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Mr. Mark Poindexter
Solid Waste Section
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Subject: Groundwater Asssessment Report
North Wake Unlined Landfill

Dear Mr. Poindexter:

Enclosed please find one copy of the Groundwater Assessment Report for the North Wake Unlined Landfill. This report includes the results of the Phase I, II and III investigations.

If you have any questions or require further explanation, do not hesitate to call me at 787-5620.

Very truly yours,

CAMP DRESSER & McKEE

Timothy Grant

Timothy D. Grant, P.G.
Project Manager

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2-2-00

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Section

Executive Summary

Camp Dresser & McKee (CDM) has prepared this Groundwater Assessment Report on behalf of Wake County for the work completed from April 1998 through May 1999, in support of the closure of the North Wake Unlined Landfill. In accordance with the State of North Carolina Solid Waste Section (SWS) regulatory requirements for landfill closures, a groundwater monitoring program was initiated for the site. Under this program, baseline groundwater data were collected and submitted to the North Carolina Solid Waste Section (SWS) during April 1995 and a *Baseline Sampling Report* was prepared. Following this, Wake County initiated an assessment monitoring program for the compliance monitoring wells around the existing landfill. Samples have continued to be collected from the compliance wells on a semi-annual basis and the analytical results, groundwater data, and statistical analysis have been submitted to the SWS.

The objective of the groundwater assessment was to determine the extent of constituents in groundwater that exceed the 2L Groundwater Standards. The groundwater assessment was completed in three phases. The first phase included a field investigation using direct push techniques (DPT), field analysis of groundwater to determine if the detected constituents have migrated beyond the landfill property, a fracture trace analysis, and a site reconnaissance for geologic and hydrogeologic features. During the second phase of the assessment, permanent monitoring wells were installed. The third phase included comprehensive sampling of compliance wells and newly installed monitoring wells over an 8 month period. Additional analyses of samples were performed to assess the ability of contaminants to naturally attenuate.

The following conclusions were developed, based on the data collected during the three phases of the groundwater assessment:

Groundwater Characterization

- There is an overall decreasing trend in contamination throughout the site for most constituents. Volatile organic compounds (VOCs) continue to be detected in wells closest to the landfill, but at less frequency and lower concentrations. Exceedances of the North Carolina 2L Standards for VOCs occurred in eight of 24 wells during the latest (April 1999) round of sampling. Only one exceedance was found in wells within the buffer zone west of the site (PCE in TB-1a at 5.0 ug/l).

- VOCs have migrated off-site to the west. A preferential flow path appears to exist in the direction of MW-24 and TB-1a. This preferential flow path is apparently due to a westerly plunging quartz/feldspar pegmatite vein. VOC migration was likely enhanced along this flowpath by radial flow

from the landfill, prior to capping. Pressure from accumulating gas inside the landfill may have also increased the rate of groundwater and contaminant migration in this direction. The combined effects of the landfill cap and gas extraction system should reduce, if not eliminate, this local flow pattern. A continued, rapid reduction in VOC concentrations is expected in this area.

- Several metals were detected at concentrations above the North Carolina 2L Standards. These metals are indicative of background concentrations of naturally occurring elements in the soil. Soil particles suspended in the water column likely contribute to the high metal detections in the newer wells. As these wells continue to be purged before each sampling event, more and more of the suspended soil particles will be removed from the well. It is expected that metal concentrations will continue to decrease over time.

Natural Attenuation Evaluation

- Two lines of evidence are available to support natural attenuation at the site. They are (1) an observed reduction in contaminant concentrations, and (2) the presence of favorable chemical and geochemical indicators. The first line of evidence is satisfied by the documented reduction in VOC concentrations of individual wells and site-wide. Data and trends to support the second line of evidence include: low dissolved oxygen (DO) oncentrations in contaminated wells; the ratio of parent/daughter compounds, over time, in contaminated wells; the presence of nitrate and sulfate at levels favoring reductive dechlorination; and elevated concentrations of cis-1,2-DCE compared to other DCE isomers.

- BTEX compounds (benzene, toluene, ehtyl benzene and xylene) appear to have been degrading aerobically, as indicated by low DO concentrations in contaminated wells. Evidence for this is the significant reduction in these compounds in monitoring wells.

- Indirect evidence suggests that reductive dechlorination may be occurring, to a limited extent. Concentrations of the more highly chlorinated hydrocarbons, compared to the less chlorinated ones, have decreased to a greater extent over time.

- The results of the receptor exposure-pathway analysis support the use of natural attenuation. Groundwater in the vicinity of the site is not currently, and is not expected to be used for consumptive purposes. Low levels of contamination may discharge with groundwater to the north and south streams; however, dilution will likely reduce concentrations to below detectable limits. Surface water samples showed no evidence of contamination in either stream.

- Using cis-1,2-DCE as a conservative contaminant, travel times of most VOCs are expected to be less than 30 feet per year. This estimate generally agrees with the current extent of contamination, assuming contaminants first entered the aquifer when the landfill began accepting waste in December 1986.

Based on the results of the groundwater assessment and natural attenuation evaluation, the following actions are recommended:

- The interim use of monitored natural attenuation for remediation of contaminated groundwater.

- Semi-annual sampling of western buffer zone wells MW-29, -29d, 30, -31, -31d, -32 and TB-1a; and surface water sampling from the north stream at a location directly downgradient of MW-6 (NS-SW2 on Figure 3-4) and again 500 feet downstream from this location (NS-SW3 on Figure 3-4).

- Continued semi-annual monitoring of compliance wells MW-5, -6, -7, -8, -9, -10, -11, -22, -23, 23d and -24; and surface water locations SW-2 and SW-3.

- Annual sampling of buffer zone wells MW-33, -34, -34d, -35, -27, -28 and -28d.

- To provide evidence of conditions suitable for biodegradation, semi-annual sampling of select wells should include field screening of DO, ORP (oxidation reduction potential as measured with a silver/silver chloride electrode), temperature, conductivity and pH. Samples should be collected for laboratory analysis of chloride, sulfide, sulfate, alkalinity, nitrate, TOC, carbon dioxide, methane, and iron (II). Well sampled for analysis of natural attenuation parameters should include MW-5, MW-9, MW-10, MW-24 and TB-1a.

- Following the collection of an additional set of chemical, geochemical and analytical data, an Assessment of Corrective Measures in accordance with Rule .1635 should be performed. The Assessment of Corrective Measures will provide an expanded evaluation of the effectiveness of monitored natural attenuation and address the objectives listed under Rule .1635(c).

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Section 1
Introduction

1.1 Background

Camp Dresser & McKee (CDM) has prepared this Groundwater Assessment Report on behalf of Wake County for the work completed from April 1998 through May 1999, in support of the closure of the North Wake Unlined Landfill. In accordance with the State of North Carolina Solid Waste Section (SWS) regulatory requirements for landfill closures, a groundwater monitoring program has been initiated for the site. Under this program, baseline groundwater data were collected and submitted to the North Carolina Solid Waste Section (SWS) during April 1995. The *Baseline Sampling Report* dated April 1995 concluded that constituents were present in groundwater at statistically significant increased concentrations as compared to background groundwater samples.

In accordance with North Carolina Solid Waste Management Rule .1633(c)(2), Wake County initiated an assessment monitoring program for the compliance monitoring wells around the existing landfill. The Appendix II sampling results, which were submitted in the *Assessment Monitoring Report* dated July 1995, indicated the presence of Appendix II constituents bis(2-ethylhexyl)phthalate and 3&4-methylphenol. Consequently, additional samples were collected to establish background concentrations for these new constituents. Samples were collected for the detected Appendix II constituents during the September 1995 sampling event, for the full Appendix I constituent list plus the detected Appendix II constituents during the October 1995 sampling event, and for the full Appendix II constituent list during the January 1996 sampling event. The results of the events were presented in the April 1996 *Semi-Annual Monitoring Sampling Report*. Samples have continued to be collected from the compliance wells on a semiannual basis and the analytical results, groundwater data, and statistical analysis have been submitted to the SWS.

In November 1996, Wake County began disposal of municipal solid waste in the lined portion of the North Wake Landfill. A low permeability cap was installed to close the unlined landfill. This cap included the installation of a geosynthetic liner on the top of the landfill to further reduce infiltration. In addition, a methane gas recovery system was also installed, and has been operational since November 1997.

Three monitoring wells (MW-22, MW-23, and MW-24) were installed along the western property line in June 1997. A letter report summarizing the installation, hydraulic testing, and initial (June 9, 1997) sampling of the new wells was submitted on August 6, 1997. The second sampling event for the new monitoring wells was conducted on August 18, 1997, and a letter report with the results of the laboratory analysis was submitted on September 15, 1997.

An objective of the assessment monitoring program, as described under Rule .1634(g), is to determine the extent of constituents in groundwater that exceed the 2L Groundwater Standards. CDM has prepared this Groundwater Assessment Report to present the results of the investigation for characterizing the extent of constituents at the Site in groundwater.

1.2 Objectives and Approach

The objective of the groundwater assessment plan was to determine the extent of constituents in groundwater that exceed the 2L Groundwater Standards. The Groundwater Assessment Plan submitted in February 1998 presented a two-phase approach for characterizing the extent of constituents at the North Wake Unlined Landfill in groundwater. The first phase (Phase I) was a field investigation using direct push techniques (DPT), and field analysis to determine if the detected constituents have migrated beyond the landfill property. Also included in Phase I was a fracture trace analysis and a site reconnaissance for geologic and hydrogeologic locations. The results of these investigations were presented in the Groundwater Assessment Plan. During the second phase of the assessment, monitoring wells were installed. Due to limitations of direct push techniques in this geology, hollow stem augering and setting of temporary wells had to be employed. Based on information and data gathered from Phase I, selected temporary wells were converted to permanent monitoring wells. A third phase was then added to the plan give a comprehensive view of contaminant characterization across the entire site.

1.3 Phase I

TASK 1

The objective of this task was to gain a greater understanding of the geology and hydrogeology of the site. To complete this task, a field investigation of the site and areas around the site was performed. This investigation included a fracture trace analysis and a surface water drainage reconnaissance. Also included in this task was extensive research and mapping of the lithologic units around the site. The results of this Task were presented in the Groundwater Assessment Plan.

TASK 2

The objective of this task was to define the extent of contaminant migration by advancing a series of DPT borings out from the perimeter of the landfill. In order to determine if contamination has possibly migrated offsite, 22 borings were advanced on the adjacent properties in all directions surrounding the landfill. Field screening of groundwater was performed using a Photovac 10S50 portable GC.

1.4 Phase II - Permanent Monitor Well Installation

TASK 1

Based on the findings of Phase I, additional investigation in the area north and west of the landfill where the DPT borings encountered refusal was needed to further define contaminant migration. CDM advanced sixteen borings using hollow-stem augers (HSA) in order to complete the delineation that was begun with Phase I. Temporary wells were installed in these borings and groundwater was collected for analysis. CDM also installed five shallow wells in the surficial aquifer to the west of the landfill, in the buffer zone between the landfill and the residential development, and one shallow well to the northeast of the landfill in the buffer zone. Three bedrock monitoring wells were installed to characterize the bedrock aquifer in the buffer zone.

TASK 2

In August, 1998, four more permanent wells were installed in the adjacent property to the east of the landfill. Three wells were set to monitor the surficial aquifer. One well was set with a six-inch surface casing to the top of bedrock and screened in bedrock to monitor the bedrock aquifer for possible vertical contaminant migration and to obtain vertical gradient information.

1.5 Phase III - Comprehensive Monitor Well Sampling

All of the recently installed permanent wells were sampled upon completion of installation. A full round of samples were collected from all of the newly installed wells to the west and east of the landfill along with MW-5, -10, -22, -23, -23d, and -24 in August 1998. Monitor wells MW-10, -22, -23, -23d, -24, -28, -28d, -29, -29d, -30, -31, -31d, -32 and TB-1a were monitored monthly from August 1998 to February 1999, and again in April 1999.

1.6 Report Contents

Section 1 provides an overview of the work that was completed. Section 2 will present the Methods of Investigation used to complete Phases I, II, and III. Section 3 will present the results of each phase of the investigation, Section 4 will present an evaluation of the feasibility of natural attenuation as a remedial option and Section 5 will present the recommendations and conclusions of the investigation.

Section 2
Methods of Investigation

This section describes the investigative methods used during Phases I, II and III.

2.1 Direct-Push Sampling Techniques

A truck-mounted DPT rig (Geoprobe®) was used to collect soil and groundwater samples at the originally proposed locations presented in the work plan. Soil samples were collected at select depths in each boring using a hydraulically advanced sampler. The sampler was decontaminated before each use with a liquid Alconox wash and potable water rinse. An acetate liner was placed inside the sampler to maintain sample integrity and reduce sample contact with the sampling equipment. Upon completion of the DPT boring, a groundwater sample was collected through the hollow DPT sampling rod using a small-diameter bailer. The bailer was decontaminated before each use with a liquid Alconox wash and potable water rinse, a reagent-grade isopropanol desorbant rinse, and a final deionized water rinse.

Twenty-two borings were advanced on the adjacent properties north, south, east, and west of the landfill. The sample locations are presented in Figure 2-1 and are designated GP-1 through GP-22.

Groundwater elevations at the existing monitoring wells, along with site topography, suggest that groundwater flow in the surficial aquifer is from the west to the east, with discharge to the streams located to the north and south of the landfill. However, there may be a mounding effect created by leachate generation from the unlined landfill that influences groundwater flow in a radial pattern. Drainage features located northwest and southwest of the landfill may also influence flow direction. Also, pressure created within the landfill by methane gas generation may be another impetus for migration of contaminants toward the west. For these reasons, the placement of DPT borings was in a radial pattern out from the landfill.

Since the contaminants of concern in the existing monitoring wells are volatile organic compounds (VOCs), groundwater samples were screened in the field using a portable gas chromatograph (GC). Field GC screening analyses of soil and groundwater samples were performed to detect the following VOCs: Benzene, toluene, ethylbenzene, xylenes (BTEX); trichloroethene (TCE); methylene chloride; and tetrachloroethene (PCE). Soil and groundwater samples from selected borings (GP-5, GP-9, GP-10, GP-11, GP-12, GP-17, GP-18, GP-19, GP-20, GP-21, and GP-22) were then submitted for laboratory analysis for the Appendix I constituents (VOCs and metals) to confirm the results of the field screening. A summary of the results for the soil analysis is presented in Table 3-1 2

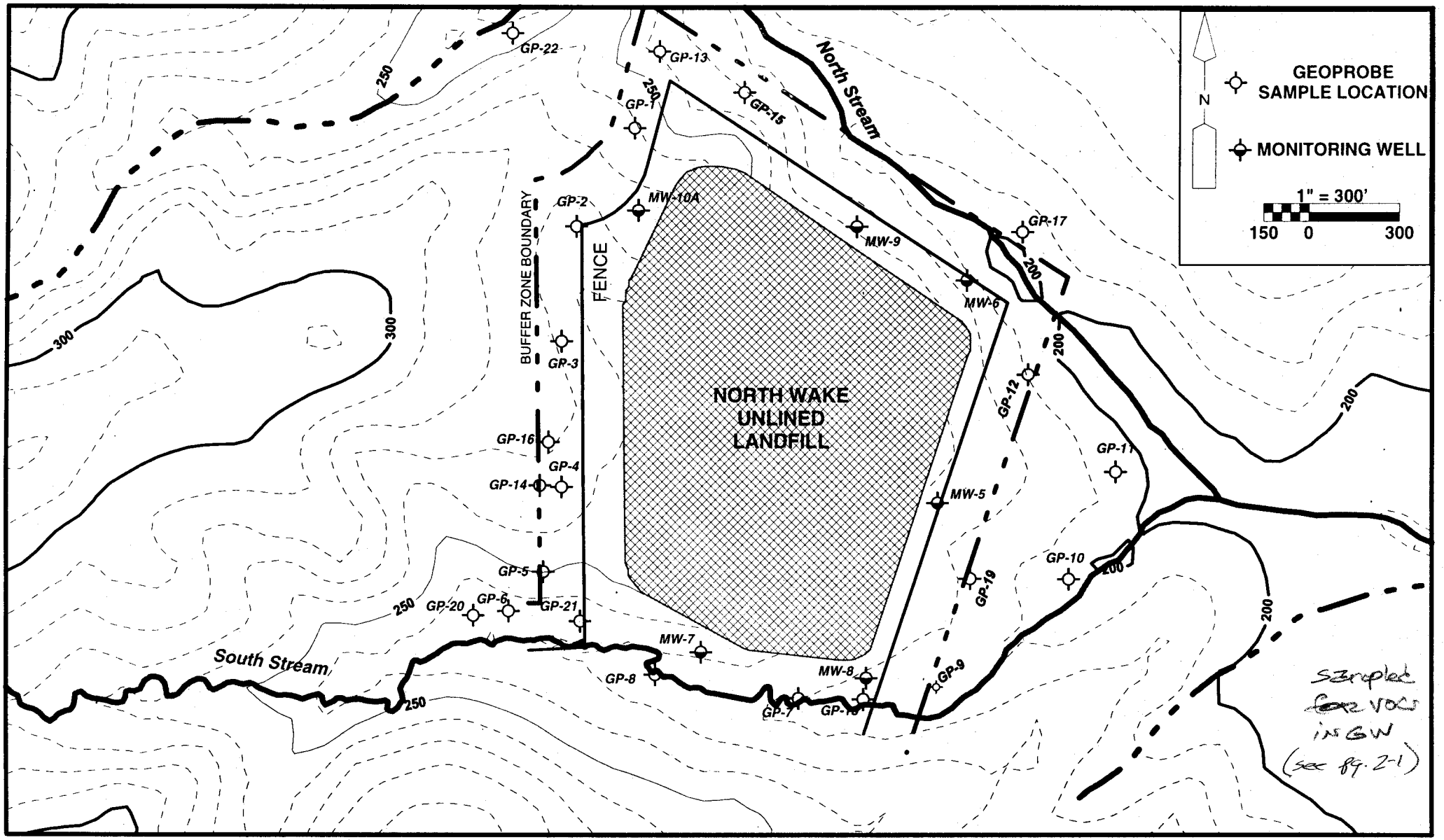


FIGURE 2-1
PHASE I GEOPROBE SAMPLE LOCATIONS
NORTH WAKE UNLINED LANDFILL
WAKE COUNTY, NORTH CAROLINA

CDM Camp Dresser & McKee

and discussed in Section 3. A summary of the groundwater analysis results is presented in Table 3-2 and discussed in Section 3. The laboratory reports are presented in Appendix A. Methane gas concentrations were also monitored during Phase I of the investigation. Due to the installation of the methane gas extraction system, no significant methane concentrations were encountered in any wells during the investigation.

2.2 Field Measurements and Analyses

Throughout the DPT sampling, onsite screening of samples was performed to allow real-time data to be incorporated into the sampling plan for guidance in the progress of the assessment. Analyses were performed for the indicated parameters (BTEX, TCE, PCE, methylene chloride) using a Photovac 10S50 portable GC, which includes an isothermal capillary column with a 10.2 eV photoionization detector. Because the instrument is intended for the analysis of vapor samples, headspace techniques were employed for environmental samples.

Calibration for aqueous samples was conducted by preparing an aqueous standard for the indicated compounds. The standard was prepared in a glass vial with a septum by injecting a known mass of VOC into the sealed vial containing a known volume of water. The standard was then allowed to equilibrate. The equilibrated headspace over the standard was injected into the GC. The results were input manually into the instrument's computer module. Groundwater samples were then collected in a conventional vial with approximately 50 percent headspace. The headspace over the sample was then withdrawn and injected into the GC for analysis using a gas-tight syringe. The analytical results were provided by the GC in conventional units of micrograms per liter (ug/l).

For solid sample analyses, the GC was calibrated using a vapor standard according to units of VOC per unit volume of air (mg/l). Soil samples were analyzed by heating the sample to volatize the VOC from the soil into the sample container headspace, and injecting a headspace aliquot into the GC for analysis. The data were reported as for the standard, in mg/l air. By measuring the weight of the soil sample and the volume of total headspace remaining in the soil sample container (container volume - volume of soil), the VOC concentration in soil was derived according to conventional units of milligrams per kilogram (mg/kg). However, no attempt was made to calculate these results on a dry weight basis in the field. The dry weight analytical results were determined in CDM's Cambridge, Massachusetts laboratory.

2.3 Temporary and Permanent Monitor Well Installation

Based on the findings of the DPT work completed in Task 1, additional investigation in the north and west of the landfill where the DPT borings encountered refusal was needed to further define groundwater migration. CDM

advanced sixteen borings using hollow stem augers (HSA) in order to complete the delineation that was begun in Task 1. Originally, five locations were selected for completion as an HSA borehole with standard penetration test (SPT) through overburden into partially weathered rock (PWR). HSA was expected to be able to penetrate PWR to depths greater than those reached by the DPT/geoprobe and hence to penetrate to the groundwater table. The temporary wells were installed using a truck-mounted hollow stem auger rig. The borings were advanced using 8.25-inch outside diameter hollow stem augers. Split-spoon samples were collected at 5-foot intervals to identify soil lithology, and screened with an organic vapor monitor for organic vapor concentrations. Upon completion of the borings, the temporary wells were installed inside the augers. Well construction consisted of 2-inch diameter, Schedule 40 PVC casing and slotted 0.010-inch screen with factory-threaded joints. The well annulus was backfilled to 2 feet above the top of the screen using number 2 silica sand. Above this sand pack, a 2-feet thick (minimum) bentonite seal was installed, and hydrated with potable water. A summary of the depths and construction details of the temporary borings is presented in Table 2-1. Boring logs and well construction diagrams for these wells are presented in Appendix D. After the wells were installed, they were developed immediately with a submersible pump and a bailer to remove any fines. CDM then purged and sampled the groundwater. The groundwater sample was sent in an iced cooler via next day air delivery to CDM in Atlanta, Georgia for GC screening of VOCs. After GC screening results were available, the temporary well was either grouted and completed as a permanent monitoring well, or the temporary well was removed and the borehole abandoned by filling the borehole with a bentonite/grout mixture. For those temporary wells that were abandoned, a new location for the temporary well was selected, incrementally offset from the previous location in an upgradient direction, and a new borehole augered, a new temporary well installed, developed, and groundwater sampled. Again, after the GC screening results were available, the temporary well was either grouted and completed as a permanent monitoring well, or removed, abandoned, and relocated. The goal of this phase of the investigation was to delineate the extent of contamination, in order to construct permanent monitoring wells in locations that were beyond the edge of the plume, for long term monitoring. The analytical results of the temporary well sampling are discussed further in Section 3 and presented in Appendix B.

Based on the results of Phase I, Tasks 1 and 2, five shallow, permanent monitoring wells (MW-28, -29, -30, -31, and -32) were installed in the surficial aquifer to the west of the landfill in the buffer zone between the landfill and the residential development (Falls River), and one shallow well (MW-27) was installed to the northeast of the landfill in the buffer zone. Monitoring wells MW-28, -29, -30, -31, and -32 were originally temporary wells that were grouted to the surface and completed with either at-grade manhole well protection, or above grade well protection and 2 foot by 2 foot concrete pads. In addition, three bedrock monitoring wells (MW-28d, MW-29d, and MW-31d) were installed to

TABLE 2-1
SUMMARY OF TEMPORARY MONITORING WELL COMPLETION DATA
NORTH WAKE UNLINED LANDFILL

Monitor Well Designation	TOC Elevation (MSL)	Ground Elevation (MSL)	Depths (feet below ground surface)				Borehole Diameter (inches)	Casing Diameter (inches)	Date of Construction	Status	(feet above mean sea level) Elevation	
			Total Borehole Depth	Screen Interval	Sand Filter Interval	Bentonite Seal Interval					Top of Screen Interval	Bottom of Screen Interval
TB-1 (MW-31)	261.67	261.83	35.5	25.5-35.5	23.0-35.5	21.0-23.0	8.0	2.0	4/2/98	complete	236.33	226.33
TB-1d (MW-31d)	260.92	261.42	66.0	56.0-66.0	54.0-66.0	52.0-54.0	6.0	2.0	4/23/98	complete	205.42	195.42
TB-1a (1)	na	255.18	40.0	30.0-40.0	28.0-40.0	26.0-28.0	8.0	2.0	4/7/98	abandoned	225.18	215.18
TB-1a (2)	na	255.15	34.0	20.0-30.0	17.5-30.0	14.0-17.5	6.0	2.0	5/8/98	completed	235.15	225.15
TB-2	na	270.04	42.0	32.0-42.0	33.0-42.0	30.0-33.0	8.0	2.0	4/2/98	abandoned	238.04	228.04
TB-2a (MW-29)	275.42	275.55	40.0	30.0-40.0	28.0-40.0	26.0-28.0	8.0	2.0	4/6/98	complete	245.55	235.55
TB-2ad (MW-29d)	275.06	275.21	52.0	47.0-52.0	45.0-52.0	43.0-45.0	6.0	2.0	4/22/98	complete	228.21	223.21
TB-3 (MW-32)	242.99	240.00	23.0	13.0-23.0	11.0-23.0	9.0-11.0	8.0	2.0	4/3/98	complete	227.00	217.00
TB-4	na	276.46	46.0	36.0-46.0	34.0-46.0	32.0-34.0	8.0	2.0	4/3/98	abandoned	240.46	230.46
TB-4a (MW-30)	282.23	282.20	65.0	40.0-55.0	38.0-55.0	36.0-38.0	8.0	2.0	4/14/98	complete	242.20	227.20
TB-4b	na	273.37	49.0	39.0-49.0	35.0-49.0	33.0-35.0	8.0	2.0	4/8/98	abandoned	234.37	224.37
TB-4c	na	276.39	45.0	35.0-45.0	33.0-45.0	31.0-33.0	8.0	2.0	4/8/98	abandoned	241.39	231.39
TB-4d	na	277.49	50.0	35.0-50.0	33.0-50.0	31.0-33.0	8.0	2.0	4/16/98	abandoned	242.49	227.49
TB-5	na	263.44	75.0	53.0-73.0	40.0-73.0	38.0-40.0	6.0	2.0	4/22/98	abandoned	210.44	190.44
TB-6 (MW-28)	237.89	238.24	30.0	20.0-30.0	18.0-30.0	16.0-18.0	8.0	2.0	4/9/98	complete	218.24	208.24
TB-6d (MW-28d)	238.44	238.86	52.0	41.0-51.0	39.0-51.0	37.0-39.0	6.0	2.0	4/22/98	complete	197.86	187.86
TB-7	na	267.19	55.0	45.0-55.0	43.0-55.0	41.0-43.0	8.0	2.0	4/10/98	abandoned	222.19	212.19
TB-7a	na	269.20	45.0	35.0-45.0	33.0-45.0	31.0-33.0	8.0	2.0	4/13/98	abandoned	234.20	224.20
MW-10a	274.76	272.10	53.0	43.0-53.0	41.0-53.0	39.0-41.0	6.0/8.0	2.0	4/1/98	complete	229.10	219.10
MW-13*	270.32	267.82	32.0	17.0-32.0	15.0-32.0	13.0-15.0	8.0	2.0	4/9/98	complete	250.82	235.82
MW-23 deep	274.89	272.10	94.0	78.0-88.0	77.0-88.0	77.0-75.0	6.0	2.0	4/27/98	complete	194.10	184.10
MW-27	215.54	213.34	15.0	5.0-15.0	3.0-15.0	1.0-3.0	8.0	2.0	4/15/98	complete	208.34	198.34
MW-33	222.01	219.16	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/22/98	complete	209.16	194.16
MW-34	221.96	218.96	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/23/98	complete	208.96	193.96
MW-34d	222.16	218.89	55.0	45.0-55.0	43.0-55.0	41.0-43.0	12.0/6.0	2.0	7/23/98	complete	173.89	163.89
MW-35	223.48	220.60	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/23/98	complete	210.60	195.60

NOTES:

* - MW-13 was replaced in the lined landfill

MSL - Mean Sea Level
D - Deep

characterize the bedrock aquifer in the above mentioned buffer zone. The new bedrock wells were installed using a truck-mounted air rotary rig. The boring was advanced through the overburden to bedrock using 12.25-inch outside diameter hollow stem augers. The boring was then cased off with a 6-inch diameter schedule 80 PVC surface casing. The annulus of the boring was sealed with a cement/bentonite mixture. A 6-inch diameter boring was then continued below this surface casing to completion depth of the bedrock well. Upon completion of the boring, the bedrock monitor wells in the western buffer zone (MW-28d, -29d, and -31d) were completed with flush-mounted well protection. A fourth bedrock monitoring well (MW-23d) was installed adjacent to existing MW-23 in order to obtain vertical definition of the extent of contamination onsite. It was constructed with a six-inch surface casing. The final screened interval of MW-23d was determined by collecting samples by use of packer test equipment at selected depth intervals which corresponded with fractures detected during drilling through the bedrock. The specific depths of the packer samples may be seen on the boring log for MW-23d. A detailed description of the packer testing is presented later in this section. Also, a previously damaged and abandoned monitoring well (MW-10) was replaced inside the landfill fence. Because groundwater was not initially encountered above bedrock, the boring was advanced into bedrock but no six-inch outer surface casing was used. These wells were completed in April, 1998 and formally sampled during the semi-annual sampling event in May, 1998. The sampling results are discussed in Section 3 and are presented in Appendix C.

In July, 1998, four more permanent wells were installed in the adjacent property (Mallinkrodt) to the east of the landfill. Three wells (MW-33, -34, and -35) were installed to monitor the surficial aquifer. Due to the relative thickness of the alluvium/saprolite and relatively shallow surficial aquifer, sufficient DPT data was obtained in Phase I - Task 1 to set these permanent wells outside the plume without installing any temporary wells. All wells were installed following the methods described in the first paragraph of this section.

In addition to these wells, a bedrock well (MW-34d) was installed using a truck-mounted air rotary rig and following the same methods as the previously installed bedrock wells.

A new MW-5 was also installed during this Task. MW-5 was originally located within the eastern landfill boundary. Due to past construction activities in that area, the old MW-5 was no longer able to be sampled. The replacement MW-5 is located as close as possible to the old MW-5. All of the permanent wells installed in April and July plus MW-22, MW-23, and MW-24 were sampled in August, 1998. A summary of the depths and construction details of the permanent monitoring wells is presented in Table 2-2. The results of this comprehensive sampling are discussed in detail in Section 3 and the analytical results are presented in Appendix C.

2.4 Groundwater Sampling from Monitor Wells

After well development, the monitor wells were sampled. Prior to sample collection, water levels were measured to determine groundwater elevations and volume of water in each well. A potentiometric contour map (Sheet 2-1 at the end of this section) was constructed using the groundwater elevations collected during the latest comprehensive sampling event in April. The groundwater elevations may be seen on Table 2-3. The wells were then purged using a laboratory decontaminated teflon bailer. Each well was purged until at least three well volumes had been removed. Each volume of water purged was tested for pH, temperature, and conductivity. These field measurements are presented on Table 2-4. Groundwater samples were collected and placed in sample jars, placed on ice, and transported to CDM's Cambridge, Massachusetts laboratory for analysis for Appendix I VOC and metal constituents plus dichlorodifluoromethane and mercury. Samples collected from the temporary wells were collected in a manner similar to that in the permanent wells. However, as previously stated, those samples were sent to CDM in Atlanta and screened for Appendix I VOCs only.

2.5 Packer Testing

Packer testing was performed within well MW-23d to assess groundwater quality in potentially isolated fractures of the bedrock. Air rotary drilling was used to advance to the desired depth. A single packer (air bladder) was then placed typically ten feet above the borehole bottom and expanded. The isolated interval was purged until dry at least three times, and allowed to recover, before a sample was taken. Following the initial sample collection, drilling continued and samples was taken from a second and third depth interval. Sample intervals were chosen based on the frequency of fracture zones. All samples were field screened with the portable GC. Analyses were performed for the indicator parameters (BTEX, TCE, PCE, methylene chloride) as described in Section 2.2.

2.6 Decontamination

All sample-contacting equipment was cleaned with a liquid Alconox wash and potable water rinse, a reagent-grade isopropanol desorbant rinse, and a final deionized water rinse. All non-sample contacting equipment (e.g., drill string, auger flights) was cleaned using a steam cleaner.

2.7 Management of Investigation Derived Wastes

All drill cuttings, well development/purge water, and equipment decontamination water was collected. Drums were used to collect drill cuttings and purge water, and they were transported to the Wake County landfill for all wastes generated during the investigation that took place on the western side of the landfill facility. Samples were collected from the drums for analysis of

TABLE 2-2
SUMMARY OF MONITOR WELL COMPLETION DATA
NORTH WAKE UNLINED LANDFILL ASSESSMENT

Well Designation	TOC Elevation (MSL)	Depths (feet below ground surface)					Borehole Diameter (inches)	Casing Diameter (inches)	Date of Construction	(feet above mean sea level) Elevation	
		Ground Elevation (MSL)	Total Borehole Depth	Screen Interval	Sand Filter Interval	Bentonite Seal Interval				Top of Screen Interval	Bottom of Screen Interval
MW-5	231.79	229.1	23.0	8.0-23.0	6.0-23.0	4.0-6.0	8.0	2.0	7/24/98	221.10	206.10
MW-10	274.76	272.1	53.0	43.0-53.0	41.0-53.0	39.0-41.0	8.0	2.0	4/1/93	229.10	219.10
MW-23d	274.89	272.56	94.0	78.0-88.0	77.0-88.0	75.0-77.0	12.0/6.0	2	4/27/98	194.56	184.56
TB-1a	255.05	255.13	30.0	20.0-30.0	17.5-30.0	14.0-17.5	6.0	2.0	5/8/98	235.13	225.13
MW-27	215.54	213.34	15.0	5.0-15.0	3.0-15.0	1.0-3.0	8.0	2.0	4/15/98	193.34	183.34
MW-28	237.89	238.24	30.0	20.0-30.0	18.0-30.0	16.0-18.0	8.0	2.0	4/15/98	218.24	208.24
MW-28d	238.44	238.83	51.0	41.0-51.0	39.0-51.0	37.0-39.0	12.0/6.0	2.0	4/23/98	197.83	187.83
MW-29	275.42	275.55	40.0	30.0-40.0	28.0-40.0	26.0-28.0	8.0	2.0	4/14/98	245.55	235.55
MW-29d	275.06	275.21	52.0	47.0-52.0	45.0-52.0	43.0-45.0	12.0/6.0	2.0	4/23/98	228.21	223.21
MW-30	282.23	282.20	55.0	40.0-55.0	38.0-55.0	36.0-38.0	8.0	2.0	4/14/98	242.20	227.20
MW-31	261.67	261.83	35.5	25.5-35.5	23.0-35.5	21.0-23.0	8.0	2.0	4/13/98	236.33	226.33
MW-31d	260.92	261.42	66.0	56.0-66.0	54.0-66.0	52.0-54.0	12.0/6.0	2.0	4/23/98	205.42	195.42
MW-32	242.99	238.99	23.0	13.0-23.0	11.0-23.0	9.0-11.0	8.0	2.0	4/13/98	225.99	215.99
MW-33	222.01	219.16	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/22/98	209.16	194.16
MW-34	221.96	218.96	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/23/98	208.96	193.96
MW-34d	222.16	218.89	55.0	45.0-55.0	43.0-55.0	41.0-43.0	12.0/6.0	2.0	7/23/98	173.89	163.89
MW-35	223.48	220.60	25.0	10.0-25.0	8.0-25.0	6.0-8.0	8.0	2.0	7/23/98	210.60	195.60

NOTES:

MSL - Mean Sea Level
D - Deep

Table 2-3
Groundwater Elevations
North Wake Landfill Assessment

Monitoring Well Designation	TOC Elevation (AMSL)	May-98 Groundwater Elevation (AMSL)	Aug-98 Groundwater Elevation (AMSL)	Sep-98 Groundwater Elevation (AMSL)	Oct-98 Groundwater Elevation (AMSL)	Dec-98 Groundwater Elevation (AMSL)	Jan-99 Groundwater Elevation (AMSL)	Feb-99 Groundwater Elevation (AMSL)	Apr-99 Groundwater Elevation (AMSL)
MW-5	231.79	NS	211.01	NS	NS	210.83	NS	NS	212.29
MW-10	274.76	232.15	233.16	232.85	232.49	231.89	230.71	230.37	230.31
MW-22	254.62	222.71	221.52	221.27	220.91	220.42	220.17	220.00	220.42
MW-23	274.83	233.14	232.21	231.90	231.58	230.87	230.46	230.52	231.48
MW-23d	274.89	232.79	231.96	231.67	231.37	230.72	230.31	230.29	230.59
MW-24	266.64	225.17	224.17	223.86	223.59	223.09	222.83	222.86	222.89
TB-1a	255.05	232.22	229.28	228.93	228.72	228.44	228.59	228.81	228.90
MW-27	215.54	209.28	NS	NS	NS	210.09	NS	NS	210.22
MW-28	237.89	221.71	220.72	220.35	219.89	219.50	219.48	219.44	219.46
MW-28d	238.44	219.06	216.01	220.70	219.21	211.12	214.39	213.03	211.23
MW-29	275.42	236.83	236.17	DRY	DRY	DRY	DRY	DRY	DRY
MW-29d	275.06	236.24	235.91	235.61	235.30	234.48	234.14	233.98	234.06
MW-30	282.23	234.56	234.08	233.75	232.46	232.78	232.36	232.25	232.23
MW-31	261.67	234.16	232.10	231.62	231.30	230.78	230.58	230.82	230.47
MW-31d	260.92	233.67	231.85	231.42	231.08	230.56	230.37	230.54	229.92
MW-32	242.99	228.88	226.76	226.99	226.68	226.91	227.86	228.30	228.48
MW-33	222.01	NS	209.59	NS	NS	209.91	NS	NS	210.00
MW-34	221.96	NS	207.57	NS	NS	207.48	NS	NS	207.75
MW-34d	222.16	NS	207.49	NS	NS	207.31	NS	NS	207.24
MW-35	223.48	NS	205.88	NS	NS	205.76	NS	NS	205.83

AMSL = Above Mean Sea Level
NS = Not Sampled

Table 2-4
Field Parameters
North Wake Landfill Assessment
Wake County

Sampling Date:	May-98				Aug-98				Sep-98				Oct-98				Dec-98				Jan-99				Feb-99				Apr-99			
Monitoring Well Designation	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)	pH (-)	Conductivity (µS)	Turbidity (NTU)	Temp. (deg. C)
TB-1a	5.35	124	130	15.8	5.29	234	856	15.9	5.36	252	>999	14.6	5.15	225	>999	15.0	5.98	203	553	14.7	5.03	203	964	14.3	5.52	208	378	14.9	5.61	209	352	15.0
MW-5	NS	NS	NS	NS	5.35	211	657	16.2	NS	NS	NS	NS	NS	NS	NS	NS	5.70	166	659	16.9	NS	NS	NS	NS	NS	NS	NS	NS	5.03	471	208	15.4
MW-10	4.98	192	680	15.8	5.36	224	585	16.8	5.20	223	95	16.2	5.73	197	150	15.8	5.85	204	125	15.7	4.82	228	68	14.9	5.49	226	101	15.2	5.86	216	181	15.8
MW-22	5.43	151	404	14.8	5.64	168	796	16.0	5.25	189	356	15.3	5.96	168	376	15.1	6.14	182	472	15.2	5.00	192	374	14.2	5.52	173	257	14.2	6.24	172	965	15.4
MW-23	5.13	156	788	16.9	5.51	158	>999	17.1	5.85	154	>999	16.3	5.17	142	>999	15.8	6.12	167	>999	15.8	4.42	168	>999	14.8	4.92	173	>999	15.3	5.80	154	>999	15.9
MW-23d	5.42	155	550	16.3	5.88	163	1	16.7	6.31	152	0	16.7	6.08	156	963	15.5	6.52	180	>999	15.4	5.30	169	711	14.5	5.84	175	480	14.8	6.52	179	>999	NS
MW-24	5.49	162	388	15.4	5.20	217	984	16.4	5.31	206	>999	15.4	4.75	173	>999	15.1	5.75	176	>999	15.2	4.13	174	929	14.5	4.82	179	>999	14.9	5.70	153	>999	15.8
MW-27	7.32	282	148	14.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.68	349	219	17.4	NS	NS	NS	NS	NS	NS	NS	NS	6.56	351	223	17.2
MW-28	5.18	143	115	15.2	5.63	188	>999	16.2	6.18	187	>999	16.0	6.17	158	>999	16.7	6.32	154	>999	15.6	6.92	152	>999	14.7	5.96	147	>999	14.8	6.27	152	>999	15.2
MW-28d	6.01	218	150	14.9	6.28	320	0	17.5	6.90	413	0	15.6	6.36	334	130	16.0	6.95	318	59	14.3	7.70	335	86	14.1	6.92	340	36	14.1	6.88	307	52	14.1
MW-29	5.89	248	135	15.8	6.15	263	226	18.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29d	7.52	341	2	15.3	5.96	173	0	16.3	6.26	180	0	15.1	6.43	199	155	15.9	6.50	138	50	14.7	6.90	129	46	14.4	6.20	127	152	14.7	6.24	205	NS	15.0
MW-30	5.30	134	740	15.0	5.86	139	>999	16.3	5.89	141	>999	14.9	6.03	128	>999	15.6	6.36	128	>999	15.4	6.81	128	878	14.5	6.22	127	>999	14.3	6.64	126	>999	14.0
MW-31	5.71	130	540	16.0	5.68	88	>999	16.0	5.05	87	>999	14.8	5.27	79	>999	15.2	6.38	84	>999	15.7	5.54	94	>999	14.4	5.31	84	>999	15.1	5.89	81	>999	14.9
MW-31d	6.38	114	>999	15.8	6.21	123	100	16.6	5.42	125	584	14.8	6.33	111	95	15.8	6.08	110	43	15.3	5.71	111	32	14.5	6.25	110	33	14.9	6.17	0	32	14.7
MW-32	5.62	348	850	13.8	5.80	180	879	16.0	5.70	118	>999	15.2	6.15	91	>999	16.2	6.32	88	>999	16.8	5.28	184	>999	15.2	5.90	305	910	15.4	5.61	300	951	14.9
MW-33	*	*	*	*	5.68	105	452	15.0	NS	NS	NS	NS	NS	NS	NS	NS	6.18	86	250	16.0	NS	NS	NS	NS	NS	NS	NS	NS	6.18	86	201	16.3
MW-34	*	*	*	*	4.77	96	>999	14.7	NS	NS	NS	NS	NS	NS	NS	NS	5.56	65	>999	15.2	NS	NS	NS	NS	NS	NS	NS	NS	5.55	66	15	>999
MW-34d	*	*	*	*	5.28	119	0	15.7	NS	NS	NS	NS	NS	NS	NS	NS	5.58	94	20	14.2	NS	NS	NS	NS	NS	NS	NS	NS	5.58	94	21	14.9
MW-35	*	*	*	*	4.99	59	673	15.1	NS	NS	NS	NS	NS	NS	NS	NS	5.72	45	976	14.7	NS	NS	NS	NS	NS	NS	NS	NS	5.71	44	968	14.7

NS = Not Sampled
* - Installed 8/98

VOCs, metals, and PCBs using the Toxicity Characteristic Leaching Procedure (TCLP) for waste characterization. If analytical results indicate that there are contaminants above regulatory standards for landfill disposal, then additional samples are analyzed using TCLP. Disposal procedures are based on the results of the TCLP analysis.

The analysis indicated that the investigation derived waste was non-hazardous. Therefore, the drummed soil was disposed in the North Wake Sanitary Landfill. Groundwater was disposed as non-hazardous by Environmental Management Solutions, Inc. of Greensboro, North Carolina at the Ecosystem facility in High Point.

Drawings Under Seperate Cover

Section 3
Results of Investigation

3.1 Environmental Setting

Topography

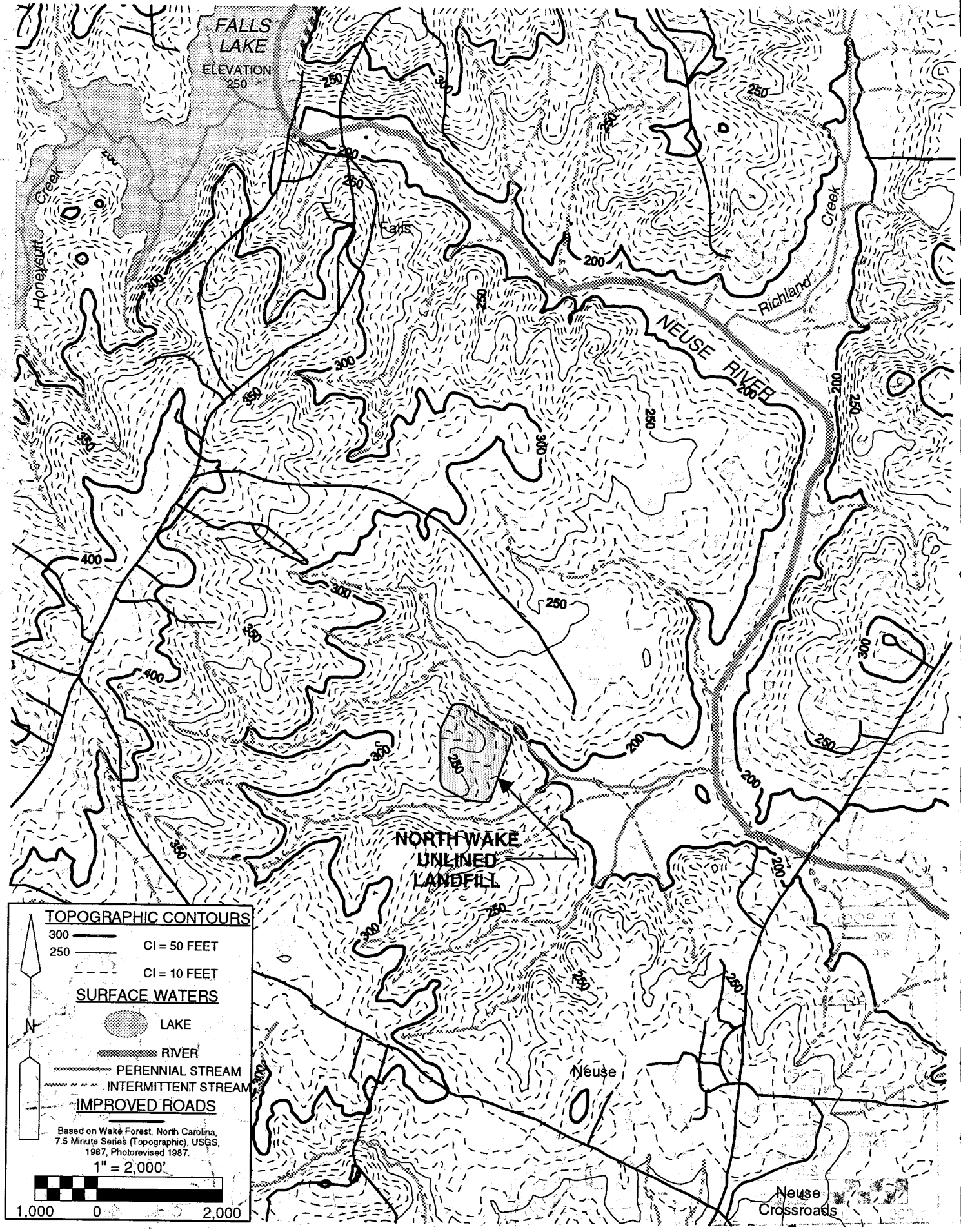
The North Wake Unlined Landfill is located along the eastern edge of the Piedmont Physiographic Province of North Carolina. The topography of this region is characterized by slightly to moderately undulating valleys and ridges having a southwest to northeast trend. The ridges represent remnants of an ancient peneplain that has been dissected by erosion and drainage basin development. The site is included on the Wake Forest Quadrangle, 7.5 Minute Series Topographic map (USGS, 1967, photorevised 1987). A topographic map prepared from the USGS map for the site vicinity is presented as Figure 3-1. The site topography indicated on Figure 3-1 represents conditions prior to landfilling.

Elevations in the site vicinity range from a high of approximately 450 feet, National Geodic Vertical Datum of 1929 (NGVD), along a ridge west of the Site to a low of approximately 190 feet NGVD along the Neuse River to the east of the site. Landfilling has raised onsite elevations to approximately 360 feet. Prior to fill placement, the elevations ranged from approximately 270 feet to 230 feet NGVD.

The entire site vicinity is located within the Neuse River drainage basin. The Neuse River generally flows to the southeast, with Falls Lake upstream of the landfill. The surface water basin that drains the site is indicated on Figure 3-2. Perennial streams exist immediately north and south of the Site. These streams originate west of the site from several intermittent tributaries, all of which were observed to be flowing during recent site visits. The north stream was observed to typically have a substantially higher flow than the south stream, a likely consequence of a greater surface area contributing flow to the north stream (Figure 3-2). The north and south streams have a confluence less than 1,000 feet east of the site.

A January 1998 stream reconnaissance included both the north and south streams from their confluence to an elevation of approximately 230 feet NGVD on the north stream and approximately 290 feet NGVD on the south stream. The only spring identified along the north stream was adjacent to the northwest corner of the landfill (Figure 3-2). This spring was observed to be flowing at an estimated 2 gallons per minute (GPM) and originated from saprolite beneath a surface drainage swale. This is likely a seasonal spring and its water could be derived from infiltration through the drainage swale. A small saprolite seep was also identified under the same conditions on the south stream adjacent to the southeast corner of the site.

Pencil seep note on fig 3-1 for Rock & Saprolite Spring info.



CDM Camp Dresser & McKee

FIGURE No. 3-1
TOPOGRAPHIC MAP
NORTH WAKE UNLINED LANDFILL
WAKE COUNTY, NORTH CAROLINA

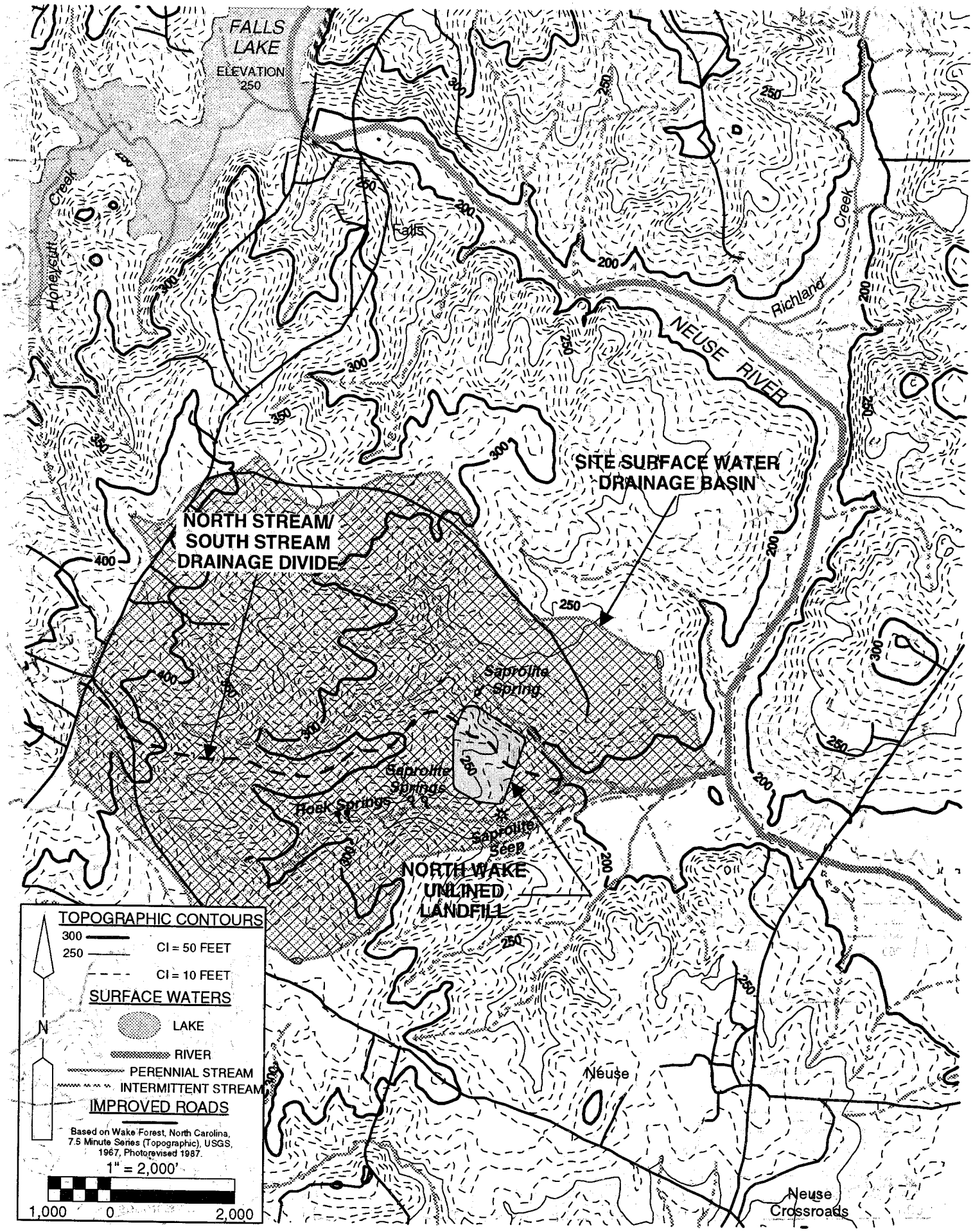


FIGURE No. 3-2
SURFACE WATER DRAINAGE BASIN
NORTH WAKE UNLINED LANDFILL
WAKE COUNTY, NORTH CAROLINA

Approximately 500 feet upstream of the landfill on the south stream, two saprolite springs were observed flowing at an estimated rate of approximately 0.5 GPM each. Also on the south stream, two springs originating from rock were observed approximately 1,800 feet upstream of the landfill. These springs were flowing at estimated rates of approximately 10 GPM. No springs or seeps were observed originating from the south side of the south stream.

