

Project C7869.41

November 2, 1998

**CHEMICAL QUALITY ASSURANCE REPORT FOR
PLUM BROOK ORDNANCE WORKS
GROUNDWATER INVESTIGATION
SAMPLE DELIVERY GROUP PB025**

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Section 1.0: Introduction and Executive Summary

This Chemical Quality Assurance Report (CQAR) has been prepared for quality control and quality assurance samples collected during groundwater investigation at the Plum Brook Ordnance Works in Sandusky, Ohio. This report has been prepared in accordance with U.S. Army Corps of Engineers policy EM 200-1-6, **Chemical Quality Assurance for HTRW Projects**, dated 10 October 1997.

The samples included in this report consist of pairs of field duplicates and field split samples that were analyzed by Quanterra, Inc., Knoxville, Tennessee and Curtis & Tompkins, Ltd., Berkeley, California. Quanterra, Inc. served as the primary laboratory for this project, while Curtis & Tompkins served as the quality assurance laboratory.

The sample pairs addressed in this report are identified in Table 1. In this table, samples analyzed by Quanterra (the primary laboratory) are identified as QC samples, while those analyzed by Curtis & Tompkins are identified as QA samples. Table 2 identifies the analytical parameters for each sample.

Table 1. Sample Delivery Group PB011 Samples in Chemical Quality Assurance Report

Sample Pair	Sample Type		Sample Collection	
	QC	QA	Date	Time
5696	X		5/20/98	8:45 A.M.
5697		X	5/20/98	8:45 A.M.
9018	X		5/20/98	9:00 A.M.
9019		X	5/20/98	9:00 A.M.

Table 2. Sample Analytical Parameters

Analytical Parameter	SW846 Method*	QC and QA Sample Set	
		5696	9018
		5697	9019
Volatile Organic Compounds	8260A	X	X
Semivolatile Organic Compounds	8270B	X	
Polychlorinated Biphenyls	8081	X	
Dissolved Metals	6010A/ 7470A	X	
Total Metals	6010A/ 7470A	X	
Nitroaromatics and Nitramine	8330	X	

Section 2.0: Laboratory Quality Control Data Evaluation

2.1 PRIMARY LABORATORY

This section focuses on QC data generated by Quanterra, Inc., the primary laboratory for this effort. All samples were analyzed by Quanterra within recommended holding times.

All samples were received by Quanterra intact, with proper chain-of-custody documentation present and custody seals intact. Samples were received at a temperature of 2°C.

2.1.1 Volatile Organic Analyses

Samples 5696 and 9018 were analyzed for volatile organic compounds. A review of QC data for these samples revealed the following.

- Quanterra conducted these analyses with new Archon autosampler and GC/MS instrumentation. The laboratory used historical surrogate recovery limits developed for previously-used instrumentation for all samples and QA/QC analyses, apparently because instrument-specific acceptance limits had not yet been developed. Quanterra also supplied default control limits, and stated that these default limits would be used until sufficient data was generated with the new instrumentation to develop new control limits. It is likely that the to-be-developed control limits will be very close to the historical and default limits; however, the use of historical or control limits may impact the defensibility of the volatiles data.
- Surrogate recoveries for all method blanks, laboratory control samples, matrix spike / matrix spike duplicates (MS/MSD), and samples were within historical recovery limits.
- Analyte recoveries and relative percent differences (RPDs) were within QC limits for all MS/MSD and laboratory control samples.
- The method blank associated with these samples did not contain detectable concentrations of contaminants.

2.1.2 Semivolatile Organic Compounds

Sample 5696 was analyzed for semivolatile organic compounds. Review of QC data for these analyses revealed the following.

- Surrogate spike recoveries for all method blanks, laboratory control samples, matrix spike / matrix spike duplicates (MS/MSD) were within control limits. Surrogate recovery in sample 5696 was outside of control limits, and was attributed by the laboratory to obvious matrix interferences. Because of these interferences, the analysis was not repeated. Several analytes were detected above the calibration range of the instrument during the initial analysis. These samples were not diluted and reanalyzed because of the matrix interferences and concern for instrument damage.
- All MS/MSD and LCS/LCSD analyte recoveries and relative percent differences (RPDs) were within control limits.
- The method blank associated with this analysis was free of contamination.

2.1.3 Polychlorinated Biphenyls

Sample 5696 was analyzed for PCBs, with the following QC data generated during this analysis.

- Surrogate spike recoveries for all method blank, laboratory control samples, and LCS duplicates were within recovery limits. However, apparent matrix interferences in the sample required dilution and reanalysis; surrogates were diluted out of the detectable range.
- Analyte recoveries and relative percent differences (RPDs) were within QC limits for all MS/MSD and laboratory control samples.
- The method blank associated with this analysis was free of contamination.

2.1.4 Metals

Sample 5696 was analyzed for total metals and dissolved metals. The following QC data was generated with these analyses.

- All MS/MSD recoveries and RPDs for the analytical batch were within limits, with the exception of calcium and sodium (in the dissolved metals MS/MSD sample) and aluminum, thallium, copper, iron, and sodium in the total metals MS/MSD sample. However, laboratory control sample recoveries and RPDs were within limits, indicating that the analyses were in control and that the MS/MSD recoveries and RPDs were likely the result of matrix interferences.

- Method / prep blank samples associated with the total and dissolved metals analyses did not contain detectable concentrations of contaminants.

2.1.5 Nitroaromatics and Nitramines

Sample 5696 was analyzed for nitroaromatics and nitramines. The following QC data was generated with these analyses.

- Surrogate spike recoveries for all method blanks, laboratory control samples, and matrix spike / matrix spike duplicates (MS/MSD) were within recovery limits.
- Apparent matrix interferences required dilution and reanalysis of sample 5696, diluting surrogates out of the detectable range.
- Analyte recoveries and relative percent differences (RPDs) were within QC limits for all MS/MSD and laboratory control samples.
- The method blank associated with this sample did not contain detectable concentrations of contaminants.

2.2 QA LABORATORY

Sample 5697 was received intact by Curtis & Tompkins, the quality assurance laboratory for this project. Chain-of-custody documentation was present and custody seals intact. Sample temperature was 3.5°C. The sample submitted for volatile organic compounds was received at a pH of 4, above the pH of less than 2 Standard Units required by the analytical method.

2.2.1 Volatile Organic Analyses

A review of QC data for samples 5697 and 9019 revealed the following.

- Surrogate spike recoveries for all method blanks, laboratory control samples, blank spike / blank spike duplicates (BS/BSD), and samples were within recovery limits.
- Analyte recoveries and relative percent differences (RPDs) were within QC limits for all BS/BSD samples.
- All method blanks were free of contamination.

2.2.2 Semivolatile Organic Compounds

Sample 5697 was analyzed for semivolatile organic compounds. Review of QC data for these analyses revealed the following.

