.02	U
72208	Endrin	.02	U
3312659	Endosulfan II	.02	U
50293	p,p'-DDT	.02	U
72-43-5	Methoxychlor	.1	U
319857	Beta-BHC	.01	U
419868	Delta-BHC	.01	U
103-74-2	Gamma-Chlordane	.01	U
5103-71-9	Alpha-Chlordane	.01	U
72559	p,p'-DDE	.02	U
72548	p,p'-DDD	.02	U
7421934	Endrin Aldehyde	.02	U
1031278	Endosulfan Sulfate	.02	U
53494-70-5	Endrin Ketone	.02	U
57-74-9	Chlordane, Technical	.2	U
8001352	Toxaphene	1.0	U
1104-28-2	Aroclor 1221	.2	U
11141165	Aroclor 1232	.2	U
53469219	Aroclor 1242	.2	U
12674-11-2	Aroclor 1016	.2	U
12672296	Aroclor 1248	.2	U
11097691	Aroclor 1254	.2	U
11096825	Aroclor 1260	.2	U

Analyzed by: Stephanie Tolin/Lockheed/ESAT

Team Leader: [signature]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 1 5 1996

Subject: Review of Region 5 Data for **AMERICAN CHEMICAL SERVICES**

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: B & V

Attached are the results for **AMERICAN CHEMICAL SERVICES**
CRL request number **960129**
for analyses for **Mercury**.
Results are reported for sample designations: 96ZB09S02.

Results Status:

(X) Acceptable for Use:
( ) Data Qualified, but Acceptable for use:
( ) Data Unacceptable for Use:

( ) Sewer Disposal Criteria Met;

Mercury: Portion of sample 96ZB09S02 that was collected and submitted for Mercury analysis was preserved with acid/dichromate reagent prior to analysis. The preserved sample should be disposed of in a drum. The acid/dichromate preservative used is toxic.

Comments on Data Quality by Reviewer:

Water sample 96ZB09S02 was assayed for mercury. All the required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits. The mercury result is acceptable for use.

Comments on Sample Results:

Mercury result for sample 96ZB09S02 was found to be above the laboratory detection limit of 0.001 mg/L (0.1 µg/L). A duplicate of the sample was reported at the detection limit. Use the data with caution.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Awanya 8/14/96
Reviewer/Task Monitor and Date (X) Reviewed ( ) Unreviewed

15 Aug 96
Team Leader and Date (X) Reviewed ( ) Unreviewed

Chuck Elby 8/15/96
QC Coordinator and Date ( ) Reviewed (X) Unreviewed

Sylvia Griffin AUG 15 1996
Data Management Coordinator and Date Received

Date Transmitted AUG 15 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

Method Number: 3114B*
Date Generated: August 13, 1996
TDF Number: 5104-040

Site Name: American Chemical Services (IN)
Charge Number(S): ESE-51-127
Work Assignment Number: 05-96-0-04

Hg NARRATIVE for Data Set 960129

Six Residential Well water samples (96ZB09S01, D01, S02, S03, S04 and R01) were submitted for the analysis of total mercury by cold vapor FIAS AA. The samples were collected on 07-17-96 and were received by the CRL properly preserved on 07-18-96. All samples were part of data set 960129.

All samples and standards were digested following standard CRL cold vapor FIAS AA digestion protocols for waters on 07-24-96. The hold time for mercury is 28 days. All samples were analyzed on 07-24-96, within the 28 day hold time for mercury.

A spiked blank, used as a laboratory control sample (LCS) and an additional spike blank, used as a Residential Well laboratory control sample (LFM), were digested and analyzed with the set of samples. Analytical results were stored in .DAT file HGMK0724.DAT.

Mercury

Data File HGMK0724.DAT

The percent recovery for the matrix spike performed on sample 96ZB09S02 (75.5%) was outside of the control limits of 85-115% as specified in the SOP. The sample was analyzed a second time by an alternate method on 08-12-96 without incident.

The remaining samples were analyzed without incident.

All remaining QC were within the control limits as specified in the SOP.

All mercury data are acceptable.

Narrative by: M.K. ESAT
Date: 8-13-96

FINAL SAMPLE REPORT FOR CN AND Hg
DATA SET 960129
AMERICAN CHEMICAL SERVICES
(ug/L)

SAMPLE	CN RESULT REPORTED	Hg RESULT REPORTED
96ZB09S01	8 U	0.2 U
96ZB09D01	8 U	0.2 U
96ZB09S02	8 U	0.2
96ZB09S03	8 U	0.2 U
96ZB09S04	8 U	0.2 U
96ZB09R01	8 U	0.2 U
ANALYST / DATE	M. Kupp 8-13-96	M. Kupp 8-13-96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 1 2 1996

Subject: Review of Region 5 Data for **AMERICAN CHEMICAL SERVICES**

From: Charles T. Elly, Director Chuck E Elly
Region 5 Central Regional Laboratory

To: B&V

Attached are the results for **AMERICAN CHEMICAL SERVICES**
CRL request number **960129**
for analyses for **Cyanide.**
Results are reported for sample designations: 96ZB09S01, 96ZB09D01, 96ZB09S02, 96ZB09S03, 96ZB09S04, and 96ZB09R01.

Results Status:

(X) Acceptable for Use:
( ) Data Qualified, but Acceptable for use:
( ) Data Unacceptable for Use:

( ) Sewer Disposal Criteria Met;

Cyanide: Portions of all of the above samples which were collected and submitted for cyanide analyses are preserved with sodium hydroxide reagents. All the samples should be neutralized prior to disposal down the drain provided that the concentrations of other analytes are less than the laboratory detection or other controlling limits. Cyanide concentration in those samples are below the laboratory detection limit.

Comments on Data Quality by Reviewer:

All the water samples submitted for cyanide analysis were assayed and the results are attached. Required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits. The results are acceptable for use.

Comments on Sample Results:

All the cyanide results were found to be below the laboratory detection limit. The limit is 0.008 mg/L (8 µg/L). Those samples should be considered safe with respect to Cyanide.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Awanya 8/8/96

Reviewer/Task Monitor and Date (X) Reviewed ( ) Unreviewed

[signature] 9 Aug 96

Team Leader and Date (✓) Reviewed ( ) Unreviewed

Chuck E [signature] 8/8/96

QC Coordinator and Date ( ) Reviewed ( ) Unreviewed

Sylvia Griffin AUG 1 2 1996

Data Management Coordinator and Date Received

Date Transmitted AUG 1 2 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

FINAL SAMPLE REPORT FOR CN DATA (SF 960129)
AMERICAN CHEMICAL SERVICES
(µg/L)

SAMPLE	RESULT REPORTED
96ZB09R01	8 U
96ZB09S01	8 U
96ZB09S02	8 U
96ZB09D01	8 U
96ZB09S03	8 U
96ZB09S04	8 U

Denise Miller 8-8-96

FAO 8/8/96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 0 6 1996

Subject: Review of Region 5 Data for American Chemical Services Code:J7

From: Charles T. Elly, Director Chuck E Elly
Region 5 Central Regional Laboratory

To: B & V

Attached are the results for American Chemical Services Code:J7
CRL request number 960129
for analyses for Antimony, Arsenic, Cadmium, Lead, Selenium and Thallium
Results are reported for sample designations: 96ZB09S01, 96ZB09D01, 96ZB09S02, 96ZB09S03, 96ZB09S04 and 96ZB09R01

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal.

Comments on Data Quality by Reviewer

The matrix spike recovery for selenium was 122%, outside the CRL's 100±15% acceptance criterion, but the samples were all below the detection limit, so the data are unaffected. The arsenic drinking water MCL is still 0.05 mg As/L, but the lifetime 10^{-4} cancer risk is for 0.002 mg As/L, so the arsenic result for sample 96ZB09S02 may be significant.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for American Chemical Services Code:J7

John V Moore 5 Aug 96

Peer/Task Monitor Review and Date (✓) Reviewed ( ) Unreviewed

John V Moore 5 Aug 96

Team Leader and Date (✓) Reviewed ( ) Unreviewed

Chuck Elly 8/5/96

QC Coordinator and Date ( ) Reviewed (✓) Unreviewed
(position vacant)

Sylvia Griffin AUG 0 6 1996

Data Management Coordinator and Date Received

Date Transmitted AUG 0 6 1996

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

Method Number: GFAA Metals
Date Generated: August 1, 1996
Auther: Bai Yuen

Site Name: American Chemical Service
Charge Number(s): ESE51127
TDF Number: 5104-040
WAD Number: 05-96-0-04

GFAA NARRATIVE for Data Set 960129

Six Residential Well water samples, 96ZB09S01, D01, S02, S03, S04 and R01 were collected from the American Chemical Service site. The samples were submitted for the analysis of total arsenic, cadmium, lead, selenium and thallium by GFAA. The samples were collected on 07/17/96 and were received properly preserved by the CRL on 07/18/96. All samples were part of data set 960129.

All samples were digested following standard CRL GFAA digestion protocols. The digestion for water samples took place on 07/29/96. All analyses were performed within holding time.

Analytical results were stored in .DAT files CDBY731.DAT, CDBY731A.DAT, PBBY730.DAT, PBBY730A.DAT, ASBY730.DAT, SEBY729.DAT, SEBY730.DAT, TLBY730.DAT and TLBY729.DAT.

Arsenic

Data File ASBY730.DAT

Arsenic was analyzed without incident.

All QC was within the specified control limits.

Cadmium

Data Files CDBY731.DAT and CDBY731A.DAT

Cadmium was analyzed without incident.

All QC was within the specified control limits.

Lead

Data Files PBBY730.DAT and PBBY730A.DAT

Lead was analyzed without incident.

All QC was within the specified control limits.

Narrative by: B. Yuen ESAT
Date: 8-2-96

Thallium

Data Files TLBY729.DAT and TLBY730.DAT

Thallium was analyzed without incident.