Regional Geology

The geology of Wake County is made up of three different rock assemblages. The eastern portion of the county is underlain by a complex group of metamorphic rocks (gneiss, schists, and phyllites) of Late Precambrian or Paleozoic age, with mafic and granitic intrusions. Rocks of this group belong to the Raleigh Belt and the Carolina Slate Belt. The second group consists of stratified sedimentary rocks of Triassic age separated from the older rocks (Carolina Slate/Raleigh Belts) by the Jonesboro Fault. The third group consists of coastal plain sediments located primarily in the southeastern portion of the county (Parker, 1979). The North Wake Unlined Landfill is located within the Raleigh Belt of the metamorphic rock group.

The vicinity of the site is included in the Geologic Map of the Falls Lake-Wake Forest Area (Horton and others, 1992). Figure 3-3 presents the surface geology, as derived from this publication, for the site vicinity. Table 3-1 below summarizes the geologic descriptions for the rock types indicated on Figure 3-3.

Table 3-1
Summary of Geologic Descriptions
(Horton and others, 1992)

Map Symbol	*Terraine*	*Unit*	*Age - Description*
Pgw	Ordovician Through Pennsylvanian Plutons	Wyatt Pluton - Muscovite-Biotite Granite	**Pennsylvanian** - Very Light gray, medium-grained, muscovite-biotite monzogranite. Presence of muscovite (less abundant than biotite) and accessory garnet are distinctive. Granite is foliated and inclusions of Raleigh gneiss are common.
Pgr		Rolesville Batholith - Biotite Monzogranite	**Pennsylvanian** - Medium- to coarse-grained, massive to weakly foliated biotite monzogranite composed of perthitic microcline, oligoclase (commonly with albite rims), quartz, and minor biotite. Primary and secondary accessories include opaque minerals, allanite, titanite, apatite, zircon, chlorite, epidote, muscovite, calcite, and hematite.

Map Symbol	*Terraine*	*Unit*	*Age - Description*
Pzgg	Ordovician through Pennsylvanian Plutons (cont.)	Gneissic Biotite Granitoid	**Paleozoic?** - Foliated biotite granitoid orthogneiss interlayered with Raleigh gneiss. Includes Wake Forest pluton and Greshams Lake pluton.
SOgf		Falls Leucogneiss	**Silurian or Ordovician?** - Strongly lineated granitic orthogneiss containing abundant accessory magnetite; interpreted to occupy Nutbush Creek fault zone.
cgk	Crabtree	Garnet-Kyanite Schist of Horse Creek	**Age unknown** - Coarse-grained aluminoschist having abundant, conspicuous porphyroblasts of kyanite and garnet. Composed of quartz, muscovite, biotite, garnet, kyanite, and minor amounts of staurolite and albite. Accessories include apatite, zircon, and opaque minerals. Staurolite occurs as small anhedral grains and as inclusions in garnet.
CZfs	Falls Lake	Biotite-Muscovite Schist	**Cambrian and/or Late Proterozoic** - Biotite-muscovite-oligoclase-quartz schist; minor chlorite and garnet are common; accessory staurolite and kyanite are locally present.
CZfu	Melange	Undivided Ultramafics	**Cambrian and/or Late Proterozoic** - Variably altered ultramafic rocks including actinolite rock, actinolite-chlorite schist, talcose schist, and serpentinite.
rgn	Raleigh	Heterogeneous Gneiss	**Late or Middle Proterozoic?** - Interlayered biotite gneiss and hornblende gneiss, commonly with layers of amphibolite.
Jd	Not Applicable	Olivine Diabase	**Early Jurassic** - Dark gray to black, fine- to medium-grained: occurs as steeply dipping dikes.

The North Wake Unlined Landfill is situated over the Raleigh gneiss. West of the site and corresponding with the highest elevations in the vicinity, is the Falls Leucogneiss. Both of these rock occurrences demonstrate a southwest to northeast trend in outcrop. Immediately east of the site is the Greshams Lake pluton. During the January 1998 site reconnaissance, the Raleigh gneiss was observed to consist primarily of biotite gneiss and to a lesser degree hornblende gneiss. The gneiss demonstrates strong flow banding of compositional layers

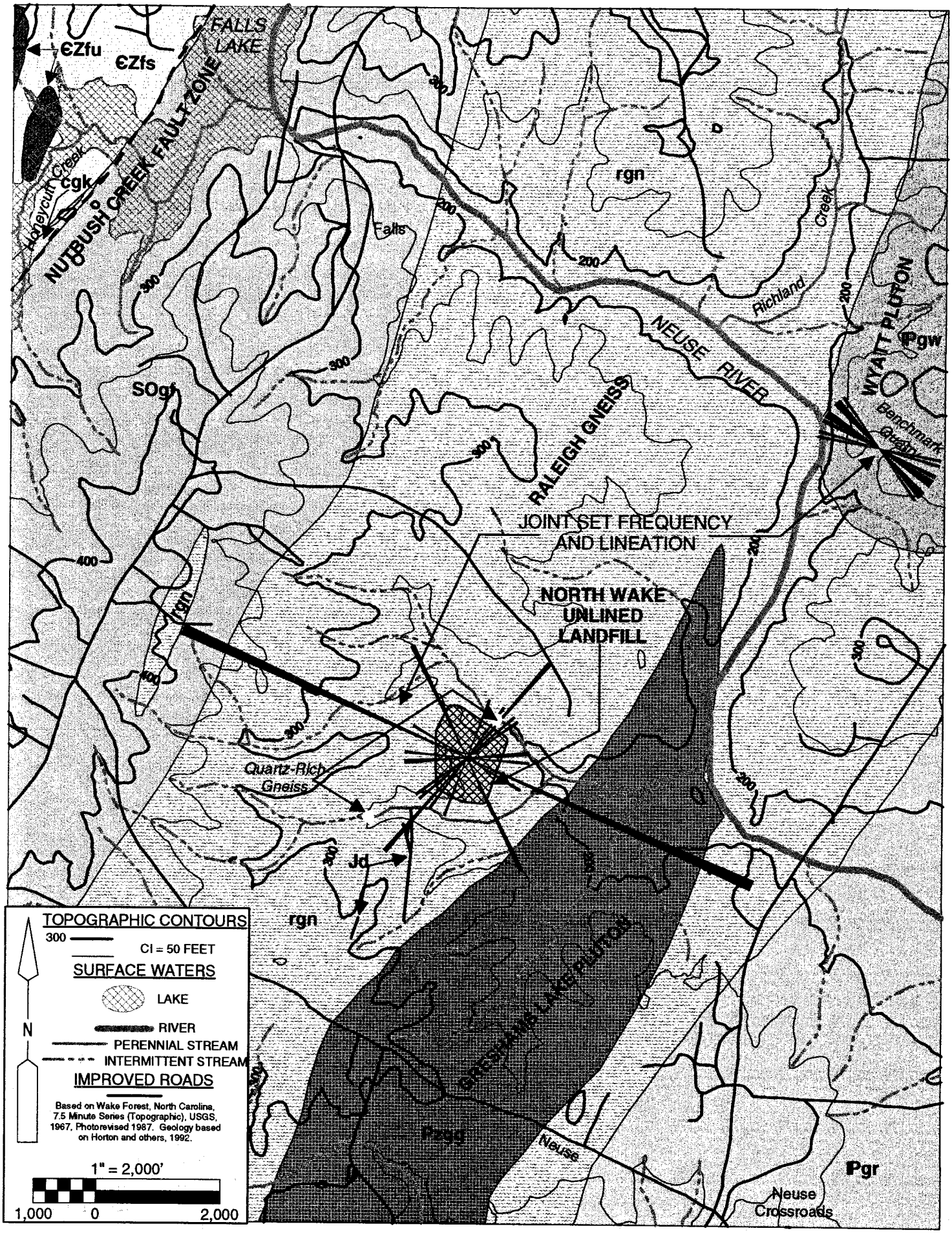


FIGURE No. 3-3
GEOLOGIC MAP
NORTH WAKE UNLINED LANDFILL
WAKE COUNTY, NORTH CAROLINA

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consisting of white, feldspar-rich layers and quartz-biotite layers. Granitoid orthogneiss (Pzgg) was also observed within the north and south stream channels west of the site.

Although somewhat variable, the general strike of foliation in the Raleigh gneiss in the site vicinity is from southwest to northeast, as mapped by Horton and others (1992). The foliation dips to the east from approximately 35° to 80°.

Relatively small diabase dikes, several feet wide, have also been identified south of the site during construction of a new landfill. These dikes have been mapped and generally trend from south to north. Should these dikes extend into the proximity of the site, they would be approximately parallel to the west boundary of the unlined landfill at a distance of approximately 400 feet.

Also noted during the site reconnaissance was an extremely quartz-rich gneiss in both the north and south streams. This rock appeared to be resistant to erosion/weathering relative to the surrounding rock and formed the creek channels into a series of small waterfalls for distances of approximately 75 feet. These two outcrops may potentially represent a continuous, resistant rock layer that forms a subsurface bedrock ridge aligned with the regional structure.

Regional Hydrogeology

Groundwater in the vicinity of the site occurs in the saprolite horizon and within fractures of the crystalline bedrock. The transition zone between saprolite and unweathered rock is generally the zone in which most lateral groundwater flow occurs. This zone typically contains a lower percentage of clay, derived from the complete weathering of micaceous minerals and feldspar, and is made more permeable by cracking associated with shrinking and swelling of minerals by hydration.

Groundwater in saprolite is derived directly from infiltrating precipitation. Welby (1994) reports that an estimated 10 to 15 percent of the annual average precipitation of about 45 inches reaches the water table. Groundwater reaching the water table then flows laterally, primarily in the transition zone above crystalline rock, until it ultimately discharges at springs or as diffuse flow into surface water features. Alternately, groundwater may encounter fractures in the crystalline rock and serve to recharge these fracture systems.

Groundwater flow directions in saprolite and the transition zone are controlled primarily by topography with groundwater flow mirroring surface drainage patterns. However, the topography of the subsurface crystalline rock surface can cause deviations in the presumed groundwater flow directions as valleys and ridges on the rock surface can direct groundwater flow. Mineralogical heterogeneities in the saprolite/transition zone may result in contrasting permeabilities and influence groundwater flow directions. Diabase dikes tend to

be less permeable than the surrounding materials and may form a groundwater flow barrier. Alternately, relic fractures in the saprolite/transition zones may represent preferential groundwater flow paths.

The occurrence and movement of groundwater in the unweathered bedrock is generally restricted to fractures as these materials have little primary porosity. The fractures are typically most numerous and have the largest openings near the top of the unweathered rock. The amount and location of groundwater in the crystalline rock varies greatly dependant on the depth, openness, and degree of connection between fractures. Large open fractures were not observed during the site reconnaissance. Upon inspection of fracture systems in the Benchmark quarry, all fractures in the crystalline bedrock were either mineralized or intruded. Although the quarry is currently being mined to elevations well below the elevation of the Neuse River, quarry representatives indicated that groundwater flow into the quarry has not been observed and during dry weather the excavation remains dry.

Site Geology

The subsurface geology at the site was highly variable. On the western side of the investigation, a generalized stratigraphic profile could be established. Generally, the investigation area was covered by 4 to 6 inches of detritus, topsoil and rootmat. Underlying the topsoil was a layer of reddish brown silt/clay. This silt/clay was encountered in most borings up to depths of 7 to 17 feet below land surface (bls). The silt/clay was usually underlain by a light brown, fine sandy silt saprolite with varying amounts of mica. Occasionally, small veins of quartz or granite were encountered in the sandy silt saprolite. Generally, this light brown sandy silt saprolite graded into a dark green and white sandy silt saprolite with depth to top of bedrock. The depth to bedrock ranged from 15 to greater than 65 feet bls.

On the eastern side of the investigation area, a 4 to 6-inch cover of topsoil and rootmat was underlain by light to medium brown sandy silt alluvial deposits. This overburden varied from 5 to 15 feet in thickness. Below the alluvial layer, a layer of light brown sandy silt saprolite with varying amounts of mica was encountered. In one boring, a zone of weathered pegmatite/granite was encountered at a depth of 15 feet bls. Bedrock was encountered in only one boring at a depth of 43 feet bls.

Air rotary methods were used to advance all deep borings into bedrock. Cuttings blown back up the borehole revealed bedrock which varied from schistose to granitic. Generally, the bedrock was highly weathered and fractured for the first 20 to 30 feet below auger refusal. One boring (MW-23d) revealed highly fractured bedrock to depths of 90 feet bls. This boring was located within a drainage feature where more highly fractured bedrock would be expected.

Site Hydrogeology

Groundwater monitor wells installed surrounding the unlined landfill are generally completed to depths corresponding with the top of rock and are considered representative of the saprolite/transition zone. Sheet 2-1 presents a water table elevation map based on water level data obtained from the monitor wells during the April 1999 sampling event. The water table elevation contours indicate an easterly groundwater flow direction coincident with the site topography prior to landfilling. It is, however, probable that groundwater elevations beneath the landfill have been higher than those indicated by the figure because of a mounding effect almost invariably occurring in unlined landfills. As a result, radial groundwater flow away from the landfill has occured. Typically, such radial flow patterns dissipate within relatively short distances, beyond which the groundwater assumes a more typical flow direction. Installation of the impermeable cap, which occurred in late 1997, has likely caused a significant reduction in the mounding of groundwater within the landfill.

3.2 Phase I Results

Geoprobe Soil Sampling

The results of the Phase I laboratory analysis of soil samples indicated no volatile organic compounds. Several metals were detected, however, all of these metal detections are attributable to background concentrations. The complete results of the Phase I soil analysis are shown on Table 3-2.

Geoprobe Water Sampling

The results of the Phase I field GC screening and laboratory analysis of groundwater samples that exceeded the NC 2L standards are summarized on Figure 3-4. The complete results of Phase I and II laboratory analysis for DPT/ geoprobe, temporary well, and permanant well groundwater samples are presented in Table 3-3.

On the west side of the landfill, isolated rock bodies or dense partially weathered rock caused DPT refusal at depths above the groundwater table at five attempted sampling locations. These five locations are designated as "DRY" in Figure 3-1.4 At these sampling locations, no groundwater samples were collected. Specifically, on the west side of the site, the dry DPT holes and their penetration depths were:

GP- 1: 26 ft. GP- 2: 29 ft. GP- 3: 43 ft. GP-13: 15 ft. GP-14:26 ft.

Field screening with the portable GC detected VOCs in only one boring, GP-4. Field GC screening indicated that the groundwater sample had trichloroethene

Table 3-2
Results of Laboratory Analysis - Soil
(February 1998)
North Wake Unlined Landfill Assessment

SAMPLE DESIGNATION	DETECTED METALS APPENDIX I and II (mg/Kg dry)	DETECTED VOC's APPENDIX I and II (ug/Kg dry)
NWUL-GP-5	Barium (20) Beryllium (0.37) Chromium (11) Copper (23) Vanadium (7.1)	None
NWUL-GP-9	Barium (35) Beryllium (0.33) Chromium (14) Cobalt (6.4) Copper (7.8) Nickel (8.9) Vanadium (52)	None
NWUL-GP-10	Barium (12) Beryllium (0.57) Chromium (12) Copper (27) Nickel (4.3) Vanadium (19)	None
NWUL-GP-11	Barium (110) Beryllium (1.3) Chromium (30) Cobalt (14) Copper (36) Nickel (24) Vanadium (53)	None
NWUL-GP-12	Barium (34) Beryllium (1.3) Chromium (20) Cobalt (7.9) Copper (28) Nickel (24) Vanadium (63)	None
NWUL-GP-19	Barium (82) Beryllium (0.88) Chromium (6.2) Copper (7.7) Lead (12) Nickel (30) Vanadium (16)	None
NWUL-GP-20	Barium (10) Chromium (5.8) Copper (4.8) Nickel (6.6) Vanadium (24)	None
NWUL-GP-21	Barium (17) Vanadium (11)	None
NWUL-GP-22	Barium (220) Beryllium (2.1) Chromium (100) Cobalt (47) Nickel (45) Vanadium (86)	None

Table 3-3
Groundwater Sampling Results Summary
(February 1998 - February 1999)
North Wake Unlined Landfill Assessment

SAMPLE DESIGNATION	FIELD SCREENING RESULTS (APRIL 1998)	LAB DETECTED PARAMETERS APPENDIX I and II (MW's only) (all values in ppb)		NORTH CAROLINA 2L STANDARDS APPENDIX I and II
		(MAY 1998)	(February 1999)	
MW-1/11		none	NS	
MW-5 * Lab detected parameters are for August and December 1998 sampling events		**Benzene (6.5)**	**Benzene (7.9)**	1
		Trichloroethene (18)	**Trichloroethene (17)**	2.8
		cis-1,2-dichloroethene (15)	cis-1,2-dichloroethene (15)	70
		Chloroethane (39)	Chloroethane (20)	2800
		1,4-dichlorobenzene (5.4)	1,4-dichlorobenzene (6.0)	75
		1,1-dichloroethane (74)	1,1-dichloroethane (81)	700
		Methylene Chloride (300)	**Methylene Chloride (79)**	5
		Tetrachloroethene (8.2)	**Tetrachloroethene (11)**	0.7
		Beryllium (2.2)	Beryllium (<2)	2*
		Cadmium (4.9)	Cadmium (1.5)	5
		Chromium (3.2)	Chromium (<10)	50
		Cobalt (2.4)	Cobalt (<10)	2
		Vanadium (68)	Vanadium (<40)	25*
		Zinc (190)	Zinc (<50)	2100
MW-10		**Benzene (<12)**	**Benzene (9)**	1
		Trichloroethene (<12)	**Trichloroethene (21)**	2.8
		Chloroethane (<25)	Chloroethane (24)	2800
		1,1-dichloroethane (77)	1,1-dichloroethane (140)	700
		Methylene Chloride (210)	**Methylene Chloride (<50)**	5
		cis-1,2-dichloroethene (37)	cis-1,2-dichloroethene (41)	70
		Tetrachloroethene (<12)	**Tetrachloroethene (17)**	0.7
		Total Xylenes (<12)	Total Xylenes (20)	530
		Cadmium (1.3)	Cadmium (<1)	5
		Lead (1.3)	Lead (< 10)	15
		Mercury (0.34)	Mercury (< 0.2)	1.1
		Zinc (720)	Zinc (<50)	2100
MW-22		Cadmium (<1)	Cadmium (2)	5
		Cobalt (110)	**Cobalt (168)**	2*
		Nickel (51)	Nickel (<50)	100
		Zinc (80)	Zinc (50)	2100
		1,1-dichloroethane (<5)	1,1-dichloroethane (8)	700
MW-23		Mercury (<0.2)	Mercury (0.2)	1.1
		1,1-dichloroethane (6.9)	1,1-dichloroethane (< 8)	700
		Methylene Chloride (10)	Methylene Chloride (<10)	5
MW-23d		Zinc (0.080 ppm)	Zinc (<50)	2100
MW-24		Trichloroethene (<25)	Trichloroethene (9)	2.8
		Chloroethane (<50)	Chloroethane (17)	2800
		1,1-dichloroethane (42)	1,1-dichloroethane (47)	700
		cis-1,2-dichloroethene (<11)	cis-1,2-dichloroethene (11)	70
		Toluene (230)	Toluene (50)	1000
		Methylene Chloride (240)	**Methylene Chloride (130)**	5
		Ethyl Benzene (28)	Ethyl Benzene (15)	29
		Tetrachloroethene (<25)	Tetrachloroethene (9)	0.7
		Total Xylenes (112)	Total Xylenes (61)	530
		Mercury (<0.2)	Mercury (0.4)	1.1
GP-17 (2/98)	**Beryllium (8.7)**	Beryllium (< 2)	Beryllium (< 2)	2*
	Chromium (130)	Chromium (<10)	Chromium (<10)	50
	Cobalt (28)	Cobalt (<10)	Cobalt (<10)	2*
	Lead (22)	Lead (10)	Lead (10)	15
	Vanadium (420)	Vanadium (40)	Vanadium (40)	25*
MW-27		Cadmium (<1)	Cadmium (1)	5
		bis(2-ethylhexyl)Phthalate (7.5)	**bis(2-ethylhexyl)Phthalate (6.4)**	3

Table 3-3
Groundwater Sampling Results Summary
(February 1998 - February 1999)
North Wake Unlined Landfill Assessment

SAMPLE DESIGNATION	FIELD SCREENING RESULTS (APRIL 1998)	LAB DETECTED PARAMETERS APPENDIX I and II (MW's only) (all values in ppb)		NORTH CAROLINA 2L STANDARDS APPENDIX I and II
		(MAY 1998)	(February 1999)	
GP-13 (2/98)	dry			
TB-6 (4/98)	none			
MW-28		none	none	
MW-28d		none	none	
GP-2 (2/98)	dry			
TB-2 (4/98)	**Tetrachloroethene (9)**			0.7
	Toluene (trace)			1000
TB-2a (4/98)	Tetrachloroethene (0.2)	Tetrachloroethene (<1)		0.7
MW-29		Chromium (18)	NS	50
MW-29d		Chromium (13)	none	50
GP-3 (2/98)	dry			
TB-4 (4/98)	**Trichloroethene (8)**			2.8
	Tetrachloroethene (17)			0.7
	Benzene (8)			1
	Toluene (17)			1000
	Xylene (8)			530
TB-4a (4/98)	**Benzene (2)**			
	Toluene (19)			
	Xylene (9)			
MW-30		**Chromium (60)**	Chromium (20)	50
		Cobalt (19)	Cobalt (<10)	2*
		Vanadium (56)	Vanadium (<40)	25*
		Zinc (60)	Zinc (<50)	2100
GP-4 (2/98)	**Trichloroethene (6)**			2.8
	Tetrachloroethene (16)			0.7
GP-14 (2/98)	dry			
TB-1 (4/98)	**Tetrachloroethene (1)**	Tetrachloroethene (<1)		0.7
	Toluene (trace)	Toluene (<5)		1000
	Chloroform (0.19)	Chloroform (<5)		0.19
MW-31		none	none	
MW-31d		**Beryllium (3)**	Beryllium (<2)	2*
		Chromium (110)	Chromium (<10)	50
		Cobalt (13)	Cobalt (<10)	2*
		Lead (19)	Lead (<10)	15
		Nickel (68)	Nickel (<50)	100
		Vanadium (280)	Vanadium (<40)	25*
		Zinc (210)	Zinc (<50)	2100
TB-3 (4/98)	Toluene (4)	Toluene (<5)		1000
MW-32		Chromium (23)	Chromium (<10)	50
		Cobalt (44)	**Cobalt (24)**	2*
		Vanadium (41)	Vanadium (<40)	25*
		Zinc (59)	Zinc (<50)	2100

Table 3-3
Groundwater Sampling Results Summary
(February 1998 - February 1999)
North Wake Unlined Landfill Assessment

SAMPLE DESIGNATION	FIELD SCREENING RESULTS (APRIL 1998)	LAB DETECTED PARAMETERS APPENDIX I and II (MW's only) (all values in ppb)		NORTH CAROLINA 2L STANDARDS APPENDIX I and II
		(MAY 1998)	(February 1999)	
TB-1a	**Tetrachloroethene (5)**	**Tetrachloroethene (2.3)**	**Tetrachloroethene (7.0)**	0.7
	Toluene (5)	Toluene (6.9)	Toluene (<5)	1000
	Xylene (2)	Xylene (<5)	Xylene (8)	530
	Chloroform (trace)	Chloroform (<5)	Chloroform (<5)	0.19
		Trichloroethene (1.5)	**Trichloroethene (<5)**	2.8
		1,1-dichloroethane (5.3)	1,1-dichloroethane (18)	700
		1,1,1-trichloroethane (6.9)	1,1,1-trichloroethane (10)	200
			Chloroethane (15)	2800
		Cadmium (1.1)	Cadmium (<1)	5
		Silver (14)	Silver (<10)	18
		Zinc (50)	Zinc (<50)	2100
TB-4b (4/98)	**Tetrachloroethene (1)**			0.7
	Benzene (2)			1
	Toluene (20)			1000
	Xylene (9)			530
TB-4c (4/98)	**Trichloroethene (19)**			2.8
	Tetrachloroethene (50)			0.7
	Toluene (15)			1000
	Xylene (11)			530
TB-4d (4/98)	none			
TB-5 (4/98)	**Trichloroethene (4)**			2.8
	Tetrachloroethene (4)			0.7
TB-7 (4/98)	**Trichloroethene (3)**			2.8
	Tetrachloroethene (15)			0.7
	Benzene (8)			1
	Toluene (30)			1000
	Xylene (6)			530
GP-16 (2/98)	dry			
TB-7a (4/98)	none			
GP-9 (2/98)	**Beryllium (6.9)**			2*
	Chromium (180)			50
	Cobalt (70)			2*
	Lead (37)			15
	Vanadium (440)			25*
MW-33 (August 1998 & December 1998)		**Cadmium (1.1)**	Cadmium (2.7)	5
		Chromium (46)	Chromium (18)	50
		Cobalt (18)	Cobalt (<10)	2*
		Vanadium (73)	Vanadium (<40)	25*
		Zinc (110)	Zinc (<50)	2100
GP-19 (2/98)	**Cobalt (20)**			
MW-34		**Beryllium (4.9)**	Beryllium (<2)	2*
		Cadmium (8.4)	Cadmium (2.2)	5
		Chromium (43)	Chromium (14)	50
		Cobalt (20)	Cobalt (<10)	2*
		Nickel (64)	Nickel (<50)	100
		Vanadium (110)	Vanadium (<40)	25*
		Zinc (180)	Zinc (59)	2100

Table 3-3
Groundwater Sampling Results Summary
(February 1998 - February 1999)
North Wake Unlined Landfill Assessment

SAMPLE DESIGNATION	FIELD SCREENING RESULTS (APRIL 1998)	LAB DETECTED PARAMETERS APPENDIX I and II (MW's only) (all values in ppb)		NORTH CAROLINA 2L STANDARDS APPENDIX I and II
		(MAY 1998)	(February 1999)	
MW-34d		**bis(2-ethylhexl)phthalate (7.3)**	bis(2-ethylhexl)phthalate (<5.1)	3
GP-12 (2/98) MW-35	none	**Beryllium (4.3)**	Beryllium (<2)	2*
		Cadmium (9.8)	Cadmium (4.6)	5
		Chromium (47)	Chromium (22)	50
		Cobalt (30)	**Cobalt (15)**	2*
		Nickel (52)	Nickel (79)	100
		Vanadium (120)	**Vanadium (43)**	25*
		Zinc (130)	Zinc (74)	2100

Bold print constituents exceed NC2L Standard.
* - proposed standard NS - not sampled
Samples are grouped by location. When sampling through geoprope resulted in dry conditions, test borings were taken at the same location. Additional testing borings (e.g. TB-1a and TB-4a) were taken, near same location as original, when contamination was detected. Some test borings were converted to permanent monitoring wells.

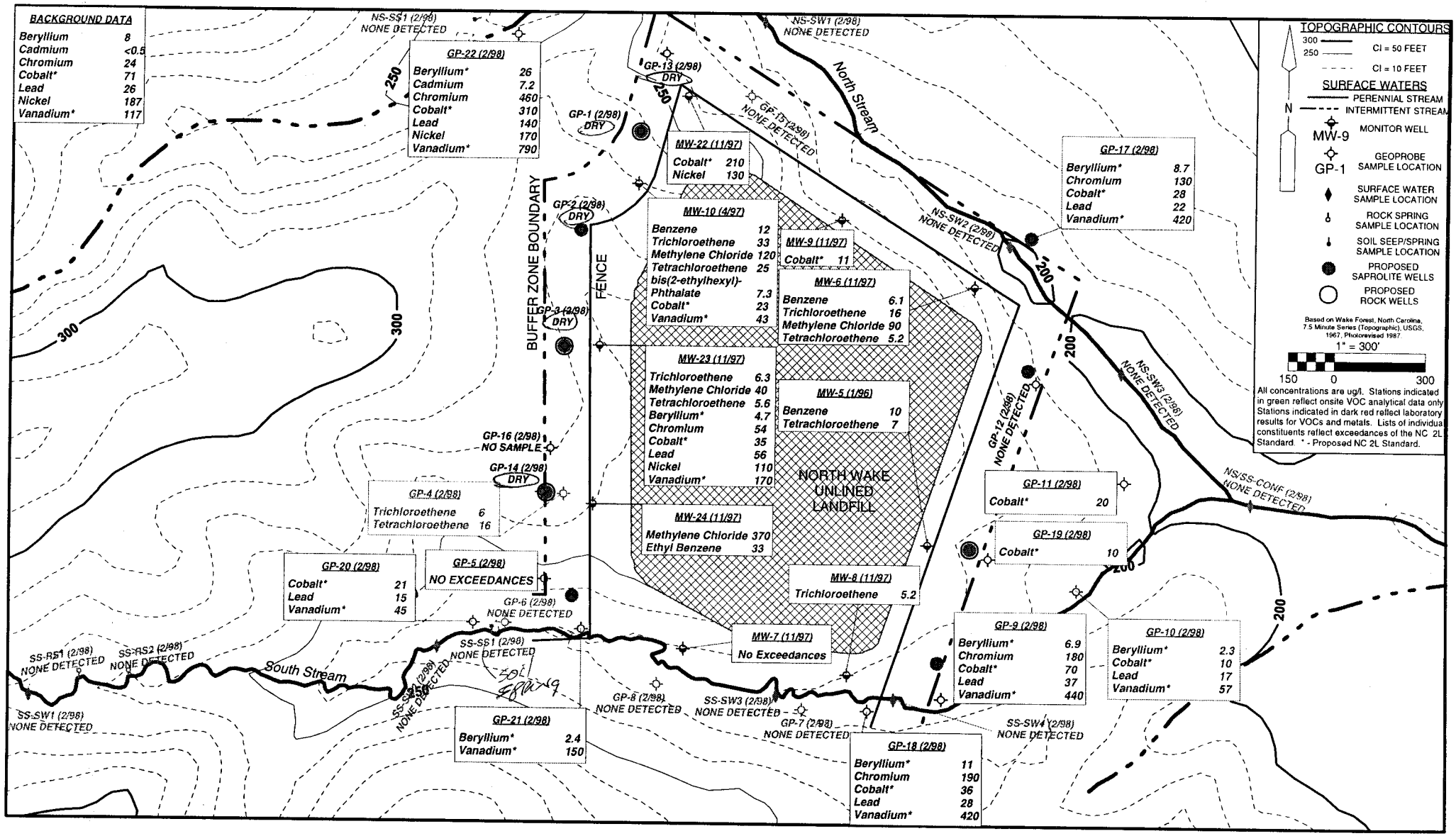

FIGURE 3-4
VOCS AND METALS IN GROUNDWATER - PHASE I
NORTH WAKE UNLINED LANDFILL
WAKE COUNTY, NORTH CAROLINA

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(TCE) at 6 ug/l and tetrachloroethene (PCE) at 16 ug/l. Another boring, GP-14, was located at the edge of the buffer zone west of GP-4. GP-14 encountered refusal at 26 ft bls during geoprobe activities.

Laboratory analysis of selected samples did not detect any VOCs. However, metals were detected in several samples in concentrations above the 2L Standards. Generally, the detected metals concentrations in the DPT borings are similar to the background concentrations, indicating that they are naturally occurring. In addition, because geoprobe samples are very turbid as a result of collection methods, these metal constituents may be derived from suspended soil materials, not dissolved in groundwater.

At the GP-16 location, a near-surface perched water condition was encountered. The perched water persistently trickled down the geoprobe hole, such that it was impossible to collect a representative sample of the surficial aquifer groundwater. This sampling location was abandoned without collecting a sample.

Results of Phase I field GC screening of surface water locations along streams north and south of the site are shown on Figure 3-4. Along the North Stream, four soil seeps, springs or surface water samples were collected and field GC screened. No VOCs were detected at these locations. Along the South Stream, seven soil seeps, springs or surface water samples were collected and field GC screened. No VOCs were detected in these samples, nor in the surface water sample from the confluence of the North Stream and South Stream. No VOCs were detected in the samples collected from the geoprobe locations, GP-7, GP-8, GP-17, and GP-18, located on the opposite sides of the streams from the landfill. These results indicate that the shallow aquifer discharges into these streams, which provide an effective barrier to further groundwater migration.

Methane gas concentrations were not detected in any of the DPT borings, indicating that the methane gas extraction system currently in operation is effective in preventing methane gas from migrating beyond the facility boundaries.

Temporary Well Sampling

As previously reported, due to isolated rock bodies and/or dense partially weathered rock, the geoprobe was unable to collect groundwater samples in several locations. In order to obtain data from these locations and further monitor the nature and extent of contamination, a hollow stem auger drill rig was used. After the wells were installed, a groundwater sample was collected and shipped to a field GC lab for next day results. The results of the laboratory analysis are summarized on Table 3-3. Permanent and abandoned well locations can be seen in Sheet 3-1, located at the end of this section. The significant results of the laboratory testing of the temporary well sampling are as follows:

TB-1 was located on the edge of the buffer zone. The PCE concentration was in exceedence of the 2L Standard of 0.7 ug/l. TB-1 has since been completed as a permanent well along with a bedrock well (TB-1 deep) as a nested pair; both will continue to be monitored as MW-31 and MW-31d.

TB-1a was located approximately 150 feet south of TB-1. Tetrachloroethene was the only constituent detected which exceeded the 2L Standard. TB-1a was originally abandoned, but was re-drilled and sampled during the May semi-annual sampling event for the unlined facility. Tetrachloroethene was detected during the second sampling at 2.3 ug/l, which exceeded the 2L Standard. In July, 1998, TB-1a was completed as a permanent well and sampled during the August, 1998 event.

TB-2 was located approximately 10 feet from the landfill fence in the buffer zone. The concentration of tetrachloroethene (9 ug/l) was in exceedance of the 2L Standard. TB-2 has since been abandoned.

TB-2a was located approximately 50 feet west of TB-2 in the buffer zone. Tetrachloroethene was found at concentrations of 0.2 ug/l. No 2L exceedences were found. TB-2a has been completed as a nested pair with TB-2a deep. Both will continue to be monitored as MW-29 and MW-29d.

TB-3 was located approximately 50 feet west of the landfill fence, near the south stream. No exceedences of the 2L Standard were found. TB-3 has been completed as a permanant monitoring well and will continue to be monitored as MW-32.

TB-4 was located approximately 50 feet from the landfill fence and was originally found to have exceedances of trichloroethene (TCE) at 15 ug/l, tetrachloroethene (PCE) at 25 ug/l, benzene at 10 ug/l. TB-4 was re-sampled two days later and was found to have concentrations of TCE at 8 ug/l, PCE at 17 ug/l and benzene at 8 ug/l. Again, the concentrations of PCE, TCE, and benzene were in exceedence of the 2L Standard. TB-4 has since been abandoned.

TB-4a was located approximately 50 feet west of the TB-4 location, on the edge of the buffer zone. TB-4a was originally found to have concentrations of benzene at 2 ug/l which exceeded the 2L Standard. The well was re-sampled and no constituents were found. TB-4a is now a permanant well and will continue to be monitored as MW-30.

TB-4b was located approximately 100 feet north of TB-4 and 50 feet west of the landfill fence. Samples were found to have concentrations of tetrachloroethene at 1 ug/l and benzene at 2 ug/l which exceeded the 2L Standard. TB-4b has since been abandoned.

TB-4c was located approximately 100 feet south of TB-4 and 50 feet west of the landfill fence. Samples were found to have concentrations of trichloroethene at 19 ug/l and tetrachlorethene at 50 ug/l, which were in exceedence of the 2L Standard. TB-4c has since been abandoned.

TB-4d was located approximately 100 feet north of TB-4a, on the edge of the buffer zone. No VOCs were detected. TB-4d was abandoned.

TB-5 was located on the edge of the buffer zone. Samples showed concentrations of TCE and PCE at 4 ug/l. Both concentrations exceeded the 2L Standard. The well was abandoned.

TB-6 was located on the north edge of the buffer. No VOCs were detected. TB-6 is now a permanant nested pair well with TB-6 deep and will be monitored and reported as MW-28 and MW-28d.

TB-7 was located approximately 50 feet west of the landfill fence, in the buffer zone. Samples had 2L Standard exceedances of trichloroethene at 3 ug/l, tertrachloroethene at 15 ug/l, benzene at 8 ug/l.

TB-7a was located due west of TB-7, on the edge of the buffer. The original sampling found no constituents above 2L Standards. TB-7a was re-sampled, and no VOCs were found. TB-7a has since been abandoned.

3.3 Phase II Results

Permanent Monitoring Well Sampling

Upon return of the results from the temporary well samples, the wells were either abandoned or converted into permanent monitoring wells. Those wells that were completed as permanent monitoring wells are: TB-1 (MW-31), TB-1 deep (MW-31d), TB-2a (MW-29), TB-2a deep (MW-29d), TB-3 (MW-32), TB-4a (MW-30), TB-6 (MW-28), and TB-6 deep (MW-28d). In addition, a well (MW-27) was installed on the north side of the north stream, near the north-~~west~~ east corner of the landfill property, to monitor any possible contaminant migration across the anticipated groundwater discharge area. These wells plus MW-10, -22, -23, -23d, and -24 were then sampled during the North Wake Unlined Landfill semi-annual sampling event on May 1 and 4, 1998 All of the wells were sampled for North Carolina Appendix I metals and VOCs, and detected Appendix II constituents (dichlorodifluoromethane and mercury). These results, along with historic data from the entire unlined landfill are listed in Tables 3-4a and 3-4b. The Phase II detections of organic compounds are plotted on Sheet 3-1 (located at the end of this section). Also included on this sheet are all organic compound detections from the Phase I temporary wells that were not converted to permanent wells.

MW-27 had detections of bis(2-ethylhexyl)phthalate at 7.5 ug/l. This constituent exceeded the 2L Standard. No other metals, volatile organic compounds, or

Table 3-4a
Detected Groundwater Constituents - Metals
North Wake Unlined Landfill

Monitor Well	Sample Date	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Vanadium	Zinc	Mercury
NC Standard		**50**	**2000**	**2***	**5**	**50**	**2***	**1000**	**15**	**100**	**50**	**18**	**25***	**2100**	**1.1**
MW-1	15-Apr-94	<3	221	<5	<0.5	<20	23	54	14	<20	<3	<1	50	88	
MW-1	11-May-94	<3	146	<5	<0.5	<20	19	55	14	<20	<3	<1	50	83	
MW-1	10-Jun-94	<3	191	<5	<0.5	<20	27	111	7.6	20	<3	<1	90	114	
MW-1	3-Oct-94	<3	143	<5	<0.5	16	26	74	8	<20	<3	<1	60	85	
MW-1	13-Jun-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.5
MW-1	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-11 **	31-Oct-95	11	842	8	<1	24	71	331	26	87	<20	<10	117	314	<1
MW-11	22-Mar-96	<10	<500	<2	<1	<10	15	<200	<10	<50	<20	<10	51	70	1.8
MW-11	29-Nov-96	35	<10	<1	<1	<2	<2	<10	<5	<50	<5	<5	<5	<10	<.2
MW-11	22-Apr-97	<10	<20	<5	<0.5	<20	<10	<10	<2	<20	<3	<1	<20	130	<.2
MW-11	31-Oct-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	66	<.2
MW-11	11-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-11	8-Dec-98	<10	<500	<2	2.1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-11	14-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-11d	31-Oct-95	<10	<500	<2	2	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-11d	22-Mar-96	<10	<500	<2	1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-11d	29-Nov-96	<5	26	<1	<1	<2	<2	<10	<5	<50	<5	<5	<5	<10	<.2
MW-11d	22-Apr-97	<10	<500	<5	<1	<20	<10	<10	<2	<20	<3	<1	<20	54	<.2
MW-11d	31-Oct-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	26	<.2
MW-11d	11-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	69	<.2
MW-11d	8-Dec-98	<10	<500	<2	1.9	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-11d	14-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-5	6-Mar-94	<5	76	<5	<5	<10	<10	<20	<5	<10	<5	<10	<10	110	
MW-5	15-Apr-94	<3	60	<50	0.9	<20	<10	<10	<2	<20	<3	62	<20	47	
MW-5	11-May-94	<3	58	<5	0.5	<20	<10	11	<2	<20	<3	<1	<20	28	
MW-5	31-May-94	<5	66	<5	<5	<10	11	<20	<5	17	<5	<10	<10	63	
MW-5	10-Jun-94	<3	54	<5	<.5	<20	<10	<10	2.5	<20	<3	<1	<20	20	
MW-5	30-Sep-94	<3	48	<5	<.5	<20	<20	<10	<2	<20	<3	7.3	<20	10	
MW-5	13-Jun-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.5
MW-5	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-5	31-Oct-95	<10	<500	<2	1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-5 dup	31-Oct-95	<10	<500	<2	1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-5	30-Jan-96	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	237	<.5
MW-5	29-Nov-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	22-Apr-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	1-Nov-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	6-May-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	6-Aug-98	<10	<500	2.2	4.9	32	24	<200	<10	<50	<20	<10	68	190	<0.2
MW-5	3-Dec-98	<10	<500	<2	1.5	<10	<10	<200	<10	<50	<20	<10	<40	<50	<0.2
MW-5	16-Apr-99	<10	<500	<2	1.5	<10	28.3	<200	<10	<50	<20	<10	<40	<50	<.2
MW-6	6-Mar-94	<5	190	<5	<5	32	10	33	18	33	<5	<10	63	51	
MW-6	15-Apr-94	<3	144	<5	<.5	20	12	20	11	<20	<3	7.3	50	27	
MW-6	11-May-94	<3	175	<5	<.5	30	13	33	9.3	<20	<3	7.3	70	35	
MW-6	1-Jun-94	<5	260	5.4	<.5	49	16	28	14	13	<5	<10	100	72	
MW-6	25-Aug-94	<3	68	<5	<.5	<20	<20	<10	<2	<20	<3	7.3	<20	<10	
MW-6	29-Sep-94	<3	110	<5	<.5	19	<20	19	6.9	<20	<3	7.3	40	16	
MW-6	13-Jun-95	<10	<500	2	<1	22	<10	<200	<10	<50	<20	<10	41	<50	2.6
MW-6	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.5
MW-6	31-Oct-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	2.6
MW-6	30-Jan-96	<10	<500	7	<1	44	12	<200	13	<50	<20	<10	65	61	1.8
MW-6	29-Nov-96	<5	150	2	<1	20	6	21	6	<50	<5	<5	52	40	0.83
MW-6	22-Apr-97	<5	<5	<.3	<1	12	<5	<5	<5	<5	<10	<5	<5	67	1.1
MW-6	2-Nov-97	<10	<500	<2	<1	14	<10	<200	<10	<50	<20	<10	<40	28	0.54
MW-6	6-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.65
MW-6 dup	6-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.20
MW-6	3-Dec-98	<10	<500	<2	1.4	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.81
MW-6	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.7

Table 3-4a
Detected Groundwater Constituents - Metals
North Wake Unlined Landfill

Monitor Well	Sample Date	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Vanadium	Zinc	Mercury
NC Standard		**50**	**2000**	**2***	**5**	**50**	**2***	**1000**	**15**	**100**	**50**	**18**	**25***	**2100**	**1.1**
MW-7	6-Mar-94	<5	190	<5	<5	48	17	110	22	21	<5	<10	67	82	
MW-7	15-Apr-94	<3	136	<5	<.5	30	11	53	25	20	<3	<1	40	56	
MW-7	11-May-94	<3	51	<5	<.5	30	11	24	6.8	<20	<3	<1	40	29	
MW-7	31-May-94	<5	350	6.4	<.5	89	30	180	34	40	<5	<10	140	150	
MW-7	25-Aug-94	<3	44	<5	<.5	<20	<20	25	2.7	<20	<3	<1	<20	19	
MW-7	29-Sep-94	<3	49	<5	<.5	15	<20	26	4.7	<20	<3	<1	20	20	
MW-7	13-Jun-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.5
MW-7	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-7	31-Oct-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-7	30-Jan-96	<10	<500	2	<1	35	<10	<200	10	<50	<20	<1	<40	<50	<.5
MW-7	29-Nov-96	<5	17	<1	<1	<2	<2	<10	<5	<50	<5	<5	<5	<10	<.2
MW-7	21-Apr-97	<5	<5	<.3	<1	<5	<5	<5	<5	<5	<10	<5	<5	<20	0.38
MW-7 dup	21-Apr-97	<5	<5	<.3	<1	<5	<5	<5	<5	<5	<10	<5	<5	<20	0.22
MW-7	1-Nov-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	48	0.58
MW-7	6-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.20
MW-7	3-Dec-98	<10	<500	<2	2.6	15	<10	<200	<10	<50	<20	<10	<40	<50	0.25
MW-7	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-8	6-Mar-94	<5	120	<5	<5	17	<10	26	<5	13	<5	<10	35	49	
MW-8	15-Apr-94	<3	97	<5	<.5	<20	<10	22	4.2	20	<3	<1	30	35	
MW-8	11-May-94	<3	89	<5	<.5	<20	<10	20	4.3	<20	<3	<1	20	26	
MW-8	31-May-94	<5	330	5.4	<5	81	34	90	16	39	<5	<10	150	150	
MW-8	25-Aug-94	<3	76	<5	<.5	<20	<10	13	2.7	<20	<3	<1	<20	21	
MW-8	30-Sep-94	<3	82	<5	<.5	20	<10	14	5.4	<20	<3	<1	20	19	
MW-8	13-Jun-95	<10	<500	<2	<1	38	11	<200	<10	<50	<20	<10	87	<50	<.5
MW-8	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-8	31-Oct-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-8	30-Jan-96	<10	<500	3	<1	35	12	<200	<10	<50	<20	<10	64	63	<.5
MW-8 dup	30-Jan-96	<10	<500	3	<1	36	12	<200	<10	<50	<20	<10	63	76	<.5
MW-8	29-Nov-96	<5	120	<1	<1	14	6	21	<5	<50	<5	<5	31	54	<.2
MW-8 dup	29-Nov-96	<5	82	<1	<1	<2	<2	<10	<5	<50	<5	<5	<5	19	<.2
MW-8	21-Apr-97	<5	<5	<.3	<1	19	<5	<5	<5	<5	<10	<5	<5	<20	<.2
MW-8	2-Nov-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	32	<.2
MW-8	6-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-8	3-Dec-98	<10	<500	<2	1.2	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-8	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-8 dup	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-9	6-Mar-94	<5	210	<5	<5	<10	<10	<20	<5	<10	<5	<10	<10	<20	
MW-9	15-Apr-94	<3	199	<5	<.5	<20	11	<10	<2	<20	<3	<1	<20	<10	
MW-9	11-May-94	<3	193	<5	<.5	<20	10	<10	2.7	<20	<3	<1	<20	14	
MW-9	31-May-94	<5	270	<5	<5	24	14	25	21	<10	<5	<10	23	120	
MW-9	25-Aug-94	<3	135	<5	<.5	<20	<20	<10	<2	<20	<3	<1	<20	14	
MW-9	29-Sep-94	<3	123	<5	<.5	<20	<20	<10	4.2	<20	<3	<1	<20	12	
MW-9	13-Jun-95	<10	<500	<2	<1	<10	14	<200	<10	<50	<20	<10	<40	<50	<.5
MW-9	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-9	31-Oct-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-9	30-Jan-96	<10	<500	4	1	20	16	<200	17	<50	<20	<10	<40	65	<.5
MW-9	29-Nov-96	<5	140	<1	<1	<2	<2	<10	<5	<50	<5	<5	<5	21	<.2
MW-9	22-Apr-97	<5	<5	<.3	<1	<5	<5	<5	<5	<5	<10	<5	<5	<20	<.2
MW-9	2-Nov-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	32	<.2
MW-9	6-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-9	3-Dec-98	<10	<500	<2	1.5	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-9	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2

Table 3-4a
Detected Groundwater Constituents - Metals
North Wake Unlined Landfill

Monitor Well	Sample Date	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Vanadium	Zinc	Mercury
NC Standard		50	2000	2*	5	50	2*	1000	15	100	50	18	25*	2100	1.1
MW-10	6-Mar-94	<5	690	<5	<5	160	100	380	18	140	110	<10	310	230	
MW-10	15-Apr-94	<3	117	<5	<.5	20	20	51	3.2	40	<3	5.6	40	38	
MW-10	11-May-94	<3	103	<5	<.5	20	16	48	2	20	<3	<1	40	32	
MW-10	31-May-94	<5	280	<5	<5	63	39	140	<5	55	<5	<10	120	120	
MW-10	25-Aug-94	<3	143	<5	<.5	30	<20	63	2.3	30	<3	<1	60	43	
MW-10	29-Sep-94	<3	103	<5	<.5	17	<20	43	3.6	<20	<3	<1	50	29	
MW-10	13-Jun-95	<10	<500	2	2	111	38	339	<10	143	<20	<10	313	168	<.5
MW-10	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<.5
MW-10	31-Oct-95	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<1
MW-10	30-Jan-96	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.5
MW-10	28-Nov-96	<5	71	<1	<1	<2	14	<10	<5	<50	<5	<5	<5	<10	<.2
MW-10	22-Apr-97	<5	<5	<.3	<1	31	23	<5	<5	<5	<10	<5	43	98	<.2
MW-10	1-Nov-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	5-May-98	<10	<500	<2	1.3	<10	<10	<200	13	<50	<20	<10	<40	720	0.34
MW-10	18-Aug-98	<10	<500	<2	4.9	<10	<10	<200	<10	<50	<20	<10	<40	150	<.2
MW-10	10-Sep-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10	6-Oct-98	<10	<500	<2	1.2	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10	8-Dec-98	<10	<500	<2	2.0	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10 dup	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-10	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-22	9-Jun-97	<10	<500	<2	2.9	<10	130	<200	<10	66	<20	<10	<40	<50	<.2
MW-22	18-Aug-97	11.9	<500	<2	4.4	<10	229	<200	14.3	164	<20	<10	<40	68.6	<.2
MW-22	2-Nov-97	<10	<500	<2	1.5	<10	210	<200	12	130	<20	<10	<40	230	<.2
MW-22	6-May-98	<10	<500	<2	<1	<10	110	<200	<10	51	<20	<10	<40	80	<.2
MW-22	18-Aug-98	<10	<500	<2	9.6	<10	110	<200	<10	<50	<20	<10	<40	210	<.2
MW-22	10-Sep-98	<10	<500	<2	<1	<10	100	<200	<10	<50	<20	<10	<40	<50	<.2
MW-22	6-Oct-98	<10	<500	<2	<1	<10	99	<200	<10	<50	<20	<10	<40	<50	<.2
MW-22	8-Dec-98	<10	<500	<2	1.9	<10	130	<200	<10	<50	<20	<10	<40	<50	<.2
MW-22	11-Jan-99	<10	<500	<2	1.5	<10	202	<200	<10	55	<20	<10	<40	<50	<.2
MW-22	8-Feb-99	<10	<500	<2	2	<10	168	<200	<10	<50	<20	<10	<40	<50	<.2
MW-22	16-Apr-99	<10	<500	<2	4.1	10.1	261	<200	21	70.9	<20	<10	<40	<50	<.2
MW-23	9-Jun-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23	18-Aug-97	10.3	<500	<2	2.3	<10	14.2	<200	18.8	59.1	<20	<10	<40	<50	<.2
MW-23	2-Nov-97	<10	600	4.7	2.6	54	35	<200	66	110	<20	<10	170	260	<.2
MW-23	5-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23	18-Aug-98	<10	<500	<2	5.4	24	10	<200	17	<50	<20	<10	50	150	<.2
MW-23	10-Sep-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23	6-Oct-98	<10	<500	<2	1.6	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.26
MW-23	8-Dec-98	<10	<500	<2	1.7	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23 dup	8-Dec-98	<10	<500	<2	2.3	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.20
MW-23	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.20
MW-23	16-Apr-99	<10	<500	<2	<1	11.2	<10	<200	23.6	<50	<20	<10	<40	<50	0.7
MW-23D	5-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	80	<.2
MW-23D	18-Aug-98	<10	<500	<2	4	<10	<10	<200	<10	<50	<20	<10	<40	63	<.2
MW-23D	10-Sep-98	<10	<500	<2	1.6	<10	<10	<200	11	<50	<20	<10	<40	<50	<.2
MW-23D	6-Oct-98	<10	<500	<2	2.0	<10	<10	<200	<10	<50	<20	<10	<40	60	0.22
MW-23D	8-Dec-98	<10	<500	<2	1.8	<10	<10	<200	<10	<50	<20	<10	<40	83	<.2
MW-23D	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23D	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-23D	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2

