DECEMBER 7, 1990

TO: MAX MAES
THRU: CHRIS LEIBMAN CL
FROM: CAROL SUTCLIFFE CMS

ATTACHED YOU WILL FIND COPIES OF **PRELIMINARY** REPORTS FOR VOLATILE AND SEMIVOLATILE ANALYSES FOR REQUEST #10773. THE HOLDING TIMES FOR UNPRESERVED WATER SAMPLES WAS MET FOR ALL SAMPLES EXCEPT FOR THE SEMIVOLATILE ANALYSIS OF THE DILUTION OF 90.17404. THIS SAMPLE WAS DILUTED TO OBTAIN A CONCENTRATION FOR DIETHYLPHTHALATE WITHIN THE INSTRUMENT WORKING CALIBRATION CURVE. THE ONLY TARGET COMPOUND FOUND IN THE SAMPLES WAS DIETHYLPHTHALATE IN SAMPLE 90.17404. SOME SURROGATE RECOVERIES FOR VOLATILE ANALYSIS DID NOT MEET SW-846 QC CRITERIA. IN ADDITION SOME RECOVERIES FROM THE VOLATILE MATRIX SPIKE SAMPLES WERE LOW. ALL SW-846 QC CRITERIA WERE MET FOR SEMIVOLATILE ANALYSIS. IF YOU HAVE ANY QUESTIONS REGARDING THESE RESULTS PLEASE DO NOT HESITATE TO CALL ME OR MARTIN AT 7-6934 OR TONEY AT 7-6871.

2351
General

12296

HSE-9 SEMIVOLATILE ORGANIC ANALYSIS
SUMMARY OF ANALYTICAL RESULTS

To: Max Maes
From: Martin Koby

Request Number: 10773
Matrix: Water
Summary Date: 12/4/90

Sample ID	Target Compounds Found	Amount (ug/L)	LOQ (ug/L)	TICs (Y/N)
Blank 10/4	Diethylphthalate	13.7	10.0	N
90.17401	NONE	NA	10.0	Y
90.17402	NONE	NA	10.0	Y
90.17403	NONE	NA	10.0	Y
90.17404	Diethylphthalate	1800	10.0	N
90.17405	NONE	NA	10.0	Y

Sample preparation was performed by extracting approximately 1.0 L of sample with 250 ml methylene chloride for 18 hours per acid and base/neutral fractions in continuous liquid/liquid extractors. Appropriate surrogate standards were added prior to extraction as a check of method efficiency. Initial extracts were concentrated to a final volume of 1.0 ml by Kuderna-Danish and nitrogen evaporation techniques. Analysis was performed by capillary column GC/MS methods. These methods are consistent with EPA SW-846 protocol.

In addition to the reported phthalate, a common plasticizer, several tentatively identified compounds were present in these samples extracts. It is unlikely that this level of phthalate contamination was introduced in the laboratory.

With the exception of 90.17404 dilution, all analytical holding times were satisfied regarding this request. If you have any questions concerning this data, please do not hesitate to call either myself or Carol Sutcliffe at 667-5889.

Reviewed CH Stell 12/7/90

TO: MAX MAES
THUR: CHRIS LEIBMAN
FROM: TONEY BEGAY
REQUEST: 10773

The following sample was analyzed for Volatile Organic Components (VOC'S) using SW 846 Purge and Trap (P/T) GC/MS method 8260 of analysis:

90.17391 90.17399 90.17401 90.17402
90.17403 90.17404 90.17405 9017411.

The samples consisted of 40 ml vials. 5 ml aliquot of these samples were spiked with ISM/PSS mix. The method blank was issued a number, 90.17399. Since the samples were not blank subtracted, a copy of 90.17399 results has been included in the report. The 7 day holding time **was** satisfied.

RESULTS:

Carbon disulfide was detected in all the samples including sample 90.17399 (method blank). The average concentration of carbon disulfide in all the samples was 35.4 ug/L. This indicates that the samples were contaminated with carbon disulfide during preparation. No other target compounds were detected at or above the limits of quantitation (LOQ). There were no non-target compounds detected.

QC Summary for Request 90.10773

Sample 90.17401 was used for matrix spike recovery determination. 5mL of the sample was spiked with 10uLs of matrix spike mix and ISM/SURR mix.

The following is the matrix recoveries in relation to the QC control limit:

SAMPLE	1,1-dichloro-ethene	benzene	trichloro-ethene	toluene	chloro-benzene
90.17401MS	low	low	low	low	acceptable
90.17401MSD	low	low	low	acceptable	acceptable

The low matrix spike compound recoveries could be attributed to the mix being old.

Of the three surrogate compounds, Toluene-d8 was outside the QC control limits for all the samples. Dichloroethene-d4 was outside the QC limit on sample 90.17401. The low recovery of toluene-d8 could be attributed to an old ISM/SURR mix.

LOS ALAMOS NATIONAL LABORATORY
HEALTH, SAFETY AND ENVIRONMENT DIVISION
HSE-3

SURROGATE RECOVERIES FOR VOLATILES
IN WATER TYPE MATRICES

REQUEST #: 10773

NUMBER OF SAMPLES: 10
MATRIX W
ANALYST: TRB
Date: 12/03/90

SURROGATE RECOVERIES

SURROGATE
RECOVERIES IN PERCENT (%)

	SAMPLE NUMBERS	TYPE	d4-1,2-dichloro-ethene	toluene-(d8)	4-bromo-fluoro-benzene
1	B90.17399	BLANK	82	85 *	93
2	S90.17401	SAMPLE	66 *	85 *	100
3	S90.17402	SAMPLE	91	86 *	93
4	S90.17403	SAMPLE	88	84 *	97
5	S90.17404	SAMPLE	95	85 *	94
6	S90.17405	SAMPLE	92	85 *	97
7	S90.17411	SAMPLE	91	84 *	97
8	S90.17391	SAMPLE	91	88 *	100
9	M90.17401	MATRIX SPIK	94	86 *	97
10	D90.17401	MATRIX SP-D	91	85 *	104
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Average % Surrogate Recovery...	88	85	97
Defined Lower QC Limits (%)....	76	88	86
Defined Upper QC Limits (%.....	114	110	115
Observed Lower QC Limits (%)...	66	84	93
Observed Upper QC Limits (%)...	95	88	104

"*" If % Surrogate Recovery is Followed by a "*", it is out of QC Limits.

Reviewed By:

LOS ALAMOS NATIONAL LABORATORY
HEALTH, SAFETY AND ENVIRONMENT DIVISION
HSE-9
MATRIX SPIKE RECOVERIES FOR VOLATILES

		DRY WT/VOL (G or ML)		DILUTION FACTOR	AMOUNT SPIKED	UG/KG OR UG/L
REQUEST #:	[redacted]					
NUMBER OF SAMPLES:	10					
SPIKE ID: (STARTS M OR S)	M90..7401	SPIKE	5	1	50	5
SPIKE DUP ID: (STARTS D OR F)	D90.17401	SPIKE-DUP	5	1	50	5
RAW DATA WITH:	---					
ANALYST:	TFB					

	SPIKE REC.	SPIKE-DUP REC.	SPIKE % REC.	SPIKE-DUP % REC.	RPD	LOW. REC. LIM.	UPP. REC. LIM.	RPD LIM.
1,1-Dichloroethene	<LOQ	<LOQ	0%*	0%*	0%	61	145	14
Benzene	31	33	62%*	66%*	6%	76	127	11
Trichloroethene	32	34	64%*	68%*	6%	71	120	14
Toluene	37	39	74%*	78%	5%	76	125	13
Chlorobenzene	38	41	76%	82%	3%	75	130	13

[redacted]

"*" If a Matrix Recovery is Followed by a "*", it is out of QC Limits.

Reviewed By:

note - MSD out of BFB tune time range

CB
11/30/93

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17401

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	67641	< 20.		UG/L	12/11/90		Acetone
APCO-1	90.17401	107028	< 100.		UG/L	12/11/90		Acrolein
APCO-1	90.17401	107131	< 100.		UG/L	12/11/90		Acrylonitrile
APCO-1	90.17401	71432	< 5.		UG/L	12/11/90		Benzene
APCO-1	90.17401	108861	< 5.		UG/L	12/11/90		Bromobenzene
APCO-1	90.17401	74975	< 5.		UG/L	12/11/90		Bromochloromethane
APCO-1	90.17401	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
APCO-1	90.17401	75252	< 5.		UG/L	12/11/90		Bromoform
APCO-1	90.17401	74839	< 10.		UG/L	12/11/90		Bromomethane
APCO-1	90.17401	78933	< 20.		UG/L	12/11/90		2-Butanone
APCO-1	90.17401	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
APCO-1	90.17401	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
APCO-1	90.17401	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
APCO-1	90.17401	75150	36.	10.8	UG/L	12/11/90		Carbon disulfide
APCO-1	90.17401	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
APCO-1	90.17401	108907	< 5.		UG/L	12/11/90		Chlorobenzene
APCO-1	90.17401	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
APCO-1	90.17401	75003	< 10.		UG/L	12/11/90		Chloroethane
APCO-1	90.17401	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
APCO-1	90.17401	67663	< 5.		UG/L	12/11/90		Chloroform
APCO-1	90.17401	74873	< 10.		UG/L	12/11/90		Chloromethane
APCO-1	90.17401	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

APCO-1	90.17401	106434	< 5.	UG/L	12/11/90	p-Chlorotoluene
APCO-1	90.17401	96128	< 10.	UG/L	12/11/90	1,2-Dibromo-3-chloropropane
APCO-1	90.17401	106934	< 5.	UG/L	12/11/90	1,2-Dibromoethane
APCO-1	90.17401	74953	< 5.	UG/L	12/11/90	Dibromomethane
APCO-1	90.17401	95501	< 5.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
APCO-1	90.17401	541731	< 5.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
APCO-1	90.17401	106467	< 5.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
APCO-1	90.17401	75718	< 10.	UG/L	12/11/90	Dichlorodifluoromethane
APCO-1	90.17401	75343	< 5.	UG/L	12/11/90	1,1-Dichloroethane
APCO-1	90.17401	107062	< 5.	UG/L	12/11/90	1,2-Dichloroethane
APCO-1	90.17401	75354	< 5.	UG/L	12/11/90	1,1-Dichloroethene
APCO-1	90.17401	156605	< 5.	UG/L	12/11/90	trans-1,2-Dichloroethene
APCO-1	90.17401	156592	< 5.	UG/L	12/11/90	cis-1,2-Dichloroethylene
APCO-1	90.17401	78875	< 5.	UG/L	12/11/90	1,2-Dichloropropane
APCO-1	90.17401	142289	< 5.	UG/L	12/11/90	1,3-Dichloropropane
APCO-1	90.17401	594207	< 5.	UG/L	12/11/90	2,2-Dichloropropane
APCO-1	90.17401	563586	< 5.	UG/L	12/11/90	1,1-Dichloropropene
APCO-1	90.17401	10061015	< 5.	UG/L	12/11/90	cis-1,3-Dichloropropene
APCO-1	90.17401	10061026	< 5.	UG/L	12/11/90	trans-1,3-Dichloropropene
APCO-1	90.17401	100414	< 5.	UG/L	12/11/90	Ethylbenzene
APCO-1	90.17401	87683	< 5.	UG/L	12/11/90	Hexachlorobutadiene
APCO-1	90.17401	591786	< 20.	UG/L	12/11/90	2-Hexanone
APCO-1	90.17401	98828	< 5.	UG/L	12/11/90	Isopropylbenzene
APCO-1	90.17401	99876	< 5.	UG/L	12/11/90	4-Isopropyltoluene
APCO-1	90.17401	74884	< 5.	UG/L	12/11/90	Methyl iodide
APCO-1	90.17401	108101	< 20.	UG/L	12/11/90	4-Methyl-2-pentanone
APCO-1	90.17401	75092	< 5.	UG/L	12/11/90	Methylene chloride
APCO-1	90.17401	91203	< 5.	UG/L	12/11/90	Naphthalene
APCO-1	90.17401	103651	< 5.	UG/L	12/11/90	Propylbenzene
APCO-1	90.17401	100425	< 5.	UG/L	12/11/90	Styrene
APCO-1	90.17401	630206	< 5.	UG/L	12/11/90	1,1,1,2-Tetrachloroethane
APCO-1	90.17401	79345	< 5.	UG/L	12/11/90	1,1,2,2-Tetrachloroethane
APCO-1	90.17401	127184	< 5.	UG/L	12/11/90	Tetrachloroethylene
APCO-1	90.17401	108883	< 5.	UG/L	12/11/90	Toluene
APCO-1	90.17401	76131	< 5.	UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
APCO-1	90.17401	87616	< 5.	UG/L	12/11/90	1,2,3-Trichlorobenzene
APCO-1	90.17401	120821	< 5.	UG/L	12/11/90	1,2,4-Trichlorobenzene
APCO-1	90.17401	71556	< 5.	UG/L	12/11/90	1,1,1-Trichloroethane
APCO-1	90.17401	79005	< 5.	UG/L	12/11/90	1,1,2-Trichloroethane
APCO-1	90.17401	79016	< 5.	UG/L	12/11/90	Trichloroethene
APCO-1	90.17401	75694	< 5.	UG/L	12/11/90	Trichlorofluoromethane
APCO-1	90.17401	96184	< 5.	UG/L	12/11/90	1,2,3-Trichloropropane
APCO-1	90.17401	95636	< 5.	UG/L	12/11/90	1,2,4-Trimethylbenzene
APCO-1	90.17401	108678	< 5.	UG/L	12/11/90	1,3,5-Trimethylbenzene
APCO-1	90.17401	108054	< 10.	UG/L	12/11/90	Vinyl acetate
APCO-1	90.17401	75014	< 10.	UG/L	12/11/90	Vinyl chloride

APCO-1	90.17401	1330207	< 5.		UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17401

none

Customer Sample Duplicate Results for Sample # 90.17401

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17401

none

Matrix Spike Results for Sample # 90.17401

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	71432	50.	33.	UG	12/11/90		Benzene
APCO-1	90.17401	108907	50.	38.	UG	12/11/90		Chlorobenzene
APCO-1	90.17401	75354	< 50.	5.	UG	12/11/90		1,1-Dichloroethene
APCO-1	90.17401	108883	50.	37.	UG	12/11/90		Toluene
APCO-1	90.17401	79016	50.	32.	UG	12/11/90		Trichloroethene

Matrix Spike Duplicate Results for Sample # 90.17401

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	71432	50.	33.	UG	12/11/90		Benzene
APCO-1	90.17401	108907	50.	41.	UG	12/11/90		Chlorobenzene
APCO-1	90.17401	75354	< 50.	5.	UG	12/11/90		1,1-Dichloroethene
APCO-1	90.17401	108883	50.	39.	UG	12/11/90		Toluene
APCO-1	90.17401	79016	50.	34.	UG	12/11/90		Trichloroethene

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17402

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3	90.17402	67641	< 20.		UG/L	12/11/90		Acetone
LAO-3	90.17402	107028	< 100.		UG/L	12/11/90		Acrolein
LAO-3	90.17402	107131	< 100.		UG/L	12/11/90		Acrylonitrile
LAO-3	90.17402	71432	< 5.		UG/L	12/11/90		Benzene
LAO-3	90.17402	108861	< 5.		UG/L	12/11/90		Bromobenzene
LAO-3	90.17402	74975	< 5.		UG/L	12/11/90		Bromochloromethane
LAO-3	90.17402	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
LAO-3	90.17402	75252	< 5.		UG/L	12/11/90		Bromoform
LAO-3	90.17402	74839	< 10.		UG/L	12/11/90		Bromomethane
LAO-3	90.17402	78933	< 20.		UG/L	12/11/90		2-Butanone
LAO-3	90.17402	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
LAO-3	90.17402	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
LAO-3	90.17402	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
LAO-3	90.17402	75150	35.	10.5	UG/L	12/11/90		Carbon disulfide
LAO-3	90.17402	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
LAO-3	90.17402	108907	< 5.		UG/L	12/11/90		Chlorobenzene
LAO-3	90.17402	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
LAO-3	90.17402	75003	< 10.		UG/L	12/11/90		Chloroethane
LAO-3	90.17402	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
LAO-3	90.17402	67663	< 5.		UG/L	12/11/90		Chloroform
LAO-3	90.17402	74873	< 10.		UG/L	12/11/90		Chloromethane
LAO-3	90.17402	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

LAO-3	90.17402	106434	< 5.	UG/L	12/11/90	p-Chlorotoluene
LAO-3	90.17402	96128	< 10.	UG/L	12/11/90	1,2-Dibromo-3-chloropropane
LAO-3	90.17402	106934	< 5.	UG/L	12/11/90	1,2-Dibromoethane
LAO-3	90.17402	74953	< 5.	UG/L	12/11/90	Dibromomethane
LAO-3	90.17402	95501	< 5.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-3	90.17402	541731	< 5.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-3	90.17402	106467	< 5.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-3	90.17402	75718	< 10.	UG/L	12/11/90	Dichlorodifluoromethane
LAO-3	90.17402	75343	< 5.	UG/L	12/11/90	1,1-Dichloroethane
LAO-3	90.17402	107062	< 5.	UG/L	12/11/90	1,2-Dichloroethane
LAO-3	90.17402	75354	< 5.	UG/L	12/11/90	1,1-Dichloroethene
LAO-3	90.17402	156605	< 5.	UG/L	12/11/90	trans-1,2-Dichloroethene
LAO-3	90.17402	156592	< 5.	UG/L	12/11/90	cis-1,2-Dichloroethylene
LAO-3	90.17402	78875	< 5.	UG/L	12/11/90	1,2-Dichloropropane
LAO-3	90.17402	142289	< 5.	UG/L	12/11/90	1,3-Dichloropropane
LAO-3	90.17402	594207	< 5.	UG/L	12/11/90	2,2-Dichloropropane
LAO-3	90.17402	563586	< 5.	UG/L	12/11/90	1,1-Dichloropropene
LAO-3	90.17402	10061015	< 5.	UG/L	12/11/90	cis-1,3-Dichloropropene
LAO-3	90.17402	10061026	< 5.	UG/L	12/11/90	trans-1,3-Dichloropropene
LAO-3	90.17402	100414	< 5.	UG/L	12/11/90	Ethylbenzene
LAO-3	90.17402	87683	< 5.	UG/L	12/11/90	Hexachlorobutadiene
LAO-3	90.17402	591786	< 20.	UG/L	12/11/90	2-Hexanone
LAO-3	90.17402	98828	< 5.	UG/L	12/11/90	Isopropylbenzene
LAO-3	90.17402	99876	< 5.	UG/L	12/11/90	4-Isopropyltoluene
LAO-3	90.17402	74884	< 5.	UG/L	12/11/90	Methyl iodide
LAO-3	90.17402	108101	< 20.	UG/L	12/11/90	4-Methyl-2-pentanone
LAO-3	90.17402	75092	< 5.	UG/L	12/11/90	Methylene chloride
LAO-3	90.17402	91203	< 5.	UG/L	12/11/90	Naphthalene
LAO-3	90.17402	103651	< 5.	UG/L	12/11/90	Propylbenzene
LAO-3	90.17402	100425	< 5.	UG/L	12/11/90	Styrene
LAO-3	90.17402	630206	< 5.	UG/L	12/11/90	1,1,1,2-Tetrachloroethane
LAO-3	90.17402	79345	< 5.	UG/L	12/11/90	1,1,2,2-Tetrachloroethane
LAO-3	90.17402	127184	< 5.	UG/L	12/11/90	Tetrachloroethylene
LAO-3	90.17402	108883	< 5.	UG/L	12/11/90	Toluene
LAO-3	90.17402	76131	< 5.	UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
LAO-3	90.17402	87616	< 5.	UG/L	12/11/90	1,2,3-Trichlorobenzene
LAO-3	90.17402	120821	< 5.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-3	90.17402	71556	< 5.	UG/L	12/11/90	1,1,1-Trichloroethane
LAO-3	90.17402	79005	< 5.	UG/L	12/11/90	1,1,2-Trichloroethane
LAO-3	90.17402	79016	< 5.	UG/L	12/11/90	Trichloroethene
LAO-3	90.17402	75694	< 5.	UG/L	12/11/90	Trichlorofluoromethane
LAO-3	90.17402	96184	< 5.	UG/L	12/11/90	1,2,3-Trichloropropane
LAO-3	90.17402	95636	< 5.	UG/L	12/11/90	1,2,4-Trimethylbenzene
LAO-3	90.17402	108678	< 5.	UG/L	12/11/90	1,3,5-Trimethylbenzene
LAO-3	90.17402	108054	< 10.	UG/L	12/11/90	Vinyl acetate
LAO-3	90.17402	75014	< 10.	UG/L	12/11/90	Vinyl chloride

LAO-3	90.17402	1330207	< 5.	UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17402

none

Customer Sample Duplicate Results for Sample # 90.17402

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17402

none

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17403

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3A	90.17403	67641	< 20.		UG/L	12/11/90		Acetone
LAO-3A	90.17403	107028	< 100.		UG/L	12/11/90		Acrolein
LAO-3A	90.17403	107131	< 100.		UG/L	12/11/90		Acrylonitrile
LAO-3A	90.17403	71432	< 5.		UG/L	12/11/90		Benzene
LAO-3A	90.17403	108861	< 5.		UG/L	12/11/90		Bromobenzene
LAO-3A	90.17403	74975	< 5.		UG/L	12/11/90		Bromochloromethane
LAO-3A	90.17403	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
LAO-3A	90.17403	75252	< 5.		UG/L	12/11/90		Bromoform
LAO-3A	90.17403	74839	< 10.		UG/L	12/11/90		Bromomethane
LAO-3A	90.17403	78933	< 20.		UG/L	12/11/90		2-Butanone
LAO-3A	90.17403	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
LAO-3A	90.17403	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
LAO-3A	90.17403	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
LAO-3A	90.17403	75150	34.	10.2	UG/L	12/11/90		Carbon disulfide
LAO-3A	90.17403	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
LAO-3A	90.17403	108907	< 5.		UG/L	12/11/90		Chlorobenzene
LAO-3A	90.17403	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
LAO-3A	90.17403	75003	< 10.		UG/L	12/11/90		Chloroethane
LAO-3A	90.17403	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
LAO-3A	90.17403	67663	< 5.		UG/L	12/11/90		Chloroform
LAO-3A	90.17403	74873	< 10.		UG/L	12/11/90		Chloromethane
LAO-3A	90.17403	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

LAO-3A	90.17403	106434	< 5.	UG/L	12/11/90	p-Chlorotoluene
LAO-3A	90.17403	96128	< 10.	UG/L	12/11/90	1,2-Dibromo-3-chloropropane
LAO-3A	90.17403	106934	< 5.	UG/L	12/11/90	1,2-Dibromoethane
LAO-3A	90.17403	74953	< 5.	UG/L	12/11/90	Dibromomethane
LAO-3A	90.17403	95501	< 5.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-3A	90.17403	541731	< 5.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-3A	90.17403	106467	< 5.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-3A	90.17403	75718	< 10.	UG/L	12/11/90	Dichlorodifluoromethane
LAO-3A	90.17403	75343	< 5.	UG/L	12/11/90	1,1-Dichloroethane
LAO-3A	90.17403	107062	< 5.	UG/L	12/11/90	1,2-Dichloroethane
LAO-3A	90.17403	75354	< 5.	UG/L	12/11/90	1,1-Dichloroethene
LAO-3A	90.17403	156605	< 5.	UG/L	12/11/90	trans-1,2-Dichloroethene
LAO-3A	90.17403	156592	< 5.	UG/L	12/11/90	cis-1,2-Dichloroethylene
LAO-3A	90.17403	78875	< 5.	UG/L	12/11/90	1,2-Dichloropropane
LAO-3A	90.17403	142289	< 5.	UG/L	12/11/90	1,3-Dichloropropane
LAO-3A	90.17403	594207	< 5.	UG/L	12/11/90	2,2-Dichloropropane
LAO-3A	90.17403	563586	< 5.	UG/L	12/11/90	1,1-Dichloropropene
LAO-3A	90.17403	10061015	< 5.	UG/L	12/11/90	cis-1,3-Dichloropropene
LAO-3A	90.17403	10061026	< 5.	UG/L	12/11/90	trans-1,3-Dichloropropene
LAO-3A	90.17403	100414	< 5.	UG/L	12/11/90	Ethylbenzene
LAO-3A	90.17403	87683	< 5.	UG/L	12/11/90	Hexachlorobutadiene
LAO-3A	90.17403	591786	< 20.	UG/L	12/11/90	2-Hexanone
LAO-3A	90.17403	98828	< 5.	UG/L	12/11/90	Isopropylbenzene
LAO-3A	90.17403	99876	< 5.	UG/L	12/11/90	4-Isopropyltoluene
LAO-3A	90.17403	74884	< 5.	UG/L	12/11/90	Methyl iodide
LAO-3A	90.17403	108101	< 20.	UG/L	12/11/90	4-Methyl-2-pentanone
LAO-3A	90.17403	75092	< 5.	UG/L	12/11/90	Methylene chloride
LAO-3A	90.17403	91203	< 5.	UG/L	12/11/90	Naphthalene
LAO-3A	90.17403	103651	< 5.	UG/L	12/11/90	Propylbenzene
LAO-3A	90.17403	100425	< 5.	UG/L	12/11/90	Styrene
LAO-3A	90.17403	630206	< 5.	UG/L	12/11/90	1,1,1,2-Tetrachloroethane
LAO-3A	90.17403	79345	< 5.	UG/L	12/11/90	1,1,2,2-Tetrachloroethane
LAO-3A	90.17403	127184	< 5.	UG/L	12/11/90	Tetrachloroethylene
LAO-3A	90.17403	108883	< 5.	UG/L	12/11/90	Toluene
LAO-3A	90.17403	76131	< 5.	UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
LAO-3A	90.17403	87616	< 5.	UG/L	12/11/90	1,2,3-Trichlorobenzene
LAO-3A	90.17403	120821	< 5.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-3A	90.17403	71556	< 5.	UG/L	12/11/90	1,1,1-Trichloroethane
LAO-3A	90.17403	79005	< 5.	UG/L	12/11/90	1,1,2-Trichloroethane
LAO-3A	90.17403	79016	< 5.	UG/L	12/11/90	Trichloroethene
LAO-3A	90.17403	75694	< 5.	UG/L	12/11/90	Trichlorofluoromethane
LAO-3A	90.17403	96184	< 5.	UG/L	12/11/90	1,2,3-Trichloropropane
LAO-3A	90.17403	95636	< 5.	UG/L	12/11/90	1,2,4-Trimethylbenzene
LAO-3A	90.17403	108678	< 5.	UG/L	12/11/90	1,3,5-Trimethylbenzene
LAO-3A	90.17403	108054	< 10.	UG/L	12/11/90	Vinyl acetate
LAO-3A	90.17403	75014	< 10.	UG/L	12/11/90	Vinyl chloride

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17404

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5	90.17404	67641	< 20.		UG/L	12/11/90		Acetone
LAO-4.5	90.17404	107028	< 100.		UG/L	12/11/90		Acrolein
LAO-4.5	90.17404	107131	< 100.		UG/L	12/11/90		Acrylonitrile
LAO-4.5	90.17404	71432	< 5.		UG/L	12/11/90		Benzene
LAO-4.5	90.17404	108861	< 5.		UG/L	12/11/90		Bromobenzene
LAO-4.5	90.17404	74975	< 5.		UG/L	12/11/90		Bromochloromethane
LAO-4.5	90.17404	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
LAO-4.5	90.17404	75252	< 5.		UG/L	12/11/90		Bromoform
LAO-4.5	90.17404	74839	< 10.		UG/L	12/11/90		Bromomethane
LAO-4.5	90.17404	78933	< 20.		UG/L	12/11/90		2-Butanone
LAO-4.5	90.17404	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
LAO-4.5	90.17404	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
LAO-4.5	90.17404	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
LAO-4.5	90.17404	75150	35.	10.5	UG/L	12/11/90		Carbon disulfide
LAO-4.5	90.17404	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
LAO-4.5	90.17404	108907	< 5.		UG/L	12/11/90		Chlorobenzene
LAO-4.5	90.17404	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
LAO-4.5	90.17404	75003	< 10.		UG/L	12/11/90		Chloroethane
LAO-4.5	90.17404	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
LAO-4.5	90.17404	67663	< 5.		UG/L	12/11/90		Chloroform
LAO-4.5	90.17404	74873	< 10.		UG/L	12/11/90		Chloromethane
LAO-4.5	90.17404	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

LAO-3A	90.17403	1330207	< 5.	UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17403

none

Customer Sample Duplicate Results for Sample # 90.17403

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17403

none

LAO-4.5	90.17404	106434	< 5.		UG/L	12/11/90	p-Chlorotoluene
LAO-4.5	90.17404	96128	< 10.		UG/L	12/11/90	1,2-Dibromo-3-chloropropane
LAO-4.5	90.17404	106934	< 5.		UG/L	12/11/90	1,2-Dibromoethane
LAO-4.5	90.17404	74953	< 5.		UG/L	12/11/90	Dibromomethane
LAO-4.5	90.17404	95501	< 5.		UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-4.5	90.17404	541731	< 5.		UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-4.5	90.17404	106467	< 5.		UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-4.5	90.17404	75718	< 10.		UG/L	12/11/90	Dichlorodifluoromethane
LAO-4.5	90.17404	75343	< 5.		UG/L	12/11/90	1,1-Dichloroethane
LAO-4.5	90.17404	107062	< 5.		UG/L	12/11/90	1,2-Dichloroethane
LAO-4.5	90.17404	75354	< 5.		UG/L	12/11/90	1,1-Dichloroethene
LAO-4.5	90.17404	156605	< 5.		UG/L	12/11/90	trans-1,2-Dichloroethene
LAO-4.5	90.17404	156592	< 5.		UG/L	12/11/90	cis-1,2-Dichloroethylene
LAO-4.5	90.17404	78875	< 5.		UG/L	12/11/90	1,2-Dichloropropane
LAO-4.5	90.17404	142289	< 5.		UG/L	12/11/90	1,3-Dichloropropane
LAO-4.5	90.17404	594207	< 5.		UG/L	12/11/90	2,2-Dichloropropane
LAO-4.5	90.17404	563586	< 5.		UG/L	12/11/90	1,1-Dichloropropene
LAO-4.5	90.17404	10061015	< 5.		UG/L	12/11/90	cis-1,3-Dichloropropene
LAO-4.5	90.17404	10061026	< 5.		UG/L	12/11/90	trans-1,3-Dichloropropene
LAO-4.5	90.17404	100414	< 5.		UG/L	12/11/90	Ethylbenzene
LAO-4.5	90.17404	87683	< 5.		UG/L	12/11/90	Hexachlorobutadiene
LAO-4.5	90.17404	591786	< 20.		UG/L	12/11/90	2-Hexanone
LAO-4.5	90.17404	98828	< 5.		UG/L	12/11/90	Isopropylbenzene
LAO-4.5	90.17404	99876	< 5.		UG/L	12/11/90	4-Isopropyltoluene
LAO-4.5	90.17404	74884	< 5.		UG/L	12/11/90	Methyl iodide
LAO-4.5	90.17404	108101	< 20.		UG/L	12/11/90	4-Methyl-2-pentanone
LAO-4.5	90.17404	75092	13.	3.9	UG/L	12/11/90	Methylene chloride
LAO-4.5	90.17404	91203	< 5.		UG/L	12/11/90	Naphthalene
LAO-4.5	90.17404	103651	< 5.		UG/L	12/11/90	Propylbenzene
LAO-4.5	90.17404	100425	< 5.		UG/L	12/11/90	Styrene
LAO-4.5	90.17404	630206	< 5.		UG/L	12/11/90	1,1,1,2-Tetrachloroethane
LAO-4.5	90.17404	79345	< 5.		UG/L	12/11/90	1,1,2,2-Tetrachloroethane
LAO-4.5	90.17404	127184	< 5.		UG/L	12/11/90	Tetrachloroethylene
LAO-4.5	90.17404	108883	< 5.		UG/L	12/11/90	Toluene
LAO-4.5	90.17404	76131	< 5.		UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
LAO-4.5	90.17404	87616	< 5.		UG/L	12/11/90	1,2,3-Trichlorobenzene
LAO-4.5	90.17404	120821	< 5.		UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-4.5	90.17404	71556	< 5.		UG/L	12/11/90	1,1,1-Trichloroethane
LAO-4.5	90.17404	79005	< 5.		UG/L	12/11/90	1,1,2-Trichloroethane
LAO-4.5	90.17404	79016	< 5.		UG/L	12/11/90	Trichloroethene
LAO-4.5	90.17404	75694	< 5.		UG/L	12/11/90	Trichlorofluoromethane
LAO-4.5	90.17404	96184	< 5.		UG/L	12/11/90	1,2,3-Trichloropropane
LAO-4.5	90.17404	95636	< 5.		UG/L	12/11/90	1,2,4-Trimethylbenzene
LAO-4.5	90.17404	108678	< 5.		UG/L	12/11/90	1,3,5-Trimethylbenzene
LAO-4.5	90.17404	108054	< 10.		UG/L	12/11/90	Vinyl acetate
LAO-4.5	90.17404	75014	< 10.		UG/L	12/11/90	Vinyl chloride

LAO-4.5	90.17404	1330207	< 5.	UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17404

none

Customer Sample Duplicate Results for Sample # 90.17404

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17404

none

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17405

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5C	90.17405	67641	< 20.		UG/L	12/11/90		Acetone
LAO-4.5C	90.17405	107028	< 100.		UG/L	12/11/90		Acrolein
LAO-4.5C	90.17405	107131	< 100.		UG/L	12/11/90		Acrylonitrile
LAO-4.5C	90.17405	71432	< 5.		UG/L	12/11/90		Benzene
LAO-4.5C	90.17405	108861	< 5.		UG/L	12/11/90		Bromobenzene
LAO-4.5C	90.17405	74975	< 5.		UG/L	12/11/90		Bromochloromethane
LAO-4.5C	90.17405	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
LAO-4.5C	90.17405	75252	< 5.		UG/L	12/11/90		Bromoform
LAO-4.5C	90.17405	74839	< 10.		UG/L	12/11/90		Bromomethane
LAO-4.5C	90.17405	78933	< 20.		UG/L	12/11/90		2-Butanone
LAO-4.5C	90.17405	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
LAO-4.5C	90.17405	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
LAO-4.5C	90.17405	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
LAO-4.5C	90.17405	75150	35.	10.5	UG/L	12/11/90		Carbon disulfide
LAO-4.5C	90.17405	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
LAO-4.5C	90.17405	108907	< 5.		UG/L	12/11/90		Chlorobenzene
LAO-4.5C	90.17405	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
LAO-4.5C	90.17405	75003	< 10.		UG/L	12/11/90		Chloroethane
LAO-4.5C	90.17405	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
LAO-4.5C	90.17405	67663	< 5.		UG/L	12/11/90		Chloroform
LAO-4.5C	90.17405	74873	< 10.		UG/L	12/11/90		Chloromethane
LAO-4.5C	90.17405	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

LAO-4.5C	90.17405	106434	< 5.	UG/L	12/11/90	p-Chlorotoluene
LAO-4.5C	90.17405	96128	< 10.	UG/L	12/11/90	1,2-Dibromo-3-chloropropane
LAO-4.5C	90.17405	106934	< 5.	UG/L	12/11/90	1,2-Dibromoethane
LAO-4.5C	90.17405	74953	< 5.	UG/L	12/11/90	Dibromomethane
LAO-4.5C	90.17405	95501	< 5.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-4.5C	90.17405	541731	< 5.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-4.5C	90.17405	106467	< 5.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-4.5C	90.17405	75718	< 10.	UG/L	12/11/90	Dichlorodifluoromethane
LAO-4.5C	90.17405	75343	< 5.	UG/L	12/11/90	1,1-Dichloroethane
LAO-4.5C	90.17405	107062	< 5.	UG/L	12/11/90	1,2-Dichloroethane
LAO-4.5C	90.17405	75354	< 5.	UG/L	12/11/90	1,1-Dichloroethene
LAO-4.5C	90.17405	156605	< 5.	UG/L	12/11/90	trans-1,2-Dichloroethene
LAO-4.5C	90.17405	156592	< 5.	UG/L	12/11/90	cis-1,2-Dichloroethylene
LAO-4.5C	90.17405	78875	< 5.	UG/L	12/11/90	1,2-Dichloropropane
LAO-4.5C	90.17405	142289	< 5.	UG/L	12/11/90	1,3-Dichloropropane
LAO-4.5C	90.17405	594207	< 5.	UG/L	12/11/90	2,2-Dichloropropane
LAO-4.5C	90.17405	563586	< 5.	UG/L	12/11/90	1,1-Dichloropropene
LAO-4.5C	90.17405	10061015	< 5.	UG/L	12/11/90	cis-1,3-Dichloropropene
LAO-4.5C	90.17405	10061026	< 5.	UG/L	12/11/90	trans-1,3-Dichloropropene
LAO-4.5C	90.17405	100414	< 5.	UG/L	12/11/90	Ethylbenzene
LAO-4.5C	90.17405	87683	< 5.	UG/L	12/11/90	Hexachlorobutadiene
LAO-4.5C	90.17405	591786	< 20.	UG/L	12/11/90	2-Hexanone
LAO-4.5C	90.17405	98828	< 5.	UG/L	12/11/90	Isopropylbenzene
LAO-4.5C	90.17405	99876	< 5.	UG/L	12/11/90	4-Isopropyltoluene
LAO-4.5C	90.17405	74884	< 5.	UG/L	12/11/90	Methyl iodide
LAO-4.5C	90.17405	108101	< 20.	UG/L	12/11/90	4-Methyl-2-pentanone
LAO-4.5C	90.17405	75092	< 5.	UG/L	12/11/90	Methylene chloride
LAO-4.5C	90.17405	91203	< 5.	UG/L	12/11/90	Naphthalene
LAO-4.5C	90.17405	103651	< 5.	UG/L	12/11/90	Propylbenzene
LAO-4.5C	90.17405	100425	< 5.	UG/L	12/11/90	Styrene
LAO-4.5C	90.17405	630206	< 5.	UG/L	12/11/90	1,1,1,2-Tetrachloroethane
LAO-4.5C	90.17405	79345	< 5.	UG/L	12/11/90	1,1,2,2-Tetrachloroethane
LAO-4.5C	90.17405	127184	< 5.	UG/L	12/11/90	Tetrachloroethylene
LAO-4.5C	90.17405	108883	< 5.	UG/L	12/11/90	Toluene
LAO-4.5C	90.17405	76131	< 5.	UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
LAO-4.5C	90.17405	87616	< 5.	UG/L	12/11/90	1,2,3-Trichlorobenzene
LAO-4.5C	90.17405	120821	< 5.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-4.5C	90.17405	71556	< 5.	UG/L	12/11/90	1,1,1-Trichloroethane
LAO-4.5C	90.17405	79005	< 5.	UG/L	12/11/90	1,1,2-Trichloroethane
LAO-4.5C	90.17405	79016	< 5.	UG/L	12/11/90	Trichloroethene
LAO-4.5C	90.17405	75694	< 5.	UG/L	12/11/90	Trichlorofluoromethane
LAO-4.5C	90.17405	96184	< 5.	UG/L	12/11/90	1,2,3-Trichloropropane
LAO-4.5C	90.17405	95636	< 5.	UG/L	12/11/90	1,2,4-Trimethylbenzene
LAO-4.5C	90.17405	108678	< 5.	UG/L	12/11/90	1,3,5-Trimethylbenzene
LAO-4.5C	90.17405	108054	< 10.	UG/L	12/11/90	Vinyl acetate
LAO-4.5C	90.17405	75014	< 10.	UG/L	12/11/90	Vinyl chloride

LAO-4.5C	90.17405	1330207	< 5.	UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17405

none

Customer Sample Duplicate Results for Sample # 90.17405

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17405

none

REPORT NUMBER: 9104

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17411

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
TRIP BLANK	90.17411	67641	< 20.		UG/L	12/11/90		Acetone
TRIP BLANK	90.17411	107028	< 100.		UG/L	12/11/90		Acrolein
TRIP BLANK	90.17411	107131	< 100.		UG/L	12/11/90		Acrylonitrile
TRIP BLANK	90.17411	71432	< 5.		UG/L	12/11/90		Benzene
TRIP BLANK	90.17411	108861	< 5.		UG/L	12/11/90		Bromobenzene
TRIP BLANK	90.17411	74975	< 5.		UG/L	12/11/90		Bromochloromethane
TRIP BLANK	90.17411	75274	< 5.		UG/L	12/11/90		Bromodichloromethane
TRIP BLANK	90.17411	75252	< 5.		UG/L	12/11/90		Bromoform
TRIP BLANK	90.17411	74839	< 10.		UG/L	12/11/90		Bromomethane
TRIP BLANK	90.17411	78933	< 20.		UG/L	12/11/90		2-Butanone
TRIP BLANK	90.17411	104518	< 5.		UG/L	12/11/90		n-Butylbenzene
TRIP BLANK	90.17411	135988	< 5.		UG/L	12/11/90		sec-Butylbenzene
TRIP BLANK	90.17411	98066	< 5.		UG/L	12/11/90		tert-Butylbenzene
TRIP BLANK	90.17411	75150	35.	10.5	UG/L	12/11/90		Carbon disulfide
TRIP BLANK	90.17411	56235	< 5.		UG/L	12/11/90		Carbon tetrachloride
TRIP BLANK	90.17411	108907	< 5.		UG/L	12/11/90		Chlorobenzene
TRIP BLANK	90.17411	124481	< 5.		UG/L	12/11/90		Chlorodibromomethane
TRIP BLANK	90.17411	75003	< 10.		UG/L	12/11/90		Chloroethane
TRIP BLANK	90.17411	110758	< 50.		UG/L	12/11/90		2-Chloroethylvinyl ether
TRIP BLANK	90.17411	67663	< 5.		UG/L	12/11/90		Chloroform
TRIP BLANK	90.17411	74873	< 10.		UG/L	12/11/90		Chloromethane
TRIP BLANK	90.17411	95498	< 5.		UG/L	12/11/90		o-Chlorotoluene

TRIP BLANK	90.17411	106434	< 5.		UG/L	12/11/90	p-Chlorotoluene
TRIP BLANK	90.17411	96128	< 10.		UG/L	12/11/90	1,2-Dibromo-3-chloropropane
TRIP BLANK	90.17411	106934	< 5.		UG/L	12/11/90	1,2-Dibromoethane
TRIP BLANK	90.17411	74953	< 5.		UG/L	12/11/90	Dibromomethane
TRIP BLANK	90.17411	95501	< 5.		UG/L	12/11/90	o-Dichlorobenzene (1,2)
TRIP BLANK	90.17411	541731	< 5.		UG/L	12/11/90	m-Dichlorobenzene (1,3)
TRIP BLANK	90.17411	106467	< 5.		UG/L	12/11/90	p-Dichlorobenzene (1,4)
TRIP BLANK	90.17411	75718	< 10.		UG/L	12/11/90	Dichlorodifluoromethane
TRIP BLANK	90.17411	75343	< 5.		UG/L	12/11/90	1,1-Dichloroethane
TRIP BLANK	90.17411	107062	< 5.		UG/L	12/11/90	1,2-Dichloroethane
TRIP BLANK	90.17411	75354	< 5.		UG/L	12/11/90	1,1-Dichloroethene
TRIP BLANK	90.17411	156605	< 5.		UG/L	12/11/90	trans-1,2-Dichloroethene
TRIP BLANK	90.17411	156592	< 5.		UG/L	12/11/90	cis-1,2-Dichloroethylene
TRIP BLANK	90.17411	78875	< 5.		UG/L	12/11/90	1,2-Dichloropropane
TRIP BLANK	90.17411	142289	< 5.		UG/L	12/11/90	1,3-Dichloropropane
TRIP BLANK	90.17411	594207	< 5.		UG/L	12/11/90	2,2-Dichloropropane
TRIP BLANK	90.17411	563586	< 5.		UG/L	12/11/90	1,1-Dichloropropene
TRIP BLANK	90.17411	10061015	< 5.		UG/L	12/11/90	cis-1,3-Dichloropropene
TRIP BLANK	90.17411	10061026	< 5.		UG/L	12/11/90	trans-1,3-Dichloropropene
TRIP BLANK	90.17411	100414	< 5.		UG/L	12/11/90	Ethylbenzene
TRIP BLANK	90.17411	87683	< 5.		UG/L	12/11/90	Hexachlorobutadiene
TRIP BLANK	90.17411	591786	< 20.		UG/L	12/11/90	2-Hexanone
TRIP BLANK	90.17411	98828	< 5.		UG/L	12/11/90	Isopropylbenzene
TRIP BLANK	90.17411	99876	< 5.		UG/L	12/11/90	4-Isopropyltoluene
TRIP BLANK	90.17411	74884	< 5.		UG/L	12/11/90	Methyl iodide
TRIP BLANK	90.17411	108101	< 20.		UG/L	12/11/90	4-Methyl-2-pentanone
TRIP BLANK	90.17411	75092	6.	1.8	UG/L	12/11/90	Methylene chloride
TRIP BLANK	90.17411	91203	< 5.		UG/L	12/11/90	Naphthalene
TRIP BLANK	90.17411	103651	< 5.		UG/L	12/11/90	Propylbenzene
TRIP BLANK	90.17411	100425	< 5.		UG/L	12/11/90	Styrene
TRIP BLANK	90.17411	630206	< 5.		UG/L	12/11/90	1,1,1,2-Tetrachloroethane
TRIP BLANK	90.17411	79345	< 5.		UG/L	12/11/90	1,1,2,2-Tetrachloroethane
TRIP BLANK	90.17411	127184	< 5.		UG/L	12/11/90	Tetrachloroethylene
TRIP BLANK	90.17411	108883	< 5.		UG/L	12/11/90	Toluene
TRIP BLANK	90.17411	76131	< 5.		UG/L	12/11/90	1,1,2-Trichloro-1,2,2-trifluoroethane
TRIP BLANK	90.17411	87616	< 5.		UG/L	12/11/90	1,2,3-Trichlorobenzene
TRIP BLANK	90.17411	120821	< 5.		UG/L	12/11/90	1,2,4-Trichlorobenzene
TRIP BLANK	90.17411	71556	< 5.		UG/L	12/11/90	1,1,1-Trichloroethane
TRIP BLANK	90.17411	79005	< 5.		UG/L	12/11/90	1,1,2-Trichloroethane
TRIP BLANK	90.17411	79016	< 5.		UG/L	12/11/90	Trichloroethene
TRIP BLANK	90.17411	75694	< 5.		UG/L	12/11/90	Trichlorofluoromethane
TRIP BLANK	90.17411	96184	< 5.		UG/L	12/11/90	1,2,3-Trichloropropane
TRIP BLANK	90.17411	95636	< 5.		UG/L	12/11/90	1,2,4-Trimethylbenzene
TRIP BLANK	90.17411	108678	< 5.		UG/L	12/11/90	1,3,5-Trimethylbenzene
TRIP BLANK	90.17411	108054	< 10.		UG/L	12/11/90	Vinyl acetate
TRIP BLANK	90.17411	75014	< 10.		UG/L	12/11/90	Vinyl chloride

TRIP BLANK	90.17411	1330207	< 5.	UG/L	12/11/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17411

none

Customer Sample Duplicate Results for Sample # 90.17411

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17411

none

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REPORT NUMBER: 9104 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA VOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Toney Begay PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUN
00.20226	90.17399	67641	< 20.		UG/L	0.0		12/11/90	UNDER CONTROL	Acetone
00.20226	90.17399	107028	< 100.		UG/L	0.0		12/11/90	UNDER CONTROL	Acrolein
00.20226	90.17399	107131	< 100.		UG/L	0.0		12/11/90	UNDER CONTROL	Acrylonitrile
00.20226	90.17399	71432	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzene
00.20226	90.17399	108861	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromobenzene
00.20226	90.17399	74975	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromochloromethane
00.20226	90.17399	75274	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromodichloromethane
00.20226	90.17399	75252	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromoform
00.20226	90.17399	74839	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromomethane
00.20226	90.17399	78933	< 20.		UG/L	0.0		12/11/90	UNDER CONTROL	2-Butanone
00.20226	90.17399	104518	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	n-Butylbenzene
00.20226	90.17399	135988	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	sec-Butylbenzene
00.20226	90.17399	98066	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	tert-Butylbenzene
00.20226	90.17399	75150	35.	10.5	UG/L	0.0		12/11/90	OUT OF CONTROL	Carbon disulfide
00.20226	90.17399	56235	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Carbon tetrachloride
00.20226	90.17399	108907	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Chlorobenzene
00.20226	90.17399	124481	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Chlorodibromomethane
00.20226	90.17399	75003	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloroethane
00.20226	90.17399	110758	< 50.		UG/L	0.0		12/11/90	UNDER CONTROL	2-Chloroethylvinyl ether
00.20226	90.17399	67663	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloroform
00.20226	90.17399	74873	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloromethane
00.20226	90.17399	95498	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Chlorotoluene
00.20226	90.17399	106434	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	p-Chlorotoluene
00.20226	90.17399	96128	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dibromo-3-chloropropane
00.20226	90.17399	106934	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dibromoethane
00.20226	90.17399	74953	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Dibromomethane
00.20226	90.17399	95501	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
00.20226	90.17399	541731	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
00.20226	90.17399	106467	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
00.20226	90.17399	75718	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Dichlorodifluoromethane
00.20226	90.17399	75343	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1-Dichloroethane
00.20226	90.17399	107062	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dichloroethane
00.20226	90.17399	75354	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1-Dichloroethene

00.20226	90.17399	156605	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	trans-1,2-Dichloroethene
00.20226	90.17399	156592	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	cis-1,2-Dichloroethylene
00.20226	90.17399	78875	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,2-Dichloropropane
00.20226	90.17399	142289	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,3-Dichloropropane
00.20226	90.17399	594207	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	2,2-Dichloropropane
00.20226	90.17399	563586	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1-Dichloropropene
00.20226	90.17399	10061015	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	cis-1,3-Dichloropropene
00.20226	90.17399	10061026	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	trans-1,3-Dichloropropene
00.20226	90.17399	100414	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Ethylbenzene
00.20226	90.17399	87683	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Hexachlorobutadiene
00.20226	90.17399	591786	< 20.	UG/L	0.0	12/11/90	UNDER CONTROL	2-Hexanone
00.20226	90.17399	98828	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Isopropylbenzene
00.20226	90.17399	99876	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	4-Isopropyltoluene
00.20226	90.17399	74884	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Methyl iodide
00.20226	90.17399	108101	< 20.	UG/L	0.0	12/11/90	UNDER CONTROL	4-Methyl-2-pentanone
00.20226	90.17399	75092	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Methylene chloride
00.20226	90.17399	91203	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Naphthalene
00.20226	90.17399	103651	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Propylbenzene
00.20226	90.17399	100425	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Styrene
00.20226	90.17399	630206	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1,1,2-Tetrachloroethane
00.20226	90.17399	79345	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1,2,2-Tetrachloroethane
00.20226	90.17399	127184	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Tetrachloroethylene
00.20226	90.17399	108883	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Toluene
00.20226	90.17399	76131	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1,2-Trichloro-1,2,2-trifluoroet
00.20226	90.17399	87616	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,2,3-Trichlorobenzene
00.20226	90.17399	120821	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,2,4-Trichlorobenzene
00.20226	90.17399	71556	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1,1-Trichloroethane
00.20226	90.17399	79005	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,1,2-Trichloroethane
00.20226	90.17399	79016	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Trichloroethene
00.20226	90.17399	75694	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Trichlorofluoromethane
00.20226	90.17399	96184	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,2,3-Trichloropropane
00.20226	90.17399	95636	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,2,4-Trimethylbenzene
00.20226	90.17399	108678	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	1,3,5-Trimethylbenzene
00.20226	90.17399	108054	< 10.	UG/L	0.0	12/11/90	UNDER CONTROL	Vinyl acetate
00.20226	90.17399	75014	< 10.	UG/L	0.0	12/11/90	UNDER CONTROL	Vinyl chloride
00.20226	90.17399	1330207	< 5.	UG/L	0.0	12/11/90	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)

Blank Spike Results

none

Blank Spike Duplicate Results

none

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Blind QC Results, Sample # 90.17391

Date Collected: 9/12/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 9/14/90

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17391	67641	< 20.		UG/L	0.0		12/11/90	UNDER CONTROL	Acetone
90.17391	107028	< 100.		UG/L	0.0		12/11/90	UNDER CONTROL	Acrolein
90.17391	107131	< 100.		UG/L	0.0		12/11/90	UNDER CONTROL	Acrylonitrile
90.17391	71432	58.	17.4	UG/L	75.	8.	12/11/90	UNDER CONTROL	Benzene
90.17391	108861	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromobenzene
90.17391	74975	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromochloromethane
90.17391	75274	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromodichloromethane
90.17391	75252	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromoform
90.17391	74839	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bromomethane
90.17391	78933	26.	7.8	UG/L	97.	10.	12/11/90	OUT OF CONTROL	2-Butanone
90.17391	104518	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	n-Butylbenzene
90.17391	135988	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	sec-Butylbenzene
90.17391	98066	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	tert-Butylbenzene
90.17391	75150	35.	10.5	UG/L	0.0		12/11/90	OUT OF CONTROL	Carbon disulfide
90.17391	56235	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Carbon tetrachloride
90.17391	108907	49.	14.7	UG/L	76.	8.	12/11/90	UNDER CONTROL	Chlorobenzene
90.17391	124481	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Chlorodibromomethane
90.17391	75003	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloroethane
90.17391	110758	< 50.		UG/L	0.0		12/11/90	UNDER CONTROL	2-Chloroethylvinyl ether
90.17391	67663	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloroform
90.17391	74873	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Chloromethane
90.17391	95498	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Chlorotoluene
90.17391	106434	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	p-Chlorotoluene
90.17391	96128	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dibromo-3-chloropropane
90.17391	106934	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dibromoethane
90.17391	74953	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Dibromomethane
90.17391	95501	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
90.17391	541731	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
90.17391	106467	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
90.17391	75718	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Dichlorodifluoromethane
90.17391	75343	67.	20.1	UG/L	76.	8.	12/11/90	UNDER CONTROL	1,1-Dichloroethane
90.17391	107062	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dichloroethane
90.17391	75354	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1-Dichloroethene
90.17391	156605	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	trans-1,2-Dichloroethene

90.17391	156592	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	cis-1,2-Dichloroethylene
90.17391	78875	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2-Dichloropropane
90.17391	142289	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,3-Dichloropropane
90.17391	594207	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	2,2-Dichloropropane
90.17391	563586	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1-Dichloropropene
90.17391	10061015	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	cis-1,3-Dichloropropene
90.17391	10061026	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	trans-1,3-Dichloropropene
90.17391	100414	50.	15.	UG/L	75.	8.	12/11/90	UNDER CONTROL	Ethylbenzene
90.17391	87683	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Hexachlorobutadiene
90.17391	591786	48.	14.4	UG/L	100.	10.	12/11/90	WARNING 2-3 SIG	2-Hexanone
90.17391	98828	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Isopropylbenzene
90.17391	99876	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Isopropyltoluene
90.17391	74884	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Methyl iodide
90.17391	108101	< 20.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Methyl-2-pentanone
90.17391	75092	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Methylene chloride
90.17391	91203	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Naphthalene
90.17391	103651	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Propylbenzene
90.17391	100425	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Styrene
90.17391	630206	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1,1,2-Tetrachloroethane
90.17391	79345	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1,2,2-Tetrachloroethane
90.17391	127184	51.	15.3	UG/L	82.	8.	12/11/90	UNDER CONTROL	Tetrachloroethylene
90.17391	108883	62.	18.6	UG/L	88.	9.	12/11/90	UNDER CONTROL	Toluene
90.17391	76131	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1,2-Trichloro-1,2,2-trifluoroethane
90.17391	87616	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2,3-Trichlorobenzene
90.17391	120821	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2,4-Trichlorobenzene
90.17391	71556	68.	20.4	UG/L	90.	9.	12/11/90	UNDER CONTROL	1,1,1-Trichloroethane
90.17391	79005	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,1,2-Trichloroethane
90.17391	79016	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Trichloroethene
90.17391	75694	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Trichlorofluoromethane
90.17391	96184	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2,3-Trichloropropane
90.17391	95636	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,2,4-Trimethylbenzene
90.17391	108678	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	1,3,5-Trimethylbenzene
90.17391	108054	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Vinyl acetate
90.17391	75014	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Vinyl chloride
90.17391	1330207	< 5.		UG/L	0.0		12/11/90	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)

SURROGATE RESULTS FOR EPA VOLATILES

Surrogate 1 = 1,2-Dichloroethane d4 (CAS # = 17060070)
Surrogate 2 = Toluene d8 (CAS # = 2037265)
Surrogate 3 = 4-Bromofluorobenzene (CAS # = 460004)

SAMPLE NUMBER	UNITS	Surrogate 1	Surrogate 2	Surrogate 3	COMPLETION DATE
90.17391	%	91.2	88.	100.4	11-Dec-1990

90.17399	%	82.	85.2	92.8	11-Dec-1990
90.17401	%	65.8	84.6	100.	11-Dec-1990
90.17401	%	94.	86.	97.	11-Dec-1990
90.17401	%	91.	85.2	103.6	11-Dec-1990
90.17402	%	91.4	86.4	92.8	11-Dec-1990
90.17403	%	87.6	84.2	97.2	11-Dec-1990
90.17404	%	95.2	85.2	94.2	11-Dec-1990
90.17405	%	91.6	85.2	96.88	11-Dec-1990
90.17411	%	91.2	84.4	97.4	11-Dec-1990

EPA Limits:

Water	%	76 - 114	88 - 110	86 - 115
Soil	%	70 - 121	81 - 117	74 - 121

REPORT NUMBER: 9104

Analyst	Reviewer	Section Leader	QA Officer
JKB	L. Bigham for CRS	[illegible]	NK for MAG
12-12-90	12-12/90	12/12/90	12/12/90
Date	Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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DECEMBER 12, 1990

TO: ALAN STOKER
THRU: CHRIS LEIBMAN
FROM: LAURA TSIAGKOURIS LAT

ATTACHED YOU WILL FIND THE FINAL REPORT FOR SEMIVOLATILE ANALYSIS FOR REQUEST 10773. YOU SHOULD HAVE RECEIVED THE FINAL REPORT FOR THE VOLATILE ANALYSIS. AS PREVIOUSLY MENTION THOSE TARGET VOLATILE COMPOUNDS REPORTED WERE MOST LIKELY DUE TO LABORATORY CONTAMINATION. CARBON DISULFIDE WAS DETECTED IN THE METHOD BLANK AND ALL ASSOCIATED SAMPLES AT SIMILAR LEVELS. METHYLENE CHLORIDE WAS DETECTED IN TWO SAMPLES (90.17404 AND 90.17411). IT SHOULD BE NOTED THAT METHYLENE CHLORIDE WAS DETECTED IN THE METHOD BLANK SLIGHTLY BELOW THE LIMIT OF QUANTITATION (4.66 UG/L). SOME SURROGATE RECOVERIES FOR VOLATILE ANALYSIS DID NOT MEET SW-846 QC CRITERIA. IN ADDITION SOME RECOVERIES FROM THE VOLATILE MATRIX SPIKE SAMPLES WERE LOW. AS PREVIOUSLY STATED SAMPLE 90.17404 DID CONTAIN A HIGH CONCENTRATION OF DIETHYLPHTHALATE. THE QC CRITERIA FOR THE SEMIVOLATILE ANALYSIS WAS MET. PLEASE CONTACT MYSELF OR CAROL AT 7-6934 IF YOU HAVE ANY QUESTIONS.