All QC was within the specified control limits.

Selenium

Data Files SEBY729.DAT and SEBY730.DAT

The digestion spike recovery for selenium (122.3%) is outside the control limits (85-115%). However, all selenium results are less than the IDL and are acceptable.

All arsenic, cadmium, lead, selenium and thallium analysis results are acceptable for the residential well water samples.

Narrative by: B. Green ESAT
Date: 8-2-96

Method Number: 3114B
Date Generated: July 30, 1996
TDF Number: 5104-040

Site Name: American Chemical Services
Charge Number(S): ESE-51-127
Work Assignment Number: 05-96-0-04

FIAS NARRATIVE for Data Set 960129

Six water samples (96ZB09S01, D01, S02, S03, S04 and R01) were submitted for the analysis of total antimony by hydride AA. The samples were collected on 07-17-96 and were received by the CRL properly preserved on 07-18-96. All samples were part of data set 960129.

All samples and standards were digested following standard CRL FIAS digestion protocols for waters on 07-30-96. The hold time for metals is six months. All samples were analyzed on 07-30-96, within the six month hold time for metals.

A spiked blank, used as a laboratory control sample (LFM), was digested and analyzed with the set of samples. The same spiked blank was also used as a Residential Well laboratory control sample (LCS). Analytical results were stored in .DAT file SBMK0730.DAT.

Antimony

Data File SBMK0730.DAT

Antimony was analyzed without incident.

All QC were within the control limits as specified in the SOP.

All antimony data are acceptable.

Narrative by: M. Knapp ESAT
Date: 8-1-96

FINAL SAMPLE REPORT FOR GFAA/FIAS (WATER)
DATA SET 960129
AMERICAN CHEMICAL SERVICES
(µg/L)

arsenic cadmium lead antimony ~~selenium~~ selenium thallium

SAMPLE 96ZB09	As RESULT	Cd RESULT	Pb RESULT	Sb RESULT	Se RESULT	Tl RESULT
S01	2 U	0.2 U	2 U	1 U	2 U	2 U
D01	2 U	0.2 U	2 U	1 U	2 U	2 U
S02	2	0.4 U	2 U	1 U	4 U	2 U
S03	2 U	0.2 U	2 U	1 U	2 U	2 U
S04	2 U	0.2 U	2 U	1 U	2 U	2 U
R01	2 U	0.2 U	2 U	1 U	2 U	2 U
ANALYST / DATE	B. Green	B. Green	B. Green	B. Green	B. Green	B. Green

[illegible] 5 Aug 96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 0 6 1996

Subject: Review of Region 5 Data for American Chemical Services Code:J7

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: BEV

Attached are the results for American Chemical Services Code:J7
CRL request number 960129
for analyses for ICP
Results are reported for sample designations: 96ZB09S01, 96ZB09D01, 96ZB09S02, 96ZB09S03, 96ZB09S04 and 96ZB09R01

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal. Samples 96ZB09S01, 96ZB09D01 and 96ZB09S02 exceed the disposal criterion for iron.

Comments on Data Quality by Reviewer

All quality control measures were met. For drinking water, iron and manganese have secondary standards, mainly for taste, of 0.3 mg Fe/L and 0.05 mg Mn/L. No other drinking water standards were exceeded.

Comments by Laboratory Director or Quality Control Coordinator

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE BATCH ID: 960129
SAMPLE REQUESTOR: MATT MASTRONARDI
ACCOUNT NO: TFA301
LABORATORY: ESAT
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09S01
FIELD: 96ZB09S01

COLLECTED: 17-JULY-96
RECEIVED: 18-JULY-96
ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	128	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	83300	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	6 U	(ug/L)
Iron	3710	(ug/L)
Magnesium	41800	(ug/L)
Manganese	37.1	(ug/L)
Nickel	20 U	(ug/L)
Potassium	5000 U	(ug/L)
Silver	6 U	(ug/L)
Sodium	20500	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	40 U	(ug/L)

ANALYZED BY: 7-30-96

1 Aug 96

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE BATCH ID: 960129
SAMPLE REQUESTOR: MATT MASTRONARDI
ACCOUNT NO: TFA301
LABORATORY: ESAT
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09D01
FIELD: 96ZB09D01

COLLECTED: 17-JULY-96
RECEIVED: 18-JULY-96
ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	127	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	83300	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	6 U	(ug/L)
Iron	3690	(ug/L)
Magnesium	41700	(ug/L)
Manganese	37.3	(ug/L)
Nickel	20 U	(ug/L)
Potassium	5000 U	(ug/L)
Silver	6 U	(ug/L)
Sodium	20300	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	40 U	(ug/L)

ANALYZED BY: 7-30-96

JVM 5 Aug 96

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE BATCH ID: 960129
SAMPLE REQUESTOR: MATT MASTRONARDI
ACCOUNT NO: TFA301
LABORATORY: ESAT
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09S02
FIELD: 96ZB09S02

COLLECTED: 17-JULY-96
RECEIVED: 18-JULY-96
ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	581	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	92900	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	6 U	(ug/L)
Iron	3900	(ug/L)
Magnesium	80600	(ug/L)
Manganese	144	(ug/L)
Nickel	41.7	(ug/L)
Potassium	82900	(ug/L)
Silver	6 U	(ug/L)
Sodium	1010000	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	40 U	(ug/L)

ANALYZED BY: RD 7-30-96

JM 5 Aug 96

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE REQUESTOR: MATT MASTRONARDI
LABORATORY: ESAT
SAMPLE BATCH ID: 960129
ACCOUNT NO: TFA301
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09S03 FIELD: 96ZB09S03

COLLECTED: 17-JULY-96 RECEIVED: 18-JULY-96 ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	22.8	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	71400	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	27.9	(ug/L)
Iron	80 U	(ug/L)
Magnesium	27700	(ug/L)
Manganese	5 U	(ug/L)
Nickel	20 U	(ug/L)
Potassium	7760	(ug/L)
Silver	6 U	(ug/L)
Sodium	36900	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	121	(ug/L)

ANALYZED BY: RD 7-30-96

JVM 5 Aug 96

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE BATCH ID: 960129
SAMPLE REQUESTOR: MATT MASTRONARDI
ACCOUNT NO: TFA301
LABORATORY: ESAT
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09S04
FIELD: 96ZB09S04

COLLECTED: 17-JULY-96
RECEIVED: 18-JULY-96
ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	9.8	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	44800	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	6 U	(ug/L)
Iron	80 U	(ug/L)
Magnesium	16200	(ug/L)
Manganese	5 U	(ug/L)
Nickel	20 U	(ug/L)
Potassium	5000 U	(ug/L)
Silver	6 U	(ug/L)
Sodium	8850	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	41.7	(ug/L)

ANALYZED BY: 7-30-96

jm
5 Aug 96

EPA CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 26-JULY-96

SAMPLE OGANIZATION: BLACK & VEATCH
SAMPLE BATCH ID: 960129
SAMPLE REQUESTOR: MATT MASTRONARDI
ACCOUNT NO: TFA301
LABORATORY: ESAT
SAMPLE FACILITY: AMERICAN CHEMICAL SERVICE

SAMPLE: 96ZB09R01
FIELD: 96ZB09R01

COLLECTED: 17-JULY-96
RECEIVED: 18-JULY-96
ANALYZED: 25-JULY-96

COMPOUND	AMOUNT	(Units)
Aluminum	80 U	(ug/L)
Barium	6 U	(ug/L)
Beryllium	1 U	(ug/L)
Calcium	500 U	(ug/L)
Chromium	10 U	(ug/L)
Cobalt	6 U	(ug/L)
Copper	6 U	(ug/L)
Iron	80 U	(ug/L)
Magnesium	100 U	(ug/L)
Manganese	5 U	(ug/L)
Nickel	20 U	(ug/L)
Potassium	5000 U	(ug/L)
Silver	6 U	(ug/L)
Sodium	1000 U	(ug/L)
Vanadium	5 U	(ug/L)
Zinc	40 U	(ug/L)

ANALYZED BY: 7-30-96

lm Aug 96

Appendix B

Montgomery Watson Organic and Inorganic Analysis Data Sheets

MONTGOMERY WATSON

September 12, 1996

Ms. Sheri Bianchin, RPM
U.S. EPA, Region V (HSRL-6J)
77 West Jackson Blvd.
Chicago, IL 60604-3590

Re: Residential Well Sampling Results
ACS NPL Site
Griffith, Indiana

Dear Ms. Bianchin:

Please find enclosed, the validated sampling results for the four residential wells in the vicinity of the ACS Site. The following is a summary of the locations and addresses:

Location	Owner/Resident	Address
PW01	Austgen	1002 Reder Road
PW02	Farrar	938 Arbogast
PW03	Cottingham	940 Arbogast
PW04	Rybacki	430 East Avenue H

This submittal includes the laboratory data sheets for each well and the validation narrative for all the data. As you know, the samples for semi-volatile analysis for location PW01 were lost by the shipping firm, and so therefore the results are not available.

Please call if I can provide further information.

Sincerely,

MONTGOMERY WATSON, INC.