Table 3-4a
Detected Groundwater Constituents - Metals
North Wake Unlined Landfill

Monitor Well	Sample Date	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Vanadium	Zinc	Mercury
NC Standard		**50**	**2000**	**2***	**5**	**50**	**2***	**1000**	**15**	**100**	**50**	**18**	**25***	**2100**	**1.1**
MW-24	9-Jun-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-24	18-Aug-97	<10	<500	<2	1.7	<10	11.2	<200	<10	<50	<20	<10	<40	52.8	<.2
MW-24	1-Nov-97	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	66	<.2
MW-24 dup	1-Nov-97	<10	<500	<2	<1	<10	<10	<200	12	<50	<20	<10	<40	91	0.25
MW-24	5-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-24	18-Aug-98	<10	<500	<2	4.7	<10	<10	<200	16	<50	<20	<10	<40	180	<.2
MW-24 dup	18-Aug-98	11	<500	21	8.9	12	11	<200	22	<50	<20	<10	<40	290	<.2
MW-24	10-Sep-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.44
MW-24	6-Oct-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.98
MW-24	8-Dec-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.62
MW-24	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.50
MW-24	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.40
MW-24	16-Apr-99	<10	<500	<2	<1	<10	<10	<200	13.7	<50	<20	<10	<40	53.1	0.4
MW-27	4-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-27	7-Dec-98	<10	<500	<2	1	21	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-27	29-Apr-99	<10	<500	<2	2.3	<10	19	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	1-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	17-Aug-98	<10	<500	<2	6.6	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	9-Sep-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	7-Oct-98	<10	<500	<2	8.8	43	24	<200	<10	<50	<20	<10	80	150	<.2
MW-28	9-Dec-98	<10	<500	<2	8.9	39	19	<200	<10	<50	<20	<10	68	140	<.2
MW-28	12-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	9-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	1-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	17-Aug-98	<10	<500	<2	1.3	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	9-Sep-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	7-Oct-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	9-Dec-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.25
MW-28d	12-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d dup	12-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	9-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-28d	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29	4-May-98	<10	<500	<2	<1	18	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29	17-Aug-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29	26-Apr-99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29d	4-May-98	<10	<500	<2	<1	13	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d	17-Aug-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d	9-Sep-98	<10	<500	<2	1	17	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d dup	9-Sep-98	<10	<500	<2	<1	11	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d	7-Oct-98	<10	<500	<2	2.7	18	<10	<200	<10	<50	<20	<10	<40	53	<.2
MW-29d	9-Dec-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.24
MW-29d	12-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d	9-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-29d	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-30	4-May-98	<10	<500	<2	<1	60	19	<200	<10	<50	<20	<10	56	60	<.2
MW-30	17-Aug-98	<10	<500	<2	34	60	19	<200	<10	50	<20	<10	60	190	<.2
MW-30	9-Sep-98	<10	<500	<2	<1	16	<10	<200	<10	50	<20	<10	<40	140	<.2
MW-30	7-Oct-98	<10	<500	<2	1.1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-30	7-Dec-98	<10	<500	<2	2.6	20	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-30	12-Jan-99	<10	<500	<2	<1	20	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-30	9-Feb-99	<10	<500	<2	<1	20	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-30	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	1-May-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	17-Aug-98	<10	<500	<2	14	88	<10	<200	38	82	<20	<10	81	220	<.2
MW-31	9-Sep-98	<10	<500	<2	3.3	42	<10	<200	15	<50	<20	<10	<40	530	<.2
MW-31	7-Oct-98	<10	<500	<2	1.8	10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	8-Dec-98	<10	<500	<2	2.6	24	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2

Table 3-4a
Detected Groundwater Constituents - Metals
North Wake Unlined Landfill

Monitor Well	Sample Date	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Vanadium	Zinc	Mercury
NC Standard		**50**	**2000**	**2***	**5**	**50**	**2***	**1000**	**15**	**100**	**50**	**18**	**25***	**2100**	**1.1**
MW-31d	1-May-98	<10	<500	3	<1	110	13	<200	19	68	<20	<10	280	210	<.2
MW-31d	17-Aug-98	<10	<500	<2	8.6	10	<10	<200	<10	<50	<20	<10	<40	94	<.2
MW-31d	9-Sep-98	<10	<500	<2	2.8	25	<10	<200	<10	<50	<20	<10	60	260	<.2
MW-31d	7-Oct-98	<10	<500	<2	2.2	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31d	8-Dec-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31d	11-Jan-99	<10	<500	<2	<1	19.1	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31d	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-31d	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-32	1-May-98	<10	<500	<2	<1	23	44	<200	<10	<50	<20	<10	41	59	<.2
MW-32	17-Aug-98	<10	<500	<2	5.5	10	31	<200	<10	<50	<20	<10	<40	130	<.2
MW-32	9-Sep-98	<10	<500	<2	5.4	34	46	<200	<10	54	<20	<10	60	240	<.2
MW-32	6-Oct-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-32	7-Dec-98	<10	<500	<2	6	40	42	<200	<10	77	<20	<10	74	85	<.2
MW-32	11-Jan-99	<10	<500	<2	<1	<10	26.5	<200	<10	<50	<20	<10	<40	<50	<.2
MW-32	8-Feb-99	<10	<500	<2	<1	<10	24	<200	<10	<50	<20	<10	<40	<50	<.2
MW-32	19-Apr-99	<10	<500	<2	<1	<10	28.1	<200	<10	<50	<20	<10	<40	<50	<.2
TB-1a	1-May-98	<10	<500	<2	1.1	<10	<10	<200	<10	<50	<20	14	<40	50	
TB-1a	17-Aug-98	<10	<500	<2	9.3	21	20	<200	<10	<50	<20	<10	<40	130	<.2
TB-1a	9-Sep-98	<10	<500	<2	2.6	14	16	<200	<10	<50	<20	<10	<40	160	<.2
TB-1a	7-Oct-98	<10	<500	<2	4.0	17	14	<200	<10	<50	<20	<10	<40	<50	<.2
TB-1a Dup	7-Oct-98	<10	<500	<2	2.1	<10	14	<200	<10	<50	<20	<10	<40	<50	<.2
TB-1a	9-Dec-98	<10	<500	<2	3.0	<10	<10	<200	<10	<50	<20	<10	<40	<50	0.22
TB-1a	11-Jan-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
TB-1a	8-Feb-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
TB-1a	19-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-33	6-Aug-98	<10	<500	<2	5.8	46	18	<200	<10	<50	<20	<10	73	110	<.2
MW-33	7-Dec-98	<10	<500	<2	2.7	18	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-33	26-Apr-99	<10	<500	<2	<1	15.5	<10	<200	<10	<50	<20	<10	<40	58.5	<.2
MW-34	6-Aug-98	<10	<500	4.9	8.4	43	20	<200	<10	64	<20	<10	110	180	<.2
MW-34	7-Dec-98	<10	<500	<2	2.2	14	<10	<200	<10	<50	<20	<10	<40	59	<.2
MW-34	26-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	73.2	<.2
MW-34d	6-Aug-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-34d dup	6-Aug-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-34d	7-Dec-98	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-34d	26-Apr-99	<10	<500	<2	<1	<10	<10	<200	<10	<50	<20	<10	<40	<50	<.2
MW-35	6-Aug-98	<10	<500	4.3	9.8	47	30	<200	<10	52	<20	<10	120	130	<.2
MW-35	7-Dec-98	<10	<500	<2	4.6	22	15	<200	<10	79	<20	<10	43	74	<.2
MW-35	26-Apr-99	<10	<500	<2	<1	<10	13	<200	<10	<50	<20	<10	<40	<50	<.2

All units are in micrograms per liter (parts per billion).
*-Proposed standard
**-New background well; NS - Not Sampled; dup - duplicate sample
- Concentrations exceeds N.C. Groundwater Standards (2L)

Table 3-4b
Detected Constituents - Volatile Organic Compounds
North Wake Unlined Landfill

Monitor Well	Sample Date	Benzene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	1,1-Dichloroethene	Toluene	Trichlorofluoromethane	Styrene	Methylene Chloride	Ethyl Benzene	Chloromethane	Tetrachloroethene	Total Xylenes	Acetone	Vinyl Chloride	Dichlorodifluoromethane	1,2-Dibromoethane	trans 1,2-Dichloroethene	bis(2-ethylhexyl)phthalate	3&4-Methylphenol
NC Standard		**1**	**0.38**	**200**	**2.8**	**2800**	**0.19**	**70**	**75**	**700**	**0.56**	**7**	**1000**	**2100**	**100**	**5**	**29**	**2.6**	**0.7**	**530**	**700**	**0.015**	**1400**	**0.0004**	**70**	**3**	**35/3.5***
MW-1	15-Apr-94	<1	<.5	<.5	<.5	<1	<.5	<.5	<1	<.5	<1.0	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-1	11-May-94	<1	<.5	<.5	<.5	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-1	25-Aug-94	<1	<.5	<.5	<.5	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-1	29-Sep-94	<1	<.5	<.5	<.5	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-1	13-Jun-95	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-1	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	NS	NS	NS	
MW-11**	31-Oct-95	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-11	22-Mar-96	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-11	27-Nov-96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<2	<25	<1	<5	<1	<1	<10	
MW-11	22-Apr-97	<1	<1	<1	<1	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<2	<20	<1	<1	<1	<1	<5	
MW-11	31-Oct-97	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-11	11-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-11	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	24	
MW-11	14-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-11d	31-Oct-95	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-11d	22-Mar-96	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-11d	27-Nov-96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<2	<25	<1	<5	<1	<1	<10		
MW-11d	22-Apr-97	<1	<1	<1	<1	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<2	<20	<1	<1	<1	<1	<5		
MW-11d	31-Oct-97	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-11d	11-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-11d	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-11d	14-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-5	6-Mar-94	4.9	<.5	5.3	14	<.5	<.5	2.1	<.5	150	<.5	0.84	<.5	9.2	<.5	17	<.5	<.5	5.3	3.23	<5	2			<.5		
MW-5	15-Apr-94	4.2	1.1	<.5	11.8	35.7	<.5	1.5	<1	99.6	<1	1.2	<1	17.9	<1	11.7	<1	5.7	6.3	<2	<20	<1			<.5		
MW-5	11-May-94	2.4	<.5	<.5	8.2	24	<.5	<.5	<1	74	<1	1.1	2	26	<1	11	<1	5.7	4.9	<2	<20	<1			<.5		
MW-5	31-May-94	3.1	<.5	7.2	8.1	<.5	0.6	1.2	<.5	47	<.5	1.2	<.5	31	<.5	13	<.5	<.5	5.4	2.72	<5	<.5			<.5		
MW-5	10-Jun-94	2.8	<.5	7.6	7.1	24.5	<.5	1.2	<1	71.8	<1	1.4	<1	34.1	<1	12.4	<1	<1	3.6	<2	<20	<1			<.5		
MW-5	30-Sep-94	1.9	<.5	8.9	<.5	18.7	<.5	<.5	<1	41.6	<1	<1	<1	34.7	<1	<1	<1	10.9	4.6	<2	<20	<1			<.5		
MW-5	13-Jun-95	10	<5	<5	19	48	<5	8	<5	<5	<5	<5	<5	<5	<5	20	<5	<10	10	<5	<100	<10	22	<5	196	<20	
MW-5	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	35	NS	NS	NS	
MW-5	31-Oct-95	9	<5	<5	11	61	<5	14	<5	230	<5	<5	<5	<5	<5	18	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-5 dup	31-Oct-95	9	<5	<5	16	53	<5	14	<5	210	<5	<5	<5	<5	<5	15	<5	<10	9	<5	<100	<10	<5	<5	<5	<20	
MW-5	30-Jan-96	10	<5	<5	17	50	<5	23	<5	198	<5	<5	<5	<5	<5	<10	<5	<10	7	<5	<100	<10	16	<5	<5	<20	
MW-5	28-Nov-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-5	22-Apr-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-5	1-Nov-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-5	6-May-98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-5	6-Aug-98	6.5	<5	<5	18	39	<5	15	5.4	81	<5	<5	<5	<5	<10	300	<5	<10	8.2	6	<100	<10	<5	<5	<5	<5.1	
MW-5	8-Dec-98	7.9	<5	<5	17	20	<5	15	6.0	74	<5	<5	<5	<5	<10	79	<5	<10	11	6.5	<100	<10	10	<5	<5	<5.2	
MW-5	16-Apr-99	8	<10	<10	14	22	<10	42	<10	87	<10	<10	<10	<10	<10	100	<10	<10	8	<20	<250	<10	<10	<10	<10	<10	26	
MW-6	6-Mar-94	1.7	<.5	5.9	4.6	<.5	0.83	<.5	<.5	34	<1	0.99	<.5	3.9	<.5	37	<.5	<.5	3.4	2.42	<5	<.5			<.5		
MW-6	15-Apr-94	<1	<.5	<.5	2.1	8.5	<.5	<.5	<1	12.5	<1	<.5	<1	2.6	<1	21	<1	1.2	1.9	<2	<20	<1			<.5		
MW-6	11-May-94	<1	<.5	<.5	4.9	18.4	<.5	<.5	<1	28.7	<1	<.5	<1	2.6	<1	64.2	<1	1.2	2.3	<2	<20	<1			<.5		
MW-6 dup	1-Jun-94	3.7	<.5	14	7.5	<.5	4.3	<.5	<.5	50	<.5	<.5	<.5	11	<.5	130	<.5	<1	7	16.6	<5	<.5			<.5		
MW-6	25-Aug-94	<1	<.5	<.5	<5	22	<.5	<.5	<1	36	<1	<.5	<1	<5	<1	79.8	<1	<1	<5	<2	<20	<1			<.5		
MW-6	29-Sep-94	2	<.5	1.4	<.5	18	<.5	<.5	<1	34	<1	<.5	<1	<1	<1	6.1	<1	56	3	<2	<20	<1			<.5		
MW-6	13-Jun-95	<5	<5	<5	6	19	<5	<5	<5	28	<5	<5	<5	<5	<5	61	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-6	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	NS	NS	NS	
MW-6	31-Oct-95	<5	<5	<5	6	22	<5	<5	<5	32	<5	<5	<5	<5	<5	56	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-6	30-Jan-96	6	<5	<5	11	37	<5	<5	<5	61	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-6	29-Nov-96	<10	<10	<10	16	34	<10	<10	<10	41	<10	<10	<10	<10	<10	91	<10	<10	<10	<20	<250	<10	<50	<10	<10	<10	
MW-6	22-Apr-97	5.4	<1	<1	15	37	<5	6.7	<1	29	<1	<1	<1	<1	<1	88	<1	<5	<1	<2	<20	<1	<1	<1	<1	<5	
MW-6	2-Nov-97	6.1	<5	<5	16	28	<5	7.8	<5	28	<5	<5	<5	<5	<10	90	<5	<10	5.2	<5	<100	<10	<5	<5	<5	<5	
MW-6	6-May-98	<10	<10	<10	17	29	<10	13	<10	34	<10	<10	<10	<10	<20	140	<10	<20	<10	<10	<200	<20	<10	<10	<10	<5	
MW-6 dup	6-May-98	<10	<10	<10	19	30	<10	14	<10	35	<10	<10	<10	<10	<20	140	<10	<20	<10	<10	<200	<20	<10	<10	<10	<5	
MW-6	8-Dec-98	<10	<10	<10	19	26	<10	14	<10	40	<10	<10	<10	<10	<20	180	<10	<20	<10	<10	<200	<20	<10	<10	<10	<5	
MW-6	16-Apr-99	5	<10	<10	11	16	<10	<10	<10	26	<10	<10	<10	<10	<20	110	<10	<20	<10	<10	<250	<20	<10	<10	<10	<10	<10

Table 3-4b
Detected Constituents - Volatile Organic Compounds
North Wake Unlined Landfill

Monitor Well	Sample Date	Benzene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	1,1-Dichloroethene	Toluene	Trichlorofluoromethane	Styrene	Methylene Chloride	Ethyl Benzene	Chloromethane	Tetrachloroethene	Total Xylenes	Acetone	Vinyl Chloride	Dichlorodifluoromethane	1,2-Dibromoethane	trans 1,2-Dichloroethene	bis(2-ethylhexyl)phthalate	3&4-Methylphenol
NC Standard		1	0.38	200	2.8	2800	0.19	70	75	700	0.56	7	1000	2100	100	5	29	2.6	0.7	530	700	0.015	1400	0.0004	70	3	35/3.5[a]
MW-7	6-Mar-94	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<5	<.5			<.5		
MW-7	15-Apr-94	<1	<.5	<.5	<1	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-7	11-May-94	<1	<.5	<.5	<1	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-7	31-May-94	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<5	<.5			<.5		
MW-7	25-Aug-94	<1	<.5	<.5	<1	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-7	29-Sep-94	<1	<.5	<.5	<1	<1	<.5	<.5	<1	<.5	<1	<.5	<1	<1	<1	<1	<1	<1	<.5	<2	<20	<1			<.5		
MW-7	13-Jun-95	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-7	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	NS	NS	NS	
MW-7	31-Oct-95	<5	<5	<5	<5	11	<5	<5	<5	5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-7	30-Jan-96	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-7	29-Nov-96	<2	<2	<2	5	22	<2	2	<2	9	<2	<2	<2	<2	<2	<2	<2	<2	4	<4	<50	<2	<10	<2	<2	<10	
MW-7	21-Apr-97	<1	<1	<1	<1	19	<5	5.9	<1	11	<1	<1	<1	<1	<1	<1	<1	<5	<1	<2	<20	<1	<1	<1	<1	<5	
MW-7	1-Nov-97	<5	<5	<5	<5	26	<5	6.2	<5	10	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-7	6-May-98	<5	<5	<5	<5	24	<5	21	<5	17	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-7	8-Dec-98	7.2	<5	<5	5.2	32	<5	36	<5	20	<5	<5	<5	<5	<5	<10	12	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.3	
MW-7	16-Apr-99	<5	<5	<5	<5	21	<5	24	<5	14	<5	<5	<5	<5	<5	<10	<20	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.3	<10
MW-8	6-Mar-94	6.6	1	18	16	<.5	2.2	7.6	3.2	13	<1	1.3	4	7.3	<.5	450	0.56	<.5	7.5	35.6	<5	0.76			<.5		
MW-8	15-Apr-94	7.9	1.8	<.5	17.5	39.8	1.3	8.9	4.9	88.6	3	1.5	5	5.1	<1	310	1.4	8.8	8.1	39.7	<20	<1			<.5		
MW-8	11-May-94	5.6	<2.5	<2.5	15	34	<2.5	<2.5	<5	83	<5	<2.5	<5	<5	<1	278	<5	<1	7	27.1	<20	<1			<.5		
MW-8	31-May-94	12	2.6	16	29	<.5	1.1	23	13	110	<5	1.6	11	4.4	3.1	310	<.5	<.5	16	89	<5	<.5			<.5		
MW-8	25-Aug-94	<5	<5	<5	<5	51.3	<5	<5	<5	109	<5	<5	<5	<5	<1	400	<5	<1	<5	32	<20	<1			<.5		
MW-8	30-Sep-94	5.8	<.5	8.9	13	35	<2.5	5.6	5.2	86	<5	<2.5	<5	<5	<1	300	<5	12.2	<5	22.8	<20	<1			<.5		
MW-8	13-Jun-95	<5	<5	<5	6	15	<5	<5	<5	36	<5	<5	<5	<5	<5	47	<5	<10	<5	19	<100	<10	<5	<5	<5	<20	
MW-8	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	NS	NS	NS	
MW-8	31-Oct-95	6	<5	<5	14	40	8	23	<5	72	<5	<5	<5	<5	<5	137	32	<10	9	<5	<100	<10	8	<5	<5	<20	
MW-8	30-Jan-96	10	<5	<5	23	37	<5	34	<5	71	<5	<5	<5	<5	<5	123	<5	<10	18	58	<100	<10	10	<5	<5	20	
MW-8	29-Nov-96	4	<1	1	12	15	<1	24	3	18	<1	<1	<1	<1	<1	23	<1	<1	13	13	<25	<1	5	8	<1	<10	
MW-8	21-Apr-97	<1	<1	<1	6.1	<5	<1	20	<1	10	<1	<1	<1	<1	<1	16	<1	<5	8.3	<2	<20	<1	<1	<1	<1	8	
MW-8	2-Nov-97	<5	<5	<5	5.2	<10	<5	22	<5	6.3	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-8	6-May-98	5.7	<5	<5	8.7	<10	<5	56	<5	15	<5	<5	<5	<5	<5	<10	13	<5	<10	7.5	6.1	<100	<10	<5	<5	<5	<5	
MW-8	8-Dec-98	<5	<5	<5	5.2	<10	<5	37	<5	7.9	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-8	16-Apr-99	<5	<5	<5	6	<10	<5	55	6	13	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	
MW-8 dup	16-Apr-99	<5	<5	<5	<5	<10	<5	41	<5	10	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	<10
MW-9	6-Mar-94	5.3	<.5	7	8.7	<.5	5.8	<.5	1.6	100	<.5	1.3	6	4.2	<.5	660	0.73	<.5	6.6	15.2	<5	0.96			<.5		
MW-9	15-Apr-94	5.8	<.5	<.5	12.4	14.1	4.9	0.7	2.4	96.8	<1	1.8	1.8	3.6	<1	357	<5	7.3	8.2	17.3	<20	<1			<.5		
MW-9	11-May-94	6.8	<.5	<2.5	13	<5	5	<2.5	<2.5	134	<1	<2.5	<5	<5	<1	357	<5	20.1	7.6	20.5	<20	<1			<.5		
MW-9	31-May-94	8.2	<.5	8.7	14	<.5	6.6	<.5	3.4	170	<.5	1.7	1.7	3.6	<.5	460	<.5	<.5	8.6	23.3	<5	<.5			<.5		
MW-9	25-Aug-94	<5	<.5	<5	<5	<10	<5	<5	<5	165	<1	<2.5	<5	<5	<1	558	<5	<1	<5	<10	<20	<1			<.5		
MW-9	29-Sep-94	7	<.5	6.5	<2.5	<5	5.1	<2.5	<5	131	<1	<2.5	<5	<5	<1	400	<5	<1	8.2	16	<20	<1			<.5		
MW-9	13-Jun-95	11	<5	7	25	20	<5	<5	<5	203	<5	<5	<5	<5	<5	256	<5	<10	11	8	<100	<10	28	<5	<5	<20	
MW-9	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	41	NS	NS	NS	
MW-9	31-Oct-95	15	<5	6	27	29	<5	<5	<5	310	<5	<5	<5	<5	<5	276	<5	<10	14	14	<100	<10	44	<5	<5	<20	
MW-9	30-Jan-96	14	<5	<5	23	22	<5	<5	<5	270	<5	<5	<5	<5	<5	<10	<5	11	9	6	<100	<10	33	<5	<5	<20	
MW-9	29-Nov-96	22	<20	<20	31	<20	<20	<20	<20	280	<20	<20	<20	<20	<20	<100	<20	<20	<20	<40	<500	<20	<100	<20	<20	<10	
MW-9	22-Apr-97	24	<2.5	<2.5	28	<13	<13	<2.5	6.6	220	<2.5	<2.5	<2.5	<2.5	<2.5	<13	<2.5	<13	<2.5	14.2	<50	<2.5	16	<2.5	<2.5	<5	
MW-9	2-Nov-97	<25	<25	<25	<25	<50	<25	<25	<25	200	<25	<25	<25	<25	<50	<50	<25	<50	<25	<50	<500	<50	32	<25	<25	<5	
MW-9	6-May-98	17	<12	<12	32	<25	<12	<12	<12	210	<12	<12	<12	<12	<25	<25	<12	<25	13	<12	<250	<25	31	<12	<12	<5	
MW-9	8-Dec-98	14	<10	<10	31	<20	<10	<10	<10	200	<10	<10	<10	<10	<20	<20	<10	<20	13	<10	<200	<20	53	<10	<10	20	
MW-9	16-Apr-99	7	<10	<10	20	<20	<10	<10	<10	140	<10	<10	<10	<10	<20	<20	<10	<10	7	<20	<250	<10	49	<10	<10	12	<10

Table 3-4b
Detected Constituents - Volatile Organic Compounds
North Wake Unlined Landfill

Monitor Well	Sample Date	Benzene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	1,1-Dichloroethene	Toluene	Trichlorofluoromethane	Styrene	Methylene Chloride	Ethyl Benzene	Chloromethane	Tetrachloroethene	Total Xylenes	Acetone	Vinyl Chloride	Dichlorodifluoromethane	1,2-Dibromoethane	trans 1,2-Dichloroethene	bis(2-ethylhexyl)phthalate	3&4-Methylphenol
NC Standard		1	0.38	200	2.8	2800	0.19	70	75	700	0.56	7	1000	2100	100	5	29	2.6	0.7	530	700	0.015	1400	0.0004	70	3	35/3.5*
MW-10	6-Mar-94	2.4	<.5	16	9.8	<.5	2.6	<.5	<.5	37	<.5	2.4	<.5	12	<.5	72	<.5	<.5	4.6	26.7	<5	<.5			<.5		
MW-10	15-Apr-94	1.8	2.6	<.5	8	18.1	1.6	<.5	<1	24.2	<1	2.6	<1	<1	<1	67.3	<1	5.5	4.8	16.9	<20	<1			<.5		
MW-10	11-May-94	1.4	2.6	<.5	6.8	15.8	1.7	<.5	<1	23	<1	1.8	<1	16.3	<1	54.8	<1	4	4	6.7	<20	<1			<.5		
MW-10	31-May-94	3.7	<.5	17	15	<.5	3.5	<.5	<.5	57	<.5	2.7	<.5	15	<.5	120	<.5	<.5	8.7	19.1	<5	<.5			<.5		
MW-10	25-Aug-94	<5	<5	18.4	<5	47.7	<5	<.5	<1	72	<1	<5	<1	18	<1	194	8	16.7	9.2	15	<20	<1			<.5		
MW-10	29-Sep-94	4.2	<.5	3.5	19	37.7	3.4	<.5	<1	56.3	<1	3.5	<1	17.1	<1	148	<1	7.2	<1	13.1	<20	<1			<.5		
MW-10	13-Jun-95	7	<5	13	20	53	<5	<5	<5	84	<5	<5	<5	<5	<5	223	<5	13	13	14	<100	<10	18	<5	<5	<20	
MW-10	28-Sep-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	53	NS	NS	NS	
MW-10	31-Oct-95	<5	<5	14	6	33	<5	10	<5	44	<5	<5	<5	14	<5	47	<5	<10	7	<5	<100	<10	46	<5	<5	<20	
MW-10	30-Jan-96	8	<5	8	18	48	<5	12	<5	101	<5	<5	<5	<5	<5	<10	<5	10	9	8	<100	<10	29	<5	<5	<20	
MW-10	28-Nov-96	<1	<1	<1	2	3	<1	1	<1	12	<1	<1	<1	<1	<1	15	<1	<1	2	<2	<25	<1	<5	<1	<1	<10	
MW-10	22-Apr-97	12	<2.5	<2.5	33	31	<13	20	<2.5	160	<2.5	<2.5	<2.5	<2.5	<2.5	120	<2.5	<13	25	19.6	<50	<2.5	8.5	<2.5	<2.5	7.3	
MW-10	5-May-98	<12	<12	<12	<12	<25	<12	37	<12	77	<12	<12	<12	<12	<25	210	<12	<25	<12	<12	<250	<25	<12	<12	<12	<5	
MW-10	18-Aug-98	<12	<12	<12	<12	<25	<12	28	<12	64	<12	<12	<12	<12	<25	150	<12	<25	<12	<12	<250	<25	<12	<12	<12	NS	
MW-10	10-Sep-98	6.7*	<25	<25	14*	<50	<25	41	<25	99	<25	<25	<25	<25	<50	220	<25	<50	12*	<25	<500	<50	<25	<25	<25	NS	
MW-10	6-Oct-98	7.0	<5	<5	16	<25	<25	46	6.1	110	<5	<5	<5	<25	<5	260	<5	<25	14	11	<100	<5	<25	<25	<5	NS	
MW-10	8-Dec-98	<12	<12	<12	19	<25	<12	48	<12	140	<12	<12	<12	<12	<25	270	<12	<25	16	12	<250	<25	<12	<25	<12	<5.1	
MW-10	11-Jan-99	7*	<12.5	<12.5	18	19	<12.5	36	<12.5	140	<12.5	<12.5	<12.5	<12.5	<13	320	<12.5	<13	14	<25	<313	<13	<12.5	<12.5	<12.5	NS	
MW-10	8-Feb-99	9*	<10	<10	21	24	<10	41	<10	140	<10	<10	<10	<10	<10	<50	<10	<10	17	20	<250	<10	<10	<10	<10	NS	
MW-10 dup	8-Feb-99	8*	<10	<10	17	20	<10	38	<10	130	<10	<10	<10	<10	<10	<50	<10	<10	13	19*	<250	<10	<10	<10	<10	NS	
MW-10	16-Apr-99	<20	<20	<20	<20	<20	<20	26	<20	160	<20	<20	<20	<20	<20	410	<20	<20	<20	<40	<1000	<20	<20	<20	<20	16	<10
MW-22	9-Jun-97	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<20	
MW-22	18-Aug-97	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	
MW-22	2-Nov-97	<5	<5	<5	<5	<10	<5	<5	<5	6.9	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	5.2	<5	<5	<5	
MW-22	6-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	
MW-22	18-Aug-98	<5	<5	<5	<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-22	10-Sep-98	<5	<5	<5	<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-22	6-Oct-98	<5	<5	<5	<5	<5	<5	<5	<5	9.2	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-22	8-Dec-98	<5	<5	<5	<5	<5	<5	<5	<5	8.6	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.4	
MW-22	11-Jan-99	<5	<5	<5	<5	<5	<5	<5	<5	8.0	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-22	8-Feb-99	<5	<5	<5	<5	<5	<5	<5	<5	8.0	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-22	16-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	6	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-23	9-Jun-97	<5	<5	6.4	9.1	40	<5	7.6	<5	86	<5	<5	16	<5	<10	100	<5	<10	9.3	13	<100	<10	<5	<5	<5	<20	
MW-23	18-Aug-97	<5	<5	<5	<5	33	<5	11	<5	93	<5	<5	<5	<5	<10	85	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	
MW-23	2-Nov-97	<5	<5	<5	6.3	33	<5	11	<5	68	<5	<5	<5	<5	<10	40	<5	<10	5.6	<5	<100	<10	<5	<5	<5	<5	
MW-23	5-May-98	<5	<5	<5	<5	<10	<5	<5	<5	6.9	<5	<5	<5	<5	<10	10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-23	18-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	10-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	6-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	7.4	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	8.3	
MW-23 dup	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	9.2	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	11-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	13.0	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	8-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	8.0	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23	16-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-23d	5-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-23d	18-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23d	10-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23d	6-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23d	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	7.8	
MW-23d	11-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23d	8-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-23d	16-Apr-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10

Table 3-4b
Detected Constituents - Volatile Organic Compounds
North Wake Unlined Landfill

Monitor Well	Sample Date	Benzene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	1,1-Dichloroethene	Toluene	Trichlorofluoromethane	Styrene	Methylene Chloride	Ethyl Benzene	Chloromethane	Tetrachloroethene	Total Xylenes	Acetone	Vinyl Chloride	Dichlorodifluoromethane	1,2-Dibromoethane	trans 1,2-Dichloroethene	bis(2-ethylhexyl)phthalate	3&4-Methylphenol
NC Standard		1	0.38	200	2.8	2800	0.19	70	75	700	0.56	7	1000	2100	100	5	29	2.6	0.7	530	700	0.015	1400	0.0004	70	3	35/3.5*
MW-24	9-Jun-97	<5	<5	<5	8.5	12	<5	5.1	<5	37	<5	<5	160	<5	<10	200	14	<10	<5	57	<100	<10	<5	<5	<5	<20	
MW-24	18-Aug-97	<5	<5	<5	<5	<10	<5	<5	<5	68	<5	<5	400	<5	<10	380	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	
MW-24	1-Nov-97	<25	<25	<25	<25	<50	<25	<25	<25	56	<25	<25	260	<25	<50	340	25	<50	<25	98	<500	<50	<25	<25	<25	<5	
MW-24 dup	1-Nov-97	<25	<25	<25	<25	<50	<25	<25	<25	68	<25	<25	340	<25	<50	370	33	<50	<25	131	<500	<50	<25	<25	<25	<5	
MW-24	5-May-98	<25	<25	<25	<25	<50	<25	<25	<25	42	<25	<25	230	<25	<50	240	28	<50	<25	112	<500	<50	<25	<25	<25	<5	
MW-24	18-Aug-98	<25	<25	<25	<25	<50	<25	28	<25	76	<25	<25	340	<25	<50	290	47	<50	<25	179	<500	<50	<25	<25	<25	NS	
MW-24 DUP	18-Aug-98	<25	<25	<25	<25	<50	<25	29	<25	85	<25	<25	370	<25	<50	330	51	<50	<25	189	<500	<50	<25	<25	<25	NS	
MW-24	10-Sep-98	11	<25	<25	15	<50	<25	<25	<25	73	<25	<25	260	<25	<50	250	35	<50	14	150	<500	<50	<25	<25	<25	NS	
MW-24	6-Oct-98	8.3	<2.5	4.6	10	17	<12	19	7.3	57	<2.5	<2.5	160	<12	<2.5	240	22	<12	8.4	99	<50	<2.5	<12	<12	<2.5	NS	
MW-24	8-Dec-98	12	<12	<12	16	30	<12	26	<12	85	<12	<12	140	<12	<25	280	23	<25	<12	93	<250	<25	<12	<12	<12	7.7	
MW-24	12-Jan-99	5	<8	<8	10	18	<8	13	<8	53	<8	<8	83	<8	<10	160	15	<10	9	59	<200	<10	<8	<8	<8	NS	
MW-24	8-Feb-99	<10	<10	<10	9	17	<10	11	<10	47	<10	<10	50	<10	<10	130	15	<10	9	61	<250	<10	<10	<10	<10	NS	
MW-24	16-Apr-99	<10	<10	<10	<10	19	<10	<10	<10	55	<10	<10	46	<10	<10	170	13	<10	<10	60	<500	<10	<10	<10	<10	<10	<10
MW-27	4-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	7.5
MW-27	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	6.4
MW-27	26-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	20	NS
MW-28	1-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-28	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28	9-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28	12-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	12	
MW-28	9-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-28d	1-May-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-28d	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	9-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	12-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	20	
MW-28d dup	12-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	9-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-28d	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29	4-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-29	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29	26-Apr-99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-29d	4-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-29d	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d dup	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d	9-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d	12-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	37	
MW-29d	9-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-29d	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	4-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-30	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.2	
MW-30	12-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	9-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-30	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10

Table 3-4b
Detected Constituents - Volatile Organic Compounds
North Wake Unlined Landfill

Monitor Well	Sample Date	Benzene	1,2-Dichloroethane	1,1,1-Trichloroethane	Trichloroethene	Chloroethane	Chloroform	cis-1,2-Dichloroethene	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	1,1-Dichloroethene	Toluene	Trichlorofluoromethane	Styrene	Methylene Chloride	Ethyl Benzene	Chloromethane	Tetrachloroethene	Total Xylenes	Acetone	Vinyl Chloride	Dichlorodifluoromethane	1,2-Dibromoethane	trans 1,2-Dichloroethene	bis(2-ethylhexyl)phthalate	3&4-Methylphenol
NC Standard		1	0.38	200	2.8	2800	0.19	70	75	700	0.56	7	1000	2100	100	5	29	2.6	0.7	530	700	0.015	1400	0.0004	70	3	35/3.5[a]
MW-31	1-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-31	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.1	
MW-31	11-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31	8-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
MW-31d	1-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-31d	17-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31d	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31d	7-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31d	8-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	10	
MW-31d	11-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31d	8-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-31d	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	10	<10
MW-32	1-May-98	<1	<5	<5	<1	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<1	<5	<100	<10	<5	<5	<5	<5	
MW-32	18-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-32	9-Sep-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-32	6-Oct-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-32	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.2	
MW-32	11-Jan-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-32	8-Feb-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	
MW-32	19-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	<10
TB-1a	1-May-98	<5	<5	6.9	<5	<10	<5	<5	<5	5.3	<5	<5	6.9	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
TB-1a	18-Aug-98	<5	<5	9.8	7.6	20	<5	<5	<5	39	<5	<5	<5	<5	<10	22	<5	<10	7.5	23	<100	<10	<5	<5	<5	NS	
TB-1a	9-Sep-98	<5	<5	11	7.9	21	<5	<5	<5	40	<5	<5	<5	<5	<10	22	<5	<10	7.7	20	<100	<10	<5	<5	<5	NS	
TB-1a	7-Oct-98	<5	<5	11	7.1	17	<5	<5	<5	35	<5	<5	<5	<5	<10	16	<5	<10	6.2	13	<100	<10	<5	<5	<5	NS	
TB-1a Dup	7-Oct-98	<5	<5	11	7.2	17	<5	<5	<5	33	<5	<5	<5	<5	<10	16	<5	<10	6.3	17	<100	<10	<5	<5	<5	NS	
TB-1a	9-Dec-98	<5	<5	8.2	<5	14	<5	<5	<5	23	<5	<5	<5	<5	<10	<10	<5	<10	6.3	11	<100	<10	<5	<5	<5	<5.2	
TB-1a	11-Jan-99	<5	<5	11	5.0	16	<5	<5	<5	21	<5	<5	<5	<5	<10	<10	<5	<10	6.0	6	<100	<10	<5	<5	<5	NS	
TB-1a	8-Feb-99	<5	<5	10	<5	15	<5	<5	<5	18	<5	<5	<5	<5	<10	<10	<5	<10	7.0	8	<100	<10	<5	<5	<5	NS	
TB-1a	19-Apr-99	<5	<5	10	<5	10	<5	<5	<5	14	<5	<5	<5	<5	<10	<10	<5	<10	5.0	5	<100	<10	<5	<5	<5	<10	<10
MW-33	6-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-33	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-33	26-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	NS
MW-34	6-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.4	
MW-34	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-34	26-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	NS
MW-34d	6-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	7.3	
MW-34d DUP	6-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.2	
MW-34d	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.1	
MW-34d	26-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	NS	NS
MW-35	6-Aug-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5.2	
MW-35	7-Dec-98	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<5	
MW-35	26-Apr-99	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<100	<10	<5	<5	<5	<10	NS

All units are in micrograms per liter (parts per billion).
[a]- N.C. 2L interim standards are for individual isomers; interim standard for 3-methylphenol is 35 ug/l; interim standard for 4-methylphenol is 3.5 ug/l.
* - Estimated Value
**-New background well.
- No Data
- Concentrations exceeds N.C. Groundwater Standards (2L).

semi-volatile compounds were detected in MW-27 during the May 1998 sampling event.

MW-10 had metals detections of cadmium, lead, zinc, and mercury at concentrations of 1.3 ug/l, 13 ug/l, 720 ug/l, and 0.34 ug/l, respectively during the May sampling event. None of these metals concentrations were above 2L Standards. 1,1-dichloroethane was detected at 77 ug/l, cis-1,2-dichloroethene was detected at 37 ug/l, and methylene chloride was detected at 210 ug/l during the May sampling event. The concentration of methylene chloride exceeded the 2L Standard.

MW-22 had detections of cobalt, nickel, and zinc at concentrations of 110 ug/l, 51 ug/l, and 80 ug/l, respectively during the May sampling event. The cobalt detection was above the 2L Standard. No VOCs were detected during the May event.

MW-23 had detections of 1,1-dichloroethane and methylene chloride at concentrations of 6.9 ug/l and 10 ug/l, respectively during the May sampling event. The methylene chloride detections were above the 2L Standard. No metals were detected during the May 1998 sampling event.

MW-23d had detections of zinc at 80 ug/l during the May sampling event. No other metals or VOCs were detected.

MW-24 had detections of 1,1-dichloroethane, toluene, methylene chloride, ethyl benzene, and xylene at concentrations of 42 ug/l, 230 ug/l, 240 ug/l, 28 ug/l, and 112 ug/l, respectively during the May 1998 sampling event. The concentration of methylene chloride was above the 2L Standard. No metals were detected.

MW-28 andMW-28d had no detections of metals, volatile organic compounds, or semi-volatile compounds during the May 1998 sampling event.

MW-29 and MW-29d had detections of chromium at 0.018 mg/l and 0.013 mg/l repsectively. No VOCs, or semi-volatiles were detected during this sampling event.

MW-30 had quantifications of chromium, cobalt, vanadium, and zinc at concentrations of 0.060 mg/l, 0.019 mg/l, 0.056 mg/l, and 0.060 mg/l, respectively. The values for chromium, cobalt, and vanadium were in excess of the 2L standards. No VOCs or semi-volatiles were detected during the May 1998 sampling event.

MW-31 had no detections of metals, VOCs or semi-volatiles during this sampling event.

MW-31d had detections of beryllium at 0.003 mg/l, chromium at 0.110 mg/l, cobalt at 0.013 mg/l, lead at 0.019 mg/l, nickel at 0.068 mg/l, vanadium at 0.280 mg/l, and zinc at 0.210 mg/l. All of these metals were above 2L Standards with the exception of nickel and zinc. No VOCs or semi-volatile compounds were detected during this sampling event.

MW-32 had detections of chromium, cobalt, vanadium, and zinc at concentrations of 0.023 mg/l, 0.044 mg/l, 0.041 mg/l, and 0.059 mg/l, respectively. The cobalt and vanadium detections were above the 2L Standard.

As stated in Section 1.5, these wells plus the wells on the eastern side of the investigation were sampled in August 1998. The results of this comprehensive sampling event are presented in Section 3.4.

Packer Testing Results

Three intervals were sampled within well MW-23d and field screened for the indicator parameters using the portable GC unit. The results are as follows:

Interval (feet below ground surface)	Result
53 to 63	8 ug/l tetrachloroethene 8 ug/l trichloroethene 3 ug/l benzene
Interval (feet below ground surface)	**Result**
66 to 76	9 ug/l tetrachloroethene 9 ug/l trichloroethene 5 ug/l benzene
78 to 94	5 ug/l tetrachloroethene 6 ug/l trichloroethene <0.05 ug/l benzene

3.4 Phase III Results

After MW-33, -34, -34d, and -35 were installed, a comprehensive sampling of all the newly installed monitor wells (MW-28, -28d, -29, -29d, -30, -31, -31d, -32, and TB-1a) plus MW-5, -10, -22, -23, -23d, and -24 was performed in August 1998. Thereafter, wells MW-10, -22, -23, -23d, -24, -28, -28d, -29, -29d, -30, -31, -31d, -32, and TB-1a were sampled monthly through February (except during November). All monitoring wells associated with the unlined facility were sampled in December and April, as part of the semi-annual monitoring program. The complete results are presented in Tables 3-4a and 3-4b along with the historical sampling data from the unlined facility background and compliance wells. Organic compounds detections from the latest Phase III sampling event (April

1999) are plotted on Sheet 3-2 (located at the end of this section). The samples were submitted to Camp Dresser and McKee's analytical lab in Cambridge, Massachusetts, or to Paradigm Anaalytical Laboratory in Wilmington, North Carolina, and analyzed for Appendix I metals and VOCs plus dichlorodifluoromethane and mercury.

The following is a discussion of the significant Phase III results through the April 1999 sampling event. For a complete presentation of the data, please refer to Tables 3-4a and 3-4b.

1,1,1-Trichloroethane, trichloroethene, chloroethane, 1,1-dichloroethane, tetrachloroethene and total xylenes were consistently detected in TB-1a during Phase III sampling events. 1,1,1-Trichloroethane, chloroethane, 1,1-dichloroethane and total xylenes were detected during every event ranging from 8.2 to 11 ug/l, 10 to 20 ug/l, 14 to 40 ug/l, and 5 to 23 ug/l respectively. Trichloroethene was detected above the 2L Standards four of seven times, ranging from 5.0 to 7.9 ug/l; however, it was not detected during the last two monitoring events. Tetrachloroethene was detected in each sampling event above the 2L Standards, ranging from 5.0 to 8.3 ug/l. Methylene chloride was detected in samples during August, September and October at concentrations slightly exceeding the 2L Standard. It was not found during any other event. Cadmium was detected above the 2L Standard during August 1998, but has not been detected since December 1998. Cobalt was detected above the 2L standard in August through October, but has not been detected since October.

MW-5 had frequent detections of benzene, trichloroethene, chloroethane, cis-1,2-dichloroethene, 1,4-dichlorobenzene, 1,1-dichloroethane, methylene chloride, tetrachloroethene and total xylenes. Benzene, trichloroethene, methylene chloride and tetrachloroethene were detected above the 2L Standards in all three of the Phase III sampling events. Methylene chloride was found at the highest concentrations, ranging from 79 to 300 ug/l. 3&4-methylphenol, a semi-volatile compound, was detected at 26 ug/l during the April sampling event. This was above the 2L Interim Standard of 3.5 ug/l for the individual isomer 4-methylphenol. During the August 1998 sampling event, MW-5 had detections of beryllium at 2.2 ug/l, cadmium at 4.9 ug/l, chromium at 32 ug/l, cobalt at 24 ug/l, vanadium at 68 ug/l, and zinc at 190 ug/l. The concentrations of beryllium, cobalt, and vanadium exceeded their respective 2L Standards. Only cadmium and cobalt were detected in the following two events, with cobalt (28.3 ug/l) exceeding the 2L Standard in April.

Benzene, trichloroethene, cis-1,2-dichloroethene, 1,1-dichloroethane, methylene chloride and total xylenes were detected in the majority of samples from MW-10 during Phase III. Benzene was found to exceed the 2L Standard during four events while trichloroethene, methylene chloride and tetrachloroethene each exceeded the 2L during six events. Methylene chloride was detected at the highest concentrations, ranging from 150 to 410 ug/l. Bis(2-ethylhexyl)phthalate

was detected once, during the April 1999 sampling event, at 16 ug/l. This detection exceeded the 2L Standard. The only metal detected was cadmium, during the August, October and December 1998 events. It did not exceed the 2L Standard.

The only organic constituent detected in MW-22 was 1,1-dichloroethane. It was found during each Phase III event ranging from 6 to 10 ug/l— well below the 2L Standard. MW-22 consistently had the highest detections of cobalt, ranging from 91 to 261 ug/l, and exceeding the 2L standard in all sampling events. Cadmium was detected in the majority of the Phase III samples. It exceeded the 2L standard once, during August 1998. Chromium, lead and nickel were detected in the most recent event, with only chromium exceeding the 2L Standard.

1,1-Dichloroethane was detected in MW-23 during four sampling events, at concentrations below the 2L Standard. The only other organic constituent detected was bis(2-ethylhexyl) phthalate during December 1999, at 8.3 ug/l. Methylene chloride was detected in the four rounds previous to the August 1998 sampling event, but has not been detected since. Similarly, tetrachloroethene and trichloroethene were detected in two of the four rounds prior to August 1998, but have not been detected since. MW-23 had detections of cadmium at 5.4 ug/l, chromium at 24 ug/l, cobalt at 10 ug/l, lead at 17 ug/l, vanadium at 50 ug/l, and zinc at 150 ug/l during the August 1998 event. The detections of cadmium, cobalt, and lead exceeded their respective 2L Standards. Since that time, only lead was detected above the 2L Standard in April 1999. Mercury was detected in four Phase III events, but did not exceeded the 2L Standard.

Bis(2-ethylhexyl)phthalate was the only organic constituent detected in MW-23d during Phase III sampling. It was detected once, at 8.3 ug/l in December 1999. Cadmium, lead, zinc and mercury were detected sporadically. No metal was found to exceed the 2L Standard. None of the VOCs detected in GC screening were detected in lab analysis.

MW-24 had frequent detections of benzene, trichloroethene, chloroethane, cis-1,2-dichloroethene, 1,1-dichloroethane, toluene, methylene chloride, ethyl benzene, trichloroethene, and total xylenes, and exceedances of the 2L Standards for benzene, trichloroethene, methylene chloride, ethyl benzene and tetrachloroethene during Phase III sampling. Methylene chloride was detected in each event above the 2L standard, ranging from 130 ug/l to 290 ug/l (330 ug/l in the duplicate sample). 1,1,1-Trichloroethane, 1,4-dichlorobenzene and bis(2-ethylhexyl)phthalate were detected in one of the seven rounds, each at concentrations below their respective 2L Standard. Mercury was detected during six events, ranging from 0.40 to 0.98 ug/l, which is below the 2L Standard. Other detected metals included cadmium lead and zinc. The concentration of lead (16 ug/l) slightly exceeded the 2L Standard during August 1999. Beryllium, cadmium, cobalt and lead were found to exceed the 2l Standards in the duplicate sample from August 1999, although beryllium and cobalt were detected at

concentrations just above their detection limit (which, for each, was greater than the 2L Standard).

MW-27 had detections of bis(2-ethylhexyl)phthalate during each of the three events it was sampled during Phase III. Concentrations ranged from 6.4 to 20 ug/l, and exceeded the 2L Standard. No other organic constituent was detected. Cadmium, chromium and cobalt were the only metals detected, with cobalt (19 ug/l in April 1999) accounting for the only 2L exceedance.

Similar to MW-27, bis(2-ethylhexyl)phthalate was the only organic compound detected in samples from MW-28. One detection, at 12 ug/l, was recorded during the December 1998 event. This detection, however, is probably a sample or laboratory artifact and is not be considered representative of the groundwater in the vicinity of this well. Evidence to this fact was the occurrence of bis(2-ethylhexyl)phthalate detections in several samples from the same December 1998 sample group, including the background well, MW-11. In each case, the bis(2-ethylhexyl)phthalate had not been previously detected, nor has it been detected since. Cadmium, chromium, cobalt, vanadium and zinc were sporadically detected. Cadmium, cobalt and zinc were found to exceed the 2L Standards during three, two and two events respectively.

No organics were detected in samples from MW-28d, except for a detection of bis(2-ethylhexyl)phthalate during December 1998. This detection, as previously explained, is probably a sample or laboratory artifact and is not be considered representative of the groundwater in the vicinity of this well. Cadmium (1.3 ug/l) and mercury (0.25 ug/l) were each detected once since August 1998. Both detections were below the 2L Standard.

MW-29 has been subject to a low groundwater table since its installation, and only two organics samples and one metals sample have been collected. No organics or metals were detected in any of these samples.

MW-29d had a detection of bis(2-ethylhexyl)phthalate at 37 ug/l in December 1998. This detection, as previously explained, is probably a sample or laboratory artifact and is not considered representative of the groundwater in the vicinity of this well. No other organics were detected at this location. Cadmium, chromium, zinc and mercury were detected infrequently, and at general low levels. No detections were above the 2L Standards.

No organic constituents were detected from MW-30. The only metals exceedances were cadmium (34 ug/l), chromium (50 ug/l), cobalt (19 ug/l) and vanadium (50 ug/l) from the August 1998 sample. Each of these constituents were infrequently detected since then.

No organic constituents were detected from MW-31. Cadmium (14 ug/l), chromium (88 ug/l), lead (38 (ug/l) and vanadium (81 ug/l) were detected above

their respective 2L Standard in August 1998. Since that time detections of these constituents have been sporadic, with the only other 2L exceedance being lead (15 ug/l) during the September 1998 sampling event. No metals have been detected in any sample since December 1998.

MW-31d had detections of bis(2-ethylhexyl)phthalate in December 1998 and April 1999 at 10 ug/l. No other organics were detected from this location. Cadmium (8.6 ug/l in August 1998) and vanadium (60 ug/l in September 1998) constitute the only exceedances of the 2L Standards. Chromium and zinc were also detected infrequently in MW-31d. Since January 1999, no metals have been detected.

No organic constituents were detected from MW-32. Cadmium, cobalt and vanadium were detected at concentrations exceeding the 2L Standards. Cobalt concentrations have ranged from 24 to 25 ug/l, and have exceeded the 2L Standard in every sample. Zinc, nickel and chromium were also been detected, but at levels below the 2L Standard.

No organic constituents were detected from MW-33. Similar to MW-32, cadmium, cobalt and vanadium were detected at concentrations exceeding the 2L Standards. Zinc was detected in two of three samples, and chromium in all three. Neither exceeded the 2L Standard.

No organic constituents have been detected in MW-34. Beryllium (4.9 ug/l), cadmium (8.4 and 2.2 ug/l), cobalt (20 ug/l) and vanadium (110 ug/l) were detected above the 2L Standards. Chromium, nickel and zinc were detected at concentrations below the 2L standards in one or more sampling events.