- Surrogate spike recoveries for all method blanks and blank spike / blank spike duplicates (BS/BSD) were within recovery limits.
- Sample 5697 required dilution and reanalysis due to matrix interference. The surrogates were diluted out of the detectable range.
- BS / BSD analyte recoveries and RPDs were within limits for all compounds.
- Percent difference values for several compounds in a continuing calibration verification exceeded limits. However, none of the compounds outside of control limits in the continuing calibration verification were detected in sample 5452; therefore, there is no apparent effect on the quality of analytical results.
- All method blanks were free of contamination.

2.2.3 Polychlorinated Biphenyls

- Surrogate spike recoveries for the method blank and blank spike / blank spike duplicate (BS/BSD) samples were within control limits. Recovery of one surrogate in sample exceeded upper recovery limits.
- Analyte recoveries and relative percent differences (RPDs) were within QC limits for all BS/BMSD samples.
- All method blanks were free of contamination.

2.2.4 Metals

Sample 5697 was analyzed for total metals and dissolved metals. The following QC data was generated with these analyses.

- BS/BSD recoveries and RPDs were within limits.
- Sample duplicate recoveries were within control limits. All duplicate RPDs were within control limits with the exception of thallium.
- Several sample spike recoveries were outside of control limits, but were deemed as not meaningful by the laboratory because the sample concentrations were more than four times the spike concentration.
- Method / prep blank samples were free of contamination.

2.2.5 Nitroaromatics and Nitramines

Sample 5697 was analyzed for nitroaromatics and nitramines by Quanterra, West Sacramento, California under contract from Curtis & Tompkins. The following QC data

was generated with these analyses. The sample was received at Quanterra after expiration of the holding time specified by the analytical method.

- Surrogate spike recoveries for all method blank, laboratory control, laboratory control sample duplicates were within recovery limits. Surrogates in sample 5697 were diluted out of the detectable range when the sample required dilution and reanalysis.
- Analyte recoveries and RPDs were within control limits for all laboratory control samples and laboratory control sample duplicates.
- The method blank associated with this analysis did not contain detectable concentrations of contaminants.

Section 3.0: Primary and QA Laboratory Sample Data Comparison

The following sections provide a comparison between sample data generated by Quanterra, Inc. and Curtis & Tompkins. The definitions of agreement, minor disagreement, and major disagreement used in this discussion are those presented in Table 4-1 (Criteria for Comparing QC and QA Sample Data) of U.S. Army Corps of Engineers policy EM-200-1-6, **Chemical Quality Assurance for HTRW Projects**.

3.1 VOLATILE ORGANIC COMPOUNDS

Results for sample pairs 5696 / 5697 and 9018 / 9019 were in agreement. Several compounds were reported at estimated concentrations below the reporting limit by Quanterra.

3.2 SEMIVOLATILE ORGANIC COMPOUNDS

Results for sample set 5696 and 5697 were in agreement. Quanterra reported several estimated concentrations, and one semivolatile detection, at reporting limits well below those utilized by Curtis & Tompkins.

3.3 POLYCHLORINATED BIPHENYLS

Results for sample set 5696 and 5697 were in agreement. No PCBs were detected in any of these samples.

3.4 TOTAL METALS

Results for samples 5696 and 5697 were in agreement for all parameters with the exception of aluminum and iron. Results for these analytes were in major disagreement.

3.5 DISSOLVED METALS

Results for samples 5696 and 5697 were in agreement for all parameters with the exception of magnesium, manganese, and nickel. Results were in disagreement for these parameters.

3.6 NITROAROMATICS AND NITRAMINES

Results for samples 5696 and 5697 were in agreement for all parameters. Each laboratory reported agreeing results for 1,3-Dinitrobenzene, 2,4-Dinitrotoluene, and 1,3,5-Trinitrobenzene.

Appendix 1

Data Comparison Tables

Volatile Organic Compounds

QC Sample No. 5696	QA Sample No. 5697
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 5/30/98	Date Extracted 6/02/98
Date Analyzed 5/30/98	Date Analyzed 6/02/98
Method No. SW846-8260A	Method No. SW846-8260A
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Chloromethane	ND	ND
Bromomethane	ND	ND
Vinyl chloride	ND	ND
Chloroethane	ND	ND
Methylene chloride	ND	ND
Acetone	ND	ND
Carbon disulfide	ND	ND
1,1-Dichloroethene	ND	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethene (total)	ND	ND
Chloroform	ND	ND
1,2-Dichloroethane	ND	ND
2-Butanone	ND	ND
1,1,1-Trichloroethane	ND	ND
Carbon tetrachloride	ND	ND
Bromodichloromethane	ND	ND
1,2-Dichloropropane	ND	ND
cis-1,3-Dichloropropene	ND	ND
Trichloroethene	ND	ND
Dibromochloromethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Benzene	ND	ND
trans-1,3-Dichloropropene	ND	ND
Bromoform	ND	ND
4-Methyl-2-pentanone	ND	ND
2-Hexanone	ND	ND
Tetrachloroethene	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
Toluene	0.15J	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
Styrene	ND	ND
Xylenes (total)	ND	ND

J – estimated concentration below reporting limit.

Volatile Organic Compounds

QC Sample No. 9018	QA Sample No. 9019
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 5/30/98	Date Extracted 5/30/98
Date Analyzed 5/30/98	Date Analyzed 5/30/98
Method No. SW846-8260A	Method No. SW846-8260A
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Chloromethane	ND	ND
Bromomethane	ND	ND
Vinyl chloride	ND	ND
Chloroethane	ND	ND
Methylene chloride	ND	ND
Acetone	2.4 J	ND
Carbon disulfide	ND	ND
1,1-Dichloroethene	ND	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethene (total)	ND	ND
Chloroform	0.19 J	ND
1,2-Dichloroethane	ND	ND
2-Butanone	ND	ND
1,1,1-Trichloroethane	ND	ND
Carbon Tetrachloride	ND	ND
Bromodichloromethane	ND	ND
1,2-Dichloropropane	ND	ND
Cis-1,3-Dichloropropene	ND	ND
Trichloroethene	ND	ND
Dibromochloromethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Benzene	ND	ND
Trans-1,3-Dichloropropene	ND	ND
Bromoform	ND	ND
4-Methyl-2-Pentanone	ND	ND
2-Hexanone	ND	ND
Tetrachloroethene	ND	ND
1,1,2,2,-Tetrachloroethane	ND	ND
Toluene	0.13 J	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
Styrene	ND	ND
Xylenes (total)	ND	ND

J – estimated concentration below reporting limit.