Peter J. Vagt, Ph.D., CPG
Vice President

Enclosures: Validated Analytical Results

cc: H. Grejda, IDEM
S. Mrkvicka, Black & Veatch
ACS Technical Committee

PJV
C:\MSOFFICE\WINWORD\JOBS\ACS\LTR-EPA.DOC
4077.0080

2100 Corporate Drive
Addison, Illinois
60101

Tel: 708 691 5000
Fax: 708 691 5133

Lower Aquifer Wells at the ACS Site

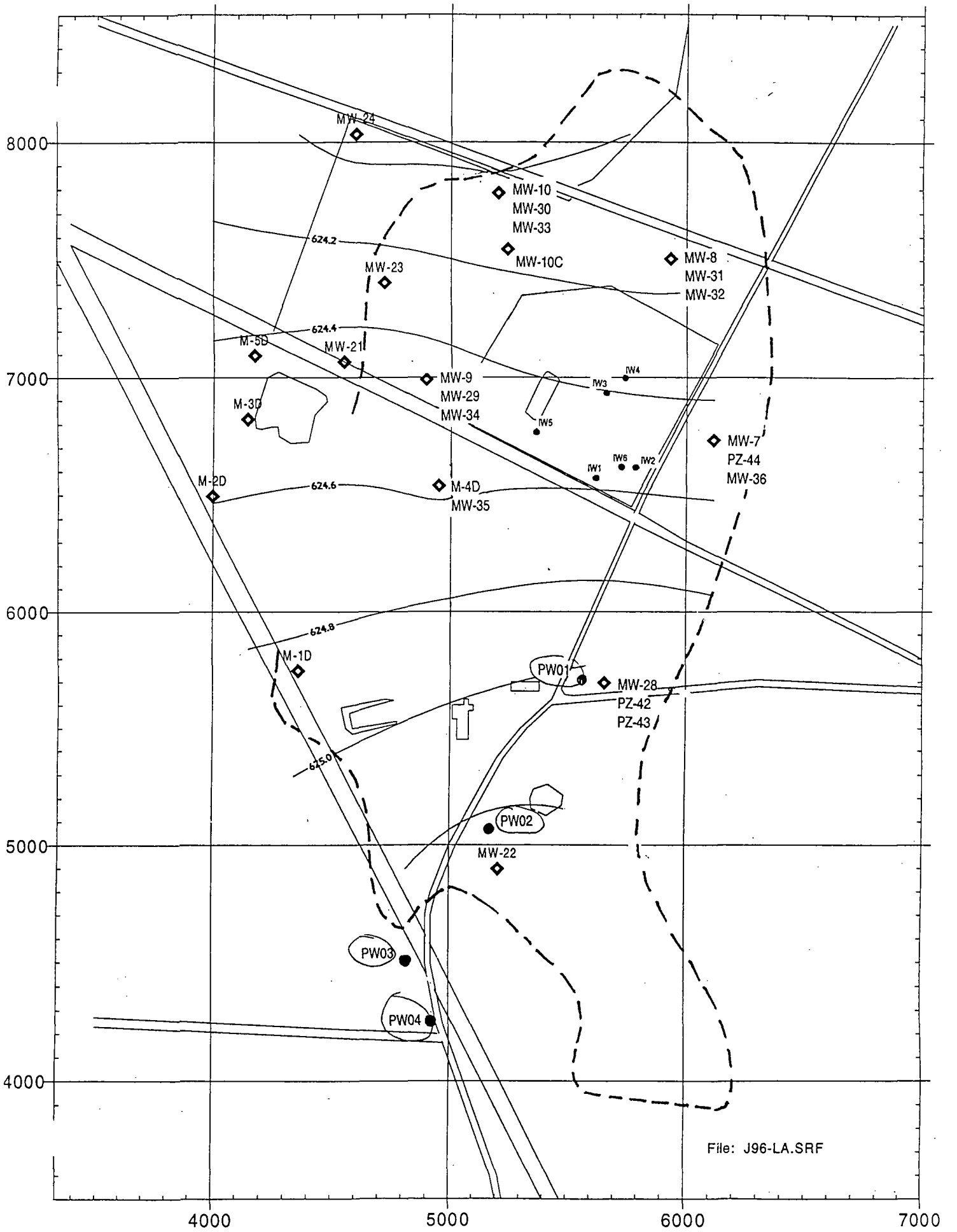

Table __

Summary of Organic Analytical Detects
Private Well Investigation
American Chemical Services, Inc.
Griffith, Indiana

		APD-GWPW01-01[1] 7/17/96			APD-GWPW01-91 7/17/96			APD-GWPW02-01[2] 7/17/96			APD-GWPW03-01 7/17/96			APD-GWPW04-01 7/17/96			APD-PWTB01-01 7/17/96		
Analyte	**CAS No.**	ug/L	LQ/DVQ	RDL	ug/L	LQ/DVQ	RDL	ug/L	LQ/DVQ	RDL	ug/L	LQ/DVQ	RDL	ug/L	LQ/DVQ	RDL	ug/L	LQ/DVQ	RDL
VOLATILES																			
Chloromethane	74-87-3		U/	1		U/	1		J/U	1		J/U	1		U/	1	0.1	J/	1
Chloroethane	75-00-3		U/	1		U/	1	21	/	1		U/	1		U/	1		U/	1
Methylene chloride	75-09-2		U/	2		U/	2		J/U	2		J/U	2		U/	2	0.6	J/	2
Acetone	67-64-1		J/R	5		J/R	5		U/R	5		/R	5		J/R	5	5	J/R	5
Chloroform	67-66-3		U/	1		U/	1		U/	1		U/	1	0.2	J/	1		U/	1
1,2-Dichloroethane	107-06-2		J/U	1		J/U	1		J/U	1		J/U	1		U/	1	0.7	J/	1
Benzene	71-43-2		U/	1		U/	1	1	/	1		U/	1		U/	1		U/	1
Toluene	108-88-3		U/	1		U/	1	0.1	J/	1		U/	1		U/	1		U/	1
SEMIVOLATILES																			
bis(2-Chloroethyl) ether	111-44-4							3	J/	10		U/	10		U/	10			
Carbazole	86-74-8							2	J/	10		U/	10		U/	10			
bis(2-Ethylhexyl)phthalate	117-81-7							12	/	10		U/	10		U/	10			

Notes:
This table presents a summary of the validated analytical results for compounds detected in at least one private well samples collected in July 1996. Volatiles analysis was performed using the low concentration SOW, semivolatile and PCB analysis was performed using the routine concentration SOW. PCBs were not detected in any of the samples.

Analytical results are presented in units of ug/L.
LQ/DVQ = Laboratory Qualifier / Data Validation Qualifier, as defined in the appropriate SOW.
RDL = reported detection limit.

Footnotes
1. Semivolatile and PCB analysis was not performed on samples PW01-01 and PW01-91 because the samples were lost during shipping.
2. This well is not used for drinking water. The residence has a public water supply.

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

7-17-96

CLIENT SAMPLE NO

PW01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732605 Date Received: 07/18/96

Lab File ID: 0723913.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	~~U~~ R ~~3~~ 5	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1. U ~~0.4~~	~~J~~
78-93-3	2-Butanone	R 5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	UJ 1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	R 5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	R 1	U

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

PW01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732605 Date Received: 07/18/96

Lab File ID: 0723913.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

VALIDATED

2

1LCA

7-17-96

CLIENT SAMPLE NO

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

PW01D

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732606 Date Received: 07/18/96

Lab File ID: 0723914.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5 µ R ~~4~~	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1 u ~~0.4~~	J
78-93-3	2-Butanone	R 5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	R 1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	R 5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	R 1	U

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE N

PW01D

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732606 Date Received: 07/18/96

Lab File ID: 0723914.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

VALIDATED

4

APD-GWPW01-01.

7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134701

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-001

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L Total

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	UJ JAH 79.0	B		P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	132	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	79700			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	14.5	B		P
7439-89-6	Iron	J JAH 3650		J	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	40600			P
7439-96-5	Manganese	40.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2220	B		A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	19800			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	U 39.0			P
	~~Cyanide~~				

JAH 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

5

duplicate?

APD-GWPW01-91

7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134702

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-002

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

Total

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	u 59.0	B		P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	126	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	80500			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	11.5	B		P
7439-89-6	Iron	3550		*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	41600			P
7439-96-5	Manganese	33.0			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2350	B		A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	18400			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	u 34.5			P
	~~Cyanide~~				

JAM 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

C

APD-GWPW01-01 F

7-17-96

duplicate?

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134706

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-006

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0 DISSOLVED

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	UJ 80.0	B	*	P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	122	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	81500			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	J 2730		*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	43300			P
7439-96-5	Manganese	35.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2330	B		A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	23200			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	U 14.5	B		P
	~~Cyanide~~				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

7

APD-GLSPW01-11

7-17-96

U.S. EPA - CLP

duplicate?

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134707

Lab Name: MWL

Contract: 4077.0073

Lab Code:

Case No.:

SAS No.:

SDG No.: SD1347

Matrix (soil/water): WATER

Lab Sample ID: 1347-007

Level (low/med): LOW

Date Received: 07/18/96

% Solids: 0.0

DISSOLVED

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	UJ 50.0	U	*	P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	130	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	1000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	J 2890		*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	42000			P
7439-96-5	Manganese	41.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2510	B		A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	27100			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	UJ 21.0			P
	~~Cyanide~~				

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

VALIDATED

8

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

7-17-96

CLIENT SAMPLE N

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732601 Date Received: 07/18/96

Lab File ID: 0723911.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	U 1 ~~0.1~~	J
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	21	
75-09-2	Methylene Chloride	U 2	J
67-64-1	Acetone	R 5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	U 1.0 ~~0.5~~	J
78-93-3	2-Butanone	R 5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	UJ 1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	R 5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	R 1	U

VALIDATED

9

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732601 Date Received: 07/18/96

Lab File ID: 0723911.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1. 75456	Methane, chlorodifluoro-	4.810	2	NJ
2. 593704	Methane, chlorofluoro-	5.540	3	NJ
3. 60297	Ether	8.290	4	NJ
4. 557175	Methyl propyl ether	8.940	2	NJ
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10

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NC

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

.b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N09.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	3	J
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

VALIDATED

11

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

.b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N09.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	2	J
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	12	
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