The only organic constituent detected in MW-34d was bis(2-ethylhexyl)phthalate (7.3 ug/l) in August 1998. However, the presence if this compound was not confirmed in the duplicate sample. The detection was likely a sampling or laboratory artifact. No metals were detected in samples from this well.

No organic constituents were detected from MW-35. Beryllium, cadmium, cobalt and vanadium were generally detected at concentrations above the 2L Standards in each of the three Phase III sampling events. Chromium, nickel and zinc were also detected, although below the 2L Standards.

3.5 Contaminant Trends

The frequent and continued sampling of monitoring wells allows for the identification of developing trends in contaminant concentrations at particular locations, and site-wide. Aiding in the identification of contaminant trends associated with the unlined landfill are five years of analytical data for wells MW-5, -6, -7, -8, -9 and –10; two years of data for wells MW-22, -23 and –24; and

one year of data for the remaining wells. The analysis of contaminant trends will focus on those wells for which two or more years of analytical data are available.

Instrumental to the analysis of contaminant trends is the identification of activities that may have influenced the extent of contaminant migration. Most obvious is the closure of the unlined landfill that began in November 1997. This included the construction of a geosynthetic liner, and the installation of an active gas collection system. Contaminant concentrations would be expected to decline in wells closest to the landfill, following installation of the liner, as a result of the reduced infiltration and leachate generation. Additionally, the active gas collection system should significantly reduce methane gas migration, which has also been identified as a mechanism for contaminant transport.

Volatile Organic Compounds

Compliance wells MW-5, -6, -7, -8 and -9 have consistently produced the most VOC detections and exceedances of the 2L Standards, primarily because of their proximity to the landfill. Figure 3-5 shows the trend in total organic compound concentrations detected from these wells since 1994. A decreasing trend is evident in total organic concentrations.

MW-23, located just inside the western property line, has shown a decrease in VOCs since sampling began in June 1997. As evident in Figure 3-6, concentrations of six different VOCs generally dropped to below detection limits by August 1998, and have remained there since. The installation of the liner and methane gas extraction system appears to have contributed to the observed decline.

MW-24 has consistently produced the highest concentrations of VOCs of the western boundary compliance wells. Methylene chloride and toluene were typically detected at the highest concentrations (often exceeding 100 ug/l), although ten other VOCs were also found. Figure 3-7 shows the trend in total VOC concentrations from this well over the last two years. A moderate decreasing trend in total VOCs is evident, especially since August 1998.

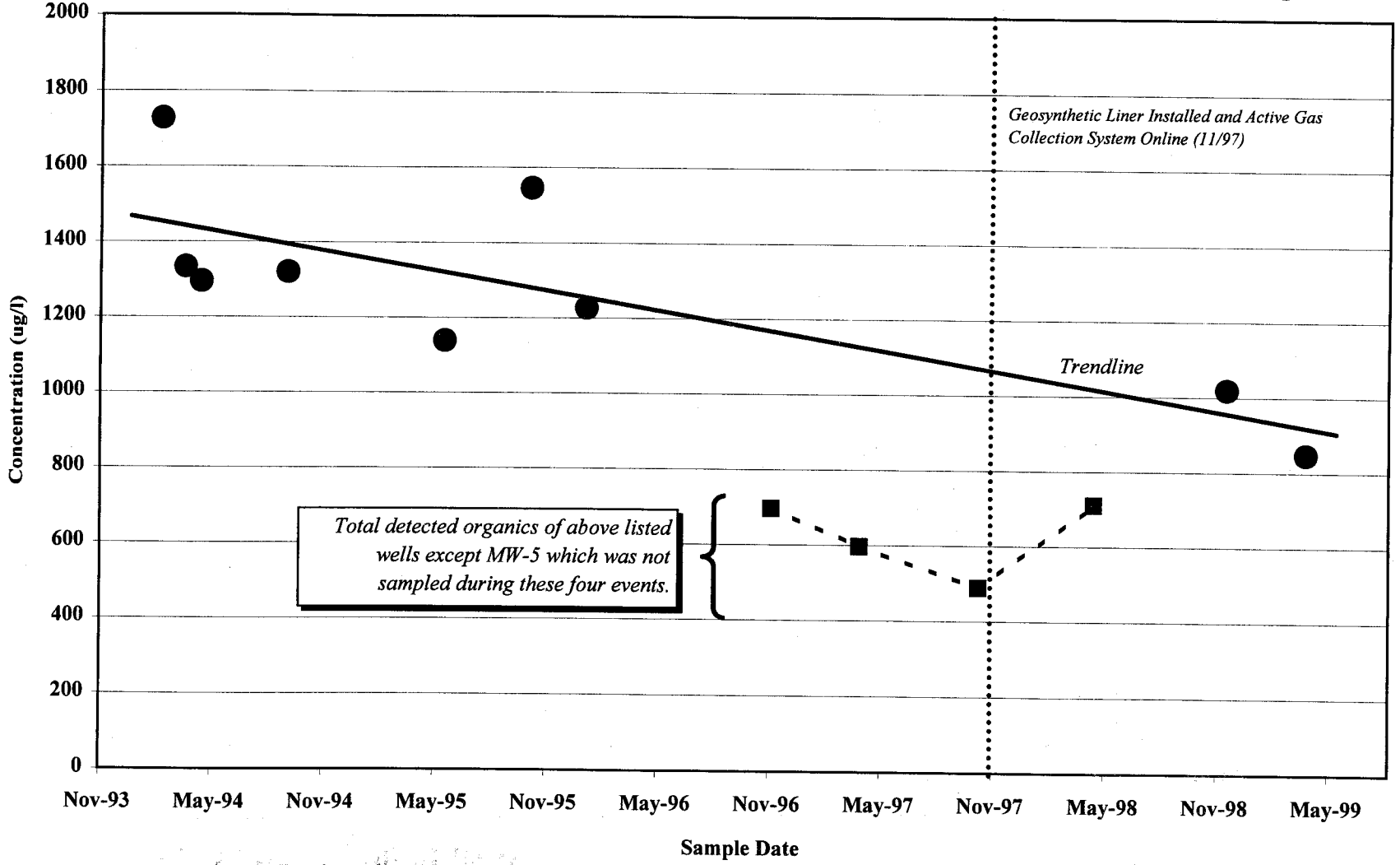
VOC concentrations in MW-10 have not shown a similar decreasing trend as the other compliance wells (Figure 3-8). Primarily responsible for this observation was the 1997 relocation of MW-10 to a point approximately 80 feet closer to the landfill. Since the time the well was relocated, 1,1-dichloroethane and methylene chloride concentrations have slightly increased. The less prevalent VOCs have generally been detected at the same concentration range throughout the 5-year monitoring period.

TB-1a is the only buffer zone well that had VOC detections. Since August 1998, all detected VOCs have declined to near or below their respective detection limits (Figure 3-9).

Time History of Total Detected Organic Contaminants

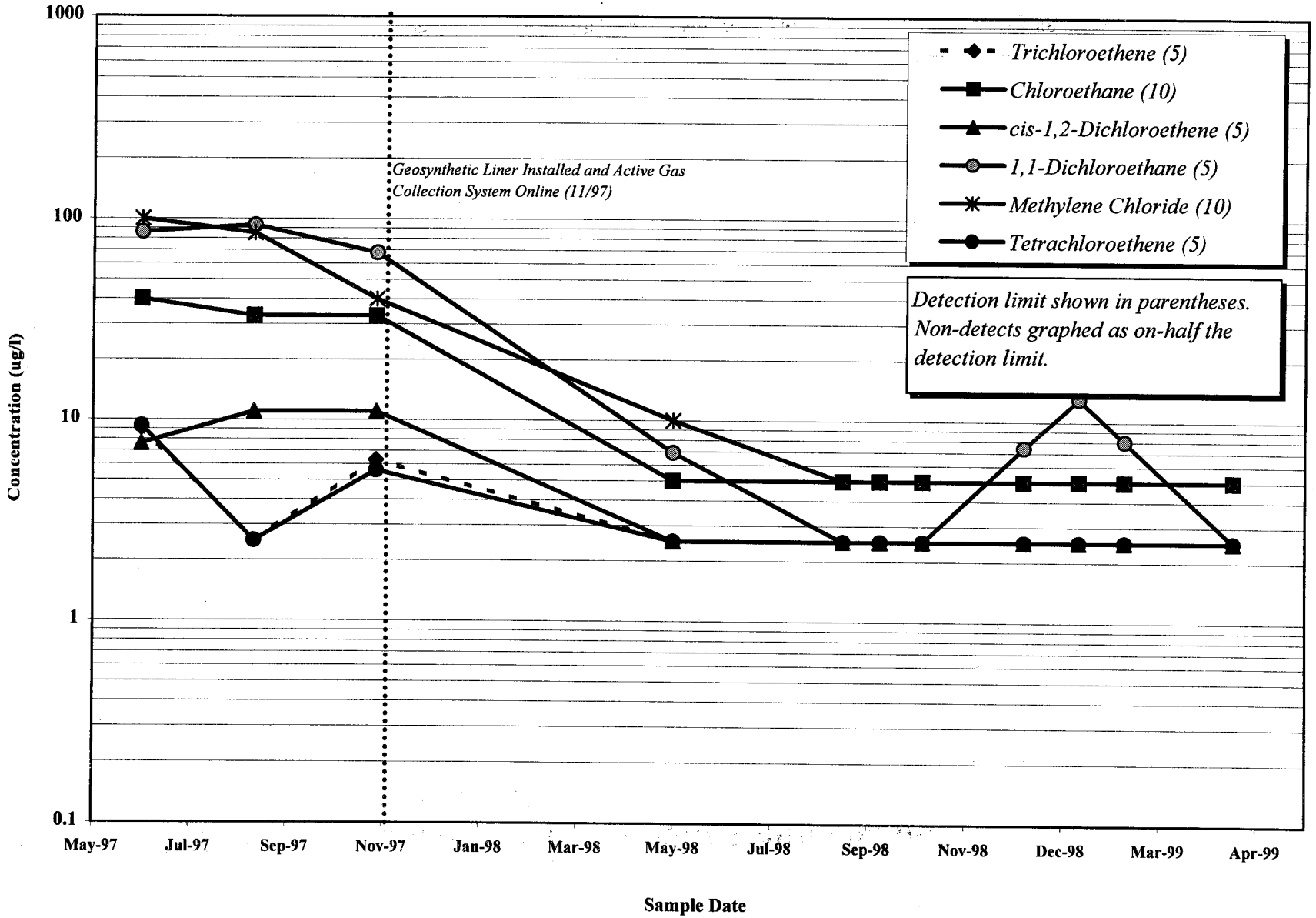
Monitoring Wells MW-5, MW-6, MW-7, MW-8 and MW-9

Figure 3-5



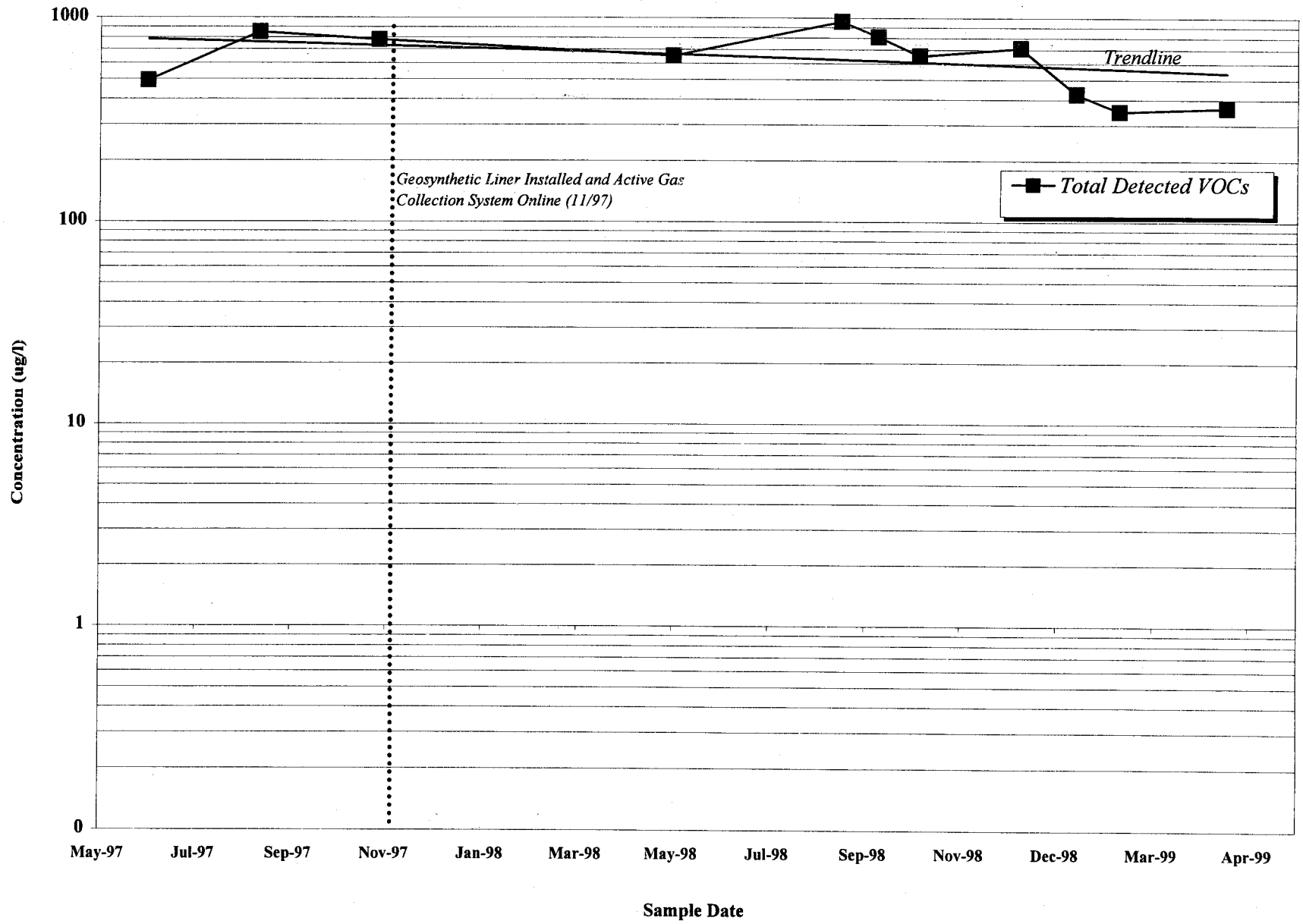
VOC Time History: MW-23

Figure 3-6



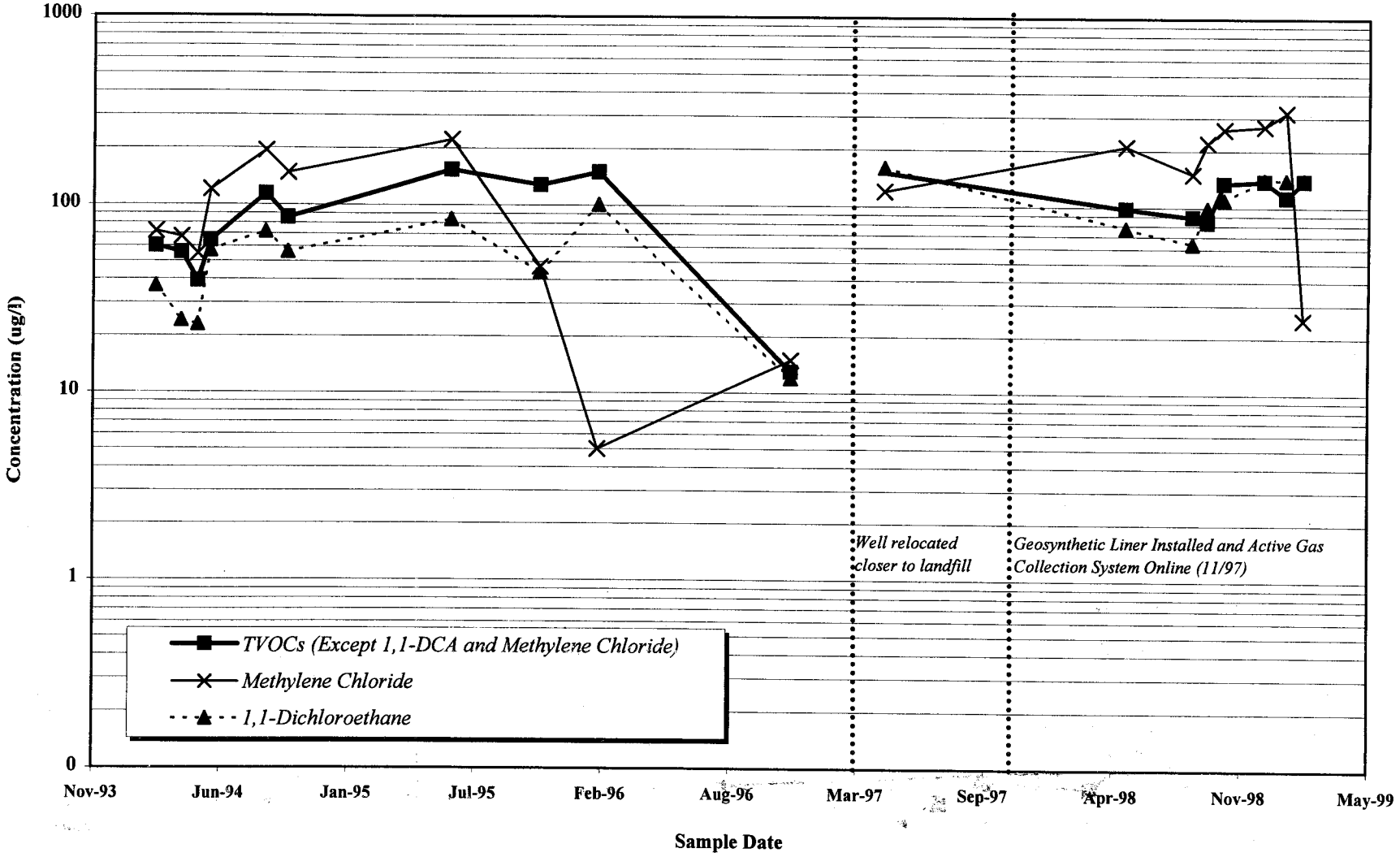
Total VOC Time History: MW-24

Figure 3-7



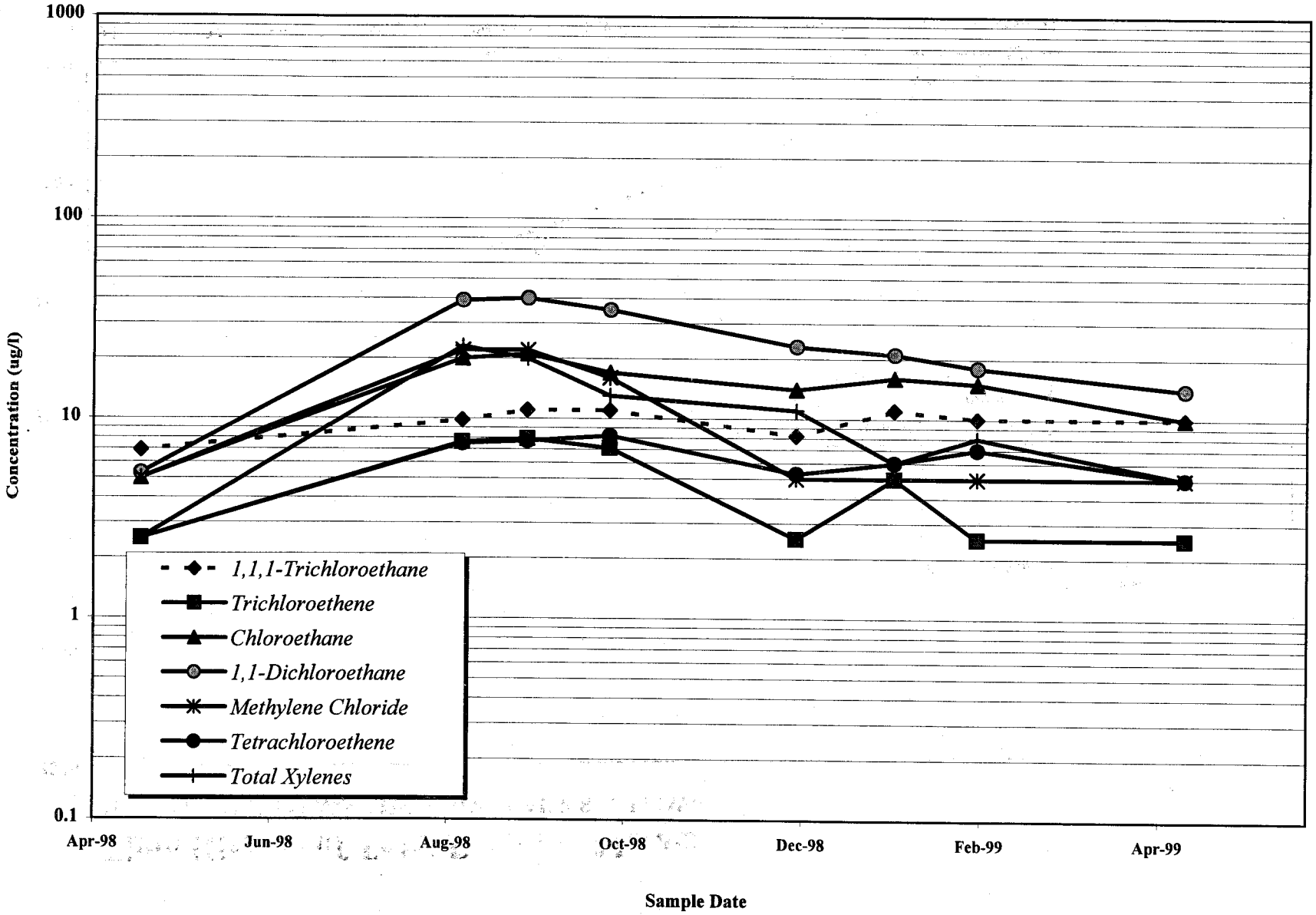
VOC Time History - MW-10

Figure 3-8



VOC Time History: TB-1a

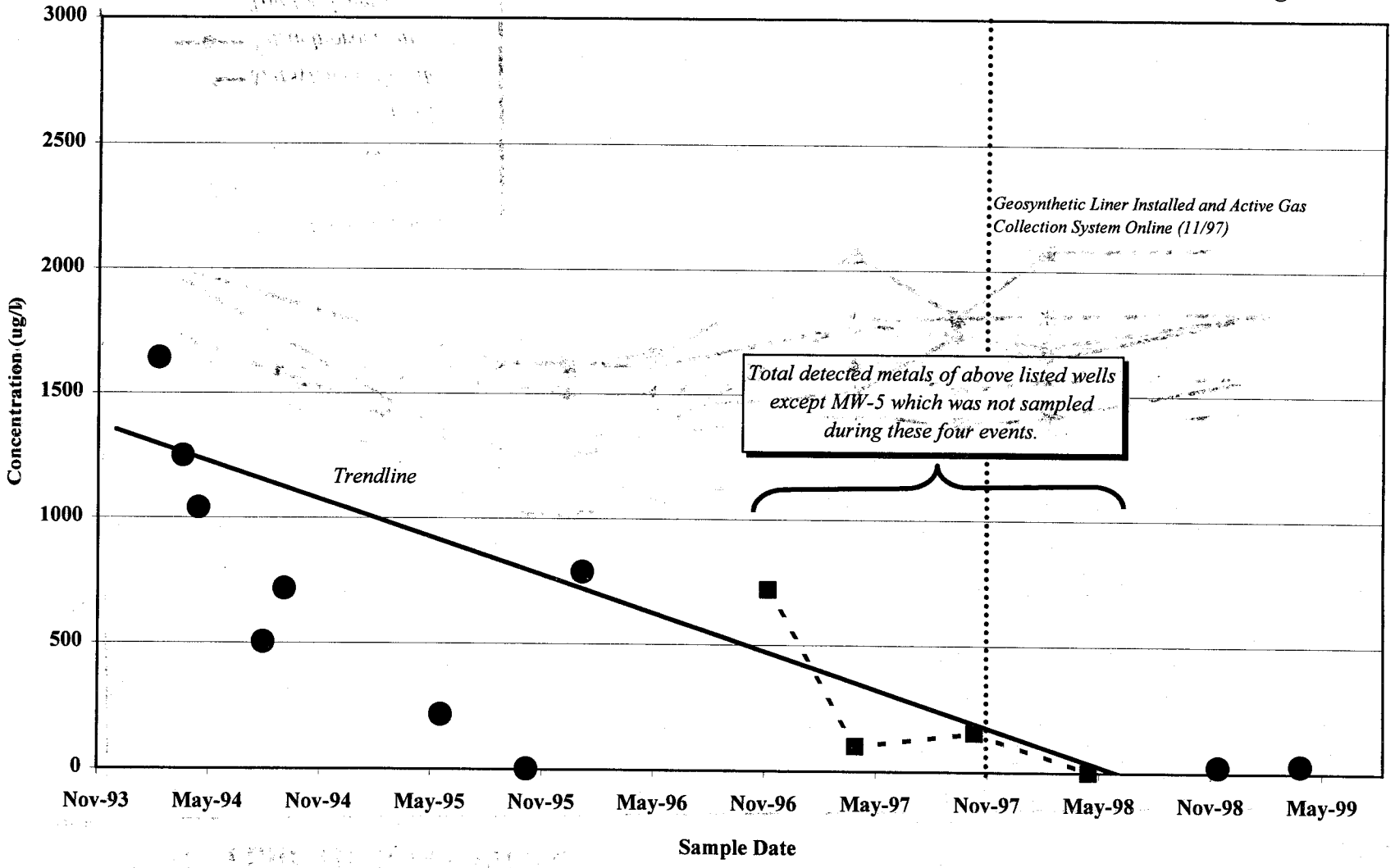
Figure 3-9



Time History of Total Detected Metals

Monitoring Wells MW-5, MW-6, MW-7, MW-8 and MW-9

Figure 3-10



Except for Well MW-10, VOC concentrations have generally declined since monitoring began. The landfill cap installation and gas extraction system operations are likely reasons for this decline. Further declines in VOCs are expected as a result of these components.

Metals

Metals concentrations also show a decreasing trend in most wells. Figure 3-10 shows the trend in total detected metal concentrations in compliance wells MW-5, MW-6, MW-7, MW-8 and MW-9 since 1994.

A potential reason for the decline in metal concentrations is that newly installed wells contain a greater amount of suspended soil particles. As the wells continue to be purged before sampling, it is expected that metal concentrations will be reduced. The existing data in fact show that most metals detections occurred in the first three or four samples. Detections in the later samples were significantly reduced.

As mentioned earlier, all of these metals may be attributed to naturally occurring background levels in the bedrock and related soils. Background monitoring well MW-11, and MW-1, which it replaced, had metals detections and exceedances of the 2L Standards similar to those observed in the compliance and buffer zone wells.

3.6 Preliminary Site Conceptual Model

This following is a discussion of the hydrogeologic regime and the extent of contamination, based on the results of the site investigation and sampling activities. The conceptual model is presented primarily to support the Natural Attenuation Evaluation presented in Section 4.

Prior to installation of the liner, precipitation infiltrated directly through the landfill. As a result of this direct recharge, it is probable that groundwater elevations beneath the landfill were higher than those surrounding the site, producing a radial flow away from the landfill. Water table contours surrounding the landfill indicate an easterly groundwater flow direction, coincident with the site topography prior to landfilling. Thus, while the regional flow is easterly, radial flow from the landfill mound resulted in a temporary reversal of flow, primarily along the western perimeter. Evidence for this is the VOC detections in temporary and permanent wells west of the landfill.

Following installation of the impermeable cap, recharge via direct infiltration should have been virtually eliminated, resulting in a reduction of the groundwater elevation within the landfill. Consequently, the radial flow pattern should dissipate within a shorter distance. While no water level measurements from within the landfill are available to confirm this assumption, the generally decreasing trend in VOC concentrations at the perimeter wells support it.

Prior to installation of the active gas recovery system, contaminant transport may have occured through vapor migration and subsequent leaching back into groundwater. This possible mechanism of transport has been eliminated through operation of the active gas recovery system.

Vertical flow of groundwater immediately surrounding the landfill is indicated by the downward vertical gradient measured in the nested well sets MW-23/-23d, -29/-29d, 31/31d and 34/34d. The average gradient of these four wells is approximately 0.02 ft/ft downward, based on the April 1999 water level measurements. This indicates that the area surrounding the landfill is predominately a recharge area for the deeper part of the surficial aquifer. Based on the observed vertical gradient, organic contamination might be expected in the deeper wells. However, VOCs have not been detected in any of the deep wells to date.

A preferential groundwater flow path appears to exist along the western edge of the landfill near wells MW-24 and TB-1a. Both wells continue to show evidence of VOC contamination in this part of the aquifer. Nearby wells MW-31, -31d and -32 have not had VOC detections, suggesting that the preferential flow path is restricted in size. Boring logs from MW-24 and TB-1a indicate the presence of a westerly plunging quartz/feldspar pegmatite vein. Because both wells are regionally upgradient of the landfill, the presence of VOCs is not expected, considering only groundwater as the transport mechanism. It is possible that gas pressure inside the landfill, prior to the active gas extraction system, had increased the velocity of contaminant migration, and helped develop a local flow of gas and groundwater counter directionally to the regional flow.

VOC contamination is primarily restricted to the shallow portion of the aquifer beneath the landfill property. Exceptions include the TB-1a area and just east of MW-5, where migration off the property is occurring. Downgradient wells MW-33, -34, -34d and -35, which are within 200 feet of the eastern perimeter, have shown no evidence of VOC contamination, indicating low contaminant velocities.

Section 4
Natural Attenuation Evaluation

4.1 Introduction

This section presents a preliminary evaluation of the feasibility of natural attenuation at the North Wake Unlined Landfill. An overview of the mechanisms of natural attenuation is presented in Section 4.1. Section 4.2 contains a screening of the natural attenuation processes that may be occurring at the site. The natural attenuation screening generally follows the protocol contained within the document Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, (EPA, 1998). The site conceptual model is then refined in Section 4.3.

4.1.1 Overview of Natural Attenuation

Natural attenuation refers to naturally occurring processes in soil and groundwater that reduce the mass, toxicity, mobility, volume or concentration of contaminants. Natural attenuation in groundwater systems results from both destructive and nondestructive subsurface attenuation mechanisms. Nondestructive mechanisms include advection, adsorption, dispersion, dilution and volatilization. Biodegradation is the primary destructive mechanism. The combination of both major types of natural attenuation can effectively reduce contaminant toxicity, mobility and volume to levels that are protective of human health and the ecosystem.

The EPA and many states have acknowledged that natural attenuation, in conjunction with source control, may be an appropriate and effective remedial option, as long as it is completed in a reasonable time frame and the likelihood of exposure has been considered. In order to support natural attenuation as a remedial option, three lines of evidence can be used:

- Observed reduction in contaminant concentrations;
- Presence and distribution of chemical and geochemical indicators (e.g., decreasing parent compound concentrations, increasing daughter compound concentrations, depletion of electron acceptors and donors, and increasing metabolic byproduct concentrations); and
- Direct microbial evidence (via lab test or field data).

The first line of evidence is documented through a review of historical trends in contaminant concentration, which should show mass reductions over time in the source area and/or along the flow path. The mass loss must exceed the losses expected through transport (nondestructive) processes alone. Section 3.3 presented a discussion of VOC trends at the site over the last five years.

The second line of evidence is documented through a correlation of the changes in concentration and distribution of indicator parameters. For example, an observed decrease in parent compound tetrachlorethene should occur in conjunction with an observed increase in its daughter compounds.

The third line of evidence is typically obtained through microcosm studies that can provide estimates of site-specific biodegradation rates. This line of evidence is seldom recommended, except when support through the first two lines of evidence is insufficient.

Natural attenuation may be an appropriate and effective remedial option to address VOC contamination from the North Wake Unlined Landfill. This section presents an evaluation of natural attenuation as a remedial option, using available historical and current data under the first two lines of evidence. Particular emphasis is placed on contamination at the western boundary of the landfill and within the Falls River Buffer Zone.

Biodegradation of Fuel Hydrocarbons and Chlorinated Solvents

The primary organic constituents found in exceedance of the 2L Standards in the Unlined Landfill monitoring well network were fuel hydrocarbons (primarily benzene, toluene, ethyl benzene, and xylene) and chlorinated solvents (primarily tetrachloroethene, trichloroethene, 1,1-dichlorethene and methylene chloride). The two groups generally biodegrade along different pathways. The BTEX compounds biodegrade rapidly in an aerobic environment. Biodegradation of BTEX compounds is usually limited by electron acceptor availability. Chlorinated solvents, on the other hand, are primarily biodegraded anaerobically via reductive dechlorination--- a process that requires an adequate supply of both electron acceptors and donors. Electron donors may include fuel hydrocarbons, landfill leachate or natural organic carbon. Biodegradation of chlorinated solvents via reductive chlorination does not proceed as rapidly as aerobic biodegradation of fuel hydrocarbons. Some chlorinated solvents may also be degraded aerobically through cometabolic degradation with methane, toluene, or NH_4.

Reductive dechlorination occurs by sequential dechlorination. Tetrachloroethene and 1,1,1-trichloroethane degrade sequentially along the following pathways:

Tetrachloroethene→Trichloroethene→cis-1,2-Dichloroethene→Vinyl Chloride→Ethene

1,1,1-Trichloroethane→1,1,-Dichloroethane→Chloroethane→Ethane

Associated with the reductive dechlorination process is the accumulation of daughter products and an increase in the concentration of chloride ions. Depending on initial concentrations, and the initial salinity of the groundwater, the chloride increase may be measurable.

Tetrachloroethene will not degrade under aerobic cometabolism; however, its daughter compounds may degrade aerobically, given the proper environmental conditions and the availability of a cometabolite. Cometabolic degradation often proceeds at a faster rate than reductive dechlorination. Cis-1,2-dichloroethene, vinyl chloride and ethene may also degrade via aerobic pathways.

4.2 Natural Attenuation Screening

The objective of this section is to document the natural processes of contaminant degradation which may be occurring at the Unlined Landfill. Available contaminant and geochemical data are provided to support the first two lines of evidence.

4.2.1 Evidence of Biodegradation

4.2.1.1 VOC Trends

Evidence was presented in Section 3.3 showing a general decreasing trend in VOC concentrations in both compliance and buffer zone wells. This trend was most evident in compliance wells MW-5, -6, -7, -8, -9, -23, -24 and buffer zone well TB-1a. The concentration of total VOCs in wells MW-5 through –9 dropped by 51% from March 1994 (1728 ug/l) to April 1999 (847 ug/l). This is direct evidence of a reduction in contaminant mass, which helps meet the requirements of the first line of evidence. However, this mass reduction may be a result of both destructive and nondestructive attenuation mechanisms.

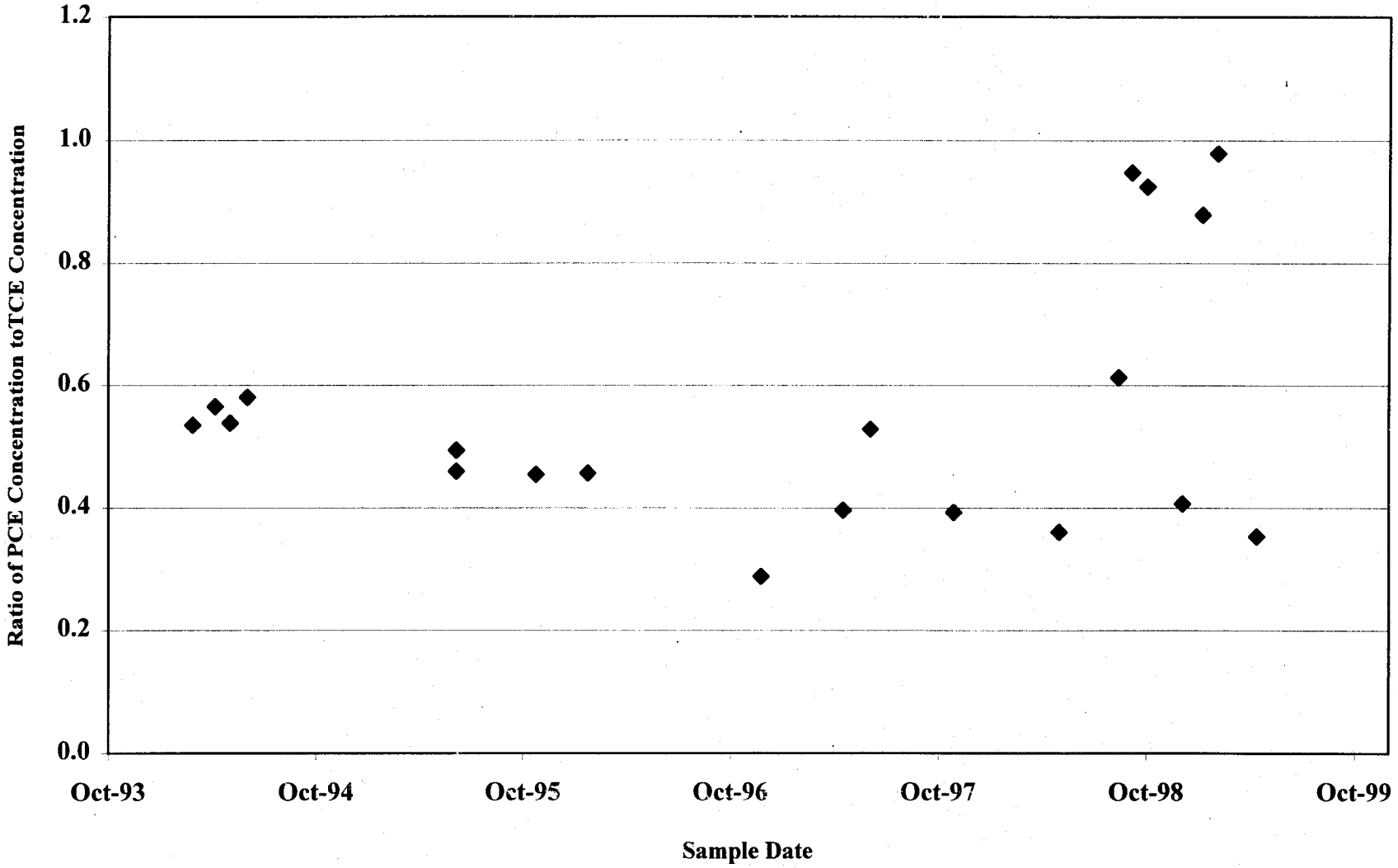
A comparison of the concentration of parent and daughter compounds over time can provide unique evidence of biodegradation. A decrease in the ratio of tetrachloroethene to its daughter compounds, over time, may serve as evidence of reductive dechlorination. Figure 4-1 shows the relationship between tetrachloroethene (PCE) and trichloroethene (TCE) concentrations over time, in wells that commonly had VOC detections. This graph does not show any clear trend and does not support the existence of reductive dechlorination. However, as seen in Figure 4-2, the ratio of PCE to cis-1,2-dichloroethene decreases significantly over time. The ratio of TCE to cis-1,2-dicholoethene also shows a significant decrease (Figure 4-3). Applying the same comparison to 1,1,1-trichloroethane (1,1,1-TCA) and its daughter products, Figure 4-4 and 4-5 show a moderate reduction in the ratio of 1,1,1-TCA to 1,1-dichloroethane and 1,1,1-TCA to chloroethane, respectively. These trends in parent/daughter ratios provide some indirect evidence that reductive dechlorination or natural hydrolysis may be occurring.

4.2.1.2 Geochemical Evidence

Biodegradation of organic compounds brings about measurable changes in the chemistry of groundwater. Identification of these changes can provide evidence of biodegradation. Limited chemical data is available from the Unlined Landfill to either support or refute the existence of biodegradation as a natural attenuation mechanism. Table 4-1 lists the available data from analyses

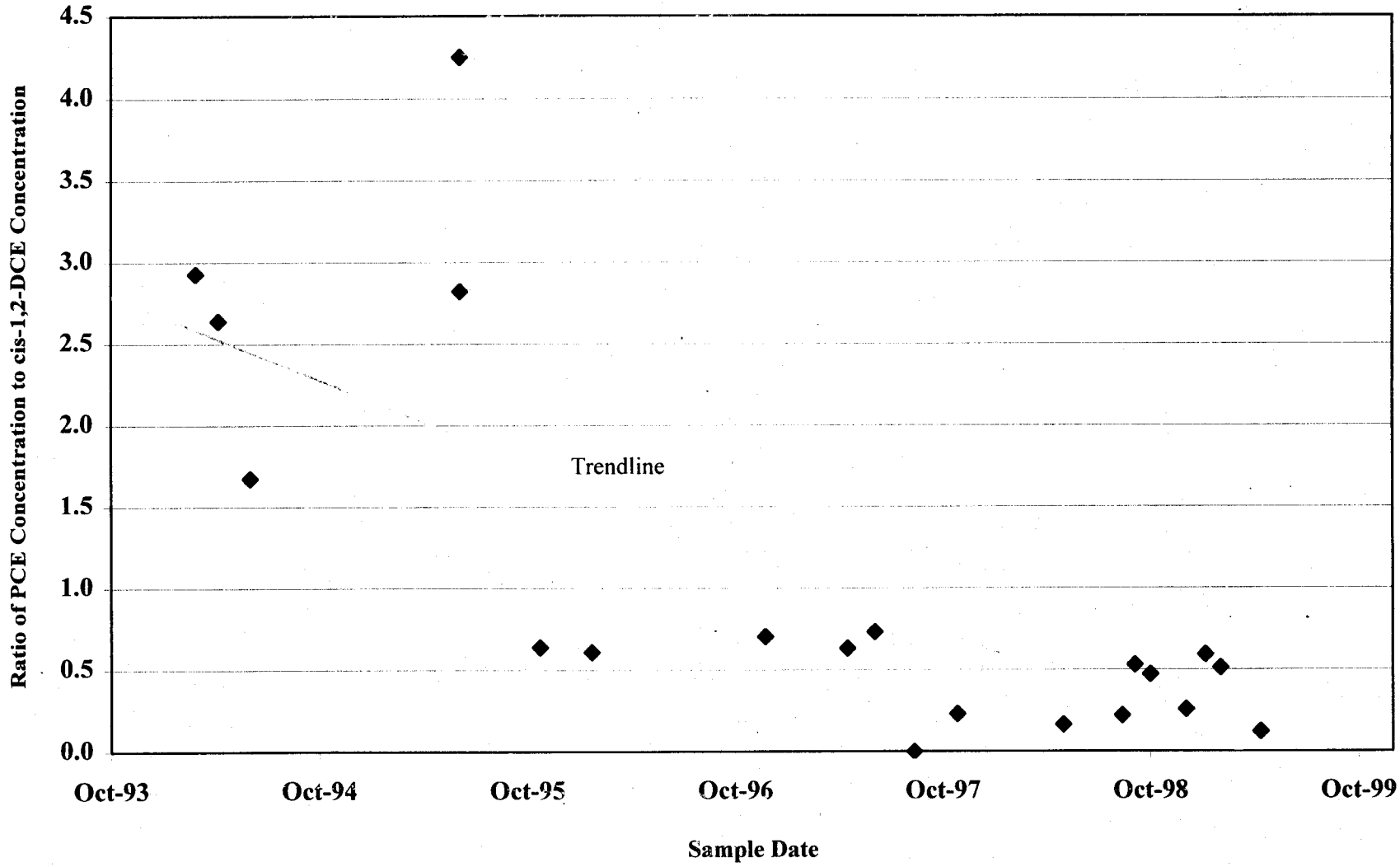
Ratio of Tetrachloroethene to Trichloroethene in Wells
MW-5, -6, -7, -8, -9, -10, -23, -24 and TB-1a

Figure 4-1



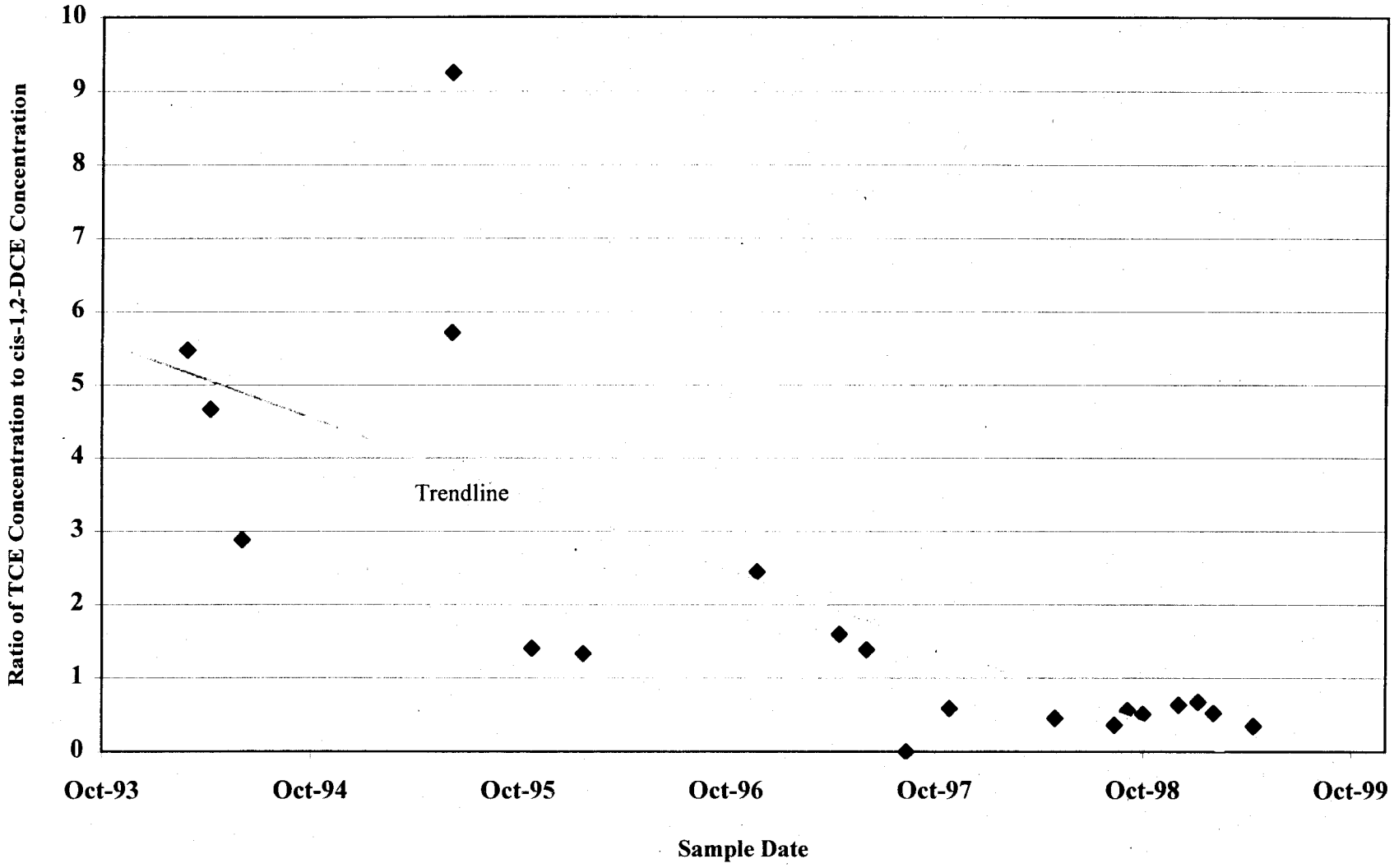
Ratio of Tetrachloroethene to cis-1,2-Dichloroethene in Wells MW-5, -6, -7, -8, -9, -10, -23, -24 and TB-1a

Figure 4-2



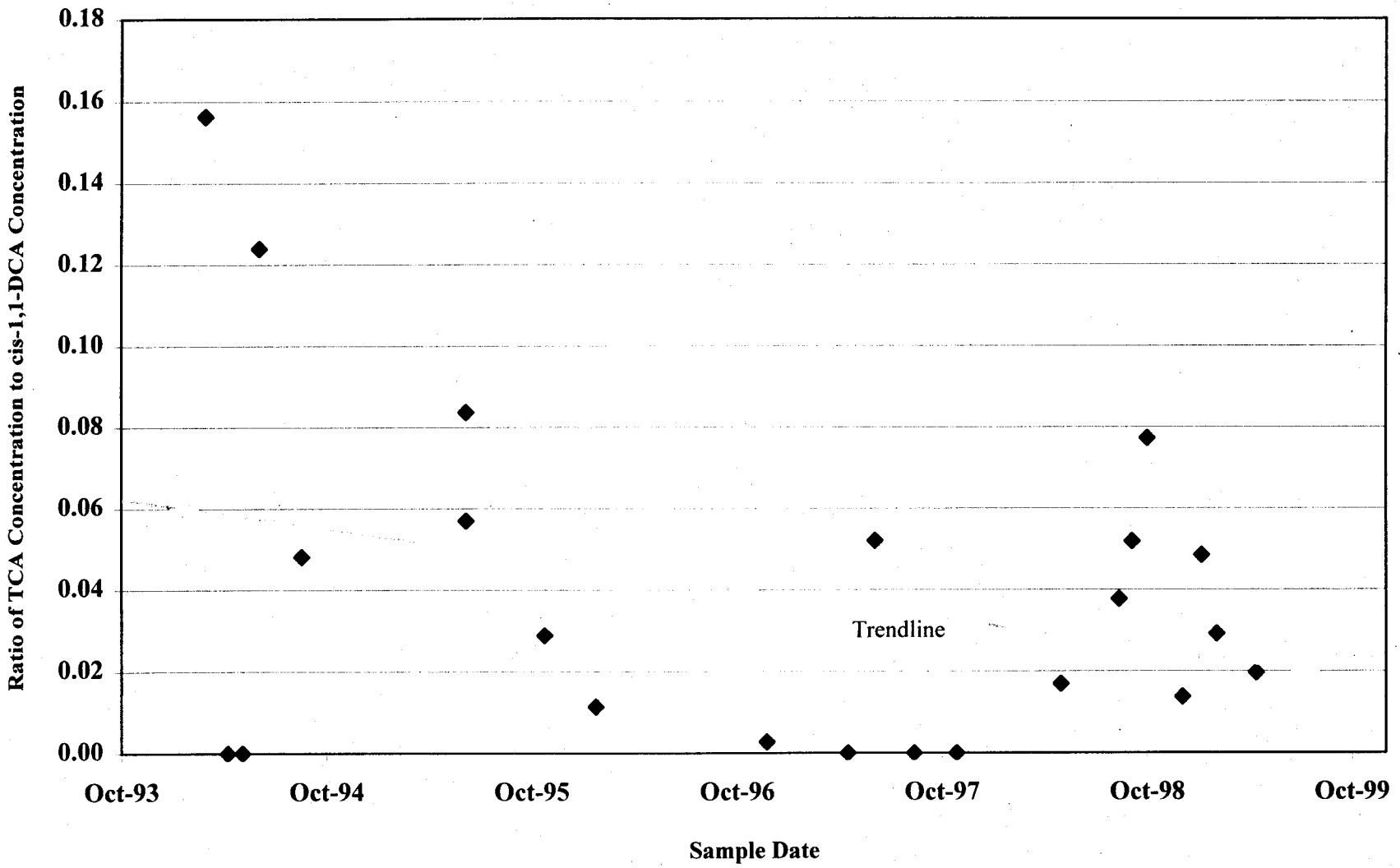
Ratio of Trichloroethene to cis-1,2-Dichloroethene in Wells
MW-5, -6, -7, -8, -9, -10, -23, -24 and TB-1a

Figure 4-3



Ratio of 1,1,1-Tetrachloroethane to 1,1-Dichloroethane in Wells MW-5, -6, -7, -8, -9, -10, -23, -24 and TB-1a

Figure 4-4



Ratio of 1,1,1-Tetrachloroethane to Chloroethane in Wells
MW-5, -6, -7, -8, -9, -10, -23, -24 and TB-1a

Figure 4-5

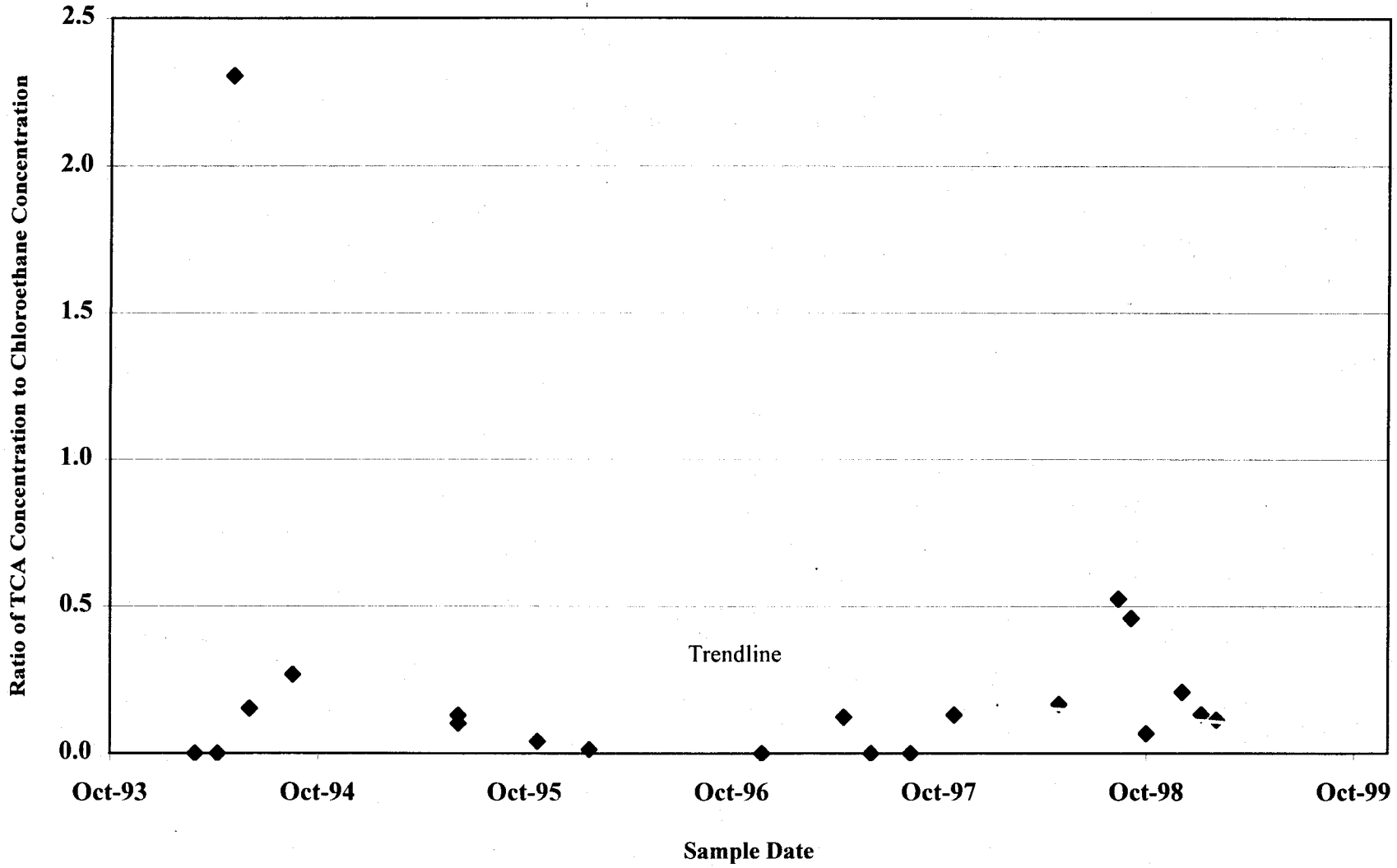


Table 4-1
Geochemical Data
North Wake Unlined Landfill
December 1998

Monitor Well	Sample Date	eH (mV)	pH	Temperature (C)	Conductivity (uS)	Dissolved Oxygen (mg/l)	Chloride	Nitrate	OrthoPhosphate	Total Organic Carbon	Alkalinity (CaCO3 - Lab)	Alkalinity (CaCO3 - Field)	Sulfate (Lab)	Sulfate (Field)	Ammonia	Free Chlorine	Carbon Dioxide	Ferrous Iron
MW-11	8-Dec-98	156.2	5.57	15.7	61	6.03	3.5	0.6	<0.05	2.1	21	40	<10	ND	<0.2	0.17	50	0.02
MW-11d	8-Dec-98	123.0	6.03	15.7	78	4.68	3.0	0.58	<0.05	0.64	14	60	<10	ND	<0.2	0.02	30	ND
MW-5	3-Dec-98		5.70	16.9	166		5.6											
MW-6	3-Dec-98		5.71	18.0	118		6.8											
MW-7	3-Dec-98		5.93	17.0	293		11											
MW-8	3-Dec-98		5.75	18.0	145		7.3											
MW-9	3-Dec-98		6.27	16.1	416		15											
MW-10	3-Dec-98		5.85	15.7	204		6.8											
MW-22	3-Dec-98		6.14	15.2	182		3.8											
MW-23	8-Dec-98		6.12	15.8	167		4.2											
MW-23d	8-Dec-98	142.1	6.52	15.4	180	3.00	3.5	0.06	0.05	2.8	60	100	46	17	<0.2	0.53	55	0.28
MW-24	8-Dec-98	145.9	5.75	15.2	176	1.02	4.2	<0.05	<0.05	2.5	66	140	<10	2	<0.2	0.07	260	0.78
MW-27	7-Dec-98		6.68	17.4	349		3.7											
MW-28	9-Dec-98		6.32	15.6	154		7.4											
MW-28d	9-Dec-98	216.6	6.95	14.3	318	6.15	5.6	0.05	<0.05	1.7	87	140	<10	61	<0.2	0.03	18	ND
MW-29d	9-Dec-98	240.4	6.50	14.7	138	3.76	3.6	<0.05	<0.05	2.9	70	100	<10	ND	<0.2	0.03	45	0.01
MW-30	7-Dec-98		6.36	15.4	128		3.1											
MW-31	8-Dec-98		6.38	15.7	84		2.7											
MW-31d	8-Dec-98		6.08	15.3	110		2.8											
MW-32	7-Dec-98		6.32	16.8	88		3.8											
MW-33	7-Dec-98		6.18	16.0	86		4.6											
MW-34	7-Dec-98		5.56	15.2	65		7.0											
MW-34d	7-Dec-98		5.58	14.2	94		4.0											
MW-35	7-Dec-98		5.72	14.7	45		3.4											
TB-1a	9-Dec-98	193.8	5.98	14.7	203	0.64	4.1	<0.05	<0.05	0.54	95	120	<10	2	<0.2	0.05	500	0.15

MW-11 & MW-11d are background wells for site.
All units are in milligrams per liter (parts per million), unless otherwise noted.
ND - Not Detected
-Blank Cells Indicate No Data Collected
-Field Tests Performed with HACH test kits

performed during the December 1998 sampling event. Temperature, pH and conductivity were measured during every round of sampling. The remaining parameters included in Table 4-1 were only sampled during the December 1998 event, and at selected wells.