LOS ALAMOS NATIONAL LABORATORY
HEALTH, SAFETY AND ENVIRONMENT DIVISION
HSE-9
MATRIX SPIKE RECOVERIES FOR SEMI-VOLATILES

		DRY WT/VOL (G or L)		AMOUNT SPIKED (50 OR 100 ug/ml) IN UG/KG or UG/L ACIDS	BASES	LOQ (UG/KG)
REQUEST #:	10773					
NUMBER OF SAMPLES:	9					
SPIKE ID: (STARTS M OR E)	E90.17435	SPIKE	1	100	50	10
SPIKE DUP ID: (STARTS D OR F)	F90.17435	SPIKE-DUP	1	100	50	10
RAW DATA WITH:	10760					
ANALYST:	MWK					

	SPIKE REC.	SPIKE-DUP REC.	SPIKE % REC.	SPIKE-DUP % REC.	RPD	LOW. REC. LIM.	UPP. REC. LIM.	RPD LIM.
PHENOL	63	66	63%	66%	5%	12	89	42
2-CHLOROPHENOL	58	62	58%	62%	7%	27	123	40
1,4-DICHLOROBENZENE	29	30	58%	60%	3%	36	97	28
N-NITROSO-DI-N-PROPYLAMINE	29	30	58%	60%	3%	41	116	38
1,2,4-TRICLOROBENZENE	32	32	64%	64%	0%	39	98	28
4-CHLORO-3-METHYLPHENOL	67	68	67%	68%	1%	23	97	42
ACENAPHTHENE	35	36	70%	72%	3%	46	118	31
4-NITROPHENOL	61	65	61%	65%	6%	10	80	50
2,4-DINITROTOLUENE	36	38	72%	76%	5%	24	96	38
PENTACHLOROPHENOL	69	55	69%	55%	23%	9	103	50
PYRENE	33	36	66%	72%	9%	26	127	31

"*" If % Matrix Recovery is Followed by a "*", it is out of QC Limits.

Reviewed By: VT

LOS ALAMOS NATIONAL LABORATORY
HEALTH, SAFETY AND ENVIRONMENT DIVISION
HSE-9
SURROGATE RECOVERIES FOR SEMI-VOLATILES
IN WATER

REQUEST #: 10773

NUMBER OF SAMPLES: 9
MATRIX W
ANALYST: MWK
Date: 12/09/90

SURROGATE RECOVERIES

SURROGATE
RECOVERIES IN PERCENT (%)

	SAMPLE NUMBERS	TYPE	2-FLUORO-PHENOL	PHENOL (D6)	NITRO-BENZENE (D5)	2-FLUORO-BIPHENYL	2,4,6-TRIBROMO-PHENOL	TERPHENYL (D14)
1	890.17435	BLANK	64	70	72	74	75	68
2	890.17413	SAMPLE	56	65	61	67	76	70
3	890.17435	BLANK SPIKE	59	72	73	67	68	61
4	890.17435	BLANK SP-DU	64	74	77	66	68	68
5	890.17401	SAMPLE	69	74	71	71	76	21 *
6	890.17402	SAMPLE	51	58	64	63	69	20 *
7	890.17403	SAMPLE	64	56	64	64	75	33
8	890.17404	SAMPLE	53	63	65	68	73	49
9	890.17405	SAMPLE	29	58	71	69	24	30 *
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
Average % Surrogate Recovery...			57	66	69	68	67	47
Defined Lower QC Limits (%)....			21	10	35	43	10	33
Defined Upper QC Limits (%)....			100	94	114	116	123	141
Observed Lower QC Limits (%)...			29	56	61	63	24	20
Observed Upper QC Limits (%)...			69	74	77	74	76	70

"*" If % Surrogate Recovery is Followed by a "*", it is out of QC Limits.

Reviewed By: VAT

MWK

REPORT NUMBER: 9114

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17401

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	83329	< 10.		UG/L	12/11/90		Acenaphthene
APCO-1	90.17401	208968	< 10.		UG/L	12/11/90		Acenaphthylene
APCO-1	90.17401	62533	< 10.		UG/L	12/11/90		Aniline
APCO-1	90.17401	120127	< 10.		UG/L	12/11/90		Anthracene
APCO-1	90.17401	103333	< 10.		UG/L	12/11/90		Azobenzene
APCO-1	90.17401	92875	< 10.		UG/L	12/11/90		m-Benzidine
APCO-1	90.17401	56553	< 10.		UG/L	12/11/90		Benzo[a]anthracene
APCO-1	90.17401	50328	< 10.		UG/L	12/11/90		Benzo[a]pyrene
APCO-1	90.17401	205992	< 10.		UG/L	12/11/90		Benzo[b]fluoranthene
APCO-1	90.17401	191242	< 10.		UG/L	12/11/90		Benzo[g,h,i]perylene
APCO-1	90.17401	207089	< 10.		UG/L	12/11/90		Benzo[k]fluoranthene
APCO-1	90.17401	65850	< 10.		UG/L	12/11/90		Benzoic acid
APCO-1	90.17401	100516	< 10.		UG/L	12/11/90		Benzyl alcohol
APCO-1	90.17401	111911	< 10.		UG/L	12/11/90		Bis(2-chloroethoxy)methane
APCO-1	90.17401	111444	< 10.		UG/L	12/11/90		Bis(2-chloroethyl)ether
APCO-1	90.17401	108601	< 10.		UG/L	12/11/90		Bis(2-chloroisopropyl)ether
APCO-1	90.17401	117817	< 10.		UG/L	12/11/90		Bis(2-ethylhexyl)phthalate
APCO-1	90.17401	101553	< 10.		UG/L	12/11/90		4-Bromophenylphenyl ether
APCO-1	90.17401	85687	< 10.		UG/L	12/11/90		Butylbenzyl phthalate
APCO-1	90.17401	59507	< 10.		UG/L	12/11/90		4-Chloro-3-methylphenol
APCO-1	90.17401	106478	< 10.		UG/L	12/11/90		4-Chloroaniline
APCO-1	90.17401	91587	< 10.		UG/L	12/11/90		2-Chloronaphthalene

APCO-1	90.17401	95578	< 10.	UG/L	12/11/90	o-Chlorophenol
APCO-1	90.17401	7005723	< 10.	UG/L	12/11/90	4-Chlorophenylphenyl ether
APCO-1	90.17401	218019	< 10.	UG/L	12/11/90	Chrysene
APCO-1	90.17401	84742	< 10.	UG/L	12/11/90	Di-n-butyl phthalate
APCO-1	90.17401	117840	< 10.	UG/L	12/11/90	Di-n-octyl phthalate
APCO-1	90.17401	53703	< 10.	UG/L	12/11/90	Dibenzo[a,h]anthracene
APCO-1	90.17401	132649	< 10.	UG/L	12/11/90	Dibenzofuran
APCO-1	90.17401	95501	< 10.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
APCO-1	90.17401	541731	< 10.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
APCO-1	90.17401	106467	< 10.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
APCO-1	90.17401	91941	< 10.	UG/L	12/11/90	3,3'-Dichlorobenzidine
APCO-1	90.17401	120832	< 10.	UG/L	12/11/90	2,4-Dichlorophenol
APCO-1	90.17401	84662	< 10.	UG/L	12/11/90	Diethyl phthalate
APCO-1	90.17401	131113	< 10.	UG/L	12/11/90	Dimethyl phthalate
APCO-1	90.17401	105679	< 10.	UG/L	12/11/90	2,4-Dimethylphenol
APCO-1	90.17401	51285	< 10.	UG/L	12/11/90	2,4-Dinitrophenol
APCO-1	90.17401	121142	< 10.	UG/L	12/11/90	2,4-Dinitrotoluene
APCO-1	90.17401	606202	< 10.	UG/L	12/11/90	2,6-Dinitrotoluene
APCO-1	90.17401	206440	< 10.	UG/L	12/11/90	Fluoranthene
APCO-1	90.17401	86737	< 10.	UG/L	12/11/90	Fluorene
APCO-1	90.17401	118741	< 10.	UG/L	12/11/90	Hexachlorobenzene
APCO-1	90.17401	87683	< 10.	UG/L	12/11/90	Hexachlorobutadiene
APCO-1	90.17401	77474	< 10.	UG/L	12/11/90	Hexachlorocyclopentadiene
APCO-1	90.17401	67721	< 10.	UG/L	12/11/90	Hexachloroethane
APCO-1	90.17401	193395	< 10.	UG/L	12/11/90	Indeno[1,2,3-cd]pyrene
APCO-1	90.17401	78591	< 10.	UG/L	12/11/90	Isophorone
APCO-1	90.17401	534521	< 10.	UG/L	12/11/90	2-Methyl-4,6-dinitrophenol
APCO-1	90.17401	91576	< 10.	UG/L	12/11/90	2-Methylnaphthalene
APCO-1	90.17401	95487	< 10.	UG/L	12/11/90	2-Methylphenol
APCO-1	90.17401	106445	< 10.	UG/L	12/11/90	4-Methylphenol
APCO-1	90.17401	91203	< 10.	UG/L	12/11/90	Naphthalene
APCO-1	90.17401	88744	< 10.	UG/L	12/11/90	2-Nitroaniline
APCO-1	90.17401	99092	< 10.	UG/L	12/11/90	3-Nitroaniline
APCO-1	90.17401	100016	< 10.	UG/L	12/11/90	4-Nitroaniline
APCO-1	90.17401	98953	< 10.	UG/L	12/11/90	Nitrobenzene
APCO-1	90.17401	88755	< 10.	UG/L	12/11/90	2-Nitrophenol
APCO-1	90.17401	100027	< 10.	UG/L	12/11/90	4-Nitrophenol
APCO-1	90.17401	621647	< 10.	UG/L	12/11/90	N-Nitrosodi-n-propylamine
APCO-1	90.17401	62759	< 10.	UG/L	12/11/90	N-Nitrosodimethylamine
APCO-1	90.17401	86306	< 10.	UG/L	12/11/90	N-Nitrosodiphenylamine
APCO-1	90.17401	87865	< 10.	UG/L	12/11/90	Pentachlorophenol
APCO-1	90.17401	85018	< 10.	UG/L	12/11/90	Phenanthrene
APCO-1	90.17401	108952	< 10.	UG/L	12/11/90	Phenol
APCO-1	90.17401	129000	< 10.	UG/L	12/11/90	Pyrene
APCO-1	90.17401	120821	< 10.	UG/L	12/11/90	1,2,4-Trichlorobenzene
APCO-1	90.17401	95954	< 10.	UG/L	12/11/90	2,4,5-Trichlorophenol

APCO-1	90.17401	88062		< 10.		UG/L	12/11/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17401

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	60322	TI	520.		UG/L	12/11/90		6-Amino-Hexanoic Acid

Customer Sample Duplicate Results for Sample # 90.17401

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17401

none

REPORT NUMBER: 9114

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17402

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3	90.17402	83329	< 10.		UG/L	12/11/90		Acenaphthene
LAO-3	90.17402	208968	< 10.		UG/L	12/11/90		Acenaphthylene
LAO-3	90.17402	62533	< 10.		UG/L	12/11/90		Aniline
LAO-3	90.17402	120127	< 10.		UG/L	12/11/90		Anthracene
LAO-3	90.17402	103333	< 10.		UG/L	12/11/90		Azobenzene
LAO-3	90.17402	92875	< 10.		UG/L	12/11/90		m-Benzidine
LAO-3	90.17402	56553	< 10.		UG/L	12/11/90		Benzo[a]anthracene
LAO-3	90.17402	50328	< 10.		UG/L	12/11/90		Benzo[a]pyrene
LAO-3	90.17402	205992	< 10.		UG/L	12/11/90		Benzo[b]fluoranthene
LAO-3	90.17402	191242	< 10.		UG/L	12/11/90		Benzo[g,h,i]perylene
LAO-3	90.17402	207089	< 10.		UG/L	12/11/90		Benzo[k]fluoranthene
LAO-3	90.17402	65850	< 10.		UG/L	12/11/90		Benzoic acid
LAO-3	90.17402	100516	< 10.		UG/L	12/11/90		Benzyl alcohol
LAO-3	90.17402	111911	< 10.		UG/L	12/11/90		Bis(2-chloroethoxy)methane
LAO-3	90.17402	111444	< 10.		UG/L	12/11/90		Bis(2-chloroethyl)ether
LAO-3	90.17402	108601	< 10.		UG/L	12/11/90		Bis(2-chloroisopropyl)ether
LAO-3	90.17402	117817	< 10.		UG/L	12/11/90		Bis(2-ethylhexyl)phthalate
LAO-3	90.17402	101553	< 10.		UG/L	12/11/90		4-Bromophenylphenyl ether
LAO-3	90.17402	85687	< 10.		UG/L	12/11/90		Butylbenzyl phthalate
LAO-3	90.17402	59507	< 10.		UG/L	12/11/90		4-Chloro-3-methylphenol
LAO-3	90.17402	106478	< 10.		UG/L	12/11/90		4-Chloroaniline
LAO-3	90.17402	91587	< 10.		UG/L	12/11/90		2-Chloronaphthalene

LAO-3	90.17402	95578	< 10.	UG/L	12/11/90	o-Chlorophenol
LAO-3	90.17402	7005723	< 10.	UG/L	12/11/90	4-Chlorophenylphenyl ether
LAO-3	90.17402	218019	< 10.	UG/L	12/11/90	Chrysene
LAO-3	90.17402	84742	< 10.	UG/L	12/11/90	Di-n-butyl phthalate
LAO-3	90.17402	117840	< 10.	UG/L	12/11/90	Di-n-octyl phthalate
LAO-3	90.17402	53703	< 10.	UG/L	12/11/90	Dibenzo[a,h]anthracene
LAO-3	90.17402	132649	< 10.	UG/L	12/11/90	Dibenzofuran
LAO-3	90.17402	95501	< 10.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-3	90.17402	541731	< 10.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-3	90.17402	106467	< 10.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-3	90.17402	91941	< 10.	UG/L	12/11/90	3,3'-Dichlorobenzidine
LAO-3	90.17402	120832	< 10.	UG/L	12/11/90	2,4-Dichlorophenol
LAO-3	90.17402	84662	< 10.	UG/L	12/11/90	Diethyl phthalate
LAO-3	90.17402	131113	< 10.	UG/L	12/11/90	Dimethyl phthalate
LAO-3	90.17402	105679	< 10.	UG/L	12/11/90	2,4-Dimethylphenol
LAO-3	90.17402	51285	< 10.	UG/L	12/11/90	2,4-Dinitrophenol
LAO-3	90.17402	121142	< 10.	UG/L	12/11/90	2,4-Dinitrotoluene
LAO-3	90.17402	606202	< 10.	UG/L	12/11/90	2,6-Dinitrotoluene
LAO-3	90.17402	206440	< 10.	UG/L	12/11/90	Fluoranthene
LAO-3	90.17402	86737	< 10.	UG/L	12/11/90	Fluorene
LAO-3	90.17402	118741	< 10.	UG/L	12/11/90	Hexachlorobenzene
LAO-3	90.17402	87683	< 10.	UG/L	12/11/90	Hexachlorobutadiene
LAO-3	90.17402	77474	< 10.	UG/L	12/11/90	Hexachlorocyclopentadiene
LAO-3	90.17402	67721	< 10.	UG/L	12/11/90	Hexachloroethane
LAO-3	90.17402	193395	< 10.	UG/L	12/11/90	Indeno[1,2,3-cd]pyrene
LAO-3	90.17402	78591	< 10.	UG/L	12/11/90	Isophorone
LAO-3	90.17402	534521	< 10.	UG/L	12/11/90	2-Methyl-4,6-dinitrophenol
LAO-3	90.17402	91576	< 10.	UG/L	12/11/90	2-Methylnaphthalene
LAO-3	90.17402	95487	< 10.	UG/L	12/11/90	2-Methylphenol
LAO-3	90.17402	106445	< 10.	UG/L	12/11/90	4-Methylphenol
LAO-3	90.17402	91203	< 10.	UG/L	12/11/90	Naphthalene
LAO-3	90.17402	88744	< 10.	UG/L	12/11/90	2-Nitroaniline
LAO-3	90.17402	99092	< 10.	UG/L	12/11/90	3-Nitroaniline
LAO-3	90.17402	100016	< 10.	UG/L	12/11/90	4-Nitroaniline
LAO-3	90.17402	98953	< 10.	UG/L	12/11/90	Nitrobenzene
LAO-3	90.17402	88755	< 10.	UG/L	12/11/90	2-Nitrophenol
LAO-3	90.17402	100027	< 10.	UG/L	12/11/90	4-Nitrophenol
LAO-3	90.17402	621647	< 10.	UG/L	12/11/90	N-Nitrosodi-n-propylamine
LAO-3	90.17402	62759	< 10.	UG/L	12/11/90	N-Nitrosodimethylamine
LAO-3	90.17402	86306	< 10.	UG/L	12/11/90	N-Nitrosodiphenylamine
LAO-3	90.17402	87865	< 10.	UG/L	12/11/90	Pentachlorophenol
LAO-3	90.17402	85018	< 10.	UG/L	12/11/90	Phenanthrene
LAO-3	90.17402	108952	< 10.	UG/L	12/11/90	Phenol
LAO-3	90.17402	129000	< 10.	UG/L	12/11/90	Pyrene
LAO-3	90.17402	120821	< 10.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-3	90.17402	95954	< 10.	UG/L	12/11/90	2,4,5-Trichlorophenol

LAO-3	90.17402	88062		< 10.		UG/L	12/11/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17402

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3	90.17402	175	TI	10.		UG/L	12/11/90		Benzenes, substituted
LAO-3	90.17402	171	TI	60.		UG/L	12/11/90		Oxygenated Hydrocarbon

Customer Sample Duplicate Results for Sample # 90.17402

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17402

none

REPORT NUMBER: 9114

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17403

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3A	90.17403	83329	< 10.		UG/L	12/11/90		Acenaphthene
LAO-3A	90.17403	208968	< 10.		UG/L	12/11/90		Acenaphthylene
LAO-3A	90.17403	62533	< 10.		UG/L	12/11/90		Aniline
LAO-3A	90.17403	120127	< 10.		UG/L	12/11/90		Anthracene
LAO-3A	90.17403	103333	< 10.		UG/L	12/11/90		Azobenzene
LAO-3A	90.17403	92875	< 10.		UG/L	12/11/90		m-Benzidine
LAO-3A	90.17403	56553	< 10.		UG/L	12/11/90		Benzo[a]anthracene
LAO-3A	90.17403	50328	< 10.		UG/L	12/11/90		Benzo[a]pyrene
LAO-3A	90.17403	205992	< 10.		UG/L	12/11/90		Benzo[b]fluoranthene
LAO-3A	90.17403	191242	< 10.		UG/L	12/11/90		Benzo[g,h,i]perylene
LAO-3A	90.17403	207089	< 10.		UG/L	12/11/90		Benzo[k]fluoranthene
LAO-3A	90.17403	65850	< 10.		UG/L	12/11/90		Benzoic acid
LAO-3A	90.17403	100516	< 10.		UG/L	12/11/90		Benzyl alcohol
LAO-3A	90.17403	111911	< 10.		UG/L	12/11/90		Bis(2-chloroethoxy)methane
LAO-3A	90.17403	111444	< 10.		UG/L	12/11/90		Bis(2-chloroethyl)ether
LAO-3A	90.17403	108601	< 10.		UG/L	12/11/90		Bis(2-chloroisopropyl)ether
LAO-3A	90.17403	117817	< 10.		UG/L	12/11/90		Bis(2-ethylhexyl)phthalate
LAO-3A	90.17403	101553	< 10.		UG/L	12/11/90		4-Bromophenylphenyl ether
LAO-3A	90.17403	85687	< 10.		UG/L	12/11/90		Butylbenzyl phthalate
LAO-3A	90.17403	59507	< 10.		UG/L	12/11/90		4-Chloro-3-methylphenol
LAO-3A	90.17403	106478	< 10.		UG/L	12/11/90		4-Chloroaniline
LAO-3A	90.17403	91587	< 10.		UG/L	12/11/90		2-Chloronaphthalene

LAO-3A	90.17403	95578	< 10.	UG/L	12/11/90	o-Chlorophenol
LAO-3A	90.17403	7005723	< 10.	UG/L	12/11/90	4-Chlorophenylphenyl ether
LAO-3A	90.17403	218019	< 10.	UG/L	12/11/90	Chrysene
LAO-3A	90.17403	84742	< 10.	UG/L	12/11/90	Di-n-butyl phthalate
LAO-3A	90.17403	117840	< 10.	UG/L	12/11/90	Di-n-octyl phthalate
LAO-3A	90.17403	53703	< 10.	UG/L	12/11/90	Dibenzo[a,h]anthracene
LAO-3A	90.17403	132649	< 10.	UG/L	12/11/90	Dibenzofuran
LAO-3A	90.17403	95501	< 10.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-3A	90.17403	541731	< 10.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-3A	90.17403	106467	< 10.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-3A	90.17403	91941	< 10.	UG/L	12/11/90	3,3'-Dichlorobenzidine
LAO-3A	90.17403	120832	< 10.	UG/L	12/11/90	2,4-Dichlorophenol
LAO-3A	90.17403	84662	< 10.	UG/L	12/11/90	Diethyl phthalate
LAO-3A	90.17403	131113	< 10.	UG/L	12/11/90	Dimethyl phthalate
LAO-3A	90.17403	105679	< 10.	UG/L	12/11/90	2,4-Dimethylphenol
LAO-3A	90.17403	51285	< 10.	UG/L	12/11/90	2,4-Dinitrophenol
LAO-3A	90.17403	121142	< 10.	UG/L	12/11/90	2,4-Dinitrotoluene
LAO-3A	90.17403	606202	< 10.	UG/L	12/11/90	2,6-Dinitrotoluene
LAO-3A	90.17403	206440	< 10.	UG/L	12/11/90	Fluoranthene
LAO-3A	90.17403	86737	< 10.	UG/L	12/11/90	Fluorene
LAO-3A	90.17403	118741	< 10.	UG/L	12/11/90	Hexachlorobenzene
LAO-3A	90.17403	87683	< 10.	UG/L	12/11/90	Hexachlorobutadiene
LAO-3A	90.17403	77474	< 10.	UG/L	12/11/90	Hexachlorocyclopentadiene
LAO-3A	90.17403	67721	< 10.	UG/L	12/11/90	Hexachloroethane
LAO-3A	90.17403	193395	< 10.	UG/L	12/11/90	Indeno[1,2,3-cd]pyrene
LAO-3A	90.17403	78591	< 10.	UG/L	12/11/90	Isophorone
LAO-3A	90.17403	534521	< 10.	UG/L	12/11/90	2-Methyl-4,6-dinitrophenol
LAO-3A	90.17403	91576	< 10.	UG/L	12/11/90	2-Methylnaphthalene
LAO-3A	90.17403	95487	< 10.	UG/L	12/11/90	2-Methylphenol
LAO-3A	90.17403	106445	< 10.	UG/L	12/11/90	4-Methylphenol
LAO-3A	90.17403	91203	< 10.	UG/L	12/11/90	Naphthalene
LAO-3A	90.17403	88744	< 10.	UG/L	12/11/90	2-Nitroaniline
LAO-3A	90.17403	99092	< 10.	UG/L	12/11/90	3-Nitroaniline
LAO-3A	90.17403	100016	< 10.	UG/L	12/11/90	4-Nitroaniline
LAO-3A	90.17403	98953	< 10.	UG/L	12/11/90	Nitrobenzene
LAO-3A	90.17403	88755	< 10.	UG/L	12/11/90	2-Nitrophenol
LAO-3A	90.17403	100027	< 10.	UG/L	12/11/90	4-Nitrophenol
LAO-3A	90.17403	621647	< 10.	UG/L	12/11/90	N-Nitrosodi-n-propylamine
LAO-3A	90.17403	62759	< 10.	UG/L	12/11/90	N-Nitrosodimethylamine
LAO-3A	90.17403	86306	< 10.	UG/L	12/11/90	N-Nitrosodiphenylamine
LAO-3A	90.17403	87865	< 10.	UG/L	12/11/90	Pentachlorophenol
LAO-3A	90.17403	85018	< 10.	UG/L	12/11/90	Phenanthrene
LAO-3A	90.17403	108952	< 10.	UG/L	12/11/90	Phenol
LAO-3A	90.17403	129000	< 10.	UG/L	12/11/90	Pyrene
LAO-3A	90.17403	120821	< 10.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-3A	90.17403	95954	< 10.	UG/L	12/11/90	2,4,5-Trichlorophenol

LAO-3A	90.17403	88062		< 10.		UG/L	12/11/90	2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17403

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3A	90.17403	60322	TI	360.		UG/L	12/11/90		6-Amino-Hexanoic Acid
LAO-3A	90.17403	175	TI	11.		UG/L	12/11/90		Benzenes, substituted

Customer Sample Duplicate Results for Sample # 90.17403

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17403

none

REPORT NUMBER: 9114

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17404

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5	90.17404	83329	< 10.		UG/L	12/12/90		Acenaphthene
LAO-4.5	90.17404	208968	< 10.		UG/L	12/12/90		Acenaphthylene
LAO-4.5	90.17404	62533	< 10.		UG/L	12/12/90		Aniline
LAO-4.5	90.17404	120127	< 10.		UG/L	12/12/90		Anthracene
LAO-4.5	90.17404	103333	< 10.		UG/L	12/12/90		Azobenzene
LAO-4.5	90.17404	92875	< 10.		UG/L	12/12/90		m-Benzidine
LAO-4.5	90.17404	56553	< 10.		UG/L	12/12/90		Benzo[a]anthracene
LAO-4.5	90.17404	50328	< 10.		UG/L	12/12/90		Benzo[a]pyrene
LAO-4.5	90.17404	205992	< 10.		UG/L	12/12/90		Benzo[b]fluoranthene
LAO-4.5	90.17404	191242	< 10.		UG/L	12/12/90		Benzo[g,h,i]perylene
LAO-4.5	90.17404	207089	< 10.		UG/L	12/12/90		Benzo[k]fluoranthene
LAO-4.5	90.17404	65850	< 10.		UG/L	12/12/90		Benzoic acid
LAO-4.5	90.17404	100516	< 10.		UG/L	12/12/90		Benzyl alcohol
LAO-4.5	90.17404	111911	< 10.		UG/L	12/12/90		Bis(2-chloroethoxy)methane
LAO-4.5	90.17404	111444	< 10.		UG/L	12/12/90		Bis(2-chloroethyl)ether
LAO-4.5	90.17404	108601	< 10.		UG/L	12/12/90		Bis(2-chloroisopropyl)ether
LAO-4.5	90.17404	117817	< 10.		UG/L	12/12/90		Bis(2-ethylhexyl)phthalate
LAO-4.5	90.17404	101553	< 10.		UG/L	12/12/90		4-Bromophenylphenyl ether
LAO-4.5	90.17404	85687	< 10.		UG/L	12/12/90		Butylbenzyl phthalate
LAO-4.5	90.17404	59507	< 10.		UG/L	12/12/90		4-Chloro-3-methylphenol
LAO-4.5	90.17404	106478	< 10.		UG/L	12/12/90		4-Chloroaniline
LAO-4.5	90.17404	91587	< 10.		UG/L	12/12/90		2-Chloronaphthalene

LAO-4.5	90.17404	95578	< 10.		UG/L	12/12/90	o-Chlorophenol
LAO-4.5	90.17404	7005723	< 10.		UG/L	12/12/90	4-Chlorophenylphenyl ether
LAO-4.5	90.17404	218019	< 10.		UG/L	12/12/90	Chrysene
LAO-4.5	90.17404	84742	< 10.		UG/L	12/12/90	Di-n-butyl phthalate
LAO-4.5	90.17404	117840	< 10.		UG/L	12/12/90	Di-n-octyl phthalate
LAO-4.5	90.17404	53703	< 10.		UG/L	12/12/90	Dibenzo[a,h]anthracene
LAO-4.5	90.17404	132649	< 10.		UG/L	12/12/90	Dibenzofuran
LAO-4.5	90.17404	95501	< 10.		UG/L	12/12/90	o-Dichlorobenzene (1,2)
LAO-4.5	90.17404	541731	< 10.		UG/L	12/12/90	m-Dichlorobenzene (1,3)
LAO-4.5	90.17404	106467	< 10.		UG/L	12/12/90	p-Dichlorobenzene (1,4)
LAO-4.5	90.17404	91941	< 10.		UG/L	12/12/90	3,3'-Dichlorobenzidine
LAO-4.5	90.17404	120832	< 10.		UG/L	12/12/90	2,4-Dichlorophenol
LAO-4.5	90.17404	84662	1800.	540.	UG/L	12/12/90	Diethyl phthalate
LAO-4.5	90.17404	131113	< 10.		UG/L	12/12/90	Dimethyl phthalate
LAO-4.5	90.17404	105679	< 10.		UG/L	12/12/90	2,4-Dimethylphenol
LAO-4.5	90.17404	51285	< 10.		UG/L	12/12/90	2,4-Dinitrophenol
LAO-4.5	90.17404	121142	< 10.		UG/L	12/12/90	2,4-Dinitrotoluene
LAO-4.5	90.17404	606202	< 10.		UG/L	12/12/90	2,6-Dinitrotoluene
LAO-4.5	90.17404	206440	< 10.		UG/L	12/12/90	Fluoranthene
LAO-4.5	90.17404	86737	< 10.		UG/L	12/12/90	Fluorene
LAO-4.5	90.17404	118741	< 10.		UG/L	12/12/90	Hexachlorobenzene
LAO-4.5	90.17404	87683	< 10.		UG/L	12/12/90	Hexachlorobutadiene
LAO-4.5	90.17404	77474	< 10.		UG/L	12/12/90	Hexachlorocyclopentadiene
LAO-4.5	90.17404	67721	< 10.		UG/L	12/12/90	Hexachloroethane
LAO-4.5	90.17404	193395	< 10.		UG/L	12/12/90	Indeno[1,2,3-cd]pyrene
LAO-4.5	90.17404	78591	< 10.		UG/L	12/12/90	Isophorone
LAO-4.5	90.17404	534521	< 10.		UG/L	12/12/90	2-Methyl-4,6-dinitrophenol
LAO-4.5	90.17404	91576	< 10.		UG/L	12/12/90	2-Methylnaphthalene
LAO-4.5	90.17404	95487	< 10.		UG/L	12/12/90	2-Methylphenol
LAO-4.5	90.17404	106445	< 10.		UG/L	12/12/90	4-Methylphenol
LAO-4.5	90.17404	91203	< 10.		UG/L	12/12/90	Naphthalene
LAO-4.5	90.17404	88744	< 10.		UG/L	12/12/90	2-Nitroaniline
LAO-4.5	90.17404	99092	< 10.		UG/L	12/12/90	3-Nitroaniline
LAO-4.5	90.17404	100016	< 10.		UG/L	12/12/90	4-Nitroaniline
LAO-4.5	90.17404	98953	< 10.		UG/L	12/12/90	Nitrobenzene
LAO-4.5	90.17404	88755	< 10.		UG/L	12/12/90	2-Nitrophenol
LAO-4.5	90.17404	100027	< 10.		UG/L	12/12/90	4-Nitrophenol
LAO-4.5	90.17404	621647	< 10.		UG/L	12/12/90	N-Nitrosodi-n-propylamine
LAO-4.5	90.17404	62759	< 10.		UG/L	12/12/90	N-Nitrosodimethylamine
LAO-4.5	90.17404	86306	< 10.		UG/L	12/12/90	N-Nitrosodiphenylamine
LAO-4.5	90.17404	87865	< 10.		UG/L	12/12/90	Pentachlorophenol
LAO-4.5	90.17404	85018	< 10.		UG/L	12/12/90	Phenanthrene
LAO-4.5	90.17404	108952	< 10.		UG/L	12/12/90	Phenol
LAO-4.5	90.17404	129000	< 10.		UG/L	12/12/90	Pyrene
LAO-4.5	90.17404	120821	< 10.		UG/L	12/12/90	1,2,4-Trichlorobenzene
LAO-4.5	90.17404	95954	< 10.		UG/L	12/12/90	2,4,5-Trichlorophenol

LAO-4.5	90.17404	88062	< 10.	UG/L	12/12/90	2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17404

none

Customer Sample Duplicate Results for Sample # 90.17404

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17404

none

REPORT NUMBER: 9114

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17405

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5C	90.17405	83329	< 10.		UG/L	12/11/90		Acenaphthene
LAO-4.5C	90.17405	208968	< 10.		UG/L	12/11/90		Acenaphthylene
LAO-4.5C	90.17405	62533	< 10.		UG/L	12/11/90		Aniline
LAO-4.5C	90.17405	120127	< 10.		UG/L	12/11/90		Anthracene
LAO-4.5C	90.17405	103333	< 10.		UG/L	12/11/90		Azobenzene
LAO-4.5C	90.17405	92875	< 10.		UG/L	12/11/90		m-Benzidine
LAO-4.5C	90.17405	56553	< 10.		UG/L	12/11/90		Benzo[a]anthracene
LAO-4.5C	90.17405	50328	< 10.		UG/L	12/11/90		Benzo[a]pyrene
LAO-4.5C	90.17405	205992	< 10.		UG/L	12/11/90		Benzo[b]fluoranthene
LAO-4.5C	90.17405	191242	< 10.		UG/L	12/11/90		Benzo[g,h,i]perylene
LAO-4.5C	90.17405	207089	< 10.		UG/L	12/11/90		Benzo[k]fluoranthene
LAO-4.5C	90.17405	65850	< 10.		UG/L	12/11/90		Benzoic acid
LAO-4.5C	90.17405	100516	< 10.		UG/L	12/11/90		Benzyl alcohol
LAO-4.5C	90.17405	111911	< 10.		UG/L	12/11/90		Bis(2-chloroethoxy)methane
LAO-4.5C	90.17405	111444	< 10.		UG/L	12/11/90		Bis(2-chloroethyl)ether
LAO-4.5C	90.17405	108601	< 10.		UG/L	12/11/90		Bis(2-chloroisopropyl)ether
LAO-4.5C	90.17405	117817	< 10.		UG/L	12/11/90		Bis(2-ethylhexyl)phthalate
LAO-4.5C	90.17405	101553	< 10.		UG/L	12/11/90		4-Bromophenylphenyl ether
LAO-4.5C	90.17405	85687	< 10.		UG/L	12/11/90		Butylbenzyl phthalate
LAO-4.5C	90.17405	59507	< 10.		UG/L	12/11/90		4-Chloro-3-methylphenol
LAO-4.5C	90.17405	106478	< 10.		UG/L	12/11/90		4-Chloroaniline
LAO-4.5C	90.17405	91587	< 10.		UG/L	12/11/90		2-Chloronaphthalene

LAO-4.5C	90.17405	95578	< 10.	UG/L	12/11/90	o-Chlorophenol
LAO-4.5C	90.17405	7005723	< 10.	UG/L	12/11/90	4-Chlorophenylphenyl ether
LAO-4.5C	90.17405	218019	< 10.	UG/L	12/11/90	Chrysene
LAO-4.5C	90.17405	84742	< 10.	UG/L	12/11/90	Di-n-butyl phthalate
LAO-4.5C	90.17405	117840	< 10.	UG/L	12/11/90	Di-n-octyl phthalate
LAO-4.5C	90.17405	53703	< 10.	UG/L	12/11/90	Dibenzo[a,h]anthracene
LAO-4.5C	90.17405	132649	< 10.	UG/L	12/11/90	Dibenzofuran
LAO-4.5C	90.17405	95501	< 10.	UG/L	12/11/90	o-Dichlorobenzene (1,2)
LAO-4.5C	90.17405	541731	< 10.	UG/L	12/11/90	m-Dichlorobenzene (1,3)
LAO-4.5C	90.17405	106467	< 10.	UG/L	12/11/90	p-Dichlorobenzene (1,4)
LAO-4.5C	90.17405	91941	< 10.	UG/L	12/11/90	3,3'-Dichlorobenzidine
LAO-4.5C	90.17405	120832	< 10.	UG/L	12/11/90	2,4-Dichlorophenol
LAO-4.5C	90.17405	84662	< 10.	UG/L	12/11/90	Diethyl phthalate
LAO-4.5C	90.17405	131113	< 10.	UG/L	12/11/90	Dimethyl phthalate
LAO-4.5C	90.17405	105679	< 10.	UG/L	12/11/90	2,4-Dimethylphenol
LAO-4.5C	90.17405	51285	< 10.	UG/L	12/11/90	2,4-Dinitrophenol
LAO-4.5C	90.17405	121142	< 10.	UG/L	12/11/90	2,4-Dinitrotoluene
LAO-4.5C	90.17405	606202	< 10.	UG/L	12/11/90	2,6-Dinitrotoluene
LAO-4.5C	90.17405	206440	< 10.	UG/L	12/11/90	Fluoranthene
LAO-4.5C	90.17405	86737	< 10.	UG/L	12/11/90	Fluorene
LAO-4.5C	90.17405	118741	< 10.	UG/L	12/11/90	Hexachlorobenzene
LAO-4.5C	90.17405	87683	< 10.	UG/L	12/11/90	Hexachlorobutadiene
LAO-4.5C	90.17405	77474	< 10.	UG/L	12/11/90	Hexachlorocyclopentadiene
LAO-4.5C	90.17405	67721	< 10.	UG/L	12/11/90	Hexachloroethane
LAO-4.5C	90.17405	193395	< 10.	UG/L	12/11/90	Indeno[1,2,3-cd]pyrene
LAO-4.5C	90.17405	78591	< 10.	UG/L	12/11/90	Isophorone
LAO-4.5C	90.17405	534521	< 10.	UG/L	12/11/90	2-Methyl-4,6-dinitrophenol
LAO-4.5C	90.17405	91576	< 10.	UG/L	12/11/90	2-Methylnaphthalene
LAO-4.5C	90.17405	95487	< 10.	UG/L	12/11/90	2-Methylphenol
LAO-4.5C	90.17405	106445	< 10.	UG/L	12/11/90	4-Methylphenol
LAO-4.5C	90.17405	91203	< 10.	UG/L	12/11/90	Naphthalene
LAO-4.5C	90.17405	88744	< 10.	UG/L	12/11/90	2-Nitroaniline
LAO-4.5C	90.17405	99092	< 10.	UG/L	12/11/90	3-Nitroaniline
LAO-4.5C	90.17405	100016	< 10.	UG/L	12/11/90	4-Nitroaniline
LAO-4.5C	90.17405	98953	< 10.	UG/L	12/11/90	Nitrobenzene
LAO-4.5C	90.17405	88755	< 10.	UG/L	12/11/90	2-Nitrophenol
LAO-4.5C	90.17405	100027	< 10.	UG/L	12/11/90	4-Nitrophenol
LAO-4.5C	90.17405	621647	< 10.	UG/L	12/11/90	N-Nitrosodi-n-propylamine
LAO-4.5C	90.17405	62759	< 10.	UG/L	12/11/90	N-Nitrosodimethylamine
LAO-4.5C	90.17405	86306	< 10.	UG/L	12/11/90	N-Nitrosodiphenylamine
LAO-4.5C	90.17405	87865	< 10.	UG/L	12/11/90	Pentachlorophenol
LAO-4.5C	90.17405	85018	< 10.	UG/L	12/11/90	Phenanthrene
LAO-4.5C	90.17405	108952	< 10.	UG/L	12/11/90	Phenol
LAO-4.5C	90.17405	129000	< 10.	UG/L	12/11/90	Pyrene
LAO-4.5C	90.17405	120821	< 10.	UG/L	12/11/90	1,2,4-Trichlorobenzene
LAO-4.5C	90.17405	95954	< 10.	UG/L	12/11/90	2,4,5-Trichlorophenol

LAO-4.5C	90.17405	88062		< 10.		UG/L	12/11/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17405

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5C	90.17405	60322	TI	310.		UG/L	12/11/90		6-Amino-Hexanoic Acid
LAO-4.5C	90.17405	175	TI	32.		UG/L	12/11/90		Benzenes, substituted
LAO-4.5C	90.17405	100	TI	15.		UG/L	12/11/90		Unknown organic compound

Customer Sample Duplicate Results for Sample # 90.17405

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17405

none

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********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: CRS on 12-Dec-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUN
00.20226	90.17435	83329	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Acenaphthene
00.20226	90.17435	208968	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Acenaphthylene
00.20226	90.17435	62533	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Aniline
00.20226	90.17435	120127	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Anthracene
00.20226	90.17435	103333	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Azobenzene
00.20226	90.17435	92875	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	m-Benzidine
00.20226	90.17435	56553	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzo[a]anthracene
00.20226	90.17435	50328	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzo[a]pyrene
00.20226	90.17435	205992	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzo[b]fluoranthene
00.20226	90.17435	191242	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzo[g,h,i]perylene
00.20226	90.17435	207089	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzo[k]fluoranthene
00.20226	90.17435	65850	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzoic acid
00.20226	90.17435	100516	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Benzyl alcohol
00.20226	90.17435	111911	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bis(2-chloroethoxy)methane
00.20226	90.17435	111444	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bis(2-chloroethyl)ether
00.20226	90.17435	108601	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bis(2-chloroisopropyl)ether
00.20226	90.17435	117817	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Bis(2-ethylhexyl)phthalate
00.20226	90.17435	101553	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Bromophenylphenyl ether
00.20226	90.17435	85687	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Butylbenzyl phthalate
00.20226	90.17435	59507	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Chloro-3-methylphenol
00.20226	90.17435	106478	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Chloroaniline
00.20226	90.17435	91587	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	2-Chloronaphthalene
00.20226	90.17435	95578	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Chlorophenol
00.20226	90.17435	7005723	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	4-Chlorophenylphenyl ether
00.20226	90.17435	218019	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Chrysene
00.20226	90.17435	84742	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Di-n-butyl phthalate
00.20226	90.17435	117840	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Di-n-octyl phthalate
00.20226	90.17435	53703	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Dibenzo[a,h]anthracene
00.20226	90.17435	132649	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	Dibenzofuran
00.20226	90.17435	95501	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
00.20226	90.17435	541731	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
00.20226	90.17435	106467	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
00.20226	90.17435	91941	< 10.		UG/L	0.0		12/11/90	UNDER CONTROL	3,3'-Dichlorobenzidine

00.20226	90.17435	120832	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4-Dichlorophenol
00.20226	90.17435	84662	14.	4.2	UG/L	0.0	12/11/90	OUT OF CONTROL	Diethyl phthalate
00.20226	90.17435	131113	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Dimethyl phthalate
00.20226	90.17435	105679	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4-Dimethylphenol
00.20226	90.17435	51285	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4-Dinitrophenol
00.20226	90.17435	121142	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4-Dinitrotoluene
00.20226	90.17435	606202	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,6-Dinitrotoluene
00.20226	90.17435	206440	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Fluoranthene
00.20226	90.17435	86737	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Fluorene
00.20226	90.17435	118741	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Hexachlorobenzene
00.20226	90.17435	87683	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Hexachlorobutadiene
00.20226	90.17435	77474	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Hexachlorocyclopentadiene
00.20226	90.17435	67721	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Hexachloroethane
00.20226	90.17435	193395	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Indeno[1,2,3-cd]pyrene
00.20226	90.17435	78591	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Isophorone
00.20226	90.17435	534521	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2-Methyl-4,6-dinitrophenol
00.20226	90.17435	91576	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2-Methylnaphthalene
00.20226	90.17435	95487	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2-Methylphenol
00.20226	90.17435	106445	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	4-Methylphenol
00.20226	90.17435	91203	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Naphthalene
00.20226	90.17435	88744	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2-Nitroaniline
00.20226	90.17435	99092	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	3-Nitroaniline
00.20226	90.17435	100016	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	4-Nitroaniline
00.20226	90.17435	98953	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Nitrobenzene
00.20226	90.17435	88755	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2-Nitrophenol
00.20226	90.17435	100027	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	4-Nitrophenol
00.20226	90.17435	621647	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	N-Nitrosodi-n-propylamine
00.20226	90.17435	62759	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	N-Nitrosodimethylamine
00.20226	90.17435	86306	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	N-Nitrosodiphenylamine
00.20226	90.17435	87865	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Pentachlorophenol
00.20226	90.17435	85018	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Phenanthrene
00.20226	90.17435	108952	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Phenol
00.20226	90.17435	129000	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	Pyrene
00.20226	90.17435	120821	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	1,2,4-Trichlorobenzene
00.20226	90.17435	95954	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4,5-Trichlorophenol
00.20226	90.17435	88062	< 10.		UG/L	0.0	12/11/90	UNDER CONTROL	2,4,6-Trichlorophenol