Semivolatile Organic Compounds

QC Sample No. 5696	QA Sample No. 5697
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 5/27/98	Date Extracted 5/26/98
Date Analyzed 6/08/98	Date Analyzed 6/03/98
Method No. SW846-8270A	Method No. SW846-8270A
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Phenol	ND	ND
bis (2-Chloroethyl) ether	ND	ND
2-Chlorophenol	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
2-Methylphenol	ND	ND
2-2'-oxybis (1-Chloropopane)	ND	ND
4-Methylphenol	ND	ND
N-Nitrosodi-n-propylamine	ND	ND
Hexachloroethane	ND	ND
Nitrobenzene	12	ND
Isophorone	ND	ND
2-Nitrophenol	5.9 J	ND
2,4-Dimethylphenol	ND	ND
bis (2-Chloroethoxy) methane	ND	ND
2,4-Dichlorophenol	ND	ND
1,2,4-Trichlorobenzene	ND	ND
Naphthalene	ND	ND
4-Chloroaniline	ND	ND
Hexachlorobutadiene	ND	ND
4-Chloro-3-methylphenol	ND	ND
2-Methylnaphthalene	ND	ND
Hexachlorocyclopentadiene	ND	ND
2,4,6-Trichlorophenol	ND	ND
2,4,5-Trichlorophenol	ND	ND
2-Chloronaphthalene	ND	ND
2-Nitroaniline	ND	ND
Dimethylphthalate	ND	ND
Acenaphthylene	ND	ND
2,6-Dinitrotoluene	ND	ND
3-Nitroaniline	ND	ND
Acenaphthene	ND	ND
2,4-Dinitrophenol	ND	ND
4-Nitrophenol	11 J	ND
Dibenzofuran	6.5 J	ND

2,4-Dinitrotoluene	1800 E	1400
Diethylphthalate	ND	ND
4-Chlorophenyl-phenylether	ND	ND
Fluorene	28	ND
4- Nitroaniline	ND	ND
4,6-Dinitro-2-methylphenol	11000 E	ND
N-Nitrosodiphenylamine	ND	ND
4-Bromophenyl-phenylether	ND	ND
Hexachlorobenzene	ND	ND
Pentachlorophenol	ND	ND
Phenanthrene	ND	ND
Anthracene	ND	ND
Carbazole	ND	ND
Di-n-butylphthalate	ND	ND
Fluoranthene	ND	ND
Pyrene	ND	ND
Butylbenzylphthalate	ND	ND
3,3'-Dichlorobenzidine	ND	ND
Benzo(a)anthracene	ND	ND
Chrysene	ND	ND
bis(2-Ehtylhexyl)phthalate	ND	ND
Di-n-octylphthalate	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Benzo(a)pyrene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Dibenz(a,h)anthracene	ND	ND
Benzo(g,h,i)perylene	ND	ND

J – estimated concentration below reporting limit. E – estimated result above calibration range.

Polychlorinated Biphenyls

QC Sample No. 5696	QA Sample No. 5697
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 5/26/98	Date Extracted 5/27/98
Date Analyzed 6/18/98	Date Analyzed 6/01/98
Method No. SW846-8081	Method No. SW846-8081
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Aroclor 1016	ND	ND
Aroclor 1221	ND	ND
Aroclor 1232	ND	ND
Aroclor 1242	ND	ND
Aroclor 1248	ND	ND
Aroclor 1254	ND	ND
Aroclor 1260	ND	ND

Dissolved Metals

QC Sample No. 5696	QA Sample No. 5497
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 6/04,04,06/98	Date Extracted 6/02/98
Date Analyzed 6/05,17,18/98	Date Analyzed 6/02/98
Method No. SW846-6010A, SW846-7470A (Mercury only)	Method No. SW846-6010A, SW846-7470A (Mercury only)
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Aluminum	ND	780
Antimony	ND	ND
Arsenic	ND	5.4
Barium	ND	18
Beryllium	ND	2.3
Cadmium	ND	ND
Calcium	648000	520000
Chromium (total)	ND	ND
Cobalt	2820	1300
Copper	1100	1000
Iron	2320	2000
Lead	ND	6.6
Magnesium	202000	81000
Manganese	18600	7800
Mercury	ND	ND
Molybdenum		ND
Nickel	2030	970
Potassium	ND	6700
Selenium	ND	19
Silver	ND	ND
Sodium	4270000	4400000
Thallium	ND	ND
Vanadium	ND	ND
Zinc	ND	24

Total Metals

QC Sample No. 5696	QA Sample No. 5697
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/21/98
Date Extracted 6/04,05/98	Date Extracted 5/26/98
Date Analyzed 6/05,17,18/98	Date Analyzed 5/26/98
Method No. SW846-6010A, SW846-7470A (Mercury only)	Method No. SW846-6010A, SW846-7470 (Mercury only)
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
Aluminum	11900	1100
Antimony	ND	ND
Arsenic	ND	8.5
Barium	ND	26
Beryllium	ND	ND
Cadmium	ND	ND
Calcium	650000	640000
Chromium (total)	ND	27
Cobalt	2740	2300
Copper	1110	1000
Iron	31500	2000
Lead	ND	6.7
Magnesium	208000	240000
Manganese	18200	16000
Mercury	ND	.78
Molybdenum		ND
Nickel	1990	1600
Potassium	ND	7100
Selenium	ND	7.8
Silver	ND	ND
Sodium	4240000	5200000
Thallium	ND	14
Vanadium	ND	ND
Zinc	ND	94

Nitroaromatics and Nitramines

QC Sample No. 5696	QA Sample No. 5697
Date Sampled 5/20/98	Date Sampled 5/20/98
Date Received 5/21/98	Date Received 5/22/98
Date Extracted 5/27/98	Date Extracted 5/26/98
Date Analyzed 6/19/98	Date Analyzed 5/28/98
Method No. SW846-8330	Method No. SW846-8330
Matrix: Water	Units: µg/L

PARAMETER	QC RESULT	QA RESULT
4-Amino-2,6-dinitrotoluene	ND	ND
1,3-Dinitrobenzene	5200	4000
2,4-Dinitrotoluene	4100	2700
2,6-Dinitrotoluene	ND	ND
HMX	ND	ND
Nitrobenzene	ND	ND
2-Nitrotoluene	ND	ND
3-Nitrotoluene	ND	ND
RDX	ND	ND
Tetryl	ND	ND
1,3,5-Trinitrobenzene	6900	7100
2,4,6-Trinitrotoluene	ND	ND