Dissolved oxygen (DO) is the electron acceptor most thermodynamically favored for the aerobic biodegradation of organic carbon. DO concentrations below 1.0 mg/l generally indicate that an anaerobic pathway will be required for biodegradation to occur. The site background wells MW-11 and MW-11d had DO concentrations of 6.03 and 4.68 mg/l, respectively. Of the seven wells that were sampled, TB-1a and MW-24 had the lowest DO concentrations at 0.64 and 1.02 mg/l, respectively. These wells have consistently shown elevated concentrations of VOCs. The remaining wells for which DO was measured (MW-23d, -28d and –29d) did not have VOC detections and had an average DO of 4.3 mg/l. The low DO concentrations in wells MW-24 and TB-1a provide evidence that some microbial activity is occuring.

Following depletion of dissolved oxygen during aerobic respiration, anaerobic microbes may use nitrate as an electron acceptor, followed by iron (III), sulfate and carbon dioxide. Each sequential reaction drives the oxidation-reduction potential (ORP) of the groundwater downward, toward the range favoring reductive dechlorination. In order for reductive dechlorination to occur, nitrate concentrations must be less than 1.0 mg/l. Nitrate concentrations in wells MW-24 and TB-1a were both less than <0.05 mg/l. Nitrate was measured in the background wells MW-11 and –11d at 0.6 and 0.58 mg/l respectively. Ferric iron concentrations were not measured, but sulfate was measured in the field and lab. Sulfate concentrations above 20 mg/l inhibit reductive dechlorination. Sulfate was not detected in the background wells. It was tested using test kits at 2 mg/l in wells MW-24 and TB-1a. Both nitrate and sulfate therefore, are present in concentrations indicating that reductive dechlorination could occur.

The presence of elevated concentrations of carbon dioxide was detected in wells MW-24 and TB-1a, compared to the background wells, and wells with no VOC contamination. MW-24 and TB-1a had carbon dioxide concentrations of 260 and 500 mg/l, compared to average of 40 mg/l in the non-contaminated wells. This is indicative of a general process of degradation, since carbon dioxide is a common end product of aerobic processes.

During biodegradation of chlorinated hydrocarbons, chloride is released into the groundwater, potentially resulting in elevated levels relative to background. Chloride was measured at all 25 wells during December 1998. Chloride concentrations in the wells with significant VOC contamination (MW-5, -6, -7, -8, -9, -10, -24 and TB-1a) averaged 7.6 mg/l, compared to 4.1 mg/l in "clean" wells. Wells MW-7 and MW-9 had chloride concentrations of 11 and 15 mg/l respectively, compared to a background concentration of 3.5 mg/l. Chloride is also commonly present in landfill leachate at elevated concentrations, however,

making it difficult to rely on this parameter as an indicator of reductive dechlorination.

The predominance of cis-1,2,-dichloroethene over the other two isomers of DCE can be indicative of reductive dechlorination. Bouwer (1994) reports that during reductive dechlorination, cis-1,2-DCE is a more common intermediate than trans-1,2-DCE or 1,1-DCE. The general rule of thumb is that if cis-1,2-DCE accounts for more than 80% of total DCE, it is likely a daughter product. Data from the site show that cis-1,2-DCE was by far the most prevalent of the DCE isomers (>95%). This suggests the occurrence of reductive dechlorination.

One potentially problematic set of data in Table 4-1 is the Oxidation/Reduction Potentials (ORP), measured as eH millivolts. The ORP readings in MW-24 and TB-1a indicate values above +100 mv. Reductive dechlorination normally proceeds at zero to negative readings in groundwater. However, these field results may not be indicative of the true groundwater conditions since the water was bailed into a beaker for testing and may have become more aerated as a result. The meaning of the ORP field readings cannot be confidently interpreted at this time.

4.2.2 Groundwater Flow and Solute Transport Parameters

Groundwater flow rates have been calculated for each well during each sampling event, using the approach described in the Semi-Annual Monitoring Reports. Hydraulic conductivity values were estimated using slug tests, following well installation and development. Effective porosity values were estimated based on specific yield values for various soil types, as reported by Johnson (1967). Table 4-2 presents a summary of the calculated groundwater flow velocities, based on data from the April 1998 to April 1999.

Contaminant transport velocities for several VOCs detected at the site were estimated using retardation coefficients (which account for sorption). Table 4-3 lists the estimated contaminant velocities of seven commonly detected VOCs and vinyl chloride (which has a low organic carbon water partition coefficient). The advective groundwater velocity used in the table is the average groundwater velocity based on April 1999 water level data.

Cis-1,2-DCE is estimated to travel 27 feet per year, the most rapid of the commonly detected VOCs. Assuming a source release of 1987 (landfilling operations began in December 1986) from the edge of the landfill, cis-1,2,-DCE would have traveled approximately 325 feet if no degradation processes were active at the site.

4.2.3 Receptor Exposure Point Identification

In order to support the natural attenuation option, a receptor exposure-pathway analysis is generally performed. The results of the receptor exposure-pathway

Table 4-2
Summary of Calculated Groundwater Flow Velocities
North Wake Unlined Landfill

	Sampling Date:		4/21/97		11/1/97		5/5/98		12/3/98		4/16/99	
Monitoring Well Designation	Hydraulic Conductivity ft/day (cm/s)	Effective Porosity	Gradient	Average Linear Velocity ft/day	Gradient	Average Linear Velocity ft/day	Gradient	Average Linear Velocity ft/day	Gradient	Average Linear Velocity ft/day	Gradient	Average Linear Velocity ft/day
MW-5	0.33 1.16E-04	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	10.58 3.73E-03	0.13	0.0170	1.38E+00	0.0175	1.42E+00	0.0147	1.19E+00	0.0183	1.49E+00	0.0152	1.23E+00
MW-7	1.15 4.06E-04	0.18	0.0401	2.56E-01	0.0116	7.41E-02	0.0133	8.51E-02	0.0118	7.54E-02	0.0123	7.88E-02
MW-8	3.61 1.27E-03	0.18	0.0177	3.55E-01	0.0147	2.95E-01	0.0140	2.80E-01	0.0148	2.97E-01	0.0139	2.80E-01
MW-9	1.22 4.30E-04	0.30	0.0282	1.15E-01	0.0182	7.40E-02	0.0139	5.63E-02	0.0120	4.88E-02	0.0127	5.17E-02
MW-10	0.509 1.80E-04	0.05	0.0244	2.48E-01	NS	NS	0.0035	3.53E-02	0.0034	3.46E-02	0.0029	3.00E-02
MW-11	5.66 2.00E-03	0.13	0.0256	1.11E+00	0.0154	6.70E-01	0.0154	6.70E-01	0.0255	1.11E+00	0.0255	1.11E+00
MW-22	0.07 2.47E-05	0.18	NC	NC	0.0143	5.56E-03	0.0208	8.11E-03	0.0032	1.26E-03	0.0032	1.26E-03
MW-23	3.59 1.27E-03	0.30	NC	NC	0.0192	2.30E-01	0.0215	2.58E-01	0.0178	2.13E-01	0.0188	2.25E-01
MW-24	0.34 1.20E-04	0.30	NC	NC	0.0126	1.43E-02	0.0083	9.37E-03	0.0049	5.55E-03	0.0046	5.24E-03

NS - Not Sampled
NC - Not Constructed

Table 4-3
Retardation Coefficient and Contaminant Velocity Estimates for Representative Compounds
North Wake Unlined Landfill

Compound	Koc L/kg	Fraction Organic Carbon [a]	Distribution Coefficient L/kg	Bulk Density [a] kg/L	Total Porosity	Coefficient of Retardation	Advective Groundwater Velocity [b] ft/day	Contaminant Velocity ft/day	Contaminant Velocity ft/year
Benzene	79	0.02	1.58	1.6	0.45	6.62	0.335	0.051	18.5
Toluene	190	0.02	3.80	1.6	0.45	14.51	0.335	0.023	8.4
Ethyl Benzene	468	0.02	9.36	1.6	0.45	34.28	0.335	0.010	3.6
m-xylene	405	0.02	8.10	1.6	0.45	29.80	0.335	0.011	4.1
Tetrachlorothene	209	0.02	4.18	1.6	0.45	15.86	0.335	0.021	7.7
Trichloroethene	87	0.02	1.74	1.6	0.45	7.19	0.335	0.047	17.0
cis-1,2-Dichloroethene	49	0.02	0.98	1.6	0.45	4.48	0.335	0.075	27.2
Vinyl Chloride	2.5	0.02	0.05	1.6	0.45	1.18	0.335	0.284	103.7

[a] - Estimates based on literature reported values for specific soils (EPA, 1998).

[b] - Average groundwater velocity as based on April 1999 water level data.

[c] - Average of four lab reported values (see Baseline Report).

Coeffecient of Retardation = $1 + (P_b K_{oc} f_{oc}/n)$

where: P_b=bulk aquifer density; K_{oc}=organic carbon water partition coefficient; f_{oc}=aquifer organic fraction; and n=total porosity

analysis should conclude that natural attenuation would be protective of human and ecological receptors, under current and future groundwater use.

No known public supply wells exist anywhere near the Unlined Landfill. Future use of groundwater from the site area for human consumption is not expected. Extraction of groundwater for any other purpose is not expected. Therefore, no direct receptor exposure-pathway is likely to exist for the site groundwater.

Two perennial streams flow immediately north and south of the Unlined Landfill. They have a confluence approximately 1,000 feet east of the site. The north stream, which has the higher flow rate of the two, borders the Unlined Landfill within 200 feet. The south stream runs within 300 feet of the southern perimeter. As detailed in Section 3.1, several springs were identified feeding the streams west of the landfill. Both streams have been sampled on numerous occasions and from various locations, with no detections of organic contamination. The most extensive sampling of the streams occurred during Phase I (February 1998), which included the collection of eight surface water samples, two spring samples, and two soil seep samples (Figure 3-4). No VOCs were detected in these samples.

Water level data from the nested well pairs surrounding the landfill indicate a moderate downward vertical gradient over most of the site. However, there is evidence that near the streams, an upward gradient exists, and groundwater discharge occurs. Human and ecological receptors may be exposed to contaminated water in the streams via dermal contact or direct ingestion. Therefore, it is warranted to estimate the potential VOC concentrations that may discharge to the stream.

VOC contamination has been observed in well MW-8, located approximately 200 feet north of the south stream. Contamination in this area may discharge to the stream. In the last two sample rounds, trichloroethene has been measured from this well at 5.2 and 6 ug/l, above the 2L standard of 2.8 ug/l. No other VOCs were detected above the 2L Standards. Assuming groundwater discharges to this stream with the same concentration of TCE as measured in MW-8, the concentration of TCE is likely to be much lower due to dilution. Volatilization will also reduce the concentration.

MW-7 is also located within approximately 200 feet of the south stream. However, VOCs in this well were detected at a lower frequency and concentration than from MW-8. Exceedances of the 2L standards are not expected, assuming groundwater discharge to the stream near MW-7.

Well MW-33 is located approximately 400 feet east of MW-8 and 200 feet north of the south stream. No VOCs were detected in this well.

MW-6 is located at the northeast corner of the site, within 100 feet of the north stream. Methylene chloride and TCE were detected above the 2L Standards in

the majority of samples from this well. Methylene chloride has been found at concentrations ranging from 110 to 180 ug/l since May 1998. Because of the close proximity of this location to the north stream, only moderate attenuation is likely occur, and it is expected that similar concentrations may discharge to the stream. Phase I sample NS-SW2 was taken at a location near the probable discharge point of this material. Sample NS-SW3 was collected approximately 600 feet downstream of NS-SW2. Because no VOCs were detected in these samples, dilution appears to be a significant factor in the attenuation of methylene chloride after discharge to the stream. However, additional monitoring may be warranted from the north stream, just east of the eastern property line, to confirm that VOCs are not present above the 2L Standards.

4.2.4 Summary of Natural Attenuation Screening

The following evidence was presented indicating that one or more mechanisms of natural attenuation may be occurring at the site:

- VOC concentrations in contaminated wells have declined over the 5-year monitoring period; and
- DO concentrations from wells in contaminated areas was significantly lower than "clean areas" or background.

Additional evidence was given to support reductive dechlorination activity:

- The ratio of parent/daughter compounds generally decreased over time;
- DO was measured at levels approaching 0.5 mg/l, which favors anaerobic degradation via reductive dechlorination;
- Nitrate and sulfate were detected at concentrations favoring reductive dechlorination;
- Elevated concentrations of cis-1,2-DCE were present, compared to the other isomers of DCE.
- The ORP readings do not favor reductive dechlorination, but they may be the result of sample collection methods.

The streams to the north and south of the landfill were identified as possible receptor exposure-pathways. No evidence of contamination has been found in samples from these streams, indicating that dilution may provide a significant reduction in the measured low levels that discharge with groundwater.

Contaminant velocity estimates were developed to better define the solute transport system. Using a conservative contaminant (cis-1,2-DCE), the effects of sorption will limit contaminant transport to approximately 25 to 30 feet per year.

4.3 Refinement of Site Conceptual Model

Based on the information presented above, the site conceptual model can be refined to incorporate the contaminant velocity estimates and provide an estimate of future contaminant extent, given the likely existence of natural attenuation processes.

The contaminant velocity estimates developed in Section 4.2.2 agree with the existing picture of contamination at the landfill. VOCs are expected to travel less than 27 feet per year. In the twelve years since the landfill began accepting waste, VOCs will have traveled no more than 325 feet downgradient from their source. Wells MW-34, -34d and –35 located within 200 feet of the eastern landfill edge, have not had detections of VOCs to date, demonstrating that contaminant migration is proceeding at a relatively slow pace.

The VOC detections in well MW-24, and especially well TB-1a do not correlate with the contaminant velocity estimates. TB-1a is located approximately 275 feet upgradient of the landfill. Three factors may have allowed contamination to migrate to this area; 1) the mounding effect in unlined landfills created radial flow with a steeper gradient and higher contaminant velocities in this region; 2) the presence of a preferential flow pathway in the MW-24/TB-1a area; and 3) pressure induced migration of groundwater and methane gas, prior to installation of the active gas extraction system. The concentration of VOCs in wells TB-1a and MW-24 have generally decreased since the installation of the cap and active gas collection system, and are expected to further decrease over time.

Available evidence suggests that aerobic degradation of BTEX compounds is occurring. Indirect evidence suggests anaerobic that degradation of chlorinated solvents may be occurring. Unfortunately, insufficient data is available to estimate the rate of biodegradation of either pathway. Given the relatively slow rate of contaminant migration, and the observed pattern of declining VOC concentrations in most wells, the extent of contamination in five years is expected to continue to decrease. Low level VOC detections in wells MW-33, -34 and –35 may occur as existing contamination migrates east. However, the combined effects of dilution, dispersion and biodegradation may reduce VOCs to below the 2L Standards.

Section 5
Summary and Recommendations

This section of the report summarizes the findings of the investigation, discusses the appropriateness of natural attenuation and makes recommendations for future monitoring and data collection.

5.1 Summary

The major conclusions of the groundwater assessment are as follows:

Groundwater Characterization

- There is an overall decreasing trend in contamination throughout the site for most constituents. VOCs continue to be detected in wells closest to the landfill, but at less frequency and lower concentrations. Exceedances of the North Carolina 2L Standards for VOCs occurred in eight of 24 wells during the latest round of sampling. Only one exceedance was found in wells within the buffer zone west of the site (PCE in TB-1a at 5.0 ug/l).

- VOCs have migrated off-site to the west. A preferential flow path appears to exist in the direction of MW-24 and TB-1a. This preferential flow path is apparently due to a westerly plunging quartz/feldspar pegmatite vein. VOC migration was likely enhanced along this flowpath by radial flow from the landfill, prior to capping. Pressure from accumulating gas inside the landfill may have also increased the rate of groundwater and contaminant migration in this direction. The combined effects of the landfill cap and gas extraction system should reduce, if not eliminate, this local flow pattern. A continued, rapid reduction in VOC concentrations is expected in this area.

- Several metals were detected at concentrations above the North Carolina 2L Standards. These metals are indicative of background concentrations of naturally occurring elements in the soil. Soil particles suspended in the water column likely contribute to the high metal detections in the newer wells. As these wells continue to be purged before each sampling event, more and more of the suspended soil particles will be removed from the well. It is expected that metal concentrations will continue to decrease over time.

Natural Attenuation Evaluation

- Two lines of evidence are available to support natural attenuation at the site. They are (1) an observed reduction in contaminant concentrations, and (2) the presence of favorable chemical and geochemical indicators. The first line of evidence is satisfied by the documented reduction in VOC

concentrations of individual wells and site-wide. Data and trends to support the second line of evidence include: low DO concentrations in contaminated wells; the ratio of parent/daughter compounds, over time, in contaminated wells; the presence of nitrate and sulfate at levels favoring reductive dechlorination; and elevated concentrations of cis-1,2-DCE compared to other DCE isomers.

- BTEX compounds appear to have been degrading aerobically, as indicated by low DO concentrations in contaminated wells. Evidence for this is the significant reduction in these compounds in monitoring wells.

- Indirect evidence suggests that reductive dechlorination may be occurring, to a limited extent. Concentrations of the more highly chlorinated hydrocarbons, compared to the less chlorinated ones, have decreased to a greater extent over time.

- The results of the receptor exposure-pathway analysis support the use of natural attenuation. Groundwater in the vicinity of the site is not currently, and is not expected to be, used for consumptive purposes. Low levels of contamination may discharge with groundwater to the north and south streams; however, dilution will likely reduce concentrations to below detectable limits. Surface water samples showed no evidence of contamination in either stream.

- Using cis-1,2-DCE as a conservative contaminant, travel times of most VOCs are expected to be less than 30 feet per year. This estimate generally agrees with the current extent of contamination, assuming contaminants first entered the aquifer when the landfill began accepting waste in December 1986.

- Available evidence supports the use of monitored natural attenuation. The criteria for source control have been met by installation of the impermeable liner. The receptor exposure-pathway analysis has shown that human and ecological exposure to contaminants above health based standards is unlikely. Various indicators of contaminant degradation, or the existence of conditions favoring degradation, were documented.

5.2 Recommendations

Based on the results of the groundwater assessment and natural attenuation evaluation, the following actions are recommended:

- The interim use of monitored natural attenuation for remediation of contaminated groundwater.

Approve recommendations w/ preceding comments/ revisions

- Semi-annual sampling of western buffer zone wells MW-29, -29d, 30, -31, -31d, -32 and TB-1a; and surface water sampling from the north stream at a location directly downgradient of MW-6 (NS-SW2 on Figure 3-4) and again 500 feet downstream from this location (NS-SW3 on Figure 3-4).

- Continued semi-annual monitoring of compliance wells MW-5, -6, -7, -8, -9, -10, -11, -22, -23, 23d and -24; and surface water locations SW-2 and SW-3.

- Annual sampling of buffer zone wells MW-33, -34, -34d, -35, -27, -28 and -28d.

- To provide evidence of conditions suitable for biodegradation, semi-annual sampling of select wells should include field screening of DO, ORP (oxidation reduction potential as measured with a silver/silver chloride electrode), temperature, conductivity and pH. Samples should be collected for laboratory analysis of chloride, sulfide, sulfate, alkalinity, nitrate, TOC, carbon dioxide, methane, and iron (II). Well sampled for analysis of natural attenuation parameters should include MW-5, MW-9, MW-10, MW-24 and TB-1a.

- Following the collection of an additional set of chemical, geochemical and analytical data, an Assessment of Corrective Measures in accordance with Rule .1635 should be performed. The Assessment of Corrective Measures will provide an expanded evaluation of the effectiveness of monitored natural attenuation and address the objectives listed under Rule .1635(c).

NORTH WAKE UNLINED LANDFILL

PHASE I

GROUNDWATER AND SOIL SAMPLING RESULTS

FEBRUARY 1998

Client: North Wake Unlined Landfill

Project: Groundwater assessment

SDG: 980224-179

Date: 3/9/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980224-179	**Print Date:**	3/9/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Groundwater assessment	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

SDG NOTES

Due to QC failure in the initial analyses for metals, Thallium for waters and Zinc for the soils are reported seperately in the Single Component Analytical Report (pp. 64 & 65) along with Mercury results..

Note that due to instrumentation down-time, volatile organics analyses of the soils were performed one or two days beyond the recommended holding time.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
NWUL-GP-11	02/19/98	02/24/98	98-00869	SOIL
NWUL-GP-11	02/19/98	02/24/98	98-00858	AQUEOUS
NWUL-GP-12	02/19/98	02/24/98	98-00870	SOIL
NWUL-GP-12	02/19/98	02/24/98	98-00859	AQUEOUS
NWUL-GP-19	02/19/98	02/24/98	98-00871	SOIL
NWUL-GP-19	02/19/98	02/24/98	98-00860	AQUEOUS
NWUL-GP-9	02/19/98	02/24/98	98-00872	SOIL
NWUL-GP-9	02/19/98	02/24/98	98-00861	AQUEOUS
NWUL-GP-10	02/19/98	02/24/98	98-00873	SOIL
NWUL-GP-10	02/19/98	02/24/98	98-00862	AQUEOUS
NWUL-GP-18	02/19/98	02/24/98	98-00863	AQUEOUS
NWUL-GP-17	02/19/98	02/24/98	98-00864	AQUEOUS
NWUL-GP-5	02/20/98	02/24/98	98-00865	AQUEOUS
NWUL-GP-5	02/20/98	02/24/98	98-00874	SOIL
NWUL-GP-20	02/20/98	02/24/98	98-00866	AQUEOUS
NWUL-GP-20	02/20/98	02/24/98	98-00875	SOIL
NWUL-GP-21	02/20/98	02/24/98	98-00867	AQUEOUS
NWUL-GP-21	02/20/98	02/24/98	98-00876	SOIL
NWUL-GP-22	02/20/98	02/24/98	98-00868	AQUEOUS
NWUL-GP-22	02/20/98	02/24/98	98-00877	SOIL

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-11		
Lab Sample ID:	98-00858	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-11		
Lab Sample ID:	98-00858	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.98	86 - 115
Dibromofluoromethane	116.60	86 - 118
Toluene-d8	99.86	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-11		
Lab Sample ID:	98-00858	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	20	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	<40	
Zinc	50	92	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-12		
Lab Sample ID:	98-00859	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-12		
Lab Sample ID:	98-00859	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.10	86 - 115
Dibromofluoromethane	111.44	86 - 118
Toluene-d8	103.30	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-12		
Lab Sample ID:	98-00859	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00860	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00860	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.64	86 - 115
Dibromofluoromethane	112.08	86 - 118
Toluene-d8	99.48	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00860	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	<40	
Zinc	50	52	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-9
Lab Sample ID: 98-00861
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980227/5030/259
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980227/8260A_AQU/196
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/259
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-9		
Lab Sample ID:	98-00861	**Analytical Batch ID:**	I980227/8260A_AQU/196
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.42	86 - 115
Dibromofluoromethane	106.96	86 - 118
Toluene-d8	97.64	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-9		
Lab Sample ID:	98-00861	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	550	
Beryllium	2	6.9	
Cadmium	1	2.0	
Chromium	10	180	
Cobalt	10	70	
Copper	200	<200	
Lead	10	37	
Nickel	50	73	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	440	
Zinc	50	230	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00862	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00862	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.04	86 - 115
Dibromofluoromethane	114.24	86 - 118
Toluene-d8	97.96	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00862	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	2.3	
Cadmium	1	<1.0	
Chromium	10	46	
Cobalt	10	10	
Copper	200	<200	
Lead	10	17	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	57	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-18
Lab Sample ID: 98-00863
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980227/5030/258
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980227/8260A_AQU/195
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL

Batch Approval Date: 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-18		
Lab Sample ID:	98-00863	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	106.44	86 - 115
Dibromofluoromethane	112.04	86 - 118
Toluene-d8	98.86	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-18		
Lab Sample ID:	98-00863	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	11	
Cadmium	1	1.5	
Chromium	10	190	
Cobalt	10	36	
Copper	200	<200	
Lead	10	28	
Nickel	50	52	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	420	
Zinc	50	160	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-17		
Lab Sample ID:	98-00864	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-17		
Lab Sample ID:	98-00864	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.94	86 - 115
Dibromofluoromethane	112.50	86 - 118
Toluene-d8	103.02	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-17		
Lab Sample ID:	98-00864	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	8.7	
Cadmium	1	1.5	
Chromium	10	130	
Cobalt	10	28	
Copper	200	<200	
Lead	10	22	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	420	
Zinc	50	110	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00865	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00865	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.34	86 - 115
Dibromofluoromethane	115.44	86 - 118
Toluene-d8	100.72	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00865	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	12	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	<40	
Zinc	50	52	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00866	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00866	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	108.08	86 - 115
Dibromofluoromethane	116.56	86 - 118
Toluene-d8	95.58	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00866	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	25	
Cobalt	10	21	
Copper	200	<200	
Lead	10	15	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	45	
Zinc	50	62	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00867	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00867	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.60	86 - 115
Dibromofluoromethane	115.94	86 - 118
Toluene-d8	101.42	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00867	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	2.4	
Cadmium	1	<1.0	
Chromium	10	44	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	12	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	150	
Zinc	50	74	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-22
Lab Sample ID: 98-00868
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980227/5030/258
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980227/8260A_AQU/195
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980227/5030/258
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-22		
Lab Sample ID:	98-00868	**Analytical Batch ID:**	I980227/8260A_AQU/195
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.36	86 - 115
Dibromofluoromethane	114.68	86 - 118
Toluene-d8	101.70	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

6010A_NC_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980225/3030C/17
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-22		
Lab Sample ID:	98-00868	**Analytical Batch ID:**	I980225/6010A_NC_/17
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	17	
Barium	500	2000	
Beryllium	2	26	
Cadmium	1	7.2	
Chromium	10	460	
Cobalt	10	310	
Copper	200	<200	
Lead	10	140	
Nickel	50	170	
Selenium	20	<20	
Silver	10	<10	
Vanadium	40	790	
Zinc	50	640	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-11
Lab Sample ID: 98-00869
Matrix: SOIL
Units: ug/Kg dry
Dilution Factor: 1

Preparation Batch ID: P980307/5035_SOIL/96
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980307/8260A_SOI/96
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	680	<680	
Benzene	17	<17	
Bromochloromethane	34	<34	
Bromodichloromethane	17	<17	
Bromoform	17	<17	
Bromomethane	34	<34	
2-Butanone	340	<340	
Carbon disulfide	340	<340	
Carbon tetrachloride	34	<34	
Chlorobenzene	17	<17	
Chloroethane	34	<34	
Chloroform	17	<17	
Chloromethane	34	<34	
1,2-Dibromo-3-chloropropane	85	<85	
1,2-Dibromoethane	17	<17	
Dibromochloromethane	17	<17	
Dibromomethane	34	<34	
1,2-Dichlorobenzene	17	<17	
1,4-Dichlorobenzene	17	<17	
trans-1,4-Dichloro-2-butene	340	<340	
Dichlorodifluoromethane	17	<17	
1,1-Dichloroethane	17	<17	
1,2-Dichloroethane	17	<17	
cis-1,2-Dichloroethene	17	<17	
trans-1,2-Dichloroethene	17	<17	
1,2-Dichloropropane	17	<17	
cis-1,3-Dichloropropene	34	<34	
trans-1,3-Dichloropropene	34	<34	
Ethylbenzene	17	<17	
2-Hexanone	170	<170	
Iodomethane	34	<34	
4-Methyl-2-pentanone	340	<340	
Methylene chloride	34	<34	
Styrene	34	<34	
1,1,1,2-Tetrachloroethane	17	<17	
1,1,2,2-Tetrachloroethane	17	<17	
Tetrachloroethene	17	<17	
Toluene	17	<17	
1,1,1-Trichloroethane	17	<17	
1,1,2-Trichloroethane	17	<17	
Trichloroethene	17	<17	
Trichlorofluoromethane	17	<17	

Batch Approved By: GOTTSHALLDL

Batch Approval Date: 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-11		
Lab Sample ID:	98-00869	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	51	<51	
Vinyl acetate	170	<170	
Vinyl chloride	34	<34	
m- and p-Xylenes	17	<17	
o-Xylene	17	<17	
1,1-Dichloroethene	17	<17	
Acetone	340	<340	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	107.34	74 - 121
Dibromofluoromethane	107.30	80 - 120
Toluene-d8	101.46	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-11		
Lab Sample ID:	98-00869	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	6.8	<6.8	
Arsenic	6.8	<6.8	
Barium	6.8	110	
Beryllium	0.41	1.3	
Cadmium	1.4	<1.4	
Chromium	6.8	30	
Cobalt	6.8	14	
Copper	6.8	36	
Lead	6.8	<6.8	
Nickel	6.8	24	
Selenium	14	<14	
Silver	6.8	<6.8	
Thallium	11	<11	
Vanadium	6.8	53	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-12
Lab Sample ID: 98-00870
Matrix: SOIL
Units: ug/Kg dry
Dilution Factor: 1

Preparation Batch ID: P980307/5035_SOIL/96
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980307/8260A_SOI/96
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	690	<690	
Benzene	17	<17	
Bromochloromethane	35	<35	
Bromodichloromethane	17	<17	
Bromoform	17	<17	
Bromomethane	35	<35	
2-Butanone	350	<350	
Carbon disulfide	350	<350	
Carbon tetrachloride	35	<35	
Chlorobenzene	17	<17	
Chloroethane	35	<35	
Chloroform	17	<17	
Chloromethane	35	<35	
1,2-Dibromo-3-chloropropane	87	<87	
1,2-Dibromoethane	17	<17	
Dibromochloromethane	17	<17	
Dibromomethane	35	<35	
1,2-Dichlorobenzene	17	<17	
1,4-Dichlorobenzene	17	<17	
trans-1,4-Dichloro-2-butene	350	<350	
Dichlorodifluoromethane	17	<17	
1,1-Dichloroethane	17	<17	
1,2-Dichloroethane	17	<17	
cis-1,2-Dichloroethene	17	<17	
trans-1,2-Dichloroethene	17	<17	
1,2-Dichloropropane	17	<17	
cis-1,3-Dichloropropene	35	<35	
trans-1,3-Dichloropropene	35	<35	
Ethylbenzene	17	<17	
2-Hexanone	170	<170	
Iodomethane	35	<35	
4-Methyl-2-pentanone	350	<350	
Methylene chloride	35	<35	
Styrene	35	<35	
1,1,1,2-Tetrachloroethane	17	<17	
1,1,2,2-Tetrachloroethane	17	<17	
Tetrachloroethene	17	<17	
Toluene	17	<17	
1,1,1-Trichloroethane	17	<17	
1,1,2-Trichloroethane	17	<17	
Trichloroethene	17	<17	
Trichlorofluoromethane	17	<17	

Batch Approved By: GOTTSHALLDL
Batch Approval Date: 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-12		
Lab Sample ID:	98-00870	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	52	<52	
Vinyl acetate	170	<170	
Vinyl chloride	35	<35	
m- and p-Xylenes	17	<17	
o-Xylene	17	<17	
1,1-Dichloroethene	17	<17	
Acetone	350	<350	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	126.24	74 - 121
Dibromofluoromethane	111.10	80 - 120
Toluene-d8	104.14	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980224-179
Client Sample ID: NWUL-GP-12
Lab Sample ID: 98-00870
Matrix: SOIL
Units: mg/Kg dry
Dilution Factor: 1

Preparation Batch ID: P980226/3051/60
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980226/6010A_SOI/58
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	5.8	<5.8	
Arsenic	5.8	<5.8	
Barium	5.8	34	
Beryllium	0.35	1.3	
Cadmium	1.2	<1.2	
Chromium	5.8	20	
Cobalt	5.8	7.9	
Copper	5.8	28	
Lead	5.8	<5.8	
Nickel	5.8	24	
Selenium	12	<12	
Silver	5.8	<5.8	
Thallium	9.3	<9.3	
Vanadium	5.8	63	

Batch Approved By: GOTTSHALLDL

Batch Approval Date: 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00871	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	640	<640	
Benzene	16	<16	
Bromochloromethane	32	<32	
Bromodichloromethane	16	<16	
Bromoform	16	<16	
Bromomethane	32	<32	
2-Butanone	320	<320	
Carbon disulfide	320	<320	
Carbon tetrachloride	32	<32	
Chlorobenzene	16	<16	
Chloroethane	32	<32	
Chloroform	16	<16	
Chloromethane	32	<32	
1,2-Dibromo-3-chloropropane	80	<80	
1,2-Dibromoethane	16	<16	
Dibromochloromethane	16	<16	
Dibromomethane	32	<32	
1,2-Dichlorobenzene	16	<16	
1,4-Dichlorobenzene	16	<16	
trans-1,4-Dichloro-2-butene	320	<320	
Dichlorodifluoromethane	16	<16	
1,1-Dichloroethane	16	<16	
1,2-Dichloroethane	16	<16	
cis-1,2-Dichloroethene	16	<16	
trans-1,2-Dichloroethene	16	<16	
1,2-Dichloropropane	16	<16	
cis-1,3-Dichloropropene	32	<32	
trans-1,3-Dichloropropene	32	<32	
Ethylbenzene	16	<16	
2-Hexanone	160	<160	
Iodomethane	32	<32	
4-Methyl-2-pentanone	320	<320	
Methylene chloride	32	<32	
Styrene	32	<32	
1,1,1,2-Tetrachloroethane	16	<16	
1,1,2,2-Tetrachloroethane	16	<16	
Tetrachloroethene	16	<16	
Toluene	16	<16	
1,1,1-Trichloroethane	16	<16	
1,1,2-Trichloroethane	16	<16	
Trichloroethene	16	<16	
Trichlorofluoromethane	16	<16	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00871	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	48	<48	
Vinyl acetate	160	<160	
Vinyl chloride	32	<32	
m- and p-Xylenes	16	<16	
o-Xylene	16	<16	
1,1-Dichloroethene	16	<16	
Acetone	320	<320	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.14	74 - 121
Dibromofluoromethane	111.00	80 - 120
Toluene-d8	96.94	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-19		
Lab Sample ID:	98-00871	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	5.7	<5.7	
Arsenic	5.7	<5.7	
Barium	5.7	82	
Beryllium	0.34	0.88	
Cadmium	1.1	<1.1	
Chromium	5.7	6.2	
Cobalt	5.7	<5.7	
Copper	5.7	7.7	
Lead	5.7	12	
Nickel	5.7	30	
Selenium	11	<11	
Silver	5.7	<5.7	
Thallium	9.2	<9.2	
Vanadium	5.7	16	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-9
Lab Sample ID: 98-00872
Matrix: SOIL
Units: ug/Kg dry
Dilution Factor: 1

Preparation Batch ID: P980307/5035_SOIL/96
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980307/8260A_SOI/96
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	600	<600	
Benzene	15	<15	
Bromochloromethane	30	<30	
Bromodichloromethane	15	<15	
Bromoform	15	<15	
Bromomethane	30	<30	
2-Butanone	300	<300	
Carbon disulfide	300	<300	
Carbon tetrachloride	30	<30	
Chlorobenzene	15	<15	
Chloroethane	30	<30	
Chloroform	15	<15	
Chloromethane	30	<30	
1,2-Dibromo-3-chloropropane	75	<75	
1,2-Dibromoethane	15	<15	
Dibromochloromethane	15	<15	
Dibromomethane	30	<30	
1,2-Dichlorobenzene	15	<15	
1,4-Dichlorobenzene	15	<15	
trans-1,4-Dichloro-2-butene	300	<300	
Dichlorodifluoromethane	15	<15	
1,1-Dichloroethane	15	<15	
1,2-Dichloroethane	15	<15	
cis-1,2-Dichloroethene	15	<15	
trans-1,2-Dichloroethene	15	<15	
1,2-Dichloropropane	15	<15	
cis-1,3-Dichloropropene	30	<30	
trans-1,3-Dichloropropene	30	<30	
Ethylbenzene	15	<15	
2-Hexanone	150	<150	
Iodomethane	30	<30	
4-Methyl-2-pentanone	300	<300	
Methylene chloride	30	<30	
Styrene	30	<30	
1,1,1,2-Tetrachloroethane	15	<15	
1,1,2,2-Tetrachloroethane	15	<15	
Tetrachloroethene	15	<15	
Toluene	15	<15	
1,1,1-Trichloroethane	15	<15	
1,1,2-Trichloroethane	15	<15	
Trichloroethene	15	<15	
Trichlorofluoromethane	15	<15	

Batch Approved By: GOTTSHALLDL

Batch Approval Date: 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-9		
Lab Sample ID:	98-00872	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	45	<45	
Vinyl acetate	150	<150	
Vinyl chloride	30	<30	
m- and p-Xylenes	15	<15	
o-Xylene	15	<15	
1,1-Dichloroethene	15	<15	
Acetone	300	<300	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.48	74 - 121
Dibromofluoromethane	110.34	80 - 120
Toluene-d8	97.20	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-9		
Lab Sample ID:	98-00872	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	4.5	<4.5	
Arsenic	4.5	<4.5	
Barium	4.5	35	
Beryllium	0.27	0.33	
Cadmium	0.89	<0.89	
Chromium	4.5	14	
Cobalt	4.5	6.4	
Copper	4.5	7.8	
Lead	4.5	<4.5	
Nickel	4.5	8.9	
Selenium	8.9	<8.9	
Silver	4.5	<4.5	
Thallium	7.1	<7.1	
Vanadium	4.5	52	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00873	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	560	<560	
Benzene	14	<14	
Bromochloromethane	28	<28	
Bromodichloromethane	14	<14	
Bromoform	14	<14	
Bromomethane	28	<28	
2-Butanone	280	<280	
Carbon disulfide	280	<280	
Carbon tetrachloride	28	<28	
Chlorobenzene	14	<14	
Chloroethane	28	<28	
Chloroform	14	<14	
Chloromethane	28	<28	
1,2-Dibromo-3-chloropropane	70	<70	
1,2-Dibromoethane	14	<14	
Dibromochloromethane	14	<14	
Dibromomethane	28	<28	
1,2-Dichlorobenzene	14	<14	
1,4-Dichlorobenzene	14	<14	
trans-1,4-Dichloro-2-butene	280	<280	
Dichlorodifluoromethane	14	<14	
1,1-Dichloroethane	14	<14	
1,2-Dichloroethane	14	<14	
cis-1,2-Dichloroethene	14	<14	
trans-1,2-Dichloroethene	14	<14	
1,2-Dichloropropane	14	<14	
cis-1,3-Dichloropropene	28	<28	
trans-1,3-Dichloropropene	28	<28	
Ethylbenzene	14	<14	
2-Hexanone	140	<140	
Iodomethane	28	<28	
4-Methyl-2-pentanone	280	<280	
Methylene chloride	28	<28	
Styrene	28	<28	
1,1,1,2-Tetrachloroethane	14	<14	
1,1,2,2-Tetrachloroethane	14	<14	
Tetrachloroethene	14	<14	
Toluene	14	<14	
1,1,1-Trichloroethane	14	<14	
1,1,2-Trichloroethane	14	<14	
Trichloroethene	14	<14	
Trichlorofluoromethane	14	<14	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00873	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	42	<42	
Vinyl acetate	140	<140	
Vinyl chloride	28	<28	
m- and p-Xylenes	14	<14	
o-Xylene	14	<14	
1,1-Dichloroethene	14	<14	
Acetone	280	<280	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	117.66	74 - 121
Dibromofluoromethane	110.84	80 - 120
Toluene-d8	103.28	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-10		
Lab Sample ID:	98-00873	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	4.2	<4.2	
Arsenic	4.2	<4.2	
Barium	4.2	12	
Beryllium	0.25	0.57	
Cadmium	0.85	<0.85	
Chromium	4.2	12	
Cobalt	4.2	<4.2	
Copper	4.2	27	
Lead	4.2	<4.2	
Nickel	4.2	4.3	
Selenium	8.5	<8.5	
Silver	4.2	<4.2	
Thallium	6.8	<6.8	
Vanadium	4.2	19	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00874	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	550	<550	
Benzene	14	<14	
Bromochloromethane	27	<27	
Bromodichloromethane	14	<14	
Bromoform	14	<14	
Bromomethane	27	<27	
2-Butanone	270	<270	
Carbon disulfide	270	<270	
Carbon tetrachloride	27	<27	
Chlorobenzene	14	<14	
Chloroethane	27	<27	
Chloroform	14	<14	
Chloromethane	27	<27	
1,2-Dibromo-3-chloropropane	69	<69	
1,2-Dibromoethane	14	<14	
Dibromochloromethane	14	<14	
Dibromomethane	27	<27	
1,2-Dichlorobenzene	14	<14	
1,4-Dichlorobenzene	14	<14	
trans-1,4-Dichloro-2-butene	270	<270	
Dichlorodifluoromethane	14	<14	
1,1-Dichloroethane	14	<14	
1,2-Dichloroethane	14	<14	
cis-1,2-Dichloroethene	14	<14	
trans-1,2-Dichloroethene	14	<14	
1,2-Dichloropropane	14	<14	
cis-1,3-Dichloropropene	27	<27	
trans-1,3-Dichloropropene	27	<27	
Ethylbenzene	14	<14	
2-Hexanone	140	<140	
Iodomethane	27	<27	
4-Methyl-2-pentanone	270	<270	
Methylene chloride	27	<27	
Styrene	27	<27	
1,1,1,2-Tetrachloroethane	14	<14	
1,1,2,2-Tetrachloroethane	14	<14	
Tetrachloroethene	14	<14	
Toluene	14	<14	
1,1,1-Trichloroethane	14	<14	
1,1,2-Trichloroethane	14	<14	
Trichloroethene	14	<14	
Trichlorofluoromethane	14	<14	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00874	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	41	<41	
Vinyl acetate	140	<140	
Vinyl chloride	27	<27	
m- and p-Xylenes	14	<14	
o-Xylene	14	<14	
1,1-Dichloroethene	14	<14	
Acetone	270	<270	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	119.48	74 - 121
Dibromofluoromethane	110.74	80 - 120
Toluene-d8	103.64	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-5		
Lab Sample ID:	98-00874	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	5.2	<5.2	
Arsenic	5.2	<5.2	
Barium	5.2	20	
Beryllium	0.31	0.37	
Cadmium	1	<1.0	
Chromium	5.2	11	
Cobalt	5.2	<5.2	
Copper	5.2	23	
Lead	5.2	<5.2	
Nickel	5.2	<5.2	
Selenium	10	<10	
Silver	5.2	<5.2	
Thallium	8.3	<8.3	
Vanadium	5.2	7.1	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00875	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	560	<560	
Benzene	14	<14	
Bromochloromethane	28	<28	
Bromodichloromethane	14	<14	
Bromoform	14	<14	
Bromomethane	28	<28	
2-Butanone	280	<280	
Carbon disulfide	280	<280	
Carbon tetrachloride	28	<28	
Chlorobenzene	14	<14	
Chloroethane	28	<28	
Chloroform	14	<14	
Chloromethane	28	<28	
1,2-Dibromo-3-chloropropane	70	<70	
1,2-Dibromoethane	14	<14	
Dibromochloromethane	14	<14	
Dibromomethane	28	<28	
1,2-Dichlorobenzene	14	<14	
1,4-Dichlorobenzene	14	<14	
trans-1,4-Dichloro-2-butene	280	<280	
Dichlorodifluoromethane	14	<14	
1,1-Dichloroethane	14	<14	
1,2-Dichloroethane	14	<14	
cis-1,2-Dichloroethene	14	<14	
trans-1,2-Dichloroethene	14	<14	
1,2-Dichloropropane	14	<14	
cis-1,3-Dichloropropene	28	<28	
trans-1,3-Dichloropropene	28	<28	
Ethylbenzene	14	<14	
2-Hexanone	140	<140	
Iodomethane	28	<28	
4-Methyl-2-pentanone	280	<280	
Methylene chloride	28	<28	
Styrene	28	<28	
1,1,1,2-Tetrachloroethane	14	<14	
1,1,2,2-Tetrachloroethane	14	<14	
Tetrachloroethene	14	<14	
Toluene	14	<14	
1,1,1-Trichloroethane	14	<14	
1,1,2-Trichloroethane	14	<14	
Trichloroethene	14	<14	
Trichlorofluoromethane	14	<14	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00875	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	42	<42	
Vinyl acetate	140	<140	
Vinyl chloride	28	<28	
m- and p-Xylenes	14	<14	
o-Xylene	14	<14	
1,1-Dichloroethene	14	<14	
Acetone	280	<280	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	119.26	74 - 121
Dibromofluoromethane	113.02	80 - 120
Toluene-d8	100.42	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-20		
Lab Sample ID:	98-00875	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	4.7	<4.7	
Arsenic	4.7	<4.7	
Barium	4.7	10	
Beryllium	0.28	<0.28	
Cadmium	0.94	<0.94	
Chromium	4.7	5.8	
Cobalt	4.7	<4.7	
Copper	4.7	4.8	
Lead	4.7	<4.7	
Nickel	4.7	6.6	
Selenium	9.4	<9.4	
Silver	4.7	<4.7	
Thallium	7.6	<7.6	
Vanadium	4.7	24	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00876	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	550	<550	
Benzene	14	<14	
Bromochloromethane	27	<27	
Bromodichloromethane	14	<14	
Bromoform	14	<14	
Bromomethane	27	<27	
2-Butanone	270	<270	
Carbon disulfide	270	<270	
Carbon tetrachloride	27	<27	
Chlorobenzene	14	<14	
Chloroethane	27	<27	
Chloroform	14	<14	
Chloromethane	27	<27	
1,2-Dibromo-3-chloropropane	68	<68	
1,2-Dibromoethane	14	<14	
Dibromochloromethane	14	<14	
Dibromomethane	27	<27	
1,2-Dichlorobenzene	14	<14	
1,4-Dichlorobenzene	14	<14	
trans-1,4-Dichloro-2-butene	270	<270	
Dichlorodifluoromethane	14	<14	
1,1-Dichloroethane	14	<14	
1,2-Dichloroethane	14	<14	
cis-1,2-Dichloroethene	14	<14	
trans-1,2-Dichloroethene	14	<14	
1,2-Dichloropropane	14	<14	
cis-1,3-Dichloropropene	27	<27	
trans-1,3-Dichloropropene	27	<27	
Ethylbenzene	14	<14	
2-Hexanone	140	<140	
Iodomethane	27	<27	
4-Methyl-2-pentanone	270	<270	
Methylene chloride	27	<27	
Styrene	27	<27	
1,1,1,2-Tetrachloroethane	14	<14	
1,1,2,2-Tetrachloroethane	14	<14	
Tetrachloroethene	14	<14	
Toluene	14	<14	
1,1,1-Trichloroethane	14	<14	
1,1,2-Trichloroethane	14	<14	
Trichloroethene	14	<14	
Trichlorofluoromethane	14	<14	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00876	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	41	<41	
Vinyl acetate	140	<140	
Vinyl chloride	27	<27	
m- and p-Xylenes	14	<14	
o-Xylene	14	<14	
1,1-Dichloroethene	14	<14	
Acetone	270	<270	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	118.88	74 - 121
Dibromofluoromethane	118.76	80 - 120
Toluene-d8	89.48	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-21		
Lab Sample ID:	98-00876	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	4.9	<4.9	
Arsenic	4.9	<4.9	
Barium	4.9	17	
Beryllium	0.29	<0.29	
Cadmium	0.98	<0.98	
Chromium	4.9	<4.9	
Cobalt	4.9	<4.9	
Copper	4.9	<4.9	
Lead	4.9	<4.9	
Nickel	4.9	<4.9	
Selenium	9.8	<9.8	
Silver	4.9	<4.9	
Thallium	7.8	<7.8	
Vanadium	4.9	11	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