Blank Spike Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND
00.20226	90.17435	83329	50.	35.	UG/L	12/11/90		Acenaphthene
00.20226	90.17435	59507	100.	67.	UG/L	12/11/90		4-Chloro-3-methylphenol
00.20226	90.17435	95578	100.	58.	UG/L	12/11/90		o-Chlorophenol

00.20226	90.17435	106467	50.	29.	UG/L	12/11/90		p-Dichlorobenzene (1,4)
00.20226	90.17435	121142	50.	36.	UG/L	12/11/90		2,4-Dinitrotoluene
00.20226	90.17435	100027	100.	61.	UG/L	12/11/90		4-Nitrophenol
00.20226	90.17435	621647	50.	29.	UG/L	12/11/90		N-Nitrosodi-n-propylamine
00.20226	90.17435	87865	100.	69.	UG/L	12/11/90		Pentachlorophenol
00.20226	90.17435	108952	100.	63.	UG/L	12/11/90		Phenol
00.20226	90.17435	129000	50.	33.	UG/L	12/11/90		Pyrene
00.20226	90.17435	120821	50.	32.	UG/L	12/11/90		1,2,4-Trichlorobenzene

Blank Spike Duplicate Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND
00.20226	90.17435	83329	50.	36.	UG/L	12/11/90		Acenaphthene
00.20226	90.17435	59507	100.	68.	UG/L	12/11/90		4-Chloro-3-methylphenol
00.20226	90.17435	95578	100.	62.	UG/L	12/11/90		o-Chlorophenol
00.20226	90.17435	106467	50.	30.	UG/L	12/11/90		p-Dichlorobenzene (1,4)
00.20226	90.17435	121142	50.	38.	UG/L	12/11/90		2,4-Dinitrotoluene
00.20226	90.17435	100027	100.	65.	UG/L	12/11/90		4-Nitrophenol
00.20226	90.17435	621647	50.	30.	UG/L	12/11/90		N-Nitrosodi-n-propylamine
00.20226	90.17435	87865	100.	55.	UG/L	12/11/90		Pentachlorophenol
00.20226	90.17435	108952	100.	66.	UG/L	12/11/90		Phenol
00.20226	90.17435	129000	50.	36.	UG/L	12/11/90		Pyrene
00.20226	90.17435	120821	50.	32.	UG/L	12/11/90		1,2,4-Trichlorobenzene

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Blind QC Results, Sample # 90.17413

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17413	83329	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthene
90.17413	208968	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthylene
90.17413	62533	110.	33.	UG/L	130.	10.	11/29/90	UNDER CONTROL	Aniline
90.17413	120127	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Anthracene
90.17413	103333	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Azobenzene
90.17413	92875	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Benzidine
90.17413	56553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]anthracene
90.17413	50328	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]pyrene

90.17413	205992	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[b]fluoranthene
90.17413	191242	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[g,h,i]perylene
90.17413	207089	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[k]fluoranthene
90.17413	65850	< 10.		UG/L	150.	20.	11/29/90	OUT OF CONTROL	Benzoic acid
90.17413	100516	94.	28.2	UG/L	130.	10.	11/29/90	UNDER CONTROL	Benzyl alcohol
90.17413	111911	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroethoxy)methane
90.17413	111444	73.	21.9	UG/L	120.	10.	11/29/90	UNDER CONTROL	Bis(2-chloroethyl)ether
90.17413	108601	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroisopropyl)ether
90.17413	117817	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-ethylhexyl)phthalate
90.17413	101553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Bromophenylphenyl ether
90.17413	85687	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Butylbenzyl phthalate
90.17413	59507	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloro-3-methylphenol
90.17413	106478	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloroaniline
90.17413	91587	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Chloronaphthalene
90.17413	95578	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Chlorophenol
90.17413	7005723	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chlorophenylphenyl ether
90.17413	218019	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Chrysene
90.17413	84742	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-butyl phthalate
90.17413	117840	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-octyl phthalate
90.17413	53703	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzo[a,h]anthracene
90.17413	132649	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzofuran
90.17413	95501	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
90.17413	541731	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
90.17413	106467	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
90.17413	91941	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3,3'-Dichlorobenzidine
90.17413	120832	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dichlorophenol
90.17413	84662	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Diethyl phthalate
90.17413	131113	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dimethyl phthalate
90.17413	105679	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dimethylphenol
90.17413	51285	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrophenol
90.17413	121142	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrotoluene
90.17413	606202	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,6-Dinitrotoluene
90.17413	206440	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluoranthene
90.17413	86737	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluorene
90.17413	118741	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobenzene
90.17413	87683	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobutadiene
90.17413	77474	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorocyclopentadiene
90.17413	67721	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachloroethane
90.17413	193395	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Indeno[1,2,3-cd]pyrene
90.17413	78591	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Isophorone
90.17413	534521	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methyl-4,6-dinitrophenol
90.17413	91576	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylnaphthalene
90.17413	95487	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylphenol
90.17413	106445	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Methylphenol
90.17413	91203	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Naphthalene
90.17413	88744	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitroaniline

90.17413	99092	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3-Nitroaniline
90.17413	100016	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitroaniline
90.17413	98953	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Nitrobenzene
90.17413	88755	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitrophenol
90.17413	100027	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitrophenol
90.17413	621647	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodi-n-propylamine
90.17413	62759	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodimethylamine
90.17413	86306	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodiphenylamine
90.17413	87865	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pentachlorophenol
90.17413	85018	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Phenanthrene
90.17413	108952	74.	22.2	UG/L	130.	10.	11/29/90	WARNING 2-3 SIG	Phenol
90.17413	129000	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pyrene
90.17413	120821	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	1,2,4-Trichlorobenzene
90.17413	95954	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,5-Trichlorophenol
90.17413	88062	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,6-Trichlorophenol

SURROGATE RESULTS FOR EPA SEMIVOLATILES

Surrogate 1 = 2-Fluorophenol (CAS # = 367124)
Surrogate 2 = Phenol-d5 (CAS # = 4165622)
Surrogate 3 = Nitrobenzene-d5 (CAS # = 4165600)
Surrogate 4 = 2-Fluorobiphenyl (CAS # = 321608)
Surrogate 5 = 2,4,6-Tribromophenol (CAS # = 118796)
Surrogate 6 = p-Terphenyl-d14 (CAS # =)

SAMPLE NUMBER	UNITS	Surrogate 1	Surrogate 2	Surrogate 3	Surrogate 4	Surrogate 5	Surrogate 6	COMPLETION DATE
90.17401	%	69.15	74.32	70.9	71.44	75.65	21.34	11-Dec-1990
90.17402	%	50.53	58.33	63.98	63.04	68.74	19.94	11-Dec-1990
90.17403	%	64.35	55.78	63.88	63.82	75.37	33.1	11-Dec-1990
90.17404	%	52.64	63.37	64.52	68.06	73.21	48.56	12-Dec-1990
90.17405	%	29.45	58.33	71.04	68.66	24.26	29.98	11-Dec-1990
90.17413	%	55.5	64.62	61.46	66.72	75.62	69.82	29-Nov-1990
90.17435	%	64.31	70.29	72.48	73.86	74.53	67.54	11-Dec-1990
90.17435	%	59.08	71.97	72.62	66.84	68.3	60.86	11-Dec-1990
90.17435	%	63.79	74.12	76.7	66.	68.42	67.52	11-Dec-1990
EPA Limits:								
Water	%	21 - 100	10 - 94	35 - 114	43 - 116	10 - 123	33 - 141	
Soil	%	25 - 121	24 - 113	23 - 120	30 - 115	19 - 122	18 - 137	

REPORT NUMBER: 9114

M W Kolby 12/13/90

L Bizzarri for CAS 12/13/90

12/13/90

NK for MAG 12/13/90

Analyst	Reviewer	Section Leader	QA Officer
_____	_____	_____	_____
Date	Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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HSE-9
INORGANIC RESULTS

REPORT NUMBER: 8501

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: E.M.HODGE on 19-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Evangeline Hodge PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	CA	55.4	5.5	MG/L	9/26/90	
MCO-4	90.17256	CL	19.2	1.9	MG/L	9/24/90	
MCO-4	90.17256	CN	0.036	0.01	MG/L	9/25/90	
MCO-4	90.17256	COND	635.	32.	UMHOS/CM	9/24/90	
MCO-4	90.17256	K	46.5	4.6	MG/L	9/26/90	
MCO-4	90.17256	MG	3.64	0.4	MG/L	9/26/90	
MCO-4	90.17256	NA	142.	14.2	MG/L	9/26/90	
MCO-4	90.17256	NO3-N	40.5	4.1	MG/L	9/19/90	
MCO-4	90.17256	PH	7.47	0.1	NONE	9/24/90	
MCO-4	90.17256	PO4-P	0.276	0.05	MG/L	9/18/90	
MCO-4	90.17256	SO4	40.9	1.4	MG/L	9/24/90	
MCO-4	90.17256	TDS	568.	57.	MG/L	10/18/90	
MCO-4B	90.17257	CA	55.4	5.5	MG/L	9/26/90	
MCO-4B	90.17257	CL	< 0.5		MG/L	9/24/90	
MCO-4B	90.17257	CN	0.041	0.01	MG/L	9/25/90	
MCO-4B	90.17257	COND	717.	36.	UMHOS/CM	9/24/90	
MCO-4B	90.17257	K	45.1	4.5	MG/L	9/26/90	
MCO-4B	90.17257	MG	5.66	0.6	MG/L	9/26/90	
MCO-4B	90.17257	NA	209.	21.	MG/L	9/26/90	
MCO-4B	90.17257	NO3-N	50.2	5.	MG/L	9/19/90	
MCO-4B	90.17257	PH	7.54	0.1	NONE	9/24/90	
MCO-4B	90.17257	PO4-P	0.361	0.07	MG/L	9/18/90	
MCO-4B	90.17257	SO4	46.5	4.6	MG/L	9/24/90	
MCO-4B	90.17257	TDS	712.	71.	MG/L	10/18/90	
MCO-6B	90.17258	CA	53.	5.3	MG/L	9/26/90	
MCO-6B	90.17258	CL	34.4	3.4	MG/L	9/24/90	
MCO-6B	90.17258	CN	0.046	0.01	MG/L	9/25/90	
MCO-6B	90.17258	COND	905.	45.	UMHOS/CM	9/24/90	
MCO-6B	90.17258	K	32.8	3.3	MG/L	9/26/90	
MCO-6B	90.17258	MG	10.2	1.	MG/L	9/26/90	
MCO-6B	90.17258	NA	278.	28.	MG/L	9/26/90	
MCO-6B	90.17258	NO3-N	15.	1.5	MG/L	9/19/90	
MCO-6B	90.17258	PH	7.31	0.1	NONE	9/24/90	
MCO-6B	90.17258	PO4-P	0.876	0.17	MG/L	9/18/90	
MCO-6B	90.17258	SO4	54.9	5.5	MG/L	9/24/90	
MCO-6B	90.17258	TDS	834.	83.	MG/L	10/18/90	
MCO-7	90.17259	CA	26.9	2.7	MG/L	9/26/90	
MCO-7	90.17259	CL	< 0.5		MG/L	9/24/90	
MCO-7	90.17259	CN	0.026	0.01	MG/L	9/25/90	
MCO-7	90.17259	COND	300.	15.	UMHOS/CM	9/24/90	

MCO-7	90.17259	K	8.96	0.9	MG/L	9/26/90
MCO-7	90.17259	MG	5.42	0.5	MG/L	9/26/90
MCO-7	90.17259	NA	89.6	9.	MG/L	9/26/90
MCO-7	90.17259	NO3-N	13.7	1.4	MG/L	9/19/90
MCO-7	90.17259	PH	7.06	0.1	NONE	9/24/90
MCO-7	90.17259	PO4-P	0.566	0.11	MG/L	9/18/90
MCO-7	90.17259	SO4	21.6	2.2	MG/L	9/24/90
MCO-7	90.17259	TDS	280.	28.	MG/L	10/18/90
MCO-7A	90.17260	CA	25.	2.5	MG/L	9/26/90
MCO-7A	90.17260	CL	28.1	2.8	MG/L	9/24/90
MCO-7A	90.17260	CN	0.026	0.01	MG/L	9/25/90
MCO-7A	90.17260	COND	361.	18.	UMHOS/CM	9/24/90
MCO-7A	90.17260	K	11.3	1.1	MG/L	9/26/90
MCO-7A	90.17260	MG	5.78	0.6	MG/L	9/26/90
MCO-7A	90.17260	NA	112.6	12.	MG/L	9/26/90
MCO-7A	90.17260	NO3-N	18.8	1.9	MG/L	9/19/90
MCO-7A	90.17260	PH	6.96	0.1	NONE	9/24/90
MCO-7A	90.17260	PO4-P	0.929	0.18	MG/L	9/18/90
MCO-7A	90.17260	SO4	22.9	2.3	MG/L	9/24/90
MCO-7A	90.17260	TDS	220.	22.	MG/L	10/18/90
MCO-6	90.17261	CA	57.6	5.7	MG/L	9/26/90
MCO-6	90.17261	CL	29.3	2.9	MG/L	9/24/90
MCO-6	90.17261	CN	0.046	0.01	MG/L	9/25/90
MCO-6	90.17261	COND	894.	45.	UMHOS/CM	9/24/90
MCO-6	90.17261	K	54.9	5.5	MG/L	9/26/90
MCO-6	90.17261	MG	6.61	0.7	MG/L	9/26/90
MCO-6	90.17261	NA	268.	27.	MG/L	9/26/90
MCO-6	90.17261	NO3-N	70.1	7.	MG/L	9/19/90
MCO-6	90.17261	PH	7.37	0.1	NONE	9/24/90
MCO-6	90.17261	PO4-P	0.333	0.07	MG/L	9/18/90
MCO-6	90.17261	SO4	49.4	5.	MG/L	9/24/90
MCO-6	90.17261	TDS	884.	88.	MG/L	10/18/90

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REPORT NUMBER: 8501 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: E.M.HODGE on 19-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Evangeline Hodge PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE
00.00966	00.00966	COND	258.	13.	UMHOS	300.	30.	9/24/90 UNDER CONTROL
00.00966	00.00966	PH	6.94	0.1	UNITS	6.87	0.06	9/24/90 UNDER CONTROL
00.00966	00.00966	TDS	265.	26.	MG/L	293.	20.	10/18/90 UNDER CONTROL
00.01013	00.01013	CA	23.9	2.4	MG/L	20.	1.2	9/26/90 UNDER CONTROL
00.01013	00.01013	CL	54.2	5.4	MG/L	52.1	1.8	10/18/90 UNDER CONTROL
00.01013	00.01013	K	5.1	0.5	MG/L	5.	0.39	9/26/90 UNDER CONTROL
00.01013	00.01013	MG	5.8	0.6	MG/L	5.	0.36	9/26/90 UNDER CONTROL
00.01013	00.01013	NA	25.4	2.5	MG/L	20.	1.1	9/26/90 UNDER CONTROL
00.01013	00.01013	SO4	24.6	2.5	MG/L	20.	1.7	10/18/90 UNDER CONTROL
00.01040	00.01040	NO3-N	187.	19.	UG/L	180.	20.	9/19/90 UNDER CONTROL
00.01041	00.01041	PO4-P	210.	42.	UG/L	270.	10.	9/18/90 UNDER CONTROL
00.01211	00.01211	CN	194.	19.	UG/L	224.	29.	9/25/90 UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17310	NO3-N	1.64	0.2	MG/L	1.6	0.1	9/28/90	UNDER CONTROL
90.17310	PO4-P	271.	50.	UG/L	270.	10.	9/18/90	UNDER CONTROL
90.17311	CN	0.335	0.01	MG/L	0.36	0.04	9/25/90	UNDER CONTROL
90.17312	CA	23.8	2.4	MG/L	18.	2.	9/26/90	UNDER CONTROL
90.17312	CL	49.2	4.9	MG/L	46.	5.	9/24/90	UNDER CONTROL

90.17312 COND	197.	10.	UMHOS	248.	25.	9/24/90	UNDER CONTROL
90.17312 K	4.7	0.5	MG/L	4.5	0.4	9/26/90	UNDER CONTROL
90.17312 MG	5.6	0.6	MG/L	4.5	0.4	9/26/90	UNDER CONTROL
90.17312 NA	20.5	2.	MG/L	18.	2.	9/26/90	UNDER CONTROL
90.17312 SO4	22.9	2.3	MG/L	18.	2.	9/24/90	UNDER CONTROL
90.17312 TDS	204.	20.	MG/L	135.	14.	10/18/90	WARNING 2-3 SIG
90.17313 PH	6.11	0.1	UNITS	6.	0.05	9/24/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
10/22/90	10-22-90	10-22-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8999

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 4-Dec-1990

ANALYSIS: AG REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	0.2	0.2	UG/L	10/03/90	TOT REC
MCO-4B	90.17257	0.3	0.2	UG/L	10/03/90	TOT REC
MCO-6B	90.17258	1.3	0.2	UG/L	10/03/90	TOT REC
MCO-7	90.17259	0.6	0.2	UG/L	10/03/90	TOT REC
MCO-7A	90.17260	0.4	0.2	UG/L	10/03/90	TOT REC
MCO-6	90.17261	< 0.2		UG/L	10/03/90	TOT REC

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REPORT NUMBER: 8999 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 4-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	10.9	0.5	UG/L	9.8	0.8	10/04/90	UNDER CONTROL
00.00895	00.00895	10.3	0.4	UG/L	9.8	0.8	10/04/90	UNDER CONTROL
00.00895	00.00895	7.8	0.4	UG/L	9.8	0.8	10/04/90	WARNING 2-3 SIG
00.00895	00.00895	10.5	0.9	UG/L	9.8	0.8	12/04/90	UNDER CONTROL
00.00895	00.00895	10.5	0.9	UG/L	9.8	0.8	12/04/90	UNDER CONTROL
00.00895	00.00895	10.6	0.4	UG/L	9.8	0.8	10/04/90	UNDER CONTROL
00.00895	00.00895	10.8	0.9	UG/L	9.8	0.8	12/04/90	UNDER CONTROL
00.98625	00.98625	95.9	3.9	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	94.	3.9	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	96.4	4.	UG/L	100.	10.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17318	42.2	1.7	UG/L	43.	4.	10/03/90	UNDER CONTROL

REPORT NUMBER: 8999

Richard Robinson — Analyst — 12/04/90 — Date

MGB — Section Leader — 12-5-90 — Date

mag — QA Officer — 12-6-90 — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9045

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 6-Dec-1990

ANALYSIS: AL REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Janet Montoya PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPES ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	1.5	0.15	MG/L	12/06/90	TOT REC
MCO-4B	90.17257	15.	1.5	MG/L	12/06/90	TOT REC
MCO-6B	90.17258	113.	11.	MG/L	12/06/90	TOT REC
MCO-7	90.17259	13.	1.3	MG/L	12/06/90	TOT REC
MCO-7A	90.17260	57.4	5.7	MG/L	12/06/90	TOT REC
MCO-6	90.17261	8.3	0.8	MG/L	12/06/90	TOT REC

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REPORT NUMBER: 9045 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 6-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Janet Montoya PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.99654	00.99654	6.2	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL
00.99654	00.99654	6.4	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL
00.99654	00.99654	6.3	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	110.	10.	UG/L	150.	15.	12/06/90	WARNING 2-3 SIG

REPORT NUMBER: 9045

J.D. Montoya
Analyst

MGB
Section Leader

CSL for MAG
QA Officer

12/07/90
Date

12-7-90
Date

12/7/90
Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 9032

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: AS REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	19.1	0.3	UG/L	12/04/90	TO REC
MCO-4B	90.17257	15.1	0.2	UG/L	12/04/90	TO REC
MCO-6B	90.17258	12.7	0.2	UG/L	12/04/90	TO REC
MCO-7	90.17259	15.6	0.2	UG/L	12/04/90	TO REC
MCO-7A	90.17260	15.8	0.2	UG/L	12/04/90	TO REC
MCO-6	90.17261	17.7	0.2	UG/L	12/04/90	TO REC

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REPORT NUMBER: 9032 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	75.3	1.	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	77.8	1.1	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	76.9	1.1	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	72.3	1.	UG/L	76.	7.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	11.8	0.2	UG/L	16.	2.	12/04/90	WARNING 2-3 SIG
90.17319	4.	1.	UG/L	20.	2.	12/04/90	OUT OF CONTROL

REPORT NUMBER: 9032

Analyst	Section Leader	QA Officer
12/6/90	12-6-90	12-6-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9000

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 4-Dec-1990

ANALYSIS: 8A REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	128.	15.	UG/L	10/04/90	TOT REC
MCO-4B	90.17257	337.	38.	UG/L	10/04/90	TOT REC
MCO-6B	90.17258	1670.	190.	UG/L	10/04/90	TOT REC
MCO-7	90.17259	254.	29.	UG/L	10/04/90	TOT REC
MCO-7A	90.17260	820.	93.	UG/L	10/04/90	DONT REPORT DIL
MCO-6	90.17261	231.	26.	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 9000 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 4-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	45.5	5.1	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	47.6	5.4	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	48.6	5.8	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	44.9	0.9	UG/L	44.	2.	12/04/90	UNDER CONTROL
00.00895	00.00895	45.5	0.9	UG/L	44.	2.	12/04/90	UNDER CONTROL
00.00895	00.00895	50.9	5.8	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	44.1	0.9	UG/L	44.	2.	12/04/90	UNDER CONTROL
00.98625	00.98625	105.	12.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	114.	13.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	114.	13.	UG/L	100.	10.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	53.	1.1	UG/L	50.	5.	10/04/90	UNDER CONTROL

REPORT NUMBER: 9000

Analyst — Section Leader — QA Officer

12/5/90 — 12-5-90 — 12-5-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9017

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Dec-1990

ANALYSIS: BE REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	< 0.1		UG/L	12/05/90	TOT REC
MCO-4B	90.17257	2.1	0.2	UG/L	12/05/90	TOT REC
MCO-6B	90.17258	8.3	0.8	UG/L	12/05/90	TOT REC
MCO-7	90.17259	0.9	0.1	UG/L	12/05/90	TOT REC
MCO-7A	90.17260	4.7	0.5	UG/L	12/05/90	TOT REC
MCO-6	90.17261	0.4	0.1	UG/L	12/05/90	TOT REC

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REPORT NUMBER: 9017 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	17.6	1.8	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	16.8	1.7	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	18.6	1.9	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	15.	1.5	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	18.1	1.8	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	15.8	1.6	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00505	00.00505	17.4	1.7	UG/L	19.	2.	12/05/90	UNDER CONTROL
00.00895	00.00895	16.8	1.7	UG/L	19.	2.	12/05/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	31.6	3.2	UG/L	45.	4.	12/05/90	WARNING 2-3 SIG

REPORT NUMBER: 9017

Analyst — Section Leader — QA Officer

12/06/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8336

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: CD REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	0.9	0.5	UG/L	10/04/90	TOT REC
MCO-4B	90.17257	0.9	0.5	UG/L	10/04/90	TOT REC
MCO-6B	90.17258	0.7	0.5	UG/L	10/04/90	TOT REC
MCO-7	90.17259	< 0.5		UG/L	10/04/90	TOT REC
MCO-7A	90.17260	0.7	0.5	UG/L	10/04/90	TOT REC
MCO-6	90.17261	0.6	0.5	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 9001

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 4-Dec-1990

ANALYSIS: CR REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	15.9	0.5	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	17.3	0.5	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	22.5	0.7	UG/L	12/04/90	TOT REC
MCO-7	90.17259	15.8	0.5	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	28.	0.8	UG/L	12/04/90	TOT REC
MCO-6	90.17261	19.8	0.6	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 9001 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 4-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	17.3	0.5	UG/L	17.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	17.7	0.5	UG/L	17.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	18.	0.5	UG/L	17.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	17.4	0.5	UG/L	17.	2.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	28.4	0.8	UG/L	30.	3.	12/04/90	UNDER CONTROL

REPORT NUMBER: 9001

Analyst	Section Leader	QA Officer
12/04/90	12-5-90	12-4-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9023

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Dec-1990

ANALYSIS: CU REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	17.	1.3	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	16.5	1.3	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	17.	1.3	UG/L	12/04/90	TOT REC
MCO-7	90.17259	49.7	3.9	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	21.2	1.7	UG/L	12/04/90	TOT REC
MCO-6	90.17261	12.3	1.	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 9023 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	15.1	1.2	UG/L	18.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	18.1	1.4	UG/L	18.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	18.	1.4	UG/L	18.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	15.1	1.2	UG/L	18.	2.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	31.6	5.	UG/L	50.	5.	12/05/90	WARNING 2-3 SIG

REPORT NUMBER: 9023

Analyst — Section Leader — QA Officer

12/6/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8681

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MAB on 2-Nov-1990

ANALYSIS: HG REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Malti Bhatia PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: CVAA ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-6	90.17261	< 0.2		UG/L	11/02/90	

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REPORT NUMBER: 8681 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MAB on 2-Nov-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Malti Bhatia PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.20087	00.20087	4.12	0.4	UG/L	4.	0.4	11/02/90	UNDER CONTROL

REPORT NUMBER: 8681

Analyst Section Leader QA Officer

Date Date Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8247

Combined Copy MSB

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MAB on 25-Sep-1990

ANALYSIS: HG REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Malti Bhatia PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: CVAA ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	< 0.2		UG/L	9/24/90	
MCO-4B	90.17257	< 0.2		UG/L	9/24/90	
MCO-6B	90.17258	< 0.2		UG/L	9/24/90	
MCO-7	90.17259	< 0.2		UG/L	9/24/90	
MCO-7A	90.17260	< 0.2		UG/L	9/24/90	
MCO-6	90.17261	< 0.2		UG/L	11/02/90	

REPORT NUMBER: 9027

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: MN REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	30.4	0.4	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	518.	10.	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	2560.	260.	UG/L	12/04/90	TOT REC
MCO-7	90.17259	206.	3.	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	1620.	160.	UG/L	12/04/90	TOT REC
MCO-6	90.17261	265.	14.	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 9027 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	29.9	0.4	UG/L	31.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	30.8	0.4	UG/L	31.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	30.5	0.7	UG/L	31.	2.	12/04/90	UNDER CONTROL
00.00505	00.00505	31.3	0.4	UG/L	31.	2.	12/04/90	UNDER CONTROL
00.00895	00.00895	24.2	2.4	UG/L	28.	2.	12/06/90	UNDER CONTROL
00.00895	00.00895	30.8	3.1	UG/L	28.	2.	12/06/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	14.	0.2	UG/L	16.	2.	12/04/90	UNDER CONTROL
90.17319	35.1	5.	UG/L	50.	5.	12/04/90	WARNING 2-3 SIG

REPORT NUMBER: 9027

Analyst	Section Leader	QA Officer
12/6/90	12-6-90	12-6-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8998

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 4-Dec-1990

ANALYSIS: MO REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	69.7	1.1	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	24.3	3.9	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	6.3	1.	UG/L	12/04/90	TOT REC
MCO-7	90.17259	5.	1.	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	3.6	1.	UG/L	12/04/90	TOT REC
MCO-6	90.17261	6.7	1.	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 8998 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 4-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	100.7	16.1	UG/L	85.	3.	12/04/90	UNDER CONTROL
00.00895	00.00895	97.	15.5	UG/L	85.	3.	12/04/90	UNDER CONTROL
00.00895	00.00895	98.2	15.7	UG/L	85.	3.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	4.5	1.	UG/L	25.	2.	12/04/90	OUT OF CONTROL

REPORT NUMBER: 8998

Analyst — Section Leader — QA Officer

12/04/90 — 12-5-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9003

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 4-Dec-1990

ANALYSIS: NI REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	14.8	1.2	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	10.9	0.9	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	17.3	0.8	UG/L	12/04/90	TOT REC
MCO-7	90.17259	10.3	0.8	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	20.3	1.7	UG/L	12/04/90	TOT REC
MCO-6	90.17261	16.3	1.3	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 9003 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 4-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	54.1	4.4	UG/L	55.	3.	12/04/90	UNDER CONTROL
00.00505	00.00505	46.1	3.8	UG/L	55.	3.	12/04/90	UNDER CONTROL
00.00505	00.00505	49.3	3.8	UG/L	55.	3.	12/04/90	UNDER CONTROL
00.00505	00.00505	52.3	4.3	UG/L	55.	3.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	50.4	4.1	UG/L	66.	7.	12/04/90	UNDER CONTROL

REPORT NUMBER: 9003

Analyst — Section Leader — QA Officer

12/04/90 — 12-5-90 — 12-5-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8341

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: PB REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	2.8	0.4	UG/L	10/04/90	TOT REC
MCO-4B	90.17257	42.3	6.2	UG/L	10/04/90	TOT REC
MCO-6B	90.17258	163.	24.	UG/L	10/04/90	TOT REC
MCO-7	90.17259	16.8	2.5	UG/L	10/04/90	TOT REC
MCO-7A	90.17260	94.	14.	UG/L	10/04/90	TOT REC
MCO-6	90.17261	16.2	2.4	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8341 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	25.1	3.7	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.00895	00.00895	30.2	4.4	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.00895	00.00895	26.1	3.8	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.00895	00.00895	25.7	3.8	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.98625	00.98625	102.	15.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	126.	18.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	123.	18.	UG/L	100.	10.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	4.3	0.6	UG/L	20.	2.	10/04/90	OUT OF CONTROL

Analyst — Section Leader — QA Officer

10/10/90 — 10-11-90 — 10-12-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8338

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: SB REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	0.7	0.5	UG/L	10/04/90	TOT REC
MCO-4B	90.17257	0.5	0.5	UG/L	10/04/90	TOT REC
MCO-6B	90.17258	< 0.5		UG/L	10/04/90	TOT REC
MCO-7	90.17259	< 0.5		UG/L	10/04/90	TOT REC
MCO-7A	90.17260	< 0.5		UG/L	10/04/90	TOT REC
MCO-6	90.17261	< 0.5		UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8338 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.98625	00.98625	111.	13.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	112.	13.	UG/L	100.	10.	10/04/90	UNDER CONTROL
00.98625	00.98625	115.	14.	UG/L	100.	10.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	1.1	0.5	UG/L	50.	5.	10/04/90	OUT OF CONTROL

Analyst Section Leader QA Officer

10/10/90 10-11-90 10-11/90

Date Date Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8378

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: TMF on 9-Oct-1990

ANALYSIS: SE REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ETVAA ANALYTICAL PROCEDURE : 7740

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	2.4	1.	UG/L	10/09/90	
MCO-4B	90.17257	2.5	1.	UG/L	10/09/90	
MCO-6B	90.17258	2.2	1.	UG/L	10/09/90	
MCO-7	90.17259	1.	1.	UG/L	10/09/90	
MCO-7A	90.17260	1.	1.	UG/L	10/09/90	
MCO-6	90.17261	2.6	1.	UG/L	10/09/90	

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REPORT NUMBER: 8378 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: TMF on 9-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01160	00.01160	11.	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	8.	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	8.6	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	7.7	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17316	48.5	10.	UG/L	50.	5.	10/09/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
Date	10-10-90 Date	10-10-90 Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8350

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: SR REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	146.	1.	UG/L	10/05/90	TOT REC
MCO-4B	90.17257	164.	2.	UG/L	10/05/90	TOT REC
MCO-6B	90.17258	164.	2.	UG/L	10/05/90	TOT REC
MCO-7	90.17259	118.	1.	UG/L	10/05/90	TOT REC
MCO-7A	90.17260	136.	1.	UG/L	10/05/90	TOT REC
MCO-6	90.17261	175.	2.	UG/L	10/05/90	TOT REC

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REPORT NUMBER: 8350 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	238.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00505	00.00505	237.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00505	00.00505	[illegible]1.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00895	00.00895	243.	2.	UG/L	227.	6.	10/05/90	WARNING 2-3 SIG

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	357.	4.	UG/L	400.	40.	10/05/90	UNDER CONTROL

Analyst — Section Leader — QA Officer

10/9/90 — 10-9-90 — 10-10-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8340

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: TL REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	0.2	0.2	UG/L	10/04/90	TOT REC
MCO-4B	90.17257	0.4	0.2	UG/L	10/04/90	TOT REC
MCO-6B	90.17258	2.1	0.2	UG/L	10/04/90	TOT REC
MCO-7	90.17259	0.2	0.2	UG/L	10/04/90	TOT REC
MCO-7A	90.17260	0.8	0.2	UG/L	10/04/90	TOT REC
MCO-6	90.17261	0.2	0.2	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 9026

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: V REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	215.	8.6	UG/L	12/04/90	TOT REC
MCO-4B	90.17257	171.	6.9	UG/L	12/04/90	TOT REC
MCO-6B	90.17258	155.	6.2	UG/L	12/04/90	TOT REC
MCO-7	90.17259	126.	5.	UG/L	12/04/90	TOT REC
MCO-7A	90.17260	147.	5.	UG/L	12/04/90	TOT REC
MCO-6	90.17261	185.	7.	UG/L	12/04/90	TOT REC

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REPORT NUMBER: 9026 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	45.8	1.9	UG/L	53.	3.	12/04/90	WARNING 2-3 SIG
00.00505	00.00505	54.	0.5	UG/L	53.	3.	12/06/90	UNDER CONTROL
00.00505	00.00505	54.	0.5	UG/L	53.	3.	12/06/90	UNDER CONTROL
00.00505	00.00505	47.9	2.	UG/L	53.	3.	12/04/90	UNDER CONTROL
00.00505	00.00505	44.9	2.1	UG/L	53.	3.	12/04/90	WARNING 2-3 SIG
00.00505	00.00505	45.7	1.9	UG/L	53.	3.	12/04/90	WARNING 2-3 SIG
00.00505	00.00505	53.4	0.5	UG/L	53.	3.	12/06/90	UNDER CONTROL
00.00895	00.00895	47.3	0.5	UG/L	45.2	0.4	12/06/90	OUT OF CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	5.7	0.6	UG/L	100.	10.	12/04/90	OUT OF CONTROL

REPORT NUMBER: 9026

Analyst — Section Leader — QA Officer

12/6/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9024

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Dec-1990

ANALYSIS: ZN REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
MCO-4	90.17256	20.6	5.	UG/L	12/05/90	TOT REC
MCO-4B	90.17257	72.1	10.	UG/L	12/05/90	TOT REC
MCO-6B	90.17258	149.	20.	UG/L	12/05/90	TOT REC
MCO-7	90.17259	74.4	10.	UG/L	12/05/90	TOT REC
MCO-7A	90.17260	107.	15.	UG/L	12/05/90	TOT REC
MCO-6	90.17261	43.2	6.	UG/L	12/05/90	TOT REC

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REPORT NUMBER: 9024 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Dec-1990

REQUEST NUMBER: 10763 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA-1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	62.7	9.	UG/L	72.	4.	12/05/90	UNDER CONTROL
00.00505	00.00505	64.2	9.2	UG/L	72.	4.	12/05/90	UNDER CONTROL
00.00505	00.00505	65.2	9.4	UG/L	72.	4.	12/05/90	UNDER CONTROL
00.00505	00.00505	54.6	7.9	UG/L	72.	4.	12/05/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	67.	14.	UG/L	90.	9.	12/05/90	UNDER CONTROL

REPORT NUMBER: 9024

Analyst	Section Leader	QA Officer
12/06/90	12-6-90	12-6-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8453

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: E.M.HODGE on 18-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Evangeline Hodge PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	CA	22.4	2.2	MG/L	9/26/90	
APCO-1	90.17401	CL	17.3	1.7	MG/L	9/24/90	
APCO-1	90.17401	CN	0.026	0.01	MG/L	9/25/90	
APCO-1	90.17401	COND	304.	15.	UMHOS/CM	9/24/90	
APCO-1	90.17401	K	14.8	1.5	MG/L	9/26/90	
APCO-1	90.17401	MG	3.45	0.5	MG/L	9/26/90	
APCO-1	90.17401	NA	103.	10.	MG/L	9/26/90	
APCO-1	90.17401	NO3-N	4.52	0.4	MG/L	9/19/90	
APCO-1	90.17401	PH	7.04	0.1	NONE	9/24/90	
APCO-1	90.17401	PO4-P	6.12	1.22	MG/L	9/18/90	
APCO-1	90.17401	SO4	40.	4.	MG/L	9/24/90	
APCO-1	90.17401	TDS	448.	45.	MG/L	10/18/90	
LAO-3	90.17402	CA	29.4	2.9	MG/L	9/26/90	
LAO-3	90.17402	CL	17.3	1.7	MG/L	9/24/90	
LAO-3	90.17402	CN	0.02	0.01	MG/L	9/25/90	
LAO-3	90.17402	COND	249.	12.	UMHOS/CM	9/24/90	
LAO-3	90.17402	K	11.7	1.2	MG/L	9/26/90	
LAO-3	90.17402	MG	5.67	0.6	MG/L	9/26/90	
LAO-3	90.17402	NA	47.2	4.7	MG/L	9/26/90	
LAO-3	90.17402	NO3-N	1.05	0.1	MG/L	9/19/90	
LAO-3	90.17402	PH	7.08	0.1	NONE	9/24/90	
LAO-3	90.17402	PO4-P	0.328	0.07	MG/L	9/18/90	
LAO-3	90.17402	SO4	20.3	2.	MG/L	9/24/90	
LAO-3	90.17402	TDS	234.	23.	MG/L	10/18/90	
LAO-3A	90.17403	CA	29.1	2.9	MG/L	9/26/90	
LAO-3A	90.17403	CL	17.5	1.7	MG/L	9/24/90	
LAO-3A	90.17403	CN	0.015	0.01	MG/L	9/25/90	
LAO-3A	90.17403	COND	257.	13.	UMHOS/CM	9/24/90	
LAO-3A	90.17403	K	12.1	1.2	MG/L	9/26/90	
LAO-3A	90.17403	MG	5.55	0.5	MG/L	9/26/90	
LAO-3A	90.17403	NA	47.9	4.8	MG/L	9/26/90	
LAO-3A	90.17403	NO3-N	1.16	0.1	MG/L	9/19/90	
LAO-3A	90.17403	PH	7.	0.1	NONE	9/24/90	
LAO-3A	90.17403	PO4-P	0.317	0.06	MG/L	9/18/90	
LAO-3A	90.17403	SO4	20.	2.	MG/L	9/24/90	
LAO-3A	90.17403	TDS	274.	27.	MG/L	10/18/90	
LAO-4.5	90.17404	CA	4.12	1.	MG/L	9/26/90	
LAO-4.5	90.17404	CL	13.5	1.3	MG/L	9/24/90	
LAO-4.5	90.17404	CN	0.01	0.01	MG/L	9/25/90	
LAO-4.5	90.17404	COND	201.	10.	UMHOS/CM	9/24/90	

LAO-4.5	90.17404	K	5.51	0.5	MG/L	9/26/90
LAO-4.5	90.17404	MG	5.05	0.5	MG/L	9/26/90
LAO-4.5	90.17404	NA	46.8	4.7	MG/L	9/26/90
LAO-4.5	90.17404	NO3-N	0.073	0.04	MG/L	9/19/90
LAO-4.5	90.17404	PH	7.12	0.1	NONE	9/24/90
LAO-4.5	90.17404	PO4-P	0.161	0.04	MG/L	9/18/90
LAO-4.5	90.17404	SO4	17.4	1.7	MG/L	9/24/90
LAO-4.5	90.17404	TDS	154.	15.	MG/L	10/18/90
LAO-4.5C	90.17405	CA	18.4	1.8	MG/L	9/26/90
LAO-4.5C	90.17405	CL	13.3	1.3	MG/L	9/24/90
LAO-4.5C	90.17405	CN	0.01	0.01	MG/L	9/25/90
LAO-4.5C	90.17405	COND	185.	9.	UMHOS/CM	9/24/90
LAO-4.5C	90.17405	K	5.93	0.6	MG/L	9/26/90
LAO-4.5C	90.17405	MG	5.16	0.5	MG/L	9/26/90
LAO-4.5C	90.17405	NA	46.	4.6	MG/L	9/26/90
LAO-4.5C	90.17405	NO3-N	0.094	0.04	MG/L	9/19/90
LAO-4.5C	90.17405	PH	7.01	0.1	NONE	9/24/90
LAO-4.5C	90.17405	PO4-P	0.146	0.04	MG/L	9/18/90
LAO-4.5C	90.17405	SO4	20.5	2.	MG/L	9/24/90
LAO-4.5C	90.17405	TDS	188.	19.	MG/L	10/18/90

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REPORT NUMBER: 8453 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: E.M.HODGE on 18-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Evangeline Hodge PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE
00.00966	00.00966	COND	258.	13.	UMHOS	300.	30.	9/24/90 UNDER CONTROL
00.00966	00.00966	PH	6.94	0.1	UNITS	6.87	0.06	9/24/90 UNDER CONTROL
00.00966	00.00966	TDS	265.	26.	MG/L	293.	20.	10/18/90 UNDER CONTROL
00.01013	00.01013	CA	23.9	2.4	MG/L	20.	1.2	9/26/90 UNDER CONTROL
.01013	00.01013	K	5.1	0.5	MG/L	5.	0.39	9/26/90 UNDER CONTROL
00.01013	00.01013	MG	5.8	0.6	MG/L	5.	0.36	9/26/90 UNDER CONTROL
00.01013	00.01013	NA	25.4	2.5	MG/L	20.	1.1	9/26/90 UNDER CONTROL
00.01040	00.01040	NO3-N	187.	19.	UG/L	180.	20.	9/19/90 UNDER CONTROL
00.01041	00.01041	PO4-P	210.	42.	UG/L	270.	10.	9/18/90 UNDER CONTROL
00.01211	00.01211	CN	194.	19.	UG/L	224.	29.	9/25/90 UNDER CONTROL
00.01013	00.01013	CL	54.2	5.4	MG/L	52.1	1.8	10/18/90 UNDER CONTROL
00.01013	00.01013	SO4	24.6	2.5	MG/L	20.	1.7	10/18/90 UNDER CONTROL

Analyst	Section Leader	QA Officer
10/23/90	10-23-90	10-23-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8816

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 14-Nov-1990

ANALYSIS: AG REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	1.	0.2	UG/L	10/03/90	TOT REC
LAO-3	90.17402	< 0.2		UG/L	10/03/90	TOT REC
LAO-3A	90.17403	< 0.2		UG/L	10/03/90	TOT REC
LAO-4.5	90.17404	< 0.2		UG/L	10/03/90	TOT REC
LAO-4.5C	90.17405	< 0.2		UG/L	10/03/90	TOT REC

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REPORT NUMBER: 8816 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 14-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	10.9	1.2	UG/L	9.8	0.8	10/04/90	UNDER CONTROL
00.00895	00.00895	10.5	1.	UG/L	9.8	0.8	11/14/90	UNDER CONTROL
00.00895	00.00895	11.	1.	UG/L	9.8	0.8	11/14/90	UNDER CONTROL
00.00895	00.00895	10.7	1.	UG/L	9.8	0.8	11/14/90	UNDER CONTROL
00.00895	00.00895	10.9	1.2	UG/L	9.8	0.8	10/04/90	UNDER CONTROL
00.00895	00.00895	10.9	1.2	UG/L	9.8	0.8	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	15.	1.4	UG/L	16.	2.	11/14/90	UNDER CONTROL
90.17318	43.4	4.7	UG/L	43.	4.	10/04/90	UNDER CONTROL

REPORT NUMBER: 8816

Analyst	Section Leader	QA Officer
11/15/90	11-15-90	11-15-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9039

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: AL REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Janet Montoya PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPES ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	30700.	3100.	UG/L	11/06/90	TOT REC
LAO-4.5	90.17404	2500.	250.	UG/L	11/06/90	TOT REC
LAO-4.5C	90.17405	2600.	260.	UG/L	11/06/90	TOT REC

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REPORT NUMBER: 9039 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Janet Montoya PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.99654	00.99654	6.3	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL
00.99654	00.99654	6.4	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL
00.99654	00.99654	6.2	0.6	MG/L	6.	0.6	12/06/90	UNDER CONTROL

REPORT NUMBER: 9039

Analyst	Section Leader	QA Officer
12/07/90	12-7-90	12-7-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9041

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: AL REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
LAO-3	90.17402	116.	17.	UG/L	11/06/90	TOT REC
LAO-3A	90.17403	58.	9.	UG/L	11/06/90	TOT REC

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REPORT NUMBER: 9041 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.21596	00.21596	217.	33.	UG/L	250.	20.	11/06/90	UNDER CONTROL
00.21596	00.21596	213.	32.	UG/L	250.	20.	11/06/90	UNDER CONTROL
00.21596	00.21596	268.	25.	UG/L	250.	20.	12/06/90	UNDER CONTROL
00.21596	00.21596	221.	19.	UG/L	250.	20.	11/06/90	UNDER CONTROL
00.21596	00.21596	204.	31.	UG/L	250.	20.	11/06/90	UNDER CONTROL
00.21596	00.21596	264.	24.	UG/L	250.	20.	12/06/90	UNDER CONTROL
00.21596	00.21596	269.	25.	UG/L	250.	20.	12/06/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	240.	40.	UG/L	400.	40.	11/06/90	WARNING 2-3 SIG

REPORT NUMBER: 9041

Analyst — Section Leader — QA Officer

12/06/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9034

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: AS REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	3.5	1.	UG/L	12/06/90	TOT REC
LAO-3	90.17402	3.4	1.	UG/L	12/06/90	TOT REC
LAO-3A	90.17403	< 1.		UG/L	12/06/90	TOT REC
LAO-4.5	90.17404	< 1.		UG/L	12/06/90	TOT REC
LAO-4.5C	90.17405	< 1.		UG/L	12/06/90	TOT REC

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REPORT NUMBER: 9034 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	77.8	1.1	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	76.9	1.1	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	72.3	1.	UG/L	76.	7.	12/04/90	UNDER CONTROL
00.00505	00.00505	75.3	1.	UG/L	76.	7.	12/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	11.8	0.2	UG/L	16.	2.	12/04/90	WARNING 2-3 SIG
90.17319	4.	1.	UG/L	20.	2.	12/04/90	OUT OF CONTROL

Not As QC

REPORT NUMBER: 9034

Analyst — Section Leader — QA Officer

12/6/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8346

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: BA REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	301.	10.	UG/L	10/04/90	TOT REC
LAO-3	90.17402	163.	6.	UG/L	10/04/90	TOT REC
LAO-3A	90.17403	96.1	3.3	UG/L	10/04/90	TOT REC
LAO-4.5	90.17404	41.7	1.5	UG/L	10/04/90	TOT REC
LAO-4.5C	90.17405	46.5	1.6	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8346 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	42.2	1.4	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	43.6	1.4	UG/L	44.	2.	10/04/90	UNDER CONTROL
00.00895	00.00895	41.9	1.4	UG/L	44.	2.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	43.6	1.6	UG/L	50.	5.	10/05/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
10/9/90	10-9-90	10-9-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8698

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Nov-1990

ANALYSIS: BE REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	2.1	0.3	UG/L	11/05/90	TOT REC
LAO-3	90.17402	< 0.1		UG/L	11/05/90	TOT REC
LAO-3A	90.17403	< 0.1		UG/L	11/05/90	TOT REC
LAO-4.5	90.17404	0.4	0.1	UG/L	11/05/90	TOT REC
LAO-4.5C	90.17405	0.2	0.1	UG/L	11/05/90	TOT REC

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REPORT NUMBER: 8698 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	22.1	2.4	UG/L	19.	2.	11/05/90	UNDER CONTROL
00.00895	00.00895	22.2	2.4	UG/L	19.	2.	11/05/90	UNDER CONTROL
00.00895	00.00895	20.6	2.3	UG/L	19.	2.	11/05/90	UNDER CONTROL
00.00895	00.00895	19.7	2.2	UG/L	19.	2.	11/05/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	33.1	3.6	UG/L	30.	3.	11/05/90	UNDER CONTROL

REPORT NUMBER: 8698

Analyst	Section Leader	QA Officer
11/06/90	11-6-90	11-6-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8344

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: CD REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	1.1	0.5	UG/L	10/04/90	TOT REC
LAO-3	90.17402	0.5	0.5	UG/L	10/04/90	TOT REC
LAO-3A	90.17403	0.6	0.5	UG/L	10/04/90	TOT REC
LAO-4.5	90.17404	< 0.5		UG/L	10/04/90	TOT REC
LAO-4.5C	90.17405	0.6	0.5	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8344 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	19.8	0.2	UG/L	20.	1.	10/04/90	UNDER CONTROL
00.00895	00.00895	19.8	0.2	UG/L	20.	1.	10/04/90	UNDER CONTROL
00.00895	00.00895	19.9	0.2	UG/L	20.	1.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	46.4	0.5	UG/L	50.	5.	10/04/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
10/9/90	10-9-90	10-9-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 9035

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: CR REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	29.5	3.	UG/L	12/06/90	TOT REC
LAO-3	90.17402	2.2	1.	UG/L	12/06/90	TOT REC
LAO-3A	90.17403	1.9	1.	UG/L	12/06/90	TOT REC
LAO-4.5	90.17404	14.4	1.4	UG/L	12/06/90	TOT REC
LAO-4.5C	90.17405	3.2	1.	UG/L	12/06/90	TOT REC

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REPORT NUMBER: 9035 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	20.6	2.1	UG/L	17.	2.	12/06/90	UNDER CONTROL

REPORT NUMBER: 9035

Analyst — Section Leader — QA Officer

12/06/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8700

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Nov-1990

ANALYSIS: CU REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	33.	2.	UG/L	11/06/90	TOT REC
LAO-3	90.17402	< 1.		UG/L	11/06/90	TOT REC
LAO-3A	90.17403	< 1.		UG/L	11/06/90	TOT REC
LAO-4.5	90.17404	38.	3.	UG/L	11/06/90	TOT REC
LAO-4.5C	90.17405	3.	1.	UG/L	11/06/90	TOT REC

****

REPORT NUMBER: 8700 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	21.	1.5	UG/L	21.9	0.4	11/06/90	UNDER CONTROL
00.00895	00.00895	19.6	1.4	UG/L	21.9	0.4	11/06/90	UNDER CONTROL
00.00895	00.00895	23.	1.1	UG/L	21.9	0.4	11/06/90	UNDER CONTROL
00.00895	00.00895	17.8	1.3	UG/L	21.9	0.4	11/06/90	OUT OF CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	10.	1.	UG/L	16.	2.	11/06/90	WARNING 2-3 SIG

REPORT NUMBER: 8700

Analyst — Section Leader — QA Officer

11/06/90 — 11-6-90 — 11-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8375

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: TMF on 9-Oct-1990

ANALYSIS: FE REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: FAA ANALYTICAL PROCEDURE : 7380

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	2.9	0.3	MG/L	10/09/90	
LAO-3	90.17402	15.	6.	MG/L	10/09/90	
LAO-3A	90.17403	< 0.02		MG/L	10/09/90	
LAO-4.5	90.17404	< 0.02		MG/L	10/09/90	
LAO-4.5C	90.17405	0.037	0.02	MG/L	10/09/90	

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REPORT NUMBER: 8375 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: TMF on 9-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01036	00.01036	119.	12.	UG/L	100.	9.	10/09/90	UNDER CONTROL
00.01036	00.01036	105.	11.	UG/L	100.	9.	10/09/90	UNDER CONTROL
00.01036	00.01036	110.	11.	UG/L	100.	9.	10/09/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17316	< 20.		UG/L	10.	1.	10/09/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
	MSLB	MSLB
Date	10-10-90	10-10-90
	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8248

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MAB on 25-Sep-1990

ANALYSIS: HG REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Malti Bhatia PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: CVAA ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	< 0.2		UG/L	9/24/90	
LAO-3	90.17402	< 0.2		UG/L	9/24/90	
LAO-3A	90.17403	< 0.2		UG/L	9/24/90	
LAO-4.5	90.17404	< 0.2		UG/L	9/24/90	
LAO-4.5C	90.17405	< 0.2		UG/L	9/24/90	