12

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N09.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	7.910	9	J
2.	Unknown	8.460	17	J
3.	Unknown	9.390	10	J
4.	Unknown	9.880	10	J
5.	Unknown	10.040	9	J
6.	Unknown	11.640	470	J
7.	Unknown	12.650	18	J
8.	Unknown	12.740	30	J
9.	Unknown	15.280	110	J
10.	Unknown	15.840	11	J
11.	Unknown	16.340	11	J
12.	Unknown	16.760	13	J
13.	Unknown	16.880	11	J
14. 101100	Propanoic acid, 2-(3-chlorophenoxy)	18.050	250	NJ
15.	Unknown	19.870	13	J
16.	Unknown	20.340	16	J
17. 50066	Phenobarbital	22.340	22	NJ
18.	Unknown	24.380	12	J
19.	Unknown	25.150	34	J
20.	Unknown	25.750	10	J
21.				
22.				
23.				
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VALIDATED

13

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732601

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_194.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/18/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/27/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

ug

VALIDATED

14

APD-GWPW02-01

7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134703

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-003

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

TOTAL

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.0	U		P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	594			P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	90800			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	12.5	B		P
7439-89-6	Iron	3850		*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	75300			P
7439-96-5	Manganese	122			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	51.0			P
7440-09-7	Potassium	72800			A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	1390000			P
7440-28-0	Thallium	1.0	U	S	F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	u 15.5	B		P
	~~Cyanide~~				

JAH 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

15

APD-GWPW02-01 F

duplicate? 7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134708

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-008

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

DISSOLVED

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	J 732		*	P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	632			P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	85200			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	10.0	B		P
7439-89-6	Iron	J 3190		*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	74400			P
7439-96-5	Manganese	160			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	51.5			P
7440-09-7	Potassium	74400			A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.5			P
7440-23-5	Sodium	1490000			P
7440-28-0	Thallium	1.0	U	S	F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	UJ 19.5	B		P
	~~Cyanide~~				

74,400 JAN 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

16

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

7-17-96
CLIENT SAMPLE NO.

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732602 Date Received: 07/18/96

Lab File ID: 0723912.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	U / ~~0.1~~	J
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	U / ~~0.3~~	J
67-64-1	Acetone	~~UJ~~ R 5	
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	U / ~~0.6~~	J
78-93-3	2-Butanone	R 5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	UJ 1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	R 5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	R 1	U

VALIDATED

(7

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732602 Date Received: 07/18/96

Lab File ID: 0723912.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
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VALIDATED

18

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

ıb Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N08.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

VALIDATED

19

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N08.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

20

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

ab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N08.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~Unknown~~	~~6.600~~	~~5~~	~~JB~~
2. 111762	Ethanol, 2-butoxy-	7.570	3	NJ
3. 111900	Ethanol, 2-(2-ethoxyethoxy)-	9.410	3	NJ
4.	Unknown	14.850	5	J
5.	Unknown	15.570	2	J
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FORM I SV-TIC 3/90

VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW03

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732602

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_193.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/18/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/27/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
12674-11-2	Aroclor-1016	uJ	1.0	U
11104-28-2	Aroclor-1221		2.0	U
11141-16-5	Aroclor-1232		1.0	U
53469-21-9	Aroclor-1242		1.0	U
12672-29-6	Aroclor-1248		1.0	U
11097-69-1	Aroclor-1254		1.0	U
11096-82-5	Aroclor-1260		1.0	U

VALIDATED

22

APD-GWPW03-01

7-17-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

134704

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-004

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

Total

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	U 72.0	B		P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	25.0	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	69800			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	21.0	B		P
7439-89-6	Iron	20.0	U		P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	29200			P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	7800			A
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	35700			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	127			P
	~~Cyanide~~				

JAH 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED

23

APD-GWPW03-01 F

duplicate? 7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134709

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-009

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

DISSOLVED

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	UJ 50.0	U	*	P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	22.5	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	75600			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	33.0			P
7439-89-6	Iron	UJ 20.0	U	*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	29700			P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	7930			A
7782-49-2	Selenium	2.0	U	S	F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	38100			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	J JAM 146			P
	~~Cyanide~~				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED 24

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

7-17-96

CLIENT SAMPLE NO

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732603 Date Received: 07/18/96

Lab File ID: 0723908.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)		Q
74-87-3	Chloromethane		1	U
74-83-9	Bromomethane		1	U
75-01-4	Vinyl Chloride		1	U
75-00-3	Chloroethane		1	U
75-09-2	Methylene Chloride		2	U
67-64-1	Acetone	R ~~ut~~	4	J
75-15-0	Carbon Disulfide		1	U
75-35-4	1,1-Dichloroethene		1	U
75-34-3	1,1-Dichloroethane		1	U
156-59-2	cis-1,2-Dichloroethene		1	U
156-60-5	trans-1,2-Dichloroethene		1	U
67-66-3	Chloroform		0.2	J
107-06-2	1,2-Dichloroethane		1	U
78-93-3	2-Butanone	R	5	U
74-97-5	Bromochloromethane		1	U
71-55-6	1,1,1-Trichloroethane		1	U
56-23-5	Carbon Tetrachloride	UJ	1	U
75-27-4	Bromodichloromethane		1	U
78-87-5	1,2-Dichloropropane		1	U
10061-01-5	cis-1,3-Dichloropropene		1	U
79-01-6	Trichloroethene		1	U
124-48-1	Chlorodibromomethane		1	U
79-00-5	1,1,2-Trichloroethane		1	U
71-43-2	Benzene		1	U
10061-02-6	trans-1,3-Dichloropropene		1	U
75-25-2	Bromoform		1	U
108-10-1	4-Methyl-2-Pentanone		5	U
591-78-6	2-Hexanone	R	5	U
127-18-4	Tetrachloroethene		1	U
79-34-5	1,1,2,2-Tetrachloroethane		1	U
106-93-4	1,2-Dibromoethane		1	U
108-88-3	Toluene		1	U
108-90-7	Chlorobenzene		1	U
100-41-4	Ethylbenzene		1	U
100-42-5	Styrene		1	U
1330-20-7	Xylene (total)		1	U
541-73-1	1,3-Dichlorobenzene		1	U
106-46-7	1,4-Dichlorobenzene		1	U
95-50-1	1,2-Dichlorobenzene		1	U
96-12-8	1,2-Dibromo-3-chloropropane	R	1	U

VALIDATED

55

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732603 Date Received: 07/18/96

Lab File ID: 0723908.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
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VALIDATED

26

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N07.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N07.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

ab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N07.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	6.600	4	JB
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

VALIDATED

29

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW04

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_188.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/18/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/27/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	1.0	U
11104-28-2------	Aroclor-1221	2.0	U
11141-16-5------	Aroclor-1232	1.0	U
53469-21-9------	Aroclor-1242	1.0	U
12672-29-6------	Aroclor-1248	1.0	U
11097-69-1------	Aroclor-1254	1.0	U
11096-82-5------	Aroclor-1260	1.0	U

VALIDATED

APD-GWPW04-01

7-17-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

134705

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-005

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0

Total

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	U 70.0	B		P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	10.0	U		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	44200			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	20.0	U	*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	16400			P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2420	B		A
7782-49-2	Selenium	2.0	U	S	F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	9280			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	U 54.5			P
	~~Cyanide~~				

JAM 9-3-96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED 31

APD-GWPW04-01 F

duplicate?

7-17-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

134710

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

Matrix (soil/water): WATER Lab Sample ID: 1347-010

Level (low/med): LOW Date Received: 07/18/96

% Solids: 0.0 DISSOLVED

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	J 166	B	*	P
7440-36-0	Antimony	2.0	U		F
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	10.0	B		P
7440-41-7	Beryllium	0.20	U		F
7440-43-9	Cadmium	0.20	U		F
7440-70-2	Calcium	42600			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	15.0	B		P
7439-89-6	Iron	UJ 46.5	B	*	P
7439-92-1	Lead	1.5	U		F
7439-95-4	Magnesium	16600			P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2450	B		A
7782-49-2	Selenium	2.0	U	S	F
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	9080			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	U 51.5			P
	~~Cyanide~~				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

VALIDATED 32

VALIDATION NARRATIVE

ACS
Project 4077.0076

VOCs, SVOCs, PCBs in Private Well Water

Validated By: JAH

Date: 8/27/96

This narrative covers the validation of 4 private well water samples from ACS for low concentration (LC) VOC, and routine concentration SVOC and PCB analysis by IEA laboratories using CLP methodologies. Validation was performed using the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Analysis Review* (2/94). The data is validated as acceptable for use in site evaluation with the following comments:

Hold Times All hold times were met, with the exception of the VOC LC storage blank, which grossly exceeded holdtimes and is unusable (R). The purpose of this blank is to evaluate whether the samples were contaminated during storage. The only detect in the storage blank was 1,2-dichloroethane, which was also detected in the trip blank. This compound was qualified based on the trip blank, therefore, the hold time exceedance does not affect the quality of the investigative sample data.

Calibration All VOC instrument tuning and calibration criteria was acceptable, except for acetone, 2-butanone, 2-hexanone and 1,2-dibromo-3-chloropropane. For these compounds, the reference factor (RF) was less than 0.05; all associated sample results were qualified as unusable ("R"). The VOC carbon tetrachloride exceeded the percent difference criteria; all associated sample results are qualified as estimated ("UJ"). Note that the calibration results are within the contract required criteria, but outside the stricter data validation requirements. All SVOC and pesticide criteria were acceptable.

Blanks Method blanks and one trip blank were analyzed. The VOC method blanks contained methylene chloride and low concentrations of acetone (1.2 to 1.6 ug/L; not reported on the form Is). The trip blank contained methylene chloride, acetone, and chloromethane. Sample results were qualified using the 5x/10x rule as undetected at the sample result or the CRQL, whichever was greater. One SVOC TIC at 6.6 minutes was also detected in the SVOC method blank; associated sample detects have been qualified as unusable. No detects were observed in the pesticide/PCB analysis.

Internal Standards All internal standard results were within acceptable validation limits.

Surrogates All surrogate recoveries were within QC limits, with the exception of pesticide analysis of PW02 and PW03, where the surrogate recovery was low. The CRQL was qualified as estimated based on this criteria.