8260A_SOIL ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980224-179
Client Sample ID: NWUL-GP-22
Lab Sample ID: 98-00877
Matrix: SOIL
Units: ug/Kg dry
Dilution Factor: 1

Preparation Batch ID: P980307/5035_SOIL/96
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980307/8260A_SOI/96
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	730	<730	
Benzene	18	<18	
Bromochloromethane	36	<36	
Bromodichloromethane	18	<18	
Bromoform	18	<18	
Bromomethane	36	<36	
2-Butanone	360	<360	
Carbon disulfide	360	<360	
Carbon tetrachloride	36	<36	
Chlorobenzene	18	<18	
Chloroethane	36	<36	
Chloroform	18	<18	
Chloromethane	36	<36	
1,2-Dibromo-3-chloropropane	91	<91	
1,2-Dibromoethane	18	<18	
Dibromochloromethane	18	<18	
Dibromomethane	36	<36	
1,2-Dichlorobenzene	18	<18	
1,4-Dichlorobenzene	18	<18	
trans-1,4-Dichloro-2-butene	360	<360	
Dichlorodifluoromethane	18	<18	
1,1-Dichloroethane	18	<18	
1,2-Dichloroethane	18	<18	
cis-1,2-Dichloroethene	18	<18	
trans-1,2-Dichloroethene	18	<18	
1,2-Dichloropropane	18	<18	
cis-1,3-Dichloropropene	36	<36	
trans-1,3-Dichloropropene	36	<36	
Ethylbenzene	18	<18	
2-Hexanone	180	<180	
Iodomethane	36	<36	
4-Methyl-2-pentanone	360	<360	
Methylene chloride	36	<36	
Styrene	36	<36	
1,1,1,2-Tetrachloroethane	18	<18	
1,1,2,2-Tetrachloroethane	18	<18	
Tetrachloroethene	18	<18	
Toluene	18	<18	
1,1,1-Trichloroethane	18	<18	
1,1,2-Trichloroethane	18	<18	
Trichloroethene	18	<18	
Trichlorofluoromethane	18	<18	

Batch Approved By: GOTTSHALLDL

Batch Approval Date: 03/09/98

8260A_SOIL ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980307/5035_SOIL/96
SDG #:	980224-179	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	NWUL-GP-22		
Lab Sample ID:	98-00877	**Analytical Batch ID:**	I980307/8260A_SOI/96
Matrix:	SOIL	**Analyst:**	MITCHELLMR
Units:	ug/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	55	<55	
Vinyl acetate	180	<180	
Vinyl chloride	36	<36	
m- and p-Xylenes	18	<18	
o-Xylene	18	<18	
1,1-Dichloroethene	18	<18	
Acetone	360	<360	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.48	74 - 121
Dibromofluoromethane	118.00	80 - 120
Toluene-d8	98.42	81 - 117

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/09/98

6010A_SOIL ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980226/3051/60
SDG #:	980224-179	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	NWUL-GP-22		
Lab Sample ID:	98-00877	**Analytical Batch ID:**	I980226/6010A_SOI/58
Matrix:	SOIL	**Analyst:**	LESHINSKYA
Units:	mg/Kg dry		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	6.5	<6.5	
Arsenic	6.5	<6.5	
Barium	6.5	220	
Beryllium	0.39	2.1	
Cadmium	1.3	<1.3	
Chromium	6.5	100	
Cobalt	6.5	47	
Copper	6.5	<6.5	
Lead	6.5	<6.5	
Nickel	6.5	45	
Selenium	13	<13	
Silver	6.5	<6.5	
Thallium	10	<10	
Vanadium	6.5	86	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 03/02/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **980224-179**

Preparation Batch: P980226/3051/61 **Prep. Analyst:** LESHINSKYA

Component Name: Zinc **EPA Method #:** EPA 6010A **Matrix:** SOIL

Analytical Batch: I980226/6010A_SOI/60 **Analyst:** LESHINSKYA **Units:** mg/Kg dry

Reviewed By - Date: GOTTSHALLDL - 3/2/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
NWUL-GP-11	98-00869	27.000	48	1	
NWUL-GP-12	98-00870	23.000	57	1	
NWUL-GP-19	98-00871	23.000	28	1	
NWUL-GP-9	98-00872	18.000	25	1	
NWUL-GP-10	98-00873	17.000	25	1	
NWUL-GP-5	98-00874	21.000	28	1	
NWUL-GP-20	98-00875	19.000	<19	1	
NWUL-GP-21	98-00876	20.000	31	1	
NWUL-GP-22	98-00877	26.000	100	1	

Preparation Batch: P980226/7470A_PRE/52 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980226/7470A_AQU/44 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 3/2/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
NWUL-GP-11	98-00858	0.200	<0.20	1	
NWUL-GP-12	98-00859	0.200	<0.20	1	
NWUL-GP-19	98-00860	0.200	<0.20	1	
NWUL-GP-9	98-00861	0.200	<0.20	1	
NWUL-GP-10	98-00862	0.200	<0.20	1	
NWUL-GP-18	98-00863	0.200	<0.20	1	
NWUL-GP-17	98-00864	0.200	<0.20	1	
NWUL-GP-5	98-00865	0.200	<0.20	1	
NWUL-GP-20	98-00866	0.200	<0.20	1	
NWUL-GP-21	98-00867	0.200	<0.20	1	
NWUL-GP-22	98-00868	0.200	0.50	1	

Preparation Batch: P980226/7471A_PRE/41 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7471A **Matrix:** SOIL

Analytical Batch: I980226/7471A_SOI/39 **Analyst:** LESHINSKYA **Units:** mg/Kg dry

Reviewed By - Date: GOTTSHALLDL - 3/2/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
NWUL-GP-11	98-00869	0.330	<0.33	1	
NWUL-GP-12	98-00870	0.350	<0.35	1	
NWUL-GP-19	98-00871	0.350	<0.35	1	
NWUL-GP-9	98-00872	0.330	<0.33	1	
NWUL-GP-10	98-00873	0.240	<0.24	1	
NWUL-GP-5	98-00874	0.240	<0.24	1	
NWUL-GP-20	98-00875	0.330	<0.33	1	

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980224-179

Preparation Batch: P980226/7471A_PRE/41 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7471A **Matrix:** SOIL

Analytical Batch: I980226/7471A_SOI/39 **Analyst:** LESHINSKYA **Units:** mg/Kg dry

Reviewed By - Date: GOTTSHALLDL - 3/2/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
NWUL-GP-21	98-00876	0.260	<0.26	1	
NWUL-GP-22	98-00877	0.410	<0.41	1	

Preparation Batch: P980304/3030C/19 **Prep. Analyst:** LESHINSKYA

Component Name: Thallium **EPA Method #:** EPA 6010A **Matrix:** AQUEOUS

Analytical Batch: I980304/6010A_NC_/19 **Analyst:** ROGERSTD **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 3/4/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
NWUL-GP-11	98-00858	10.000	<10	1	
NWUL-GP-12	98-00859	10.000	<10	1	
NWUL-GP-19	98-00860	10.000	<10	1	
NWUL-GP-9	98-00861	10.000	<10	1	
NWUL-GP-10	98-00862	10.000	<10	1	
NWUL-GP-18	98-00863	10.000	<10	1	
NWUL-GP-17	98-00864	10.000	<10	1	
NWUL-GP-5	98-00865	10.000	<10	1	
NWUL-GP-20	98-00866	10.000	<10	1	
NWUL-GP-21	98-00867	10.000	<10	1	
NWUL-GP-22	98-00868	10.000	<10	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764

Field Log # Q*954 | Page 1 of 2

Client: WAKE COUNTY | Address: | SDG#: 980224-179

Project Name: NORTH WAKE UNLINED LANDFILL GROUNDWATER ASSESSMENT | TAT: 1 WEEK / STD

Project #: 6172-22910-RT. FLD | Phone: 770-95-2-8643 | TAT Approved by: JFO.

Contact: TIM GRANT | Fax #: | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE 2-XX-98	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260	VOA Other	SEMI VOA 525	SEMI VOA 625/8270 A, B/N, AB/N	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other	METALS Filtered (Y/N)	OTHER
NWUL-GP-11	19	1110	S	2	98-00869			X										X			
NWUL-GP-11	19	1135	W	3	98-00858			X										X			
NWUL-GP-12	19	1225	S	2	98-00870			X										X			
NWUL-GP-12	19	1235	W	3	98-00859			X										X			
NWUL-GP-19	19	1335	S	2	98-00871			X										X			
NWUL-GP-19	19	1345	W	3	98-00860			X										X			
NWUL-GP-9	19	1355	S	2	98-00872			X										X			
NWUL-GP-9	19	1420	W	3	98-00861			X										X			
NWUL-GP-10	19	1500	S	2	98-00873			X										X			
NWUL-GP-10	19	1515	W	3	98-00862			X										X			
NWUL-GP-18	19	1645	W	3	98-00863			X										X			
NWUL-GP-17	19		W	3	98-00864			X										X			
Container Type:																					
Preservative:																					
Volume:																					

A - HCl | D - NaOH | P - Plastic

B - HNO_3 | E - NaThio | G - Glass

C - H_2SO_4 | F - Other | V - Vial

Samples Received:
- Cooler Temperature: ~4 °C
- Chilled/properly preserved? ☑ yes ☐ no
- In good condition? ☑ yes ☐ no
- Evidence of tampering? ☐ yes ☑ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2-23-98	1110	[signature]	2/24/98	1110
Relinquished by: [signature]	2/24/98	1200	Received by: [signature]	2/24	1435
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☑ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

VERIFY ANALYTICAL REQUIREMENTS W/ TIM GRANT, COM/RALEIGH

8260: NC APP I + DCDFM

GC/LC/ANC: APP I + Hg

CONTINUED ON BACK

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # Q# 954 | Page 2 of 2

Client: WAKE COUNTY | Address: | SDG#: 980224-179

Project Name: NORTH WAKE UNLINED LANDFILL | TAT: 1WEEK / STD

Project #: 6172-22910-RT.FLD | Phone: | TAT Approved by: JFO

Contact: TIM GRANT | Fax #: | Lab Acct. #:

Report to: | Bill to:

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA: 524.2	VOA: 624/8240	VOA: 8260	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other	METALS: Filtered (Y/N)	OTHER
NWVL-GP-5	2/20/98	1000	S	2	98-00874			X										X			
NWVL-GP-5		V	W	3	98-00865			X										X			
NWVL-GP-20		1100	S	2	98-00875			X										X			
NWVL-GP-20		V	W	3	98-00866			X										X			
NWVL-GP-21		1135	S	2	98-00876			X										X			
NWVL-GP-21		V	W	3	98-00867			X										X			
NWVL-GP-22		1240	S	2	98-00877			X										X			
NWVL-GP-22	V	V	W	3	98-00868			X										X			

A - HCl | D - NaOH | P - Plastic

B - HNO_3 | E - NaThio | G - Glass

C - H_2SO_4 | F - Other | V - Vial

Container Type: | Preservative: | Volume:

Samples Received:
- Cooler Temperature: ~4 °C
- Chilled/properly preserved? ☑ yes ☐ no
- In good condition? ☐ yes ☐ no
- Evidence of tampering? ☐ yes ☑ no

Instructions:
- ☐ Fax Results
- ☐ State Forms
- ☐ SMART Report
- ☐ Disk Deliverable
- ( ) ☐ TICS

	Date	Time		Date	Time
Sampled & Relinquished by:			Received by:	2/24	1435
Relinquished by:			Received by:		
Relinquished by:			Received by:		

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☑ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

NORTH WAKE UNLINED LANDFILL

PHASE II

GROUNDWATER SAMPLING RESULTS

MAY 1998

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980505-506

Date: 5/21/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980505-506	**Print Date:**	5/21/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
TB-6	05/01/98	05/05/98	98-02543	AQUEOUS
TB-6 Deep	05/01/98	05/05/98	98-02544	AQUEOUS
TB-3	05/01/98	05/05/98	98-02545	AQUEOUS
TB-1	05/01/98	05/05/98	98-02546	AQUEOUS
TB-1 Deep	05/01/98	05/05/98	98-02547	AQUEOUS

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-506	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-6		
Lab Sample ID:	98-02543	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	84.22	43 - 116
4-Terphenyl-d14	83.61	33 - 141
Nitrobenzene-d5	85.35	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980505-506
Client Sample ID: TB-6
Lab Sample ID: 98-02543
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980511/5030/344
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980511/8260A_AQU/251
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980511/5030/344
SDG #:	980505-506	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-6		
Lab Sample ID:	98-02543	**Analytical Batch ID:**	I980511/8260A_AQU/251
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	102.80	86 - 115
Dibromofluoromethane	100.02	86 - 118
Toluene-d8	101.38	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980505-506	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-6		
Lab Sample ID:	98-02543	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-506	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-6 Deep		
Lab Sample ID:	98-02544	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	87.01	43 - 116
4-Terphenyl-d14	87.40	33 - 141
Nitrobenzene-d5	85.71	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980505-506
Client Sample ID: TB-6 Deep
Lab Sample ID: 98-02544
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980511/5030/344
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980511/8260A_AQU/251
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980511/5030/344
SDG #:	980505-506	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-6 Deep		
Lab Sample ID:	98-02544	**Analytical Batch ID:**	I980511/8260A_AQU/251
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.12	86 - 115
Dibromofluoromethane	104.78	86 - 118
Toluene-d8	105.10	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980505-506	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-6 Deep		
Lab Sample ID:	98-02544	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-506	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-3		
Lab Sample ID:	98-02545	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	83.67	43 - 116
4-Terphenyl-d14	86.42	33 - 141
Nitrobenzene-d5	83.29	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980505-506
Client Sample ID: TB-3
Lab Sample ID: 98-02545
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980511/5030/344
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980511/8260A_AQU/251
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980511/5030/344
SDG #:	980505-506	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-3		
Lab Sample ID:	98-02545	**Analytical Batch ID:**	I980511/8260A_AQU/251
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	95.74	86 - 115
Dibromofluoromethane	101.34	86 - 118
Toluene-d8	98.88	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980505-506	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-3		
Lab Sample ID:	98-02545	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	23	
Cobalt	10	44	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	41	
Zinc	50	59	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-506	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-1		
Lab Sample ID:	98-02546	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	87.99	43 - 116
4-Terphenyl-d14	91.15	33 - 141
Nitrobenzene-d5	86.12	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980505-506
Client Sample ID: TB-1
Lab Sample ID: 98-02546
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980511/5030/344
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980511/8260A_AQU/251
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980511/5030/344
SDG #:	980505-506	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1		
Lab Sample ID:	98-02546	**Analytical Batch ID:**	I980511/8260A_AQU/251
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.24	86 - 115
Dibromofluoromethane	103.14	86 - 118
Toluene-d8	101.56	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980505-506	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-1		
Lab Sample ID:	98-02546	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980505-506
Client Sample ID: TB-1 Deep
Lab Sample ID: 98-02547
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980511/5030/344
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980511/8260A_AQU/251
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980511/5030/344
SDG #:	980505-506	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1 Deep		
Lab Sample ID:	98-02547	**Analytical Batch ID:**	I980511/8260A_AQU/251
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	103.54	86 - 115
Dibromofluoromethane	104.54	86 - 118
Toluene-d8	99.18	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/11/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980505-506	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-1 Deep		
Lab Sample ID:	98-02547	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	3.0	
Cadmium	1	<1.0	
Chromium	10	110	
Cobalt	10	13	
Copper	200	<200	
Lead	10	19	
Nickel	50	68	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	280	
Zinc	50	210	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **980505-506**

Preparation Batch: P980518/7470A_PRE/67 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980518/7470A_AQU/54 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 5/18/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
TB-6	98-02543	0.200	<0.20	1	
TB-6 Deep	98-02544	0.200	<0.20	1	
TB-3	98-02545	0.200	<0.20	1	
TB-1	98-02546	0.200	<0.20	1	
TB-1 Deep	98-02547	0.200	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764

Q# ~~1317~~ 1322 | Field Log # N. WAKE | Page 1 of 1

Client: CAMP DRESSER & McKEE | Address: 5400 GLENWOOD AVE STE. 300 RALEIGH, NC | SDG#: 980505-506

Project Name: NORTH WAKE [UNLINED] | TAT: STD

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260 X	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, ABN *	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other *	METALS: Filtered (Y/N)	OTHER
TB-6	5-1	10:00	W	4	98-02543			2			1								1		
TB-6 DEEP	5-1	11:00	W	4	98-02544			2			1								1		
TB-3	5-1	13:00	W	4	98-02545			2			1								1		
TB-1	5-1	15:00	W	4	98-02546			2			1								1		
TB-1 DEEP	5-1	16:00	W	4	98-02547			2			(1) Bottle rec'd broken @ AM 5/2								1		
Container Type:								V			G								P		
Preservative:								A			—								B		
Volume:								40ml			1l								1l		

A - HCl | B - HNO_3 | C - H_2SO_4 | D - NaOH | E - NaThio | F - Other | P - Plastic | G - Glass | V - Vial

Samples Received:
- Cooler Temperature: _____ °C
- Chilled/properly preserved? ☑ yes ☐ no
- In good condition? ☐ yes → ☐ no (SEE NOTE)
- Evidence of tampering? ☐ yes ☑ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- TICS ☐ (_____)

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Mathew J. Colone	5-1-98	17:00	PT Mayo from FEDX	5/2/98	10-
PT Mayo-1 @ Lab	5/2/98	830			
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments: * NORTH CAROLINA APPENDIX I

** APPENDIX II

* - METAL ANALYSIS T.B.D. 063 5/5/98

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980505-508

Date: 5/21/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980505-508	**Print Date:**	5/21/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOH#, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
TB-4A	05/04/98	05/05/98	98-02551	AQUEOUS
TB-2A	05/04/98	05/05/98	98-02552	AQUEOUS
TB-2A Deep	05/04/98	05/05/98	98-02553	AQUEOUS
MW-27	05/04/98	05/05/98	98-02554	AQUEOUS

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-508	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-4A		
Lab Sample ID:	98-02551	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	86.60	43 - 116
4-Terphenyl-d14	94.62	33 - 141
Nitrobenzene-d5	82.39	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-4A		
Lab Sample ID:	98-02551	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-4A		
Lab Sample ID:	98-02551	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	86.34	86 - 115
Dibromofluoromethane	87.76	86 - 118
Toluene-d8	99.44	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/110
SDG #:	980505-508	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-4A		
Lab Sample ID:	98-02551	**Analytical Batch ID:**	I980519/6010A_AQU/84
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	60	
Cobalt	10	19	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	56	
Zinc	50	60	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-508	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-2A		
Lab Sample ID:	98-02552	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	78.91	43 - 116
4-Terphenyl-d14	87.76	33 - 141
Nitrobenzene-d5	77.71	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-2A		
Lab Sample ID:	98-02552	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-2A		
Lab Sample ID:	98-02552	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.00	86 - 115
Dibromofluoromethane	103.72	86 - 118
Toluene-d8	104.26	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/110
SDG #:	980505-508	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-2A		
Lab Sample ID:	98-02552	**Analytical Batch ID:**	I980519/6010A_AQU/84
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	18	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-508	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-2A Deep		
Lab Sample ID:	98-02553	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	83.38	43 - 116
4-Terphenyl-d14	87.16	33 - 141
Nitrobenzene-d5	82.64	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-2A Deep		
Lab Sample ID:	98-02553	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-2A Deep		
Lab Sample ID:	98-02553	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.16	86 - 115
Dibromofluoromethane	108.38	86 - 118
Toluene-d8	102.34	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/110
SDG #:	980505-508	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-2A Deep		
Lab Sample ID:	98-02553	**Analytical Batch ID:**	I980519/6010A_AQU/84
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	13	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980505-508	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-27		
Lab Sample ID:	98-02554	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	7.5	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	89.49	43 - 116
4-Terphenyl-d14	93.48	33 - 141
Nitrobenzene-d5	85.64	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-27		
Lab Sample ID:	98-02554	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980512/5030/346
SDG #:	980505-508	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-27		
Lab Sample ID:	98-02554	**Analytical Batch ID:**	I980512/8260A_AQU/253
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	93.46	86 - 115
Dibromofluoromethane	97.88	86 - 118
Toluene-d8	101.12	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/12/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/110
SDG #:	980505-508	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-27		
Lab Sample ID:	98-02554	**Analytical Batch ID:**	I980519/6010A_AQU/84
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980505-508

Preparation Batch: P980518/7470A_PRE/67 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980518/7470A_AQU/54 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 5/18/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
TB-4A	98-02551	0.200	<0.20	1	
TB-2A	98-02552	0.200	<0.20	1	
TB-2A Deep	98-02553	0.200	<0.20	1	
MW-27	98-02554	0.200	<0.20	1	

Chain of Custody

CDM Analytical Laboratory 840 Memorial Drive, Cambridge, MA 02139 — Phone: (617) 354-4448, Fax: (617) 354-0764

Field Log # QA 1324 Page 1 of 1

Client: CDM RALEIGH — Address: 5400 GLENWOOD AVE, RALEIGH, 27612 — SDG#: 980505-506

Project Name: NORTH WAKE — TAT: STD

Project #: 6172-22910 — Phone: (919) 787-5620 — TAT Approved by:

Contact: TIM GRANT — Fax #: (919) 781-5730 — Lab Acct. #:

Report to: TIM GRANT — Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: * 8260	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, ABN	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other *	METALS: Filtered (Y/N)	OTHER
TB-4A	5-4	10:00	W	4	98-02551			2			1								1		
TB-2A	5-4	11:00	W	4	98-02552			2			1								1		
TB-2A DEEP	5-4	12:30	W	4	98-02553			2			1								1		
MW-27	5-4	15:00	W	4	98-02554			2			1								1		
								V			G								P		
					Container Type:			A			—								B		
					Preservative:			40ml			1l								1l		
					Volume:																

A - HCl D - NaOH P - Plastic

B - HNO_3 E - NaThio G - Glass

C - H_2SO_4 F - Other V - Vial

Samples Received:
- Cooler Temperature: 4.1 °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

	Date	Time		Date	Time
Sampled & Relinquished by: Matthew J. Colore	5-4-98	17:00	Received by: CDM	5/7/98	1300
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

* NORTH CAROLINA APPENDIX I METALS T.B.D. 5/5/98 JB

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980506-529

Date: 5/21/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980506-529	**Print Date:**	5/21/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
TB-1 Deep	05/05/98	05/06/98	98-02631	AQUEOUS
MW-24	05/05/98	05/06/98	98-02632	AQUEOUS
MW-23	05/05/98	05/06/98	98-02633	AQUEOUS
MW-23 Deep	05/05/98	05/06/98	98-02634	AQUEOUS
MW-10A	05/05/98	05/06/98	98-02635	AQUEOUS

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980506-529	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	TB-1 Deep		
Lab Sample ID:	98-02631	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	87.68	43 - 116
4-Terphenyl-d14	86.32	33 - 141
Nitrobenzene-d5	84.81	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-02632	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5.		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	42	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	<25	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	28	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	240	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	230	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	78	
o-Xylene	25	34	
1,1-Dichloroethene	25	<25	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-02632	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
Acetone	500	<500	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	88.16	86 - 115
Dibromofluoromethane	96.12	86 - 118
Toluene-d8	93.40	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980506-529	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-24		
Lab Sample ID:	98-02632	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	87.54	43 - 116
4-Terphenyl-d14	90.42	33 - 141
Nitrobenzene-d5	90.08	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980506-529	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-24		
Lab Sample ID:	98-02632	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-02633	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	6.9	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-02633	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.46	86 - 115
Dibromofluoromethane	102.02	86 - 118
Toluene-d8	96.70	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980506-529	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-23		
Lab Sample ID:	98-02633	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	89.98	43 - 116
4-Terphenyl-d14	93.37	33 - 141
Nitrobenzene-d5	88.02	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980506-529	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23		
Lab Sample ID:	98-02633	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980515/5030/348
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23 Deep		
Lab Sample ID:	98-02634	**Analytical Batch ID:**	I980515/8260A_AQU/254
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980515/5030/348
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23 Deep		
Lab Sample ID:	98-02634	**Analytical Batch ID:**	I980515/8260A_AQU/254
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	90.60	86 - 115
Dibromofluoromethane	94.12	86 - 118
Toluene-d8	94.74	88 - 110

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 05/15/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980506-529	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-23 Deep		
Lab Sample ID:	98-02634	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	86.89	43 - 116
4-Terphenyl-d14	91.37	33 - 141
Nitrobenzene-d5	84.17	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980506-529	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23 Deep		
Lab Sample ID:	98-02634	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	80	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10A		
Lab Sample ID:	98-02635	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	500	<500	
Benzene	12	<12	
Bromochloromethane	12	<12	
Bromodichloromethane	12	<12	
Bromoform	12	<12	
Bromomethane	25	<25	
2-Butanone	250	<250	
Carbon disulfide	250	<250	
Carbon tetrachloride	25	<25	
Chlorobenzene	12	<12	
Chloroethane	25	<25	
Chloroform	12	<12	
Chloromethane	25	<25	
1,2-Dibromo-3-chloropropane	62	<62	
1,2-Dibromoethane	12	<12	
Dibromochloromethane	12	<12	
Dibromomethane	25	<25	
1,2-Dichlorobenzene	12	<12	
1,4-Dichlorobenzene	12	<12	
trans-1,4-Dichloro-2-butene	250	<250	
Dichlorodifluoromethane	12	<12	
1,1-Dichloroethane	12	77	
1,2-Dichloroethane	12	<12	
cis-1,2-Dichloroethene	12	37	
trans-1,2-Dichloroethene	12	<12	
1,2-Dichloropropane	12	<12	
cis-1,3-Dichloropropene	25	<25	
trans-1,3-Dichloropropene	25	<25	
Ethylbenzene	12	<12	
2-Hexanone	120	<120	
Iodomethane	25	<25	
4-Methyl-2-pentanone	250	<250	
Methylene chloride	25	210	
Styrene	25	<25	
1,1,1,2-Tetrachloroethane	12	<12	
1,1,2,2-Tetrachloroethane	12	<12	
Tetrachloroethene	12	<12	
Toluene	12	<12	
1,1,1-Trichloroethane	12	<12	
1,1,2-Trichloroethane	12	<12	
Trichloroethene	12	<12	
Trichlorofluoromethane	12	<12	
1,2,3-Trichloropropane	38	<38	
Vinyl acetate	120	<120	
Vinyl chloride	25	<25	
m- and p-Xylenes	12	<12	
o-Xylene	12	<12	
1,1-Dichloroethene	12	<12	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980506-529	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10A		
Lab Sample ID:	98-02635	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acetone	250	<250	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	88.94	86 - 115
Dibromofluoromethane	98.40	86 - 118
Toluene-d8	95.50	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980512/3510_8270/46
SDG #:	980506-529	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-10A		
Lab Sample ID:	98-02635	**Analytical Batch ID:**	I980515/8270B_AQU/54
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	93.18	43 - 116
4-Terphenyl-d14	93.03	33 - 141
Nitrobenzene-d5	91.97	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980506-529	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-10A		
Lab Sample ID:	98-02635	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.3	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	13	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	720	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980506-529

Preparation Batch: P980518/7470A_PRE/68 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980518/7470A_AQU/55 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 5/18/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-24	98-02632	0.20	<0.20	1	
MW-23	98-02633	0.20	<0.20	1	
MW-23 Deep	98-02634	0.20	<0.20	1	
MW-10A	98-02635	0.20	0.34	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764

Field Log # Q# 1345 | Page 1 of 1

Client: WAKE COUNTY (CDM RALEIGH) | Address: 5400 GLENWOOD AVE, ST. 300, RALEIGH, NC 27612 | SDG#: 980506-529

Project Name: NORTH WAKE | TAT: STD

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: * 8260	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other *	METALS: Filtered (Y/N)	OTHER
TB-1 DEEP	5-5	10:00	W	1	98-02631						1										
MW-24	5-5	11:30	W	4	98-02632			2			1								1		
MW-23	5-5	14:00	W	4	98-02633			2			1								1		
MW-23 DEEP	5-5	15:00	W	4	98-02634			2			1								1		
MW-10A	5-5	16:30	W	4	98-02635			2			1								1		
Container Type:								V				G							P		
Preservative:								A				—							B		
Volume:								40ml				1l							1l		

A - HCl | D - NaOH | P - Plastic
B - HNO_3 | E - NaThio | G - Glass
C - H_2SO_4 | F - Other | V - Vial

Samples Received:
- Cooler Temperature: 2.3 °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

	Date	Time
Sampled & Relinquished by: Matthew Cline	5-5-98	18:00
Relinquished by:		
Relinquished by:		

	Date	Time
Received by: DHL AM COM	5/6/98	1700
Received by:		
Received by:		

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments: * NORTH CAROLINA APPENDIX I

METALS T.B.D. 5/6/98

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980507-545

Date: 5/26/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980507-545	**Print Date:**	5/26/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-22	05/06/98	05/07/98	98-02684	AQUEOUS
MW-9	05/06/98	05/07/98	98-02685	AQUEOUS
MW-7	05/06/98	05/07/98	98-02686	AQUEOUS
MW-8	05/06/98	05/07/98	98-02687	AQUEOUS
MW-6	05/06/98	05/07/98	98-02688	AQUEOUS
MW-6 Duplicate	05/06/98	05/07/98	98-02689	AQUEOUS
Equipment Blank	05/06/98	05/07/98	98-02690	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-02684	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980516/5030/350
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-02684	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	90.26	86 - 115
Dibromofluoromethane	96.32	86 - 118
Toluene-d8	94.38	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-22		
Lab Sample ID:	98-02684	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	97.51	43 - 116
4-Terphenyl-d14	93.82	33 - 141
Nitrobenzene-d5	92.38	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-22		
Lab Sample ID:	98-02684	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	110	
Copper	200	<200	
Lead	10	<10	
Nickel	50	51	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	80	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-9		
Lab Sample ID:	98-02685	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	500	<500	
Benzene	12	17	
Bromochloromethane	12	<12	
Bromodichloromethane	12	<12	
Bromoform	12	<12	
Bromomethane	25	<25	
2-Butanone	250	<250	
Carbon disulfide	250	<250	
Carbon tetrachloride	25	<25	
Chlorobenzene	12	<12	
Chloroethane	25	<25	
Chloroform	12	<12	
Chloromethane	25	<25	
1,2-Dibromo-3-chloropropane	62	<62	
1,2-Dibromoethane	12	<12	
Dibromochloromethane	12	<12	
Dibromomethane	25	<25	
1,2-Dichlorobenzene	12	<12	
1,4-Dichlorobenzene	12	<12	
trans-1,4-Dichloro-2-butene	250	<250	
Dichlorodifluoromethane	12	31	
1,1-Dichloroethane	12	210	
1,2-Dichloroethane	12	<12	
cis-1,2-Dichloroethene	12	<12	
trans-1,2-Dichloroethene	12	<12	
1,2-Dichloropropane	12	<12	
cis-1,3-Dichloropropene	25	<25	
trans-1,3-Dichloropropene	25	<25	
Ethylbenzene	12	<12	
2-Hexanone	120	<120	
Iodomethane	25	<25	
4-Methyl-2-pentanone	250	<250	
Methylene chloride	25	<25	
Styrene	25	<25	
1,1,1,2-Tetrachloroethane	12	<12	
1,1,2,2-Tetrachloroethane	12	<12	
Tetrachloroethene	12	13	
Toluene	12	<12	
1,1,1-Trichloroethane	12	<12	
1,1,2-Trichloroethane	12	<12	
Trichloroethene	12	32	
Trichlorofluoromethane	12	<12	
1,2,3-Trichloropropane	38	<38	
Vinyl acetate	120	<120	
Vinyl chloride	25	<25	
m- and p-Xylenes	12	<12	
o-Xylene	12	<12	
1,1-Dichloroethene	12	<12	
Acetone	250	<250	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-9		
Lab Sample ID:	98-02685	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	2.5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	94.28	86 - 115
Dibromofluoromethane	98.16	86 - 118
Toluene-d8	96.14	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-9		
Lab Sample ID:	98-02685	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	93.75	43 - 116
4-Terphenyl-d14	98.20	33 - 141
Nitrobenzene-d5	95.67	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-9		
Lab Sample ID:	98-02685	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-7		
Lab Sample ID:	98-02686	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	24	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	17	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	21	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-7		
Lab Sample ID:	98-02686	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.12	86 - 115
Dibromofluoromethane	99.42	86 - 118
Toluene-d8	98.36	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-7		
Lab Sample ID:	98-02686	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	98.02	43 - 116
4-Terphenyl-d14	93.76	33 - 141
Nitrobenzene-d5	94.09	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-7		
Lab Sample ID:	98-02686	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980516/5030/350
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-8		
Lab Sample ID:	98-02687	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	5.7	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	15	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	56	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	13	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	7.8	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	8.7	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	6.1	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980516/5030/350
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-8		
Lab Sample ID:	98-02687	**Analytical Batch ID:**	I980516/8260A_AQU/255
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	97.00	86 - 115
Dibromofluoromethane	97.92	86 - 118
Toluene-d8	94.72	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-8		
Lab Sample ID:	98-02687	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	96.66	43 - 116
4-Terphenyl-d14	96.00	33 - 141
Nitrobenzene-d5	96.78	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-8		
Lab Sample ID:	98-02687	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-6		
Lab Sample ID:	98-02688	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	400	<400	
Benzene	10	<10	
Bromochloromethane	10	<10	
Bromodichloromethane	10	<10	
Bromoform	10	<10	
Bromomethane	20	<20	
2-Butanone	200	<200	
Carbon disulfide	200	<200	
Carbon tetrachloride	20	<20	
Chlorobenzene	10	<10	
Chloroethane	20	29	
Chloroform	10	<10	
Chloromethane	20	<20	
1,2-Dibromo-3-chloropropane	50	<50	
1,2-Dibromoethane	10	<10	
Dibromochloromethane	10	<10	
Dibromomethane	20	<20	
1,2-Dichlorobenzene	10	<10	
1,4-Dichlorobenzene	10	<10	
trans-1,4-Dichloro-2-butene	200	<200	
Dichlorodifluoromethane	10	<10	
1,1-Dichloroethane	10	34	
1,2-Dichloroethane	10	<10	
cis-1,2-Dichloroethene	10	13	
trans-1,2-Dichloroethene	10	<10	
1,2-Dichloropropane	10	<10	
cis-1,3-Dichloropropene	20	<20	
trans-1,3-Dichloropropene	20	<20	
Ethylbenzene	10	<10	
2-Hexanone	100	<100	
Iodomethane	20	<20	
4-Methyl-2-pentanone	200	<200	
Methylene chloride	20	140	
Styrene	20	<20	
1,1,1,2-Tetrachloroethane	10	<10	
1,1,2,2-Tetrachloroethane	10	<10	
Tetrachloroethene	10	<10	
Toluene	10	<10	
1,1,1-Trichloroethane	10	<10	
1,1,2-Trichloroethane	10	<10	
Trichloroethene	10	17	
Trichlorofluoromethane	10	<10	
1,2,3-Trichloropropane	30	<30	
Vinyl acetate	100	<100	
Vinyl chloride	20	<20	
m- and p-Xylenes	10	<10	
o-Xylene	10	<10	
1,1-Dichloroethene	10	<10	
Acetone	200	<200	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-6		
Lab Sample ID:	98-02688	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	2		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	106.78	86 - 115
Dibromofluoromethane	106.40	86 - 118
Toluene-d8	100.62	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-6		
Lab Sample ID:	98-02688	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	100.05	43 - 116
4-Terphenyl-d14	98.63	33 - 141
Nitrobenzene-d5	100.66	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-6		
Lab Sample ID:	98-02688	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-6 Duplicate		
Lab Sample ID:	98-02689	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	400	<400	
Benzene	10	<10	
Bromochloromethane	10	<10	
Bromodichloromethane	10	<10	
Bromoform	10	<10	
Bromomethane	20	<20	
2-Butanone	200	<200	
Carbon disulfide	200	<200	
Carbon tetrachloride	20	<20	
Chlorobenzene	10	<10	
Chloroethane	20	30	
Chloroform	10	<10	
Chloromethane	20	<20	
1,2-Dibromo-3-chloropropane	50	<50	
1,2-Dibromoethane	10	<10	
Dibromochloromethane	10	<10	
Dibromomethane	20	<20	
1,2-Dichlorobenzene	10	<10	
1,4-Dichlorobenzene	10	<10	
trans-1,4-Dichloro-2-butene	200	<200	
Dichlorodifluoromethane	10	<10	
1,1-Dichloroethane	10	35	
1,2-Dichloroethane	10	<10	
cis-1,2-Dichloroethene	10	14	
trans-1,2-Dichloroethene	10	<10	
1,2-Dichloropropane	10	<10	
cis-1,3-Dichloropropene	20	<20	
trans-1,3-Dichloropropene	20	<20	
Ethylbenzene	10	<10	
2-Hexanone	100	<100	
Iodomethane	20	<20	
4-Methyl-2-pentanone	200	<200	
Methylene chloride	20	140	
Styrene	20	<20	
1,1,1,2-Tetrachloroethane	10	<10	
1,1,2,2-Tetrachloroethane	10	<10	
Tetrachloroethene	10	<10	
Toluene	10	<10	
1,1,1-Trichloroethane	10	<10	
1,1,2-Trichloroethane	10	<10	
Trichloroethene	10	19	
Trichlorofluoromethane	10	<10	
1,2,3-Trichloropropane	30	<30	
Vinyl acetate	100	<100	
Vinyl chloride	20	<20	
m- and p-Xylenes	10	<10	
o-Xylene	10	<10	
1,1-Dichloroethene	10	<10	
Acetone	200	<200	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-6 Duplicate		
Lab Sample ID:	98-02689	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	2		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.34	86 - 115
Dibromofluoromethane	101.10	86 - 118
Toluene-d8	92.64	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	MW-6 Duplicate		
Lab Sample ID:	98-02689	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	94.23	43 - 116
4-Terphenyl-d14	94.94	33 - 141
Nitrobenzene-d5	90.02	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-6 Duplicate		
Lab Sample ID:	98-02689	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Equipment Blank		
Lab Sample ID:	98-02690	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980518/5030/351
SDG #:	980507-545	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Equipment Blank		
Lab Sample ID:	98-02690	**Analytical Batch ID:**	I980518/8260A_AQU/256
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.46	86 - 115
Dibromofluoromethane	108.30	86 - 118
Toluene-d8	95.14	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980520/3510_8270/47
SDG #:	980507-545	**Prep. Analyst:**	ELSDENGF
Client Sample ID:	Equipment Blank		
Lab Sample ID:	98-02690	**Analytical Batch ID:**	I980520/8270B_AQU/55
Matrix:	AQUEOUS	**Analyst:**	ELSDENGF
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	98.35	43 - 116
4-Terphenyl-d14	97.86	33 - 141
Nitrobenzene-d5	97.74	35 - 114

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980519/3015/111
SDG #:	980507-545	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	Equipment Blank		
Lab Sample ID:	98-02690	**Analytical Batch ID:**	I980519/6010A_AQU/85
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 05/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980507-545

Preparation Batch: P980518/7470A_PRE/68 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980518/7470A_AQU/55 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 5/18/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-22	98-02684	0.20	<0.20	1	
MW-9	98-02685	0.20	<0.20	1	
MW-7	98-02686	0.20	0.24	1	
MW-8	98-02687	0.20	<0.20	1	
MW-6	98-02688	0.20	0.65	1	
MW-6 Duplicate	98-02689	0.20	<0.20	1	
Equipment Blank	98-02690	0.20	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # Q# 1359 | Page 1 of 1

Client: WAKE COUNTY (CDM RALEIGH) | Address: 5400 GLENWOOD AVE, ST. 300 RALEIGH 27612 | SDG#: 980507-545

Project Name: NORTH WAKE | TAT: STD

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260 *	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET. ID	METALS: PP13	METALS: RCRA 8	METALS: Other *	METALS: Filtered (Y/N)	OTHER
MW-22	5-6	10:00	W	4	98-02684			2			1								1		
MW-9	5-6	11:00	W	4	98-02685			2			1								1		
MW-7	5-6	12:00	W	4	98-02686			2			1								1		
MW-8	5-6	13:00	W	4	98-02687			2			1								1		
MW-6	5-6	18:30	W	4	98-02688			2			1								1		
MW-6 (DUP)	5-6	16:30	W	4	98-02689			2			1								1		
EQ. BLANK	5-6	16:30	W	4	98-02690			2			1								1		

A - HCl | D - NaOH | P - Plastic | B - HNO_3 | E - NaThio | G - Glass | C - H_2SO_4 | F - Other | V - Vial

	VOA: 8260 *	SEMI VOA: 625/8270 A, B/N, AB/N	METALS: Other *
Container Type:	V	G	P
Preservative:	A	—	B
Volume:	40ml	1l	1l

Samples Received:
- Cooler Temperature: 2.6 °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

	Date	Time		Date	Time
Sampled & Relinquished by: Matthew J. Colore	5/6/98	17:00	Received by: [signature] COM	5/7/98	1500
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

* NORTH CAROLINA APPENDIX I

METALS TO BE DONE 5/7/98

Not enough volume for Semi VOH duplicate or MS

NORTH WAKE UNLINED LANDFILL

PHASE III

GROUNDWATER SAMPLING RESULTS

AUGUST 1998 - FEBRUARY 1999

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980810-1112

Date: 9/3/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980810-1112	**Print Date:**	9/3/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: James F. Oglesbee

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
Trip Blank	08/04/98	08/10/98	98-06303	AQUEOUS
MW-33	08/06/98	08/10/98	98-06297	AQUEOUS
MW-34d	08/06/98	08/10/98	98-06298	AQUEOUS
Duplicate	08/06/98	08/10/98	98-06300	AQUEOUS
MW-34	08/06/98	08/10/98	98-06299	AQUEOUS
MW-35	08/06/98	08/10/98	98-06301	AQUEOUS
MW-5	08/06/98	08/10/98	98-06302	AQUEOUS

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-33		
Lab Sample ID:	98-06297	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-33		
Lab Sample ID:	98-06297	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	104.00	86 - 115
Dibromofluoromethane	103.08	86 - 118
Toluene-d8	104.96	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980810-1112
Client Sample ID: MW-33
Lab Sample ID: 98-06297
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980818/3015/165
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980824/6010A_AQU/133
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	5.8	
Chromium	10	46	
Cobalt	10	18	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	73	
Zinc	50	110	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-33		
Lab Sample ID:	98-06297	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	92.29	10 - 123
2-Fluorobiphenyl	77.84	43 - 116
2-Fluorophenol	42.35	21 - 100
4-Terphenyl-d14	82.02	33 - 141
Nitrobenzene-d5	77.57	35 - 114
Phenol-d6	31.03	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-34d
Lab Sample ID: 98-06298
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-34d
Lab Sample ID: 98-06298
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.26	86 - 115
Dibromofluoromethane	105.54	86 - 118
Toluene-d8	103.42	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980818/3015/165
SDG #:	980810-1112	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-34d		
Lab Sample ID:	98-06298	**Analytical Batch ID:**	I980824/6010A_AQU/133
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-34d		
Lab Sample ID:	98-06298	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	7.3	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	94.65	10 - 123
2-Fluorobiphenyl	76.74	43 - 116
2-Fluorophenol	44.01	21 - 100
4-Terphenyl-d14	82.77	33 - 141
Nitrobenzene-d5	77.54	35 - 114
Phenol-d6	32.99	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-34
Lab Sample ID: 98-06299
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-34		
Lab Sample ID:	98-06299	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.12	86 - 115
Dibromofluoromethane	107.04	86 - 118
Toluene-d8	108.72	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980818/3015/165
SDG #:	980810-1112	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-34		
Lab Sample ID:	98-06299	**Analytical Batch ID:**	I980824/6010A_AQU/133
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	4.9	
Cadmium	1	8.4	
Chromium	10	43	
Cobalt	10	20	
Copper	200	<200	
Lead	10	<10	
Nickel	50	64	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	110	
Zinc	50	180	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-34		
Lab Sample ID:	98-06299	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.4	<5.4	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	80.56	10 - 123
2-Fluorobiphenyl	71.06	43 - 116
2-Fluorophenol	41.60	21 - 100
4-Terphenyl-d14	73.19	33 - 141
Nitrobenzene-d5	70.99	35 - 114
Phenol-d6	31.70	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: Duplicate
Lab Sample ID: 98-06300
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: Duplicate
Lab Sample ID: 98-06300
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.28	86 - 115
Dibromofluoromethane	99.52	86 - 118
Toluene-d8	108.96	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980810-1112
Client Sample ID: Duplicate
Lab Sample ID: 98-06300
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980818/3015/165
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980824/6010A_AQU/133
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	Duplicate		
Lab Sample ID:	98-06300	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	84.22	10 - 123
2-Fluorobiphenyl	72.13	43 - 116
2-Fluorophenol	41.11	21 - 100
4-Terphenyl-d14	74.30	33 - 141
Nitrobenzene-d5	72.75	35 - 114
Phenol-d6	31.06	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-35
Lab Sample ID: 98-06301
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-35		
Lab Sample ID:	98-06301	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.08	86 - 115
Dibromofluoromethane	106.58	86 - 118
Toluene-d8	109.76	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980810-1112
Client Sample ID: MW-35
Lab Sample ID: 98-06301
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980818/3015/165
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980824/6010A_AQU/133
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	4.3	
Cadmium	1	9.8	
Chromium	10	47	
Cobalt	10	30	
Copper	200	<200	
Lead	10	<10	
Nickel	50	52	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	120	
Zinc	50	130	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-35		
Lab Sample ID:	98-06301	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	81.08	10 - 123
2-Fluorobiphenyl	72.69	43 - 116
2-Fluorophenol	41.28	21 - 100
4-Terphenyl-d14	73.99	33 - 141
Nitrobenzene-d5	72.10	35 - 114
Phenol-d6	31.64	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-5
Lab Sample ID: 98-06302
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	6.5	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	39	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	5.4	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	81	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	15	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	300	E
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	8.2	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	18	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-5		
Lab Sample ID:	98-06302	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	6.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	142.80	86 - 115
Dibromofluoromethane	100.06	86 - 118
Toluene-d8	113.96	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980810-1112
Client Sample ID: MW-5
Lab Sample ID: 98-06302
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980818/3015/165
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980824/6010A_AQU/133
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	2.2	
Cadmium	1	4.9	
Chromium	10	32	
Cobalt	10	24	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	68	
Zinc	50	190	

Batch Approved By: OCCHIALINIJF **Batch Approval Date:** 08/28/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P980901/3510_8270/72
SDG #:	980810-1112	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-5		
Lab Sample ID:	98-06302	**Analytical Batch ID:**	I980901/8270B_AQU/80
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	<5.1	

Surrogate	% Recovery	Accep. Range
2,4,6-Tribromophenol	65.95	10 - 123
2-Fluorobiphenyl	56.89	43 - 116
2-Fluorophenol	36.49	21 - 100
4-Terphenyl-d14	62.22	33 - 141
Nitrobenzene-d5	59.64	35 - 114
Phenol-d6	28.95	10 - 94

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/02/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980824/5030/475
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-5		
Lab Sample ID:	98-06302	**Analytical Batch ID:**	I980824/8260A_AQU/328
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	10		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	2000	<2000	
Benzene	50	<50	
Bromochloromethane	50	<50	
Bromodichloromethane	50	<50	
Bromoform	50	<50	
Bromomethane	100	<100	
2-Butanone	1000	<1000	
Carbon disulfide	1000	<1000	
Carbon tetrachloride	100	<100	
Chlorobenzene	50	<50	
Chloroethane	100	<100	
Chloroform	50	<50	
Chloromethane	100	<100	
1,2-Dibromo-3-chloropropane	250	<250	
1,2-Dibromoethane	50	<50	
Dibromochloromethane	50	<50	
Dibromomethane	100	<100	
1,2-Dichlorobenzene	50	<50	
1,4-Dichlorobenzene	50	<50	
trans-1,4-Dichloro-2-butene	1000	<1000	
Dichlorodifluoromethane	50	<50	
1,1-Dichloroethane	50	85	
1,2-Dichloroethane	50	<50	
cis-1,2-Dichloroethene	50	<50	
trans-1,2-Dichloroethene	50	<50	
1,2-Dichloropropane	50	<50	
cis-1,3-Dichloropropene	100	<100	
trans-1,3-Dichloropropene	100	<100	
Ethylbenzene	50	<50	
2-Hexanone	500	<500	
Iodomethane	100	<100	
4-Methyl-2-pentanone	1000	<1000	
Methylene chloride	100	270	
Styrene	100	<100	
1,1,1,2-Tetrachloroethane	50	<50	
1,1,2,2-Tetrachloroethane	50	<50	
Tetrachloroethene	50	<50	
Toluene	50	<50	
1,1,1-Trichloroethane	50	<50	
1,1,2-Trichloroethane	50	<50	
Trichloroethene	50	<50	
Trichlorofluoromethane	50	<50	

Batch Approved By: CROWELLSD **Batch Approval Date:** 08/27/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: MW-5
Lab Sample ID: 98-06302
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 10

Preparation Batch ID: P980824/5030/475
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980824/8260A_AQU/328
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	150	<150	
Vinyl acetate	500	<500	
Vinyl chloride	100	<100	
m- and p-Xylenes	50	<50	
o-Xylene	50	<50	
1,1-Dichloroethene	50	<50	
Acetone	1000	<1000	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.88	86 - 115
Dibromofluoromethane	109.36	86 - 118
Toluene-d8	107.92	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 08/27/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980810-1112
Client Sample ID: Trip Blank
Lab Sample ID: 98-06303
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980822/5030/471
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980822/8260A_AQU/325
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980822/5030/471
SDG #:	980810-1112	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-06303	**Analytical Batch ID:**	I980822/8260A_AQU/325
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.64	86 - 115
Dibromofluoromethane	105.36	86 - 118
Toluene-d8	110.06	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/23/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980810-1112

Preparation Batch: P980812/7470A_PRE/89 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980812/7470A_AQU/72 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: GOTTSHALLDL - 8/17/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-33	98-06297	0.200	<0.20	1	
MW-34d	98-06298	0.200	<0.20	1	
MW-34	98-06299	0.200	<0.20	1	
Duplicate	98-06300	0.200	<0.20	1	
MW-35	98-06301	0.200	<0.20	1	
MW-5	98-06302	0.200	<0.20	1	

Chain of Custody

CDM Analytical Laboratory. 840 Memorial Drive, Cambridge, MA 02139 Phone: (617) 354-4448 Fax: (617) 354-0764

Field Log # Q# 1958 Page 1 of 1

Client: CDM Address: 5400 GLENWOOD AVE #300 SDG#: 980810-1112

Project Name: NORTH WAKE ASSESSMENT RALEIGH, NC 27612 TAT: STD

Project #: 6172-22910 Phone: (919) 787-5820 TAT Approved by:

Contact: TIM GRANT Fax #: (919) 781-5780 Lab Acct. #:

Report to: TIM GRANT Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other *	METALS: Filtered (Y/N)	OTHER
MW-33	8-6-98	9:40	W	4	98.06297			2			1								1	N	
MW-34d	8-6-98	11:30	W	4	98-06298			2			1								1	N	
MW-34	8-6-98	12:30	W	4	98-06299			2			1								1	N	
DUPLICATE	8-6-98	11:30	W	4	98-06300			2			1								1	N	
MW-35	8-6-98	13:40	W	4	98-06301			2			1								1	N	
MW-5	8-6-98	14:40	W	4	98-06302			2			1								1	N	
TRIP BLANK	8-4-98	—	W	2	98-06303			2													
Container Type:								V			G								P		
Preservative:								A			—								B		
Volume:								40 ml			1l								1l		

A - HCl D - NaOH P - Plastic

B - HNO_3 E - NaThio G - Glass

C - H_2SO_4 F - Other V - Vial

Samples Received:
- Cooler Temperature: 2.7 °C
- Chilled/properly preserved? ☑ yes ☐ no
- In good condition? ☑ yes ☐ no
- Evidence of tampering? ☐ yes ☑ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (____ ____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew J. Clore	8-6-98	15:00	[signature] CDM	8/7/98	1530
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill# Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☑ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

✓ NORTH CAROLINA APPENDIX I METALS

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980819-1154

Date: 9/3/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980819-1154	**Print Date:**	9/3/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48, VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-28d	08/17/98	08/19/98	98-06546	AQUEOUS
MW-28	08/17/98	08/19/98	98-06545	AQUEOUS
MW-30	08/17/98	08/19/98	98-06548	AQUEOUS
MW-29	08/17/98	08/19/98	98-06551	AQUEOUS
Trip Blank	08/17/98	08/19/98	98-06552	AQUEOUS
MW-29d	08/17/98	08/19/98	98-06547	AQUEOUS
MW-31d	08/17/98	08/19/98	98-06549	AQUEOUS
MW-31	08/17/98	08/19/98	98-06550	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-06545	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1;2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-06545	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.40	86 - 115
Dibromofluoromethane	100.36	86 - 118
Toluene-d8	97.48	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28		
Lab Sample ID:	98-06545	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	5.6	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-06546	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-06546	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.54	86 - 115
Dibromofluoromethane	102.74	86 - 118
Toluene-d8	96.82	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28d		
Lab Sample ID:	98-06546	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.3	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-06547	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-06547	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	104.34	86 - 115
Dibromofluoromethane	103.16	86 - 118
Toluene-d8	99.84	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-29d		
Lab Sample ID:	98-06547	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-06548	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-06548	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	106.02	86 - 115
Dibromofluoromethane	106.24	86 - 118
Toluene-d8	100.32	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-30		
Lab Sample ID:	98-06548	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	34	
Chromium	10	50	
Cobalt	10	19	
Copper	200	<200	
Lead	10	<10	
Nickel	50	50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	50	
Zinc	50	190	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31d		
Lab Sample ID:	98-06549	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1;2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31d		
Lab Sample ID:	98-06549	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.50	86 - 115
Dibromofluoromethane	103.50	86 - 118
Toluene-d8	98.78	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31d		
Lab Sample ID:	98-06549	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	8.6	
Chromium	10	10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	94	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-06550	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-06550	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	102.42	86 - 115
Dibromofluoromethane	104.32	86 - 118
Toluene-d8	98.00	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/169
SDG #:	980819-1154	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31		
Lab Sample ID:	98-06550	**Analytical Batch ID:**	I980828/6010A_AQU/137
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	14	
Chromium	10	88	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	38	
Nickel	50	82	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	81	
Zinc	50	220	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29		
Lab Sample ID:	98-06551	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29		
Lab Sample ID:	98-06551	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	104.78	86 - 115
Dibromofluoromethane	103.90	86 - 118
Toluene-d8	99.30	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-06552	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/482
SDG #:	980819-1154	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-06552	**Analytical Batch ID:**	I980828/8260A_AQU/333
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.02	86 - 115
Dibromofluoromethane	102.00	86 - 118
Toluene-d8	99.46	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **980819-1154**

Preparation Batch: P980826/7470A_PRE/91 **Prep. Analyst:** NGUYENP

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980826/7470A_AQU/74 **Analyst:** NGUYENP **Units:** ug/L

Reviewed By - Date: OCCHIALINIJF - 8/28/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28	98-06545	0.20	<0.20	1	
MW-28d	98-06546	0.20	<0.20	1	
MW-29d	98-06547	0.20	<0.20	1	
MW-30	98-06548	0.20	<0.20	1	
MW-31d	98-06549	0.20	<0.20	1	
MW-31	98-06550	0.20	<0.20	1	

CDM Analytical Laboratory

840 Memorial Drive
Cambridge, MA 02139

Phone: (617) 354-4448
Fax: (617) 354-0764

Field Log # Q* 2000 Page 1 of 1

Client: CDM
Address: 5400 Glenwood Ave, Ste 300
Raleigh, NC 27612
SDG#: 980819-1154

Project Name: NORTH WAKE UNLINED ASSESSMENT
TAT: STD

Project #: 6172-22910
Phone: (919) 787-5620
TAT Approved by:

Contact: TIM GRANT
Fax #: (919) 781-5730
Lab Acct. #:

Report to: TIM GRANT
Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260 *1	VOA Other	SEMI VOA 525	SEMI VOA 625/8270 A, B/N, AB/N	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other *2	METALS Filtered (Y/N)	OTHER
MW-28	8-17	10:40	W	3	98-06545			2											1	N	
MW-28d	"	10:30	W	3	98-06546			2											1	N	
MW-29	"	11:20	W	2	98-06551			2													
MW-29d	"	12:30	W	3	98-06547			2											1	N	
MW-30	"	13:30	W	3	98-06548			2											1	N	
MW-31d	"	15:00	W	3	98-06549			2											1	N	
MW-31	"	16:00	W	3	98-06550			2											1	N	
Trip Blank	"		W	2	98-06552			2													
Container Type:								V											P		
Preservative:								A											B		
Volume:								40ml											1l		

A - HCl D - NaOH P - Plastic
B - HNO_3 E - NaThio G - Glass
C - H_2SO_4 F - Other V - Vial

Samples Received:
- Cooler Temperature: 1.6 °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- TICS ☐ (_____)

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
			[signature]	8/19/98	1100
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

*1 EPA 8260 plus dichlorodifluoromethane

*2 NORTH CAROLINA APPENDIX I plus Mercury

Chain of Custody

AUG. 18. 1998 8:44AM CAMP DRESSER MCKEE NO. 039 P. 2/2

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 980821-1167

Date: 9/3/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980821-1167	**Print Date:**	9/3/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

VOA: I980828/8260A_AQU/336; The toluene recovery for MS98-06587 is outside the recommended quality control limits.