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REPORT NUMBER: 8248 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MAB on 25-Sep-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Malti Bhatia PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.20087	00.20087	4.	0.4	UG/L	4.	0.4	9/24/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17317	2.8	0.3	UG/L	3.	0.3	9/24/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
Date	9-25-90 Date	9-25-90 Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9029

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: MN REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	1050.	110.	UG/L	11/29/90	TOT REC
LAO-3	90.17402	412.	41.	UG/L	12/06/90	TOT REC
LAO-3A	90.17403	14.5	1.5	UG/L	12/06/90	TOT REC
LAO-4.5	90.17404	1.8	1.	UG/L	12/06/90	TOT REC
LAO-4.5C	90.17405	10.8	1.1	UG/L	12/06/90	TOT REC

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REPORT NUMBER: 9029 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	35.2	3.5	UG/L	31.	2.	12/06/90	UNDER CONTROL
00.00505	00.00505	35.6	3.6	UG/L	31.	2.	12/06/90	UNDER CONTROL
00.00505	00.00505	36.7	3.7	UG/L	31.	2.	12/06/90	UNDER CONTROL
00.00895	00.00895	30.6	3.1	UG/L	28.	2.	11/29/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17563	9.5	1.	UG/L	14.	1.	11/29/90	OUT OF CONTROL

REPORT NUMBER: 9029

Richard Robinson — Analyst — 12/6/90 Date

MSB — Section Leader — 12-6-90 Date

mag — QA Officer — 12-6-90 Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8704

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Nov-1990

ANALYSIS: MO REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	6.	1.2	UG/L	11/06/90	TOT REC
LAO-3	90.17402	1.5	0.3	UG/L	11/06/90	TOT REC
LAO-3A	90.17403	1.4	0.3	UG/L	11/06/90	TOT REC
LAO-4.5	90.17404	2.3	0.5	UG/L	11/06/90	TOT REC
LAO-4.5C	90.17405	1.7	0.5	UG/L	11/06/90	TOT REC

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REPORT NUMBER: 8704 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	111.	28.	UG/L	85.	3.	11/06/90	UNDER CONTROL
00.00895	00.00895	104.	26.	UG/L	85.	3.	11/06/90	UNDER CONTROL
00.00895	00.00895	105.	25.	UG/L	85.	3.	11/06/90	UNDER CONTROL
00.00895	00.00895	106.	26.	UG/L	85.	3.	11/06/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	50.	5.5	UG/L	50.	5.	11/06/90	UNDER CONTROL

REPORT NUMBER: 8704

Analyst — Section Leader — QA Officer

11/06/90 — 11-6-90 — 11-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 9036

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Dec-1990

ANALYSIS: NI REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	37.	3.7	UG/L	12/06/90	TOT REC
LAO-3	90.17402	3.7	1.	UG/L	12/06/90	TOT REC
LAO-3A	90.17403	3.4	1.	UG/L	12/06/90	TOT REC
LAO-4.5	90.17404	7.3	1.	UG/L	12/06/90	TOT REC
LAO-4.5C	90.17405	4.1	1.	UG/L	12/06/90	TOT REC

****

REPORT NUMBER: 9036 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Dec-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	59.1	5.6	UG/L	55.	3.	12/06/90	UNDER CONTROL

REPORT NUMBER: 9036

Analyst — Section Leader — QA Officer

12/06/90 — 12-6-90 — 12-6-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8348

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: PB REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	10.6	0.4	UG/L	10/04/90	TOT REC
LAO-3	90.17402	18.8	0.7	UG/L	10/04/90	TOT REC
LAO-3A	90.17403	< 0.5		UG/L	10/04/90	TOT REC
LAO-4.5	90.17404	< 0.5		UG/L	10/04/90	TOT REC
LAO-4.5C	90.17405	2.	0.5	UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8348 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	24.5	0.8	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.00895	00.00895	25.	0.9	UG/L	23.7	0.7	10/04/90	UNDER CONTROL
00.00895	00.00895	24.1	0.8	UG/L	23.7	0.7	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	12.	0.4	UG/L	20.	2.	10/05/90	OUT OF CONTROL

Analyst — Section Leader — QA Officer

10/10/90 — 10-11-90 — 10-12-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8345

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: SB REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	< 0.5		UG/L	10/04/90	TOT REC
LAO-3	90.17402	< 0.5		UG/L	10/04/90	TOT REC
LAO-3A	90.17403	< 0.5		UG/L	10/04/90	TOT REC
LAO-4.5	90.17404	< 0.5		UG/L	10/04/90	TOT REC
LAO-4.5C	90.17405	< 0.5		UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8345 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.21596	00.21596	35.9	2.2	UG/L	40.	4.	10/04/90	UNDER CONTROL
00.21596	00.21596	38.3	2.4	UG/L	40.	4.	10/04/90	UNDER CONTROL
00.21596	00.21596	36.6	2.3	UG/L	40.	4.	10/04/90	UNDER CONTROL
00.21596	00.21596	36.6	2.3	UG/L	40.	4.	10/04/90	UNDER CONTROL
00.21596	00.21596	35.9	2.2	UG/L	40.	4.	10/04/90	UNDER CONTROL
00.21596	00.21596	38.3	2.4	UG/L	40.	4.	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	26.8	1.7	UG/L	50.	5.	10/05/90	OUT OF CONTROL

Analyst — Section Leader — QA Officer

10/10/90 — 10-11-90 — 10-12-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8376

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: TMF on 9-Oct-1990

ANALYSIS: SE REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALL

ANALYTICAL TECHNIQUE: ETVAA ANALYTICAL PROCEDURE : 7740

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	1.	1.	UG/L	10/09/90	
LAO-3	90.17402	1.	1.	UG/L	10/09/90	
LAO-3A	90.17403	1.7	1.	UG/L	10/09/90	
LAO-4.5	90.17404	1.	1.	UG/L	10/09/90	
LAO-4.5C	90.17405	< 1.		UG/L	10/09/90	

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REPORT NUMBER: 8376 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: TMF on 9-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Trudi Foreman PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01160	00.01160	7.7	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	11.	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	8.	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL
00.01160	00.01160	8.6	2.	UG/L	8.1	1.1	10/09/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
	MSB	MSB
Date	10-10-90	10-10-90
	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8351

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: SR REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	163.	2.	UG/L	10/05/90	TOT REC
LAO-3	90.17402	143.	1.	UG/L	10/05/90	TOT REC
LAO-3A	90.17403	124.	1.	UG/L	10/05/90	TOT REC
LAO-4.5	90.17404	79.7	0.8	UG/L	10/05/90	TOT REC
LAO-4.5C	90.17405	76.3	0.8	UG/L	10/05/90	TOT REC

****

REPORT NUMBER: 8351 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00505	00.00505	241.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00505	00.00505	238.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00505	00.00505	237.	2.	UG/L	239.	5.	10/05/90	UNDER CONTROL
00.00895	00.00895	243.	2.	UG/L	227.	6.	10/05/90	WARNING 2-3 SIG

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17319	357.	4.	UG/L	400.	40.	10/05/90	UNDER CONTROL

Analyst — Section Leader — QA Officer

10/8/90 — 10-8-90 — 10-10-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8347

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 5-Oct-1990

ANALYSIS: TL REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	0.5	0.2	UG/L	10/04/90	TOT REC
LAO-3	90.17402	0.3	0.2	UG/L	10/04/90	TOT REC
LAO-3A	90.17403	< 0.2		UG/L	10/04/90	TOT REC
LAO-4.5	90.17404	< 0.2		UG/L	10/04/90	TOT REC
LAO-4.5C	90.17405	< 0.2		UG/L	10/04/90	TOT REC

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REPORT NUMBER: 8347 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 5-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	8.	0.1	UG/L	8.	0.2	10/04/90	UNDER CONTROL
00.00895	00.00895	8.4	0.1	UG/L	8.	0.2	10/04/90	UNDER CONTROL
00.00895	00.00895	8.	0.1	UG/L	8.	0.2	10/04/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17318	35.	3.5	UG/L	18.	2.	10/05/90	OUT OF CONTROL

Analyst — Section Leader — QA Officer

10/10/90 — 10-11-90 — 10-12-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8888

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 20-Nov-1990

ANALYSIS: V REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	91.	14.	UG/L	11/19/90	TOT REC
LAO-3	90.17402	1.3	1.	UG/L	11/19/90	TOT REC
LAO-3A	90.17403	< 1.		UG/L	11/19/90	TOT REC
LAO-4.5	90.17404	100.	15.	UG/L	11/19/90	TOT REC
LAO-4.5C	90.17405	4.1	1.	UG/L	11/19/90	TOT REC

****

REPORT NUMBER: 8888 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 20-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M2[illegible]

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA[illegible]

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	35.5	5.3	UG/L	45.2	0.4	11/19/90	UNDER CONTROL
00.00895	00.00895	39.6	5.9	UG/L	45.2	0.4	11/19/90	UNDER CONTROL
00.00895	00.00895	36.6	5.5	UG/L	45.2	0.4	11/19/90	UNDER CONTROL
00.00895	00.00895	46.8	2.8	UG/L	45.2	0.4	11/06/90	UNDER CONTROL
00.00895	00.00895	43.7	2.6	UG/L	45.2	0.4	11/06/90	UNDER CONTROL
00.00895	00.00895	42.2	6.3	UG/L	45.2	0.4	11/19/90	UNDER CONTROL
00.00895	00.00895	39.8	2.4	UG/L	45.2	0.4	11/06/90	WARNING [illegible]
00.00895	00.00895	40.4	2.4	UG/L	45.2	0.4	11/06/90	UNDER CONTROL
00.98625	00.98625	97.1	15.	UG/L	100.	10.	11/19/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	49.6	7.4	UG/L	66.	7.	11/06/90	UNDER CONTROL

REPORT NUMBER: 8888

Analyst — Section Leader — QA Officer

11/20/90 — 11-20-90 — 11-21-90

Date — Date — Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8702

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: ROBINSON on 6-Nov-1990

ANALYSIS: ZN REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: ICPMS ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	123.	6.	UG/L	11/06/90	TOT REC
LAO-3	90.17402	< 5.		UG/L	11/06/90	TOT REC
LAO-3A	90.17403	< 5.		UG/L	11/06/90	TOT REC
LAO-4.5	90.17404	34.	5.	UG/L	11/06/90	TOT REC
LAO-4.5C	90.17405	20.	5.	UG/L	11/06/90	TOT REC

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REPORT NUMBER: 8702 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: ROBINSON on 6-Nov-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Richard Robinson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895	00.00895	73.	3.7	UG/L	66.	2.	11/06/90	UNDER CONTROL
00.00895	00.00895	63.9	3.2	UG/L	66.	2.	11/06/90	UNDER CONTROL
00.00895	00.00895	70.3	3.5	UG/L	66.	2.	11/06/90	UNDER CONTROL
00.00895	00.00895	64.8	3.2	UG/L	66.	2.	11/06/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.14641	35.	10.	UG/L	30.	3.	11/06/90	UNDER CONTROL

REPORT NUMBER: 8702

Analyst	Section Leader	QA Officer
11/06/90	11-7-90	11-7-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8309

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: H. PATTERSON on 1-Oct-1990

ANALYSIS: HARD REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Harry Patterson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

ANALYTICAL TECHNIQUE: CALC ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
APCO-1	90.17401	79.81	7.98	MG/L	10/01/90	
LAO-3	90.17402	96.75	9.67	MG/L	10/01/90	
LAO-3A	90.17403	95.51	9.55	MG/L	10/01/90	
LAO-4.5	90.17404	31.08	3.11	MG/L	10/01/90	
LAO-4.5C	90.17405	67.19	6.72	MG/L	10/01/90	

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REPORT NUMBER: 8309 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: H. PATTERSON on 1-Oct-1990

REQUEST NUMBER: 10774 MATRIX: WW ANALYST: Harry Patterson PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01013	00.01013	83.56	8.36	MG/L	72.2	2.5	10/01/90	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
90.17312	82.49	8.25	MG/L	63.	6.	10/01/90	UNDER CONTROL

Analyst	Section Leader	QA Officer
H. P	MSB	MSB
10/2/90	10-2-90	10-2-90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT ON RCRA APPENDIX IX SAMPLING AT LOS ALAMOS NATIONAL LABORATORY LOS ALAMOS, NEW MEXICO

NOVEMBER 1990

Prepared by

International Technology Corporation
5301 Central Ave. NE, Suite 700
Albuquerque, New Mexico 87108

Introduction

On November 1 and 2, 1990, ground-water sampling of six RCRA ground-water monitoring wells at Los Alamos National Laboratory (LANL), in Los Alamos, NM, took place. Sampling was performed by IT-Albuquerque personnel Barbara Matz, Jon Saavedra, and Kurt Schmidt, with Peggy Reneau of IT-Los Alamos observing and assisting. Sampling was conducted in accordance with the RCRA Ground Water Monitoring Technical Enforcement Guidance Document (EPA, 1986) (TEGD). Observers from LANL were Steve McLin on November 1, and Max Maes on November 2.

Sample Collection

Monitor wells sampled were MCO-4B, MCO-6B and MCO-7A in Mortandad Canyon; LAO-3A and LAO-4.5C in Los Alamos Canyon; and well APCO-1 in Acid Pueblo Canyon. Samples were collected for analysis for RCRA Appendix IX parameters, including: volatile organic compounds, base/neutral/acid-extractable semivolatile organic compounds, organochlorine pesticides, herbicides, PCBs, Dioxins and Furans, total metals, cyanide, and sulfide.

Clean, empty sample bottles were shipped from IT-Knoxville Analytical Services to IT-Albuquerque. The 40-ml glass vials used for volatile organic compound analyses were pre-prepared with hydrochloric acid preservative, but sample bottles for metals, cyanide and sulfide analyses required laboratory preparation prior to sampling. The sampling team prepared sample bottles with preservatives in the laboratory at LANL TA-50, as directed by EPA document SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods). [Although the title refers to solid waste, this document contains all the test methods called for in the RCRA Appendix IX constituent list, all of which are applicable to analysis of water samples.]

IT sampling personnel wore Level D protective clothing, with additional PVC raingear and latex surgical gloves whenever in contact with ground water. Upon opening each wellhead in the field, organic vapors were monitored, using a HNu Photo-Ionic Detector, and found to be non-detectable. Additionally, the wellhead, surrounding area, and ground water withdrawn from the wells were monitored for beta and gamma radiation, using a hand-held ion chamber. No radiation was detected at any measurement point above normal background levels.

Each well was measured, using a Solinst Water Level Indicator, for fluid level and total depth, prior to sampling activities. The field measurements are listed in Table 1. Each well's casing volume was calculated in the field, and approximately three casing volumes of ground water were purged from each well immediately prior to sampling. This was done to insure that samples collected represented formation water, and were not affected by stagnation within the well casing. All wells recharged continuously during purging, and did not go dry. A PVC double-check bailer was used to purge the wells, tied onto LANL's dedicated nylon ropes. The bailer was decontaminated between wells with a non-phosphate detergent wash and a deionized water rinse. Well measurement and purge data are summarized in Table 1. Field sample collection logs are included in Appendix A of this report.

Purge water was containerized in 5-gallon plastic containers with screw-on lids, and marked legibly as to contents and purge date. Filled and sealed purge water containers were left

next to each wellhead by IT personnel for appropriate disposal by LANL personnel.

A clear teflon double-check bailer was used for actual sampling of the wells. The sampling bailer was decontaminated between wells with a non-phosphate detergent wash followed by a deionized water rinse. Ground water was poured directly from the bailer into prepared and pre-labelled sample bottles. Sample bottles and preservatives are summarized in Table 2. Sample fractions were collected in the following order: 1) volatile organic compounds, 2) semi-volatile organic compounds, 3) metals, 4) cyanide, and 5) sulfide.

Sample Handling and Shipment

IT personnel prepared all Chain-of-Custody and Request for Analysis documentation for the sampling effort. As each sample was collected in the field, IT custody tape was applied over the closed lid, and the sample was packaged in a resealable plastic bag. All sample bottles were then stored on ice, in coolers. Samples were packed with vermiculite and ice for shipment, and transported to the Federal Express facility in Santa Fe for shipment to IT-Oak Ridge analytical laboratory. All sample fractions were shipped on the same day they were collected. Upon receipt at Oak Ridge, the organophosphorus pesticide samples were then shipped to the IT analytical laboratory in San Jose, CA, for preparation and analysis.

Field copies of Chain-of-custody and Request for Analysis forms are included in Appendix B of this report.

Sample Analysis

Samples were analyzed by U.S. Environmental Protection Agency (EPA) methods described in EPA SW-846. Analytical results are summarized in Tables 3 through 10; laboratory analytical data sheets are included in Appendix C. The laboratory also performed required internal QC analyses concurrently with the environmental samples.

Analytical Results

Volatile organic compounds were not detected in any environmental samples, nor in any field blank or trip blank samples.

Semivolatile organic compounds were not detected in any environmental samples, with the exception of N-nitrosomorpholine, which was detected in samples from wells MCO-4B and MCO-6B at estimated concentrations lower than the method reporting limit.
Pesticides, PCBs, herbicides, dioxins and furans were not detected in any environmental samples.

Some metals (barium, beryllium, chromium, cobalt, copper, lead, nickel, silver, vanadium, and zinc) were detected in some or all of the environmental samples. Table 9 summarizes all metals analyses.

Cyanide was undetected in all environmental samples.

Sulfide was detected in all environmental samples, at concentrations ranging between 1.0 and 2.8 milligrams per liter (mg/L).

Field QC Results

A duplicate sample was collected from monitor well MCO-6B, and labelled as MCO-10, in order to be a blind duplicate. Table 11 compares results of the duplicate samples. All analyses show either no relative percent difference (RPD), or are within allowable ranges, with the exception of sulfide.

Laboratory QC Results

Quality control methods employed by the analytical laboratory included analysis of method blanks concurrent with each sample analysis, and the measurement of surrogate recovery. Laboratory QC results are acceptable with two exceptions.

The method blank for metals analysis contained 0.17 mg/L of zinc. The laboratory report indicates that environmental sample analytical results were blank-corrected; that is, the zinc concentration in the method blank was subtracted from analytical results for environmental samples, and the corrected concentration was reported.

Surrogate recoveries for some organochlorine pesticides were not within acceptable limits. The LANL laboratory-prepared QC sample (APCO-2) required dilution prior to analysis, thereby making surrogate recovery impossible. Dilution is required when one or more constituents in a sample are present in such concentrations as to mask other constituents. Additionally, the surrogate recovery for environmental sample LAO-4.5C fell below EPA-recommended limits.

With the exception of the cases mentioned above, all laboratory and field QC results are acceptable.

Summary and Conclusions

Analysis of environmental samples showed virtually no Appendix IX parameters present in the ground-water, with the exception of some metals and sulfide. QC results were generally in control, indicating that analytical results are reliable.

It may be useful to compare the list of constituents detected with materials that have been discharged into the canyons, as well as the geochemistry of rocks and soil in the canyons.

TABLE 1

WELL PARAMETERS DURING SAMPLING ACTIVITIES
LOS ALAMOS NATIONAL LABORATORY

NOVEMBER 1990

WELL LOCATION AND IDENTIFICATION	DEPTH TO WATER, FT.	TOTAL WELL DEPTH, FT.	TOTAL VOLUME PURGED, GALS.	NO. OF CASING VOLS. PURGED
MORTANDAD CANYON				
MCO-4B	17.40	34.85	8.5	2.96
MCO-6B	35.10	46.90	5.0	2.78
MCO-7A	37.68	45.60	4.0	3.08
LOS ALAMOS CANYON				
LAO-3A	8.64	14.84	3.0	2.94
LAO-4.5C	10.67	24.50	7.0	3.07
PUEBLO CANYON				
APCO-1	8.19	20.21	6.0	3.03

TABLE 2

SAMPLE BOTTLES AND PRESERVATIVES FOR RCRA APPENDIX IX SAMPLES
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

ANALYSIS	CONTAINER	NO./VOLUME	PRESERVATIVE
Volatile Organic Compounds	glass	2 X 40 ml	HCl
Semivolatile Organic Compounds, including pesticides, herbicides, dioxins, furans.	amber glass	7 X 1 liter	none
Metals	plastic	1 X 1 liter	HNO_3
Cyanide	plastic	1 X 1 liter	NaOH
Sulfide	plastic	1 X 1 liter	Zinc acetate + NaOH

TABLE 3

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
Acetone	10	ND	ND	ND	ND
Acetonitrile	100	ND	ND	ND	ND
Acrolein	10	ND	ND	ND	ND
Acrylonitrile	10	ND	ND	ND	ND
Benzene	5	ND	**74**	ND	ND
Bromodichloromethane	5	ND	ND	ND	ND
Bromoform	5	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND
2-Butanone	10	ND	**53**	ND	ND
Carbon disulfide	5	ND	ND	ND	ND
Carbon tetrachloride	5	ND	**100**	ND	ND
Chlorobenzene	5	ND	**81**	ND	ND
Chloroethane	10	ND	ND	ND	ND
3-Chloro-1-propene	5	ND	ND	ND	ND
Chloroform	5	ND	ND	ND	ND
Chloromethane	10	ND	ND	ND	ND
Chloroprene	5	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND	ND
1,2-Dibromoethane	5	ND	ND	ND	ND
Dibromomethane	5	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	20	ND	ND	ND	ND
Dichlorodifluoromethane	20	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	**69**	ND	ND
1,2-Dichloroethane	5	ND	**90**	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
1,2-Dichloropropane	5	ND	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND	ND
1,4-Dioxane	1000	ND	ND	ND	ND
Ethyl Benzene	5	ND	**85**	ND	ND
Ethyl Cyanide	100	ND	ND	ND	ND
Ethyl methacrylate	10	ND	ND	ND	ND
2-Hexanone	10	ND	**67**	ND	ND
Iodomethane	5	ND	ND	ND	ND
Isobutyl Alcohol	2000	ND	ND	ND	ND
Methacrylonitrile	10	ND	ND	ND	ND
Methyl methacrylate	10	ND	ND	ND	ND
4-Methyl-2-pentanone	10	ND	ND	ND	ND
Methylene chloride	5	ND	ND	ND	ND
Pyridine	20000	ND	ND	ND	ND
Styrene	5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND
Tetrachloroethene	5	ND	**83**	ND	ND
Toluene	5	ND	**86**	ND	ND
1,1,1-Trichloroethane	5	ND	**97**	ND	ND
1,1,2-Trichloroethane	5	ND	**110**	ND	ND
Trichloroethene	5	ND	**86**	ND	ND
Trichlorofluoromethane	5	ND	ND	ND	ND
1,2,3-Trichloropropane	20	ND	ND	ND	ND
Vinyl acetate	10	ND	ND	ND	ND
Vinyl chloride	10	ND	ND	ND	ND
Xylenes (total)	5	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
Acetone	10	ND	ND	ND	ND
Acetonitrile	100	ND	ND	ND	ND
Acrolein	10	ND	ND	ND	ND
Acrylonitrile	10	ND	ND	ND	ND
Benzene	5	ND	ND	ND	ND
Bromodichloromethane	5	ND	ND	ND	ND
Bromoform	5	ND	ND	ND	ND
Bromomethane	10	ND	ND	ND	ND
2-Butanone	10	ND	ND	ND	ND
Carbon disulfide	5	ND	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND
Chloroethane	10	ND	ND	ND	ND
3-Chloro-1-propane	5	ND	ND	ND	ND
Chloroform	5	ND	ND	ND	ND
Chloromethane	10	ND	ND	ND	ND
Chloroprene	5	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND	ND
1,2-Dibromoethane	5	ND	ND	ND	ND
Dibromomethane	5	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	20	ND	ND	ND	ND
Dichlorodifluoromethane	20	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
1,2-Dichloropropane	5	ND	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND	ND
1,4-Dioxane	1000	ND	ND	ND	ND
Ethyl Benzene	5	ND	ND	ND	ND
Ethyl Cyanide	100	ND	ND	ND	ND
Ethyl methacrylate	10	ND	ND	ND	ND
2-Hexanone	10	ND	ND	ND	ND
Iodomethane	5	ND	ND	ND	ND
Isobutyl Alcohol	2000	ND	ND	ND	ND
Methacrylonitrile	10	ND	ND	ND	ND
Methyl methacrylate	10	ND	ND	ND	ND
4-Methyl-2-pentanone	10	ND	ND	ND	ND
Methylene chloride	5	ND	ND	ND	ND
Pyridine	20000	ND	ND	ND	ND
Styrene	5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND	ND
1,2,3-Trichloropropane	20	ND	ND	ND	ND
Vinyl acetate	10	ND	ND	ND	ND
Vinyl chloride	10	ND	ND	ND	ND
Xylenes (total)	5	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		FIELD BLANKS		
		APCO-11	LAO-11	MCO-11
PARAMETER	REPORTING LIMIT µg/L			
Acetone	10	ND	ND	ND
Acetonitrile	100	ND	ND	ND
Acrolein	10	ND	ND	ND
Acrylonitrile	10	ND	ND	ND
Benzene	5	ND	ND	ND
Bromodichloromethane	5	ND	ND	ND
Bromoform	5	ND	ND	ND
Bromomethane	10	ND	ND	ND
2-Butanone	10	ND	ND	ND
Carbon disulfide	5	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND
Chlorobenzene	5	ND	ND	ND
Chloroethane	10	ND	ND	ND
3-Chloro-1-propene	5	ND	ND	ND
Chloroform	5	ND	ND	ND
Chloromethane	10	ND	ND	ND
Chloroprene	5	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND
1,2-Dibromoethane	5	ND	ND	ND
Dibromomethane	5	ND	ND	ND
trans-1,4-Dichloro-2-butene	20	ND	ND	ND
Dichlorodifluoromethane	20	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		FIELD BLANKS		
		APCO-11	LAO-11	MCO-11
PARAMETER	REPORTING LIMIT µg/L			
1,2-Dichloropropane	5	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND
1,4-Dioxane	1000	ND	ND	ND
Ethyl Benzene	5	ND	ND	ND
Ethyl Cyanide	100	ND	ND	ND
Ethyl methacrylate	10	ND	ND	ND
2-Hexanone	10	ND	ND	ND
Iodomethane	5	ND	ND	ND
Isobutyl Alcohol	2000	ND	ND	ND
Methacrylonitrile	10	ND	ND	ND
Methyl methacrylate	10	ND	ND	ND
4-Methyl-2-pentanone	10	ND	ND	ND
Methylene chloride	5	ND	ND	ND
Pyridine	20000	ND	ND	ND
Styrene	5	ND	ND	ND
1,1,1,2-Tetrachloroethane	5	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND
Toluene	5	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND
Trichloroethene	5	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND
1,2,3-Trichloropropane	20	ND	ND	ND
Vinyl acetate	10	ND	ND	ND
Vinyl chloride	10	ND	ND	ND
Xylenes (total)	5	ND	ND	ND

NOTES:
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		TRIP BLANKS		
		APCO-TB	LAO-TB	MCO-TB
PARAMETER	REPORTING LIMIT µg/L			
Acetone	10	ND	ND	ND
Acetonitrile	100	ND	ND	ND
Acrolein	10	ND	ND	ND
Acrylonitrile	10	ND	ND	ND
Benzene	5	ND	ND	ND
Bromodichloromethane	5	ND	ND	ND
Bromoform	5	ND	ND	ND
Bromomethane	10	ND	ND	ND
2-Butanone	10	ND	ND	ND
Carbon disulfide	5	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND
Chlorobenzene	5	ND	ND	ND
Chloroethane	10	ND	ND	ND
3-Chloro-1-propene	5	ND	ND	ND
Chloroform	5	ND	ND	ND
Chloromethane	10	ND	ND	ND
Chloroprene	5	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND
1,2-Dibromoethane	5	ND	ND	ND
Dibromomethane	5	ND	ND	ND
trans-1,4-Dichloro-2-butene	20	ND	ND	ND
Dichlorodifluoromethane	20	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND

NOTES:
ND = Not detected at reporting limit indicated

TABLE 3, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

VOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		TRIP BLANKS		
		APCO-TB	LAO-TB	MCO-TB
PARAMETER	REPORTING LIMIT µg/L			
1,2-Dichloropropane	5	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND
1,4-Dioxane	1000	ND	ND	ND
Ethyl Benzene	5	ND	ND	ND
Ethyl Cyanide	100	ND	ND	ND
Ethyl methacrylate	10	ND	ND	ND
2-Hexanone	10	ND	ND	ND
Iodomethane	5	ND	ND	ND
Isobutyl Alcohol	2000	ND	ND	ND
Methacrylonitrile	10	ND	ND	ND
Methyl methacrylate	10	ND	ND	ND
4-Methyl-2-pentanone	10	ND	ND	ND
Methylene chloride	5	ND	ND	ND
Pyridine	20000	ND	ND	ND
Styrene	5	ND	ND	ND
1,1,1,2-Tetrachloroethane	5	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND
Toluene	5	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND
Trichloroethene	5	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND
1,2,3-Trichloropropane	20	ND	ND	ND
Vinyl acetate	10	ND	ND	ND
Vinyl chloride	10	ND	ND	ND
Xylenes (total)	5	ND	ND	ND

NOTES:
ND = Not detected at reporting limit indicated

TABLE 4

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
Acenaphthene	10	ND	ND	ND	ND
Acenaphthylene	10	ND	ND	ND	ND
Acetophenone	10	ND	ND	ND	ND
2-Acetylaminofluorene	10	ND	ND	ND	ND
4-Aminobiphenyl	50	ND	ND	ND	ND
Aniline	50	ND	ND	ND	ND
Anthracene	10	ND	ND	ND	ND
Aramite	10	ND	ND	ND	ND
Benzo(a)Anthracene	10	ND	ND	ND	ND
Benzo(b)Fluoranthene	10	ND	ND	ND	ND
Benzo(k)Fluoranthene	10	ND	ND	ND	ND
Benzoic Acid	50	ND	ND	ND	ND
Benzo(g,h,i)Perylene	10	ND	ND	ND	ND
Benzo(a)Pyrene	10	ND	ND	ND	ND
Benzyl Alcohol	10	ND	ND	ND	ND
bis(2-Chloroethoxy) Methane	10	ND	ND	ND	ND
bis(2-Chloroethyl) Ether	10	ND	ND	ND	ND
bis(2-Chloroisopropyl) Ether	10	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	10	ND	ND	ND	ND
4-Bromophenyl-phenyl ether	10	ND	ND	ND	ND
Butylbenzylphthalate	10	ND	ND	ND	ND
4-Chloroaniline	10	ND	ND	ND	ND
4-Chloro-3-Methylphenol	10	ND	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND	ND
2-Chlorophenol	10	ND	ND	ND	ND
4-Chlorophenyl-phenyl ether	10	ND	ND	ND	ND
Chrysene	10	ND	ND	ND	ND
Diallate	10	ND	ND	ND	ND
Dibenz(a,h)Anthracene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
Dibenzofuran	10	ND	ND	ND	ND
Di-n-butylphthalate	10	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND
3,3'-Dichlorobenzidine	20	ND	ND	ND	ND
2,4-Dichlorophenol	10	ND	ND	ND	ND
2,6-Dichlorophenol	10	ND	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	30	ND	ND	ND	ND
7,12-Dimethylbenz(a)anthracene	20	ND	ND	ND	ND
3,3'-Dimethylbenzidine	80	ND	ND	ND	ND
a,a-Dimethylphenethylamine	10	ND	ND	ND	ND
2,4-Dimethylphenol	10	ND	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND	ND
m-Dinitrobenzene	10	ND	ND	ND	ND
4,6-Dinitro-2-Methylphenol	50	ND	ND	ND	ND
2,4-Dinitrophenol	50	ND	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND	ND
Dinoseb	20	ND	ND	ND	ND
Di-n-Octyl phthalate	10	ND	ND	ND	ND
Diphenylamine	10	ND	ND	ND	ND
Ethyl methanesulfonate	10	ND	ND	ND	ND
Fluoranthene	10	ND	ND	ND	ND
Fluorene	10	ND	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND	ND
Hexachlorobutadiene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
Hexachlorocyclopentadiene	10	ND	ND	ND	ND
Hexachloroethane	10	ND	ND	ND	ND
Hexachlorophene	50	ND	ND	ND	ND
Hexachloropropene	20	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	10	ND	ND	ND	ND
Isophorone	10	ND	ND	ND	ND
Isosafrole	10	ND	ND	ND	ND
Methapyrilene	40	ND	ND	ND	ND
3-Methylcholanthrene	30	ND	ND	ND	ND
Methyl methanesulfonate	10	ND	ND	ND	ND
2-Methylnaphthalene	10	ND	ND	ND	ND
2-Methylphenol	10	ND	ND	ND	ND
3-Methylphenol	10	ND	ND	ND	ND
4-Methylphenol	10	ND	ND	ND	ND
Naphthalene	10	ND	ND	ND	ND
1,4-Naphthoquinone	10	ND	ND	ND	ND
1-Naphthylamine	120	ND	ND	ND	ND
2-Naphthylamine	170	ND	ND	ND	ND
2-Nitroaniline	50	ND	ND	ND	ND
3-Nitroaniline	50	ND	ND	ND	ND
4-Nitroaniline	50	ND	ND	ND	ND
Nitrobenzene	10	ND	ND	ND	ND
2-Nitrophenol	10	ND	ND	ND	ND
4-Nitrophenol	50	ND	ND	ND	ND
4-Nitroquinoline-1-oxide	10	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	20	ND	ND	ND	ND
N-Nitrosodiethylamine	10	ND	ND	ND	ND
N-Nitrosodimethylamine	10	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ND	ND	ND	ND
N-Nitroso-Di-n-Propylamine	10	ND	ND	ND	ND
N-Nitrosomethylethylamine	10	ND	ND	ND	ND
N-Nitrosomorpholine	10	ND	ND	ND	ND
N-Nitrosopiperidine	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
N-Nitrosopyrrolidine	10	ND	ND	ND	ND
5-Nitro-o-toluidine	20	ND	ND	ND	ND
Pentachlorobenzene	20	ND	ND	ND	ND
Pentachloroethane	20	ND	ND	ND	ND
Pentachloronitrobenzene	20	ND	ND	ND	ND
Pentachlorophenol	50	ND	ND	ND	ND
Phenacetin	10	ND	ND	ND	ND
Phenanthrene	10	ND	ND	ND	ND
Phenol	10	ND	ND	ND	ND
p-Phenylenediamine	50	ND	ND	ND	ND
2-Picoline	70	ND	ND	ND	ND
Pronamide	30	ND	ND	ND	ND
Pyrene	10	ND	ND	ND	ND
Safrole	10	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	10	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	10	ND	ND	ND	ND
Tetraethyl dithiopyrophosphate	10	ND	ND	ND	ND
o-Toluidine	10	ND	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND	ND
2,4,5-Trichlorophenol	50	ND	ND	ND	ND
2,4,6-Trichlorophenol	10	ND	ND	ND	ND
O,O,O-Triethylphosphorothioate	10	ND	ND	ND	ND
sym-Trinitrobenzene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
Acenaphthene	10	ND	ND	ND	ND
Acenaphthylene	10	ND	ND	ND	ND
Acetophenone	10	ND	ND	ND	ND
2-Acetylaminofluorene	10	ND	ND	ND	ND
4-Aminobiphenyl	50	ND	ND	ND	ND
Aniline	50	ND	ND	ND	ND
Anthracene	10	ND	ND	ND	ND
Aramite	10	ND	ND	ND	ND
Benzo(a)Anthracene	10	ND	ND	ND	ND
Benzo(b)Fluoranthene	10	ND	ND	ND	ND
Benzo(k)Fluoranthene	10	ND	ND	ND	ND
Benzoic Acid	50	ND	ND	ND	ND
Benzo(g,h,i)Perylene	10	ND	ND	ND	ND
Benzo(a)Pyrene	10	ND	ND	ND	ND
Benzyl Alcohol	10	ND	ND	ND	ND
bis(2-Chloroethoxy)Methane	10	ND	ND	ND	ND
bis(2-Chloroethyl)Ether	10	ND	ND	ND	ND
bis(2-Chloroisopropyl)Ether	10	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	10	ND	ND	ND	ND
4-Bromophenyl-phenylether	10	ND	ND	ND	ND
Butylbenzylphthalate	10	ND	ND	ND	ND
4-Chloroaniline	10	ND	ND	ND	ND
4-Chloro-3-Methylphenol	10	ND	ND	ND	ND
2-Chloronaphthalene	10	ND	ND	ND	ND
2-Chlorophenol	10	ND	ND	ND	ND
4-Chlorophenyl-phenylether	10	ND	ND	ND	ND
Chrysene	10	ND	ND	ND	ND
Diallate	10	ND	ND	ND	ND
Dibenz(a,h)Anthracene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
Dibenzofuran	10	ND	ND	ND	ND
Di-n-butylphthalate	10	ND	ND	ND	ND
1,2-Dichlorobenzene	10	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND
1,4-Dichlorobenzene	10	ND	ND	ND	ND
3,3'-Dichlorobenzidine	20	ND	ND	ND	ND
2,4-Dichlorophenol	10	ND	ND	ND	ND
2,6-Dichlorophenol	10	ND	ND	ND	ND
Diethyl phthalate	10	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	30	ND	ND	ND	ND
7,12-Dimethylbenz(a)anthracene	20	ND	ND	ND	ND
3,3'-Dimethylbenzidine	80	ND	ND	ND	ND
a,a-Dimethylphenethylamine	10	ND	ND	ND	ND
2,4-Dimethylphenol	10	ND	ND	ND	ND
Dimethyl phthalate	10	ND	ND	ND	ND
m-Dinitrobenzene	10	ND	ND	ND	ND
4,6-Dinitro-2-Methylphenol	50	ND	ND	ND	ND
2,4-Dinitrophenol	50	ND	ND	ND	ND
2,4-Dinitrotoluene	10	ND	ND	ND	ND
2,6-Dinitrotoluene	10	ND	ND	ND	ND
Dinoseb	20	ND	ND	ND	ND
Di-n-Octyl phthalate	10	ND	ND	ND	ND
Diphenylamine	10	ND	ND	ND	ND
Ethyl methanesulfonate	10	ND	ND	ND	ND
Fluoranthene	10	ND	ND	ND	ND
Fluorene	10	ND	ND	ND	ND
Hexachlorobenzene	10	ND	ND	ND	ND
Hexachlorobutadiene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
Hexachlorocyclopentadiene	10	ND	ND	ND	ND
Hexachloroethane	10	ND	ND	ND	ND
Hexachlorophene	50	ND	ND	ND	ND
Hexachloropropene	20	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	10	ND	ND	ND	ND
Isophorone	10	ND	ND	ND	ND
Isosafrole	10	ND	ND	ND	ND
Methapyrilene	40	ND	ND	ND	ND
3-Methylcholanthrene	30	ND	ND	ND	ND
Methyl methanesulfonate	10	ND	ND	ND	ND
2-Methylnaphthalene	10	ND	ND	ND	ND
2-Methylphenol	10	ND	ND	ND	ND
3-Methylphenol	10	ND	ND	ND	ND
4-Methylphenol	10	ND	ND	ND	ND
Naphthalene	10	ND	ND	ND	ND
1,4-Naphthoquinone	10	ND	ND	ND	ND
1-Naphthylamine	120	ND	ND	ND	ND
2-Naphthylamine	170	ND	ND	ND	ND
2-Nitroaniline	50	ND	ND	ND	ND
3-Nitroaniline	50	ND	ND	ND	ND
4-Nitroaniline	50	ND	ND	ND	ND
Nitrobenzene	10	ND	ND	ND	ND
2-Nitrophenol	10	ND	ND	ND	ND
4-Nitrophenol	50	ND	ND	ND	ND
4-Nitroquinoline-1-oxide	10	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	20	ND	ND	ND	ND
N-Nitrosodiethylamine	10	ND	ND	ND	ND
N-Nitrosodimethylamine	10	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ND	ND	ND	ND
N-Nitroso-Di-n-Propylamine	10	ND	ND	ND	ND
N-Nitrosomethylethylamine	10	ND	ND	ND	ND
N-Nitrosomorpholine	10	3 J	2 J	ND	ND
N-Nitrosopiperidine	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated
J = Estimated at concentration below reporting limit

TABLE 4, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

SEMIVOLATILE ORGANIC COMPOUNDS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
N-Nitrosopyrrolidine	10	ND	ND	ND	ND
5-Nitro-o-toluidine	20	ND	ND	ND	ND
Pentachlorobenzene	20	ND	ND	ND	ND
Pentachloroethane	20	ND	ND	ND	ND
Pentachloronitrobenzene	20	ND	ND	ND	ND
Pentachlorophenol	50	ND	ND	ND	ND
Phenacetin	10	ND	ND	ND	ND
Phenanthrene	10	ND	ND	ND	ND
Phenol	10	ND	ND	ND	ND
p-Phenylenediamine	50	ND	ND	ND	ND
2-Picoline	70	ND	ND	ND	ND
Pronamide	30	ND	ND	ND	ND
Pyrene	10	ND	ND	ND	ND
Safrole	10	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	10	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	10	ND	ND	ND	ND
Tetraethyl dithiopyrophosphate	10	ND	ND	ND	ND
o-Toluidine	10	ND	ND	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND	ND	ND
2,4,5-Trichlorophenol	50	ND	ND	ND	ND
2,4,6-Trichlorophenol	10	ND	ND	ND	ND
O,O,O-Triethylphosphorothioate	10	ND	ND	ND	ND
sym-Trinitrobenzene	10	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 5

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

ORGANOCHLORINE PESTICIDES

WELL I.D./SAMPLE #:		APCO-1	APCO-2*	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
α-BHC	0.050	ND	ND<0.25	ND	ND
β-BHC	0.050	ND	ND<0.25	ND	ND
δ-BHC	0.050	ND	ND<0.25	ND	ND
γ-BHC (lindane)	0.050	ND	ND<0.25	ND	ND
heptachlor	0.050	ND	ND<0.25	ND	ND
aldrin	0.050	ND	ND<0.25	ND	ND
heptachlor epoxide	0.050	ND	ND<0.25	ND	ND
endosulfan I	0.050	ND	ND<0.25	ND	ND
dieldrin	0.10	ND	ND<0.50	ND	ND
4,4'-DDE	0.10	ND	ND<0.50	ND	ND
endrin	0.10	ND	**0.51**	ND	ND
endosulfan II	0.10	ND	ND<0.50	ND	ND
4,4'-DDD	0.10	ND	**0.37 J**	ND	ND
endosulfan sulfate	0.10	ND	ND<0.50	ND	ND
4,4'-DDT	0.10	ND	**0.18 J**	ND	ND
methoxychlor	0.50	ND	**1.0 J**	ND	ND
chlordane	0.50	ND	ND<2.5	ND	ND
toxaphene	1.0	ND	ND<5.0	ND	ND
Aroclor 1016	0.50	ND	ND<2.5	ND	ND
Aroclor 1221	0.50	ND	ND<2.5	ND	ND
Aroclor 1232	0.50	ND	ND<2.5	ND	ND
Aroclor 1242	0.50	ND	ND<2.5	ND	ND
Aroclor 1248	0.50	ND	ND<2.5	ND	ND
Aroclor 1254	1.0	ND	ND<5.0	ND	ND
Aroclor 1260	1.0	ND	ND<5.0	ND	ND
endrin aldehyde	0.10	ND	ND<0.50	ND	ND
isodrin	0.050	ND	ND<0.25	ND	ND
kepone	0.10	ND	ND<0.50	ND	ND
chlorobenzilate	0.50	ND	ND<2.5	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
* = Dilution factor of 5X for APCO2, causing increased reporting limits indicated
ND = Not detected at reporting limit indicated
J = Estimated concentration below reporting limit

TABLE 5, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

ORGANOCHLORINE PESTICIDES

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
α-BHC	0.050	ND	ND	ND	ND
β-BHC	0.050	ND	ND	ND	ND
δ-BHC	0.050	ND	ND	ND	ND
γ-BHC (lindane)	0.050	ND	ND	ND	ND
heptachlor	0.050	ND	ND	ND	ND
aldrin	0.050	ND	ND	ND	ND
heptachlor epoxide	0.050	ND	ND	ND	ND
endosulfan I	0.050	ND	ND	ND	ND
dieldrin	0.10	ND	ND	ND	ND
4,4'-DDE	0.10	ND	ND	ND	ND
endrin	0.10	ND	ND	ND	ND
endosulfan II	0.10	ND	ND	ND	ND
4,4'-DDD	0.10	ND	ND	ND	ND
endosulfan sulfate	0.10	ND	ND	ND	ND
4,4'-DDT	0.10	ND	ND	ND	ND
methoxychlor	0.50	ND	ND	ND	ND
chlordane	0.50	ND	ND	ND	ND
toxaphene	1.0	ND	ND	ND	ND
Aroclor 1016	0.50	ND	ND	ND	ND
Aroclor 1221	0.50	ND	ND	ND	ND
Aroclor 1232	0.50	ND	ND	ND	ND
Aroclor 1242	0.50	ND	ND	ND	ND
Aroclor 1248	0.50	ND	ND	ND	ND
Aroclor 1254	1.0	ND	ND	ND	ND
Aroclor 1260	1.0	ND	ND	ND	ND
endrin aldehyde	0.10	ND	ND	ND	ND
isodrin	0.050	ND	ND	ND	ND
kepone	0.10	ND	ND	ND	ND
chlorobenzilate	0.50	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 6

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

ORGANOPHOSPHORUS PESTICIDES

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT µg/L				
Dimethoate	1.0	ND	ND	ND	ND
Disulfoton	0.5	ND	ND	ND	ND
Famphur	1.5	ND	ND	ND	ND
Parathion ethyl	1.0	ND	ND	ND	ND
Parathion methyl	1.0	ND	ND	ND	ND
Phorate	1.0	ND	ND	ND	ND
Sulfotepp	0.5	ND	ND	ND	ND
Thionazin	0.5	ND	ND	ND	ND
0,0,0-Triethylphosphorothioate	0.25	ND	ND	ND	ND

ORGANOPHOSPHORUS PESTICIDES

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT µg/L				
Dimethoate	1.0	ND	ND	ND	ND
Disulfoton	0.5	ND	ND	ND	ND
Famphur	1.5	ND	ND	ND	ND
Parathion ethyl	1.0	ND	ND	ND	ND
Parathion methyl	1.0	ND	ND	ND	ND
Phorate	1.0	ND	ND	ND	ND
Sulfotepp	0.5	ND	ND	ND	ND
Thionazin	0.5	ND	ND	ND	ND
0,0,0-Triethylphosphorothioate	0.25	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 7

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

HERBICIDES

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT mg/L				
2,4-D	0.0002	ND	ND	ND	ND
silvex	0.0001	ND	ND	ND	ND
2,4,5-T	0.0001	ND	ND	ND	ND

HERBICIDES

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT mg/L				
2,4-D	0.0002	ND	ND	ND	ND
silvex	0.0001	ND	ND	ND	ND
2,4,5-T	0.0001	ND	ND	ND	ND

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 8

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

DIOXINS and FURANS

WELL I.D./SAMPLE #:	APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:	ENV	QC	ENV	ENV
PARAMETER	Units = ng/L			
2,3,7,8-TCDD	ND<1.6	ND<1.8	ND<1.3	ND<1.4
Total TCDD	ND<0.23	ND<0.26	ND<0.13	ND<0.20
Total PeCDD	ND<0.60	ND<0.51	ND<0.71	ND<0.65
Total HxCDD	ND<0.49	ND<0.35	ND<0.51	ND<0.92
Total TCDF	ND<0.14	ND<0.11	ND<0.11	ND<0.11
Total PeCDF	ND<0.15	ND<0.095	ND<0.13	ND<0.18
Total HxCDF	ND<0.23	ND<0.15	ND<0.24	ND<0.22

DIOXINS and FURANS

WELL I.D./SAMPLE #:	MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:	ENV	ENV	DUP	ENV
PARAMETER	Units = ng/L			
2,3,7,8-TCDD	ND<3.0	ND<1.8	ND<0.62	ND<0.99
Total TCDD	ND<0.44	ND<0.26	ND<0.11	ND<0.15
Total PeCDD	ND<1.1	ND<0.88	ND<0.59	ND<0.84
Total HxCDD	ND<1.1	ND<0.95	ND<0.48	ND<0.40
Total TCDF	ND<0.17	ND<0.13	ND<0.098	ND<0.13
Total PeCDF	ND<0.17	ND<0.28	ND<0.22	ND<0.14
Total HxCDF	ND<0.27	ND<0.32	ND<0.18	ND<0.22

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 9

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

APPENDIX IX METALS

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT mg/L				
Antimony	0.03	ND	ND	ND	ND
Arsenic	0.04	ND	ND	ND	ND
Barium	0.002	**0.97**	**5.6**	**0.18**	**0.095**
Beryllium	0.001	**0.004**	ND	**0.002**	ND
Cadmium	0.005	ND	**0.83**	ND	ND
Chromium	0.01	**0.03**	**1.1**	**0.02**	**0.01**
Cobalt	0.02	**0.04**	ND	ND	ND
Copper	0.01	**0.12**	**0.03**	**0.03**	**0.03**
Lead	0.03	**0.08**	**0.74**	**0.04**	ND
Mercury	0.001	ND	ND	ND	ND
Nickel	0.02	**0.05**	ND	ND	ND
Selenium	0.06	ND	ND	ND	ND
Silver	0.005	ND	**1.4**	ND	ND
Thallium	0.04	ND	ND	ND	ND
Tin	0.02	ND	ND	ND	ND
Vanadium	0.01	**0.07**	ND	**0.01**	ND
Zinc	0.005	**0.20**	**0.054**	**0.054**	**0.052**

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
ND = Not detected at reporting limit indicated

TABLE 9, CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

APPENDIX IX METALS

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT mg/L				
Antimony	0.03	ND	ND	ND	ND
Arsenic	0.04	ND	ND	ND	ND
Barium	0.002	**0.19**	**0.69**	**0.67**	**0.42**
Beryllium	0.001	ND	**0.004**	**0.004**	**0.003**
Cadmium	0.005	ND	ND	ND	ND
Chromium	0.01	ND	**0.03**	**0.03**	**0.02**
Cobalt	0.02	ND	ND	ND	ND
Copper	0.01	**0.01**	**0.03**	**0.03**	**0.03**
Lead	0.03	ND	**0.07**	**0.07**	**0.05**
Mercury	0.001	ND	ND	ND	ND
Nickel	0.02	ND	ND	ND	**0.03**
Selenium	0.06	ND	ND	ND	ND
Silver	0.005	ND	ND	ND	ND
Thallium	0.04	ND	ND	ND	ND
Tin	0.02	ND	ND	ND	ND
Vanadium	0.01	ND	**0.03**	**0.03**	**0.04**
Zinc	0.005	**0.081**	**0.15**	**0.17**	**0.10**

NOTES:
ENV = field environmental sample from well indicated
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 10

SUMMARY OF ANALYTICAL RESULTS FOR BACKGROUND SAMPLING
LOS ALAMOS NATIONAL LABORATORY
NOVEMBER 1990

CYANIDE and SULFIDE

WELL I.D./SAMPLE #:		APCO-1	APCO-2	LAO-3A	LAO-4.5C
SAMPLE TYPE:		ENV	QC	ENV	ENV
PARAMETER	REPORTING LIMIT mg/L				
Cyanide	0.01	ND	**0.33**	ND	ND
Sulfide	0.2	**1.6**	ND	**2.8**	**2.2**

CYANIDE and SULFIDE

WELL I.D./SAMPLE #:		MCO-4B	MCO-6B	MCO-10	MCO-7A
SAMPLE TYPE:		ENV	ENV	DUP	ENV
PARAMETER	REPORTING LIMIT mg/L				
Cyanide	0.01	**0.01**	ND	ND	ND
Sulfide	0.2	**2.0**	**1.0**	**2.0**	**1.6**

NOTES:
ENV = field environmental sample from well indicated
QC = LANL laboratory-prepared QC sample
DUP = environmental duplicate sample from well MCO-6B
ND = Not detected at reporting limit indicated

TABLE 11

COMPARISON OF ANALYTICAL RESULTS FROM DUPLICATE SAMPLES
LOS ALAMOS NATIONAL LABORATORY

NOVEMBER 1990

PARAMETER	SAMPLE NUMBER MCO-6B	SAMPLE NUMBER MCO-10	RPD	ACCEPTABLE?*
Volatile Organic Compounds	ND	ND	NC	yes
Semivolatile Org. Comp.	ND	ND	NC	yes
Pesticides	ND	ND	NC	yes
Herbicides	ND	ND	NC	yes
Dioxins and Furans	ND	ND	NC	yes
Metals, mg/L				
Barium	0.69	0.67	3	yes
Beryllium	0.004	0.004	0	yes
Chromium	0.03	0.03	0	yes
Copper	0.03	0.03	0	yes
Lead	0.07	0.07	0	yes
Vanadium	0.03	0.03	0	yes
Zinc	0.15	0.17	12.5	yes
Cyanide	ND	ND	NC	yes
Sulfide, mg/L	1.0	2.0	67	no

RPD = Relative Percent Difference = $\frac{|\text{Env. sample conc.} - \text{Env. dup. conc.}|}{(\text{Env. sample conc.} + \text{Env. dup. conc.})/2} \times 100$

* = Acceptance limit for RPD is generally considered to be 20%.
ND = Not detected at method reporting limit (see analytical results)
NC = Not calculable

APPENDIX A

WATER SAMPLE COLLECTION FORM

JOB NAME: LANL ER Sampling JOB NUMBER: 301215.03.04
SAMPLE LOCATION: Mortandad Canyon WELL NUMBER: MCO4B

PURGE CALCULATIONS

		DATE	TIME	INITIALS
MEASURED WELL DEPTH (FT):	34.85	11-2-90	1040	BM
WATER LEVEL DEPTH (FT):	17.40	↓	↓	BM
STATIC WATER HEIGHT (FT):	17.45	↓	↓	BM

CASED WELL VOLUME = Static Water Height (ft) * Area of Well (ft sq) * 7.48 gal/ft sq.
2.87 (gal) = 17.45 (ft) * 0.022 (ft sq) * 7.48 gal/ft sq.