Matrix Spikes All matrix spike recoveries and RPDs were within acceptable QC limits.

Field Duplicates VOC field duplicate results were within acceptable QC limits. Because the SVOC and PCB aliquots of PW01-01 and PW01-91 were lost in shipping, no field duplicate results are available for these fractions.

Sample Results No results were received for PW01 SVOC and PCB analyses, which were requested on the COC, but lost in shipping. All calculations are acceptable. Overall data quality by the laboratory was good, with no significant instrument related problems observed. Calibration exceedences for the low concentration VOCs are not unusual; most occurred on "poor response compounds". The SOW allows these exceedences, while the functional guidelines do not. The poor response is due to the low standard concentrations in the calibration, and do not indicate a significant instrument problem, but rather well documented difficulties with specific compounds. VOCs and SVOCs were detected in the samples, but PCBs were not.

JAH/jah
I:\PROJECT\ACS\PW-DV.DOC
4077.0076

IEA Assigned Number Index

Case No.: 1589-171

SDG No.: 07326

IEA Lab Sample Number	Sample Number	Abbreviated Sample Number
9607326-01A	APD-GW-PW02-1	PW02
9607326-02A	APD-GW-PW03-1	PW03
9607326-03A	APD-GW-PW04-1	PW04
9607326-04A	APD-PWTB01-01	TB01
9607326-05A	APD-GWPW01-01	PW01
9607326-06A	APD-GWPW01-91 DUP.	PW01D
9607326-21A	HB07326	HB326

Review Date: 8-26-96 Reviewed by: JAH

Review of Contract Data; ~~SMO~~ SDG Case No. 67326
te Name: ACS Contract Lab: IEA
ontract No.: Project No.: 4077.0073
SMO Traffic No's:
Sample Matrix: Low Level ✓ Med. Level ____ High Level ____ Soil/Seq ____
Water ✓ Waste ____

PWS – VOC = LC
SVOC/PEST = RAS

I. HOLDING TIMES

Water: VOA P SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - All contract and 40 CFR 136 holding times met.
P - Provisional - Some contract and 40 CFR 136 holding times exceeded.
U - Unacceptable - All holding times exceeded.

REMARKS: Sampled 7-17-96
VOCs run 7-23-96, Storage Blk 8-14 (28 days) "R"
SVOCs ext 7-22 (5 day), run 7-31
PCBs ext 7-22 (5 day), run 7-26

II. GC/MS TUNING AND PERFORMANCE

Water: VOA (BFB) A SV (DFTPP) A
Sed/Soil: VOA (BFB) ____ SV (DFTPP) ____

A - Acceptable - All criteria met, spectra of good quality.
P - Provisional - All criteria not met, spectra of reasonable quality; date usable.
U - Unacceptable - Criteria not met, spectra of poor quality, data unusable.

BFB

MSD5
8-13-96 (Init Cal) ✓
8-14 (0919) ✓
(Storage Blk only)

MSD9
4-15-96 (Init Cal) ✓
7-23-96 (0801) ✓
(all Spls)

DFTPP

MSD14
7-24-96 (Init Cal) ✓
7-31 (2319) ✓
(all Spls)

SMO Case No.: ACS Contract Lab: IEA

V. SURROGATE SPIKE RESULTS

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

NOTE: Sample data flagged on individual basis.

A. Individual sample flagging criteria.

Acceptable - All surrogate recoveries within criteria.
Suspect - Any surrogate recoveries outside criteria and/or recoveries of <10% substantiated as a matrix effect.
Invalid - Any recoveries of <10% that are unsubstantiated as a matrix effect.

		No. Samples	No. Suspect	No. Invalid
Water:	VOA	13	0	0
	SV	6 x 8	0	0
	PEST	6 x 4	5	0
Sed/Soil:	VOA			
	SV			
	PEST			

B. Summary of Surrogates

A - Acceptable - <10% of samples reported as suspect.
P - Provisional - >10% but <50% of samples reported as suspect.
U - Unacceptable - >50% of samples reported as suspect and/or >10% samples reported as invalid.

REMARKS:

PPCB - PW02 21-39% Rec
PW03 56% Rec on TCX-2 } Flag "UJ"

SOP-99]

SMO Case No.: ACS Contract Lab: IEA

III. INITIAL AND CONTINUING CALIBRATION CHECKS

Water: VOA P SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - All criteria met.
P - Provisional - Some criteria not met, data usable, see remarks.
U - Unacceptable - Criteria not met, data unusable, see remarks.

REMARKS: See Summary Sheets

VOC - Some exceedances for Cl-Et, Acetone, MEK, CCl_4, MIBK, 2-Hex, DBDCIprop
Some data unusable, rest estimated

SVOC - all in criteria

PCB - all acceptable

IV. BLANK ANALYSIS

Water: VOA P SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - No contaminants above minimum detection limit, no interference with sample results, appropriate blank for each GC/MS system and extraction method.

P - Provisional - Contaminants present but minimal interference with sample results.

U - Unacceptable - Gross contamination, too much interference to use data for certain components or the entire fraction, appropriate blanks not analyzed.

VOC	$MeCl_2$	Acetone	MEK	1,2-DCA	Cl-Me
VBLK5R	0.1	(1.2)*	(0.5)	—	—
VBLK9P	-	(1.6)	—	—	—
VSBLK5R	-	(1.6)	(0.4)	0.32	—
TB01	0.6	5	(1.1)	0.7	0.1
QC-Flag if <	6.0	50.	NA	7.0	1.0

*(on quant report - Not reported)

SVOC	Diet-PhH	Dibut-PhH	Unk TIC @ 6.6
SBLK90	(0.97)	(2.2)	6.4

PCB ND

SMO Case No.: ACS Contract Lab: IEA

V. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A. MATRIX SPIKE RESULTS:

PWOH

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

NOTE: No action taken on Matrix Spike Results alone.

A - Acceptable - <10% of compounds outside criteria.
P - Provisional - >10% but <50% of compounds outside criteria.
U - Unacceptable - >50% of compounds outside criteria and/or >10% of compounds with recoveries of <10%.

		No. Compounds	No. Outside Criteria	No. <10% Recovery	
Water:	VOA	5x2	0	0	
	SV	11x2	2	0	(4-Nitrophenol = 91, 92 %)
	PEST	AR-1260	0	0	
~~Sed/Soil:~~ LCS	VOA	12 x 2	0	0	LCS5R, LCS9P
	SV				
	PEST				

B. DUPLICATE RESULTS

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - <10% of compounds outside criteria.
P - Provisional - >10% but <50% of compounds outside criteria.
U - Unacceptable - >50% of compounds outside criteria and/or >10% of compounds with recoveries of <10%.

		No. Compounds	No. Outside Criteria
Water:	VOA	5	0
	SV	11	0
	PEST	AR-1260	0
Sed/Soil:	VOA		
	SV		
	PEST		

REMARKS:

SMC Case No.: ACS - PW Contract Lab: IEA

VII. FIELD DUPLICATES

Water: VOA A SV NA PEST NA
Sed/Soil: VOA ____ SV ____ PEST ____

PW01

A - Acceptable - All compounds are within 25% of each other for waters or within 50% of each other for soils.

P - Provisional - Some compounds are greater than 25% RPD for waters and greater than 50% RPD for soils, see remarks.

U - Unacceptable - Professional judgement, see remarks.

REMARKS:

		PW01	PW01 Dup	$\bar{x}$	RPD
	VOCs	ND	ND	—	—
	No Dup for PEST/PCB				

SMO Case No.: ACS Contract Lab: IEA

VIII. INTERNAL STANDARD PERFORMANCE

Water: VOA A SV A PEST NA
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - Is area counts between - 50% to +100% from associated calibration standard and ±30 seconds from associated calibration standards.

P - Provisional - Most all area counts between -50% to +100% and ±30 seconds, from associated calibration standard, see remarks.

U - Unacceptable - Extremely low area counts or major abrupt drop-off of sensitivity or greater than ±30 second time shift, see remarks.

REMARKS: all in limits

IX. COMPOUND IDENTIFICATION

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - All compounds within retention time windows, spectral criteria met.
P - Provisional - Some criteria not met, data usable, see remarks.
U - Unacceptable - Criteria not met, data unusable, see remarks.

REMARKS: VOCs (LC) - some compounds very low, poor spectra, all < CRQL (Not significant because low conc. analysis)

SVOC - ok

PCB - ok

Case No.: ACS Contract Lab: IEA

X. COMPOUND QUANTIFICATION AND REPORTED D.L.

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - Compounds were quantified, as well as the adjustment of the CRQL, was calculated according for the SOW or SAS.

P - Provisional - Some criteria not met, data usable, see remarks.

U - Unacceptable - Gross problems, interferences, unacceptable RT and RRF shifts, see remarks.

REMARKS:

all ok

XI. SYSTEM PERFORMANCE

Water: VOA A SV A PEST A
Sed/Soil: VOA ____ SV ____ PEST ____

A - Acceptable - No indication of instrument problems such as baseline shifts, I.S. absolute area changes, etc.
P - Provisional - Indication of minor problems, see remarks.
U - Unacceptable - Indication of instrument problems, see remarks.