VOA: I980901/8260A_AQU/340; B98-05452 is the blank associated with North Wake (program specific RLs).

TB-1A was analyzed twice with similar results. Sample can not be a trip blank because sediment was found in both sample aliquots. Actual trip blank was not located after log-in.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-24	08/18/98	08/21/98	98-06587	AQUEOUS
Duplicate	08/18/98	08/21/98	98-06594	AQUEOUS
MW-23d	08/18/98	08/21/98	98-06588	AQUEOUS
MW-23	08/18/98	08/21/98	98-06589	AQUEOUS
Eq. Blank	08/18/98	08/21/98	98-06595	AQUEOUS
MW-10A	08/18/98	08/21/98	98-06590	AQUEOUS
MW-22	08/18/98	08/21/98	98-06591	AQUEOUS
MW-32	08/18/98	08/21/98	98-06592	AQUEOUS
TB-1A	08/18/98	08/21/98	98-06593	AQUEOUS
Trip Blank	08/18/98	08/21/98	98-06596	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/485
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-06587	**Analytical Batch ID:**	I980828/8260A_AQU/336
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	76	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	28	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	47	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	290	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	340	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	130	
o-Xylene	25	49	
1,1-Dichloroethene	25	<25	
Acetone	500	<500	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/485
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-06587	**Analytical Batch ID:**	I980828/8260A_AQU/336
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.52	86 - 115
Dibromofluoromethane	105.82	86 - 118
Toluene-d8	98.02	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-24		
Lab Sample ID:	98-06587	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	4.7	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	16	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	180	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980828/5030/485
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23d		
Lab Sample ID:	98-06588	**Analytical Batch ID:**	I980828/8260A_AQU/336
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980828/5030/485
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23d		
Lab Sample ID:	98-06588	**Analytical Batch ID:**	I980828/8260A_AQU/336
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.42	86 - 115
Dibromofluoromethane	104.06	86 - 118
Toluene-d8	97.32	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23d		
Lab Sample ID:	98-06588	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	4.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	63	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-06589	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-06589	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	107.98	86 - 115
Dibromofluoromethane	106.66	86 - 118
Toluene-d8	99.64	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10A		
Lab Sample ID:	98-06590	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	2.5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.04	86 - 115
Dibromofluoromethane	96.20	86 - 118
Toluene-d8	100.40	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-10A		
Lab Sample ID:	98-06590	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	4.9	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	150	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-06591	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	10	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-06591	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.76	86 - 115
Dibromofluoromethane	104.86	86 - 118
Toluene-d8	102.88	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-22		
Lab Sample ID:	98-06591	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	9.6	
Chromium	10	<10	
Cobalt	10	110	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	210	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-06592	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-06592	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.78	86 - 115
Dibromofluoromethane	106.98	86 - 118
Toluene-d8	100.22	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-32		
Lab Sample ID:	98-06592	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	5.5	
Chromium	10	10	
Cobalt	10	31	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	130	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980901/5030/489
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1A		
Lab Sample ID:	98-06593	**Analytical Batch ID:**	I980901/8260A_AQU/340
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	20	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	39	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	22	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	7.5	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	9.8	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	7.6	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	23	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/01/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980901/5030/489
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1A		
Lab Sample ID:	98-06593	**Analytical Batch ID:**	I980901/8260A_AQU/340
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.74	86 - 115
Dibromofluoromethane	107.44	86 - 118
Toluene-d8	102.24	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 09/01/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-1A		
Lab Sample ID:	98-06593	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	9.3	
Chromium	10	21	
Cobalt	10	20	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	130	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Duplicate		
Lab Sample ID:	98-06594	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	85	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	29	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	51	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	330	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	370	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	140	
o-Xylene	25	49	
1,1-Dichloroethene	25	<25	
Acetone	500	<500	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Duplicate		
Lab Sample ID:	98-06594	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	91.56	86 - 115
Dibromofluoromethane	100.12	86 - 118
Toluene-d8	98.28	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	Duplicate		
Lab Sample ID:	98-06594	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	11	
Barium	500	<500	
Beryllium	2.0	2.1	
Cadmium	1.0	8.9	
Chromium	10	12	
Cobalt	10	11	
Copper	200	<200	
Lead	10	22	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	290	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Eq. Blank		
Lab Sample ID:	98-06595	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980831/5030/486
SDG #:	980821-1167	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Eq. Blank		
Lab Sample ID:	98-06595	**Analytical Batch ID:**	I980831/8260A_AQU/337
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	106.74	86 - 115
Dibromofluoromethane	113.14	86 - 118
Toluene-d8	102.20	88 - 110

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980828/3015/170
SDG #:	980821-1167	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	Eq. Blank		
Lab Sample ID:	98-06595	**Analytical Batch ID:**	I980828/6010A_AQU/138
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	3.1	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	82	

Batch Approved By: GOTTSHALLDL **Batch Approval Date:** 08/31/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980821-1167

Preparation Batch: P980826/7470A_PRE/92 **Prep. Analyst:** NGUYENP

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980826/7470A_AQU/75 **Analyst:** NGUYENP **Units:** ug/L

Reviewed By - Date: OCCHIALINIJF - 8/28/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-24	98-06587	0.20	<0.20	1	
MW-23d	98-06588	0.20	<0.20	1	
MW-23	98-06589	0.20	<0.20	1	
MW-10A	98-06590	0.20	<0.20	1	
MW-22	98-06591	0.20	<0.20	1	
MW-32	98-06592	0.20	<0.20	1	
TB-1A	98-06593	0.20	<0.20	1	
Duplicate	98-06594	0.20	<0.20	1	
Eq. Blank	98-06595	0.20	<0.20	1	

Chain of Custody

CDM Analytical Laboratory — [redacted] Mem[redacted] Drive[redacted] Cambridge, MA 02139 — Ph[redacted](617)[redacted]4448[redacted] Fax: (617) 354-0764 — Field Log # Q 2051 — Page 1 of 1

Client: CDM — Address: 5400 GLENWOOD AVE, STE. 300 — SDG#: 980821-1167

Project Name: NORTH WAKE UNLINED ASSESSMENT — RALEIGH, NC 27612 — TAT: STD

Project #: 6172-22910 — Phone: (919) 787-5620 — TAT Approved by:

Contact: TIM GRANT — Fax #: (919) 781-5730 — Lab Acct. #:

Report to: TIM GRANT — Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/6240	VOA: 8260 * 1	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other * 2	METALS: Filtered (Y/N)
MW-24	8/18/98	11:00	W	3	98-06587			2											1	N
MW-23d	"	12:35	W	3	98-06588			2											1	N
MW-23	"	12:45	W	3	98-06589			2											1	N
MW-10A	"	13:35	W	3	98-06590			2											1	N
MW-22	"	14:10	W	3	98-06591			2											1	N
MW-32	"	15:15	W	3	98-06592			2											1	N
TB-1A	"	16:05	W	3	98-06593			2											1	N
DUP	"	11:00	W	3	98-06594			2											1	N
ER BLANK	"	12:45	W	3	98-06595			2											1	N
TRIP BLANK	8/19/98	—	W	1	98-06596			1												
Container Type:								V											P	
Preservative:								A											B	
Volume:								40ml											1L	

A - HCl D - NaOH P - Plastic
B - HNO_3 E - NaThio G - Glass
C - H_2SO_4 F - Other V - Vial

Samples Received:
- Cooler Temperature: 2.6 °C
- Chilled/properly preserved? ☑ yes ☐ no
- In good condition? ☑ yes ☐ no
- Evidence of tampering? ☐ yes ☑ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew J. Odom	8/18/98	17:00	[redacted] COM	8/19/98	1045
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: — Custody Seal#: — Method of Shipment: ☐ Courier ☐ Airborne ☑ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:
* 1 EPA 8260 and dichlorodifluoromethane
* 2 NC APPENDIX I + Hg

Client: North Wake Unlined Landfill

Project: North Wake Assesment- unlined

SDG: 980910-1262

Date: 9/24/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980910-1262	**Print Date:**	9/25/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	North Wake Assesment- unlined	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

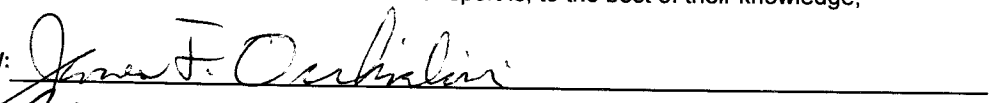
Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

VOA: I980921/8260A_AQU/351; See seperate form attached at the end of this report, for VOA_8260A Matrix Spike Report for North Wake Assessment Unlined.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: 

LABORATORY QA/QC REVIEW:

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #46,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-31	09/09/98	09/10/98	98-06972	AQUEOUS
MW-31d	09/09/98	09/10/98	98-06973	AQUEOUS
TB-1A	09/09/98	09/10/98	98-06974	AQUEOUS
MW-32	09/09/98	09/10/98	98-06975	AQUEOUS
MW-30	09/09/98	09/10/98	98-06976	AQUEOUS
MW-29d	09/09/98	09/10/98	98-06977	AQUEOUS
MW-28d	09/09/98	09/10/98	98-06978	AQUEOUS
MW-28	09/09/98	09/10/98	98-06979	AQUEOUS
DUP	09/09/98	09/10/98	98-06980	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-06972	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-06972	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.14	86 - 115
Dibromofluoromethane	101.94	86 - 118
Toluene-d8	98.04	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31		
Lab Sample ID:	98-06972	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	3.3	
Chromium	10	42	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	15	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	530	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31d		
Lab Sample ID:	98-06973	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 980910-1262
Client Sample ID: MW-31d
Lab Sample ID: 98-06973
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P980918/5030/511
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980918/8260A_AQU/350
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.94	86 - 115
Dibromofluoromethane	114.04	86 - 118
Toluene-d8	103.12	88 - 110

Batch Approved By: CROWELLSD
Batch Approval Date: 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31d		
Lab Sample ID:	98-06973	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.8	
Chromium	10	25	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	60	
Zinc	50	260	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980910-1262
Client Sample ID: TB-1A
Lab Sample ID: 98-06974
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	21	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	40	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	22	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	7.7	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	11	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	7.9	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	20	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD

Batch Approval Date: 09/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980921/5030/512
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1A		
Lab Sample ID:	98-06974	**Analytical Batch ID:**	I980921/8260A_AQU/351
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	110.82	86 - 115
Dibromofluoromethane	108.08	86 - 118
Toluene-d8	105.38	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-1A		
Lab Sample ID:	98-06974	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.6	
Chromium	10	14	
Cobalt	10	16	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	160	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-06975	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 980910-1262
Client Sample ID: MW-32
Lab Sample ID: 98-06975
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P980918/5030/511
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980918/8260A_AQU/350
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	168.40	86 - 115
Dibromofluoromethane	86.34	86 - 118
Toluene-d8	110.56	88 - 110

Batch Approved By: CROWELLSD
Batch Approval Date: 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-32		
Lab Sample ID:	98-06975	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	5.4	
Chromium	10	34	
Cobalt	10	45	
Copper	200	<200	
Lead	10	<10	
Nickel	50	54	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	60	
Zinc	50	240	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-06976	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-06976	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	100.22	86 - 115
Dibromofluoromethane	107.10	86 - 118
Toluene-d8	99.74	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980910-1262
Client Sample ID: MW-30
Lab Sample ID: 98-06976
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	16	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	140	

Batch Approved By: MAHANYWW
Batch Approval Date: 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980921/5030/512
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-06977	**Analytical Batch ID:**	I980921/8260A_AQU/351
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 980910-1262
Client Sample ID: MW-29d
Lab Sample ID: 98-06977
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.30	86 - 115
Dibromofluoromethane	100.88	86 - 118
Toluene-d8	104.22	88 - 110

Batch Approved By: CROWELLSD
Batch Approval Date: 09/22/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-29d		
Lab Sample ID:	98-06977	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.0	
Chromium	10	17	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980910-1262
Client Sample ID: MW-28d
Lab Sample ID: 98-06978
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD

Batch Approval Date: 09/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980921/5030/512
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-06978	**Analytical Batch ID:**	I980921/8260A_AQU/351
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.52	86 - 115
Dibromofluoromethane	102.16	86 - 118
Toluene-d8	103.00	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980910-1262
Client Sample ID: MW-28d
Lab Sample ID: 98-06978
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW
Batch Approval Date: 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-06979	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-06979	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	103.14	86 - 115
Dibromofluoromethane	102.86	86 - 118
Toluene-d8	101.34	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980910-1262	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28		
Lab Sample ID:	98-06979	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980910-1262
Client Sample ID: DUP
Lab Sample ID: 98-06980
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980918/5030/511
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980918/8260A_AQU/350
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD

Batch Approval Date: 09/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P980918/5030/511
SDG #:	980910-1262	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	DUP		
Lab Sample ID:	98-06980	**Analytical Batch ID:**	I980918/8260A_AQU/350
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.42	86 - 115
Dibromofluoromethane	103.00	86 - 118
Toluene-d8	103.56	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980910-1262
Client Sample ID: DUP
Lab Sample ID: 98-06980
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	11	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW
Batch Approval Date: 09/23/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **980910-1262**

Preparation Batch: P980922/7470A_PRE/97 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980922/7470A_AQU/80 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: MAHANYWW - 9/23/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-31	98-06972	0.20	<0.20	1	
MW-31d	98-06973	0.20	<0.20	1	
TB-1A	98-06974	0.20	<0.20	1	
MW-32	98-06975	0.20	<0.20	1	
MW-30	98-06976	0.20	<0.20	1	
MW-29d	98-06977	0.20	<0.20	1	
MW-28d	98-06978	0.20	<0.20	1	
MW-28	98-06979	0.20	<0.20	1	
DUP	98-06980	0.20	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # _____ | Page 1 of _____

Client: CDM | Address: 5400 Glenwood Ave, Ste. 300, Raleigh, NC 27612 | SDG#: 98-0910-1262

Project Name: NORTH WAKE ASSESSMENT UNLINED | TAT:

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260 * 1	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other * 2	METALS: Filtered (Y/N)	OTHER
MW-31	9-9-98	10:30	W	3	98-06972			2											1	N	
MW-31d		10:45			06973																
TB-1A		11:30			06974																
MW-32		13:30			06975																
MW-30 *500 mls		14:45			06976																
MW-29d		13:45			06977																
MW-28d		16:10			06978																
MW-28		8:20			06979																
DUP		13:45			06980																

A - HCl | D - NaOH | P - Plastic

B - HNO_3 | E - NaThio | G - Glass

C - H_2SO_4 | F - Other | V - Vial

Container Type:

Preservative:

Volume:

Samples Received:

- Cooler Temperature: _____ °C
- Chilled/properly preserved? ☐ yes ☐ no
- In good condition? ☐ yes ☐ no
- Evidence of tampering? ☐ yes ☐ no

Instructions:

- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew J. Colvin	9-9-98	17:30			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☐ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

*1 EPA 8260 + dichlorodifluoromethane

*2 NC APPENDIX I Metals + Hg

8260A-Aqueous

6010A-Aq

7470A-Aq

North Wake (UL) - CDM-013

q2134

SDG 980910-1262

Client: **North Wake Unlined Landfill**

Project: **Assessment**

SDG: **980911-1271**

Date: **9/25/98**

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	980911-1271	**Print Date:**	9/25/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Assessment	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

I980921/8260A_AQU/351

See attached data summary for VOA_8260A Matrix Spike Report.

RESULT NOTES

98-07006 (Mercury)

RPD is not determinable due to low original concentration (less than 10x MDL).

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-24	09/10/98	09/11/98	98-07006	AQUEOUS
MW-23d	09/10/98	09/11/98	98-07007	AQUEOUS
MW-23	09/10/98	09/11/98	98-07008	AQUEOUS
MW-10	09/10/98	09/11/98	98-07009	AQUEOUS
MW-22	09/10/98	09/11/98	98-07010	AQUEOUS
EQ. BLANK	09/10/98	09/11/98	98-07011	AQUEOUS

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-24
Lab Sample ID: 98-07006
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 5

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	73	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	<25	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	35	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	290	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	260	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-24
Lab Sample ID: 98-07006
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 5

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	110	
o-Xylene	25	40	
1,1-Dichloroethene	25	<25	
Acetone	500	<500	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	95.84	86 - 115
Dibromofluoromethane	98.66	86 - 118
Toluene-d8	99.96	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980911-1271
Client Sample ID: MW-24
Lab Sample ID: 98-07006
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW

Batch Approval Date: 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-23d
Lab Sample ID: 98-07007
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980918/5030/511
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980918/8260A_AQU/350
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-23d
Lab Sample ID: 98-07007
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980918/5030/511
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980918/8260A_AQU/350
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	107.08	86 - 115
Dibromofluoromethane	104.86	86 - 118
Toluene-d8	101.86	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/18/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P980922/3015/176
SDG #:	980911-1271	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23d		
Lab Sample ID:	98-07007	**Analytical Batch ID:**	I980922/6010A_AQU/145
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	1.6	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	11	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-23
Lab Sample ID: 98-07008
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980921/5030/512
SDG #:	980911-1271	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-07008	**Analytical Batch ID:**	I980921/8260A_AQU/351
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.78	86 - 115
Dibromofluoromethane	103.66	86 - 118
Toluene-d8	103.06	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980911-1271
Client Sample ID: MW-23
Lab Sample ID: 98-07008
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW
Batch Approval Date: 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-10
Lab Sample ID: 98-07009
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 5

Preparation Batch ID: P980922/5030/514
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980922/8260A_AQU/353
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	99	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	41	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	<25	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	220	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	<25	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980922/5030/514
SDG #:	980911-1271	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10		
Lab Sample ID:	98-07009	**Analytical Batch ID:**	I980922/8260A_AQU/353
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	<25	
o-Xylene	25	<25	
1,1-Dichloroethene	25	<25	
Acetone	500	<500	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	108.96	86 - 115
Dibromofluoromethane	109.70	86 - 118
Toluene-d8	102.98	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/23/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980911-1271
Client Sample ID: MW-10
Lab Sample ID: 98-07009
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: MW-22
Lab Sample ID: 98-07010
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	10	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P980921/5030/512
SDG #:	980911-1271	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-07010	**Analytical Batch ID:**	I980921/8260A_AQU/351
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.68	86 - 115
Dibromofluoromethane	108.84	86 - 118
Toluene-d8	101.20	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980911-1271
Client Sample ID: MW-22
Lab Sample ID: 98-07010
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	100	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW

Batch Approval Date: 09/23/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: EQ. BLANK
Lab Sample ID: 98-07011
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 09/22/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 980911-1271
Client Sample ID: EQ. BLANK
Lab Sample ID: 98-07011
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980921/5030/512
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I980921/8260A_AQU/351
Analyst: MITCHELLMR

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.02	86 - 115
Dibromofluoromethane	102.86	86 - 118
Toluene-d8	102.72	88 - 110

Batch Approved By: CROWELLSD

Batch Approval Date: 09/22/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 980911-1271
Client Sample ID: EQ. BLANK
Lab Sample ID: 98-07011
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P980922/3015/176
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I980922/6010A_AQU/145
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 09/23/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 980911-1271

Preparation Batch: P980922/7470A_PRE/98 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I980922/7470A_AQU/81 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: MAHANYWW - 9/23/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-24	98-07006	0.200	0.44	1	
MW-23d	98-07007	0.200	<0.20	1	
MW-23	98-07008	0.200	<0.20	1	
MW-10	98-07009	0.200	<0.20	1	
MW-22	98-07010	0.200	<0.20	1	
EQ. BLANK	98-07011	0.200	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # _____ | Page ____ of ____

Client: CDM | Address: 5400 Glenwood Ave. Suite 300 | SDG#: 980911-1271

Project Name: NORTH WAKE ASSESSMENT unlined | Raleigh, NC 27612 | TAT:

Project #: 6172-27910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260*	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other*	METALS: Filtered (Y/N)
MW-24	9/10/98	11:00	W	3	98070006			2											1	N
MW-23d	"	11:20	W	3	98070007			2											1	N
MW-23	"	11:15	N	3	98070008			2											1	N
MW-10	"	13:00	W	3	98070009			2											1	N
MW-22	"	13:15	W	3	98070010			2											1	N
EQ. Blank	"	8:45	W	3	98070011			2											1	N
Container Type:								√											P	
Preservative:								A											B	
Volume:								40ml											50	

A - HCl | B - HNO_3 | C - H_2SO_4 | D - NaOH | E - NaThio | F - Other | P - Plastic | G - Glass | V - Vial

Samples Received:
- Cooler Temperature: _____ °C
- Chilled/properly preserved? ☐ yes ☐ no
- In good condition? ☐ yes ☐ no
- Evidence of tampering? ☐ yes ☐ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew B. Coleman	9-10-98	15:00			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☑ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:
*8260 - DICHLORODIFLUOROMETHANE
*2 NORTH CAROLINA APPENDIX I plus Mercury

North Wake (UL) - CDM 014
8
SDG 980911-1271

Client: North Wake Unlined Landfill

Project: North Wake Unlined Additional Assessment

SDG: 981009-1421

Date: 10/26/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981009-1421	**Print Date:**	10/26/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	North Wake Unlined Additional Assessment	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

I981019/8260A_AQU/371; project requires lowest reporting limits for selected volatiles; the samples were analyzed if needed and reported for two separate component lists. Those samples which have estimated values (above the calibration range) are included in order to achieve necessary limits.

RESULT NOTES

98-07732 (Methylene chloride) (Toluene) E footnote: concentration exceeds calibration range; sample reanalyzed after dilution; both data sets reported.

98-07734 (Methylene chloride) E footnote: concentration exceeds calibration range; sample reanalyzed after dilution; both data sets reported

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH#48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-23d	10/06/98	10/09/98	98-07731	AQUEOUS
MW-24	10/06/98	10/09/98	98-07732	AQUEOUS
MW-23	10/06/98	10/09/98	98-07733	AQUEOUS
MW-10	10/06/98	10/09/98	98-07734	AQUEOUS
MW-22	10/06/98	10/09/98	98-07735	AQUEOUS
MW-32	10/06/98	10/09/98	98-07736	AQUEOUS

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1421	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23d		
Lab Sample ID:	98-07731	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	60	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23d		
Lab Sample ID:	98-07731	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	2.7	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.12	86 - 115
Dibromofluoromethane	117.70	86 - 118
Toluene-d8	99.50	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23d		
Lab Sample ID:	98-07731	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23d		
Lab Sample ID:	98-07731	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.12	86 - 115
Dibromofluoromethane	117.70	86 - 118
Toluene-d8	99.50	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1421	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-24		
Lab Sample ID:	98-07732	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-07732	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	9.9	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	23	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	7.6	
1,1-Dichloroethane	1.0	66	
1,2-Dichloroethane	1.0	1.6	
cis-1,2-Dichloroethene	1.0	22	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	28	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	210	E
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	14	
Toluene	1.0	150	E
1,1,1-Trichloroethane	1.0	7.7	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	14	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	74	
o-Xylene	1.0	31	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	92.24	86 - 115
Dibromofluoromethane	103.34	86 - 118
Toluene-d8	93.86	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-07732	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Benzene	2.5	8.3	
Bromodichloromethane	2.5	<2.5	
Bromoform	2.5	<2.5	
Bromomethane	12	<12	
2-Butanone	50	<50	
Carbon disulfide	12	<12	
Carbon tetrachloride	2.5	<2.5	
Chlorobenzene	2.5	<2.5	
Chloroethane	12	17	
Chloroform	12	<12	
Chloromethane	12	<12	
Dibromochloromethane	2.5	<2.5	
1,2-Dichlorobenzene	2.5	<2.5	
1,3-Dichlorobenzene	2.5	<2.5	
1,4-Dichlorobenzene	2.5	7.3	
1,1-Dichloroethane	2.5	57	
1,2-Dichloroethane	2.5	<2.5	
cis-1,2-Dichloroethene	2.5	19	
trans-1,2-Dichloroethene	2.5	<2.5	
1,2-Dichloropropane	2.5	<2.5	
cis-1,3-Dichloropropene	2.5	<2.5	
trans-1,3-Dichloropropene	2.5	<2.5	
Ethylbenzene	2.5	22	
2-Hexanone	50	<50	
4-Methyl-2-pentanone	50	<50	
Methylene chloride	12	240	
Styrene	2.5	<2.5	
1,1,2,2-Tetrachloroethane	2.5	<2.5	
Tetrachloroethene	2.5	8.4	
Toluene	2.5	160	
1,1,1-Trichloroethane	2.5	4.6	
1,1,2-Trichloroethane	2.5	<2.5	
Trichloroethene	2.5	10	
Vinyl chloride	2.5	<2.5	
m- and p-Xylenes	2.5	69	
o-Xylene	2.5	30	
1,1-Dichloroethene	2.5	<2.5	
Acetone	50	<50	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.02	86 - 115
Dibromofluoromethane	108.80	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-07732	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	500	<500	
Benzene	12	<12	
Bromochloromethane	12	<12	
Bromodichloromethane	12	<12	
Bromoform	12	<12	
Bromomethane	25	<25	
2-Butanone	250	<250	
Carbon disulfide	250	<250	
Carbon tetrachloride	25	<25	
Chlorobenzene	12	<12	
Chloroethane	25	<25	
Chloroform	12	<12	
Chloromethane	25	<25	
1,2-Dibromo-3-chloropropane	62	<62	
1,2-Dibromoethane	12	<12	
Dibromochloromethane	12	<12	
Dibromomethane	25	<25	
1,2-Dichlorobenzene	12	<12	
1,4-Dichlorobenzene	12	<12	
trans-1,4-Dichloro-2-butene	250	<250	
Dichlorodifluoromethane	12	<12	
1,1-Dichloroethane	12	57	
1,2-Dichloroethane	12	<12	
cis-1,2-Dichloroethene	12	19	
trans-1,2-Dichloroethene	12	<12	
1,2-Dichloropropane	12	<12	
cis-1,3-Dichloropropene	25	<25	
trans-1,3-Dichloropropene	25	<25	
Ethylbenzene	12	22	
2-Hexanone	120	<120	
Iodomethane	25	<25	
4-Methyl-2-pentanone	250	<250	
Methylene chloride	25	240	
Styrene	25	<25	
1,1,1,2-Tetrachloroethane	12	<12	
1,1,2,2-Tetrachloroethane	12	<12	
Tetrachloroethene	12	<12	
Toluene	12	160	
1,1,1-Trichloroethane	12	<12	
1,1,2-Trichloroethane	12	<12	
Trichloroethene	12	<12	
Trichlorofluoromethane	12	<12	
1,2,3-Trichloropropane	38	<38	
Vinyl acetate	120	<120	
Vinyl chloride	25	<25	
m- and p-Xylenes	12	69	
o-Xylene	12	30	
1,1-Dichloroethene	12	<12	
Acetone	250	<250	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-24		
Lab Sample ID:	98-07732	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	2.5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.02	86 - 115
Dibromofluoromethane	108.80	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1421	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23		
Lab Sample ID:	98-07733	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.6	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-07733	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	4.8	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	1.1	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.50	86 - 115
Dibromofluoromethane	108.72	86 - 118
Toluene-d8	91.40	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-07733	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-23		
Lab Sample ID:	98-07733	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.50	86 - 115
Dibromofluoromethane	108.72	86 - 118
Toluene-d8	91.40	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1421	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-10		
Lab Sample ID:	98-07734	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.2	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10		
Lab Sample ID:	98-07734	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	6.6	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	16	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	5.8	
1,1-Dichloroethane	1.0	100	
1,2-Dichloroethane	1.0	2.2	
cis-1,2-Dichloroethene	1.0	45	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	2.3	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	230	E
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	15	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	16	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	2.1	
o-Xylene	1.0	11	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.90	86 - 115
Dibromofluoromethane	107.12	86 - 118
Toluene-d8	98.36	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981021/5030/549
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10		
Lab Sample ID:	98-07734	**Analytical Batch ID:**	I981021/8260A_AQU/373
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
Benzene	5.0	7.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	25	<25	
2-Butanone	100	<100	
Carbon disulfide	25	<25	
Carbon tetrachloride	5.0	<5.0	
Chlorobenzene	5.0	<5.0	
Chloroethane	25	<25	
Chloroform	25	<25	
Chloromethane	25	<25	
Dibromochloromethane	5.0	<5.0	
1,2-Dichlorobenzene	5.0	<5.0	
1,3-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	6.1	
1,1-Dichloroethane	5.0	110	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	46	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	5.0	<5.0	
trans-1,3-Dichloropropene	5.0	<5.0	
Ethylbenzene	5.0	<5.0	
2-Hexanone	100	<100	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	25	260	
Styrene	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	14	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	16	
Vinyl chloride	5.0	<5.0	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	11	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	100.64	86 - 115
Dibromofluoromethane	102.68	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981021/5030/549
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10		
Lab Sample ID:	98-07734	**Analytical Batch ID:**	I981021/8260A_AQU/373
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	1000	<1000	
Benzene	25	<25	
Bromochloromethane	25	<25	
Bromodichloromethane	25	<25	
Bromoform	25	<25	
Bromomethane	50	<50	
2-Butanone	500	<500	
Carbon disulfide	500	<500	
Carbon tetrachloride	50	<50	
Chlorobenzene	25	<25	
Chloroethane	50	<50	
Chloroform	25	<25	
Chloromethane	50	<50	
1,2-Dibromo-3-chloropropane	120	<120	
1,2-Dibromoethane	25	<25	
Dibromochloromethane	25	<25	
Dibromomethane	50	<50	
1,2-Dichlorobenzene	25	<25	
1,4-Dichlorobenzene	25	<25	
trans-1,4-Dichloro-2-butene	500	<500	
Dichlorodifluoromethane	25	<25	
1,1-Dichloroethane	25	110	
1,2-Dichloroethane	25	<25	
cis-1,2-Dichloroethene	25	46	
trans-1,2-Dichloroethene	25	<25	
1,2-Dichloropropane	25	<25	
cis-1,3-Dichloropropene	50	<50	
trans-1,3-Dichloropropene	50	<50	
Ethylbenzene	25	<25	
2-Hexanone	250	<250	
Iodomethane	50	<50	
4-Methyl-2-pentanone	500	<500	
Methylene chloride	50	260	
Styrene	50	<50	
1,1,1,2-Tetrachloroethane	25	<25	
1,1,2,2-Tetrachloroethane	25	<25	
Tetrachloroethene	25	<25	
Toluene	25	<25	
1,1,1-Trichloroethane	25	<25	
1,1,2-Trichloroethane	25	<25	
Trichloroethene	25	<25	
Trichlorofluoromethane	25	<25	
1,2,3-Trichloropropane	75	<75	
Vinyl acetate	250	<250	
Vinyl chloride	50	<50	
m- and p-Xylenes	25	<25	
o-Xylene	25	<25	
1,1-Dichloroethene	25	<25	
Acetone	500	<500	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981021/5030/549
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-10		
Lab Sample ID:	98-07734	**Analytical Batch ID:**	I981021/8260A_AQU/373
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	100.64	86 - 115
Dibromofluoromethane	102.68	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/21/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1421	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-22		
Lab Sample ID:	98-07735	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	99	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-07735	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	9.2	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	4.1	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	2.5	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.36	86 - 115
Dibromofluoromethane	103.34	86 - 118
Toluene-d8	88.12	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-07735	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	9.2	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-22		
Lab Sample ID:	98-07735	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.36	86 - 115
Dibromofluoromethane	103.34	86 - 118
Toluene-d8	88.12	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-07736	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	10	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.30	86 - 115
Dibromofluoromethane	109.90	86 - 118
Toluene-d8	94.32	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-07736	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981019/5030/547
SDG #:	981009-1421	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-32		
Lab Sample ID:	98-07736	**Analytical Batch ID:**	I981019/8260A_AQU/371
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.30	86 - 115
Dibromofluoromethane	109.90	86 - 118
Toluene-d8	94.32	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981009-1421

Preparation Batch: P981019/7470A_PRE/106 **Prep. Analyst:** HILLSP

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I981019/7470A_AQU/88 **Analyst:** HILLSP **Units:** ug/L

Reviewed By - Date: MAHANYWW - 10/19/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-23d	98-07731	0.20	0.22	1	
MW-24	98-07732	0.20	0.98	1	
MW-23	98-07733	0.20	0.26	1	
MW-10	98-07734	0.20	<0.20	1	
MW-22	98-07735	0.20	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # _____ | Page 1 of 1

Client: CDM - RALEIGH | Address: 5400 Glenwood Ave Suite 300 | SDG#: 9810004 - 1421 9#23094

Project Name: NORTH WAKE UNLINED ADD'L ASSESSMENT | Raleigh, NC 27612 | TAT: Northwake UL CDM - 016

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5750 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260*	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other*	METALS: Filtered (Y/N)	OTHER
MW-23d	10-6-98	9:30	W	3	9807731			2											1	N	
MW-24	10-6-98	9:45	W	3	7732			2											1	N	
MW-23	10-6-98	10:00	W	3	7733			2											1	N	
MW-10	10-6-98	11:30	W	3	7734			2											1	N	
MW-22	10-6-98	11:40	W	3	7735			2											1	N	
MW-32	10-6-98	14:00	W	3	7736			2										*1	(1)	N	
Container Type:								V											P		
Preservative:								A											B		
Volume:								40ml											500		

A - HCl | B - HNO_3 | C - H_2SO_4 | D - NaOH | E - NaThio | F - Other | P - Plastic | G - Glass | V - Vial

Samples Received:
- Cooler Temperature: ONICE °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew J. Colvo	10-6-98	16:00	R Kelly	10/8	
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☐ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

*1 NORTH CAROLINA APPENDIX I PLUS DICHLORODIFLUOROMETHANE (Benzene, TCE, PCE detection limits of 1 for all samples)

*2 NORTH CAROLINA APPENDIX I PLUS MERCURY * container lid fell off in transport

Client: North Wake Unlined Landfill

Project: North Wake Unlined Additional

SDG: 981009-1420

Date: 10/28/98

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981009-1420	**Print Date:**	10/28/98
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	North Wake Unlined Additional Assessment	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

NOTE

In order to meet project requirements VOA data was processed twice;

1.) as the standard NC Appendix I list; nominal reporting limit of 5.0 ug/L,
2.) as the standard CDM VOA list with a nominal reporting limit of 1.0 ug/L

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48, VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-31d	10/07/98	10/09/98	98-07723	AQUEOUS
MW-31	10/07/98	10/09/98	98-07724	AQUEOUS
TB-1A	10/07/98	10/09/98	98-07725	AQUEOUS
MW-30	10/07/98	10/09/98	98-07726	AQUEOUS
MW-29d	10/07/98	10/09/98	98-07727	AQUEOUS
MW-28	10/07/98	10/09/98	98-07728	AQUEOUS
MW-28d	10/07/98	10/09/98	98-07729	AQUEOUS
Duplicate	10/07/98	10/09/98	98-07730	AQUEOUS

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31d		
Lab Sample ID:	98-07723	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.2	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31d		
Lab Sample ID:	98-07723	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 981009-1420
Client Sample ID: MW-31d
Lab Sample ID: 98-07723
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P981020/5030/548
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I981020/8260A_AQU/372
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.00	86 - 115
Dibromofluoromethane	106.86	86 - 118
Toluene-d8	93.26	88 - 110

Batch Approved By: CROWELLSD
Batch Approval Date: 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31d		
Lab Sample ID:	98-07723	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.00	86 - 115
Dibromofluoromethane	106.86	86 - 118
Toluene-d8	93.26	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31		
Lab Sample ID:	98-07724	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.8	
Chromium	10	10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-07724	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 981009-1420
Client Sample ID: MW-31
Lab Sample ID: 98-07724
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P981020/5030/548
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I981020/8260A_AQU/372
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.60	86 - 115
Dibromofluoromethane	106.08	86 - 118
Toluene-d8	96.46	88 - 110

Batch Approved By: CROWELLSD

Batch Approval Date: 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-31		
Lab Sample ID:	98-07724	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.60	86 - 115
Dibromofluoromethane	106.08	86 - 118
Toluene-d8	96.46	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	TB-1A		
Lab Sample ID:	98-07725	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	4.0	
Chromium	10	17	
Cobalt	10	14	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1A		
Lab Sample ID:	98-07725	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	17	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	35	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	16	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	8.2	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	11	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	7.1	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	13	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:
SDG #: 981009-1420
Client Sample ID: TB-1A
Lab Sample ID: 98-07725
Matrix: AQUEOUS
Units: %
Dilution Factor: 1

Preparation Batch ID: P981020/5030/548
Prep. Analyst: MITCHELLMR

Analytical Batch ID: I981020/8260A_AQU/372
Analyst: MITCHELLMR

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.18	86 - 115
Dibromofluoromethane	105.84	86 - 118
Toluene-d8	91.00	88 - 110

Batch Approved By: CROWELLSD

Batch Approval Date: 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	TB-1A		
Lab Sample ID:	98-07725	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	2.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	17	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	35	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	16	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	8.2	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	11	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	7.1	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	13	
o-Xylene	1.0	1.8	
1,1-Dichloroethene	1.0	1.3	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	96.18	86 - 115
Dibromofluoromethane	105.84	86 - 118
Toluene-d8	91.00	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-30		
Lab Sample ID:	98-07726	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.1	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-07726	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-07726	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	97.46	86 - 115
Dibromofluoromethane	109.02	86 - 118
Toluene-d8	92.38	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-30		
Lab Sample ID:	98-07726	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	97.46	86 - 115
Dibromofluoromethane	109.02	86 - 118
Toluene-d8	92.38	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-29d		
Lab Sample ID:	98-07727	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.7	
Chromium	10	18	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	53	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-07727	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-07727	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.22	86 - 115
Dibromofluoromethane	112.16	86 - 118
Toluene-d8	96.72	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-29d		
Lab Sample ID:	98-07727	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	98.22	86 - 115
Dibromofluoromethane	112.16	86 - 118
Toluene-d8	96.72	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28		
Lab Sample ID:	98-07728	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	8.8	
Chromium	10	43	
Cobalt	10	24	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	80	
Zinc	50	150	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-07728	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-07728	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	103.44	86 - 115
Dibromofluoromethane	108.22	86 - 118
Toluene-d8	101.02	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28		
Lab Sample ID:	98-07728	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	103.44	86 - 115
Dibromofluoromethane	108.22	86 - 118
Toluene-d8	101.02	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28d		
Lab Sample ID:	98-07729	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-07729	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-07729	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.54	86 - 115
Dibromofluoromethane	115.92	86 - 118
Toluene-d8	94.20	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	MW-28d		
Lab Sample ID:	98-07729	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	<1.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	<5.0	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	<1.0	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	<5.0	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	<1.0	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	<1.0	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	<1.0	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	<1.0	
o-Xylene	1.0	<1.0	
1,1-Dichloroethene	1.0	<1.0	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	101.54	86 - 115
Dibromofluoromethane	115.92	86 - 118
Toluene-d8	94.20	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981019/3015/185
SDG #:	981009-1420	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	Duplicate		
Lab Sample ID:	98-07730	**Analytical Batch ID:**	I981019/6010A_AQU/152
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.1	
Chromium	10	<10	
Cobalt	10	14	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 10/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Duplicate		
Lab Sample ID:	98-07730	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	17	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	33	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	16	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	8.3	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	11	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	7.2	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	17	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Duplicate		
Lab Sample ID:	98-07730	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	93.32	86 - 115
Dibromofluoromethane	105.50	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981020/5030/548
SDG #:	981009-1420	**Prep. Analyst:**	MITCHELLMR
Client Sample ID:	Duplicate		
Lab Sample ID:	98-07730	**Analytical Batch ID:**	I981020/8260A_AQU/372
Matrix:	AQUEOUS	**Analyst:**	MITCHELLMR
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Benzene	1.0	2.0	
Bromodichloromethane	1.0	<1.0	
Bromoform	1.0	<1.0	
Bromomethane	5.0	<5.0	
2-Butanone	20	<20	
Carbon disulfide	5.0	<5.0	
Carbon tetrachloride	1.0	<1.0	
Chlorobenzene	1.0	<1.0	
Chloroethane	5.0	17	
Chloroform	5.0	<5.0	
Chloromethane	5.0	<5.0	
Dibromochloromethane	1.0	<1.0	
1,2-Dichlorobenzene	1.0	<1.0	
1,3-Dichlorobenzene	1.0	<1.0	
1,4-Dichlorobenzene	1.0	<1.0	
1,1-Dichloroethane	1.0	33	
1,2-Dichloroethane	1.0	<1.0	
cis-1,2-Dichloroethene	1.0	<1.0	
trans-1,2-Dichloroethene	1.0	<1.0	
1,2-Dichloropropane	1.0	<1.0	
cis-1,3-Dichloropropene	1.0	<1.0	
trans-1,3-Dichloropropene	1.0	<1.0	
Ethylbenzene	1.0	<1.0	
2-Hexanone	20	<20	
4-Methyl-2-pentanone	20	<20	
Methylene chloride	5.0	16	
Styrene	1.0	<1.0	
1,1,2,2-Tetrachloroethane	1.0	<1.0	
Tetrachloroethene	1.0	8.3	
Toluene	1.0	<1.0	
1,1,1-Trichloroethane	1.0	11	
1,1,2-Trichloroethane	1.0	<1.0	
Trichloroethene	1.0	7.2	
Vinyl chloride	1.0	<1.0	
m- and p-Xylenes	1.0	17	
o-Xylene	1.0	2.0	
1,1-Dichloroethene	1.0	1.4	
Acetone	20	<20	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	93.32	86 - 115
Dibromofluoromethane	105.50	86 - 118
Toluene-d8	97.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 10/20/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981009-1420

Preparation Batch: P981019/7470A_PRE/106 **Prep. Analyst:** HILLSP

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I981019/7470A_AQU/88 **Analyst:** HILLSP **Units:** ug/L

Reviewed By - Date: MAHANYWW - 10/19/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-31d	98-07723	0.20	<0.20	1	
MW-31	98-07724	0.20	<0.20	1	
TB-1A	98-07725	0.20	<0.20	1	
MW-30	98-07726	0.20	<0.20	1	
MW-29d	98-07727	0.20	<0.20	1	
MW-28	98-07728	0.20	<0.20	1	
MW-28d	98-07729	0.20	<0.20	1	
Duplicate	98-07730	0.20	<0.20	1	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # _____ | Page ____ of

Client: CDM | Address: 5400 Glenwood Ave Suite 300 | SDG#: 981009-1420 q# 2305

Project Name: NORTH WAKE UNLINED ADDTNL ASSESSMENT Raleigh, NC 27612 | TAT: North Wake UL CDM CIS

Project #: 6172-22910 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: TIM GRANT | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260 *	VOA Other	SEMI VOA 525	SEMI VOA 625/8270 A, B/N, AB/N	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other *	METALS Filtered (Y/N)	OTHER
MW-31d	10-7-98	11:45	W	3	9807723 ✓			2											(*2)	N	
MW-31	10-7-98	11:50	W	3	7724 ✓			2											1	N	
TB-1A	10-7-98	0:15	W	3	7725 ✓			2											1	N	
MW-30	10-7-98	12:15	W	3	7726 ✓			2											1	N	
MW-29d	10-7-98	14:05	W	3	7727 ✓			2											1	N	
MW-28	10-7-98	17:10	W	3	7728 ✓			2											1	N	
MW-28d	10-7-98	17:15	W	3	7729 ✓			2											1	N	
Duplicate	10-7-98	12:15	W	3	7730			2											1	N	
								V											P		
								A											B		
								40ml											.5L		

A - HCl | D - NaOH | P - Plastic | Container Type:

B - HNO_3 | E - NaThio | G - Glass | Preservative:

C - H_2SO_4 | F - Other | V - Vial | Volume:

Samples Received:
- Cooler Temperature: MLC/C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:

Fax Results	☐
State Forms	☐
SMART Report	☐
Disk Deliverable	☐
(_____) TICS	☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matthew Colone	10-7-98	18:20	R Kelly	10/9	
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: | Custody Seal#: | Method of Shipment: ☐ Courier ☐ Airborne ☐ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

*1 NORTH CAROLINA APPENDIX I PLUS DICHLORODIFLUOROMETHANE (USE DETECTION LIMITS OF 1 FOR BENZENE, TCE, & PCE) degradation products

*2 NORTH CAROLINA APPENDIX I PLUS MERCURY

Client: North Wake Unlined Landfill

Project: Semi-Annual

SDG: 981204-1639

Date: 1/4/99

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981204-1639	**Print Date:**	1/4/99
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Semi-Annual	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

I981211/8260A_AQU/406

MS98-08646 spike recoveries should be divided by 2.5 (required dilution factor not correctly employed); all % recoveries are within limits when proerly calculated.