Appendix 2

Analytical Results and Chain-of-Custody Documents

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

GC/MS Volatiles

Lot-Sample #....: H8E220101-002 Work Order #....: CHD6L101 Matrix.....: WATER
 Date Sampled....: 05/20/98 Date Received...: 05/21/98
 Prep Date.....: 05/30/98 Analysis Date...: 05/30/98
 Prep Batch #....: 8150122
 Dilution Factor: 1 Method.....: SW846 8260A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	2.0	ug/L
Bromomethane	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Chloroethane	ND	2.0	ug/L
Methylene chloride	ND	1.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
2-Hexanone	ND	5.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	0.15 J	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(67 - 128)
1,2-Dichloroethane-d4	108	(67 - 128)
Toluene-d8	98	(71 - 119)
4-Bromofluorobenzene	108	(76 - 111)

(Continued on next page)

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

GC/MS Volatiles

Lot-Sample #....: H8E220101-002 Work Order #....: CHD6L101 Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

IT CORPORATION - KNOXVILLE

Client Sample ID: 9018

GC/MS Volatiles

Lot-Sample #....: H8E220101-006 Work Order #....: CHD6Q101 Matrix.....: WATER
 Date Sampled....: 05/20/98 Date Received...: 05/21/98
 Prep Date.....: 05/30/98 Analysis Date...: 05/30/98
 Prep Batch #....: 8150122
 Dilution Factor: 1 Method.....: SW846 8260A

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Chloromethane	ND	2.0	ug/L
Bromomethane	ND	2.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Chloroethane	ND	2.0	ug/L
Methylene chloride	ND	1.0	ug/L
Acetone	2.4 J	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
Chloroform	0.19 J	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
2-Hexanone	ND	5.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	0.13 J	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	96	(67 - 128)
1,2-Dichloroethane-d4	107	(67 - 128)
Toluene-d8	97	(71 - 119)
4-Bromofluorobenzene	102	(76 - 111)

(Continued on next page)

IT CORPORATION - KNOXVILLE

Client Sample ID: 9018

GC/MS Volatiles

Lot-Sample #...: H8E220101-006 Work Order #...: CHD6Q101 Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

GC/MS Semivolatiles

Lot-Sample #....: H8E220101-002 Work Order #....: CHD6L102 Matrix.....: WATER
 Date Sampled....: 05/20/98 Date Received...: 05/21/98
 Prep Date.....: 05/27/98 Analysis Date...: 06/08/98
 Prep Batch #....: 8147246
 Dilution Factor: 1 Method.....: SW846 8270B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Phenol	ND	10	ug/L
bis(2-Chloroethyl) ether	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	12	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	5.9 J	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichlorobenzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopentadiene	ND	50	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Dimethyl phthalate	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
Acenaphthene	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	11 J	50	ug/L
Dibenzofuran	6.5 J	10	ug/L
2,4-Dinitrotoluene	1800 K	10	ug/L

(Continued on next page)

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

GC/MS Semivolatiles

Lot-Sample #....: H8E220101-002 Work Order #....: CHD6L102 Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	28	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro- 2-methylphenol	11000 E	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Carbazole	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo (a) anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
bis (2-Ethylhexyl) phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo (b) fluoranthene	ND	10	ug/L
Benzo (k) fluoranthene	ND	10	ug/L
Benzo (a) pyrene	ND	10	ug/L
Indeno (1,2,3-cd) pyrene	ND	10	ug/L
Dibenz (a,h) anthracene	ND	10	ug/L
Benzo (ghi) perylene	ND	10	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorophenol	44	(27 - 106)
Phenol-d5	52	(27 - 111)
Nitrobenzene-d5	58	(37 - 115)
2-Fluorobiphenyl	94	(43 - 116)
2,4,6-Tribromophenol	67	(27 - 127)
Terphenyl-d14	73	(33 - 141)

NOTE (S) :

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

GC Semivolatiles

Lot-Sample #...: H8E220101-002 Work Order #...: CHD6L103 Matrix.....: WATER
 Date Sampled...: 05/20/98 Date Received...: 05/21/98
 Prep Date.....: 05/26/98 Analysis Date...: 06/18/98
 Prep Batch #...: 8146169
 Dilution Factor: 50 Method.....: SW846 8081

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Aroclor 1016	ND	50	ug/L
Aroclor 1221	ND	50	ug/L
Aroclor 1232	ND	50	ug/L
Aroclor 1242	ND	50	ug/L
Aroclor 1248	ND	50	ug/L
Aroclor 1254	ND	50	ug/L
Aroclor 1260	ND	50	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	NC, DIL	(30 - 133)
Decachlorobiphenyl	NC, DIL	(30 - 139)

NOTE (S) :

NC The recovery and RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

HPLC

Lot-Sample #...: H8E220101-002 Work Order #...: CHD6L10V Matrix.....: WATER
 Date Sampled...: 05/20/98 Date Received...: 05/21/98
 Prep Date.....: 05/27/98 Analysis Date...: 06/19/98
 Prep Batch #...: 8147164
 Dilution Factor: 4000 Method.....: SW846 8330

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
4-Amino-2,6-dinitrotoluene	ND	800	ug/L
1,3-Dinitrobenzene	5200	800	ug/L
2,4-Dinitrotoluene	4100	800	ug/L
2,6-Dinitrotoluene	ND	800	ug/L
HMX	ND	2000	ug/L
Nitrobenzene	ND	800	ug/L
2-Nitrotoluene	ND	800	ug/L
3-Nitrotoluene	ND	800	ug/L
RDX	ND	2000	ug/L
Tetryl	ND	800	ug/L
1,3,5-Trinitrobenzene	6900	800	ug/L
2,4,6-Trinitrotoluene	ND	800	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1-Chloro-3-nitrobenzene	NC, DIL	(39 - 157)

NOTE(S) :

NC The recovery and RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.



Volatile Organics by GC/MS

Client: IT Corporation
Project#: 773206
Location: Plumbrook Ordinance Wor

Analysis Method: EPA 8260
Prep Method: EPA 5030

Field ID: 5697
Lab ID: 133756-001
Matrix: Water
Batch#: 41215
Units: ug/L
Diln Fac: 1

Sampled: 05/20/98
Received: 05/21/98
Extracted: 06/02/98
Analyzed: 06/02/98

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Acetone	ND	20
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	20
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	20
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	20
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	117	76-128
1,2-Dichloroethane-d4	118	85-121
Toluene-d8	108	92-110
Bromofluorobenzene	108	84-115



Volatile Organics by GC/MS		
Client: IT Corporation	Analysis Method: EPA 8260	
Project#: 773206	Prep Method: EPA 5030	
Location: Plumbrook Ordinance Wor		
Field ID: 9019	Sampled:	05/20/98
Lab ID: 133756-002	Received:	05/21/98
Matrix: Water	Extracted:	05/30/98
Batch#: 41199	Analyzed:	05/30/98
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Acetone	ND	20
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	20
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	20
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	20
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	117	76-128
1,2-Dichloroethane-d4	114	85-121
Toluene-d8	106	92-110
Bromofluorobenzene	104	84-115