REMARKS:

all ok

Volatiles Low Concentration TCL
Calibration Outliers

CASE/SDG ACS-PW CONTRACTOR IEA

Instrument	MSD 5						MSD 9								
	Init Cal			Cont. Cal			~~Cont.~~ Cal INIT			Cont. Cal			Cont. Cal		
Date	8-13-96			8-14 (1002)			4-15-96			7-23 (1138)					
	RF	RSD	*	RF	%D		RF	%D		RF	%D		RF	%D	
Chloromethane															
Bromomethane															
Vinyl chloride															
Chloroethane		34.7	J/UJ												
Methylene chloride															
* Acetone	.007	53.0	J/R	.006			.014		J/R	.016					
Carbon disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane															
cis-1,2-Dichloroethene															
trans-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane															
* 2-Butanone	.009		J/R	.008			.026	30.5	J/R	.024					
Bromochloromethane															
1,1,1-Trichloroethane															
* Carbon tetrachloride											-39.3	J/UJ			
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-pentanone	.041		J/R	.042											
* 2-Hexanone	.018			.021						.044		J/R			
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
1,2-Dibromoethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Xylenes (total)															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
1,2-Dichlorobenzene															
* 1,2-Dibromo-3-chloropropane							.042	420	J/R		-32.9				
	Init. Cal.			VBLK5R			INIT. CAL			VBLK9P					
				LCS5R						LCS9P					
				USBLK5R						PW04					
										MS					
										MSD					
										PW02					
										PW03					
										PW01					
										PW01D					
										TB01					

+/-

RF- < 0.05 = J/R

RSD/%D = J/UJ

Storage Blk only

CASE/SDG ACS - PW CONTRACTOR IEA

Instrument MSD14	Init Cal			Cont. Cal		Cont. Cal		Cont. Cal		Cont. Cal	
Date	7-24-96			7-31 (2336)							
	RF	RSD	*	RF	%D	RF	%D	RF	%D	RF	%D
Phenol											
bis(2-chloroethyl) ether											
2-Chlorophenol											
1,3-Dichlorobenzene											
1,4-Dichlorobenzene											
1,2-Dichlorobenzene											
2-Methylphenol											
2,2-oxybis 1-chloropropane											
4-Methylphenol											
N-Nitroso-di-n-propylamine											
Hexachloroethane											
Nitrobenzene											
Isophorone											
2-Nitrophenol											
2,4-Dimethylphenol											
bis(2-chloroethoxy)methane											
2,4-Dichlorophenol											
1,2,4-Trichlorobenzene											
Naphthalene											
4-Chloroaniline											
Hexachlorobutadiene											
4-Chloro-3-methylphenol											
2-Methylnaphthalene											
Hexachlorocyclopentadiene											
2,4,6-Trichlorophenol											
2,4,5-Trichlorophenol											
2-Chloronaphthalene											
2-Nitroaniline											
Dimethylphthalate											
Acenaphthene											
2,6-Dinitrotoluene											
3-Nitroaniline											
Acenaphthene											
2,4-Dinitrophenol											
4-Nitrophenol											
Dibenzofuran											
	Init. Cal.			SBLK90							
				PW04							
				3							
				2							
				4 MS							
				MSD							

✓ ✓

Semivolatiles TCLs
Calibration Outliers

CASE/SDG ACS CONTRACTOR IEA

Instrument	Init Cal			Cont. Cal			Cont. Cal			Cont. Cal			Cont. Cal		
Date	7-24			7-31 (2336)											
	RF	RSD	*	RF	%D		RF	%D		RF	%D		RF	%D	
2,4-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenylphenyl ether															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl phenyl ether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Carbazole															
Di-n-butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
3,3'-Dichlorobenzidine															
Benzo(a)anthracene															
Chrysene															
bis(2-ethylhexyl)phthalate															
Di-n-octylphthalate															
Benzo(b)fluoranthene															
Benzo(k)fluoranthene															
Benzo(a)pyrene															
Indeno(1,2,3-cd)anthracene															
Dibenz(g,h,l)perylene															

✓ ✓

CASE ACS - PW
LAB IEA

PESTICIDE/PCB DATA REVIEW
SOW OLM02.1

RUN #				
INSTRUMENT #	HP5890 P2	HP5890 P3		
RUN DATE	7/27/96	7/29/96		
COLUMN	DB-1701	RTX-35		
FORM VI PEST-1 Retention time windows within limits	✓	✓		
FORM VI PEST-2 Percent RSD within QC limits for single component cmpds <20 %	✓	✓		
FORM VI PEST-3 Multicomponent cmpd calibrations within QC limits	✓	✓		
FORM VI PEST-4 Resolution check greater than 60 %	✓	✓		
FORM VII PEST-1 Continuing calibration verification, breakdown acceptable RPD <25%, BD <20	✓	✓		
FORM VII PEST-2 Continuing calibration verification, RPD acceptable RPD ≤25%	✓	✓		
FORM VIII Analytical sequence correct, Surrogate shift within QC limits.	✓	✓		
Form IX Florisil	✓	✓		

Affected Samples

PBlk 16
PW04 MS
MSD
PW04
03
02

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND
- [ ] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: ACS Private Well Sampling
PROJECT #: 4077.0073
CITY: Griffith
STATE: INDIANA
SAMPLER(S): [signature]

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	Low Level TCL VOCs	TCL Semi-Volatiles	TCL PCBs						TAG #s REMARKS	LAB USE ONLY MATRIX	LAB USE ONLY LAB NO.
7-17-96	1120	X	APD-GWPW01-01	7	3	2	2						9-32881 to 32887		
7-17-96	1130	X	APD-GW PW01-91 Duplicate	7	3	2	2						9-32899, 900 to 32905		
7-17-96	1030	X	APD-GW PW02-01	7	3	2	2						9-32908 to 32914		
7-17-96	1000	X	APD-GW PW03-01	7	3	2	2						9-32920 to 32926		
7-17-96	1420	X	APD-GW PW04-01	7	3	2	2						9-32890 to 32898		
7-17-96	1420	X	APD-GW PW04-01 MS/MSD	10	6	2	2						9-32929 to 32938		
7-12-96	—	X	APD-PWTB01-01	3	X								9-32917, 18, 19		

SPECIAL INSTRUCTIONS:

PW01 — 1002 Reder Road
PW02 — 938 Arbogast
PW03 — 940 Arbogast
PW04 — 430 East Ave H.

TAMPER EVIDENT SEAL INTACT? ____YES ____NO ____NOT PRESENT
SEAL NO.: ____
SAMPLES RECEIVED ON ICE? ____YES ____NO TEMP: ____°C
COC seals → 92-00438, 39, 40, 41, 42, 43, 36 and 37

PROJ. MGR.: Pete Vagt

4°C

	SIGNATURE	DATE	TIME		SIGNATURE	DATE	TIME
RELINQUISHED BY:	[signature]	7-17-96	1830	RECEIVED BY:			
RELINQUISHED BY				RECEIVED BY:			
RELINQUISHED BY:				RECEIVED BY:			
RELINQUISHED BY				RECEIVED FOR LABORATORY BY:	D. McBride	7/18/96	0930

C-O-C No. 013760

NAME OF COURIER: FEDEX
AIRBILL NUMBER: ____

IEA SDG NARRATIVE VOLATILE FRACTION

PROJECT: 1589-171 BATCH: 07326 METHOD: 6/91 SOW

Samples: Six (6) Water Samples and One (1) Holding Blank

These samples were received at Industrial and Environmental Analysts, Inc. (IEA) on July 18, 1996. Each sample was assigned a 9-character "IEA" lab identification number (lab ID) and a client abbreviated sample ID for simplicity in forms generation. This package makes reference to these ID's as listed on the IEA Assigned Number Index. In addition the pH for the water samples are listed on this index. All analyses were performed according to the EPA 6/91 SOW and meet the requirements of the IEA Quality Assurance Program. Please see the enclosed data package for your results and Chain of Custody (COC) documentation.

The 6/91 SOW calls for the Laboratory Control Sample (LCS) to be calculated in nanograms. The nanogram sample amount on the Form 3LCA is calculated from the concentration of the analyte as reported on the raw data and rounded using EPA rounding rules. The percent recovery is then calculated using the "Amount Recovered" values as displayed on the Form 3LCA.

The form 6 and 7 indicate that the minimum Relative Response Factor (RRF) must be 0.010 and the maximum percent Relative Standard Deviation (%RSD) and/or percent difference (%D) must be less than 40.0%. However, the form does not indicate the exceptions which are the ketones and 1,2-Dibromo-3-chloropropane. Table D-5 VOA section D page 47 of the 6/91 SOW states, "At the present time, the Agency has not set minimum RRF or %RSD criteria for Acetone, 2-Butanone, 1,2-Dibromo-3-chloropropane, 2-Hexanone, and 4-Methyl-2-pentanone."

There is an air peak that is common to all of the volatile analyses and a solvent peak common to some volatile analyses. These peaks are present at the beginning of the Reconstructed Ion Chromatograms (RIC) and are labeled. These peaks are not searched as Tentatively Identified Compounds (TIC's).

The "J" flag used on the Form I VOA designates an estimated concentration between the Contract Required Quantitation Limit (CRQL) and the Method Detection Limit (MDL), not accounting for dilution of the sample prior to analysis. This flag is also used on the Form I VOA-TIC to indicate an estimated amount for all non-target concentrations.

The "B" flag used on the Form I VOA and/or the Form I VOA-TIC indicates that this compound was present in the associated method blank.

The "M" flag used on the data system report form designates that a manual integration was required to provide an accurate quantification of that analyte. Manual integrations have been initialled and dated by the analyst.

IEA

SDG NARRATIVE VOLATILE FRACTION

The nonconformances associated with the analysis of the samples in this case are as follows:

The storage blank for the project (VSBLK5R) was analyzed past the method specified holding time.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Brian D. Neptune 08/16/96

Brian D. Neptune
Lead Analyst, GC/MS Final Review
IEA, Inc.

PROJECT: 1589-171 BATCH: 07326 METHOD: SOW 1/91

Samples: Three (3) Water Samples

The samples were received at Industrial and Environmental Analysts, Inc. (IEA) on 07/18/96. Each sample was assigned a 9-character "IEA" lab identification number (lab ID) and an abbreviated client ID which is referenced on the IEA Assigned Number Index. All analyses are performed in accordance with EPA approved methodologies and meet the requirements of the IEA Quality Assurance Program. Please see the enclosed data package for your results and Chain of Custody documentation.

The chromatographic separation of the analytes was performed using a Restek 30 X 0.32 XTI-5 fused silica capillary column with a 0.5 μm bonded phase film thickness.