REQUIRED PURGE VOLUME = CASED WELL VOLUME (gal) * 3
8.6 (gal) = 2.87 (gal) * 3

Rad (ft-α) = ND
HNU = ND (0.4)
56 ppm @ 9.81 (calib.)

	DATE	TIME	INITIALS
START PURGE	11-2-90	1045	BM
STOP PURGE	11-2-90	1107	BM

	DATE	TIME	INITIALS
ACTUAL PURGE VOLUME: 8.5 (gal)	11-2-90	1125	BM
PURGED DRY no			

PURGE METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless X PVC

DESCRIPTION OF PURGE WATER: Silty
WEATHER: o/c, fog, cool, calm

PURGE MEASUREMENTS

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umohs/cm)	Turbidity(NTU)	INITIALS
11-2-90		1	9.5	6.13	0625	Silty	BM
	1051	2	9.5	6.57	0642	Silty	BM
	1054	3	9.5	6.66	633	Silty	BM
	1056	4	9.3	6.85	636	Silty	BM
	1058	5	9.3	6.96	634	Silty	BM
	1101	6	9.2	7.10	641	Silty	BM
	1104	7	9.2	7.02	651	Silty	BM
	1106	8	9.2	7.09	620	Silty	BM
	1107	8.5	9.3	7.10	643	Silty	BM
→	1125	—	9.3	7.15	640	Silty	BM

post sampling

PRINT NAME OF SAMPLER: B. Matz
SIGNATURE OF SAMPLER: BMatz DATE: 11-2-90

WATER SAMPLE COLLECTION FORM

JOB NAME: LANL ER Sampling JOB NUMBER: 30125.03.04
SAMPLE LOCATION: Mortandad Canyon WELL NUMBER: MCOCB

PURGE CALCULATIONS

		DATE	TIME	INITIALS
MEASURED WELL DEPTH (FT):	46.90	11-1-90	1415	BM
WATER LEVEL DEPTH (FT):	35.10	↓	↓	BM
STATIC WATER HEIGHT (FT):	11.80	↓	↓	BM

CASED WELL VOLUME = Static Water Height (ft) * Area of Well (ft sq) * 7.48 gal/ft sq.
1.8 (gal) = 11.08 (ft) * 0.022 (ft sq) * 7.48 gal/ft sq.

REQUIRED PURGE VOLUME = CASED WELL VOLUME (gal) * 3
5.5 (gal)= 1.8 (gal) * 3

HNu=ND.

	DATE	TIME	INITIALS
START PURGE	11-1-90	1420	BM
STOP PURGE	11-1-90	1500	BM

	DATE	TIME	INITIALS
ACTUAL PURGE VOLUME: 5.0 gal. (gal)	11-1-90	1500	BM

PURGED DRY no

PURGE METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless X PVC

DESCRIPTION OF PURGE WATER: Silty
WEATHER: Cloudy, occasional rain, cool.

PURGE MEASUREMENTS

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umoho/cm)	Turbidity(NTU)	INITIALS
11-1	1425	1.0	10.0	6.2	0.674	Silty	BM
		2.0	10.0	6.59	0.644	"	BM
		3.0	9.4	6.75	0.643	"	BM
		4.0	9.8	6.78	0.624	"	BM
		5.0	9.8	6.80	0.644	"	BM
	1530			6.82	0.660	"	BM

PRINT NAME OF SAMPLER: B. Matz
SIGNATURE OF SAMPLER: BMatz DATE: 11-1-90

SNL:F-0420/1

WATER SAMPLE COLLECTION FORM

JOB NAME: LANL ER Sampling JOB NUMBER: 301215.03.04
SAMPLE LOCATION: Mortandad Canyon WELL NUMBER: MCOTA

PURGE CALCULATIONS

		DATE	TIME	INITIALS
MEASURED WELL DEPTH (FT):	45.60	11-1-90	1300	[illegible]
WATER LEVEL DEPTH (FT):	37.68	↓	↓	[illegible]
STATIC WATER HEIGHT (FT):	7.92			[illegible]

CASED WELL VOLUME = Static Water Height (ft) * Area of Well (ft sq) * 7.48 gal/ft sq.
1.30 (gal) = 7.92 (ft) * 0.022 (ft sq) * 7.48 gal/ft sq.

REQUIRED PURGE VOLUME = CASED WELL VOLUME (gal) * 3
3.90 (gal)= 1.30 (gal) * 3

HNu = bkgd. (1.5) = ND.

	DATE	TIME	INITIALS
START PURGE	1305	11-1-90	[illegible]
STOP PURGE	1325	11-1-90	[illegible]

	DATE	TIME	INITIALS
ACTUAL PURGE VOLUME: 4.0 (gal)	11-1-90	1325	[illegible]

PURGED DRY no.

PURGE METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless X PVC

DESCRIPTION OF PURGE WATER: Silty
WEATHER: cloudy, occasional rain, cool.

PURGE MEASUREMENTS

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umohs/cm)	Turbidity(NTU)	INITIALS
11-1-90		0.0	8.6	6.8	0.342	Silty	[illegible]
		~~2.5~~ 1.0	10.0	7.0	0.314	Silty	[illegible]
		2.0	9.7	6.92	0.337	Silty	[illegible]
	1318	2.5	9.8	6.84	0.337	Silty	[illegible]
	1320	3.0	10.0	6.90	0.323	Silty	[illegible]
	1323	3.5	10.0	6.79	0.327	Silty	[illegible]
	1325	4.0	10.0	6.87	0.334	Silty	[illegible]

PRINT NAME OF SAMPLER: Barbara Matz
SIGNATURE OF SAMPLER: BMatz DATE: 11-1-90

WATER SAMPLE COLLECTION FORM

JOB NAME: LANL ER Sampling JOB NUMBER: 301215.03.04
SAMPLE LOCATION: Los Alamos Canyon WELL NUMBER: LAO-3A

PURGE CALCULATIONS

		DATE	TIME	INITIALS
MEASURED WELL DEPTH (FT):	14.84	11-2-90	1305	[illegible]
WATER LEVEL DEPTH (FT):	8.64	↓	↓	[illegible]
STATIC WATER HEIGHT (FT):	6.2	↓	↓	[illegible]

CASED WELL VOLUME = Static Water Height (ft) * Area of Well (ft sq) * 7.48 gal/ft sq.
1.02 (gal) = 6.2 (ft) * 0.022 (ft sq) * 7.48 gal/ft sq.

REQUIRED PURGE VOLUME = CASED WELL VOLUME (gal) * 3
3.06 (gal) = 1.02 (gal) * 3

HNu = ND.
β r γ = ND

	DATE	TIME	INITIALS
START PURGE	1315	11-2-90	[illegible]
STOP PURGE	1322	11-2-90	[illegible]

	DATE	TIME	INITIALS
ACTUAL PURGE VOLUME: 3.0 (gal)	11-2-90	1322	[illegible]

PURGED DRY no

PURGE METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless X PVC

DESCRIPTION OF PURGE WATER: Silty
WEATHER: Cloudy, cool, occ. rain

PURGE MEASUREMENTS

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umohs/cm)	Turbidity(NTU)	INITIALS
11-2-90	1317	1.0	12.7	6.60	239	Silty	[illegible]
	1319	1.5	12.3	6.63	247	"	[illegible]
	1320	2.0	12.2	6.62	250	"	[illegible]
	1321	2.5	12.2	6.62	246	"	[illegible]
	1322	3.0	12.0	6.58	249	"	[illegible]

PRINT NAME OF SAMPLER: B Matz
SIGNATURE OF SAMPLER: BMatz DATE: 11-2-90

SNL:F-0420/1

WATER SAMPLE COLLECTION FORM

JOB NAME: LANL ER Sampling JOB NUMBER: 30121[illegible]
SAMPLE LOCATION: Los Alamos Canyon WELL NUMBER: LAC-4.5C

PURGE CALCULATIONS

		DATE	TIME	INITIALS
MEASURED WELL DEPTH (FT):	24.50	11-2-90	1422	BM
WATER LEVEL DEPTH (FT):	10.67	↓	↓	BM
STATIC WATER HEIGHT (FT):	13.83			BM

CASED WELL VOLUME = Static Water Height (ft) * Area of Well (ft sq) * 7.48 gal/ft sq.
2.28 (gal) = 13.83 (ft) * 0.022 (ft sq) * 7.48 gal/ft sq.

REQUIRED PURGE VOLUME = CASED WELL VOLUME (gal) * 3
6.83 (gal) = 2.28 (gal) * 3

HNu = ND
β+γ = ND.

	DATE	TIME	INITIALS
START PURGE	403	11-2-90	BM
STOP PURGE	414	11-2-90	BM

	DATE	TIME	INITIALS
ACTUAL PURGE VOLUME: 7.0 (gal)	11-2-90	1414	BM

PURGED DRY NO.

PURGE METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless X PVC

DESCRIPTION OF PURGE WATER: sl. silty.
WEATHER: o/c, breez, cool, occ. rain.

PURGE MEASUREMENTS

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umohs/cm)	Turbidity(NTU)	INITIALS
	1405	1.0	12.0	6.69	196	sl. silty	BM
	1407	2.0	11.5	6.61	202	"	BM
	1408	3.0	11.5	6.62	192	"	BM
	1410	4.0	11.5	6.63	181	"	BM
	1411	5.0	11.5	6.60	201	"	BM
	1413	6.0	11.5	6.61	197	"	BM
	1414	7.0	11.5	6.59	204	"	BM
	1430	—	12.2	6.83	072	"	BM

PRINT NAME OF SAMPLER: B. Matz
SIGNATURE OF SAMPLER: BMatz DATE: 11-2-90

SAMPLING DATA

SAMPLING METHOD: ___Dedicated Pump ___Portable Pump X Bailer ___Stainless ___PVC

FIELD INSTRUMENTS	BRAND/MODEL	SERIAL NUMBER	CALIBRATION DATE
pH	Orion		11-1-90
Temperature			
Conductivity			
Turbidity			
PID			

SAMPLING MEASUREMENTS (Minimum of 4 at 5 minute interval)

DATE	TIME	VOLUME(gal)	TEMP(C)	pH(s.u.)	Conductivity(umohs/cm)	Turbidity(NTU)	INITIALS

SAMPLING HANDLING

	TIME	DATE	INITIALS
BEGIN SAMPLING	1515	11-2-90	BM
END SAMPLING	1530	11-2-90	BM

SAMPLE NUMBER	SAMPLE VOLUME	CONTAINER TYPE	PRESERVATIVES	FILTERED	PARAMETERS
AFC01	2x40ml	G	HCl	no	VOA
	1x1 l	AG	—	no	SVOA
	1x1 l	P	HNO3	no	T.Metals
	1x1 l	P	NaOH	no	T.CN
	1x1 l	P	ZnAc+NaOH	no	Sulfide

CHAIN OF CUSTODY NUMBER: 19537 REQUEST FOR ANALYSIS NUMBER: 230961

PRINT NAME OF SAMPLER: B. Matz

SIGNATURE OF SAMPLER: BMatz DATE: 11-2-90

SNL-F-0420/2

APPENDIX B

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230960
C/C Control No. 195436

PROJECT NAME: LANL ER Sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3515
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-1-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Sterrett
SEND LAB REPORT TO: Barb Matz, IT-Albq.

DATE REPORT REQUIRED: NOV. 30, 1990
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
MC010	Water	2x40 ml	HCl	App. IX Volatile Org.	Method 8240
↓	↓	7x1 l	—	Semivolatiles	Meth-Various
		1x1 l	HNO3	T. Metals	Method 6010
		1x1 l	NaOH	T. Cyanide	Method 9010
		1x1 l	ZnAc+NaOH	Sulfide	Method 9030
MC011	Water	2x40 ml	HCl	Volatile Org.	Method 8240
MC0TB	Water	2x40 ml	HCl	Volatile Org.	Method 8240

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ____ Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ____ Flammable ____ Skin Irritant preservatives Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by A. Robbins Date/Time 11-2-90 1030

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230959
C/C Control No. 195436

PROJECT NAME: LANL ER Sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3515
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-1-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Sterrett
SEND LAB REPORT TO: ~~Mark Lyon~~ Barb Matz, IT Corp. ~~5~~, Albq. NM.

DATE REPORT REQUIRED: Nov. 29, 1990
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
MC0-7A	~~SW~~ water	2 x 40ml	HCl	App. IX Volatile Org.	Method 8240.
↓	↓	7 x 1 l.	—	App. IX Semivolatiles	various methods
		1 x 1 l.	HNO_3	Total Metals	Method 6010
		1 x 1 l.	NaOH	Total Cyanide	Method 9010
		1 x 1 l	ZnAc + NaOH	Sulfide	Method 9030
~~MC04B~~ MC06B	water	2 x 40ml	HCl	App. IX Volatile Org.	Method 8240
↓	↓	7 x 1 l	—	Semivolatiles	Various
		1 x 1 l	HNO_3	Total metals	Method 6010
		1 x 1 l	NaOH	Total Cyanide	Method 9010
		1 x 1 l	ZnAc + NaOH	Sulfide	Method 9030

TURNAROUND TIME REQUIRED (Rush must be approved by the Laboratory Project Manager.)
Normal ____ Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ____ Flammable ____ Skin Irritant preservatives Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by A. Robbins 11-2-90 1030 Date/Time ____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A 10-85

ITNA 47061

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230962
C/C Control No. 195438

PROJECT NAME: LANL ER Sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3515
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-2-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Sterlett
SEND LAB REPORT TO: Barb Matz, IT Albq.

DATE REPORT REQUIRED *: NOV. 30, 1990
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
LA03A	water	2x40ml G	HCl	App.IX Volatile Organics	Method 8240
		7x1l AG	—	Semivolatiles	Various methods
		1x1l P	HNO3	Total Metals	Method 6010
		1x1l P	NaOH	Total Cyanide	Method 9010
		1x1l P	ZnAc+NaOH	Sulfide	Method 9030
LA04.5C	water	2x40ml G	HCl	App.IX Volatile Organics	Method 8240
		7x1l AG	—	Semivolatiles	Various methods
		1x1l P	HNO3	Total Metals	Method 6010
		1x1l P	NaOH	Total Cyanide	Method 9010
		1x1l P	ZnAc+NaOH	Sulfide	Method 9030

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ____ * Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ____ Flammable ____ Skin Irritant preservatives Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by ____ Date/Time ____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230964
C/C Control No. 195440

PROJECT NAME: LANL ER sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3515
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-2-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Stertett
SEND LAB REPORT TO: Barb Matz, IT Albq.

DATE REPORT REQUIRED: * NOV. 30, 1990
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
~~LA020~~ 8m	water	2x40 ml G	HCl	App. IX volatile organics	Method 8240
APC023		7x1 l AG	—	Semivolatiles	Various methods
		1x1 l P	HNO_3	Total Metals	Method 6010
		1x1 l P	NaOH	Total Cyanide	Method 9010
		1x1 l P	ZnAc + NaOH	Sulfide	Method 9030

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal * Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ____ Flammable ____ Skin Irritant preservatives Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by [illegible] - ITORL Date/Time 11/3/90 1230

WHITE - Original, to accompany samples
YELLOW - Field copy

126A 10-85

ITNA 07411

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230961
C/C Control No. 195437

PROJECT NAME: LANL ER Sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3615
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-2-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Sterrett
SEND LAB REPORT TO: Barb Matz, IT Albq.

DATE REPORT REQUIRED: * Nov. 30, 1990.
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
MC04BX	water	2x40ml G	HCl	App. IX Volatile organics	Method 8240.
		7x1L AG	—	Semivolatiles	various methods
		1x1L P	HNO_3	Total Metals	Method 6010
		1x1L P	NaOH	Total Cyanide	Method 9010
		1x1L P	ZnAc+NaOH	Sulfide	Method 9030
AP001	water	2x40ml G	HCl	App. IX Volatile organics	Method 8240
		7x1L AG	—	semivolatiles	various methods
		1x1L P	HNO_3	Total Metals	Method 6010
		1x1L P	NaOH	Total Cyanide	Method 9010
		1x1L P	ZnAc+NaOH	Sulfide	Method 9030

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ____ * Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ____ Flammable ____ Skin Irritant Preservatives Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by [illegible] IT ORL Date/Time 11/3/90 1230

WHITE - Original, to accompany samples
YELLOW - Field copy

126A 10-85

ITNA 11731.1

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230963
C/C Control No. 195439

PROJECT NAME: LANL ER Sampling
PROJECT NUMBER: 301215.03.04
PROFIT CENTER NUMBER: 3515
PROJECT MANAGER: Kelly Bitner
BILL TO: IT Albq.

PURCHASE ORDER NO.: bill to project no.

DATE SAMPLES SHIPPED: 11-2-90
LAB DESTINATION: IT Oak Ridge
LABORATORY CONTACT: Janice Stewart
SEND LAB REPORT TO: Barb Matz, IT Albq.

DATE REPORT REQUIRED: * Nov. 30, 1990
PROJECT CONTACT: Barb Matz
PROJECT CONTACT PHONE NO.: 505/262-8800

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
MC07A ✓	Water	1x1 l P.	ZnAc + NaOH	App. IX Sulfide **	Method 9030
MC06B ✓	↓	↓	↓ ↓	↓ ↓ **	↓
MC010 ✓	↓	↓	↓ ↓	↓ ↓ **	↓
LA011 ✓	↓	2x40 ml G	HCl	App. IX volatile org.	Method 8240
APC011 ✓	↓	"	HCl	" " "	" "
APC07B ✓	"	"	"	" " "	" "
				** to replace sulfide fractions	from 11-1-90.
				(COC: 195436, RFA: 230959)	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal * Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I X II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard _____ Flammable _____ Skin Irritant preservatives Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab X Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by [illegible] ETORE Date/Time 11/3/90 1830

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

ITNA 47011

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 230962

C/C Control No. 195438

PROJECT NAME/NUMBER LANL ER Sampling

LAB DESTINATION IT Oak Ridge

SAMPLE TEAM MEMBERS Matz, Schmidt, Saavedra, Reneau

CARRIER/WAYBILL NO. Fed. Exp. 8095848843

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
LA03A	LANL well	11-2-90, 1320	water	2x40ml G	Rec'd 4°C OK	
↓	↓	↓ ↓	↓	7x1 l AG(4)		
↓	↓	↓ ↓	↓	3x1 l P	Rec'd ok	
LA04.5C	LANL well	11-2-90, 1410	water	2x40ml G	Rec'd ok @ ITMS. 11-6-90	
↓	↓	↓ ↓	↓	7x1 l AG (4)		
↓	↓	↓ ↓	↓	3x1 l P.		

Special Instructions:

Possible Sample Hazards: preservatives

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: B. Matz, ITCorp, 11-2-90, 1730
   Received By: [illegible] ITORL 1830
2. Relinquished By: Steve Faughlin ITORL 11-6-90 16:00
   Received By: SA Kennedy, ITMS, 11-6-90 1800
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

ITNA 47061

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 230961

C/C Control No. 195437

PROJECT NAME/NUMBER LANL ER / 301215.03.04

LAB DESTINATION IT Oak Ridge

SAMPLE TEAM MEMBERS Matz, Schmidt, Saavedra, Reneau ~~[illegible]~~.

CARRIER/WAYBILL NO. Fed. Exp. 8095848843

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
MC04B	LANL well	11-2-90, 1100	water	2x40ml G	Rec'd 4°C OK	
↓	↓	↓ ↓	↓	7x1 l AG (4)		
↓	↓	↓ ↓	↓	3x1 l P.	fluid ok	
APC01	LANL well	11-2-90, 1510	water	2x40ml G	ITMS, sab 11/6/90	
↓	↓	↓ ↓	↓	7x1 l AG (4)		
↓	↓	↓ ↓	↓	3x1 l P.		

Special Instructions:

Possible Sample Hazards: preservatives

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: B. Matz, BMatz, ITCorp, 11-2-90, 1730
   Received By: [illegible] 11/3/90 1830 IT Ork
2. Relinquished By: Steve Tumblin IT/ORL 11/6/90 16:00
   Received By: SA Kennedy, ITMS, 11-6-90 1800
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

ITNA 4706.1

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 230964

C/C Control No. 195440

PROJECT NAME/NUMBER LANL ER

LAB DESTINATION IT Oak Ridge

SAMPLE TEAM MEMBERS Matz, Schmidt, Reneau, Saavedra

CARRIER/WAYBILL NO. Fed. Exp. 8095848843

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
~~LA0208~~ ↑	LANL well	11-2-90 1600	water	2X40ml G ✓	Rec'd 5°C OK	
APC02				7X1 L AG (4) ✓	Rec'd ok @ ITAS, sah 11-6-90	
				3X1 L P. ✓		

Special Instructions:

Possible Sample Hazards: preservatives

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: B. Matz, B. Matz, IT Corp, 11-2-90, 1730
   Received By: [illegible] ITIOAL 11-3-90 1230
2. Relinquished By: Steve Zaugg[illegible] ITIOAL 11-6-90 16:00
   Received By: SA Kennedy, ITAS, 11-6-90 1800
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

ITNA 47061

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 230960 230959

C/C Control No. 195436

PROJECT NAME/NUMBER LANL ER / 301215.03.04

LAB DESTINATION IT Oak Ridge

SAMPLE TEAM MEMBERS Matz, Schmidt, Saavedra, Reneau

CARRIER/WAYBILL NO. Fed. Exp. 8095848806

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
MC07A	LANL well	11-1-90, 1330	water	2x40ml G	ok 6°C AC 11-2-90	
↓	↓	11-1-90, 1340	↓	7x1l AG		
↓	↓	11-1-90 1340	↓	3x1l P		
~~MC04BM~~ MC06B	LANL well	11-1-90 1450	water	2x40ml G		
↓	↓	↓ ↓	↓	7x1l AG		
↓	↓	↓ ↓	↓	3x1l P.		
MC0-10	LANL well	11-1-90 1450	water	~~3~~2x40ml G	Did not receive any but VOA containers on this COC. SA 11/6/90	
↓	↓	↓ ↓	↓	7x1l AG		
↓	↓	↓ ↓	↓	3x1l P		
MC0-11	LANL well	11-1-90 1530	↓	2x40ml G		
15 MC0-TB	Trip Blank	Lab prep.	water	2x40ml G.		

Special Instructions:

Possible Sample Hazards: preservatives.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: [illegible] IT-ABQ 11-1-90 1730
   Received By: A. Robbins 11-2-90 1030
2. Relinquished By: Tim Laughlin IVORL 11-1-90 16:00
   Received By: SA Kennedy, ITAS, 11-6-90 1800
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

ITNA 47061

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 230963

C/C Control No. 195439

PROJECT NAME/NUMBER LANL ER /301215.03.04

LAB DESTINATION IT Oak Ridge

SAMPLE TEAM MEMBERS Matz, Schmidt, Saavedra, Renieau

CARRIER/WAYBILL NO. Fed. Exp. 8095848843

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
MC07A	LANL well	11-2-90 0940	water	1x1 LP	Rec'd 11/6/90	
MC06B	↓	↓ 1015	↓	↓	did not rec. @ ITAS sat 11/6/90	
MC010	↓	↓ 1020	↓	↓		
LA011	"	↓ 1410	↓	2x40ml G	Rec'd ok, sat 11/6/90	
APC011	"	↓ 1530	↓	"		
APC07B	TRIP BLANK	11-2-90 "	"	"		

Special Instructions:

Possible Sample Hazards: preservatives.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: B. Matz, BMatz, IT Corp, 11-2-90, 1730
   Received By: [illegible] 11/3/90 1230
2. Relinquished By: Steve Zumpfelin IT/ORL 11-6-90 16:00
   Received By: Sal Kennedy, ITAS, 11-6-90, 1800
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

ITNA 47161

REPORT NUMBER: 8550

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	94757	< 0.26		UG/L	10/24/90		2,4-D
APCO-1	90.17401	93765	< 0.05		UG/L	10/24/90		2,4,5-T
APCO-1	90.17401	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

ACID - Pueblo Canyon

REPORT NUMBER: 8550

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3	90.17402	94757	< 0.26		UG/L	10/24/90		2,4-D
LAO-3	90.17402	93765	< 0.05		UG/L	10/24/90		2,4,5-T
LAO-3	90.17402	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8550

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3A	90.17403	94757	< 0.26		UG/L	10/24/90		2,4-D
LAO-3A	90.17403	93765	< 0.05		UG/L	10/24/90		2,4,5-T
LAO-3A	90.17403	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8550

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5	90.17404	94757	< 0.26		UG/L	10/24/90		2,4-D
LAO-4.5	90.17404	93765	< 0.05		UG/L	10/24/90		2,4,5-T
LAO-4.5	90.17404	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8550

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5C	90.17405	94757	< 0.26		UG/L	10/24/90		2,4-D
LAO-4.5C	90.17405	93765	< 0.05		UG/L	10/24/90		2,4,5-T
LAO-4.5C	90.17405	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

****

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this sample batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17415	94757	0.63	0.44	UG/L	0.54	0.05	10/24/90	UNDER CONTROL	2,4-D
90.17415	93721	0.31	0.22	UG/L	0.29	0.03	10/24/90	UNDER CONTROL	2,4,5-TP

REPORT NUMBER: 8550

Analyst	Section Leader	QA Officer
10/25/90	10/30/90	
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8238

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: DMS on 25-Sep-1990

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Dee Seitz PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

SUMMARY of TOTAL PCB's for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
LAO-3	90.17402	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
LAO-3A	90.17403	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
LAO-4.5	90.17404	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
LAO-4.5C	90.17405	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor

DETAILED PCB DATA for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
APCO-1	90.17401	53469219	< 0.4		UG/L	9/19/90		Aroclor 1242
APCO-1	90.17401	11097691	< 0.4		UG/L	9/19/90		Aroclor 1254
APCO-1	90.17401	11096825	< 0.4		UG/L	9/19/90		Aroclor 1260
LAO-3	90.17402	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
LAO-3	90.17402	53469219	< 0.4		UG/L	9/19/90		Aroclor 1242
LAO-3	90.17402	11097691	< 0.4		UG/L	9/19/90		Aroclor 1254
LAO-3	90.17402	11096825	< 0.4		UG/L	9/19/90		Aroclor 1260
LAO-3A	90.17403	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor

LAO-3A	90.17403	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
LAO-3A	90.17403	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
LAO-3A	90.17403	11096825	< 0.4	*UG/L	9/19/90	Aroclor 1260
LAO-4.5	90.17404	1336363	< 0.4	UG/L	9/19/90	Mixed-Aroclor
LAO-4.5	90.17404	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
LAO-4.5	90.17404	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
LAO-4.5	90.17404	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260
LAO-4.5C	90.17405	1336363	< 0.4	UG/L	9/19/90	Mixed-Aroclor
LAO-4.5C	90.17405	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
LAO-4.5C	90.17405	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
LAO-4.5C	90.17405	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260

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REPORT NUMBER: 8238 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: DMS on 25-Sep-1990

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Dee Seitz PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

X Only Blind QC samples run with this sample batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17414	1336363	2.8	0.6	UG/L	1.89	0.45	9/19/90	UNDER CONTROL	Mixed-Aroclor
90.17414	53469219	2.8	0.6	UG/L	1.89	0.45	9/19/90	UNDER CONTROL	Aroclor 1242
90.17414	11097691	< 0.4		UG/L			9/19/90	UNDER CONTROL	Aroclor 1254
90.17414	11096825	< 0.4		UG/L			9/19/90	UNDER CONTROL	Aroclor 1260

Analyst	Section Leader	QA Officer
9/25/90	9/27/90	10/1/90
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

REPORT NUMBER: 8993

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17401

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
APCO-1	90.17401	309002	< 0.06		UG/L	12/04/90		Aldrin
APCO-1	90.17401	319846	< 0.02		UG/L	12/04/90		alpha-BHC
APCO-1	90.17401	319857	< 0.1		UG/L	12/04/90		beta-BHC
APCO-1	90.17401	319868	< 0.12		UG/L	12/04/90		delta-BHC
APCO-1	90.17401	57749	< 0.25		UG/L	12/04/90		Chlordane
APCO-1	90.17401	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
APCO-1	90.17401	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
APCO-1	90.17401	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
APCO-1	90.17401	60571	< 0.08		UG/L	12/04/90		Dieldrin
APCO-1	90.17401	959988	< 0.05		UG/L	12/04/90		Endosulfan I
APCO-1	90.17401	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
APCO-1	90.17401	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
APCO-1	90.17401	72208	< 0.03		UG/L	12/04/90		Endrin
APCO-1	90.17401	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
APCO-1	90.17401	76448	< 0.03		UG/L	12/04/90		Heptachlor
APCO-1	90.17401	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
APCO-1	90.17401	58899	< 0.03		UG/L	12/04/90		Lindane
APCO-1	90.17401	72435	< 0.08		UG/L	12/04/90		Methoxychlor
APCO-1	90.17401	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17401

none

Customer Sample Duplicate Results for Sample # 90.17401

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17401

none

REPORT NUMBER: 8993

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17402

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3	90.17402	309002	< 0.06		UG/L	12/04/90		Aldrin
LAO-3	90.17402	319846	< 0.02		UG/L	12/04/90		alpha-BHC
LAO-3	90.17402	319857	< 0.1		UG/L	12/04/90		beta-BHC
LAO-3	90.17402	319868	< 0.12		UG/L	12/04/90		delta-BHC
LAO-3	90.17402	57749	< 0.25		UG/L	12/04/90		Chlordane
LAO-3	90.17402	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
LAO-3	90.17402	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
LAO-3	90.17402	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
LAO-3	90.17402	60571	< 0.04		UG/L	12/04/90		Dieldrin
LAO-3	90.17402	959988	< 0.05		UG/L	12/04/90		Endosulfan I
LAO-3	90.17402	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
LAO-3	90.17402	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
LAO-3	90.17402	72208	< 0.03		UG/L	12/04/90		Endrin
LAO-3	90.17402	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
LAO-3	90.17402	76448	< 0.03		UG/L	12/04/90		Heptachlor
LAO-3	90.17402	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
LAO-3	90.17402	58899	< 0.03		UG/L	12/04/90		Lindane
LAO-3	90.17402	72435	< 0.08		UG/L	12/04/90		Methoxychlor
LAO-3	90.17402	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17402

none

Customer Sample Duplicate Results for Sample # 90.17402

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17402

none

REPORT NUMBER: 8993

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17403

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-3A	90.17403	309002	< 0.06		UG/L	12/04/90		Aldrin
LAO-3A	90.17403	319846	< 0.02		UG/L	12/04/90		alpha-BHC
LAO-3A	90.17403	319857	< 0.1		UG/L	12/04/90		beta-BHC
LAO-3A	90.17403	319868	< 0.12		UG/L	12/04/90		delta-BHC
LAO-3A	90.17403	57749	< 0.25		UG/L	12/04/90		Chlordane
LAO-3A	90.17403	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
LAO-3A	90.17403	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
LAO-3A	90.17403	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
LAO-3A	90.17403	60571	< 0.04		UG/L	12/04/90		Dieldrin
LAO-3A	90.17403	959988	< 0.05		UG/L	12/04/90		Endosulfan I
LAO-3A	90.17403	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
LAO-3A	90.17403	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
LAO-3A	90.17403	72208	< 0.03		UG/L	12/04/90		Endrin
LAO-3A	90.17403	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
LAO-3A	90.17403	76448	< 0.03		UG/L	12/04/90		Heptachlor
LAO-3A	90.17403	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
LAO-3A	90.17403	58899	< 0.03		UG/L	12/04/90		Lindane
LAO-3A	90.17403	72435	< 0.08		UG/L	12/04/90		Methoxychlor
LAO-3A	90.17403	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17403

none

Customer Sample Duplicate Results for Sample # 90.17403

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17403

none

REPORT NUMBER: 8993

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17404

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5	90.17404	309002	< 0.06		UG/L	12/04/90		Aldrin
LAO-4.5	90.17404	319846	< 0.02		UG/L	12/04/90		alpha-BHC
LAO-4.5	90.17404	319857	< 0.1		UG/L	12/04/90		beta-BHC
LAO-4.5	90.17404	319868	< 0.12		UG/L	12/04/90		delta-BHC
LAO-4.5	90.17404	57749	< 0.25		UG/L	12/04/90		Chlordane
LAO-4.5	90.17404	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
LAO-4.5	90.17404	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
LAO-4.5	90.17404	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
LAO-4.5	90.17404	60571	< 0.04		UG/L	12/04/90		Dieldrin
LAO-4.5	90.17404	959988	< 0.05		UG/L	12/04/90		Endosulfan I
LAO-4.5	90.17404	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
LAO-4.5	90.17404	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
LAO-4.5	90.17404	72208	< 0.03		UG/L	12/04/90		Endrin
LAO-4.5	90.17404	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
LAO-4.5	90.17404	76448	< 0.03		UG/L	12/04/90		Heptachlor
LAO-4.5	90.17404	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
LAO-4.5	90.17404	58899	< 0.03		UG/L	12/04/90		Lindane
LAO-4.5	90.17404	72435	< 0.08		UG/L	12/04/90		Methoxychlor
LAO-4.5	90.17404	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17404

none

Customer Sample Duplicate Results for Sample # 90.17404

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17404

none

REPORT NUMBER: 8993

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

Customer Sample Results, Sample # 90.17405

Date Collected: 9/12/90 Date Received: 9/12/90 Date Extracted: 9/13/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAO-4.5C	90.17405	309002	< 0.06		UG/L	12/04/90		Aldrin
LAO-4.5C	90.17405	319846	< 0.02		UG/L	12/04/90		alpha-BHC
LAO-4.5C	90.17405	319857	< 0.1		UG/L	12/04/90		beta-BHC
LAO-4.5C	90.17405	319868	< 0.12		UG/L	12/04/90		delta-BHC
LAO-4.5C	90.17405	57749	< 0.25		UG/L	12/04/90		Chlordane
LAO-4.5C	90.17405	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
LAO-4.5C	90.17405	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
LAO-4.5C	90.17405	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
LAO-4.5C	90.17405	60571	< 0.04		UG/L	12/04/90		Dieldrin
LAO-4.5C	90.17405	959988	< 0.05		UG/L	12/04/90		Endosulfan I
LAO-4.5C	90.17405	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
LAO-4.5C	90.17405	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
LAO-4.5C	90.17405	72208	< 0.03		UG/L	12/04/90		Endrin
LAO-4.5C	90.17405	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
LAO-4.5C	90.17405	76448	< 0.03		UG/L	12/04/90		Heptachlor
LAO-4.5C	90.17405	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
LAO-4.5C	90.17405	58899	< 0.03		UG/L	12/04/90		Lindane
LAO-4.5C	90.17405	72435	< 0.08		UG/L	12/04/90		Methoxychlor
LAO-4.5C	90.17405	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17405

none

Customer Sample Duplicate Results for Sample # 90.17405

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17405

none

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REPORT NUMBER: 8993 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10773 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: ALLA1

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

none

Blank Spike Results

none

Blank Spike Duplicate Results

none

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Blind QC Results, Sample # 90.17416

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17416	309002	< 0.06		UG/L	0.0		12/04/90	UNDER CONTROL	Aldrin
90.17416	319846	< 0.02		UG/L	0.0		12/04/90	UNDER CONTROL	alpha-BHC
90.17416	319857	< 0.1		UG/L	0.0		12/04/90	UNDER CONTROL	beta-BHC
90.17416	319868	< 0.12		UG/L	0.0		12/04/90	UNDER CONTROL	delta-BHC
90.17416	57749	< 0.25		UG/L	0.0		12/04/90	UNDER CONTROL	Chlordane
90.17416	72548	< 0.04		UG/L	0.0		12/04/90	UNDER CONTROL	p,p'-DDD
90.17416	72559	0.17	0.08	UG/L	0.25	0.02	12/04/90	UNDER CONTROL	p,p'-DDE
90.17416	50293	< 0.06		UG/L	0.0		12/04/90	UNDER CONTROL	p,p'-DDT
90.17416	60571	< 0.04		UG/L	0.0		12/04/90	UNDER CONTROL	Dieldrin
90.17416	959988	< 0.05		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan I
90.17416	33213659	< 0.08		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan II
90.17416	1031078	< 0.09		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan sulfate
90.17416	72208	< 0.03		UG/L	0.0		12/04/90	UNDER CONTROL	Endrin
90.17416	7421934	< 0.31		UG/L	0.0		12/04/90	UNDER CONTROL	Endrin aldehyde
90.17416	76448	< 0.03		UG/L	0.0		12/04/90	UNDER CONTROL	Heptachlor
90.17416	1024573	0.22	0.1	UG/L	0.23	0.02	12/04/90	UNDER CONTROL	Heptachlor epoxide

90.17416	58899	0.15	0.07	UG/L	0.18	0.02	12/04/90	UNDER CONTROL	Lindane
90.17416	72435	0.68	0.34	UG/L	0.68	0.07	12/04/90	UNDER CONTROL	Methoxychlor
90.17416	8001352	< 2.5		UG/L	0.0		12/04/90	UNDER CONTROL	Toxaphene

Surrogate results for EPA PESTICIDES

Dibutyl chlorendate (CAS # = 96); EPA Range Limits: Water = **-*** %, Soil = **-*** %

SAMPLE NUMBER	RESULT	UNITS	COMPLETION DATE	COMMENT
90.17401	0.0	NOSURR	12/04/90	
90.17402	0.0	NOSURR	12/04/90	
90.17403	0.0	NOSURR	12/04/90	
90.17404	0.0	NOSURR	12/04/90	
90.17405	0.0	NOSURR	12/04/90	
90.17416	0.0	NOSURR	12/04/90	

REPORT NUMBER: 8993

Analyst	Reviewer	Section Leader	QA Officer
12/4/90	12/4/90	12/4/90	
Date	Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-4	90.17256	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-4	90.17256	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4B	90.17257	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-4B	90.17257	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-4B	90.17257	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6B	90.17258	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-6B	90.17258	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-6B	90.17258	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7	90.17259	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-7	90.17259	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-7	90.17259	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7A	90.17260	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-7A	90.17260	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-7A	90.17260	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

REPORT NUMBER: 8548

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6	90.17261	94757	< 0.26		UG/L	10/24/90		2,4-D
MCO-6	90.17261	93765	< 0.05		UG/L	10/24/90		2,4,5-T
MCO-6	90.17261	93721	< 0.06		UG/L	10/24/90		2,4,5-TP

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REPORT NUMBER: 8548 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: HEMBERGER on 24-Oct-1990

EPA HERBICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Barbara Hemberger PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this sample batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17415	94757	0.63	0.44	UG/L	0.54	0.05	10/24/90	UNDER CONTROL	2,4-D
90.17415	93721	0.31	0.22	UG/L	0.29	0.03	10/24/90	UNDER CONTROL	2,4,5-TP

REPORT NUMBER: 8548

Analyst	Section Leader	QA Officer
10/25/90	10/30/90	
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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REPORT NUMBER: 8204

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: DMS on 19-Sep-1990

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Dee Seitz PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

SUMMARY of TOTAL PCB's for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-4B	90.17257	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-6B	90.17258	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-7	90.17259	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-7A	90.17260	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-6	90.17261	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor

DETAILED PCB DATA for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-4	90.17256	53469219	< 0.4		UG/L	9/19/90		Aroclor 1242
MCO-4	90.17256	11097691	< 0.4		UG/L	9/19/90		Aroclor 1254
MCO-4	90.17256	11096825	< 0.4		UG/L	9/19/90		Aroclor 1260
MCO-4B	90.17257	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor
MCO-4B	90.17257	53469219	< 0.4		UG/L	9/19/90		Aroclor 1242
MCO-4B	90.17257	11097691	< 0.4		UG/L	9/19/90		Aroclor 1254
MCO-4B	90.17257	11096825	< 0.4		UG/L	9/19/90		Aroclor 1260
MCO-6B	90.17258	1336363	< 0.4		UG/L	9/19/90		Mixed-Aroclor

MCO-6B	90.17258	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
MCO-6B	90.17258	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
MCO-6B	90.17258	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260
MCO-7	90.17259	1336363	< 0.4	UG/L	9/19/90	Mixed-Aroclor
MCO-7	90.17259	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
MCO-7	90.17259	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
MCO-7	90.17259	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260
MCO-7A	90.17260	1336363	< 0.4	UG/L	9/19/90	Mixed-Aroclor
MCO-7A	90.17260	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
MCO-7A	90.17260	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
MCO-7A	90.17260	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260
MCO-6	90.17261	1336363	< 0.4	UG/L	9/19/90	Mixed-Aroclor
MCO-6	90.17261	53469219	< 0.4	UG/L	9/19/90	Aroclor 1242
MCO-6	90.17261	11097691	< 0.4	UG/L	9/19/90	Aroclor 1254
MCO-6	90.17261	11096825	< 0.4	UG/L	9/19/90	Aroclor 1260

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REPORT NUMBER: 8204 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: DMS on 19-Sep-1990

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Dee Seitz PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

___ Only qualitative data requested

X Only Blind QC samples run with this sample batch.

___ No QC samples run with this sample batch.

___ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17414	1336363	2.8	0.6	UG/L	1.89	0.45	9/19/90	UNDER CONTROL	Mixed-Aroclor
90.17414	53469219	2.8	0.6	UG/L	1.89	0.45	9/19/90	UNDER CONTROL	Aroclor 1242
90.17414	11097691	< 0.4		UG/L			9/19/90	UNDER CONTROL	Aroclor 1254
90.17414	11096825	< 0.4		UG/L			9/19/90	UNDER CONTROL	Aroclor 1260

Analyst	Section Leader	QA Officer
9/20/90	10/1/90	
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

DEC 4, 1990

TO: Max Maes, MS 490, 7-0817

FROM: Peter Del Mar, 7-6011

THRU: Chris Leibman, Section Leader, 7-5889 CL

SUBJECT: Final Report, Request Number 10760 for Pesticides

Attached is the final report for request number 10760.Six water samples were analyzed using Solid Phase Extraction, with analysis by GC/ECD. No target compounds were detected in these samples and holding times were met. Please contact me if you have any questions.

Attachments:

Report Number 8992.

Well Monitoring

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17256

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-4	90.17256	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-4	90.17256	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-4	90.17256	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-4	90.17256	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-4	90.17256	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
MCO-4	90.17256	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
MCO-4	90.17256	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-4	90.17256	60571	< 0.04		UG/L	12/04/90		Dieldrin
MCO-4	90.17256	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-4	90.17256	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-4	90.17256	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-4	90.17256	72208	< 0.03		UG/L	12/04/90		Endrin
MCO-4	90.17256	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
MCO-4	90.17256	76448	< 0.03		UG/L	12/04/90		Heptachlor
MCO-4	90.17256	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
MCO-4	90.17256	58899	< 0.03		UG/L	12/04/90		Lindane
MCO-4	90.17256	72435	< 0.08		UG/L	12/04/90		Methoxychlor
MCO-4	90.17256	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17256

none

Customer Sample Duplicate Results for Sample # 90.17256

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17256

none

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17257

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4B	90.17257	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-4B	90.17257	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-4B	90.17257	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-4B	90.17257	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-4B	90.17257	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-4B	90.17257	72548	< 0.08		UG/L	12/04/90		p,p'-DDD
MCO-4B	90.17257	72559	< 0.08		UG/L	12/04/90		p,p'-DDE
MCO-4B	90.17257	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-4B	90.17257	60571	< 0.08		UG/L	12/04/90		Dieldrin
MCO-4B	90.17257	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-4B	90.17257	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-4B	90.17257	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-4B	90.17257	72208	< 0.06		UG/L	12/04/90		Endrin
MCO-4B	90.17257	7421934	< 0.62		UG/L	12/04/90		Endrin aldehyde
MCO-4B	90.17257	76448	< 0.06		UG/L	12/04/90		Heptachlor
MCO-4B	90.17257	1024573	< 0.08		UG/L	12/04/90		Heptachlor epoxide
MCO-4B	90.17257	58899	< 0.06		UG/L	12/04/90		Lindane
MCO-4B	90.17257	72435	< 0.16		UG/L	12/04/90		Methoxychlor
MCO-4B	90.17257	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17257

none

Customer Sample Duplicate Results for Sample # 90.17257

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17257

none

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17258

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6B	90.17258	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-6B	90.17258	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-6B	90.17258	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-6B	90.17258	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-6B	90.17258	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-6B	90.17258	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
MCO-6B	90.17258	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
MCO-6B	90.17258	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-6B	90.17258	60571	< 0.04		UG/L	12/04/90		Dieldrin
MCO-6B	90.17258	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-6B	90.17258	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-6B	90.17258	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-6B	90.17258	72208	< 0.03		UG/L	12/04/90		Endrin
MCO-6B	90.17258	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
MCO-6B	90.17258	76448	< 0.03		UG/L	12/04/90		Heptachlor
MCO-6B	90.17258	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
MCO-6B	90.17258	58899	< 0.03		UG/L	12/04/90		Lindane
MCO-6B	90.17258	72435	< 0.08		UG/L	12/04/90		Methoxychlor
MCO-6B	90.17258	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17258

none

Customer Sample Duplicate Results for Sample # 90.17258

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17258

none

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17259

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7	90.17259	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-7	90.17259	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-7	90.17259	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-7	90.17259	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-7	90.17259	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-7	90.17259	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
MCO-7	90.17259	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
MCO-7	90.17259	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-7	90.17259	60571	< 0.04		UG/L	12/04/90		Dieldrin
MCO-7	90.17259	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-7	90.17259	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-7	90.17259	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-7	90.17259	72208	< 0.03		UG/L	12/04/90		Endrin
MCO-7	90.17259	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
MCO-7	90.17259	76448	< 0.03		UG/L	12/04/90		Heptachlor
MCO-7	90.17259	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
MCO-7	90.17259	58899	< 0.03		UG/L	12/04/90		Lindane
MCO-7	90.17259	72435	< 0.08		UG/L	12/04/90		Methoxychlor
MCO-7	90.17259	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17259

none

Customer Sample Duplicate Results for Sample # 90.17259

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17259

none

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17260

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7A	90.17260	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-7A	90.17260	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-7A	90.17260	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-7A	90.17260	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-7A	90.17260	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-7A	90.17260	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
MCO-7A	90.17260	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
MCO-7A	90.17260	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-7A	90.17260	60571	< 0.04		UG/L	12/04/90		Dieldrin
MCO-7A	90.17260	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-7A	90.17260	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-7A	90.17260	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-7A	90.17260	72208	< 0.03		UG/L	12/04/90		Endrin
MCO-7A	90.17260	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
MCO-7A	90.17260	76448	< 0.03		UG/L	12/04/90		Heptachlor
MCO-7A	90.17260	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
MCO-7A	90.17260	58899	< 0.03		UG/L	12/04/90		Lindane
MCO-7A	90.17260	72435	< 0.08		UG/L	12/04/90		Methoxychlor
MCO-7A	90.17260	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17260

none

Customer Sample Duplicate Results for Sample # 90.17260

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17260

none

REPORT NUMBER: 8992

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17261

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6	90.17261	309002	< 0.06		UG/L	12/04/90		Aldrin
MCO-6	90.17261	319846	< 0.02		UG/L	12/04/90		alpha-BHC
MCO-6	90.17261	319857	< 0.1		UG/L	12/04/90		beta-BHC
MCO-6	90.17261	319868	< 0.12		UG/L	12/04/90		delta-BHC
MCO-6	90.17261	57749	< 0.25		UG/L	12/04/90		Chlordane
MCO-6	90.17261	72548	< 0.04		UG/L	12/04/90		p,p'-DDD
MCO-6	90.17261	72559	< 0.04		UG/L	12/04/90		p,p'-DDE
MCO-6	90.17261	50293	< 0.06		UG/L	12/04/90		p,p'-DDT
MCO-6	90.17261	60571	< 0.04		UG/L	12/04/90		Dieldrin
MCO-6	90.17261	959988	< 0.05		UG/L	12/04/90		Endosulfan I
MCO-6	90.17261	33213659	< 0.08		UG/L	12/04/90		Endosulfan II
MCO-6	90.17261	1031078	< 0.09		UG/L	12/04/90		Endosulfan sulfate
MCO-6	90.17261	72208	< 0.03		UG/L	12/04/90		Endrin
MCO-6	90.17261	7421934	< 0.31		UG/L	12/04/90		Endrin aldehyde
MCO-6	90.17261	76448	< 0.03		UG/L	12/04/90		Heptachlor
MCO-6	90.17261	1024573	< 0.04		UG/L	12/04/90		Heptachlor epoxide
MCO-6	90.17261	58899	< 0.03		UG/L	12/04/90		Lindane
MCO-6	90.17261	72435	< 0.08		UG/L	12/04/90		Methoxychlor
MCO-6	90.17261	8001352	< 2.5		UG/L	12/04/90		Toxaphene

Tentatively Identified Compounds in Customer Sample # 90.17261

none

Customer Sample Duplicate Results for Sample # 90.17261

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17261

none

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REPORT NUMBER: 8992 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: PDM on 4-Dec-1990

EPA PESTICIDES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Peter Del Mar PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

none

Blank Spike Results

none

Blank Spike Duplicate Results

none

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Blind QC Results, Sample # 90.17416

Date Collected: 9/12/90 Date Received: 9/13/90 Date Extracted: 9/14/90 Date Analyzed: 10/05/90

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17416	309002	< 0.06		UG/L	0.0		12/04/90	UNDER CONTROL	Aldrin
90.17416	319846	< 0.02		UG/L	0.0		12/04/90	UNDER CONTROL	alpha-BHC
90.17416	319857	< 0.1		UG/L	0.0		12/04/90	UNDER CONTROL	beta-BHC
90.17416	319868	< 0.12		UG/L	0.0		12/04/90	UNDER CONTROL	delta-BHC
90.17416	57749	< 0.25		UG/L	0.0		12/04/90	UNDER CONTROL	Chlordane
90.17416	72548	< 0.04		UG/L	0.0		12/04/90	UNDER CONTROL	p,p'-DDD
90.17416	72559	0.17	0.08	UG/L	0.25	0.02	12/04/90	UNDER CONTROL	p,p'-DDE
90.17416	50293	< 0.06		UG/L	0.0		12/04/90	UNDER CONTROL	p,p'-DDT
90.17416	60571	< 0.04		UG/L	0.0		12/04/90	UNDER CONTROL	Dieldrin
90.17416	959988	< 0.05		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan I
90.17416	33213659	< 0.08		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan II
90.17416	1031078	< 0.09		UG/L	0.0		12/04/90	UNDER CONTROL	Endosulfan sulfate
90.17416	72208	< 0.03		UG/L	0.0		12/04/90	UNDER CONTROL	Endrin
90.17416	7421934	< 0.31		UG/L	0.0		12/04/90	UNDER CONTROL	Endrin aldehyde

90.17416	76448	< 0.03		UG/L		0.0		12/04/90	UNDER CONTROL	Heptachlor
90.17416	1024573	0.22	0.1	UG/L		0.23	0.02	12/04/90	UNDER CONTROL	Heptachlor epoxide
90.17416	58899	0.15	0.07	UG/L	*	0.18	0.02	12/04/90	UNDER CONTROL	Lindane
90.17416	72435	0.68	0.34	UG/L		0.68	0.07	12/04/90	UNDER CONTROL	Methoxychlor
90.17416	8001352	< 2.5		UG/L		0.0		12/04/90	UNDER CONTROL	Toxaphene

Surrogate results for EPA PESTICIDES

Dibutyl chlorendate (CAS # = 96); EPA Range Limits: Water = **-*** %, Soil = **-*** %

SAMPLE NUMBER	RESULT	UNITS	COMPLETION DATE	COMMENT
90.17256	0.0	NOSURR	12/04/90	
90.17257	0.0	NOSURR	12/04/90	
90.17258	0.0	NOSURR	12/04/90	
90.17259	0.0	NOSURR	12/04/90	
90.17260	0.0	NOSURR	12/04/90	
90.17261	0.0	NOSURR	12/04/90	
90.17416	0.0	NOSURR	12/04/90	

REPORT NUMBER: 8992

Analyst	Reviewer	Section Leader	QA Officer
12/4/90	12/4/90	12/4/90	
Date	Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

****

SEPTEMBER 19, 1990

TO: MAX MAES
THRU: CHRIS LEIBMAN
FROM: LAURA TSIAGKOURIS
REQUEST #: 10760

The following water samples were analyzed for Volatile Organic Components (VOC's) using a SW 846 Purge & Trap (P/T) GC/MS method 8260 of analysis:

90.17256 MCO-4	90.17257 MCO 4B	90.17258 MCO-6B
90.17259 MCO-7	90.17260 MCO-7A	90.17261 MCO-6
90.17400		

Since the final results are <u>not</u> blank subtracted, the results from the associated method blanks (samples 90.17436 and 90.17560) have been included in the report. **The 14 day holding time for preserved water samples was satisfied.**

<u>RESULTS:</u>

As indicated on the **FINAL** report, the analysis of samples 90.17256, 90.17257, 90.17260, 90.17261 and 90.17400 (#90.17400 is the trip blank) did not detect any of the target VOC's at or above the level of quantitation (LOQ). The detection of low level VOC's in samples 90.17258 and 90.17259 is most likely due to contamination from storage and/or preparation of the samples. The samples did not contain any non-target VOC's at a significant level. The surrogate recoveries were within the control limit for all samples except for sample 90.17400. 1,2-Dichloroethane-d4 was above the upper control limit in sample 90.17400.