Semivolatiles Organics by GC/MS

Client: IT Corporation
Project#: 773206
Location: Plumbrook Ordinance Wor

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: 5697
Lab ID: 133756-001
Matrix: Water
Batch#: 41087
Units: ug/L
Diln Fac: 50

Sampled: 05/20/98
Received: 05/21/98
Extracted: 05/26/98
Analyzed: 06/03/98

Analyte	Result	Reporting Limit
Phenol	ND	680
2-Chlorophenol	ND	680
Benzyl alcohol	ND	680
2-Methylphenol	ND	680
3,4-Methylphenol	ND	680
2-Nitrophenol	ND	3400
2,4-Dimethylphenol	ND	680
Benzoic acid	ND	3400
2,4-Dichlorophenol	ND	680
4-Chloro-3-methylphenol	ND	680
2,4,6-Trichlorophenol	ND	680
2,4,5-Trichlorophenol	ND	680
2,4-Dinitrophenol	ND	3400
4-Nitrophenol	ND	3400
4,6-Dinitro-2-methylphenol	ND	3400
Pentachlorophenol	ND	680
N-Nitrosodimethylamine	ND	680
Aniline	ND	680
bis(2-Chloroethyl) ether	ND	680
1,3-Dichlorobenzene	ND	680
1,4-Dichlorobenzene	ND	680
1,2-Dichlorobenzene	ND	680
bis(2-Chloroisopropyl) ether	ND	680
N-Nitroso-di-n-propylamine	ND	680
Hexachloroethane	ND	680
Nitrobenzene	ND	680
Isophorone	ND	680
bis(2-Chloroethoxy) methane	ND	680
1,2,4-Trichlorobenzene	ND	680
Naphthalene	ND	680
4-Chloroaniline	ND	680
Hexachlorobutadiene	ND	680
2-Methylnaphthalene	ND	680
Hexachlorocyclopentadiene	ND	3400
2-Chloronaphthalene	ND	680
2-Nitroaniline	ND	3400
Dimethylphthalate	ND	680
Acenaphthylene	ND	680



Semivolatile Organics by GC/MS

Field ID: 5697	Sampled: 05/20/98
Lab ID: 133756-001	Received: 05/21/98
Matrix: Water	Extracted: 05/26/98
Batch#: 41087	Analyzed: 06/03/98
Units: ug/L	
Diln Fac: 50	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	680
3-Nitroaniline	ND	3400
Acenaphthene	ND	680
Dibenzofuran	ND	680
2,4-Dinitrotoluene	1400	680
Diethylphthalate	ND	680
4-Chlorophenyl-phenylether	ND	680
Fluorene	ND	680
4-Nitroaniline	ND	3400
N-Nitrosodiphenylamine	ND	680
Azobenzene	ND	680
4-Bromophenyl-phenylether	ND	680
Hexachlorobenzene	ND	680
Phenanthrene	ND	680
Anthracene	ND	680
Di-n-butylphthalate	ND	680
Fluoranthene	ND	680
Pyrene	ND	680
Butylbenzylphthalate	ND	680
3,3'-Dichlorobenzidine	ND	3400
Benzo(a)anthracene	ND	680
Chrysene	ND	680
bis(2-Ethylhexyl)phthalate	ND	680
Di-n-octylphthalate	ND	680
Benzo(b,k)fluoranthene	ND	680
Benzo(a)pyrene	ND	680
Indeno(1,2,3-cd)pyrene	ND	680
Dibenz(a,h)anthracene	ND	680
Benzo(g,h,i)perylene	ND	680
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	DO*	17-107
Phenol-d5	DO*	18-115
2,4,6-Tribromophenol	DO*	14-121
Nitrobenzene-d5	DO*	36-115
2-Fluorobiphenyl	DO*	36-113
Terphenyl-d14	DO*	17-115

* Values outside of QC limits

DO: Surrogate diluted out



PCBs

Client: IT Corporation
Project#: 773206
Location: Plumbrook Ordinance Wor

Analysis Method: PCB
Prep Method: EPA 3520

Field ID: 5697
Lab ID: 133756-001
Matrix: Water
Batch#: 41130
Units: ug/L
Diln Fac: 1

Sampled: 05/20/98
Received: 05/21/98
Extracted: 05/27/98
Analyzed: 06/01/98

Analyte	Result	Reporting Limit
Aroclor-1016	ND	0.48
Aroclor-1221	ND	0.96
Aroclor-1232	ND	0.48
Aroclor-1242	ND	0.48
Aroclor-1248	ND	0.48
Aroclor-1254	ND	0.48
Aroclor-1260	ND	0.48

Surrogate	%Recovery	Recovery Limits
TCMX	1144*	19-130
Decachlorobiphenyl	27	22-110

* Values outside of QC limits

Nitroaromatics and Nitramines by HPLC
Method 8330

Client Name: Curtis & Tompkins, Ltd.
Client ID: 5697
LAB ID: 099326-0001-SA
Matrix: AQUEOUS
Authorized: 22 MAY 98

Sampled: 20 MAY 98
Prepared: 26 MAY 98

Received: 22 MAY 98
Analyzed: 28 MAY 98

Dilution Factor: 3000

Parameter	Result	Units	Reporting Limit	Qualifier
HMX	ND	ug/L	3000	o
1,3,5-Trinitrobenzene	7100	ug/L	900	
RDX	ND	ug/L	2400	
1,3-Dinitrobenzene	4000	ug/L	300	
Nitrobenzene	ND	ug/L	3000	
2,4,6-Trinitrotoluene	ND	ug/L	300	
Tetryl	ND	ug/L	3000	
2,4-Dinitrotoluene	2700	ug/L	300	
2,6-Dinitrotoluene	ND	ug/L	900	
2-Am-DNT	ND	ug/L	300	
4-Am-DNT	ND	ug/L	300	
2-Nitrotoluene	ND	ug/L	3000	
4-Nitrotoluene	ND	ug/L	3000	
3-Nitrotoluene	ND	ug/L	3000	

Surrogate	Recovery	Acceptable Range	
2,4-Dinitrofluorobenzene	ND %	65 - 135	H

Note H = Spiked analyte not detected because of required sample dilution.
Note o = Reporting limit(s) raised due to high level of analyte present in sample.
ND = Not Detected

Reported By: Jon Edmondson

Approved By: Emily Uebelhoer

The cover letter is an integral part of this report.

Rev 230787



Curtis & Tompkins, Ltd.