The "J" flag used on the Form I SV indicates an estimated concentration between the CRQL and the Method Detection Limit (MDL). This flag also identifies the estimated concentration of the non-target compounds reported on the Form I SV-TIC.

The "N" flag used on the Form I SV-TIC indicates that there is the presumptive evidence of a compound based on the mass spectral library search and the interpretation of the mass spectral interpretation specialist.

The "B" flag used on the Form I SV indicates that this compound was present in the associated extraction blank.

The "M" flag used on the data system report form designates that a manual integration was required to provide an accurate quantification of that analyte. Manual integrations have been initialed and dated by the analyst.

The "X" flag is used to designate a non-target which can be attributed to laboratory contamination on the Form I SV-TIC.

Compound 4-Nitrophenol recovered above method specified criteria in the MS/MSD sample.

Instrument data printouts identify the compound 2,2'-oxybis(1-Chloropropane) with CAS number 108-60-1. Alternative nomenclature for this compound is bis(2-Chloroisopropyl)ether which is included on report forms submitted.

I certify that this data package is in compliance with the procedures and methods defined for this project, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data (if applicable) as submitted has been authorized by the laboratory manager or his designee, as verified by the following signature.

08/07/96

Keith B. Scott
Organic Laborotory Manager
IEA, Inc.

IEA SDG NARRATIVE PESTICIDE FRACTION

CASE: 1589-171 SDG NO.:07326 CONTRACT: SOW 1/91

Samples: (3) Water Samples

This case was closed on July 18, 1996. Each sample has been assigned a 9-character IEA lab identification number.

The chromatographic separation of the analytes was performed using a J & W 30 m X 0.53 mm DB-1701 fused silica capillary column with a 1.0 μm bonded phase film thickness and a Restek 30 m X 0.53 mm Rt_x-35 fused silica capillary column with a 1.0 μm bonded phase film thickness. The Rt_x-35 column used as one of the analytical columns is equivalent to the DB-608 column specified in the SOW.

The filenames have an extension of ".D" to denote the use of the ASCII file generated by the data system to produce the forms. Two significant figures were reported for the "calculated amount" on Form VII PEST-1 and -2. All of the initial pesticide chromatograms were missing the scaling factor; however, the scaling factor (in mV scale) appeared for the re-plotted chromatograms.

Gel Permeation Cleanup (GPC) was performed using a column series: a 19 X 300 mm Waters UltraStyragel column paired with a 19 X 150 mm Waters UltraStyragel column. The additional column provides the additional resolution needed to achieve the criteria for pesticide analysis. This column combination meets the equivalency criteria in paragraph 10.1.8.1.2, page D-43/PEST. A 2 mL injection loop is utilized by the GPC system.

All soil sample extracts underwent GPC as required by the SOW. Florisil column cleanup was performed on all sample extracts as required by the SOW.

The "P" flag is used to designate that there is a greater than 25% difference in the detected concentration of an analyte between the two analytical columns.

The "*" used on the Form III PEST designates percent recoveries and/or RPD's are outside the QC limits.

Any nonconformances associated with the analysis of the samples in this case are note as follows:

Sample PW02 had surrogate recoveries outside the advisory limits on both columns. The surrogate TCX was outside the advisory limits for sample PW03 on the RTX-35 column.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Dwight A. Dingess 08/13/96

Dwight A. Dingess
GC SV Lead Analyst
IEA, Inc.

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

VBLK5R

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: VBLK5R Date Received: / /

Lab File ID: 0814503.D Date Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	0.1	J
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

VBLK5R

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: VBLK5R Date Received: / /

Lab File ID: 0814503.D Data Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
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VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

VBLK9P

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: VBLK9P Date Received: / /

Lab File ID: 0723905.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO

VBLK9P

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: VBLK9P Date Received: / /

Lab File ID: 0723905.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
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VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

VSBLK5R

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732621 Date Received: 07/18/96

Lab File ID: 0814509.D Date Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	R 1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	0.3	J
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

FORM I LCV

Hold time exceeded

6/91

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE N

VSBLK5R

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732621 Date Received: 07/18/96

Lab File ID: 0814509.D Data Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

SBLK90

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: SBLK90

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N06.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

SBLK90

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: SBLK90

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N06.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLK90

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: SBLK90

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0731N06.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	6.600	3	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PBLK16

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: PBLK16

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_175.D

% Moisture: _____ decanted: (Y/N)___ Date Received: / /

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/26/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	1.0	U
11104-28-2------	Aroclor-1221	2.0	U
11141-16-5------	Aroclor-1232	1.0	U
53469-21-9------	Aroclor-1242	1.0	U
12672-29-6------	Aroclor-1248	1.0	U
11097-69-1------	Aroclor-1254	1.0	U
11096-82-5------	Aroclor-1260	1.0	U

VALIDATED

Data Validation Narrative

Project Name ACS
Project Number 4077.0076

September 9, 1996
Login # 1347

This data narrative covers the analysis of 10 Total and Dissolved private well water samples from ACS for CLP metals analysis by Montgomery Watson Laboratories. The data was validated according to the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (2/94).

This data is acceptable for use with the following comments:

Holdtimes - All holdtimes were met.

Blanks - The laboratory blanks had hits of aluminum, iron, and zinc. All associated sample results less than 5 times the highest blank concentration have been qualified as undetected (U) at the sample concentration.

Duplicate Analysis - Aluminum and iron duplicate analysis failed QC requirements for sample 1347-08 (Dissolved samples). Associated samples with detects have been qualified as estimated (J/UJ).

Additional flags associated with this data include "S" indicating furnace post digestion spike QC criteria was exceeded. "S" indicates the sample was rerun by method of standard addition.

JAH/jah
I:\PROJECT\ACS\L1347DV.DOC
4077.0076

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MWL Contract: 4077.0073

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SD1347

SOW No.: 3/90

Sample Description	Lab Sample ID.	EPA Sample No.	LIMS Sample ID.
APD-GWPW01-01	1347-001	134701	L13407-001
APD-GWPW01-91	1347-002	134702	L13407-002
APD-GWPW02-01	1347-003	134703	L13407-003
APD-GWPW03-01	1347-004	134704	L13407-004
APD-GWPW04-01	1347-005	134705	L13407-005
APD-GWPW01-01Filtered	1347-006	134706	L13407-006
APD-GWPW01-91Filtered	1347-007	134707	L13407-007
APD-GWPW02-01Filtered	1347-008	134708	L13407-008
APD-GWPW03-01Filtered	1347-009	134709	L13407-009
APD-GWPW04-01Filtered	1347-010	134710	L13407-010

Were ICP interelement corrections applied? Yes/No _____

Were ICP background corrections applied? Yes/No _____

If yes - were raw data generated before application of background corrections? Yes/No _____

Comments:

Release of the data contained in this hardcopy data package has been authorized by the Laboratory manager or the Manager's designee, as verified by the following signature.

Lab Manager: _____

Date: _____

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1347

SOW No.: 3/90

EPA Sample No.	Lab Sample ID.
134701	1347-001
134701S	1347-001S
134702	1347-002
134703	1347-003
134703D	1347-003D
134704	1347-004
134705	1347-005
134706	1347-006
134706S	1347-006S
134707	1347-007
134708	1347-008
134708D	1347-008D
134709	1347-009
134710	1347-010

Were ICP interelement corrections applied? Yes/No

Were ICP background corrections applied? Yes/No
If yes-were raw data generated before application of background corrections? Yes/No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

CLP Protocol

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND
- [ ] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: AGS

PROJECT #: 4077.0073

CITY: Griffith

STATE: Indiana

SAMPLER(S): [signature]

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	TAL TOTAL METALS	DISSOLVED METALS TAL							REMARKS	LAB USE ONLY MATRIX	LAB NO.
7-17-96	1120	X	APD-GWPW01-01	2	x	x							9-32888,89		13407-001
7-17-96	1130	X	APD-GWPW01-91	2	x	x							9-32906,07		-002
7-17-96	1030	X	APD-GWPW02-01	2	x	x							9-32915,16		-003
7-17-96	1000	X	APD-GWPW03-01	2	x	x							9-32927,28		-004
7-17-96	1420	X	APD-GWPW04-01	2	x	x							9-32897,98		-005
7-17			APD GW PW01-01 filtered			x									006
			APD GW PW01-91 filtered			x									-007
			APD GW PW02-01 filtered			x									-008
			APD GW PW03-01 filtered			x									-009
			APD GW PW04-01 filtered			x									-010

SPECIAL INSTRUCTIONS:

COC = 92-00444
92 00445

RECEIVED: [x] INTACT [x] ON ICE TEMP _____ °F

PROJ. MGR.: P. VAGT

	SIGNATURE	PRINT NAME	COMPANY / TITLE	DATE	TIME
RELINQUISHED BY:	[signature]	David A. Pieczynski	Montgomery Watson / Hydro	1830	7/17/96
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:	Kari-Ann Killian	Kari-Ann Killian	Montgomery Watson Lab / Admin Asst	7/18/96	10:40am

C-O-C No. 010539

NAME OF COURIER: Lok Air Br Fed Ex

AIRBILL NUMBER: 153 4615 275

ICP

I HOLDTIME - Sampled 7-17-96, Run 8/21, 22, 22, 22, 26, 26

II CALIBRATION

Curve - Blk + 2-3 Stds

ICV/CCV - 1/10, 90-110%

CRI - 72-137%

III BLANKS

	Al	Fe	Zn
ICB/CCB	-	-255	-
PB	58.5	-	12.0
	292	127	60

IV ICP INTERFERENCE CHECK STANDARD

% Rec 80-120% (Mg = 78.3%)

V SPIKES

1347-01 85-110%

1347-06 87-116%

VI DUPLICATES

1347-03 <25% RPD or ±CRDL

1347-08 - Al = 170%, Fe = 31.8%, *Ag Flag J/UJ

VII LCS

90-110% Rec

VIII ICP SERIAL DILUTIONS

1347-01 - %D < 10% or Spl < 50x IDL

Zn shows Blk cont.