QC Summary for Request 90.10760

Sample 90.17256 was used as the matrix spike media by adding 10 uL of the matrix spike mix to two separate 5 mL aliquots. The accurancy and precision for all spiked cmponents were within control limits.

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17256

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 9/13/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	67641	< 20.		UG/L	9/21/90		Acetone
MCO-4	90.17256	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-4	90.17256	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-4	90.17256	71432	< 5.		UG/L	9/21/90		Benzene
MCO-4	90.17256	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-4	90.17256	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO-4	90.17256	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-4	90.17256	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-4	90.17256	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-4	90.17256	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-4	90.17256	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-4	90.17256	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-4	90.17256	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-4	90.17256	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-4	90.17256	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-4	90.17256	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-4	90.17256	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-4	90.17256	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-4	90.17256	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-4	90.17256	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-4	90.17256	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-4	90.17256	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-4	90.17256	106434	< 5.	UG/L	9/21/90	p-Chlorotoluene
MCO-4	90.17256	96128	< 10.	UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-4	90.17256	106934	< 5.	UG/L	9/21/90	1,2-Dibromoethane
MCO-4	90.17256	74953	< 5.	UG/L	9/21/90	Dibromomethane
MCO-4	90.17256	95501	< 5.	UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-4	90.17256	541731	< 5.	UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-4	90.17256	106467	< 5.	UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-4	90.17256	75718	< 10.	UG/L	9/21/90	Dichlorodifluoromethane
MCO-4	90.17256	75343	< 5.	UG/L	9/21/90	1,1-Dichloroethane
MCO-4	90.17256	107062	< 5.	UG/L	9/21/90	1,2-Dichloroethane
MCO-4	90.17256	75354	< 5.	UG/L	9/21/90	1,1-Dichloroethene
MCO-4	90.17256	156605	< 5.	UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-4	90.17256	156592	< 5.	UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-4	90.17256	78875	< 5.	UG/L	9/21/90	1,2-Dichloropropane
MCO-4	90.17256	142289	< 5.	UG/L	9/21/90	1,3-Dichloropropane
MCO-4	90.17256	594207	< 5.	UG/L	9/21/90	2,2-Dichloropropane
MCO-4	90.17256	563586	< 5.	UG/L	9/21/90	1,1-Dichloropropene
MCO-4	90.17256	10061015	< 5.	UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-4	90.17256	10061026	< 5.	UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-4	90.17256	100414	< 5.	UG/L	9/21/90	Ethylbenzene
MCO-4	90.17256	87683	< 5.	UG/L	9/21/90	Hexachlorobutadiene
MCO-4	90.17256	591786	< 20.	UG/L	9/21/90	2-Hexanone
MCO-4	90.17256	98828	< 5.	UG/L	9/21/90	Isopropylbenzene
MCO-4	90.17256	99876	< 5.	UG/L	9/21/90	4-Isopropyltoluene
MCO-4	90.17256	74884	< 5.	UG/L	9/21/90	Methyl iodide
MCO-4	90.17256	108101	< 20.	UG/L	9/21/90	4-Methyl-2-pentanone
MCO-4	90.17256	75092	< 5.	UG/L	9/21/90	Methylene chloride
MCO-4	90.17256	91203	< 5.	UG/L	9/21/90	Naphthalene
MCO-4	90.17256	103651	< 5.	UG/L	9/21/90	Propylbenzene
MCO-4	90.17256	100425	< 5.	UG/L	9/21/90	Styrene
MCO-4	90.17256	630206	< 5.	UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-4	90.17256	79345	< 5.	UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-4	90.17256	127184	< 5.	UG/L	9/21/90	Tetrachloroethylene
MCO-4	90.17256	108883	< 5.	UG/L	9/21/90	Toluene
MCO-4	90.17256	76131	< 5.	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-4	90.17256	87616	< 5.	UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-4	90.17256	120821	< 5.	UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-4	90.17256	71556	< 5.	UG/L	9/21/90	1,1,1-Trichloroethane
MCO-4	90.17256	79005	< 5.	UG/L	9/21/90	1,1,2-Trichloroethane
MCO-4	90.17256	79016	< 5.	UG/L	9/21/90	Trichloroethene
MCO-4	90.17256	75694	< 5.	UG/L	9/21/90	Trichlorofluoromethane
MCO-4	90.17256	96184	< 5.	UG/L	9/21/90	1,2,3-Trichloropropane
MCO-4	90.17256	95636	< 5.	UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-4	90.17256	108678	< 5.	UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-4	90.17256	108054	< 10.	UG/L	9/21/90	Vinyl acetate
MCO-4	90.17256	75014	< 10.	UG/L	9/21/90	Vinyl chloride

MCO-4	90.17256	1330207	< 5.		UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17256

none

Customer Sample Duplicate Results for Sample # 90.17256

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17256

none

Matrix Spike Results for Sample # 90.17256

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	71432	50.	56.	UG/L	9/21/90		Benzene
MCO-4	90.17256	108907	50.	48.	UG/L	9/21/90		Chlorobenzene
MCO-4	90.17256	75343	50.	50.	UG/L	9/21/90		1,1-Dichloroethane
MCO-4	90.17256	108883	50.	48.	UG/L	9/21/90		Toluene
MCO-4	90.17256	79016	50.	51.	UG/L	9/21/90		Trichloroethene

Matrix Spike Duplicate Results for Sample # 90.17256

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	71432	50.	53.	UG/L	9/21/90		Benzene
MCO-4	90.17256	108907	50.	45.	UG/L	9/21/90		Chlorobenzene
MCO-4	90.17256	75343	50.	50.	UG/L	9/21/90		1,1-Dichloroethane
MCO-4	90.17256	108883	50.	48.	UG/L	9/21/90		Toluene
MCO-4	90.17256	79016	50.	47.	UG/L	9/21/90		Trichloroethene

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17257

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 9/13/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4B	90.17257	67641	< 20.		UG/L	9/21/90		Acetone
MCO-4B	90.17257	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-4B	90.17257	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-4B	90.17257	71432	< 5.		UG/L	9/21/90		Benzene
MCO-4B	90.17257	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-4B	90.17257	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO-4B	90.17257	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-4B	90.17257	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-4B	90.17257	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-4B	90.17257	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-4B	90.17257	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-4B	90.17257	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-4B	90.17257	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-4B	90.17257	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-4B	90.17257	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-4B	90.17257	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-4B	90.17257	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-4B	90.17257	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-4B	90.17257	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-4B	90.17257	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-4B	90.17257	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-4B	90.17257	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-4B	90.17257	106434	< 5.	UG/L	9/21/90	p-Chlorotoluene
MCO-4B	90.17257	96128	< 10.	UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-4B	90.17257	106934	< 5.	UG/L	9/21/90	1,2-Dibromoethane
MCO-4B	90.17257	74953	< 5.	UG/L	9/21/90	Dibromomethane
MCO-4B	90.17257	95501	< 5.	UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-4B	90.17257	541731	< 5.	UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-4B	90.17257	106467	< 5.	UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-4B	90.17257	75718	< 10.	UG/L	9/21/90	Dichlorodifluoromethane
MCO-4B	90.17257	75343	< 5.	UG/L	9/21/90	1,1-Dichloroethane
MCO-4B	90.17257	107062	< 5.	UG/L	9/21/90	1,2-Dichloroethane
MCO-4B	90.17257	75354	< 5.	UG/L	9/21/90	1,1-Dichloroethene
MCO-4B	90.17257	156605	< 5.	UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-4B	90.17257	156592	< 5.	UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-4B	90.17257	78875	< 5.	UG/L	9/21/90	1,2-Dichloropropane
MCO-4B	90.17257	142289	< 5.	UG/L	9/21/90	1,3-Dichloropropane
MCO-4B	90.17257	594207	< 5.	UG/L	9/21/90	2,2-Dichloropropane
MCO-4B	90.17257	563586	< 5.	UG/L	9/21/90	1,1-Dichloropropene
MCO-4B	90.17257	10061015	< 5.	UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-4B	90.17257	10061026	< 5.	UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-4B	90.17257	100414	< 5.	UG/L	9/21/90	Ethylbenzene
MCO-4B	90.17257	87683	< 5.	UG/L	9/21/90	Hexachlorobutadiene
MCO-4B	90.17257	591786	< 20.	UG/L	9/21/90	2-Hexanone
MCO-4B	90.17257	98828	< 5.	UG/L	9/21/90	Isopropylbenzene
MCO-4B	90.17257	99876	< 5.	UG/L	9/21/90	4-Isopropyltoluene
MCO-4B	90.17257	74884	< 5.	UG/L	9/21/90	Methyl iodide
MCO-4B	90.17257	108101	< 20.	UG/L	9/21/90	4-Methyl-2-pentanone
MCO-4B	90.17257	75092	< 5.	UG/L	9/21/90	Methylene chloride
MCO-4B	90.17257	91203	< 5.	UG/L	9/21/90	Naphthalene
MCO-4B	90.17257	103651	< 5.	UG/L	9/21/90	Propylbenzene
MCO-4B	90.17257	100425	< 5.	UG/L	9/21/90	Styrene
MCO-4B	90.17257	630206	< 5.	UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-4B	90.17257	79345	< 5.	UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-4B	90.17257	127184	< 5.	UG/L	9/21/90	Tetrachloroethylene
MCO-4B	90.17257	108883	< 5.	UG/L	9/21/90	Toluene
MCO-4B	90.17257	76131	< 5.	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-4B	90.17257	87616	< 5.	UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-4B	90.17257	120821	< 5.	UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-4B	90.17257	71556	< 5.	UG/L	9/21/90	1,1,1-Trichloroethane
MCO-4B	90.17257	79005	< 5.	UG/L	9/21/90	1,1,2-Trichloroethane
MCO-4B	90.17257	79016	< 5.	UG/L	9/21/90	Trichloroethene
MCO-4B	90.17257	75694	< 5.	UG/L	9/21/90	Trichlorofluoromethane
MCO-4B	90.17257	96184	< 5.	UG/L	9/21/90	1,2,3-Trichloropropane
MCO-4B	90.17257	95636	< 5.	UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-4B	90.17257	108678	< 5.	UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-4B	90.17257	108054	< 10.	UG/L	9/21/90	Vinyl acetate
MCO-4B	90.17257	75014	< 10.	UG/L	9/21/90	Vinyl chloride

MCO-4B	90.17257	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17257

none

Customer Sample Duplicate Results for Sample # 90.17257

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17257

none

Matrix Spike Results for Sample # 90.17257

none

Matrix Spike Duplicate Results for Sample # 90.17257

none

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17258

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/17/90 Date Analyzed: 9/17/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6B	90.17258	67641	< 20.		UG/L	9/21/90		Acetone
MCO-6B	90.17258	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-6B	90.17258	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-6B	90.17258	71432	< 5.		UG/L	9/21/90		Benzene
MCO-6B	90.17258	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-6B	90.17258	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO-6B	90.17258	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-6B	90.17258	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-6B	90.17258	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-6B	90.17258	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-6B	90.17258	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-6B	90.17258	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-6B	90.17258	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-6B	90.17258	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-6B	90.17258	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-6B	90.17258	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-6B	90.17258	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-6B	90.17258	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-6B	90.17258	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-6B	90.17258	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-6B	90.17258	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-6B	90.17258	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-6B	90.17258	106434	< 5.		UG/L	9/21/90	p-Chlorotoluene
MCO-6B	90.17258	96128	< 10.		UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-6B	90.17258	106934	< 5.		UG/L	9/21/90	1,2-Dibromoethane
MCO-6B	90.17258	74953	< 5.		UG/L	9/21/90	Dibromomethane
MCO-6B	90.17258	95501	< 5.		UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-6B	90.17258	541731	< 5.		UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-6B	90.17258	106467	< 5.		UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-6B	90.17258	75718	< 10.		UG/L	9/21/90	Dichlorodifluoromethane
MCO-6B	90.17258	75343	< 5.		UG/L	9/21/90	1,1-Dichloroethane
MCO-6B	90.17258	107062	< 5.		UG/L	9/21/90	1,2-Dichloroethane
MCO-6B	90.17258	75354	< 5.		UG/L	9/21/90	1,1-Dichloroethene
MCO-6B	90.17258	156605	< 5.		UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-6B	90.17258	156592	< 5.		UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-6B	90.17258	78875	< 5.		UG/L	9/21/90	1,2-Dichloropropane
MCO-6B	90.17258	142289	< 5.		UG/L	9/21/90	1,3-Dichloropropane
MCO-6B	90.17258	594207	< 5.		UG/L	9/21/90	2,2-Dichloropropane
MCO-6B	90.17258	563586	< 5.		UG/L	9/21/90	1,1-Dichloropropene
MCO-6B	90.17258	10061015	< 5.		UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-6B	90.17258	10061026	< 5.		UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-6B	90.17258	100414	< 5.		UG/L	9/21/90	Ethylbenzene
MCO-6B	90.17258	87683	< 5.		UG/L	9/21/90	Hexachlorobutadiene
MCO-6B	90.17258	591786	< 20.		UG/L	9/21/90	2-Hexanone
MCO-6B	90.17258	98828	< 5.		UG/L	9/21/90	Isopropylbenzene
MCO-6B	90.17258	99876	< 5.		UG/L	9/21/90	4-Isopropyltoluene
MCO-6B	90.17258	74884	< 5.		UG/L	9/21/90	Methyl iodide
MCO-6B	90.17258	108101	< 20.		UG/L	9/21/90	4-Methyl-2-pentanone
MCO-6B	90.17258	75092	6.	1.8	UG/L	9/21/90	Methylene chloride
MCO-6B	90.17258	91203	< 5.		UG/L	9/21/90	Naphthalene
MCO-6B	90.17258	103651	< 5.		UG/L	9/21/90	Propylbenzene
MCO-6B	90.17258	100425	< 5.		UG/L	9/21/90	Styrene
MCO-6B	90.17258	630206	< 5.		UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-6B	90.17258	79345	< 5.		UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-6B	90.17258	127184	< 5.		UG/L	9/21/90	Tetrachloroethylene
MCO-6B	90.17258	108883	< 5.		UG/L	9/21/90	Toluene
MCO-6B	90.17258	76131	< 5.		UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-6B	90.17258	87616	< 5.		UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-6B	90.17258	120821	< 5.		UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-6B	90.17258	71556	< 5.		UG/L	9/21/90	1,1,1-Trichloroethane
MCO-6B	90.17258	79005	< 5.		UG/L	9/21/90	1,1,2-Trichloroethane
MCO-6B	90.17258	79016	< 5.		UG/L	9/21/90	Trichloroethene
MCO-6B	90.17258	75694	< 5.		UG/L	9/21/90	Trichlorofluoromethane
MCO-6B	90.17258	96184	< 5.		UG/L	9/21/90	1,2,3-Trichloropropane
MCO-6B	90.17258	95636	< 5.		UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-6B	90.17258	108678	< 5.		UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-6B	90.17258	108054	< 10.		UG/L	9/21/90	Vinyl acetate
MCO-6B	90.17258	75014	< 10.		UG/L	9/21/90	Vinyl chloride

MCO-6B	90.17258	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17258

none

Customer Sample Duplicate Results for Sample # 90.17258

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17258

none

Matrix Spike Results for Sample # 90.17258

none

Matrix Spike Duplicate Results for Sample # 90.17258

none

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17259

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/17/90 Date Analyzed: 9/17/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7	90.17259	67641	< 20.		UG/L	9/21/90		Acetone
MCO-7	90.17259	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-7	90.17259	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-7	90.17259	71432	< 5.		UG/L	9/21/90		Benzene
MCO-7	90.17259	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-7	90.17259	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO	90.17259	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-7	90.17259	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-7	90.17259	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-7	90.17259	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-7	90.17259	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-7	90.17259	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-7	90.17259	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-7	90.17259	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-7	90.17259	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-7	90.17259	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-7	90.17259	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-7	90.17259	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-7	90.17259	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-7	90.17259	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-7	90.17259	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-7	90.17259	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-7	90.17259	106434	< 5.		UG/L	9/21/90	p-Chlorotoluene
MCO-7	90.17259	96128	< 10.		UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-7	90.17259	106934	< 5.		UG/L	9/21/90	1,2-Dibromoethane
MCO-7	90.17259	74953	< 5.		UG/L	9/21/90	Dibromomethane
MCO-7	90.17259	95501	< 5.		UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-7	90.17259	541731	< 5.		UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-7	90.17259	106467	< 5.		UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-7	90.17259	75718	< 10.		UG/L	9/21/90	Dichlorodifluoromethane
MCO-7	90.17259	75343	< 5.		UG/L	9/21/90	1,1-Dichloroethane
MCO-7	90.17259	107062	< 5.		UG/L	9/21/90	1,2-Dichloroethane
MCO-7	90.17259	75354	< 5.		UG/L	9/21/90	1,1-Dichloroethene
MCO-7	90.17259	156605	< 5.		UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-7	90.17259	156592	< 5.		UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-7	90.17259	78875	< 5.		UG/L	9/21/90	1,2-Dichloropropane
MCO-7	90.17259	142289	< 5.		UG/L	9/21/90	1,3-Dichloropropane
MCO-7	90.17259	594207	< 5.		UG/L	9/21/90	2,2-Dichloropropane
MCO-7	90.17259	563586	< 5.		UG/L	9/21/90	1,1-Dichloropropene
MCO-7	90.17259	10061015	< 5.		UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-7	90.17259	10061026	< 5.		UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-7	90.17259	100414	< 5.		UG/L	9/21/90	Ethylbenzene
MCO-7	90.17259	87683	< 5.		UG/L	9/21/90	Hexachlorobutadiene
MCO-7	90.17259	591786	< 20.		UG/L	9/21/90	2-Hexanone
MCO-7	90.17259	98828	< 5.		UG/L	9/21/90	Isopropylbenzene
MCO-7	90.17259	99876	< 5.		UG/L	9/21/90	4-Isopropyltoluene
MCO-7	90.17259	74884	< 5.		UG/L	9/21/90	Methyl iodide
MCO-7	90.17259	108101	< 20.		UG/L	9/21/90	4-Methyl-2-pentanone
MCO-7	90.17259	75092	< 5.		UG/L	9/21/90	Methylene chloride
MCO-7	90.17259	91203	< 5.		UG/L	9/21/90	Naphthalene
MCO-7	90.17259	103651	< 5.		UG/L	9/21/90	Propylbenzene
MCO-7	90.17259	100425	< 5.		UG/L	9/21/90	Styrene
MCO-7	90.17259	630206	< 5.		UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-7	90.17259	79345	< 5.		UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-7	90.17259	127184	< 5.		UG/L	9/21/90	Tetrachloroethylene
MCO-7	90.17259	108883	< 5.		UG/L	9/21/90	Toluene
MCO-7	90.17259	76131	6.	1.8	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-7	90.17259	87616	< 5.		UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-7	90.17259	120821	< 5.		UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-7	90.17259	71556	< 5.		UG/L	9/21/90	1,1,1-Trichloroethane
MCO-7	90.17259	79005	< 5.		UG/L	9/21/90	1,1,2-Trichloroethane
MCO-7	90.17259	79016	< 5.		UG/L	9/21/90	Trichloroethene
MCO-7	90.17259	75694	< 5.		UG/L	9/21/90	Trichlorofluoromethane
MCO-7	90.17259	96184	< 5.		UG/L	9/21/90	1,2,3-Trichloropropane
MCO-7	90.17259	95636	< 5.		UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-7	90.17259	108678	< 5.		UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-7	90.17259	108054	< 10.		UG/L	9/21/90	Vinyl acetate
MCO-7	90.17259	75014	< 10.		UG/L	9/21/90	Vinyl chloride

MCO-7	90.17259	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17259

none

Customer Sample Duplicate Results for Sample # 90.17259

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17259

none

Matrix Spike Results for Sample # 90.17259

none

Matrix Spike Duplicate Results for Sample # 90.17259

none

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17260

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/17/90 Date Analyzed: 9/17/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7A	90.17260	67641	< 20.		UG/L	9/21/90		Acetone
MCO-7A	90.17260	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-7A	90.17260	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-7A	90.17260	71432	< 5.		UG/L	9/21/90		Benzene
MCO-7A	90.17260	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-7A	90.17260	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO-7A	90.17260	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-7A	90.17260	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-7A	90.17260	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-7A	90.17260	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-7A	90.17260	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-7A	90.17260	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-7A	90.17260	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-7A	90.17260	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-7A	90.17260	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-7A	90.17260	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-7A	90.17260	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-7A	90.17260	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-7A	90.17260	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-7A	90.17260	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-7A	90.17260	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-7A	90.17260	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-7A	90.17260	106434	< 5.	UG/L	9/21/90	p-Chlorotoluene
MCO-7A	90.17260	96128	< 10.	UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-7A	90.17260	106934	< 5.	UG/L	9/21/90	1,2-Dibromoethane
MCO-7A	90.17260	74953	< 5.	UG/L	9/21/90	Dibromomethane
MCO-7A	90.17260	95501	< 5.	UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-7A	90.17260	541731	< 5.	UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-7A	90.17260	106467	< 5.	UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-7A	90.17260	75718	< 10.	UG/L	9/21/90	Dichlorodifluoromethane
MCO-7A	90.17260	75343	< 5.	UG/L	9/21/90	1,1-Dichloroethane
MCO-7A	90.17260	107062	< 5.	UG/L	9/21/90	1,2-Dichloroethane
MCO-7A	90.17260	75354	< 5.	UG/L	9/21/90	1,1-Dichloroethene
MCO-7A	90.17260	156605	< 5.	UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-7A	90.17260	156592	< 5.	UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-7A	90.17260	78875	< 5.	UG/L	9/21/90	1,2-Dichloropropane
MCO-7A	90.17260	142289	< 5.	UG/L	9/21/90	1,3-Dichloropropane
MCO-7A	90.17260	594207	< 5.	UG/L	9/21/90	2,2-Dichloropropane
MCO-7A	90.17260	563586	< 5.	UG/L	9/21/90	1,1-Dichloropropene
MCO-7A	90.17260	10061015	< 5.	UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-7A	90.17260	10061026	< 5.	UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-7A	90.17260	100414	< 5.	UG/L	9/21/90	Ethylbenzene
MCO-7A	90.17260	87683	< 5.	UG/L	9/21/90	Hexachlorobutadiene
MCO-7A	90.17260	591786	< 20.	UG/L	9/21/90	2-Hexanone
MCO-7A	90.17260	98828	< 5.	UG/L	9/21/90	Isopropylbenzene
MCO-7A	90.17260	99876	< 5.	UG/L	9/21/90	4-Isopropyltoluene
MCO-7A	90.17260	74884	< 5.	UG/L	9/21/90	Methyl iodide
MCO-7A	90.17260	108101	< 20.	UG/L	9/21/90	4-Methyl-2-pentanone
MCO-7A	90.17260	75092	< 5.	UG/L	9/21/90	Methylene chloride
MCO-7A	90.17260	91203	< 5.	UG/L	9/21/90	Naphthalene
MCO-7A	90.17260	103651	< 5.	UG/L	9/21/90	Propylbenzene
MCO-7A	90.17260	100425	< 5.	UG/L	9/21/90	Styrene
MCO-7A	90.17260	630206	< 5.	UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-7A	90.17260	79345	< 5.	UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-7A	90.17260	127184	< 5.	UG/L	9/21/90	Tetrachloroethylene
MCO-7A	90.17260	108883	< 5.	UG/L	9/21/90	Toluene
MCO-7A	90.17260	76131	< 5.	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-7A	90.17260	87616	< 5.	UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-7A	90.17260	120821	< 5.	UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-7A	90.17260	71556	< 5.	UG/L	9/21/90	1,1,1-Trichloroethane
MCO-7A	90.17260	79005	< 5.	UG/L	9/21/90	1,1,2-Trichloroethane
MCO-7A	90.17260	79016	< 5.	UG/L	9/21/90	Trichloroethene
MCO-7A	90.17260	75694	< 5.	UG/L	9/21/90	Trichlorofluoromethane
MCO-7A	90.17260	96184	< 5.	UG/L	9/21/90	1,2,3-Trichloropropane
MCO-7A	90.17260	95636	< 5.	UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-7A	90.17260	108678	< 5.	UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-7A	90.17260	108054	< 10.	UG/L	9/21/90	Vinyl acetate
MCO-7A	90.17260	75014	< 10.	UG/L	9/21/90	Vinyl chloride

MCO-7A	90.17260	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17260

none

Customer Sample Duplicate Results for Sample # 90.17260

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17260

none

Matrix Spike Results for Sample # 90.17260

none

Matrix Spike Duplicate Results for Sample # 90.17260

none

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17261

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/17/90 Date Analyzed: 9/17/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6	90.17261	67641	< 20.		UG/L	9/21/90		Acetone
MCO-6	90.17261	107028	< 100.		UG/L	9/21/90		Acrolein
MCO-6	90.17261	107131	< 100.		UG/L	9/21/90		Acrylonitrile
MCO-6	90.17261	71432	< 5.		UG/L	9/21/90		Benzene
MCO-6	90.17261	108861	< 5.		UG/L	9/21/90		Bromobenzene
MCO-6	90.17261	74975	< 5.		UG/L	9/21/90		Bromochloromethane
MCO-6	90.17261	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
MCO-6	90.17261	75252	< 5.		UG/L	9/21/90		Bromoform
MCO-6	90.17261	74839	< 10.		UG/L	9/21/90		Bromomethane
MCO-6	90.17261	78933	< 20.		UG/L	9/21/90		2-Butanone
MCO-6	90.17261	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
MCO-6	90.17261	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
MCO-6	90.17261	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
MCO-6	90.17261	75150	< 5.		UG/L	9/21/90		Carbon disulfide
MCO-6	90.17261	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
MCO-6	90.17261	108907	< 5.		UG/L	9/21/90		Chlorobenzene
MCO-6	90.17261	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
MCO-6	90.17261	75003	< 10.		UG/L	9/21/90		Chloroethane
MCO-6	90.17261	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
MCO-6	90.17261	67663	< 5.		UG/L	9/21/90		Chloroform
MCO-6	90.17261	74873	< 10.		UG/L	9/21/90		Chloromethane
MCO-6	90.17261	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

MCO-6	90.17261	106434	< 5.	UG/L	9/21/90	p-Chlorotoluene
MCO-6	90.17261	96128	< 10.	UG/L	9/21/90	1,2-Dibromo-3-chloropropane
MCO-6	90.17261	106934	< 5.	UG/L	9/21/90	1,2-Dibromoethane
MCO-6	90.17261	74953	< 5.	UG/L	9/21/90	Dibromomethane
MCO-6	90.17261	95501	< 5.	UG/L	9/21/90	o-Dichlorobenzene (1,2)
MCO-6	90.17261	541731	< 5.	UG/L	9/21/90	m-Dichlorobenzene (1,3)
MCO-6	90.17261	106467	< 5.	UG/L	9/21/90	p-Dichlorobenzene (1,4)
MCO-6	90.17261	75718	< 10.	UG/L	9/21/90	Dichlorodifluoromethane
MCO-6	90.17261	75343	< 5.	UG/L	9/21/90	1,1-Dichloroethane
MCO-6	90.17261	107062	< 5.	UG/L	9/21/90	1,2-Dichloroethane
MCO-6	90.17261	75354	< 5.	UG/L	9/21/90	1,1-Dichloroethene
MCO-6	90.17261	156605	< 5.	UG/L	9/21/90	trans-1,2-Dichloroethene
MCO-6	90.17261	156592	< 5.	UG/L	9/21/90	cis-1,2-Dichloroethylene
MCO-6	90.17261	78875	< 5.	UG/L	9/21/90	1,2-Dichloropropane
MCO-6	90.17261	142289	< 5.	UG/L	9/21/90	1,3-Dichloropropane
MCO-6	90.17261	594207	< 5.	UG/L	9/21/90	2,2-Dichloropropane
MCO-6	90.17261	563586	< 5.	UG/L	9/21/90	1,1-Dichloropropene
MCO-6	90.17261	10061015	< 5.	UG/L	9/21/90	cis-1,3-Dichloropropene
MCO-6	90.17261	10061026	< 5.	UG/L	9/21/90	trans-1,3-Dichloropropene
MCO-6	90.17261	100414	< 5.	UG/L	9/21/90	Ethylbenzene
MCO-6	90.17261	87683	< 5.	UG/L	9/21/90	Hexachlorobutadiene
MCO-6	90.17261	591786	< 20.	UG/L	9/21/90	2-Hexanone
MCO-6	90.17261	98828	< 5.	UG/L	9/21/90	Isopropylbenzene
MCO-6	90.17261	99876	< 5.	UG/L	9/21/90	4-Isopropyltoluene
MCO-6	90.17261	74884	< 5.	UG/L	9/21/90	Methyl iodide
MCO-6	90.17261	108101	< 20.	UG/L	9/21/90	4-Methyl-2-pentanone
MCO-6	90.17261	75092	< 5.	UG/L	9/21/90	Methylene chloride
MCO-6	90.17261	91203	< 5.	UG/L	9/21/90	Naphthalene
MCO-6	90.17261	103651	< 5.	UG/L	9/21/90	Propylbenzene
MCO-6	90.17261	100425	< 5.	UG/L	9/21/90	Styrene
MCO-6	90.17261	630206	< 5.	UG/L	9/21/90	1,1,1,2-Tetrachloroethane
MCO-6	90.17261	79345	< 5.	UG/L	9/21/90	1,1,2,2-Tetrachloroethane
MCO-6	90.17261	127184	< 5.	UG/L	9/21/90	Tetrachloroethylene
MCO-6	90.17261	108883	< 5.	UG/L	9/21/90	Toluene
MCO-6	90.17261	76131	< 5.	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
MCO-6	90.17261	87616	< 5.	UG/L	9/21/90	1,2,3-Trichlorobenzene
MCO-6	90.17261	120821	< 5.	UG/L	9/21/90	1,2,4-Trichlorobenzene
MCO-6	90.17261	71556	< 5.	UG/L	9/21/90	1,1,1-Trichloroethane
MCO-6	90.17261	79005	< 5.	UG/L	9/21/90	1,1,2-Trichloroethane
MCO-6	90.17261	79016	< 5.	UG/L	9/21/90	Trichloroethene
MCO-6	90.17261	75694	< 5.	UG/L	9/21/90	Trichlorofluoromethane
MCO-6	90.17261	96184	< 5.	UG/L	9/21/90	1,2,3-Trichloropropane
MCO-6	90.17261	95636	< 5.	UG/L	9/21/90	1,2,4-Trimethylbenzene
MCO-6	90.17261	108678	< 5.	UG/L	9/21/90	1,3,5-Trimethylbenzene
MCO-6	90.17261	108054	< 10.	UG/L	9/21/90	Vinyl acetate
MCO-6	90.17261	75014	< 10.	UG/L	9/21/90	Vinyl chloride

MCO-6	90.17261	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17261

none

Customer Sample Duplicate Results for Sample # 90.17261

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17261

none

Matrix Spike Results for Sample # 90.17261

none

Matrix Spike Duplicate Results for Sample # 90.17261

none

REPORT NUMBER: 8264

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

Customer Sample Results, Sample # 90.17400

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 9/13/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
TRIP BLANK	90.17400	67641	< 20.		UG/L	9/21/90		Acetone
TRIP BLANK	90.17400	107028	< 100.		UG/L	9/21/90		Acrolein
TRIP BLANK	90.17400	107131	< 100.		UG/L	9/21/90		Acrylonitrile
TRIP BLANK	90.17400	71432	< 5.		UG/L	9/21/90		Benzene
TRIP BLANK	90.17400	108861	< 5.		UG/L	9/21/90		Bromobenzene
TRIP BLANK	90.17400	74975	< 5.		UG/L	9/21/90		Bromochloromethane
TRIP BLANK	90.17400	75274	< 5.		UG/L	9/21/90		Bromodichloromethane
TRIP BLANK	90.17400	75252	< 5.		UG/L	9/21/90		Bromoform
TRIP BLANK	90.17400	74839	< 10.		UG/L	9/21/90		Bromomethane
TRIP BLANK	90.17400	78933	< 20.		UG/L	9/21/90		2-Butanone
TRIP BLANK	90.17400	104518	< 5.		UG/L	9/21/90		n-Butylbenzene
TRIP BLANK	90.17400	135988	< 5.		UG/L	9/21/90		sec-Butylbenzene
TRIP BLANK	90.17400	98066	< 5.		UG/L	9/21/90		tert-Butylbenzene
TRIP BLANK	90.17400	75150	< 5.		UG/L	9/21/90		Carbon disulfide
TRIP BLANK	90.17400	56235	< 5.		UG/L	9/21/90		Carbon tetrachloride
TRIP BLANK	90.17400	108907	< 5.		UG/L	9/21/90		Chlorobenzene
TRIP BLANK	90.17400	124481	< 5.		UG/L	9/21/90		Chlorodibromomethane
TRIP BLANK	90.17400	75003	< 10.		UG/L	9/21/90		Chloroethane
TRIP BLANK	90.17400	110758	< 50.		UG/L	9/21/90		2-Chloroethylvinyl ether
TRIP BLANK	90.17400	67663	< 5.		UG/L	9/21/90		Chloroform
TRIP BLANK	90.17400	74873	< 10.		UG/L	9/21/90		Chloromethane
TRIP BLANK	90.17400	95498	< 5.		UG/L	9/21/90		o-Chlorotoluene

TRIP BLANK	90.17400	106434	< 5.	UG/L	9/21/90	p-Chlorotoluene
TRIP BLANK	90.17400	96128	< 10.	UG/L	9/21/90	1,2-Dibromo-3-chloropropane
TRIP BLANK	90.17400	106934	< 5.	UG/L	9/21/90	1,2-Dibromoethane
TRIP BLANK	90.17400	74953	< 5.	UG/L	9/21/90	Dibromomethane
TRIP BLANK	90.17400	95501	< 5.	UG/L	9/21/90	o-Dichlorobenzene (1,2)
TRIP BLANK	90.17400	541731	< 5.	UG/L	9/21/90	m-Dichlorobenzene (1,3)
TRIP BLANK	90.17400	106467	< 5.	UG/L	9/21/90	p-Dichlorobenzene (1,4)
TRIP BLANK	90.17400	75718	< 10.	UG/L	9/21/90	Dichlorodifluoromethane
TRIP BLANK	90.17400	75343	< 5.	UG/L	9/21/90	1,1-Dichloroethane
TRIP BLANK	90.17400	107062	< 5.	UG/L	9/21/90	1,2-Dichloroethane
TRIP BLANK	90.17400	75354	< 5.	UG/L	9/21/90	1,1-Dichloroethene
TRIP BLANK	90.17400	156605	< 5.	UG/L	9/21/90	trans-1,2-Dichloroethene
TRIP BLANK	90.17400	156592	< 5.	UG/L	9/21/90	cis-1,2-Dichloroethylene
TRIP BLANK	90.17400	78875	< 5.	UG/L	9/21/90	1,2-Dichloropropane
TRIP BLANK	90.17400	142289	< 5.	UG/L	9/21/90	1,3-Dichloropropane
TRIP BLANK	90.17400	594207	< 5.	UG/L	9/21/90	2,2-Dichloropropane
TRIP BLANK	90.17400	563586	< 5.	UG/L	9/21/90	1,1-Dichloropropene
TRIP BLANK	90.17400	10061015	< 5.	UG/L	9/21/90	cis-1,3-Dichloropropene
TRIP BLANK	90.17400	10061026	< 5.	UG/L	9/21/90	trans-1,3-Dichloropropene
TRIP BLANK	90.17400	100414	< 5.	UG/L	9/21/90	Ethylbenzene
TRIP BLANK	90.17400	87683	< 5.	UG/L	9/21/90	Hexachlorobutadiene
TRIP BLANK	90.17400	591786	< 20.	UG/L	9/21/90	2-Hexanone
TRIP BLANK	90.17400	98828	< 5.	UG/L	9/21/90	Isopropylbenzene
TRIP BLANK	90.17400	99876	< 5.	UG/L	9/21/90	4-Isopropyltoluene
TRIP BLANK	90.17400	74884	< 5.	UG/L	9/21/90	Methyl iodide
TRIP BLANK	90.17400	108101	< 20.	UG/L	9/21/90	4-Methyl-2-pentanone
TRIP BLANK	90.17400	75092	< 5.	UG/L	9/21/90	Methylene chloride
TRIP BLANK	90.17400	91203	< 5.	UG/L	9/21/90	Naphthalene
TRIP BLANK	90.17400	103651	< 5.	UG/L	9/21/90	Propylbenzene
TRIP BLANK	90.17400	100425	< 5.	UG/L	9/21/90	Styrene
TRIP BLANK	90.17400	630206	< 5.	UG/L	9/21/90	1,1,1,2-Tetrachloroethane
TRIP BLANK	90.17400	79345	< 5.	UG/L	9/21/90	1,1,2,2-Tetrachloroethane
TRIP BLANK	90.17400	127184	< 5.	UG/L	9/21/90	Tetrachloroethylene
TRIP BLANK	90.17400	108883	< 5.	UG/L	9/21/90	Toluene
TRIP BLANK	90.17400	76131	< 5.	UG/L	9/21/90	1,1,2-Trichloro-1,2,2-trifluoroethane
TRIP BLANK	90.17400	87616	< 5.	UG/L	9/21/90	1,2,3-Trichlorobenzene
TRIP BLANK	90.17400	120821	< 5.	UG/L	9/21/90	1,2,4-Trichlorobenzene
TRIP BLANK	90.17400	71556	< 5.	UG/L	9/21/90	1,1,1-Trichloroethane
TRIP BLANK	90.17400	79005	< 5.	UG/L	9/21/90	1,1,2-Trichloroethane
TRIP BLANK	90.17400	79016	< 5.	UG/L	9/21/90	Trichloroethene
TRIP BLANK	90.17400	75694	< 5.	UG/L	9/21/90	Trichlorofluoromethane
TRIP BLANK	90.17400	96184	< 5.	UG/L	9/21/90	1,2,3-Trichloropropane
TRIP BLANK	90.17400	95636	< 5.	UG/L	9/21/90	1,2,4-Trimethylbenzene
TRIP BLANK	90.17400	108678	< 5.	UG/L	9/21/90	1,3,5-Trimethylbenzene
TRIP BLANK	90.17400	108054	< 10.	UG/L	9/21/90	Vinyl acetate
TRIP BLANK	90.17400	75014	< 10.	UG/L	9/21/90	Vinyl chloride

TRIP BLANK	90.17400	1330207	< 5.	UG/L	9/21/90	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Customer Sample # 90.17400

none

Customer Sample Duplicate Results for Sample # 90.17400

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17400

none

Matrix Spike Results for Sample # 90.17400

none

Matrix Spike Duplicate Results for Sample # 90.17400

none

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********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: EAJ on 26-Sep-1990

EPA VOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Laura Tsiagkouris PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID:

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUN

00.20226	90.17436	67641	< 20.	UG/L	9/21/90	UNDER CONTROL	Acetone
00.20226	90.17436	107028	< 100.	UG/L	9/21/90	UNDER CONTROL	Acrolein
00.20226	90.17436	107131	< 100.	UG/L	9/21/90	UNDER CONTROL	Acrylonitrile
00.20226	90.17436	71432	< 5.	UG/L	9/21/90	UNDER CONTROL	Benzene
00.20226	90.17436	108861	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromobenzene
00.20226	90.17436	74975	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromochloromethane
00.20226	90.17436	75274	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromodichloromethane
00.20226	90.17436	75252	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromoform
00.20226	90.17436	74839	< 10.	UG/L	9/21/90	UNDER CONTROL	Bromomethane
00.20226	90.17436	78933	< 20.	UG/L	9/21/90	UNDER CONTROL	2-Butanone
00.20226	90.17436	104518	< 5.	UG/L	9/21/90	UNDER CONTROL	n-Butylbenzene
00.20226	90.17436	135988	< 5.	UG/L	9/21/90	UNDER CONTROL	sec-Butylbenzene
00.20226	90.17436	98066	< 5.	UG/L	9/21/90	UNDER CONTROL	tert-Butylbenzene
00.20226	90.17436	75150	< 5.	UG/L	9/21/90	UNDER CONTROL	Carbon disulfide
00.20226	90.17436	56235	< 5.	UG/L	9/21/90	UNDER CONTROL	Carbon tetrachloride
00.20226	90.17436	108907	< 5.	UG/L	9/21/90	UNDER CONTROL	Chlorobenzene
00.20226	90.17436	124481	< 5.	UG/L	9/21/90	UNDER CONTROL	Chlorodibromomethane
00.20226	90.17436	75003	< 10.	UG/L	9/21/90	UNDER CONTROL	Chloroethane
00.20226	90.17436	110758	< 50.	UG/L	9/21/90	UNDER CONTROL	2-Chloroethylvinyl ether
00.20226	90.17436	67663	< 5.	UG/L	9/21/90	UNDER CONTROL	Chloroform
00.20226	90.17436	74873	< 10.	UG/L	9/21/90	UNDER CONTROL	Chloromethane
00.20226	90.17436	95498	< 5.	UG/L	9/21/90	UNDER CONTROL	o-Chlorotoluene
00.20226	90.17436	106434	< 5.	UG/L	9/21/90	UNDER CONTROL	p-Chlorotoluene
00.20226	90.17436	96128	< 10.	UG/L	9/21/90	UNDER CONTROL	1,2-Dibromo-3-chloropropane
00.20226	90.17436	106934	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dibromoethane
00.20226	90.17436	74953	< 5.	UG/L	9/21/90	UNDER CONTROL	Dibromomethane
00.20226	90.17436	95501	< 5.	UG/L	9/21/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
00.20226	90.17436	541731	< 5.	UG/L	9/21/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
00.20226	90.17436	106467	< 5.	UG/L	9/21/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
00.20226	90.17436	75718	< 10.	UG/L	9/21/90	UNDER CONTROL	Dichlorodifluoromethane
00.20226	90.17436	75343	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloroethane
00.20226	90.17436	107062	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dichloroethane
00.20226	90.17436	75354	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloroethene
00.20226	90.17436	156605	< 5.	UG/L	9/21/90	UNDER CONTROL	trans-1,2-Dichloroethene
00.20226	90.17436	156592	< 5.	UG/L	9/21/90	UNDER CONTROL	cis-1,2-Dichloroethylene
00.20226	90.17436	78875	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dichloropropane
00.20226	90.17436	142289	< 5.	UG/L	9/21/90	UNDER CONTROL	1,3-Dichloropropane
00.20226	90.17436	594207	< 5.	UG/L	9/21/90	UNDER CONTROL	2,2-Dichloropropane
00.20226	90.17436	563586	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloropropene
00.20226	90.17436	10061015	< 5.	UG/L	9/21/90	UNDER CONTROL	cis-1,3-Dichloropropene
00.20226	90.17436	10061026	< 5.	UG/L	9/21/90	UNDER CONTROL	trans-1,3-Dichloropropene
00.20226	90.17436	100414	< 5.	UG/L	9/21/90	UNDER CONTROL	Ethylbenzene
00.20226	90.17436	87683	< 5.	UG/L	9/21/90	UNDER CONTROL	Hexachlorobutadiene
00.20226	90.17436	591786	< 20.	UG/L	9/21/90	UNDER CONTROL	2-Hexanone
00.20226	90.17436	98828	< 5.	UG/L	9/21/90	UNDER CONTROL	Isopropylbenzene

00.20226	90.17436	99876	< 5.	UG/L	9/21/90	UNDER CONTROL	4-Isopropyltoluene
00.20226	90.17436	74884	< 5.	UG/L	9/21/90	UNDER CONTROL	Methyl iodide
00.20226	90.17436	108101	< 20.	UG/L	9/21/90	UNDER CONTROL	4-Methyl-2-pentanone
00.20226	90.17436	75092	< 5.	UG/L	9/21/90	UNDER CONTROL	Methylene chloride
00.20226	90.17436	91203	< 5.	UG/L	9/21/90	UNDER CONTROL	Naphthalene
00.20226	90.17436	103651	< 5.	UG/L	9/21/90	UNDER CONTROL	Propylbenzene
00.20226	90.17436	100425	< 5.	UG/L	9/21/90	UNDER CONTROL	Styrene
00.20226	90.17436	630206	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,1,2-Tetrachloroethane
00.20226	90.17436	79345	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2,2-Tetrachloroethane
00.20226	90.17436	127184	< 5.	UG/L	9/21/90	UNDER CONTROL	Tetrachloroethylene
00.20226	90.17436	108883	< 5.	UG/L	9/21/90	UNDER CONTROL	Toluene
00.20226	90.17436	76131	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2-Trichloro-1,2,2-trifluoroet
00.20226	90.17436	87616	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,3-Trichlorobenzene
00.20226	90.17436	120821	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,4-Trichlorobenzene
00.20226	90.17436	71556	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,1-Trichloroethane
00.20226	90.17436	79005	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2-Trichloroethane
00.20226	90.17436	79016	< 5.	UG/L	9/21/90	UNDER CONTROL	Trichloroethene
00.20226	90.17436	75694	< 5.	UG/L	9/21/90	UNDER CONTROL	Trichlorofluoromethane
00.20226	90.17436	96184	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,3-Trichloropropane
00.20226	90.17436	95636	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,4-Trimethylbenzene
00.20226	90.17436	108678	< 5.	UG/L	9/21/90	UNDER CONTROL	1,3,5-Trimethylbenzene
00.20226	90.17436	108054	< 10.	UG/L	9/21/90	UNDER CONTROL	Vinyl acetate
00.20226	90.17436	75014	< 10.	UG/L	9/21/90	UNDER CONTROL	Vinyl chloride
00.20226	90.17436	1330207	< 5.	UG/L	9/21/90	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)
00.20226	90.17560	67641	< 20.	UG/L	9/21/90	UNDER CONTROL	Acetone
00.20226	90.17560	107028	< 100.	UG/L	9/21/90	UNDER CONTROL	Acrolein
00.20226	90.17560	107131	< 100.	UG/L	9/21/90	UNDER CONTROL	Acrylonitrile
00.20226	90.17560	71432	< 5.	UG/L	9/21/90	UNDER CONTROL	Benzene
00.20226	90.17560	108861	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromobenzene
00.20226	90.17560	74975	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromochloromethane
00.20226	90.17560	75274	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromodichloromethane
00.20226	90.17560	75252	< 5.	UG/L	9/21/90	UNDER CONTROL	Bromoform
00.20226	90.17560	74839	< 10.	UG/L	9/21/90	UNDER CONTROL	Bromomethane
00.20226	90.17560	78933	< 20.	UG/L	9/21/90	UNDER CONTROL	2-Butanone
00.20226	90.17560	104518	< 5.	UG/L	9/21/90	UNDER CONTROL	n-Butylbenzene
00.20226	90.17560	135988	< 5.	UG/L	9/21/90	UNDER CONTROL	sec-Butylbenzene
00.20226	90.17560	98066	< 5.	UG/L	9/21/90	UNDER CONTROL	tert-Butylbenzene
00.20226	90.17560	75150	< 5.	UG/L	9/21/90	UNDER CONTROL	Carbon disulfide
00.20226	90.17560	56235	< 5.	UG/L	9/21/90	UNDER CONTROL	Carbon tetrachloride
00.20226	90.17560	108907	< 5.	UG/L	9/21/90	UNDER CONTROL	Chlorobenzene
00.20226	90.17560	124481	< 5.	UG/L	9/21/90	UNDER CONTROL	Chlorodibromomethane
00.20226	90.17560	75003	< 10.	UG/L	9/21/90	UNDER CONTROL	Chloroethane
00.20226	90.17560	110758	< 50.	UG/L	9/21/90	UNDER CONTROL	2-Chloroethylvinyl ether
00.20226	90.17560	67663	< 5.	UG/L	9/21/90	UNDER CONTROL	Chloroform
00.20226	90.17560	74873	< 10.	UG/L	9/21/90	UNDER CONTROL	Chloromethane
00.20226	90.17560	95498	< 5.	UG/L	9/21/90	UNDER CONTROL	o-Chlorotoluene