SAMPLE ID: 5697
 LAB ID: 133756-001
 CLIENT: IT Corporation
 PROJECT ID: 773206
 LOCATION: Plumbrook Ordinance Wor
 MATRIX: Water

DATE SAMPLED: 05/20/98
 DATE RECEIVED: 05/21/98
 DATE REPORTED: 06/02/98

TARGET ANALYTE LIST

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Aluminum	1100	100	1	41026	EPA 6010A	05/26/98
Antimony	ND	60	1	41026	EPA 6010A	05/26/98
Arsenic	8.5	5.0	1	41026	EPA 6010A	05/26/98
Barium	26	10	1	41026	EPA 6010A	05/26/98
Beryllium	ND	2.0	1	41026	EPA 6010A	05/26/98
Cadmium	ND	5.0	1	41026	EPA 6010A	05/26/98
Calcium	640000	50000	100	41026	EPA 6010A	05/26/98
Chromium (total)	27	10	1	41026	EPA 6010A	05/26/98
Cobalt	2300	20	1	41026	EPA 6010A	05/26/98
Copper	1000	10	1	41026	EPA 6010A	05/26/98
Iron	2000	100	1	41026	EPA 6010A	05/26/98
Lead	6.7	3.0	1	41026	EPA 6010A	05/26/98
Magnesium	240000	50000	100	41026	EPA 6010A	05/26/98
Manganese	16000	10	1	41026	EPA 6010A	05/26/98
Mercury	0.78	0.20	1	41074	EPA 7470	05/26/98
Molybdenum	ND	20	1	41026	EPA 6010A	05/26/98
Nickel	1600	20	1	41026	EPA 6010A	05/26/98
Potassium	7100	500	1	41026	EPA 6010A	05/26/98
Selenium	7.8	5.0	1	41026	EPA 6010A	05/26/98
Silver	ND	5.0	1	41026	EPA 6010A	05/26/98
Sodium	5200000	50000	100	41026	EPA 6010A	05/26/98
Thallium	14	5.0	1	41026	EPA 6010A	05/26/98
Vanadium	ND	10	1	41026	EPA 6010A	05/26/98
Zinc	94	20	1	41026	EPA 6010A	05/26/98

ND = Not detected at or above reporting limit

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

TOTAL Metals

Lot-Sample #...: H8E220101-002

Matrix.....: WATER

Date Sampled...: 05/20/98

Date Received...: 05/21/98

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 8154222						
Mercury	ND	0.20	ug/L	SW846 7470A	06/04-06/05/98	CHD6L10U
		Dilution Factor: 1		Analysis Time..: 08:25		
Prep Batch #...: 8156159						
Aluminum	11900	2000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L104
		Dilution Factor: 10		Analysis Time..: 17:48		
Arsenic	ND	50.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6L10P
		Dilution Factor: 5		Analysis Time..: 19:13		
Lead	ND	15.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6L10Q
		Dilution Factor: 5		Analysis Time..: 19:13		
Antimony	ND	600	ug/L	SW846 6010A	06/05-06/17/98	CHD6L105
		Dilution Factor: 10		Analysis Time..: 17:48		
Barium	ND	2000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L106
		Dilution Factor: 10		Analysis Time..: 17:48		
Selenium	ND	25.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6L10R
		Dilution Factor: 5		Analysis Time..: 19:13		
Beryllium	ND	50.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6L107
		Dilution Factor: 10		Analysis Time..: 17:48		
Thallium	ND	50.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6L10T
		Dilution Factor: 5		Analysis Time..: 19:13		
Cadmium	ND	50.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6L108
		Dilution Factor: 10		Analysis Time..: 17:48		
Calcium	650000	50000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L109
		Dilution Factor: 10		Analysis Time..: 17:48		
Chromium	ND	100	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time..: 17:48		
Cobalt	2740	500	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time..: 17:48		
Copper	1110	250	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time..: 17:48		

(Continued on next page)

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

TOTAL Metals

Lot-Sample #...: H8E220101-002

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	31500	1000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Magnesium	208000	50000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Manganese	18200	150	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Nickel	1990	400	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Potassium	ND	50000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Silver	ND	100	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Sodium	4240000	50000	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Vanadium	ND	500	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		
Zinc	ND	200	ug/L	SW846 6010A	06/05-06/17/98	CHD6L10
		Dilution Factor: 10		Analysis Time...: 17:48		

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

DISSOLVED Metals

Lot-Sample #....: H8E220101-008
 Date Sampled....: 05/20/98

Date Received...: 05/21/98

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 8154225						
Mercury	ND	0.20	ug/L	SW846 7470A	06/04-06/05/98	CHD6T10Q
		Dilution Factor: 1		Analysis Time...: 09:04		
Prep Batch #....: 8156163						
Aluminum	ND	1000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T101
		Dilution Factor: 5		Analysis Time...: 18:59		
Arsenic	ND	100	ug/L	SW846 6010A	06/05-06/18/98	CHD6T10I
		Dilution Factor: 10		Analysis Time...: 18:34		
Lead	ND	30.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6T10E
		Dilution Factor: 10		Analysis Time...: 18:34		
Antimony	ND	300	ug/L	SW846 6010A	06/05-06/17/98	CHD6T102
		Dilution Factor: 5		Analysis Time...: 18:59		
Barium	ND	1000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T103
		Dilution Factor: 5		Analysis Time...: 18:59		
Selenium	ND	50.0	ug/L	SW846 6010A	06/05-06/18/98	CHD6T10I
		Dilution Factor: 10		Analysis Time...: 18:34		
Beryllium	ND	25.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6T104
		Dilution Factor: 5		Analysis Time...: 18:59		
Thallium	ND	100	ug/L	SW846 6010A	06/05-06/18/98	CHD6T105
		Dilution Factor: 10		Analysis Time...: 18:34		
Cadmium	ND	25.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6T106
		Dilution Factor: 5		Analysis Time...: 18:59		
Calcium	648000	25000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T107
		Dilution Factor: 5		Analysis Time...: 18:59		
Chromium	ND	50.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6T108
		Dilution Factor: 5		Analysis Time...: 18:59		
Cobalt	2820	250	ug/L	SW846 6010A	06/05-06/17/98	CHD6T109
		Dilution Factor: 5		Analysis Time...: 18:59		
Copper	1100	125	ug/L	SW846 6010A	06/05-06/17/98	CHD6T110
		Dilution Factor: 5		Analysis Time...: 18:59		

(Continued on next page)

IT CORPORATION - KNOXVILLE

Client Sample ID: 5696

DISSOLVED Metals

Lot-Sample #...: H8E220101-008

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	2320	500	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10F
		Dilution Factor: 5		Analysis Time...: 18:59		
Magnesium	202000	25000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10C
		Dilution Factor: 5		Analysis Time...: 18:59		
Manganese	18600	75.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10E
		Dilution Factor: 5		Analysis Time...: 18:59		
Nickel	2030	200	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10E
		Dilution Factor: 5		Analysis Time...: 18:59		
Potassium	ND	25000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10E
		Dilution Factor: 5		Analysis Time...: 18:59		
Silver	ND	50.0	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10C
		Dilution Factor: 5		Analysis Time...: 18:59		
Sodium	4270000	50000	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10E
		Dilution Factor: 10		Analysis Time...: 20:41		
Vanadium	ND	250	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10C
		Dilution Factor: 5		Analysis Time...: 18:59		
Zinc	ND	100	ug/L	SW846 6010A	06/05-06/17/98	CHD6T10E
		Dilution Factor: 5		Analysis Time...: 18:59		