IX SRV

Calcs + transcriptions 10% check

X OVERALL

Data Acceptable Al, Zn flagged on some samples for blank (all filtered samples estimated for duplicate

K

I HOLDTIME - Sampled 7/17, Run 8/12

II CALIBRATION

Curve - Blk + 3 Stds r > .995

ICV/CCV - 1/10, 90-110%

CRA - 99%

III BLANKS

ICB/CCB - 1/10, < 100 µg/L

PB - < 100

IV SPIKE

1347-01 - 106% 1347-06 - 104%

V DUPLICATE

1347-03 1.9% RPD 1347-08 0.1% RPD

VI LCS

97.4%

VII SRV

Calcs + transcriptions checked

VIII OVERALL

Data acceptable

Sb

I HOLDTIME - Sampled 7-17-96 Run 8-21-96

II CALIBRATION

Curve - Blk + 3 Stds r > .995

ICV/CCV - 1/10, 90-110 % ✓

CRA - 99.4 %

III BLANKS

ICB/CCB - 1/10, < 2 ug/L

PB < 2

Spls Spiked @ 2x (40) - No flag required

IV SPIKES

13407-01 101.5 % 13407-06 96.6 %

V DUPLICATES

13407-03 ND 13407-08 ND

VI LCS

96.6 %

VII FURNACE QC

Dup Inj < 20 % RSD or < CRDL ✓

~~Dup~~ PDS 85-115 % ✓

VIII ~~CALCS~~ SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable

As Fe

I HOLDTIME - Sampled 7-17-96 Run 8-16 ; 8-16

II CALIBRATION

Curve - Blk + 3 stds r > .995 ✓

ICV/CCV - 1/10 , 90-110 %

CRA - 101.7 %

III BLANKS

ICB/CCB - 1/10, < 1.0 ug/L

PB - <1.0

IV SPIKES

13407-01 95.5 % 13407-06 97.7 %

V DUPLICATES

13407-03 RPD = 25.2 (±CRDL) 13407-08 RPD ±CRDL

VI LCS

108.7 %

VII FURNACE QC

Dup Inj < 20 % RSD or < CRDL

PDS 85-115 %

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data Acceptable

Be

I HOLDTIME Sampled Sampled ~~8/22~~ 7/17, Run 8/22

II CALIBRATION

Curve - Blk + 3 Stds r > .995

ICV/CCV - Y/O, 90-110 %

CRA - 106 %

III BLANKS

ICB/CCB - Y/O, < 0.2 ug/L

PB - < 0.2

VI SPIKES

13407-01 113 % 13407-06 116 %

VII DUPLICATES

13407-03 ND 13407-08 ND

VIII LCS

98.0 %

IX FURNACE QC

Dup lnj < 20 % RSD

PDS 85-115 %

X OVERALL

Data Acceptable

Cd

I Sampled 7/17 Run 8/21

II CALIBRATION

Curve - Blk + 3 Std r > .995

ICV/CCV - 1/10, 90-110 %

CRA - 98.0 %

III BLANKS

ICB/CCB - 1/10, < 0.20

PB - < 0.2 ug/L

IV SPIKE

13407-01 113.0 % 13407-06 106 %

V DUPLICATE

13407-03 ND 13407-08 ND

VI LCS

98.0 %

VII FURNACE QC

Dup Inj < 20 % RSD

PDS 85-115 %

VIII SRV

Calcs + transcriptions checked

II OVERALL

Data Acceptable

Pb

I HOLDTIME- Sampled 7-17-96 Run 8-20-96

II CALIBRATION

Curve- Blk + 4 Std's r = 0.999

ICV/CCV - 1/10, 90-110 %

CRA - 114.0 %

III BLANK

ICB/CCB - 1/10, < 1.5 ug/L

PB < 1.5 ug/L

IV SPIKE

13407-01 99.6 %

13407-06 101.9 %

V DUPLICATE

13407-03 ND

13407-08 89.9 %

VI LCS

89.9 %

VII FURNACE QC

Dup Inj < 20 % RSD or < CRDL

PDS 85-115 %

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable, all < 1.5 ug/L

I HOLDTIME - Sampled 7/17/96, Run 8/16/96

II CALIBRATION

Curve - Blk + 4 stds r > .995, >.995

ICV/CCV - 1/10, 90-110%

CRA 101.4%

III BLANK

ICB/CCB - 1/10, < 2.0 ug/L

PB - <2.0

IV SPIKES

13407-01 89.1%

13407-06 100.5%

V DUPLICATE

13407-03 ND

13407-08 ND

VI LCS

114.7%

VII FURNACE QC

Dup Inj < 20% RPD or <CRDL

PDS 85-115%, or MSA (-05, -09, -10)

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable, No defects

T1

I HOLDTIME - Sampled 8-21, 8/22 Run 7/17 ✓

II CALIBRATION

Curve - Blk + 3 Stds r > .995

ICV/CCV - 1/10, 90-110 %

CRA - 94.1%, 109.2%

III BLANKS

ICB/CCB - 1/10, < 1 ug/L

PB - < 1

IV SPIKES

13407-01 102.1%

13407-06 100.6%

V DUPLICATES

13407-03 ND

13407-08 ND

VI LCS

108.4%, 100.0%

VII Furnace QC

Dup Inj < 20% RSD or < CRDL

PDS 85-115% or MSA (-03, -03D, -08D, -08)

VIII OVERALL

Data Acceptable, No hits

Hg

I HOLDTIME - Sampled 7-17-96, Run 8/7/96 (21 days)

II CALIBRATION -

Curve - Blk + 4 Stds r = 0.999, .2 ug/L = .004 abs

ICV/CCV - 1/10, 90-110 %

CRA - 105 %

III BLANK

ICB/CCB - 1/10, <0.20

IV SPIKES

13407-01 97.0 %

13407-06 96 %

V DUPLICATES

13407-03 ND

13407-08 ND

VI LCS

98.0 %

VII SRU

Calcs + transcriptions ok

VIII OVERALL

Data acceptable

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE N

PW04MS

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732603MS Date Received: 07/18/96

Lab File ID: 0723909.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	6	
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	5	
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	5	
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	5	
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04MSD

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732603MSD Date Received: 07/18/96

Lab File ID: 0723910.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	5	
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	5	
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	5	
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	5	
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U

VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04MS

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

b Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MS

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N10.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	61	
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	63	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	40	
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	49	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	43	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	66	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	42	

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04MS

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MS

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N10.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	68	
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	43	
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	63	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	42	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04MSD

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MSD

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N11.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	59	
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	60	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	37	
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	48	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	40	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	65	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	41	

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

PW04MSD

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

ab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MSD

Sample wt/vol: 500 (g/mL) mL Lab File ID: 0731N11.D

Level: (low/med) LOW Date Received: 07/18/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 07/22/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/01/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	69	
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	44	
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	63	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	43	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW04MS

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_186.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/18/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/27/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	1.0	U
11104-28-2------	Aroclor-1221	2.0	U
11141-16-5------	Aroclor-1232	1.0	U
53469-21-9------	Aroclor-1242	1.0	U
12672-29-6------	Aroclor-1248	1.0	U
11097-69-1------	Aroclor-1254	1.0	U
11096-82-5------	Aroclor-1260	4.1	P

VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PW04MSD

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-171 SDG No.: 07326

Matrix: (soil/water) WATER Lab Sample ID: 960732603MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2062896_187.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/18/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 07/27/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2------	Aroclor-1016	1.0	U
11104-28-2------	Aroclor-1221	2.0	U
11141-16-5------	Aroclor-1232	1.0	U
53469-21-9------	Aroclor-1242	1.0	U
12672-29-6------	Aroclor-1248	1.0	U
11097-69-1------	Aroclor-1254	1.0	U
11096-82-5------	Aroclor-1260	3.4	P

VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

7-12-96

CLIENT SAMPLE N

TB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

ab Sample ID: 960732604 Date Received: 07/18/96

Lab File ID: 0723915.D Date Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	0.1	J
74-83-9	Bromomethane	1	U
75-01-4	Vinyl Chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene Chloride	0.6	J
67-64-1	Acetone	R 5	J
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	0.7	J
78-93-3	2-Butanone	R 5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	UJ 1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	R 5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	R 1	U

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE N(

TB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-171 SAS No.: SDG No.: 07326

Lab Sample ID: 960732604 Date Received: 07/18/96

Lab File ID: 0723915.D Data Analyzed: 07/23/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
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30.				

VALIDATED

Letter of Transmittal
BLACK & VEATCH Special Projects Corp.

101 North Wacker Drive, Suite 1100, Chicago, Illinois, 60606, Phone (312) 346-3775, Fax (312) 346-4781

To: Ms. Sheri Bianchin
United States Environmental Protection Agency
77 West Jackson Boulevard (SRW-6J)
Chicago, Illinois 60604

Date: September 20, 1996
From: Steve Mrkvicka
Project: American Chemical Services
Project No.: 71670
File: C.3

We are sending you: [XXX] Attached [ ] Under separate cover via

- [ ] Preliminary Report
- [ ] Final Report
- [XXX] Other: Data Evaluation and Comparison
- [ ] Specifications
- [ ] Change Order
- [ ] Addendum

These items are transmitted:

- [ ] As requested
- [ ] For your approval
- [XXX] For your information
- [ ] For review and comment

Remarks: Enclosed is the data comparison for the July 1996 residential well analytical data.

If you have any questions, please call me at 312/683-7849.

American Chemical Services
Work Assignment 80-5PJ7

Copy To: P. Hendrixson, USEPA (w/o enclosure);
E. Howard, USEPA (w/o enclosure); D. Gountanis, USEPA (w/o enclosure)

Signed: September 20, 1996