00.20226	90.17560	106434	< 5.	UG/L	9/21/90	UNDER CONTROL	p-Chlorotoluene
00.20226	90.17560	96128	< 10.	UG/L	9/21/90	UNDER CONTROL	1,2-Dibromo-3-chloropropane
00.20226	90.17560	106934	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dibromoethane
00.20226	90.17560	74953	< 5.	UG/L	9/21/90	UNDER CONTROL	Dibromomethane
00.20226	90.17560	95501	< 5.	UG/L	9/21/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
00.20226	90.17560	541731	< 5.	UG/L	9/21/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
00.20226	90.17560	106467	< 5.	UG/L	9/21/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
00.20226	90.17560	75718	< 10.	UG/L	9/21/90	UNDER CONTROL	Dichlorodifluoromethane
00.20226	90.17560	75343	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloroethane
00.20226	90.17560	107062	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dichloroethane
00.20226	90.17560	75354	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloroethene
00.20226	90.17560	156605	< 5.	UG/L	9/21/90	UNDER CONTROL	trans-1,2-Dichloroethene
00.20226	90.17560	156592	< 5.	UG/L	9/21/90	UNDER CONTROL	cis-1,2-Dichloroethylene
00.20226	90.17560	78875	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2-Dichloropropane
00.20226	90.17560	142289	< 5.	UG/L	9/21/90	UNDER CONTROL	1,3-Dichloropropane
00.20226	90.17560	594207	< 5.	UG/L	9/21/90	UNDER CONTROL	2,2-Dichloropropane
00.20226	90.17560	563586	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1-Dichloropropene
00.20226	90.17560	10061015	< 5.	UG/L	9/21/90	UNDER CONTROL	cis-1,3-Dichloropropene
00.20226	90.17560	10061026	< 5.	UG/L	9/21/90	UNDER CONTROL	trans-1,3-Dichloropropene
00.20226	90.17560	100414	< 5.	UG/L	9/21/90	UNDER CONTROL	Ethylbenzene
00.20226	90.17560	87683	< 5.	UG/L	9/21/90	UNDER CONTROL	Hexachlorobutadiene
00.20226	90.17560	591786	< 20.	UG/L	9/21/90	UNDER CONTROL	2-Hexanone
00.20226	90.17560	98828	< 5.	UG/L	9/21/90	UNDER CONTROL	Isopropylbenzene
00.20226	90.17560	99876	< 5.	UG/L	9/21/90	UNDER CONTROL	4-Isopropyltoluene
00.20226	90.17560	74884	< 5.	UG/L	9/21/90	UNDER CONTROL	Methyl iodide
00.20226	90.17560	108101	< 20.	UG/L	9/21/90	UNDER CONTROL	4-Methyl-2-pentanone
00.20226	90.17560	75092	< 5.	UG/L	9/21/90	UNDER CONTROL	Methylene chloride
00.20226	90.17560	91203	< 5.	UG/L	9/21/90	UNDER CONTROL	Naphthalene
00.20226	90.17560	103651	< 5.	UG/L	9/21/90	UNDER CONTROL	Propylbenzene
00.20226	90.17560	100425	< 5.	UG/L	9/21/90	UNDER CONTROL	Styrene
00.20226	90.17560	630206	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,1,2-Tetrachloroethane
00.20226	90.17560	79345	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2,2-Tetrachloroethane
00.20226	90.17560	127184	< 5.	UG/L	9/21/90	UNDER CONTROL	Tetrachloroethylene
00.20226	90.17560	108883	< 5.	UG/L	9/21/90	UNDER CONTROL	Toluene
00.20226	90.17560	76131	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2-Trichloro-1,2,2-trifluoroet
00.20226	90.17560	87616	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,3-Trichlorobenzene
00.20226	90.17560	120821	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,4-Trichlorobenzene
00.20226	90.17560	71556	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,1-Trichloroethane
00.20226	90.17560	79005	< 5.	UG/L	9/21/90	UNDER CONTROL	1,1,2-Trichloroethane
00.20226	90.17560	79016	< 5.	UG/L	9/21/90	UNDER CONTROL	Trichloroethene
00.20226	90.17560	75694	< 5.	UG/L	9/21/90	UNDER CONTROL	Trichlorofluoromethane
00.20226	90.17560	96184	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,3-Trichloropropane
00.20226	90.17560	95636	< 5.	UG/L	9/21/90	UNDER CONTROL	1,2,4-Trimethylbenzene
00.20226	90.17560	108678	< 5.	UG/L	9/21/90	UNDER CONTROL	1,3,5-Trimethylbenzene
00.20226	90.17560	108054	< 10.	UG/L	9/21/90	UNDER CONTROL	Vinyl acetate
00.20226	90.17560	75014	< 10.	UG/L	9/21/90	UNDER CONTROL	Vinyl chloride

00.20226	90.17560	1330207	< 5.	UG/L	9/21/90	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)

Blank Spike Results

none

Blank Spike Duplicate Results

none

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Original Blind QC Results, Sample # 90.17412

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 9/13/90

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17412	67641	< 20.		UG/L			9/21/90	UNDER CONTROL	Acetone
90.17412	107028	< 100.		UG/L			9/21/90	UNDER CONTROL	Acrolein
90.17412	107131	< 100.		UG/L			9/21/90	UNDER CONTROL	Acrylonitrile
90.17412	71432	79.	23.7	UG/L	75.	8.	9/21/90	UNDER CONTROL	Benzene
90.17412	108861	< 5.		UG/L			9/21/90	UNDER CONTROL	Bromobenzene
90.17412	74975	< 5.		UG/L			9/21/90	UNDER CONTROL	Bromochloromethane
90.17412	75274	< 5.		UG/L			9/21/90	UNDER CONTROL	Bromodichloromethane
90.17412	75252	< 5.		UG/L			9/21/90	UNDER CONTROL	Bromoform
90.17412	74839	< 10.		UG/L			9/21/90	UNDER CONTROL	Bromomethane
90.17412	78933	63.	18.9	UG/L	97.	10.	9/21/90	UNDER CONTROL	2-Butanone
90.17412	104518	< 5.		UG/L			9/21/90	UNDER CONTROL	n-Butylbenzene
90.17412	135988	< 5.		UG/L			9/21/90	UNDER CONTROL	sec-Butylbenzene
90.17412	98066	< 5.		UG/L			9/21/90	UNDER CONTROL	tert-Butylbenzene
90.17412	75150	< 5.		UG/L			9/21/90	UNDER CONTROL	Carbon disulfide
90.17412	56235	< 5.		UG/L			9/21/90	UNDER CONTROL	Carbon tetrachloride
90.17412	108907	56.	16.8	UG/L	76.	8.	9/21/90	UNDER CONTROL	Chlorobenzene
90.17412	124481	< 5.		UG/L			9/21/90	UNDER CONTROL	Chlorodibromomethane
90.17412	75003	< 10.		UG/L			9/21/90	UNDER CONTROL	Chloroethane
90.17412	110758	< 50.		UG/L			9/21/90	UNDER CONTROL	2-Chloroethylvinyl ether
90.17412	67663	< 5.		UG/L			9/21/90	UNDER CONTROL	Chloroform
90.17412	74873	< 10.		UG/L			9/21/90	UNDER CONTROL	Chloromethane
90.17412	95498	< 5.		UG/L			9/21/90	UNDER CONTROL	o-Chlorotoluene
90.17412	106434	< 5.		UG/L			9/21/90	UNDER CONTROL	p-Chlorotoluene

90.17412	96128	< 10.		UG/L			9/21/90	UNDER CONTROL	1,2-Dibromo-3-chloropropane
90.17412	106934	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2-Dibromoethane
90.17412	74953	< 5.		UG/L			9/21/90	UNDER CONTROL	Dibromomethane
90.17412	95501	< 5.		UG/L			9/21/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
90.17412	541731	< 5.		UG/L			9/21/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
90.17412	106467	< 5.		UG/L			9/21/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
90.17412	75718	< 10.		UG/L			9/21/90	UNDER CONTROL	Dichlorodifluoromethane
90.17412	75343	83.	24.9	UG/L	76.	8.	9/21/90	UNDER CONTROL	1,1-Dichloroethane
90.17412	107062	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2-Dichloroethane
90.17412	75354	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1-Dichloroethene
90.17412	156605	< 5.		UG/L			9/21/90	UNDER CONTROL	trans-1,2-Dichloroethene
90.17412	156592	< 5.		UG/L			9/21/90	UNDER CONTROL	cis-1,2-Dichloroethylene
90.17412	78875	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2-Dichloropropane
90.17412	142289	< 5.		UG/L			9/21/90	UNDER CONTROL	1,3-Dichloropropane
90.17412	594207	< 5.		UG/L			9/21/90	UNDER CONTROL	2,2-Dichloropropane
90.17412	563586	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1-Dichloropropene
90.17412	10061015	< 5.		UG/L			9/21/90	UNDER CONTROL	cis-1,3-Dichloropropene
90.17412	10061026	< 5.		UG/L			9/21/90	UNDER CONTROL	trans-1,3-Dichloropropene
90.17412	100414	36.	10.8	UG/L	75.	8.	9/21/90	WARNING 2-3 SIG	Ethylbenzene
90.17412	87683	< 5.		UG/L			9/21/90	UNDER CONTROL	Hexachlorobutadiene
90.17412	591786	84.	25.2	UG/L	100.	10.	9/21/90	UNDER CONTROL	2-Hexanone
90.17412	98828	< 5.		UG/L			9/21/90	UNDER CONTROL	Isopropylbenzene
90.17412	99876	< 5.		UG/L			9/21/90	UNDER CONTROL	4-Isopropyltoluene
90.17412	74884	< 5.		UG/L			9/21/90	UNDER CONTROL	Methyl iodide
90.17412	108101	< 20.		UG/L			9/21/90	UNDER CONTROL	4-Methyl-2-pentanone
90.17412	75092	< 5.		UG/L			9/21/90	UNDER CONTROL	Methylene chloride
90.17412	91203	< 5.		UG/L			9/21/90	UNDER CONTROL	Naphthalene
90.17412	103651	< 5.		UG/L			9/21/90	UNDER CONTROL	Propylbenzene
90.17412	100425	< 5.		UG/L			9/21/90	UNDER CONTROL	Styrene
90.17412	630206	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1,1,2-Tetrachloroethane
90.17412	79345	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1,2,2-Tetrachloroethane
90.17412	127184	50.	15.	UG/L	82.	8.	9/21/90	UNDER CONTROL	Tetrachloroethylene
90.17412	108883	49.	14.7	UG/L	88.	9.	9/21/90	WARNING 2-3 SIG	Toluene
90.17412	76131	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1,2-Trichloro-1,2,2-trifluoroethane
90.17412	87616	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2,3-Trichlorobenzene
90.17412	120821	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2,4-Trichlorobenzene
90.17412	71556	88.	26.4	UG/L	90.	9.	9/21/90	UNDER CONTROL	1,1,1-Trichloroethane
90.17412	79005	< 5.		UG/L			9/21/90	UNDER CONTROL	1,1,2-Trichloroethane
90.17412	79016	< 5.		UG/L			9/21/90	UNDER CONTROL	Trichloroethene
90.17412	75694	< 5.		UG/L			9/21/90	UNDER CONTROL	Trichlorofluoromethane
90.17412	96184	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2,3-Trichloropropane
90.17412	95636	< 5.		UG/L			9/21/90	UNDER CONTROL	1,2,4-Trimethylbenzene
90.17412	108678	< 5.		UG/L			9/21/90	UNDER CONTROL	1,3,5-Trimethylbenzene
90.17412	108054	< 10.		UG/L			9/21/90	UNDER CONTROL	Vinyl acetate
90.17412	75014	< 10.		UG/L			9/21/90	UNDER CONTROL	Vinyl chloride
90.17412	1330207	< 5.		UG/L			9/21/90	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)

Tentatively Identified Compounds in Original Blind QC # 90.17412

none

Blind QC Duplicate Results, Sample # 90.17412

none

Tentatively Identified Compounds in Duplicate Blind QC # 90.17412

none

Blind QC Matrix Spike Results for Sample # 90.17412

none

Blind QC Matrix Spike Duplicate Results for Sample # 90.17412

none

SURROGATE RESULTS FOR EPA VOLATILES

Surrogate 1 = 1,2-Dichloroethane d4 (CAS # = 17060070)
Surrogate 2 = Toluene d8 (CAS # = 2037265)
Surrogate 3 = 4-Bromofluorobenzene (CAS # = 460004)

SAMPLE NUMBER	UNITS	Surrogate 1	Surrogate 2	Surrogate 3	COMPLETION DATE
90.17256	%	102.06	99.78	101.9	21-Sep-1990
90.17256	%	104.64	100.24	105.16	21-Sep-1990
90.17256	%	96.66	100.6	102.2	21-Sep-1990
90.17257	%	106.44	102.52	104.86	21-Sep-1990
90.17258	%	91.52	92.48	92.1	21-Sep-1990
90.17259	%	94.34	95.32	93.1	21-Sep-1990
90.17260	%	96.62	94.8	96.7	21-Sep-1990
90.17261	%	97.18	93.66	95.38	21-Sep-1990
90.17400	%	127.74	100.24	111.28	21-Sep-1990
90.17412	%	133.48	93.4	107.62	21-Sep-1990
90.17436	%	93.46	103.34	101.04	21-Sep-1990
90.17560	%	88.76	95.36	91.16	21-Sep-1990
EPA Limits:					
Water	%	76 - 114	88 - 110	86 - 115	
Soil	%	70 - 121	81 - 117	74 - 121	

Analyst	Section Leader	QA Officer
9/27/90	10/3/90	10/3/90
Date	Date	Date

CRS for Chris Leibman
CRS Ralph Revised 10/3/90

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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HSE-9 SEMIVOLATILE ORGANIC ANALYSIS
SUMMARY OF ANALYTICAL RESULTS

MWK
11/14/90

To: Max Mees
From: Martin Koby

Request Number: 10760
Matrix: Water
Summary Date: 11/14/90

CL
12/4/90

Sample ID	Target Compounds Found	Amount (ug/L)	LOQ (ug/L)	TICs (Y/N)
Blank 9/13	Diethyl phthalate	13.7	10.0	N
[illegible] (MCO-4)	Diethyl phthalate	19.0	10.0	Y
[illegible] (MCO-4B)	NONE	NA	[illegible]	Y
90.17258 (MCO-6B)	NONE	NA	[illegible]	Y
90.17259 (MCO-7)	NONE	NA	10.0	Y
90.17260 (MCO-7A)	NONE	NA	10.0	Y
90.17261 (MCO-6)	NONE	NA	10.0	N

Sample preparation was performed by extracting approximately 1.0 L of sample with 250 ml methylene chloride for 18 hours per acid and base/neutral fractions in continuous liquid/liquid extractors. Appropriate surrogate standards were added prior to extraction as a check of method efficiency. Initial extracts were concentrated to a final volume of 1.0 ml by Kuderna-Danish and nitrogen evaporation techniques. Analysis was performed by capillary column GC/MS methods. These methods are consistent with EPA SW-846 protocol.

Reportable levels of diethyl phthalate, a common plasticizer and laboratory contaminant, were detected in one sample and the reagent blank. This indicates a high probability that the phthalate was introduced during the analytical process and is not necessarily present in the sample.

Many of the sample extracts contained considerable levels of tentatively identified compounds. The nature of these compounds implicates a source related to the medical, dental, or pharmaceutical industry.

LOS ALAMOS NATIONAL LABORATORY
HEALTH, SAFETY AND ENVIRONMENT DIVISION
HSE-9
SURROGATE RECOVERIES FOR SEMI-VOLATILES
IN WATER

REQUEST #: 10760

NUMBER OF SAMPLES: 10
MATRIX: W
ANALYST: MWK
Date: 10/26/90

SURROGATE RECOVERIES

SURROGATE
RECOVERIES IN PERCENT (%)

	SAMPLE NUMBERS	TYPE	2-FLUORO-PHENOL	PHENOL -D6-	NITRO-BENZENE (D5)	2-FLUORO-BIPHENYL	2,4,6-TRIBROMO-PHENOL	TERPHENYL (D14)
1	590.17435	BLANK	64	70	72	74	75	68
2	590.17412	SAMPLE	56	65	61	67	76	70
3	590.17256	SAMPLE	62	75	69	72	85	48
4	590.17257	SAMPLE	62	55	70	67	74	27 *
5	590.17258	SAMPLE	61	84	72	69	58	19 *
6	590.17259	SAMPLE	60	73	71	65	71	20 *
7	590.17260	SAMPLE	57	77	70	69	54	32 *
8	590.17435	BLANK SPIKE	59	72	73	67	68	61
9	590.17435	BLANK SP-DU	64	74	77	66	68	68
10	590.17261	SAMPLE	54	69	67	68	71	61
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
Average % Surrogate Recovery...			60	71	70	68	70	46
Defined Lower QC Limits (%).....			21	10	35	43	10	33
Defined Upper QC Limits (%).....			100	94	114	116	123	141
Observed Lower QC Limits (%)...			54	55	61	65	54	19
Observed Upper QC Limits (%)...			64	84	77	74	85	70

** If % Surrogate Recovery is followed by a "*", it is out of QC Limits.

Reviewed By:

CKB

el

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17256

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-4	90.17256	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-4	90.17256	62533	< 10.		UG/L	11/29/90		Aniline
MCO-4	90.17256	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-4	90.17256	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-4	90.17256	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-4	90.17256	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-4	90.17256	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-4	90.17256	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-4	90.17256	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-4	90.17256	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-4	90.17256	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-4	90.17256	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-4	90.17256	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-4	90.17256	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-4	90.17256	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-4	90.17256	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-4	90.17256	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-4	90.17256	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-4	90.17256	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-4	90.17256	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-4	90.17256	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-4	90.17256	95578	< 10.		UG/L	11/29/90	o-Chlorophenol
MCO-4	90.17256	7005723	< 10.		UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-4	90.17256	218019	< 10.		UG/L	11/29/90	Chrysene
MCO-4	90.17256	84742	< 10.		UG/L	11/29/90	Di-n-butyl phthalate
MCO-4	90.17256	117840	< 10.		UG/L	11/29/90	Di-n-octyl phthalate
MCO-4	90.17256	53703	< 10.		UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-4	90.17256	132649	< 10.		UG/L	11/29/90	Dibenzofuran
MCO-4	90.17256	95501	< 10.		UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-4	90.17256	541731	< 10.		UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-4	90.17256	106467	< 10.		UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-4	90.17256	91941	< 10.		UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-4	90.17256	120832	< 10.		UG/L	11/29/90	2,4-Dichlorophenol
MCO-4	90.17256	84662	18.	5.4	UG/L	11/29/90	Diethyl phthalate
MCO-4	90.17256	131113	< 10.		UG/L	11/29/90	Dimethyl phthalate
MCO-4	90.17256	105679	< 10.		UG/L	11/29/90	2,4-Dimethylphenol
MCO-4	90.17256	51285	< 10.		UG/L	11/29/90	2,4-Dinitrophenol
MCO-4	90.17256	121142	< 10.		UG/L	11/29/90	2,4-Dinitrotoluene
MCO-4	90.17256	606202	< 10.		UG/L	11/29/90	2,6-Dinitrotoluene
MCO-4	90.17256	206440	< 10.		UG/L	11/29/90	Fluoranthene
MCO-4	90.17256	86737	< 10.		UG/L	11/29/90	Fluorene
MCO-4	90.17256	118741	< 10.		UG/L	11/29/90	Hexachlorobenzene
MCO-4	90.17256	87683	< 10.		UG/L	11/29/90	Hexachlorobutadiene
MCO-4	90.17256	77474	< 10.		UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-4	90.17256	67721	< 10.		UG/L	11/29/90	Hexachloroethane
MCO-4	90.17256	193395	< 10.		UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-4	90.17256	78591	< 10.		UG/L	11/29/90	Isophorone
MCO-4	90.17256	534521	< 10.		UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-4	90.17256	91576	< 10.		UG/L	11/29/90	2-Methylnaphthalene
MCO-4	90.17256	95487	< 10.		UG/L	11/29/90	2-Methylphenol
MCO-4	90.17256	106445	< 10.		UG/L	11/29/90	4-Methylphenol
MCO-4	90.17256	91203	< 10.		UG/L	11/29/90	Naphthalene
MCO-4	90.17256	88744	< 10.		UG/L	11/29/90	2-Nitroaniline
MCO-4	90.17256	99092	< 10.		UG/L	11/29/90	3-Nitroaniline
MCO-4	90.17256	100016	< 10.		UG/L	11/29/90	4-Nitroaniline
MCO-4	90.17256	98953	< 10.		UG/L	11/29/90	Nitrobenzene
MCO-4	90.17256	88755	< 10.		UG/L	11/29/90	2-Nitrophenol
MCO-4	90.17256	100027	< 10.		UG/L	11/29/90	4-Nitrophenol
MCO-4	90.17256	621647	< 10.		UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-4	90.17256	62759	< 10.		UG/L	11/29/90	N-Nitrosodimethylamine
MCO-4	90.17256	86306	< 10.		UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-4	90.17256	87865	< 10.		UG/L	11/29/90	Pentachlorophenol
MCO-4	90.17256	85018	< 10.		UG/L	11/29/90	Phenanthrene
MCO-4	90.17256	108952	< 10.		UG/L	11/29/90	Phenol
MCO-4	90.17256	129000	< 10.		UG/L	11/29/90	Pyrene
MCO-4	90.17256	120821	< 10.		UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-4	90.17256	95954	< 10.		UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-4	90.17256	88062		< 10.		UG/L	11/29/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17256

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4	90.17256	171	TI	130.		UG/L	11/29/90		Oxygenated Hydrocarbon

Customer Sample Duplicate Results for Sample # 90.17256

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17256

none

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17257

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4B	90.17257	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-4B	90.17257	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-4B	90.17257	62533	< 10.		UG/L	11/29/90		Aniline
MCO-4B	90.17257	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-4B	90.17257	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-4B	90.17257	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-4B	90.17257	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-4B	90.17257	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-4B	90.17257	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-4B	90.17257	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-4B	90.17257	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-4B	90.17257	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-4B	90.17257	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-4B	90.17257	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-4B	90.17257	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-4B	90.17257	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-4B	90.17257	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-4B	90.17257	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-4B	90.17257	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-4B	90.17257	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-4B	90.17257	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-4B	90.17257	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-4B	90.17257	95578	< 10.	UG/L	11/29/90	o-Chlorophenol
MCO-4B	90.17257	7005723	< 10.	UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-4B	90.17257	218019	< 10.	UG/L	11/29/90	Chrysene
MCO-4B	90.17257	84742	< 10.	UG/L	11/29/90	Di-n-butyl phthalate
MCO-4B	90.17257	117840	< 10.	UG/L	11/29/90	Di-n-octyl phthalate
MCO-4B	90.17257	53703	< 10.	UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-4B	90.17257	132649	< 10.	UG/L	11/29/90	Dibenzofuran
MCO-4B	90.17257	95501	< 10.	UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-4B	90.17257	541731	< 10.	UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-4B	90.17257	106467	< 10.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-4B	90.17257	91941	< 10.	UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-4B	90.17257	120832	< 10.	UG/L	11/29/90	2,4-Dichlorophenol
MCO-4B	90.17257	84662	< 10.	UG/L	11/29/90	Diethyl phthalate
MCO-4B	90.17257	131113	< 10.	UG/L	11/29/90	Dimethyl phthalate
MCO-4B	90.17257	105679	< 10.	UG/L	11/29/90	2,4-Dimethylphenol
MCO-4B	90.17257	51285	< 10.	UG/L	11/29/90	2,4-Dinitrophenol
MCO-4B	90.17257	121142	< 10.	UG/L	11/29/90	2,4-Dinitrotoluene
MCO-4B	90.17257	606202	< 10.	UG/L	11/29/90	2,6-Dinitrotoluene
MCO-4B	90.17257	206440	< 10.	UG/L	11/29/90	Fluoranthene
MCO-4B	90.17257	86737	< 10.	UG/L	11/29/90	Fluorene
MCO-4B	90.17257	118741	< 10.	UG/L	11/29/90	Hexachlorobenzene
MCO-4B	90.17257	87683	< 10.	UG/L	11/29/90	Hexachlorobutadiene
MCO-4B	90.17257	77474	< 10.	UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-4B	90.17257	67721	< 10.	UG/L	11/29/90	Hexachloroethane
MCO-4B	90.17257	193395	< 10.	UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-4B	90.17257	78591	< 10.	UG/L	11/29/90	Isophorone
MCO-4B	90.17257	534521	< 10.	UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-4B	90.17257	91576	< 10.	UG/L	11/29/90	2-Methylnaphthalene
MCO-4B	90.17257	95487	< 10.	UG/L	11/29/90	2-Methylphenol
MCO-4B	90.17257	106445	< 10.	UG/L	11/29/90	4-Methylphenol
MCO-4B	90.17257	91203	< 10.	UG/L	11/29/90	Naphthalene
MCO-4B	90.17257	88744	< 10.	UG/L	11/29/90	2-Nitroaniline
MCO-4B	90.17257	99092	< 10.	UG/L	11/29/90	3-Nitroaniline
MCO-4B	90.17257	100016	< 10.	UG/L	11/29/90	4-Nitroaniline
MCO-4B	90.17257	98953	< 10.	UG/L	11/29/90	Nitrobenzene
MCO-4B	90.17257	88755	< 10.	UG/L	11/29/90	2-Nitrophenol
MCO-4B	90.17257	100027	< 10.	UG/L	11/29/90	4-Nitrophenol
MCO-4B	90.17257	621647	< 10.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-4B	90.17257	62759	< 10.	UG/L	11/29/90	N-Nitrosodimethylamine
MCO-4B	90.17257	86306	< 10.	UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-4B	90.17257	87865	< 10.	UG/L	11/29/90	Pentachlorophenol
MCO-4B	90.17257	85018	< 10.	UG/L	11/29/90	Phenanthrene
MCO-4B	90.17257	108952	< 10.	UG/L	11/29/90	Phenol
MCO-4B	90.17257	129000	< 10.	UG/L	11/29/90	Pyrene
MCO-4B	90.17257	120821	< 10.	UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-4B	90.17257	95954	< 10.	UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-4B	90.17257	88062		< 10.		UG/L	11/29/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17257

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-4B	90.17257	60322	TI	320.		UG/L	11/29/90		6-Amino-Hexanoic Acid

Customer Sample Duplicate Results for Sample # 90.17257

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17257

none

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17258

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6B	90.17258	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-6B	90.17258	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-6B	90.17258	62533	< 10.		UG/L	11/29/90		Aniline
MCO-6B	90.17258	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-6B	90.17258	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-6B	90.17258	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-6B	90.17258	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-6B	90.17258	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-6B	90.17258	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-6B	90.17258	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-6B	90.17258	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-6B	90.17258	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-6B	90.17258	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-6B	90.17258	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-6B	90.17258	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-6B	90.17258	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-6B	90.17258	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-6B	90.17258	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-6B	90.17258	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-6B	90.17258	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-6B	90.17258	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-6B	90.17258	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-6B	90.17258	95578	< 10.	UG/L	11/29/90	o-Chlorophenol
MCO-6B	90.17258	7005723	< 10.	UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-6B	90.17258	218019	< 10.	UG/L	11/29/90	Chrysene
MCO-6B	90.17258	84742	< 10.	UG/L	11/29/90	Di-n-butyl phthalate
MCO-6B	90.17258	117840	< 10.	UG/L	11/29/90	Di-n-octyl phthalate
MCO-6B	90.17258	53703	< 10.	UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-6B	90.17258	132649	< 10.	UG/L	11/29/90	Dibenzofuran
MCO-6B	90.17258	95501	< 10.	UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-6B	90.17258	541731	< 10.	UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-6B	90.17258	106467	< 10.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-6B	90.17258	91941	< 10.	UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-6B	90.17258	120832	< 10.	UG/L	11/29/90	2,4-Dichlorophenol
MCO-6B	90.17258	84662	< 10.	UG/L	11/29/90	Diethyl phthalate
MCO-6B	90.17258	131113	< 10.	UG/L	11/29/90	Dimethyl phthalate
MCO-6B	90.17258	105679	< 10.	UG/L	11/29/90	2,4-Dimethylphenol
MCO-6B	90.17258	51285	< 10.	UG/L	11/29/90	2,4-Dinitrophenol
MCO-6B	90.17258	121142	< 10.	UG/L	11/29/90	2,4-Dinitrotoluene
MCO-6B	90.17258	606202	< 10.	UG/L	11/29/90	2,6-Dinitrotoluene
MCO-6B	90.17258	206440	< 10.	UG/L	11/29/90	Fluoranthene
MCO-6B	90.17258	86737	< 10.	UG/L	11/29/90	Fluorene
MCO-6B	90.17258	118741	< 10.	UG/L	11/29/90	Hexachlorobenzene
MCO-6B	90.17258	87683	< 10.	UG/L	11/29/90	Hexachlorobutadiene
MCO-6B	90.17258	77474	< 10.	UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-6B	90.17258	67721	< 10.	UG/L	11/29/90	Hexachloroethane
MCO-6B	90.17258	193395	< 10.	UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-6B	90.17258	78591	< 10.	UG/L	11/29/90	Isophorone
MCO-6B	90.17258	534521	< 10.	UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-6B	90.17258	91576	< 10.	UG/L	11/29/90	2-Methylnaphthalene
MCO-6B	90.17258	95487	< 10.	UG/L	11/29/90	2-Methylphenol
MCO-6B	90.17258	106445	< 10.	UG/L	11/29/90	4-Methylphenol
MCO-6B	90.17258	91203	< 10.	UG/L	11/29/90	Naphthalene
MCO-6B	90.17258	88744	< 10.	UG/L	11/29/90	2-Nitroaniline
MCO-6B	90.17258	99092	< 10.	UG/L	11/29/90	3-Nitroaniline
MCO-6B	90.17258	100016	< 10.	UG/L	11/29/90	4-Nitroaniline
MCO-6B	90.17258	98953	< 10.	UG/L	11/29/90	Nitrobenzene
MCO-6B	90.17258	88755	< 10.	UG/L	11/29/90	2-Nitrophenol
MCO-6B	90.17258	100027	< 10.	UG/L	11/29/90	4-Nitrophenol
MCO-6B	90.17258	621647	< 10.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-6B	90.17258	62759	< 10.	UG/L	11/29/90	N-Nitrosodimethylamine
MCO-6B	90.17258	86306	< 10.	UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-6B	90.17258	87865	< 10.	UG/L	11/29/90	Pentachlorophenol
MCO-6B	90.17258	85018	< 10.	UG/L	11/29/90	Phenanthrene
MCO-6B	90.17258	108952	< 10.	UG/L	11/29/90	Phenol
MCO-6B	90.17258	129000	< 10.	UG/L	11/29/90	Pyrene
MCO-6B	90.17258	120821	< 10.	UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-6B	90.17258	95954	< 10.	UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-6B	90.17258	88062		< 10.		UG/L	11/29/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17258

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6B	90.17258	60322	TI	650.		UG/L	11/29/90		6-Amino-Hexanoic Acid

Customer Sample Duplicate Results for Sample # 90.17258

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17258

none

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17259

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7	90.17259	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-7	90.17259	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-7	90.17259	62533	< 10.		UG/L	11/29/90		Aniline
MCO-7	90.17259	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-7	90.17259	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-7	90.17259	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-7	90.17259	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-7	90.17259	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-7	90.17259	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-7	90.17259	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-7	90.17259	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-7	90.17259	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-7	90.17259	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-7	90.17259	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-7	90.17259	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-7	90.17259	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-7	90.17259	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-7	90.17259	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-7	90.17259	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-7	90.17259	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-7	90.17259	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-7	90.17259	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-7	90.17259	95578	< 10.	UG/L	11/29/90	o-Chlorophenol
MCO-7	90.17259	7005723	< 10.	UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-7	90.17259	218019	< 10.	UG/L	11/29/90	Chrysene
MCO-7	90.17259	84742	< 10.	UG/L	11/29/90	Di-n-butyl phthalate
MCO-7	90.17259	117840	< 10.	UG/L	11/29/90	Di-n-octyl phthalate
MCO-7	90.17259	53703	< 10.	UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-7	90.17259	132649	< 10.	UG/L	11/29/90	Dibenzofuran
MCO-7	90.17259	95501	< 10.	UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-7	90.17259	541731	< 10.	UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-7	90.17259	106467	< 10.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-7	90.17259	91941	< 10.	UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-7	90.17259	120832	< 10.	UG/L	11/29/90	2,4-Dichlorophenol
MCO-7	90.17259	84662	< 10.	UG/L	11/29/90	Diethyl phthalate
MCO-7	90.17259	131113	< 10.	UG/L	11/29/90	Dimethyl phthalate
MCO-7	90.17259	105679	< 10.	UG/L	11/29/90	2,4-Dimethylphenol
MCO-7	90.17259	51285	< 10.	UG/L	11/29/90	2,4-Dinitrophenol
MCO-7	90.17259	121142	< 10.	UG/L	11/29/90	2,4-Dinitrotoluene
MCO-7	90.17259	606202	< 10.	UG/L	11/29/90	2,6-Dinitrotoluene
MCO-7	90.17259	206440	< 10.	UG/L	11/29/90	Fluoranthene
MCO-7	90.17259	86737	< 10.	UG/L	11/29/90	Fluorene
MCO-7	90.17259	118741	< 10.	UG/L	11/29/90	Hexachlorobenzene
MCO-7	90.17259	87683	< 10.	UG/L	11/29/90	Hexachlorobutadiene
MCO-7	90.17259	77474	< 10.	UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-7	90.17259	67721	< 10.	UG/L	11/29/90	Hexachloroethane
MCO-7	90.17259	193395	< 10.	UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-7	90.17259	78591	< 10.	UG/L	11/29/90	Isophorone
MCO-7	90.17259	534521	< 10.	UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-7	90.17259	91576	< 10.	UG/L	11/29/90	2-Methylnaphthalene
MCO-7	90.17259	95487	< 10.	UG/L	11/29/90	2-Methylphenol
MCO-7	90.17259	106445	< 10.	UG/L	11/29/90	4-Methylphenol
MCO-7	90.17259	91203	< 10.	UG/L	11/29/90	Naphthalene
MCO-7	90.17259	88744	< 10.	UG/L	11/29/90	2-Nitroaniline
MCO-7	90.17259	99092	< 10.	UG/L	11/29/90	3-Nitroaniline
MCO-7	90.17259	100016	< 10.	UG/L	11/29/90	4-Nitroaniline
MCO-7	90.17259	98953	< 10.	UG/L	11/29/90	Nitrobenzene
MCO-7	90.17259	88755	< 10.	UG/L	11/29/90	2-Nitrophenol
MCO-7	90.17259	100027	< 10.	UG/L	11/29/90	4-Nitrophenol
MCO-7	90.17259	621647	< 10.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-7	90.17259	62759	< 10.	UG/L	11/29/90	N-Nitrosodimethylamine
MCO-7	90.17259	86306	< 10.	UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-7	90.17259	87865	< 10.	UG/L	11/29/90	Pentachlorophenol
MCO-7	90.17259	85018	< 10.	UG/L	11/29/90	Phenanthrene
MCO-7	90.17259	108952	< 10.	UG/L	11/29/90	Phenol
MCO-7	90.17259	129000	< 10.	UG/L	11/29/90	Pyrene
MCO-7	90.17259	120821	< 10.	UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-7	90.17259	95954	< 10.	UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-7	90.17259	88062		< 10.		UG/L	11/29/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17259

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7	90.17259	120401	TI	60.		UG/L	11/29/90		N,N-(2-Hydroxyethyl)-Dodecanamide
MCO-7	90.17259	124072	TI	11.		UG/L	11/29/90		Octanoic Acid

Customer Sample Duplicate Results for Sample # 90.17259

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17259

none

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17260

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7A	90.17260	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-7A	90.17260	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-7A	90.17260	62533	< 10.		UG/L	11/29/90		Aniline
MCO-7A	90.17260	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-7A	90.17260	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-7A	90.17260	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-7A	90.17260	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-7A	90.17260	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-7A	90.17260	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-7A	90.17260	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-7A	90.17260	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-7A	90.17260	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-7A	90.17260	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-7A	90.17260	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-7A	90.17260	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-7A	90.17260	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-7A	90.17260	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-7A	90.17260	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-7A	90.17260	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-7A	90.17260	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-7A	90.17260	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-7A	90.17260	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-7A	90.17260	95578	< 10.	UG/L	11/29/90	o-Chlorophenol
MCO-7A	90.17260	7005723	< 10.	UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-7A	90.17260	218019	< 10.	UG/L	11/29/90	Chrysene
MCO-7A	90.17260	84742	< 10.	UG/L	11/29/90	Di-n-butyl phthalate
MCO-7A	90.17260	117840	< 10.	UG/L	11/29/90	Di-n-octyl phthalate
MCO-7A	90.17260	53703	< 10.	UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-7A	90.17260	132649	< 10.	UG/L	11/29/90	Dibenzofuran
MCO-7A	90.17260	95501	< 10.	UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-7A	90.17260	541731	< 10.	UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-7A	90.17260	106467	< 10.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-7A	90.17260	91941	< 10.	UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-7A	90.17260	120832	< 10.	UG/L	11/29/90	2,4-Dichlorophenol
MCO-7A	90.17260	84662	< 10.	UG/L	11/29/90	Diethyl phthalate
MCO-7A	90.17260	131113	< 10.	UG/L	11/29/90	Dimethyl phthalate
MCO-7A	90.17260	105679	< 10.	UG/L	11/29/90	2,4-Dimethylphenol
MCO-7A	90.17260	51285	< 10.	UG/L	11/29/90	2,4-Dinitrophenol
MCO-7A	90.17260	121142	< 10.	UG/L	11/29/90	2,4-Dinitrotoluene
MCO-7A	90.17260	606202	< 10.	UG/L	11/29/90	2,6-Dinitrotoluene
MCO-7A	90.17260	206440	< 10.	UG/L	11/29/90	Fluoranthene
MCO-7A	90.17260	86737	< 10.	UG/L	11/29/90	Fluorene
MCO-7A	90.17260	118741	< 10.	UG/L	11/29/90	Hexachlorobenzene
MCO-7A	90.17260	87683	< 10.	UG/L	11/29/90	Hexachlorobutadiene
MCO-7A	90.17260	77474	< 10.	UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-7A	90.17260	67721	< 10.	UG/L	11/29/90	Hexachloroethane
MCO-7A	90.17260	193395	< 10.	UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-7A	90.17260	78591	< 10.	UG/L	11/29/90	Isophorone
MCO-7A	90.17260	534521	< 10.	UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-7A	90.17260	91576	< 10.	UG/L	11/29/90	2-Methylnaphthalene
MCO-7A	90.17260	95487	< 10.	UG/L	11/29/90	2-Methylphenol
MCO-7A	90.17260	106445	< 10.	UG/L	11/29/90	4-Methylphenol
MCO-7A	90.17260	91203	< 10.	UG/L	11/29/90	Naphthalene
MCO-7A	90.17260	88744	< 10.	UG/L	11/29/90	2-Nitroaniline
MCO-7A	90.17260	99092	< 10.	UG/L	11/29/90	3-Nitroaniline
MCO-7A	90.17260	100016	< 10.	UG/L	11/29/90	4-Nitroaniline
MCO-7A	90.17260	98953	< 10.	UG/L	11/29/90	Nitrobenzene
MCO-7A	90.17260	88755	< 10.	UG/L	11/29/90	2-Nitrophenol
MCO-7A	90.17260	100027	< 10.	UG/L	11/29/90	4-Nitrophenol
MCO-7A	90.17260	621647	< 10.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-7A	90.17260	62759	< 10.	UG/L	11/29/90	N-Nitrosodimethylamine
MCO-7A	90.17260	86306	< 10.	UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-7A	90.17260	87865	< 10.	UG/L	11/29/90	Pentachlorophenol
MCO-7A	90.17260	85018	< 10.	UG/L	11/29/90	Phenanthrene
MCO-7A	90.17260	108952	< 10.	UG/L	11/29/90	Phenol
MCO-7A	90.17260	129000	< 10.	UG/L	11/29/90	Pyrene
MCO-7A	90.17260	120821	< 10.	UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-7A	90.17260	95954	< 10.	UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-7A	90.17260	88062		< 10.		UG/L	11/29/90		2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17260

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS		RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-7A	90.17260	120401	TI	10.		UG/L	11/29/90		N,N-(2-Hydroxyethyl)-Dodecanamide
MCO-7A	90.17260	60322	TI	1200.		UG/L	11/29/90		6-Amino-Hexanoic Acid

Customer Sample Duplicate Results for Sample # 90.17260

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17260

none

REPORT NUMBER: 8964

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

Customer Sample Results, Sample # 90.17261

Date Collected: 9/11/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
MCO-6	90.17261	83329	< 10.		UG/L	11/29/90		Acenaphthene
MCO-6	90.17261	208968	< 10.		UG/L	11/29/90		Acenaphthylene
MCO-6	90.17261	62533	< 10.		UG/L	11/29/90		Aniline
MCO-6	90.17261	120127	< 10.		UG/L	11/29/90		Anthracene
MCO-6	90.17261	103333	< 10.		UG/L	11/29/90		Azobenzene
MCO-6	90.17261	92875	< 10.		UG/L	11/29/90		m-Benzidine
MCO-6	90.17261	56553	< 10.		UG/L	11/29/90		Benzo[a]anthracene
MCO-6	90.17261	50328	< 10.		UG/L	11/29/90		Benzo[a]pyrene
MCO-6	90.17261	205992	< 10.		UG/L	11/29/90		Benzo[b]fluoranthene
MCO-6	90.17261	191242	< 10.		UG/L	11/29/90		Benzo[g,h,i]perylene
MCO-6	90.17261	207089	< 10.		UG/L	11/29/90		Benzo[k]fluoranthene
MCO-6	90.17261	65850	< 10.		UG/L	11/29/90		Benzoic acid
MCO-6	90.17261	100516	< 10.		UG/L	11/29/90		Benzyl alcohol
MCO-6	90.17261	111911	< 10.		UG/L	11/29/90		Bis(2-chloroethoxy)methane
MCO-6	90.17261	111444	< 10.		UG/L	11/29/90		Bis(2-chloroethyl)ether
MCO-6	90.17261	108601	< 10.		UG/L	11/29/90		Bis(2-chloroisopropyl)ether
MCO-6	90.17261	117817	< 10.		UG/L	11/29/90		Bis(2-ethylhexyl)phthalate
MCO-6	90.17261	101553	< 10.		UG/L	11/29/90		4-Bromophenylphenyl ether
MCO-6	90.17261	85687	< 10.		UG/L	11/29/90		Butylbenzyl phthalate
MCO-6	90.17261	59507	< 10.		UG/L	11/29/90		4-Chloro-3-methylphenol
MCO-6	90.17261	106478	< 10.		UG/L	11/29/90		4-Chloroaniline
MCO-6	90.17261	91587	< 10.		UG/L	11/29/90		2-Chloronaphthalene

MCO-6	90.17261	95578	< 10.	UG/L	11/29/90	o-Chlorophenol
MCO-6	90.17261	7005723	< 10.	UG/L	11/29/90	4-Chlorophenylphenyl ether
MCO-6	90.17261	218019	< 10.	UG/L	11/29/90	Chrysene
MCO-6	90.17261	84742	< 10.	UG/L	11/29/90	Di-n-butyl phthalate
MCO-6	90.17261	117840	< 10.	UG/L	11/29/90	Di-n-octyl phthalate
MCO-6	90.17261	53703	< 10.	UG/L	11/29/90	Dibenzo[a,h]anthracene
MCO-6	90.17261	132649	< 10.	UG/L	11/29/90	Dibenzofuran
MCO-6	90.17261	95501	< 10.	UG/L	11/29/90	o-Dichlorobenzene (1,2)
MCO-6	90.17261	541731	< 10.	UG/L	11/29/90	m-Dichlorobenzene (1,3)
MCO-6	90.17261	106467	< 10.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
MCO-6	90.17261	91941	< 10.	UG/L	11/29/90	3,3'-Dichlorobenzidine
MCO-6	90.17261	120832	< 10.	UG/L	11/29/90	2,4-Dichlorophenol
MCO-6	90.17261	84662	< 10.	UG/L	11/29/90	Diethyl phthalate
MCO-6	90.17261	131113	< 10.	UG/L	11/29/90	Dimethyl phthalate
MCO-6	90.17261	105679	< 10.	UG/L	11/29/90	2,4-Dimethylphenol
MCO-6	90.17261	51285	< 10.	UG/L	11/29/90	2,4-Dinitrophenol
MCO-6	90.17261	121142	< 10.	UG/L	11/29/90	2,4-Dinitrotoluene
MCO-6	90.17261	606202	< 10.	UG/L	11/29/90	2,6-Dinitrotoluene
MCO-6	90.17261	206440	< 10.	UG/L	11/29/90	Fluoranthene
MCO-6	90.17261	86737	< 10.	UG/L	11/29/90	Fluorene
MCO-6	90.17261	118741	< 10.	UG/L	11/29/90	Hexachlorobenzene
MCO-6	90.17261	87683	< 10.	UG/L	11/29/90	Hexachlorobutadiene
MCO-6	90.17261	77474	< 10.	UG/L	11/29/90	Hexachlorocyclopentadiene
MCO-6	90.17261	67721	< 10.	UG/L	11/29/90	Hexachloroethane
MCO-6	90.17261	193395	< 10.	UG/L	11/29/90	Indeno[1,2,3-cd]pyrene
MCO-6	90.17261	78591	< 10.	UG/L	11/29/90	Isophorone
MCO-6	90.17261	534521	< 10.	UG/L	11/29/90	2-Methyl-4,6-dinitrophenol
MCO-6	90.17261	91576	< 10.	UG/L	11/29/90	2-Methylnaphthalene
MCO-6	90.17261	95487	< 10.	UG/L	11/29/90	2-Methylphenol
MCO-6	90.17261	106445	< 10.	UG/L	11/29/90	4-Methylphenol
MCO-6	90.17261	91203	< 10.	UG/L	11/29/90	Naphthalene
MCO-6	90.17261	88744	< 10.	UG/L	11/29/90	2-Nitroaniline
MCO-6	90.17261	99092	< 10.	UG/L	11/29/90	3-Nitroaniline
MCO-6	90.17261	100016	< 10.	UG/L	11/29/90	4-Nitroaniline
MCO-6	90.17261	98953	< 10.	UG/L	11/29/90	Nitrobenzene
MCO-6	90.17261	88755	< 10.	UG/L	11/29/90	2-Nitrophenol
MCO-6	90.17261	100027	< 10.	UG/L	11/29/90	4-Nitrophenol
MCO-6	90.17261	621647	< 10.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
MCO-6	90.17261	62759	< 10.	UG/L	11/29/90	N-Nitrosodimethylamine
MCO-6	90.17261	86306	< 10.	UG/L	11/29/90	N-Nitrosodiphenylamine
MCO-6	90.17261	87865	< 10.	UG/L	11/29/90	Pentachlorophenol
MCO-6	90.17261	85018	< 10.	UG/L	11/29/90	Phenanthrene
MCO-6	90.17261	108952	< 10.	UG/L	11/29/90	Phenol
MCO-6	90.17261	129000	< 10.	UG/L	11/29/90	Pyrene
MCO-6	90.17261	120821	< 10.	UG/L	11/29/90	1,2,4-Trichlorobenzene
MCO-6	90.17261	95954	< 10.	UG/L	11/29/90	2,4,5-Trichlorophenol

MCO-6	90.17261	88062	< 10.	UG/L	11/29/90	2,4,6-Trichlorophenol

Tentatively Identified Compounds in Customer Sample # 90.17261

none

Customer Sample Duplicate Results for Sample # 90.17261

none

Tentatively Identified Compounds in Customer Sample Duplicates for Sample # 90.17261

none

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REPORT NUMBER: 8964 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: CRS on 29-Nov-1990

EPA SEMIVOLATILES

REQUEST NUMBER: 10760 MATRIX: WW ANALYST: Martin Koby PROGRAM CODE: M211

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817

SUMMARY OF CONTROL STATUS OF OPEN (NON-BLIND) QA SAMPLES RUN WITH THIS BATCH

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ Only Blind QC samples run with this batch.