SAMPLE ID: 5697
 LAB ID: 133756-001
 CLIENT: IT Corporation
 PROJECT ID: 773206
 LOCATION: Plumbrook Ordinance Wor
 MATRIX: Filtrate

DATE SAMPLED: 05/20/98
 DATE RECEIVED: 05/21/98
 DATE REPORTED: 06/02/98

TARGET ANALYTE LIST

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Aluminum	780	100	1	41179	EPA 6010A	06/02/98
Antimony	ND	60	1	41179	EPA 6010A	06/02/98
Arsenic	5.4	5.0	1	41179	EPA 6010A	06/02/98
Barium	18	10	1	41179	EPA 6010A	06/02/98
Beryllium	2.3	2.0	1	41179	EPA 6010A	06/02/98
Cadmium	ND	5.0	1	41179	EPA 6010A	06/02/98
Calcium	520000	10000	20	41179	EPA 6010A	06/02/98
Chromium (total)	ND	10	1	41179	EPA 6010A	06/02/98
Cobalt	1300	20	1	41179	EPA 6010A	06/02/98
Copper	1000	10	1	41179	EPA 6010A	06/02/98
Iron	2000	100	1	41179	EPA 6010A	06/02/98
Lead	6.6	3.0	1	41179	EPA 6010A	06/02/98
Magnesium	81000	500	1	41179	EPA 6010A	06/02/98
Manganese	7800	10	1	41179	EPA 6010A	06/02/98
Mercury	ND	0.20	1	41073	EPA 7470	05/26/98
Molybdenum	ND	20	1	41179	EPA 6010A	06/02/98
Nickel	970	20	1	41179	EPA 6010A	06/02/98
Potassium	6700	500	1	41179	EPA 6010A	06/02/98
Selenium	19	5.0	1	41179	EPA 6010A	06/02/98
Silver	ND	5.0	1	41179	EPA 6010A	06/02/98
Sodium	4400000	10000	20	41179	EPA 6010A	06/02/98
Thallium	ND	5.0	1	41179	EPA 6010A	06/02/98
Vanadium	ND	10	1	41179	EPA 6010A	06/02/98
Zinc	24	20	1	41179	EPA 6010A	06/02/98

ND = Not detected at or above reporting limit

**QUANTERRA KNOXVILLE LABORATORY
SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST**

Page 1 of 2

CLIENT: I.T.KNX PROJECT: PBow Lot No.: H8E220101

TO BE COMPLETED BY SAMPLE RECEIPT ASSOCIATE:

- | | | | |
|--|-----|----|----|
| 1. Sample Receipt: | YES | NO | NA |
| a. Do sample container labels match COC? (IDs, Dates, Times) | ✓ | — | — |
| b. Is the cooler temperature within acceptance limits? | ✓ | — | — |
| c. Were samples received with correct preservative (excluding Encore)? | ✓ | — | — |
| d. Were custody seals present/intact on cooler and/or containers? | ✓ | — | — |
| e. Were all of the samples listed on the COC received? | ✓ | — | — |
| f. Were all of the sample containers received intact? | ✓ | — | — |
| g. Were containers received for VOAs received without headspace? | ✓ | — | — |
| h. Were samples received in the appropriate containers? | ✓ | — | — |
| i. Did you check for residual chlorine, if necessary? | ✓ | — | ✓ |
| j. Were samples received within 1/2 of the (QAMP) holding time? | ✓ | — | — |
| k. Were samples screened for radioactivity? | ✓ | — | ✓ |
| l. Were client's sample documents (RFA/COC) received? | ✓ | — | — |
| m. Has the RFA/COC been relinquished? (Signed, Dated, Timed) | ✓ | — | — |
| n. Are test/parameters listed for each sample? | ✓ | — | — |
| o. Is the matrix of the samples noted? | ✓ | — | — |
| p. Is the date/time of sample collection noted? | ✓ | — | — |
| q. Is the client and project name/No. identified? | ✓ | — | — |

SAMPLE RECEIVING ASSOCIATE: Bryan Blongquist DATE: 5/21/98

TO BE COMPLETED BY PROJECT MANAGER :

- | | | | |
|--|-----|----|----|
| 1. Project manager "Sample Greet": | YES | NO | NA |
| a. Quote number to be logged-in under <u>20941</u> | ✓ | — | — |
| b. Informed Login associates of special instructions?
<u>per SDS PB... *CLOSE OUT ALL OPEN SDS...</u> | ✓ | — | — |
2. If custody seals were missing/not intact, was client notified? ✓

PROJECT MANAGER : JL DATE: 5/21/98

Client Sample ID	Analysis Requested	Lab Condition (see legend)	Comments/Action
5695	metals	4d	Total = pH5, Diss = pH3
5696	↓	4d	↓ ↓
5705	↓	4d	Tot + Diss = pH7 *preserve in lab.

- Client informed on _____ by _____. Person contacted: _____
- Noted actions in comments section above.
- No action necessary; process as is.
- Project Manager: JL Date: 5/21/98

QUANTERRA KNOXVILLE LABORATORY
SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST LEGEND

Item	Condition
Cooler:	1a Not received, COC available 1b Leaking 1c Other: _____
Temperature:	2a Temp Blank = _____ 2b Cooler Temp = _____ (cooler temp should be used only if there is no temp blank)
Container:	3a Leaking 3b Broken 3c Extra 3d No labels 3e Headspace (VOA only) 3f Other: _____
Samples:	4a Samples received but not on COC 4b Samples not received but on COC 4c Holding time expired 4d Sample preservative: _____ 4e Other: _____
Custody Seals:	5a None 5b Not intact 5c Other: _____
Chain of Custody (COC):	6a Not relinquished by client 6b Incomplete information 6c Other: _____
Container Labels:	7a Doesn't match COC 7b Incomplete information 7c Marking smeared 7d Label torn 7e Other: _____
Other (8):	_____

QUANTERRA KNOXVILLE LABORATORY
SAMPLE LOG-IN (LOT SUMMARY) REVIEW CHECKLIST

CLIENT: I.T. Knox PROJECT: PBOW Lot No.: HPC220101

TO BE COMPETED BY PROJECT MANAGER:

- | | |
|--|---|
| <p>1. Client Documents (Request for Analysis/Chain of Custody):</p> <p>a. Was QuanTIMS lot number documented on all paperwork?</p> <p>b. Was RFA/COC signed upon receipt, including date/time?</p> <p>c. Is preservative check (pH) noted on RFA/COC?</p> <p>d. Is cooler temperature & custody seal condition noted on COC?</p> | <p>YES NO NA</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> |
| <p>2. Log-in (Lot Folder) Review:</p> <p>a. Do client IDs on Client Summaries match RFA/COC?</p> <p>b. Were tests/parameters assigned correctly?</p> <p>c. Were correct analytical and report due dates assigned?</p> <p>d. Has the correct fax due date been assigned to the lot?</p> <p>e. Is the correct report format noted in the lot summary?</p> <p>f. Is percent moisture logged for samples requiring this analysis?</p> <p>g. Are client assigned QC samples properly defined?</p> | <p>YES NO NA</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> |
| <p>3. Contract/Subcontract Review:</p> <p>a. Is there a contract number or PO for this work?</p> <p>b. If the purchase order number is given, is it noted in Lot header?</p> <p>c. If samples were subcontracted, was copy of COC in folder?</p> | <p>YES NO NA</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> |
| <p>4. SDG Review:</p> <p>a. If SDG is required, is SDG form in Lot folder?</p> <p>b. Is SDG number noted in Lot header & sample comments?</p> <p>c. If SDG is complete, has the due date been revised & marked closed?</p> | <p>YES NO NA</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> |
| <p>5. Checklist Review:</p> <p>a. Has Sample Receipt Checklist been filled-out?</p> <p>b. Was there a CUR?</p> <p>c. Were all issues resolved?</p> | <p>YES NO NA</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> |

LOT FOLDER REVIEWED BY: [Signature] DATE: 5/22/01

Quote# 20941

H&E 220101



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: PBGW-052098QESK
Page 1 of 2

Project Number: 773206

Samples Shipment Date: 20-MAY-98

Bill To: Accounts Receivable

Project Name: PLUMBROOK ORDNANCE WOR ab Destination: Quanterra - Knoxville

312 Directors Drive
Knoxville TN 37923

Sample Coordinator: Duane Nielsen

Lab Contact: John Reynolds

Report To: Kim Napier

Turnaround Time:

Project Contact: Kim Napier

312 Directors Drive
Knoxville TN 37923

Carrier/Waybill No.: Fed Ex/801624849932

Special Instructions:

Possible Hazard Identification:
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal:
 Return to Client Disposal by Lab Archive (mos.)

1. Relinquished By (Signature/Affiliation) <i>[Signature]</i>	Date: 5/20/98 Time: 1600	1. Received By (Signature/Affiliation) <i>[Signature]</i> 2cc seals intact	Date: 5-21-98 Time: 10:30
2. Relinquished By (Signature/Affiliation)	Date: Time:	2. Received By (Signature/Affiliation)	Date: Time:
3. Relinquished By (Signature/Affiliation)	Date: Time:	3. Received By (Signature/Affiliation)	Date: Time:

Comments: 1L TOTAL METALS; 1L FILTERED METALS

Sample No	Sample Name	Sample Date	Sample Time	Container	Ctr Qty	Preservative	Requested Testing Program	File CID	Condition On Receipt
5695	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L HDPE	2	HNO3, pH<2	TAL Metals by SW-846 6010A/7470 in water	N	pH=5 Total pH=3 Diss
5695	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	1	None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
5695	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270B in soil	N	
5695	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	40 ml GVIAL, SEP	3	HCl, pH<2	TCL Volatiles by SW-846 8260A	N	
5695	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	2	None except cool to 4 C	PCBs by SW8081	N	
5696	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L HDPE	2	HNO3, pH<2	TAL Metals by SW-846 6010A/7470 in water	N	pH=5 Total pH=3 Diss
5696	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	2	None except cool to 4 C	TCL Semivolatiles by SW-846 8270B in soil	N	

60000019

48E220101



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No: PBGW-052098QESK

Page 2 of 2

Sample No	Sample Name	Sample Date	Sample Time	Container	Preservative	Requested Testing Program	File CID	Condition On Receipt
5698	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	2 None except cool to 4 C	PCBs by SW8081	N	
5698	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	40 ml GVIAL,SEP	3 HCl, pH<2	TCL Volatiles by SW-846 8260A	N	
5698	PBOW-98-GW-PRMW7-5695	20-MAY-98	08:45	1 L Amb. Glass	1 None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	1 L Amb. Glass	1 None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	40 ml GVIAL,SEP	3 HCl, pH<2	TCL Volatiles by SW-846 8260A	N	
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	1 L Amb. Glass	2 None except cool to 4 C	TCL Semivolatiles by SW-846 8270B in soil	N	
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	1 L Amb. Glass	2 None except cool to 4 C	PCBs by SW8081	N	
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	1 L Amb. Glass	2 None except cool to 4 C	TAL Metals by SW-846 6010A/7470 in water	N	98.5 = 5/16/98 pH = 3.7 Diss pH = 5.7 Total
5705	PBOW-98-GW-PRMW8-5705	20-MAY-98	08:00	1 L HDPE	2 HNO3, pH<2	TAL Metals by SW-846 6010A/7470 in water	N	pH < 2 pH < 2
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	1 L HDPE	2 HNO3, pH<2	TAL Metals by SW-846 6010A/7470 in water	N	
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	1 L Amb. Glass	1 None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	40 ml GVIAL,SEP	3 HCl, pH<2	TCL Volatiles by SW-846 8260A	N	
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	1 L Amb. Glass	2 None except cool to 4 C	TCL Semivolatiles by SW-846 8270B in soil	N	
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	1 L Amb. Glass	2 None except cool to 4 C	PCBs by SW8081	N	
5715	PBOW-98-GW-PRMW9-5715	20-MAY-98	09:30	1 L Amb. Glass	2 None except cool to 4 C	TAL Metals by SW-846 6010A/7470 in water	N	pH < 2 pH < 2
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	1 L HDPE	2 HNO3, pH<2	TAL Metals by SW-846 6010A/7470 in water	N	
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	40 ml GVIAL,SEP	3 HCl, pH<2	TCL Volatiles by SW-846,8260A	N	
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	1 L Amb. Glass	2 None except cool to 4 C	PCBs by SW8081	N	
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	1 L Amb. Glass	2 None except cool to 4 C	TCL Semivolatiles by SW-846 8270B in soil	N	
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	1 L Amb. Glass	1 None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
5845	PBOW-98-GW-MKMW24-5845	20-MAY-98	07:35	1 L Amb. Glass	1 None except cool to 4 C	Nitroaromatics by SW-846 8330 in soil	N	
9018		20-MAY-98	09:00	40 ml GVIAL,SEP	3 HCl-pH 2	TCL Volatiles by SW-846 8260A	N	

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