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLANK QC SAMPLES RUN WITH THIS BATCH

Blank Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUN
00.20226	90.17435	83329	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthene
00.20226	90.17435	208968	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthylene
00.20226	90.17435	62533	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Aniline
00.20226	90.17435	120127	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Anthracene
00.20226	90.17435	103333	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Azobenzene
00.20226	90.17435	92875	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Benzidine
00.20226	90.17435	56553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]anthracene
00.20226	90.17435	50328	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]pyrene
00.20226	90.17435	205992	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[b]fluoranthene
00.20226	90.17435	191242	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[g,h,i]perylene
00.20226	90.17435	207089	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[k]fluoranthene
00.20226	90.17435	65850	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzoic acid
00.20226	90.17435	100516	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzyl alcohol
00.20226	90.17435	111911	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroethoxy)methane
00.20226	90.17435	111444	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroethyl)ether
00.20226	90.17435	108601	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroisopropyl)ether
00.20226	90.17435	117817	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-ethylhexyl)phthalate
00.20226	90.17435	101553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Bromophenylphenyl ether
00.20226	90.17435	85687	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Butylbenzyl phthalate
00.20226	90.17435	59507	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloro-3-methylphenol
00.20226	90.17435	106478	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloroaniline
00.20226	90.17435	91587	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Chloronaphthalene
00.20226	90.17435	95578	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Chlorophenol
00.20226	90.17435	7005723	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chlorophenylphenyl ether
00.20226	90.17435	218019	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Chrysene
00.20226	90.17435	84742	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-butyl phthalate
00.20226	90.17435	117840	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-octyl phthalate
00.20226	90.17435	53703	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzo[a,h]anthracene
00.20226	90.17435	132649	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzofuran
00.20226	90.17435	95501	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
00.20226	90.17435	541731	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
00.20226	90.17435	106467	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
00.20226	90.17435	91941	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3,3'-Dichlorobenzidine

00.20226	90.17435	120832	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dichlorophenol
00.20226	90.17435	84662	14.	4.2	UG/L	0.0		11/29/90	~~OUT OF~~ Under CONTROL	Diethyl phthalate
00.20226	90.17435	131113	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dimethyl phthalate
00.20226	90.17435	105679	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dimethylphenol
00.20226	90.17435	51285	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrophenol
00.20226	90.17435	121142	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrotoluene
00.20226	90.17435	606202	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,6-Dinitrotoluene
00.20226	90.17435	206440	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluoranthene
00.20226	90.17435	86737	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluorene
00.20226	90.17435	118741	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobenzene
00.20226	90.17435	87683	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobutadiene
00.20226	90.17435	77474	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorocyclopentadiene
00.20226	90.17435	67721	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachloroethane
00.20226	90.17435	193395	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Indeno[1,2,3-cd]pyrene
00.20226	90.17435	78591	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Isophorone
00.20226	90.17435	534521	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methyl-4,6-dinitrophenol
00.20226	90.17435	91576	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylnaphthalene
00.20226	90.17435	95487	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylphenol
00.20226	90.17435	106445	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Methylphenol
00.20226	90.17435	91203	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Naphthalene
00.20226	90.17435	88744	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitroaniline
00.20226	90.17435	99092	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3-Nitroaniline
00.20226	90.17435	100016	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitroaniline
00.20226	90.17435	98953	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Nitrobenzene
00.20226	90.17435	88755	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitrophenol
00.20226	90.17435	100027	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitrophenol
00.20226	90.17435	621647	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodi-n-propylamine
00.20226	90.17435	62759	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodimethylamine
00.20226	90.17435	86306	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodiphenylamine
00.20226	90.17435	87865	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pentachlorophenol
00.20226	90.17435	85018	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Phenanthrene
00.20226	90.17435	108952	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Phenol
00.20226	90.17435	129000	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pyrene
00.20226	90.17435	120821	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	1,2,4-Trichlorobenzene
00.20226	90.17435	95954	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,5-Trichlorophenol
00.20226	90.17435	88062	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,6-Trichlorophenol

Blank Spike Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND
00.20226	90.17435	83329	50.	35.	UG/L	11/29/90		Acenaphthene
00.20226	90.17435	59507	100.	67.	UG/L	11/29/90		4-Chloro-3-methylphenol
00.20226	90.17435	95578	100.	58.	UG/L	11/29/90		o-Chlorophenol

00.20226	90.17435	106467	50.	29.	UG/L	11/29/90	p-Dichlorobenzene (1,4)
00.20226	90.17435	121142	50.	36.	UG/L	11/29/90	2,4-Dinitrotoluene
00.20226	90.17435	100027	100.	61.	UG/L	11/29/90	4-Nitrophenol
00.20226	90.17435	621647	50.	29.	UG/L	11/29/90	N-Nitrosodi-n-propylamine
00.20226	90.17435	87865	100.	69.	UG/L	11/29/90	Pentachlorophenol
00.20226	90.17435	108952	100.	63.	UG/L	11/29/90	Phenol
00.20226	90.17435	129000	50.	33.	UG/L	11/29/90	Pyrene
00.20226	90.17435	120821	50.	32.	UG/L	11/29/90	1,2,4-Trichlorobenzene

Blank Spike Duplicate Results

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	AMOUNT SPIKED	AMOUNT RECOVERED	UNITS	COMPLETION DATE	COMMENT	COMPOUND
00.20226	90.17435	83329	50.	36.	UG/L	11/29/90		Acenaphthene
00.20226	90.17435	59507	100.	68.	UG/L	11/29/90		4-Chloro-3-methylphenol
00.20226	90.17435	95578	100.	62.	UG/L	11/29/90		o-Chlorophenol
00.20226	90.17435	106467	50.	30.	UG/L	11/29/90		p-Dichlorobenzene (1,4)
00.20226	90.17435	121142	50.	38.	UG/L	11/29/90		2,4-Dinitrotoluene
00.20226	90.17435	100027	100.	65.	UG/L	11/29/90		4-Nitrophenol
00.20226	90.17435	621647	50.	30.	UG/L	11/29/90		N-Nitrosodi-n-propylamine
00.20226	90.17435	87865	100.	55.	UG/L	11/29/90		Pentachlorophenol
00.20226	90.17435	108952	100.	66.	UG/L	11/29/90		Phenol
00.20226	90.17435	129000	50.	36.	UG/L	11/29/90		Pyrene
00.20226	90.17435	120821	50.	32.	UG/L	11/29/90		1,2,4-Trichlorobenzene

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

Blind QC Results, Sample # 90.17413

Date Collected: 9/13/90 Date Received: 9/13/90 Date Extracted: 9/13/90 Date Analyzed: 10/04/90

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
90.17413	83329	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthene
90.17413	208968	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Acenaphthylene
90.17413	62533	110.	33.	UG/L	130.	10.	11/29/90	UNDER CONTROL	Aniline
90.17413	120127	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Anthracene
90.17413	103333	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Azobenzene
90.17413	92875	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Benzidine

90.17413	56553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]anthracene
90.17413	50328	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[a]pyrene
90.17413	205992	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[b]fluoranthene
90.17413	191242	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[g,h,i]perylene
90.17413	207089	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Benzo[k]fluoranthene
90.17413	65850	< 10.		UG/L	150.	20.	11/29/90	OUT OF CONTROL	Benzoic acid
90.17413	100516	94.	28.2	UG/L	130.	10.	11/29/90	UNDER CONTROL	Benzyl alcohol
90.17413	111911	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroethoxy)methane
90.17413	111444	73.	21.9	UG/L	120.	10.	11/29/90	UNDER CONTROL	Bis(2-chloroethyl)ether
90.17413	108601	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-chloroisopropyl)ether
90.17413	117817	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Bis(2-ethylhexyl)phthalate
90.17413	101553	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Bromophenylphenyl ether
90.17413	85687	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Butylbenzyl phthalate
90.17413	59507	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloro-3-methylphenol
90.17413	106478	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chloroaniline
90.17413	91587	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Chloronaphthalene
90.17413	95578	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Chlorophenol
90.17413	7005723	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Chlorophenylphenyl ether
90.17413	218019	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Chrysene
90.17413	84742	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-butyl phthalate
90.17413	117840	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Di-n-octyl phthalate
90.17413	53703	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzo[a,h]anthracene
90.17413	132649	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dibenzofuran
90.17413	95501	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	o-Dichlorobenzene (1,2)
90.17413	541731	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	m-Dichlorobenzene (1,3)
90.17413	106467	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	p-Dichlorobenzene (1,4)
90.17413	91941	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3,3'-Dichlorobenzidine
90.17413	120832	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dichlorophenol
90.17413	84662	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Diethyl phthalate
90.17413	131113	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Dimethyl phthalate
90.17413	105679	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dimethylphenol
90.17413	51285	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrophenol
90.17413	121142	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4-Dinitrotoluene
90.17413	606202	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,6-Dinitrotoluene
90.17413	206440	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluoranthene
90.17413	86737	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Fluorene
90.17413	118741	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobenzene
90.17413	87683	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorobutadiene
90.17413	77474	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachlorocyclopentadiene
90.17413	67721	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Hexachloroethane
90.17413	193395	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Indeno[1,2,3-cd]pyrene
90.17413	78591	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Isophorone
90.17413	534521	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methyl-4,6-dinitrophenol
90.17413	91576	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylnaphthalene
90.17413	95487	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Methylphenol
90.17413	106445	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Methylphenol

90.17413	91203	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Naphthalene
90.17413	88744	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitroaniline
90.17413	99092	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	3-Nitroaniline
90.17413	100016	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitroaniline
90.17413	98953	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Nitrobenzene
90.17413	88755	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2-Nitrophenol
90.17413	100027	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	4-Nitrophenol
90.17413	621647	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodi-n-propylamine
90.17413	62759	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodimethylamine
90.17413	86306	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	N-Nitrosodiphenylamine
90.17413	87865	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pentachlorophenol
90.17413	85018	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Phenanthrene
90.17413	108952	74.	22.2	UG/L	130.	10.	11/29/90	WARNING 2-3 SIG	Phenol
90.17413	129000	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	Pyrene
90.17413	120821	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	1,2,4-Trichlorobenzene
90.17413	95954	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,5-Trichlorophenol
90.17413	88062	< 10.		UG/L	0.0		11/29/90	UNDER CONTROL	2,4,6-Trichlorophenol

SURROGATE RESULTS FOR EPA SEMIVOLATILES

Surrogate 1 = 2-Fluorophenol (CAS # = 367124)
Surrogate 2 = Phenol-d5 (CAS # = 4165622)
Surrogate 3 = Nitrobenzene-d5 (CAS # = 4165600)
Surrogate 4 = 2-Fluorobiphenyl (CAS # = 321608)
Surrogate 5 = 2,4,6-Tribromophenol (CAS # = 118796)
Surrogate 6 = p-Terphenyl-d14 (CAS # =)

SAMPLE NUMBER	UNITS	Surrogate 1	Surrogate 2	Surrogate 3	Surrogate 4	Surrogate 5	Surrogate 6	COMPLETION DATE
90.17256	%	62.36	74.92	69.26	72.46	85.28	48.28	29-Nov-1990
90.17257	%	61.71	55.31	70.1	67.04	73.72	27.36	29-Nov-1990
90.17258	%	61.28	83.8	71.98	69.12	58.47	18.66	29-Nov-1990
90.17259	%	59.55	72.93	70.68	64.6	71.49	19.86	29-Nov-1990
90.17260	%	56.98	77.48	69.88	68.6	53.63	21.82	29-Nov-1990
90.17261	%	54.42	69.08	66.86	67.58	71.2	60.5	29-Nov-1990
90.17413	%	55.5	64.62	61.46	66.72	75.62	69.82	29-Nov-1990
90.17435	%	59.08	71.97	72.62	66.84	68.3	60.86	29-Nov-1990
90.17435	%	63.79	74.12	76.7	66.	68.42	67.52	29-Nov-1990
90.17435	%	64.31	70.29	72.48	73.86	74.53	67.54	29-Nov-1990
EPA Limits:								
Water	%	21 - 100	10 - 94	35 - 114	43 - 116	10 - 123	33 - 141	
Soil	%	25 - 121	24 - 113	23 - 120	30 - 115	19 - 122	18 - 137	

REPORT NUMBER: 8964

Analyst	Reviewer	Section Leader	QA Officer
11/29/90	11/29/90	12/4/90	12/4/90
Date	Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

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APPENDIX C

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

IT Corporation
5301 Central N.E., Suite 700
Albuquerque, NM 87108
ATTN: Barb Matz

November 30, 1990

Job Number: ITNA 47061

P.O. Number: 301215.03.04

This is the Certificate of Analysis for the following samples:

Client Project ID:	LANL ER
Date Received by Lab:	11/06/90
Number of Samples:	Thirteen (13)
Sample Type:	Water - eleven (11), Trip Blank - two (2)

I. Introduction

On 11/06/90, eleven (11) water samples and two (2) trip blanks arrived at the ITAS-Knoxville, Tennessee, laboratory from the IT-Albuquerque, New Mexico, office in support of the LANL ER project. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

II. Analytical Results/Methodology

The analytical results for this report are presented by analytical test. Each set of data will include sample identification information and the analytical results. Please note that all data are blank corrected, i.e., if any compound is found in the corresponding laboratory blank, it is subtracted from the analytical result before it is reported.

The samples were analyzed for Appendix IX dioxins at the ITAS Special Analysis Laboratory, Knoxville, Tennessee. A copy of their report is included.

The samples were analyzed for Appendix IX organophosphorus pesticides at the ITAS-San Jose, California, laboratory.

The samples were analyzed for Appendix IX volatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on EPA SW-846 method 8240.

Reviewed and Approved:

Alyce Moore

Alyce Moore
Laboratory Manager

II. Analytical Results/Methodology (continued)

The samples were analyzed for Appendix IX semivolatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) based on EPA SW-846 method 8270.

The samples were analyzed for Appendix IX organochlorine pesticides, PCBs and herbicides by gas chromatography/electron capture detection (GC/ECD) based on EPA SW-846 methods 8080 and 8150.

The samples were analyzed for Appendix IX metals by cold vapor atomic absorption spectroscopy (CVAA) and inductively coupled plasma spectroscopy (ICP) based on EPA SW-846 methods 7470, 3010 and 6010.

The samples were analyzed for total cyanide by manual distillation/colorimetric determination using EPA SW-846 method 9010.

The samples were analyzed for sulfide by iodometric titration based on EPA SW-846 method 9030.

III. Quality Control

The volatiles analyses were performed on 11/07 and 11/08/90 by purge and trap with a J&W DB-624 megabore column on a Finnigan OWA GC/MS/DS. The semivolatiles analyses were performed on 11/14/90 by direct injection of sample extract on a Restek RTX-5 capillary column on a Finnigan 4500 GC/MS/DS. Both volatiles and semivolatiles runs went well. Standardization was performed for all analytes, except that volatiles pyridine, isobutanol, and dioxane were evaluated based on earlier studies with standards on the same column type and conditions. These compounds have been seen to carry over and may cause false positives if the standards are run with the samples. There were no problems seen in final review of the data.

The pesticide/PCB analyses were performed from 11/26 to 11/28/90 using a mixed phase (SP2250/2401) column on the Varian 3740B instrument and a 3% OV-1 column on the Varian 3740A instrument. All water samples required treatment for sulfur interference; this was performed on 11/26/90. Sample LA04.5C exhibited low surrogate recovery. Sample APC02 had sample matrix interferences which resulted in an elevated detection limit for beta-BHC. No other problems were encountered.

The samples were analyzed for herbicides on 11/20/90. No problems were encountered.

The samples were digested on 11/20/90 for ICP. The samples for mercury analysis were prepared just prior to analysis. The CVAA analysis for mercury was performed on 11/12/90; the remaining metals were analyzed by ICP on 11/21/90. All run QC was acceptable.

The samples were analyzed for sulfide on 11/08/90 and for cyanide on 11/13/90. No problems were encountered in either analysis.

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1
Lab Sample ID: EB1107

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	2 J
chloroform	1 J	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

This method blank applies to the following samples: APC01, APC011, APC02, LA011, LA03A, LA04.5C, MC04B, MC06B and MC07A.

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC01
Lab Sample ID: PP1457

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC02
Lab Sample ID: PP1458

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	74	ethyl benzene	85
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	67
2-butanone	53	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	100	methacrylonitrile	10 U
chlorobenzene	81	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	83
1,2-dibromoethane	5 U	toluene	86
dibromomethane	5 U	1,1,1-trichloroethane	97
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	110
dichlorodifluoromethane	20 U	trichloroethene	86
1,1-dichloroethane	69	trichlorofluoromethane	5 U
1,2-dichloroethane	90	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC011
Lab Sample ID: PP1459

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA03A
Lab Sample ID: PP1460

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA04.5C
Lab Sample ID: PP1461

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA011
Lab Sample ID: PP1462

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC04B
Lab Sample ID: PP1463

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC06B
Lab Sample ID: PP1464

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC07A
Lab Sample ID: PP1465

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/07/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2
Lab Sample ID: EB1108

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/08/90
Dilution Factor: 1

This method blank applies to the following samples: APCO-TB, MC010, MC011 and MCO-TB.

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APCO-TB
Lab Sample ID: PP1468

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/08/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MCO-TB
Lab Sample ID: PP1469

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/08/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC010
Lab Sample ID: PP1466

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/08/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX VOLATILE ORGANIC ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC011
Lab Sample ID: PP1467

Compound		Compound	
acetone	10 U	1,2-dichloropropane	5 U
acetonitrile	100 U	cis-1,3-dichloropropene	5 U
acrolein	10 U	trans-1,3-dichloropropene	5 U
acrylonitrile	10 U	1,4-dioxane	1,000 U
benzene	5 U	ethyl benzene	5 U
bromodichloromethane	5 U	ethyl cyanide	100 U
bromoform	5 U	ethyl methacrylate	10 U
bromomethane	10 U	2-hexanone	10 U
2-butanone	10 U	iodomethane	5 U
carbon disulfide	5 U	isobutyl alcohol	2,000 U
carbon tetrachloride	5 U	methacrylonitrile	10 U
chlorobenzene	5 U	methyl methacrylate	10 U
chloroethane	10 U	4-methyl-2-pentanone	10 U
3-chloro-1-propene	5 U	methylene chloride	5 U
chloroform	5 U	pyridine	20,000 U
chloromethane	10 U	styrene	5 U
chloroprene	5 U	1,1,1,2-tetrachloroethane	5 U
1,2-dibromo-3-chloropropane	10 U	1,1,2,2-tetrachloroethane	5 U
dibromochloromethane	5 U	tetrachloroethene	5 U
1,2-dibromoethane	5 U	toluene	5 U
dibromomethane	5 U	1,1,1-trichloroethane	5 U
trans-1,4-dichloro-2-butene	20 U	1,1,2-trichloroethane	5 U
dichlorodifluoromethane	20 U	trichloroethene	5 U
1,1-dichloroethane	5 U	trichlorofluoromethane	5 U
1,2-dichloroethane	5 U	1,2,3-trichloropropane	20 U
1,1-dichloroethene	5 U	vinyl acetate	10 U
trans-1,2-dichloroethene	5 U	vinyl chloride	10 U
		xylenes (total)	5 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Analyzed: 11/08/90
Dilution Factor: 1

WATER SURROGATE PERCENT RECOVERY SUMMARY

	VOLATILE		
Sample No.	Toluene-D8 (88-110%)*	BFB (86-115%)*	1,2 Dichloroethane-D4 (76-114%)*
APC01	102	110	92
APC011	107	106	92
APC02	98	99	94
APC0-TB	99	104	97
LA011	94	101	84
LA03A	103	110	90
LA04.5C	98	108	84
MC010	94	100	94
MC011	98	105	93
MC04B	96	103	85
MC06B	100	101	85
MC07A	93	97	85
MC0-TB	98	104	93
Method Blank 1	98	101	94
Method Blank 2	93	99	94

* - Values in parenthesis represent USEPA contract required QC limits.

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1
Lab Sample ID: BLA1935

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

This method blank applies to the following samples: APC01, APC02, LA03A, LA04.5C and MC04B.

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1
Lab Sample ID: BLA1935

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1
Lab Sample ID: BLA1935

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC01
Lab Sample ID: PP1470

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC01
Lab Sample ID: PP1470

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC01
Lab Sample ID: PP1470

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC02
Lab Sample ID: PP1471

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC02
Lab Sample ID: PP1471

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC02
Lab Sample ID: PP1471

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA03A
Lab Sample ID: PP1472

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA03A
Lab Sample ID: PP1472

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA03A
Lab Sample ID: PP1472

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA04.5C
Lab Sample ID: PP1473

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA04.5C
Lab Sample ID: PP1473

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA04.5C
Lab Sample ID: PP1473

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC04B
Lab Sample ID: PP1474

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

682 : 85

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC04B
Lab Sample ID: PP1474

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC04B
Lab Sample ID: PP1474

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	3 J	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/07/90
Date Analyzed: 11/14/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2
Lab Sample ID: BLA1940

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

This method blank applies to the following samples: MC010, MC06B and MC07A.

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2
Lab Sample ID: BLA1940

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2
Lab Sample ID: BLA1940

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

682-1-85

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC06B
Lab Sample ID: PP1606

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC06B
Lab Sample ID: PP1606

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC06B
Lab Sample ID: PP1606

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	2 J	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC07A
Lab Sample ID: PP1607

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC07A
Lab Sample ID: PP1607

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC07A
Lab Sample ID: PP1607

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX SEMIVOLATILE ANALYSIS

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC010
Lab Sample ID: PP1608

Compound		Compound	
phenol	10 U	bis(2-chloroethoxy)methane	10 U
bis(2-chloroethyl)ether	10 U	2,4-dichlorophenol	10 U
2-chlorophenol	10 U	1,2,4-trichlorobenzene	10 U
1,3-dichlorobenzene	10 U	naphthalene	10 U
1,4-dichlorobenzene	10 U	4-chloroaniline	10 U
benzyl alcohol	10 U	hexachlorobutadiene	10 U
1,2-dichlorobenzene	10 U	4-chloro-3-methylphenol	10 U
2-methylphenol	10 U	2-methylnaphthalene	10 U
bis(2-chloroisopropyl)ether	10 U	hexachlorocyclopentadiene	10 U
4-methylphenol	10 U	2,4,6-trichlorophenol	10 U
n-nitroso-di-n-propylamine	10 U	2,4,5-trichlorophenol	50 U
hexachloroethane	10 U	2-chloronaphthalene	10 U
nitrobenzene	10 U	2-nitroaniline	50 U
isophorone	10 U	dimethyl phthalate	10 U
2-nitrophenol	10 U	acenaphthylene	10 U
2,4-dimethylphenol	10 U	2,6-dinitrotoluene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC010
Lab Sample ID: PP1608

Compound		Compound	
3-nitroaniline	50 U	anthracene	10 U
acenaphthene	10 U	di-n-butylphthalate	10 U
2,4-dinitrophenol	50 U	fluoranthene	10 U
4-nitrophenol	50 U	pyrene	10 U
dibenzofuran	10 U	butylbenzylphthalate	10 U
2,4-dinitrotoluene	10 U	3,3'-dichlorobenzidine	20 U
diethylphthalate	10 U	benzo(a)anthracene	10 U
4-chlorophenyl-phenylether	10 U	chrysene	10 U
fluorene	10 U	bis(2-ethylhexyl)phthalate	10 U
4-nitroaniline	50 U	di-n-octylphthalate	10 U
4,6-dinitro-2-methylphenol	50 U	benzo(b)fluoranthene	10 U
n-nitrosodiphenylamine[1]	10 U	benzo(k)fluoranthene	10 U
4-bromophenyl-phenylether	10 U	benzo(a)pyrene	10 U
hexachlorobenzene	10 U	indeno(1,2,3-cd)pyrene	10 U
pentachlorophenol	50 U	dibenzo(a,h)anthracene	10 U
phenanthrene	10 U	benzo(g,h,i)perylene	10 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - Detected as diphenylamine.

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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APPENDIX IX SEMIVOLATILE ANALYSIS (continued)

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC010
Lab Sample ID: PP1608

n-nitrosodimethylamine	10 U	m-dinitrobenzene	10 U
2-picoline	70 U	pentachlorobenzene	20 U
n-nitrosomethylethylamine	10 U	2-naphthylamine	170 U
methyl methanesulfonate	10 U	1-naphthylamine	120 U
n-nitrosodiethylamine	10 U	2,3,4,6-tetrachlorophenol	10 U
ethyl methanesulfonate	10 U	5-nitro-o-toluidine	20 U
aniline	50 U	diphenylamine	10 U
pentachloroethane	20 U	tetraethyl dithiopyropho(2)	10 U
3-methylphenol	10 U	sym-trinitrobenzene	10 U
n-nitrosopyrrolidine	10 U	phenacetin	10 U
acetophenone	10 U	diallate	10 U
n-nitrosomorpholine	10 U	4-aminobiphenyl	50 U
o-toluidine	10 U	pronamide	30 U
n-nitrosopiperidine	10 U	pentachloronitrobenzene	20 U
o,o,o-triethylphosphorot(1)	10 U	dinoseb	20 U
2,6-dichlorophenol	10 U	4-nitroquinoline-1-oxide	10 U
hexachloropropene	20 U	methapyrilene	40 U
a,a-dimethylphenethylamine	10 U	aramite	10 U
n-nitrosodi-n-butylamine	20 U	p-(dimethylamino)azobenzene	30 U
p-phenylenediamine	50 U	3,3'-dimethylbenzidine	80 U
safrole	10 U	2-acetylaminofluorene	10 U
1,2,4,5-tetrachlorobenzene	10 U	7,12-dimethylbenz(a)anth(3)	20 U
isosafrole	10 U	hexachlorophene	50 U
1,4-naphthoquinone	10 U	3-methylcholanthrene	30 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
J - Indicates an estimated value less than the detection limit.
1 - o,o,o-triethylphosphorothioate
2 - tetraethyl dithiopyrophosphate
3 - 7,12-dimethylbenz(a)anthracene

Date Extracted: 11/08/90
Date Analyzed: 11/14/90
Dilution Factor: 1

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WATER SURROGATE PERCENT RECOVERY SUMMARY

	SEMI-VOLATILE					
Sample No.	Nitro-Benzene-D5 (35-114%)*	2-Fluoro-Biphenyl (43-116%)*	Terphenyl-D14 (33-141%)*	Phenol-D5 (10-94%)*	2-Fluoro-Phenol (21-100%)*	2,4,6 Tribromo-Phenol (10-123%)*
APC01	91	78	88	25	43	72
APC02	91	83	106	28	51	83
LA03A	102	85	90	32	56	79
LA04.5C	94	79	93	34	56	76
MC010	100	82	92	29	45	77
MC04B	98	78	97	28	47	77
MC06B	94	81	92	28	49	71
MC07A	100	85	89	23	47	78
Method Blank 1	82	69	83	27	49	72
Method Blank 2	100	87	108	28	44	85

* - Values in parenthesis represent USEPA contract required QC limits.

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 1
Lab Sample ID: BLA1941

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/26/90
Dilution Factor: 1

This method blank applies to the following samples: MC010, MC06B and MC07A.

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC06B
Lab Sample ID: PP1606

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/26/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC07A
Lab Sample ID: PP1607

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/26/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in μg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC010
Lab Sample ID: PP1608

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/26/90
Dilution Factor: 1

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: Method Blank 2
Lab Sample ID: BLA1936

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/07/90
Date Analyzed: 11/26/90
Dilution Factor: 1

This method blank applies to the following samples: APC01, APC02, APC02 DL, LA03A, LA04.5C and MC04B.

DL = Dilution

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC01
Lab Sample ID: PP1470

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/07/90
Date Analyzed: 11/26/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: APC02
Lab Sample ID: PP1471

Compound		Compound	
α-BHC	0.25 U	methoxychlor	1.0 J
β-BHC	2.5 UD	chlordane	2.5 U
δ-BHC	0.25 U	toxaphene	5.0 U
γ-BHC (lindane)	0.25 U	Aroclor 1016	2.5 U
heptachlor	0.25 U	Aroclor 1221	2.5 U
aldrin	0.25 U	Aroclor 1232	2.5 U
heptachlor epoxide	0.25 U	Aroclor 1242	2.5 U
endosulfan I	0.25 U	Aroclor 1248	2.5 U
dieldrin	0.50 U	Aroclor 1254	5.0 U
4,4'-DDE	0.50 U	Aroclor 1260	5.0 U
endrin	0.51	endrin aldehyde	0.50 U
endosulfan II	0.50 U	isodrin	0.25 U
4,4'-DDD	0.37 J	kepone	0.50 U
endosulfan sulfate	0.50 U	chlorobenzilate	2.5 U
4,4'-DDT	0.18 J		

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
D - Compound analyzed at a secondary dilution factor.
J - Indicates an estimated value less than the detection limit.

Date Extracted: 11/07/90
Date Analyzed: 11/27/90
Dilution Factor: 5

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November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA03A
Lab Sample ID: PP1472

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/07/90
Date Analyzed: 11/27/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in µg/liter (ppb)

Sample Matrix: Water

Client Sample ID: LA04.5C
Lab Sample ID: PP1473

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/07/90
Date Analyzed: 11/26/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX ORGANOCHLORINE PESTICIDES

Results in μg/liter (ppb)

Sample Matrix: Water

Client Sample ID: MC04B
Lab Sample ID: PP1474

Compound			Compound		
α-BHC	0.050	U	methoxychlor	0.50	U
β-BHC	0.050	U	chlordane	0.50	U
δ-BHC	0.050	U	toxaphene	1.0	U
γ-BHC (lindane)	0.050	U	Aroclor 1016	0.50	U
heptachlor	0.050	U	Aroclor 1221	0.50	U
aldrin	0.050	U	Aroclor 1232	0.50	U
heptachlor epoxide	0.050	U	Aroclor 1242	0.50	U
endosulfan I	0.050	U	Aroclor 1248	0.50	U
dieldrin	0.10	U	Aroclor 1254	1.0	U
4,4'-DDE	0.10	U	Aroclor 1260	1.0	U
endrin	0.10	U	endrin aldehyde	0.10	U
endosulfan II	0.10	U	isodrin	0.050	U
4,4'-DDD	0.10	U	kepone	0.10	U
endosulfan sulfate	0.10	U	chlorobenzilate	0.50	U
4,4'-DDT	0.10	U			

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/07/90
Date Analyzed: 11/26/90
Dilution Factor: 1

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

WATER SURROGATE PERCENT RECOVERY SUMMARY

Sample No.	PESTICIDE Dibutylchlorendate (24-154%)*
Method Blank 1	121
Method Blank 2	121
APC01	50
APC02	121
APC02 DL	0 D
LA03A	75
LA04.5C	23 **
MC010	73
MC04B	87
MC06B	76
MC07A	60

* - Values in parenthesis represent USEPA advisory QC limits.
** - Values outside of contract required QC limits.
D - Surrogates diluted out.
DL - Dilution.

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX HERBICIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	Method Blank BLA1944
2,4-D	0.0002 U
silvex	0.0001 U
2,4,5-T	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/20/90

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX HERBICIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID: Lab Sample ID:	APC01 PP1470	APC02 PP1471	LA03A PP1472	LA04.5C PP1473
2,4-D	0.0002 U	0.0002 U	0.0002 U	0.0002 U
silvex	0.0001 U	0.0001 U	0.0001 U	0.0001 U
2,4,5-T	0.0001 U	0.0001 U	0.0001 U	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/20/90

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX HERBICIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	MC04B	MC06B	MC07A	MC010
Lab Sample ID:	PP1474	PP1606	PP1607	PP1608
2,4-D	0.0002 U	0.0002 U	0.0002 U	0.0002 U
silvex	0.0001 U	0.0001 U	0.0001 U	0.0001 U
2,4,5-T	0.0001 U	0.0001 U	0.0001 U	0.0001 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Extracted: 11/08/90
Date Analyzed: 11/20/90

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November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	Method Blank
Lab Sample ID:	PBWC3811
antimony	0.03 U
arsenic	0.04 U
barium	0.002 U
beryllium	0.001 U
cadmium	0.005 U
chromium	0.01 U
cobalt	0.02 U
copper	0.01 U
lead	0.03 U
mercury	NR
nickel	0.02 U
selenium	0.06 U
silver	0.005 U
thallium	0.04 U
tin	0.02 U
vanadium	0.01 U
zinc	0.017

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.
NR - Not required.

Date Digested: 11/20/90
Date Analyzed: 11/21/90 (ICP), 11/12/90 (CVAA)

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November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	APC01	APC02	LA03A	LA04.5C
Lab Sample ID:	PP1475	PP1476	PP1477	PP1478
antimony	0.03 U	0.03 U	0.03 U	0.03 U
arsenic	0.04 U	0.04 U	0.04 U	0.04 U
barium	0.97	5.6	0.18	0.095
beryllium	0.004	0.001 U	0.002	0.001 U
cadmium	0.005 U	0.83	0.005 U	0.005 U
chromium	0.03	1.1	0.02	0.01
cobalt	0.04	0.02 U	0.02 U	0.02 U
copper	0.12	0.03	0.03	0.03
lead	0.08	0.74	0.04	0.03 U
mercury	0.001 U	0.001 U	0.001 U	0.001 U
nickel	0.05	0.02 U	0.02 U	0.02 U
selenium	0.06 U	0.06 U	0.06 U	0.06 U
silver	0.005 U	1.4	0.005 U	0.005 U
thallium	0.04 U	0.04 U	0.04 U	0.04 U
tin	0.02 U	0.02 U	0.02 U	0.02 U
vanadium	0.07	0.01 U	0.01	0.01 U
zinc	0.20	0.054	0.054	0.052

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Digested: 11/20/90
Date Analyzed: 11/21/90 (ICP), 11/12/90 (CVAA)

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IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

APPENDIX IX METALS ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID:	MC04B	MC06B	MC07A	MC010
Lab Sample ID:	PP1479	PP1609	PP1610	PP1611
antimony	0.03 U	0.03 U	0.03 U	0.03 U
arsenic	0.04 U	0.04 U	0.04 U	0.04 U
barium	0.19	0.69	0.42	0.67
beryllium	0.001 U	0.004	0.003	0.004
cadmium	0.005 U	0.005 U	0.005 U	0.005 U
chromium	0.01 U	0.03	0.02	0.03
cobalt	0.02 U	0.02 U	0.02 U	0.02 U
copper	0.01	0.03	0.03	0.03
lead	0.03 U	0.07	0.05	0.07
mercury	0.001 U	0.001 U	0.001 U	0.001 U
nickel	0.02 U	0.02 U	0.03	0.02 U
selenium	0.06 U	0.06 U	0.06 U	0.06 U
silver	0.005 U	0.005 U	0.005 U	0.005 U
thallium	0.04 U	0.04 U	0.04 U	0.04 U
tin	0.02 U	0.02 U	0.02 U	0.02 U
vanadium	0.01 U	0.03	0.04	0.03
zinc	0.081	0.15	0.10	0.17

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Digested: 11/20/90
Date Analyzed: 11/21/90 (ICP), 11/12/90 (CVAA)

IT Corporation
November 30, 1990

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Client Project ID: LANL ER

Job Number: ITNA 47061

CYANIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID	Lab Sample ID	Result
Method Blank	P1737	0.01 U
APC01	PP1480	0.01 U
APC02	PP1481	0.33
LA03A	PP1482	0.01 U
LA04.5C	PP1483	0.01 U
MC04B	PP1484	0.01
MC06B	PP1612	0.01 U
MC07A	PP1613	0.01 U
MC010	PP1614	0.01 U

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 11/13/90

682 : 89

IT Corporation
November 30, 1990

Client Project ID: LANL ER

IT ANALYTICAL SERVICES
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN

Job Number: ITNA 47061

SULFIDE ANALYSIS

Results in mg/liter (ppm)

Sample Matrix: Water

Client Sample ID	Lab Sample ID	Result
Method Blank	P1719	0.2 U
APC01	PP1485	1.6
APC02	PP1486	0.2 U
LA03A	PP1487	2.8
LA04.5C	PP1488	2.2
MC04B	PP1489	2.0
MC06B	PP1615	1.0
MC07A	PP1616	1.6
MC010	PP1617	2.0

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

Date Analyzed: 11/08/90

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 12/11/90

IT Analytical Services
5815 Middlebrook Pike
Knoxville, TN 37921
Mary Tyler

Work Order: TO-11-076 P.O. Number: 486000.02

This is the Certificate of Analysis for the following samples:

Client Work ID: 301215.07.02 Los Alamos, CORRECTED REPORT
Date Received: 11/07/90
Number of Samples: 6
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	TO-11-076-01	PP1473 LA04.5C
3	TO-11-076-02	PP1470 APC01
4	TO-11-076-03	PP1474 MC04B
5	TO-11-076-04	PP1471 APC02
6	TO-11-076-05	PP1606 MC06B
7	TO-11-076-06	PP1608 MC010

Reviewed and Approved:

David A. Pichette
Project Manager

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1473 LA04.5C**
SAMPLE DATE: **11/02/90**
LAB SAMPLE ID: **T011076-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1470 APC01**
SAMPLE DATE: **11/02/90**
LAB SAMPLE ID: **T011076-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: T0-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1474 MC04B**
SAMPLE DATE: **11/02/90**
LAB SAMPLE ID: **T011076-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1471 APC02**
SAMPLE DATE: **11/02/90**
LAB SAMPLE ID: **TO11076-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1606 MC06B**
SAMPLE DATE: **11/01/90**
LAB SAMPLE ID: **T011076-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: T0-11-076

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1608 MC010**
SAMPLE DATE: **11/01/90**
LAB SAMPLE ID: **T011076-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/20/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Trithylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-076

TEST CODE **8140** TEST NAME **EPA 8140**

The method of analysis for organophosphorus pesticides is taken from E.P.A. Methods 614, 622 and 8140. The samples are extracted with solvent and concentrated. Final detection is by gas chromatography using a flameless alkali salt nitrogren-phosphorus detector.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 12/11/90

IT Analytical Services
5815 Middlebrook Pike
Knoxville, TN 37921
Mary Tyler

Work Order: TO-11-103 P.O. Number: 486000.02

This is the Certificate of Analysis for the following samples:

Client Work ID: 301215.07.02 Los Alamos, CORRECTED REPORT
Date Received: 11/09/90
Number of Samples: 2
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	TO-11-103-01	PP1472 LA03A
3	TO-11-103-02	PP1607 MC07A

Reviewed and Approved:

David A. Pichette
Project Manager

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: T0-11-103

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1472 LA03A**
SAMPLE DATE: **11/02/90**
LAB SAMPLE ID: **T011103-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/21/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: T0-11-103

TEST NAME: **EPA 8140**

SAMPLE ID: **PP1607 MC07A**
SAMPLE DATE: **11/01/90**
LAB SAMPLE ID: **T011103-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **11/09/90**
ANALYSIS DATE: **11/21/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	1.	None
Disulfoton	0.5	None
Famphur	1.5	None
Parathion ethyl	1.	None
Parathion methyl	1.	None
Phorate	1.	None
Sulfotepp	0.5	None
Thionazin	0.5	None
0,0,0-Triethylphosphorothioate	0.25	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services, CORRECTED REPORT
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-11-103

TEST CODE **8140** TEST NAME **EPA 8140**

The method of analysis for organophosphorus pesticides is taken from E.P.A. Methods 614, 622 and 8140. The samples are extracted with solvent and concentrated. Final detection is by gas chromatography using a flameless alkali salt nitrogren-phosphorus detector.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 12/11/90

IT Analytical Services
5815 Middlebrook Pike
Knoxville, TN 37921
Mary Tyler

Work Order: TO-12-018 P.O. Number: 486000.02

This is the Certificate of Analysis for the following samples:

Client Work ID: 301215.07.02 Los Alamos
Date Received: 12/04/90
Number of Samples: 1
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	TO-12-018-01	PP3335 MC07A

Reviewed and Approved:

David A. Pichette
Project Manager

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-12-018

TEST NAME: **EPA 614/8140**

SAMPLE ID: **PP3335 MC07A**
SAMPLE DATE: **11/30/90**
LAB SAMPLE ID: **T012018-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool**
EXTRACTION DATE: **12/05/90**
ANALYSIS DATE: **12/07/90**

RESULTS in Micrograms per Liter

PARAMETER	DETECTION LIMIT	DETECTED
Dimethoate	2.	None
Disulfoton	1.	None
Famphur	3.	None
Parathion ethyl	2.	None
Parathion methyl	2.	None
Phorate	1.	None
Sulfotepp	1.	None
Thionzain	1.	None
0,0,0-Triethylphosphorothioate	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: IT Analytical Services
Date: 12/11/90
Client Work ID: 301215.07.02 Los Alamos

Work Order: TO-12-018

TEST CODE 614 TEST NAME EPA 614/8140

The method of analysis for organophosphorus pesticides is taken from E.P.A. Methods 614 and 8140. The samples are extracted with solvent and concentrated. Final detection is by gas chromatography using a flameless alkali salt nitrogen-phosphorus detector.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Kelly Bitner
IT Corporation
5301 Central Avenue N.E.
Albuquerque, NM 87108

November 30, 1990

TDL PROJECT NUMBER: 482833

This is the Certificate of Analysis for the following samples:

Client Project ID:	301215.07.02 **(Los Alamos National Laboratory)**
Date Received by Lab:	November 7, 1990
Number of Samples:	Eight (8)
Sample Type:	Water

I. Introduction/Case Narrative

Eight (8) water samples were received November 7, 1990, for the analysis of Appendix IX dioxins and furans. This includes isomer specific 2,3,7,8-TCDD and total tetra through hexa (Cl_4-Cl_6) dioxin and furan homologs (See Appendix A, Cross Reference List and Appendix C, Chain-of-Custody and Request for Analysis records). The samples and blank were spiked with an internal standard mixture containing 50 ng each of ^{13}C-2,3,7,8-TCDD, ^{13}C-PeCDD, ^{13}C-PeCDF, ^{13}C-HxCDD and ^{13}C-HxCDF. The samples and blank were extracted and cleaned up using a modified version of the EPA reference method described in "RCRA SW-846, Method 8280," revised September, 1986. Extracts were analyzed by GC/MS operating in the selected ion monitoring mode for enhanced sensitivity.

The samples were labeled with the following:

MC07A	APC01
MC06B	LA03A
MC010	MC04B
LA04,5C	APC02

Reviewed and Approved:

Duane K. Root
Analytical Operations Manager
qhc-s\NM311

II. Analytical Results/Methodology

SAMPLE PREPARATION

Approximately 1000 ml of each sample and 1000 ml distilled water (for the blank) were transferred into individual separatory funnels. The samples and blank were spiked with the internal standard mixture, and then triple-extracted with CH_2Cl_2. The resulting extracts were filtered into a KD flask and the volume reduced to approximately 1 ml.

SAMPLE CLEANUP

The samples and blank were cleaned up using dual column chromatography consisting of an acid-modified silica gel column followed by a neutral alumina column to aid in the removal of chemical interferences. Detailed descriptions of these cleanup techniques can be found in Option A of the U.S. Environmental Protection Agency, Region VII Protocol for "The Determination Of 2,3,7,8-TCDD In Soil And Sediment", revised September, 1983. Final extracts were concentrated to near dryness and raised to 50 µl with 25 ng ^{13}C-1,2,3,4-TCDD and 25 ng ^{13}C-1,2,3,7,8,9-HxCDD which were used as recovery standards.

GC/MS ANALYSIS

Isomer Specific TCDD - The sample extracts were analyzed using HRGC/LRMS scanning in the selected ion monitoring mode for enhanced sensitivity. The column used for this isomer specific analysis was a 60 m SP-2331 fused silica capillary column. Before acquisition of the sample data, a seven isomer performance mixture containing the six most closely eluting TCDD isomers was analyzed.

A five-point calibration plot was analyzed in triplicate. The mean response factors obtained from this fifteen-point calibration were used for all subsequent calculations. The shift standard, analyzed on the same day as the sample, produced a response factor within 10% of the fifteen-point curve for TCDD.

Total Dioxin and Furan - The samples and blank were analyzed for total dioxin and furan homologs from Cl_4-Cl_6. The analytical approach employed by ITAS for the determination of total dioxins and furans is considered semi-quantitative due to the lack of availability of all dioxin and furan isomer standards. The standard analyzed each shift consisted of:

II. Analytical Results/Methodology (continued)

GC/MS ANALYSIS (continued)

Dioxins	**Dibenzofurans**
^{13}C-2,3,7,8-TCDD	^{13}C-2,3,7,8-TCDF
^{13}C-1,2,3,4-TCDD	^{13}C-1,2,3,7,8-PeCDF
^{13}C-1,2,3,7,8-PeCDD	^{13}C-1,2,3,4,7,8-HxCDF
^{13}C-1,2,3,6,7,8-HxCDD	2,3,7,8-TCDF
^{13}C-1,2,3,7,8,9-HxCDD	1,2,3,7,8-PeCDF
^{13}C-OCDD	2,3,4,7,8-PeCDF
2,3,7,8-TCDD	1,2,3,4,7,8-HxCDF
1,2,3,7,8-PeCDD	1,2,3,6,7,8-HxCDF
1,2,3,4,7,8-HxCDD	2,3,4,6,7,8-HxCDF
1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDF
1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDF
1,2,3,4,6,7,8-HpCDD	1,2,3,4,7,8,9-HpCDF
OCDD	OCDF

Response factors were calculated for each compound in the standard relative to its ^{13}C labeled homolog; the same response was assumed applicable to all isomers in each homologous group. A five-point calibration plot was analyzed in triplicate. The mean response factors obtained from this fifteen-point calibration were used for all subsequent calculations. The shift standard, analyzed on the same day as the samples, produced a response factor within 30% of the multipoint.

The extracts were analyzed using HRGC/LRMS scanning in the selected ion monitoring mode for enhanced sensitivity. The column used for the analysis was a 60 m DB-5 type fused silica capillary column.

GC/MS RESULTS

Isomer Specific TCDD - The results for the isomer specific analysis, shown in Appendix B, are reported in ppt (ng/L). A detection limit is calculated from 2.5 times the signal in the area of the elution of ^{13}C-TCDD whenever a sample contains no detectable 2,3,7,8-TCDD.

Totals - The results for the totals analysis, shown in Appendix B, are reported in ppt (ng/L) with the total amount of each homologous group calculated. When more than one isomer in a homologous group of dioxin or furan is found, all of the isomers are added together to produce a total homolog result. Detection limits are calculated from 2.5 times signal to noise when a "Not Detected" (ND) is reported. The detection limits are listed in parenthesis.

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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III. Quality Control

Routine laboratory QA/QC was followed. Recoveries for the internal standards for each sample are presented with the sample analysis data.

APPENDIX A

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

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CROSS REFERENCE LIST

TDL SAMPLE NO.	ITAS SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
BB3058	PP1607	MC07A	Water
BB3059	PP1606	MC06B	Water
BB3060	PP1608	MC010	Water
BB3061	PP1473	LA04,5C	Water
BB3062	PP1470	APC01	Water
BB3063	PP1472	LA03A	Water
BB3064	PP1474	MC04B	Water
BB3065	PP1471	APC02	Water

APPENDIX B

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: MC07A (Water)
Sample Date: November 1, 1990
TDL Sample ID: BB3058
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(0.99)	^{13}C-2,3,7,8-TCDD	82
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.15)	^{13}C-2,3,7,8-TCDD	75
Total PeCDD	ND(0.84)	^{13}C-1,2,3,7,8-PeCDD	85
Total HxCDD	ND(0.40)	^{13}C-1,2,3,6,7,8-HxCDD	90
Furans			
Total TCDF	ND(0.13)	^{13}C-2,3,7,8-TCDF	72
Total PeCDF	ND(0.14)	^{13}C-1,2,3,7,8-PeCDF	85
Total HxCDF	ND(0.22)	^{13}C-1,2,3,4,7,8-HxCDF	96

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: MC06B (Water)
Sample Date: November 1, 1990
TDL Sample ID: BB3059
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(1.8)	^{13}C-2,3,7,8-TCDD	80
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.26)	^{13}C-2,3,7,8-TCDD	75
Total PeCDD	ND(0.88)	^{13}C-1,2,3,7,8-PeCDD	69
Total HxCDD	ND(0.95)	^{13}C-1,2,3,6,7,8-HxCDD	78
Furans			
Total TCDF	ND(0.13)	^{13}C-2,3,7,8-TCDF	73
Total PeCDF	ND(0.28)	^{13}C-1,2,3,7,8-PeCDF	74
Total HxCDF	ND(0.32)	^{13}C-1,2,3,4,7,8-HxCDF	88

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
304 DIRECTORS DRIVE
KNOXVILLE, TENNESSEE

Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: MC010 (Water)
Sample Date: November 1, 1990
TDL Sample ID: BB3060
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(0.62)	^{13}C-2,3,7,8-TCDD	101
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.11)	^{13}C-2,3,7,8-TCDD	90
Total PeCDD	ND(0.59)	^{13}C-1,2,3,7,8-PeCDD	93
Total HxCDD	ND(0.48)	^{13}C-1,2,3,6,7,8-HxCDD	96
Furans			
Total TCDF	ND(0.098)	^{13}C-2,3,7,8-TCDF	94
Total PeCDF	ND(0.22)	^{13}C-1,2,3,7,8-PeCDF	90
Total HxCDF	ND(0.18)	^{13}C-1,2,3,4,7,8-HxCDF	105

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: LA04,5C (Water)
Sample Date: November 2, 1990
TDL Sample ID: BB3061
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(1.4)	^{13}C-2,3,7,8-TCDD	92
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.20)	^{13}C-2,3,7,8-TCDD	80
Total PeCDD	ND(0.65)	^{13}C-1,2,3,7,8-PeCDD	86
Total HxCDD	ND(0.92)	^{13}C-1,2,3,6,7,8-HxCDD	91
Furans			
Total TCDF	ND(0.11)	^{13}C-2,3,7,8-TCDF	81
Total PeCDF	ND(0.18)	^{13}C-1,2,3,7,8-PeCDF	85
Total HxCDF	ND(0.22)	^{13}C-1,2,3,4,7,8-HxCDF	105

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: APC01 (Water)
Sample Date: November 2, 1990
TDL Sample ID: BB3062
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(1.6)	^{13}C-2,3,7,8-TCDD	75
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.23)	^{13}C-2,3,7,8-TCDD	67
Total PeCDD	ND(0.60)	^{13}C-1,2,3,7,8-PeCDD	68
Total HxCDD	ND(0.49)	^{13}C-1,2,3,6,7,8-HxCDD	73
Furans			
Total TCDF	ND(0.14)	^{13}C-2,3,7,8-TCDF	65
Total PeCDF	ND(0.15)	^{13}C-1,2,3,7,8-PeCDF	72
Total HxCDF	ND(0.23)	^{13}C-1,2,3,4,7,8-HxCDF	84

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: LA03A (Water)
Sample Date: November 2, 1990
TDL Sample ID: BB3063
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(1.3)	^{13}C-2,3,7,8-TCDD	96
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.13)	^{13}C-2,3,7,8-TCDD	87
Total PeCDD	ND(0.71)	^{13}C-1,2,3,7,8-PeCDD	94
Total HxCDD	ND(0.51)	^{13}C-1,2,3,6,7,8-HxCDD	93
Furans			
Total TCDF	ND(0.11)	^{13}C-2,3,7,8-TCDF	93
Total PeCDF	ND(0.13)	^{13}C-1,2,3,7,8-PeCDF	90
Total HxCDF	ND(0.24)	^{13}C-1,2,3,4,7,8-HxCDF	99

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
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KNOXVILLE, TENNESSEE

Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: MC04B (Water)
Sample Date: November 2, 1990
TDL Sample ID: BB3064
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(3.0)	^{13}C-2,3,7,8-TCDD	58
Totals Analysis Date: November 27, 1990			
Dioxins			
Total TCDD	ND(0.44)	^{13}C-2,3,7,8-TCDD	52
Total PeCDD	ND(1.1)	^{13}C-1,2,3,7,8-PeCDD	54
Total HxCDD	ND(1.1)	^{13}C-1,2,3,6,7,8-HxCDD	54
Furans			
Total TCDF	ND(0.17)	^{13}C-2,3,7,8-TCDF	56
Total PeCDF	ND(0.17)	^{13}C-1,2,3,7,8-PeCDF	51
Total HxCDF	ND(0.27)	^{13}C-1,2,3,4,7,8-HxCDF	56

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
304 DIRECTORS DRIVE
KNOXVILLE, TENNESSEE

Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: APC02 (Water)
Sample Date: November 1, 1990
TDL Sample ID: BB3065
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 26, 1990			
2,3,7,8-TCDD	ND(1.8)	^{13}C-2,3,7,8-TCDD	94
Totals Analysis Date: November 27, 1990			
Dioxins			
Total TCDD	ND(0.26)	^{13}C-2,3,7,8-TCDD	82
Total PeCDD	ND(0.51)	^{13}C-1,2,3,7,8-PeCDD	92
Total HxCDD	ND(0.35)	^{13}C-1,2,3,6,7,8-HxCDD	90
Furans			
Total TCDF	ND(0.11)	^{13}C-2,3,7,8-TCDF	90
Total PeCDF	ND(0.095)	^{13}C-1,2,3,7,8-PeCDF	86
Total HxCDF	ND(0.15)	^{13}C-1,2,3,4,7,8-HxCDF	92

Kelly Bitner
Los Alamos National Laboratory
Date: November 30, 1990
Client Project ID: 301215.07.02 TDL Project No.: 482833

IT ANALYTICAL SERVICES
304 DIRECTORS DRIVE
KNOXVILLE, TENNESSEE

Dioxin/Furan Analysis - Modified Method 8280

Client Sample ID: Method Blank (Water)
Sample Date: NA
TDL Sample ID: BLK1896
Extraction Date: November 8, 1990

Analyte	Conc. (ng/L)	Internal Standard	% Recovery
Isomer Specific Analysis Date: November 19, 1990			
2,3,7,8-TCDD	ND(1.3)	^{13}C-2,3,7,8-TCDD	84
Totals Analysis Date: November 26, 1990			
Dioxins			
Total TCDD	ND(0.53)	^{13}C-2,3,7,8-TCDD	89
Total PeCDD	ND(0.84)	^{13}C-1,2,3,7,8-PeCDD	92
Total HxCDD	ND(1.0)	^{13}C-1,2,3,6,7,8-HxCDD	94
Furans			
Total TCDF	ND(0.12)	^{13}C-2,3,7,8-TCDF	91
Total PeCDF	ND(0.14)	^{13}C-1,2,3,7,8-PeCDF	90
Total HxCDF	ND(0.25)	^{13}C-1,2,3,4,7,8-HxCDF	101

APPENDIX C

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 231488

C/C Control No. 195496

PROJECT NAME/NUMBER ITNA 47061

LAB DESTINATION IT/TDL

SAMPLE TEAM MEMBERS

CARRIER/WAYBILL NO.

	Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
1062	PP1470	APC01	11-2-90	water	1 liter	Cooler temp at 6°C.	
1065	PP1471	APC02	↓	↓	↓	Samples OK. MLW 11-6-90	
1063	PP1472	LA03A					
1061	PP1473	LA04.5C					
1064	PP1474	MC04B					
1059	PP1606	MC06B	11-1-90				
1058	PP1607	MC07A					
1060	PP1608	MC010					

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Samples shipped from IT/MWL on 11/6/90 sat 11-7-90
   Received By: Mark Whipple, TDL, 11-6-90 1400
2. Relinquished By:
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

482833

T1-C

WHITE To accompany samples
YELLOW Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 231488
C/C Control No. 195496

PROJECT NAME: Los Alamos
PROJECT NUMBER: ITNA 47061
PROFIT CENTER NUMBER: 4620
PROJECT MANAGER:
BILL TO: ITAS

PURCHASE ORDER NO. 486000.09

DATE SAMPLES SHIPPED: 11-6-90
LAB DESTINATION: IT/TDL
LABORATORY CONTACT: Nancy Conrad
SEND LAB REPORT TO: IT Corp. Middlebrook Pike

DATE REPORT REQUIRED: normal
PROJECT CONTACT: Mary Tyler
PROJECT CONTACT PHONE NO. 588-6401

	Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
33062	PP1470	Water	2l		App. IX Dioxins + Furans	
33065	PP1471	↓	↓			
33063	PP1472					
33061	PP1473					
33064	PP1474					
33059	PP1606					
33058	PP1607					
33060	PP1608					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab ✓ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by Mark W [illegible], TDL Date/Time 11-6-90 1400

482833

126A 10 85

WHITE Original to accompany samples