RESULT NOTES

98-08649 (Thallium) QC; Post-digest spike performed on this sample was outside of 80-120% R criteria - analyte recovery issue is considered to be matrix-related, not related to sample preparation.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
Trip Blank	11/05/98	12/04/98	98-08650	AQUEOUS
MW-7	12/03/98	12/04/98	98-08643	AQUEOUS
MW-8	12/03/98	12/04/98	98-08644	AQUEOUS
MW-9	12/03/98	12/04/98	98-08645	AQUEOUS
MW-10	12/03/98	12/04/98	98-08646	AQUEOUS
MW-5	12/03/98	12/04/98	98-08647	AQUEOUS
MW-6	12/03/98	12/04/98	98-08648	AQUEOUS
MW-22	12/03/98	12/04/98	98-08649	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-7		
Lab Sample ID:	98-08643	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	7.2	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	32	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	20	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	36	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	12	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	5.2	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-7		
Lab Sample ID:	98-08643	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.92	86 - 115
Dibromofluoromethane	118.16	86 - 118
Toluene-d8	105.22	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-7		
Lab Sample ID:	98-08643	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.3	<5.3	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	77.24	43 - 116
4-Terphenyl-d14	79.66	33 - 141
Nitrobenzene-d5	81.96	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-7		
Lab Sample ID:	98-08643	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.6	
Chromium	10	15	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-8		
Lab Sample ID:	98-08644	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	7.9	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	37	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	5.2	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-8		
Lab Sample ID:	98-08644	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	99.34	86 - 115
Dibromofluoromethane	94.58	86 - 118
Toluene-d8	105.10	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-8		
Lab Sample ID:	98-08644	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	73.65	43 - 116
4-Terphenyl-d14	82.11	33 - 141
Nitrobenzene-d5	82.09	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-8		
Lab Sample ID:	98-08644	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.2	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-9		
Lab Sample ID:	98-08645	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	2		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	400	<400	
Benzene	10	14	
Bromochloromethane	10	<10	
Bromodichloromethane	10	<10	
Bromoform	10	<10	
Bromomethane	20	<20	
2-Butanone	200	<200	
Carbon disulfide	200	<200	
Carbon tetrachloride	20	<20	
Chlorobenzene	10	<10	
Chloroethane	20	<20	
Chloroform	10	<10	
Chloromethane	20	<20	
1,2-Dibromo-3-chloropropane	50	<50	
1,2-Dibromoethane	10	<10	
Dibromochloromethane	10	<10	
Dibromomethane	20	<20	
1,2-Dichlorobenzene	10	<10	
1,4-Dichlorobenzene	10	<10	
trans-1,4-Dichloro-2-butene	200	<200	
Dichlorodifluoromethane	10	53	
1,1-Dichloroethane	10	200	
1,2-Dichloroethane	10	<10	
cis-1,2-Dichloroethene	10	<10	
trans-1,2-Dichloroethene	10	<10	
1,2-Dichloropropane	10	<10	
cis-1,3-Dichloropropene	20	<20	
trans-1,3-Dichloropropene	20	<20	
Ethylbenzene	10	<10	
2-Hexanone	100	<100	
Iodomethane	20	<20	
4-Methyl-2-pentanone	200	<200	
Methylene chloride	20	<20	
Styrene	20	<20	
1,1,1,2-Tetrachloroethane	10	<10	
1,1,2,2-Tetrachloroethane	10	<10	
Tetrachloroethene	10	13	
Toluene	10	<10	
1,1,1-Trichloroethane	10	<10	
1,1,2-Trichloroethane	10	<10	
Trichloroethene	10	31	
Trichlorofluoromethane	10	<10	
1,2,3-Trichloropropane	30	<30	
Vinyl acetate	100	<100	
Vinyl chloride	20	<20	
m- and p-Xylenes	10	<10	
o-Xylene	10	<10	
1,1-Dichloroethene	10	<10	
Acetone	200	<200	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-9		
Lab Sample ID:	98-08645	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	2		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.66	86 - 115
Dibromofluoromethane	107.86	86 - 118
Toluene-d8	104.24	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-9		
Lab Sample ID:	98-08645	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.3	20	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	68.33	43 - 116
4-Terphenyl-d14	76.90	33 - 141
Nitrobenzene-d5	72.71	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-9		
Lab Sample ID:	98-08645	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.5	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-10		
Lab Sample ID:	98-08646	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	500	<500	
Benzene	12	<12	
Bromochloromethane	12	<12	
Bromodichloromethane	12	<12	
Bromoform	12	<12	
Bromomethane	25	<25	
2-Butanone	250	<250	
Carbon disulfide	250	<250	
Carbon tetrachloride	25	<25	
Chlorobenzene	12	<12	
Chloroethane	25	<25	
Chloroform	12	<12	
Chloromethane	25	<25	
1,2-Dibromo-3-chloropropane	62	<62	
1,2-Dibromoethane	12	<12	
Dibromochloromethane	12	<12	
Dibromomethane	25	<25	
1,2-Dichlorobenzene	12	<12	
1,4-Dichlorobenzene	12	<12	
trans-1,4-Dichloro-2-butene	250	<250	
Dichlorodifluoromethane	12	<12	
1,1-Dichloroethane	12	140	
1,2-Dichloroethane	12	<12	
cis-1,2-Dichloroethene	12	48	
trans-1,2-Dichloroethene	12	<12	
1,2-Dichloropropane	12	<12	
cis-1,3-Dichloropropene	25	<25	
trans-1,3-Dichloropropene	25	<25	
Ethylbenzene	12	<12	
2-Hexanone	120	<120	
Iodomethane	25	<25	
4-Methyl-2-pentanone	250	<250	
Methylene chloride	25	270	
Styrene	25	<25	
1,1,1,2-Tetrachloroethane	12	<12	
1,1,2,2-Tetrachloroethane	12	<12	
Tetrachloroethene	12	16	
Toluene	12	<12	
1,1,1-Trichloroethane	12	<12	
1,1,2-Trichloroethane	12	<12	
Trichloroethene	12	19	
Trichlorofluoromethane	12	<12	
1,2,3-Trichloropropane	38	<38	
Vinyl acetate	120	<120	
Vinyl chloride	25	<25	
m- and p-Xylenes	12	<12	
o-Xylene	12	12	
1,1-Dichloroethene	12	<12	
Acetone	250	<250	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-10		
Lab Sample ID:	98-08646	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	2.5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.10	86 - 115
Dibromofluoromethane	107.54	86 - 118
Toluene-d8	104.40	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-10		
Lab Sample ID:	98-08646	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	<5.1	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	76.00	43 - 116
4-Terphenyl-d14	80.02	33 - 141
Nitrobenzene-d5	80.72	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-10		
Lab Sample ID:	98-08646	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-5		
Lab Sample ID:	98-08647	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	7.9	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	20	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	6.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	10	
1,1-Dichloroethane	5.0	74	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	15	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	79	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	11	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	17	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	6.5	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-5		
Lab Sample ID:	98-08647	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	102.12	86 - 115
Dibromofluoromethane	103.32	86 - 118
Toluene-d8	105.10	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-5		
Lab Sample ID:	98-08647	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	72.21	43 - 116
4-Terphenyl-d14	78.11	33 - 141
Nitrobenzene-d5	78.85	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-5		
Lab Sample ID:	98-08647	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.5	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-6		
Lab Sample ID:	98-08648	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	2		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	400	<400	
Benzene	10	<10	
Bromochloromethane	10	<10	
Bromodichloromethane	10	<10	
Bromoform	10	<10	
Bromomethane	20	<20	
2-Butanone	200	<200	
Carbon disulfide	200	<200	
Carbon tetrachloride	20	<20	
Chlorobenzene	10	<10	
Chloroethane	20	26	
Chloroform	10	<10	
Chloromethane	20	<20	
1,2-Dibromo-3-chloropropane	50	<50	
1,2-Dibromoethane	10	<10	
Dibromochloromethane	10	<10	
Dibromomethane	20	<20	
1,2-Dichlorobenzene	10	<10	
1,4-Dichlorobenzene	10	<10	
trans-1,4-Dichloro-2-butene	200	<200	
Dichlorodifluoromethane	10	<10	
1,1-Dichloroethane	10	40	
1,2-Dichloroethane	10	<10	
cis-1,2-Dichloroethene	10	14	
trans-1,2-Dichloroethene	10	<10	
1,2-Dichloropropane	10	<10	
cis-1,3-Dichloropropene	20	<20	
trans-1,3-Dichloropropene	20	<20	
Ethylbenzene	10	<10	
2-Hexanone	100	<100	
Iodomethane	20	<20	
4-Methyl-2-pentanone	200	<200	
Methylene chloride	20	180	
Styrene	20	<20	
1,1,1,2-Tetrachloroethane	10	<10	
1,1,2,2-Tetrachloroethane	10	<10	
Tetrachloroethene	10	<10	
Toluene	10	<10	
1,1,1-Trichloroethane	10	<10	
1,1,2-Trichloroethane	10	<10	
Trichloroethene	10	19	
Trichlorofluoromethane	10	<10	
1,2,3-Trichloropropane	30	<30	
Vinyl acetate	100	<100	
Vinyl chloride	20	<20	
m- and p-Xylenes	10	<10	
o-Xylene	10	<10	
1,1-Dichloroethene	10	<10	
Acetone	200	<200	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/608
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-6		
Lab Sample ID:	98-08648	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	2		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	105.28	86 - 115
Dibromofluoromethane	109.46	86 - 118
Toluene-d8	104.74	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-6		
Lab Sample ID:	98-08648	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	64.44	43 - 116
4-Terphenyl-d14	68.75	33 - 141
Nitrobenzene-d5	68.49	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-6		
Lab Sample ID:	98-08648	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.4	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-22		
Lab Sample ID:	98-08649	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	8.6	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-22		
Lab Sample ID:	98-08649	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.22	86 - 115
Dibromofluoromethane	102.30	86 - 118
Toluene-d8	107.08	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981204-1639	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-22		
Lab Sample ID:	98-08649	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.4	<5.4	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	66.04	43 - 116
4-Terphenyl-d14	70.19	33 - 141
Nitrobenzene-d5	72.18	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981210/3015/208
SDG #:	981204-1639	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-22		
Lab Sample ID:	98-08649	**Analytical Batch ID:**	I981211/6010A_AQU/174
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.9	
Chromium	10	<10	
Cobalt	10	130	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/15/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-08650	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/607
SDG #:	981204-1639	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-08650	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	110.98	86 - 115
Dibromofluoromethane	111.74	86 - 118
Toluene-d8	105.24	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **981204-1639**

Preparation Batch: P981210/7470A_PRE/119 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I981210/7470A_AQU/98 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: MAHANYWW - 12/15/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-7	98-08643	0.20	0.25	1	
MW-8	98-08644	0.20	<0.20	1	
MW-9	98-08645	0.20	<0.20	1	
MW-10	98-08646	0.20	<0.20	1	
MW-5	98-08647	0.20	<0.20	1	
MW-6	98-08648	0.20	0.81	1	
MW-22	98-08649	0.20	<0.20	1	

Component Name: Chloride **EPA Method #:** EPA 325.2 **Matrix:** AQUEOUS

Analytical Batch: I981214/325.2_AQU/39 **Analyst:** BAKERPJ **Units:** mg/L

Reviewed By - Date: MAHANYWW - 12/15/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-7	98-08643	1.0	11	1	
MW-8	98-08644	1.0	7.3	1	
MW-9	98-08645	1.0	15	1	
MW-10	98-08646	1.0	6.8	1	
MW-5	98-08647	1.0	5.6	1	
MW-6	98-08648	1.0	6.8	1	
MW-22	98-08649	1.0	3.8	1	

Chain of Custody

CDM Analytical Laboratory
840 Memorial Drive
Cambridge, MA 02139
Phone: (617) 354-4448
Fax: (617) 354-0764

Field Log # _____ Page 1 of 1

Client: CDM
Address: 5400 Glenwood Ave Ste 300 Raleigh, NC 27612
SDG#: 981204-1639 gH2528
Project Name: NORTH WAKE UNLINED - SEMI-ANNUAL
TAT:
Project #: 6172-20454
Phone: (919) 787-5620
TAT Approved by:
Contact: TIM GRANT
Fax #: (919) 781-5730
Lab Acct. #:
Report to: TIM GRANT
Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260 *1	VOA Other	SEMI VOA 525	SEMI VOA 625/8270 A, B/N, AB/N *2	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other *3	METALS Filtered (Y/N)	OTHER Chlorides						
MW-7	12-3-98	16:00	W	5	98-08643			2			1								1	N	1						
MW-8	12-3-98	15:30	W	5	98-08644			2			1								1	N	1						
MW-9	12-3-98	13:00	W	5	98-08645			2			1								1	N	1						
MW-10	12-3-98	11:40	W	5	98-08646			2			1								1	N	1						
MW-5	12-3-98	15:00	W	5	98-08647			2			1								1	N	1						
MW-6	12-3-98	14:30	W	5	98-08648			2			1								1	N	1						
MW-22	12-3-98	12:40	W	5	98-08649			2			1								1	N	1						
TRIP BLANK	11/5/98		W	2	98-08650																						

A - HCl	D - NaOH	P - Plastic	Container Type:			V			G								P		P						
B - HNO_3	E - NaThio	G - Glass	Preservative:			A			-								B		-						
C - H_2SO_4	F - Other	V - Vial	Volume:			40ml			1l								5l		1l						

Samples Received:
- Cooler Temperature: on ice °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Michael Cohen	12-3-98	12-3-98	[signature]	12/4/98	1030
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: 804817005628 Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:
*1 8260 + dichlorodifluoromethane
*2 BIS(2-ethylhexl)phthalate
*3 NORTH CAROLINA APPENDIX I plus Mercury

North Wake (UL) - CDM - 017

Client: North Wake Unlined Landfill

Project: Unlined Assessment

SDG: 981208-1652

Date: 1/5/99

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981208-1652	**Print Date:**	1/5/99
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Unlined Assessment	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

BATCH NOTES

VOA: I981211/8260A_AQU/406; MS98-08646 spike recoveries should be divided by 2.5. All % recoveries are within limits, note correction of dividing by 2.5 needed.

SVOA: P981214/3510_8270/81; Sample MW-30 (98-08714) formed an emulsion during extraction for semivolatiles.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
Trip Blank	11/05/98	12/08/98	98-08716	AQUEOUS
MW-33	12/07/98	12/08/98	98-08709	AQUEOUS
MW-34	12/07/98	12/08/98	98-08710	AQUEOUS
MW-34d	12/07/98	12/08/98	98-08711	AQUEOUS
MW-35	12/07/98	12/08/98	98-08712	AQUEOUS
MW-27	12/07/98	12/08/98	98-08713	AQUEOUS
MW-30	12/07/98	12/08/98	98-08714	AQUEOUS
MW-32	12/07/98	12/08/98	98-08715	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-33		
Lab Sample ID:	98-08709	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-33		
Lab Sample ID:	98-08709	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	102.66	86 - 115
Dibromofluoromethane	111.04	86 - 118
Toluene-d8	103.14	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-33		
Lab Sample ID:	98-08709	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	67.47	43 - 116
4-Terphenyl-d14	72.01	33 - 141
Nitrobenzene-d5	71.58	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981208-1652
Client Sample ID: MW-33
Lab Sample ID: 98-08709
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/3015/210
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981217/6010A_AQU/176
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	2.7	
Chromium	10	18	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW

Batch Approval Date: 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-34		
Lab Sample ID:	98-08710	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981208-1652
Client Sample ID: MW-34
Lab Sample ID: 98-08710
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981211/5030/608
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981211/8260A_AQU/406
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	106.90	86 - 115
Dibromofluoromethane	111.96	86 - 118
Toluene-d8	102.06	88 - 110

Batch Approved By: CROWELLSD

Batch Approval Date: 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-34		
Lab Sample ID:	98-08710	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	64.21	43 - 116
4-Terphenyl-d14	69.33	33 - 141
Nitrobenzene-d5	68.97	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981208-1652
Client Sample ID: MW-34
Lab Sample ID: 98-08710
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/3015/210
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981217/6010A_AQU/176
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	2.2	
Chromium	10	14	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	59	

Batch Approved By: MAHANYWW

Batch Approval Date: 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-34d		
Lab Sample ID:	98-08711	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/607
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-34d		
Lab Sample ID:	98-08711	**Analytical Batch ID:**	I981211/8260A_AQU/405
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.38	86 - 115
Dibromofluoromethane	112.40	86 - 118
Toluene-d8	104.48	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-34d		
Lab Sample ID:	98-08711	**Analytical Batch ID:**	I981214/8270B_AQU/90
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	<5.1	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	64.08	43 - 116
4-Terphenyl-d14	67.06	33 - 141
Nitrobenzene-d5	69.10	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A_AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981208-1652
Client Sample ID: MW-34d
Lab Sample ID: 98-08711
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/3015/210
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981217/6010A_AQU/176
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-35		
Lab Sample ID:	98-08712	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-35		
Lab Sample ID:	98-08712	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.96	86 - 115
Dibromofluoromethane	108.40	86 - 118
Toluene-d8	101.98	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-35		
Lab Sample ID:	98-08712	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	79.34	43 - 116
4-Terphenyl-d14	85.04	33 - 141
Nitrobenzene-d5	85.64	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981214/3015/210
SDG #:	981208-1652	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-35		
Lab Sample ID:	98-08712	**Analytical Batch ID:**	I981217/6010A_AQU/176
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	4.6	
Chromium	10	22	
Cobalt	10	15	
Copper	200	<200	
Lead	10	<10	
Nickel	50	79	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	43	
Zinc	50	74	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-27		
Lab Sample ID:	98-08713	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981208-1652
Client Sample ID: MW-27
Lab Sample ID: 98-08713
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/5030/610
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981214/8260A_AQU/408
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.48	86 - 115
Dibromofluoromethane	105.88	86 - 118
Toluene-d8	110.78	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-27		
Lab Sample ID:	98-08713	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	6.4	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	72.42	43 - 116
4-Terphenyl-d14	76.21	33 - 141
Nitrobenzene-d5	81.78	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981214/3015/210
SDG #:	981208-1652	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-27		
Lab Sample ID:	98-08713	**Analytical Batch ID:**	I981217/6010A_AQU/176
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	1.0	
Chromium	10	21	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	21	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-30		
Lab Sample ID:	98-08714	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-30		
Lab Sample ID:	98-08714	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	108.52	86 - 115
Dibromofluoromethane	112.96	86 - 118
Toluene-d8	103.54	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-30		
Lab Sample ID:	98-08714	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	66.30	43 - 116
4-Terphenyl-d14	73.65	33 - 141
Nitrobenzene-d5	74.29	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981214/3015/210
SDG #:	981208-1652	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-30		
Lab Sample ID:	98-08714	**Analytical Batch ID:**	I981217/6010A_AQU/176
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	2.6	
Chromium	10	20	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981208-1652
Client Sample ID: MW-32
Lab Sample ID: 98-08715
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981211/5030/608
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981211/8260A_AQU/406
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD
Batch Approval Date: 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-32		
Lab Sample ID:	98-08715	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.82	86 - 115
Dibromofluoromethane	113.44	86 - 118
Toluene-d8	105.48	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981214/3510_8270/81
SDG #:	981208-1652	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-32		
Lab Sample ID:	98-08715	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	76.69	43 - 116
4-Terphenyl-d14	79.79	33 - 141
Nitrobenzene-d5	83.56	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981214/3015/210
SDG #:	981208-1652	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-32		
Lab Sample ID:	98-08715	**Analytical Batch ID:**	I981217/6010A_AQU/176
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	8.0	
Chromium	10	40	
Cobalt	10	42	
Copper	200	<200	
Lead	10	<10	
Nickel	50	77	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	74	
Zinc	50	85	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/22/98

8260A_AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981208-1652
Client Sample ID: Trip Blank
Lab Sample ID: 98-08716
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981211/5030/608
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981211/8260A_AQU/406
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD

Batch Approval Date: 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981208-1652	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	Trip Blank		
Lab Sample ID:	98-08716	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	104.38	86 - 115
Dibromofluoromethane	107.26	86 - 118
Toluene-d8	101.74	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: **981208-1652**

Preparation Batch: P981215/7470A_PRE/120 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS

Analytical Batch: I981215/7470A_AQU/99 **Analyst:** LESHINSKYA **Units:** ug/L

Reviewed By - Date: MAHANYWW - 12/30/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-33	98-08709	0.200	<0.20	1	
MW-34	98-08710	0.200	<0.20	1	
MW-34d	98-08711	0.200	<0.20	1	
MW-35	98-08712	0.200	<0.20	1	
MW-27	98-08713	0.200	<0.20	1	
MW-30	98-08714	0.200	<0.20	1	
MW-32	98-08715	0.200	<0.20	1	

Component Name: Chloride **EPA Method #:** EPA 325.2 **Matrix:** AQUEOUS

Analytical Batch: I990104/325.2_AQU/40 **Analyst:** BAKERPJ **Units:** mg/L

Reviewed By - Date: MAYNARDPT - 1/5/99

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-33	98-08709	1.000	4.6	1	
MW-34	98-08710	1.000	7.0	1	
MW-34d	98-08711	1.000	4.0	1	
MW-35	98-08712	1.000	3.4	1	
MW-27	98-08713	1.000	3.7	1	
MW-30	98-08714	1.000	3.1	1	
MW-32	98-08715	1.000	3.8	1	

PREPARATION INFORMATION REPORT

SDG #: 981208-1652

Preparation Batch ID: P981211/5030/607
Preparation ID: 5030
Batch Approved By: CROWELLSD
EPA Method #: EPA 5030
Batch Approved On: 12/14/98

Client Sample ID	Lab Sample ID	Aliquot Type	Prep. Component	Value	Units	Comments
MW-34d	98-08711	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	

Preparation Batch ID: P981211/5030/608
Preparation ID: 5030
Batch Approved By: CROWELLSD
EPA Method #: EPA 5030
Batch Approved On: 12/14/98

Client Sample ID	Lab Sample ID	Aliquot Type	Prep. Component	Value	Units	Comments
MW-33	98-08709	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	
MW-34	98-08710	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	
MW-35	98-08712	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	
MW-30	98-08714	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	
MW-32	98-08715	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	
Trip Blank	98-08716	SAMPLE	Final Volume	25.0	ml	
			Initial Volume	25.0	ml	
			Surrogate Volume	0.010	ml	

Preparation Batch ID: P981214/3015/210
Preparation ID: 3015
Batch Approved By: MAHANYWW
EPA Method #: 3015
Batch Approved On: 12/22/98

Client Sample ID	Lab Sample ID	Aliquot Type	Prep. Component	Value	Units	Comments
MW-33	98-08709	SAMPLE	Final Volume	50	mL	
			Initial Volume	45	mL	
		DUPLICATE	Final Volume	50	mL	
			Initial Volume	45	mL	
		MATRIX_SPIKE	Final Volume	50	mL	
			Initial Volume	45	mL	
MW-34	98-08710	SAMPLE	Final Volume	50	mL	
			Initial Volume	45	mL	
MW-34d	98-08711	SAMPLE	Final Volume	50	mL	
			Initial Volume	45	mL	
MW-35	98-08712	SAMPLE	Final Volume	50	mL	
			Initial Volume	45	mL	
MW-27	98-08713	SAMPLE	Final Volume	50	mL	

Chain of Custody

CDM Analytical Laboratory | 840 Memorial Drive, Cambridge, MA 02139 | Phone: (617) 354-4448 | Fax: (617) 354-0764 | Field Log # _____ | Page 1 of 1

Client: CDM | Address: 5400 Glenwood Ave, Suite 300, Raleigh, NC 27612 | SDG#: 98J208-1652 GH2541

Project Name: NORTH WAKE UNLINED | TAT:

Project #: 6172-20454 | Phone: (919) 787-5620 | TAT Approved by:

Contact: TIM GRANT | Fax #: (919) 781-5730 | Lab Acct. #:

Report to: MAT COLONE | Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX (S - Soil, W - Water, D - Drinking)	# OF CONT.	CDM SAMPLE ID (See Attached SDG DR for Aliquot #'s & CDM Bottle Id's)	VOA: 524.2	VOA: 624/8240	VOA: 8260 * 1	VOA: Other	SEMI VOA: 525	SEMI VOA: 625/8270 A, B/N, AB/N * 2	SEMI VOA: PAH	SEMI VOA: Other	MISC: PEST / PCB	MISC: TPH 418.1	MISC: PET ID	METALS: PP13	METALS: RCRA 8	METALS: Other * 3	METALS: Filtered (Y/N)	OTHER: Chloride
MW-33	12-7	10:30	W	5	98-08709			2			1								1	N	1
MW-34	12-7	12:30	W	5	98-08710			2			1								1	N	1
MW-34d	12-7	12:35	W	5	98-08711			2			1								1	N	1
MW-35	12-7	13:00	W	5	98-08712			2			1								1	N	1
MW-27	12-7	15:00	W	5	98-08713			2			1								1	N	1
MW-30	12-7	15:30	W	5	98-08714			2			1								1	N	1
MW-32	12-7	15:15	W	5	98-08715			2			1								1	N	1
TRIP BLANK			W	~~2~~	98-08716			2													
A - HCl; B - HNO_3; C - H_2SO_4; D - NaOH; E - NaThio; F - Other; P - Plastic; G - Glass; V - Vial					Container Type:			V			G								P		P
					Preservative:			A			—								B		—
					Volume:			40			1L								5L		1L

Samples Received:
- Cooler Temperature: 07 | 4 °C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions: Fax Results ☐ | State Forms ☐ | SMART Report ☐ | Disk Deliverable ☐ | (_____) TICS ☐

	Date	Time
Sampled & Relinquished by: Matthew Colone	12-7	17:30
Relinquished by:	Date	Time
Relinquished by:	Date	Time

	Date	Time
Received by:	12/7/98	10:30
Received by:	Date	Time
Received by:	Date	Time

Shipper/Airbill#: 804847005352 Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:
*1 - 8260 + dichlorodifluoromethane
*2 - BIS(2-ethylhexl)phthalate
*3 - Appendix I metals plus MERCURY

North Wake - Unl - CDM - 019

Client: North Wake Unlined Landfill

Project: Semi-Annual

SDG: 981209-1662

Date: 1/9/99

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981209-1662	**Print Date:**	1/9/99
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Semi-Annual	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples.

No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

SDG NOTES: 981209-1662

BATCH NOTES

I981211/8260A_AQU/406

MS98-08646 spike recoveries should be divided by 2.5. All % recoveries are within limits, note correction of dividing by 2.5 needed.

I981218/8260A_AQU/411

For QC results, see instrument batch I981217/8260A_AQU/409.

P981218/5030/615

For QC, See prep batch P981217/5030/613.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-11	12/08/98	12/09/98	98-08743	AQUEOUS
MW-11d	12/08/98	12/09/98	98-08744	AQUEOUS
MW-24	12/08/98	12/09/98	98-08745	AQUEOUS
MW-23d	12/08/98	12/09/98	98-08746	AQUEOUS
MW-23	12/08/98	12/09/98	98-08747	AQUEOUS
MW-31	12/08/98	12/09/98	98-08748	AQUEOUS
MW-31d	12/08/98	12/09/98	98-08749	AQUEOUS
Duplicate	12/08/98	12/09/98	98-08750	AQUEOUS

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-11		
Lab Sample ID:	98-08743	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-11		
Lab Sample ID:	98-08743	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	108.54	86 - 115
Dibromofluoromethane	108.12	86 - 118
Toluene-d8	105.60	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-11		
Lab Sample ID:	98-08743	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	24	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	60.64	43 - 116
4-Terphenyl-d14	67.78	33 - 141
Nitrobenzene-d5	65.04	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-11		
Lab Sample ID:	98-08743	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.1	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981211/5030/608
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-11d		
Lab Sample ID:	98-08744	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981211/5030/608
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-11d		
Lab Sample ID:	98-08744	**Analytical Batch ID:**	I981211/8260A_AQU/406
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.62	86 - 115
Dibromofluoromethane	107.40	86 - 118
Toluene-d8	105.56	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-11d		
Lab Sample ID:	98-08744	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	<5.0	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	59.38	43 - 116
4-Terphenyl-d14	65.51	33 - 141
Nitrobenzene-d5	64.49	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-11d		
Lab Sample ID:	98-08744	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.9	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981218/5030/615
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-24		
Lab Sample ID:	98-08745	**Analytical Batch ID:**	I981218/8260A_AQU/411
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	2.5		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	500	<500	
Benzene	12	12	
Bromochloromethane	12	<12	
Bromodichloromethane	12	<12	
Bromoform	12	<12	
Bromomethane	25	<25	
2-Butanone	250	<250	
Carbon disulfide	250	<250	
Carbon tetrachloride	25	<25	
Chlorobenzene	12	<12	
Chloroethane	25	30	
Chloroform	12	<12	
Chloromethane	25	<25	
1,2-Dibromo-3-chloropropane	62	<62	
1,2-Dibromoethane	12	<12	
Dibromochloromethane	12	<12	
Dibromomethane	25	<25	
1,2-Dichlorobenzene	12	<12	
1,4-Dichlorobenzene	12	<12	
trans-1,4-Dichloro-2-butene	250	<250	
Dichlorodifluoromethane	12	<12	
1,1-Dichloroethane	12	85	
1,2-Dichloroethane	12	<12	
cis-1,2-Dichloroethene	12	26	
trans-1,2-Dichloroethene	12	<12	
1,2-Dichloropropane	12	<12	
cis-1,3-Dichloropropene	25	<25	
trans-1,3-Dichloropropene	25	<25	
Ethylbenzene	12	23	
2-Hexanone	120	<120	
Iodomethane	25	<25	
4-Methyl-2-pentanone	250	<250	
Methylene chloride	25	280	
Styrene	25	<25	
1,1,1,2-Tetrachloroethane	12	<12	
1,1,2,2-Tetrachloroethane	12	<12	
Tetrachloroethene	12	<12	
Toluene	12	140	
1,1,1-Trichloroethane	12	<12	
1,1,2-Trichloroethane	12	<12	
Trichloroethene	12	15	
Trichlorofluoromethane	12	<12	
1,2,3-Trichloropropane	38	<38	
Vinyl acetate	120	<120	
Vinyl chloride	25	<25	
m- and p-Xylenes	12	64	
o-Xylene	12	29	
1,1-Dichloroethene	12	<12	
Acetone	250	<250	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/21/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981218/5030/615
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-24		
Lab Sample ID:	98-08745	**Analytical Batch ID:**	I981218/8260A_AQU/411
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	2.5		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.92	86 - 115
Dibromofluoromethane	113.50	86 - 118
Toluene-d8	108.52	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/21/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-24		
Lab Sample ID:	98-08745	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	7.7	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	61.96	43 - 116
4-Terphenyl-d14	73.42	33 - 141
Nitrobenzene-d5	67.66	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-24		
Lab Sample ID:	98-08745	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981217/5030/613
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-23d		
Lab Sample ID:	98-08746	**Analytical Batch ID:**	I981217/8260A_AQU/409
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981217/5030/613
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-23d		
Lab Sample ID:	98-08746	**Analytical Batch ID:**	I981217/8260A_AQU/409
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.44	86 - 115
Dibromofluoromethane	116.22	86 - 118
Toluene-d8	110.04	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/18/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-23d		
Lab Sample ID:	98-08746	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.0	7.8	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	59.91	43 - 116
4-Terphenyl-d14	68.39	33 - 141
Nitrobenzene-d5	63.85	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23d		
Lab Sample ID:	98-08746	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.8	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	83	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-23		
Lab Sample ID:	98-08747	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	7.4	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-23		
Lab Sample ID:	98-08747	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	115.06	86 - 115
Dibromofluoromethane	109.00	86 - 118
Toluene-d8	110.52	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-23		
Lab Sample ID:	98-08747	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	8.3	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	63.58	43 - 116
4-Terphenyl-d14	70.45	33 - 141
Nitrobenzene-d5	68.46	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-23		
Lab Sample ID:	98-08747	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	1.7	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-31		
Lab Sample ID:	98-08748	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-31		
Lab Sample ID:	98-08748	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	103.92	86 - 115
Dibromofluoromethane	110.40	86 - 118
Toluene-d8	108.28	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-31		
Lab Sample ID:	98-08748	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.1	<5.1	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	77.42	43 - 116
4-Terphenyl-d14	85.26	33 - 141
Nitrobenzene-d5	84.66	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31		
Lab Sample ID:	98-08748	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.6	
Chromium	10	24	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-31d		
Lab Sample ID:	98-08749	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	<5.0	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981214/5030/610
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-31d		
Lab Sample ID:	98-08749	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	113.84	86 - 115
Dibromofluoromethane	111.80	86 - 118
Toluene-d8	107.96	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981209-1662	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-31d		
Lab Sample ID:	98-08749	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	10	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	74.67	43 - 116
4-Terphenyl-d14	78.78	33 - 141
Nitrobenzene-d5	81.14	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-31d		
Lab Sample ID:	98-08749	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981217/5030/613
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	Duplicate		
Lab Sample ID:	98-08750	**Analytical Batch ID:**	I981217/8260A_AQU/409
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5.0	<5.0	
Bromochloromethane	5.0	<5.0	
Bromodichloromethane	5.0	<5.0	
Bromoform	5.0	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5.0	<5.0	
Chloroethane	10	<10	
Chloroform	5.0	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5.0	<5.0	
Dibromochloromethane	5.0	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5.0	<5.0	
1,4-Dichlorobenzene	5.0	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5.0	<5.0	
1,1-Dichloroethane	5.0	9.2	
1,2-Dichloroethane	5.0	<5.0	
cis-1,2-Dichloroethene	5.0	<5.0	
trans-1,2-Dichloroethene	5.0	<5.0	
1,2-Dichloropropane	5.0	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5.0	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5.0	<5.0	
1,1,2,2-Tetrachloroethane	5.0	<5.0	
Tetrachloroethene	5.0	<5.0	
Toluene	5.0	<5.0	
1,1,1-Trichloroethane	5.0	<5.0	
1,1,2-Trichloroethane	5.0	<5.0	
Trichloroethene	5.0	<5.0	
Trichlorofluoromethane	5.0	<5.0	
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5.0	<5.0	
o-Xylene	5.0	<5.0	
1,1-Dichloroethene	5.0	<5.0	
Acetone	100	<100	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/18/98

8260A_AQUEOUS ANALYSIS REPORT

Method #:		**Preparation Batch ID:**	P981217/5030/613
SDG #:	981209-1662	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	Duplicate		
Lab Sample ID:	98-08750	**Analytical Batch ID:**	I981217/8260A_AQU/409
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	%		
Dilution Factor:	1		

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.74	86 - 115
Dibromofluoromethane	116.84	86 - 118
Toluene-d8	109.64	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/18/98

6010A_AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981209-1662	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	Duplicate		
Lab Sample ID:	98-08750	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2.0	<2.0	
Cadmium	1.0	2.3	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981209-1662

Preparation Batch: P981217/7470A_PRE/121 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS
Analytical Batch: I981218/7470A_AQU/100 **Analyst:** LESHINSKYA **Units:** ug/L
Reviewed By - Date: MAHANYWW - 12/23/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	0.20	<0.20	1	
MW-11d	98-08744	0.20	<0.20	1	
MW-24	98-08745	0.20	0.62	1	
MW-23d	98-08746	0.20	<0.20	1	
MW-23	98-08747	0.20	<0.20	1	
MW-31	98-08748	0.20	<0.20	1	
MW-31d	98-08749	0.20	<0.20	1	
Duplicate	98-08750	0.20	<0.20	1	

Component Name: Nitrate **EPA Method #:** EPA 353.2 **Matrix:** AQUEOUS
Analytical Batch: I981214/353.2_AQU/106 **Analyst:** BAKERPJ **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/15/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	0.050	0.60	1	
MW-11d	98-08744	0.050	0.58	1	
MW-24	98-08745	0.050	<0.050	1	
MW-23d	98-08746	0.050	0.060	1	

Component Name: OrthoPhosphate **EPA Method #:** SM 4500-P-E **Matrix:** AQUEOUS
Analytical Batch: I981214/4500P_E_A/87 **Analyst:** CARROLLRF **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/15/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	0.05	<0.05	1	
MW-11d	98-08744	0.05	<0.05	1	
MW-24	98-08745	0.05	<0.05	1	
MW-23d	98-08746	0.05	0.05	1	

Component Name: TOC **EPA Method #:** SM 5310C **Matrix:** AQUEOUS
Analytical Batch: I981221/5310C_AQU/213 **Analyst:** DONOVANKT **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/28/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	1.0	2.1	2	Reanalyzed 12/24
MW-11d	98-08744	0.50	0.64	1	
MW-24	98-08745	1.0	2.5	2	
MW-23d	98-08746	1.0	2.8	2	

Component Name: Alkalinity **EPA Method #:** SM 2320B **Matrix:** AQUEOUS
Analytical Batch: I981230/2320B_AQU/73 **Analyst:** CARROLLRF **Units:** mg/L CaCO3
Reviewed By - Date: MAYNARDPT - 1/5/99

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	5.0	21	1	
MW-11d	98-08744	5.0	14	1	
MW-24	98-08745	5.0	66	1	

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981209-1662

Component Name:	Alkalinity	**EPA Method #:**	SM 2320B	**Matrix:**	AQUEOUS
Analytical Batch:	I981230/2320B_AQU/73	**Analyst:**	CARROLLRF	**Units:**	mg/L CaCO3
Reviewed By - Date:	MAYNARDPT - 1/5/99				

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-23d	98-08746	5.0	60	1	

Component Name:	Chloride	**EPA Method #:**	EPA 325.2	**Matrix:**	AQUEOUS
Analytical Batch:	I990104/325.2_AQU/40	**Analyst:**	BAKERPJ	**Units:**	mg/L
Reviewed By - Date:	MAYNARDPT - 1/5/99				

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	1.0	3.5	1	
MW-11d	98-08744	1.0	3.0	1	
MW-24	98-08745	1.0	4.2	1	
MW-23d	98-08746	1.0	3.5	1	
MW-23	98-08747	1.0	4.2	1	
MW-31	98-08748	1.0	2.7	1	
MW-31d	98-08749	1.0	2.8	1	

Component Name:	Sulfate	**EPA Method #:**	EPA 375.4	**Matrix:**	AQUEOUS
Analytical Batch:	I990104/375.4_AQU/28	**Analyst:**	BAKERPJ	**Units:**	mg/L
Reviewed By - Date:	MAYNARDPT - 1/5/99				

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	10	<10	1	
MW-11d	98-08744	10	<10	1	
MW-24	98-08745	10	<10	1	
MW-23d	98-08746	10	46	1	

Component Name:	Ammonia	**EPA Method #:**	SM 4500-NH3-F	**Matrix:**	AQUEOUS
Analytical Batch:	I990107/4500NH3-F/38	**Analyst:**	BAKERPJ	**Units:**	mg/L
Reviewed By - Date:	MAYNARDPT - 1/8/99				

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-11	98-08743	0.20	<0.20	2	
MW-11d	98-08744	0.20	<0.20	2	
MW-24	98-08745	0.20	<0.20	2	
MW-23d	98-08746	0.20	<0.20	2	

Chain of Custody

CDM Analytical Laboratory
840 Memorial Drive
Cambridge, MA 02139
Phone: (617) 354-4448
Fax: (617) 354-0764

Field Log # _____ Page ____ of ____

Client: CDM
Address: 5400 Glenwood Ave Suite 300 SDG#: 981209-1662 gf#2557
Project Name: NORTH WAKE SEMI-ANNUAL
Raleigh, NC 27612 TAT:
Project #: 6172-20454
Phone: (919) 787-5620 TAT Approved by:
Contact: TIM GRANT
Fax #: (919) 781-5730 Lab Acct. #:
Report to: MAT COLONE Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260	VOA Other	SEMI VOA 525	SEMI VOA 625/8270 A, B/N, AB/N	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other	METALS Filtered (Y/N)	OTHER Chloride	OTHER NH_3	OTHER TOC	OTHER Wet Chem
MW-11	12-8	10:30	W	8	98-08743			2			1								1	N	1	1	1	1
MW-11d	12-8	10:15	W	8	98-08744			2			1								1	N	1	1	1	1
MW-24	12-8	13:50	W	8	98-08745			2			1								1	N	1	1	1	1
MW-23d	12-8	14:15	W	8	98-08746			2			1								1	N	1	1	1	1
MW-23	12-8	14:05	W	~~4~~ 5	98-08747			2			1								1	N	1			
MW-31	12-8	17:10	W	5	98-08748			2			1								1	N	1			
MW-31d	12-8	17:00	W	5	98-08749			2			1								1	N	1			
duplicate	12-8	—	W	~~3~~ 4	98-08750			2											1	N				
								V			G								P		P	P	G	P
								A			—								B		—	C	C	—
								40			1L								5L		1L	5L	2.5L	5L

A - HCl D - NaOH P - Plastic
B - HNO_3 E - NaThio G - Glass
C - H_2SO_4 F - Other V - Vial

Container Type:
Preservative:
Volume:

Samples Received:
- Cooler Temperature: 4°C
- Chilled/properly preserved? ☒ yes ☐ no
- In good condition? ☒ yes ☐ no
- Evidence of tampering? ☐ yes ☒ no

Instructions:
- Fax Results ☐
- State Forms ☐
- SMART Report ☐
- Disk Deliverable ☐
- (_____) TICS ☐

	Date	Time
Sampled & Relinquished by: Matthew J. Colone	12-8-98	18:00
Relinquished by:	Date	Time
Relinquished by:	Date	Time

	Date	Time
Received by: K Kelly	12/9/98	1030
Received by:	Date	Time
Received by:	Date	Time

Shipper/Airbill# Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:

Wet Chem- SO_4, Alk, NO_3, O-Phos, as per Tim Grant 12/9/98 North Wake @ CDM 020

Client: North Wake Unlined Landfill

Project: Monitoring

SDG: 981210-1668

Date: 1/9/99

CDM Laboratory
Riverside Technology Center
840 Memorial Drive
Cambridge, MA 02139
phone (617) 354-4448 - fax (617) 354-0764

Laboratory Report

SDG #:	981210-1668	**Print Date:**	1/9/99
Client:	North Wake Unlined Landfill	**Client Contact:**	Tim Grant
Project:	Monitoring	**Address:**	Camp Dresser & McKee, Inc. 5400 Glenwood Ave, Suite 300 Raleigh, NC 27612

Project Narrative

Attached please find the analytical results for this sample delivery group. Please refer to the Sample List Report for sample identification. All associated quality control information is summarized following the analytical results for all samples. No significant deviations or anomalies were encountered during the preparation or analysis of these samples unless as noted below.

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge complete & accurate.

LABORATORY MANAGEMENT REVIEW: _____

LABORATORY QA/QC REVIEW: _____

AZ DOH #AZ0553, CO DPHE (RECIPROCITY), CT DPH #0682, LA DOHH, MA DEP M-MA012, ME DHS (RECIPROCITY), NH DES #2509, NY ELAP #11330, NC DEHNR #553, PA DEP #68-469, RI DOH #48,VA DGS/DCLS #00046, EPA ICR MA001

SAMPLE LIST REPORT

Client Sample ID	Date Collected	Received Date	Lab Sample ID	Matrix Type
MW-28d	12/09/98	12/10/98	98-08769	AQUEOUS
MW-29d	12/09/98	12/10/98	98-08770	AQUEOUS
TB-1A	12/09/98	12/10/98	98-08771	AQUEOUS
MW-28	12/09/98	12/10/98	98-08772	AQUEOUS
EQ BLANK	12/09/98	12/10/98	98-08773	AQUEOUS

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981210-1668
Client Sample ID: MW-28d
Lab Sample ID: 98-08769
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/5030/610
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981214/8260A_AQU/408
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981210-1668
Client Sample ID: MW-28d
Lab Sample ID: 98-08769
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/5030/610
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981214/8260A_AQU/408
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	111.96	86 - 115
Dibromofluoromethane	117.32	86 - 118
Toluene-d8	109.28	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981210-1668	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-28d		
Lab Sample ID:	98-08769	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	20	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	75.11	43 - 116
4-Terphenyl-d14	79.06	33 - 141
Nitrobenzene-d5	81.89	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981210-1668	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	MW-28d		
Lab Sample ID:	98-08769	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981210-1668	**Prep. Analyst**	DESMARAISS
Client Sample ID:	MW-29d		
Lab Sample ID:	98-08770	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981210-1668
Client Sample ID: MW-29d
Lab Sample ID: 98-08770
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/5030/610
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981214/8260A_AQU/408
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	114.98	86 - 115
Dibromofluoromethane	113.82	86 - 118
Toluene-d8	108.82	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981210-1668	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-29d		
Lab Sample ID:	98-08770	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	37	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	64.02	43 - 116
4-Terphenyl-d14	68.13	33 - 141
Nitrobenzene-d5	69.41	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981210-1668
Client Sample ID: MW-29d
Lab Sample ID: 98-08770
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981221/3015/211
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981221/6010A_AQU/177
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981210-1668
Client Sample ID: TB-1A
Lab Sample ID: 98-08771
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981214/5030/610
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981214/8260A_AQU/408
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	14	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	23	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	5.3	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	8.2	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981210-1668	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	TB-1A		
Lab Sample ID:	98-08771	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	11	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	109.40	86 - 115
Dibromofluoromethane	115.70	86 - 118
Toluene-d8	110.12	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981210-1668	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	TB-1A		
Lab Sample ID:	98-08771	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5.2	<5.2	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	71.49	43 - 116
4-Terphenyl-d14	74.44	33 - 141
Nitrobenzene-d5	80.40	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981210-1668
Client Sample ID: TB-1A
Lab Sample ID: 98-08771
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981221/3015/211
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981221/6010A_AQU/177
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	3.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981218/5030/614
SDG #:	981210-1668	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	MW-28		
Lab Sample ID:	98-08772	**Analytical Batch ID:**	I981218/8260A_AQU/410
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/21/98

8260A AQUEOUS ANALYSIS REPORT

Method #: EPA 8260A
SDG #: 981210-1668
Client Sample ID: MW-28
Lab Sample ID: 98-08772
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981218/5030/614
Prep. Analyst: DESMARAISS

Analytical Batch ID: I981218/8260A_AQU/410
Analyst: DESMARAISS

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.40	86 - 115
Dibromofluoromethane	112.70	86 - 118
Toluene-d8	108.28	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/21/98

8270B AQUEOUS ANALYSIS REPORT

Method #:	EPA 8270B	**Preparation Batch ID:**	P981215/3510_8270/83
SDG #:	981210-1668	**Prep. Analyst:**	CROWELLSD
Client Sample ID:	MW-28		
Lab Sample ID:	98-08772	**Analytical Batch ID:**	I981215/8270B_AQU/92
Matrix:	AQUEOUS	**Analyst:**	CROWELLSD
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Bis(2-ethylhexyl) phthalate	5	12	

Surrogate	% Recovery	Accep. Range
2-Fluorobiphenyl	68.77	43 - 116
4-Terphenyl-d14	74.59	33 - 141
Nitrobenzene-d5	75.82	35 - 114

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/15/98

6010A AQUEOUS ANALYSIS REPORT

Method #: EPA 6010A
SDG #: 981210-1668
Client Sample ID: MW-28
Lab Sample ID: 98-08772
Matrix: AQUEOUS
Units: ug/L
Dilution Factor: 1

Preparation Batch ID: P981221/3015/211
Prep. Analyst: LESHINSKYA

Analytical Batch ID: I981221/6010A_AQU/177
Analyst: LESHINSKYA

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	8.9	
Chromium	10	39	
Cobalt	10	19	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	68	
Zinc	50	140	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981210-1668	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	EQ BLANK		
Lab Sample ID:	98-08773	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Acrylonitrile	200	<200	
Benzene	5	<5.0	
Bromochloromethane	5	<5.0	
Bromodichloromethane	5	<5.0	
Bromoform	5	<5.0	
Bromomethane	10	<10	
2-Butanone	100	<100	
Carbon disulfide	100	<100	
Carbon tetrachloride	10	<10	
Chlorobenzene	5	<5.0	
Chloroethane	10	<10	
Chloroform	5	<5.0	
Chloromethane	10	<10	
1,2-Dibromo-3-chloropropane	25	<25	
1,2-Dibromoethane	5	<5.0	
Dibromochloromethane	5	<5.0	
Dibromomethane	10	<10	
1,2-Dichlorobenzene	5	<5.0	
1,4-Dichlorobenzene	5	<5.0	
trans-1,4-Dichloro-2-butene	100	<100	
Dichlorodifluoromethane	5	<5.0	
1,1-Dichloroethane	5	<5.0	
1,2-Dichloroethane	5	<5.0	
cis-1,2-Dichloroethene	5	<5.0	
trans-1,2-Dichloroethene	5	<5.0	
1,2-Dichloropropane	5	<5.0	
cis-1,3-Dichloropropene	10	<10	
trans-1,3-Dichloropropene	10	<10	
Ethylbenzene	5	<5.0	
2-Hexanone	50	<50	
Iodomethane	10	<10	
4-Methyl-2-pentanone	100	<100	
Methylene chloride	10	<10	
Styrene	10	<10	
1,1,1,2-Tetrachloroethane	5	<5.0	
1,1,2,2-Tetrachloroethane	5	<5.0	
Tetrachloroethene	5	<5.0	
Toluene	5	<5.0	
1,1,1-Trichloroethane	5	<5.0	
1,1,2-Trichloroethane	5	<5.0	
Trichloroethene	5	<5.0	
Trichlorofluoromethane	5	<5.0	

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

8260A AQUEOUS ANALYSIS REPORT

Method #:	EPA 8260A	**Preparation Batch ID:**	P981214/5030/610
SDG #:	981210-1668	**Prep. Analyst:**	DESMARAISS
Client Sample ID:	EQ BLANK		
Lab Sample ID:	98-08773	**Analytical Batch ID:**	I981214/8260A_AQU/408
Matrix:	AQUEOUS	**Analyst:**	DESMARAISS
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
1,2,3-Trichloropropane	15	<15	
Vinyl acetate	50	<50	
Vinyl chloride	10	<10	
m- and p-Xylenes	5	<5.0	
o-Xylene	5	<5.0	
1,1-Dichloroethene	5	<5.0	
Acetone	100	<100	

Surrogate	% Recovery	Accep. Range
4-Bromofluorobenzene	112.34	86 - 115
Dibromofluoromethane	104.02	86 - 118
Toluene-d8	104.04	88 - 110

Batch Approved By: CROWELLSD **Batch Approval Date:** 12/14/98

6010A AQUEOUS ANALYSIS REPORT

Method #:	EPA 6010A	**Preparation Batch ID:**	P981221/3015/211
SDG #:	981210-1668	**Prep. Analyst:**	LESHINSKYA
Client Sample ID:	EQ BLANK		
Lab Sample ID:	98-08773	**Analytical Batch ID:**	I981221/6010A_AQU/177
Matrix:	AQUEOUS	**Analyst:**	LESHINSKYA
Units:	ug/L		
Dilution Factor:	1		

Component Name	MRL	Result	Qualifiers
Antimony	30	<30	
Arsenic	10	<10	
Barium	500	<500	
Beryllium	2	<2.0	
Cadmium	1	<1.0	
Chromium	10	<10	
Cobalt	10	<10	
Copper	200	<200	
Lead	10	<10	
Nickel	50	<50	
Selenium	20	<20	
Silver	10	<10	
Thallium	10	<10	
Vanadium	40	<40	
Zinc	50	<50	

Batch Approved By: MAHANYWW **Batch Approval Date:** 12/28/98

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981210-1668

Preparation Batch: P981217/7470A_PRE/121 **Prep. Analyst:** LESHINSKYA

Component Name: Mercury **EPA Method #:** EPA 7470A **Matrix:** AQUEOUS
Analytical Batch: I981218/7470A_AQU/100 **Analyst:** LESHINSKYA **Units:** ug/L
Reviewed By - Date: MAHANYWW - 12/23/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	0.200	0.25	1	
MW-29d	98-08770	0.200	0.24	1	
TB-1A	98-08771	0.200	0.22	1	
MW-28	98-08772	0.200	<0.20	1	
EQ BLANK	98-08773	0.200	0.21	1	

Component Name: OrthoPhosphate **EPA Method #:** SM 4500-P-E **Matrix:** AQUEOUS
Analytical Batch: I981214/4500P_E_A/88 **Analyst:** CARROLLRF **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/15/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	0.050	<0.05	1	
MW-29d	98-08770	0.050	<0.05	1	
TB-1A	98-08771	0.050	<0.05	1	

Component Name: Nitrate **EPA Method #:** EPA 353.2 **Matrix:** AQUEOUS
Analytical Batch: I981217/353.2_AQU/107 **Analyst:** BAKERPJ **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/23/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	0.050	0.051	1	
MW-29d	98-08770	0.050	<0.050	1	
TB-1A	98-08771	0.050	<0.050	1	

Component Name: TOC **EPA Method #:** SM 5310C **Matrix:** AQUEOUS
Analytical Batch: I981221/5310C_AQU/213 **Analyst:** DONOVANKT **Units:** mg/L
Reviewed By - Date: MAHANYWW - 12/28/98

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	0.500	1.7	1	
MW-29d	98-08770	0.500	2.9	1	
TB-1A	98-08771	0.500	0.54	1	Reanalyzed 12/2

Component Name: Alkalinity **EPA Method #:** SM 2320B **Matrix:** AQUEOUS
Analytical Batch: I981230/2320B_AQU/74 **Analyst:** CARROLLRF **Units:** mg/L CaCO3
Reviewed By - Date: MAYNARDPT - 1/5/99

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	5.000	87	1	
MW-29d	98-08770	5.000	70	1	

SINGLE COMPONENT ANALYTICAL REPORT

SDG#: 981210-1668

Component Name: Alkalinity
Analytical Batch: I981230/2320B_AQU/74
Reviewed By - Date: MAYNARDPT - 1/5/99
EPA Method #: SM 2320B
Analyst: CARROLLRF
Matrix: AQUEOUS
Units: mg/L CaCO3

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
TB-1A	98-08771	5.000	95	1	

Component Name: Chloride
Analytical Batch: I990104/325.2_AQU/40
Reviewed By - Date: MAYNARDPT - 1/5/99
EPA Method #: EPA 325.2
Analyst: BAKERPJ
Matrix: AQUEOUS
Units: mg/L

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	1.000	5.6	1	
MW-29d	98-08770	1.000	3.6	1	
TB-1A	98-08771	1.000	4.1	1	
MW-28	98-08772	1.000	7.4	1	

Component Name: Sulfate
Analytical Batch: I990104/375.4_AQU/28
Reviewed By - Date: MAYNARDPT - 1/5/99
EPA Method #: EPA 375.4
Analyst: BAKERPJ
Matrix: AQUEOUS
Units: mg/L

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	10.000	<10	1	
MW-29d	98-08770	10.000	<10	1	
TB-1A	98-08771	10.000	<10	1	

Component Name: Ammonia
Analytical Batch: I990107/4500NH3-F/38
Reviewed By - Date: MAYNARDPT - 1/8/99
EPA Method #: SM 4500-NH3-F
Analyst: BAKERPJ
Matrix: AQUEOUS
Units: mg/L

Client Sample ID	Lab Sample ID	MRL	Result	Dilution Factor	Qualifier
MW-28d	98-08769	0.200	<0.20	2	
MW-29d	98-08770	0.200	<0.20	2	
TB-1A	98-08771	0.200	<0.20	2	

Chain of Custody

CDM Analytical Laboratory
840 Memorial Drive
Cambridge, MA 02139
Phone: (617) 354-4448
Fax: (617) 354-0764

Field Log # _____ Page 1 of 1

Client: CDM
Address: 5400 GLENWOOD AVE STE 300 SDG#: 981210 - 1668 GH2557
Project Name: NORTH WAKE UNLINED RALEIGH, NC 27612
TAT:
Project #: 6172 - 20454
Phone: (919) 787-5620
TAT Approved by:
Contact: TIM GRANT
Fax #: (919) 781-5730
Lab Acct. #:
Report to: MAT COLONE
Bill to: TIM GRANT

CLIENT SAMPLE ID	DATE	TIME	MATRIX S - Soil W - Water D - Drinking	# OF CONT.	CDM SAMPLE ID See Attached SDG DR for Aliquot #'s & CDM Bottle Id's	VOA 524.2	VOA 624/8240	VOA 8260 *1	VOA Other	SEMI VOA 525 *2	SEMI VOA 625/8270 A, B/N, AB/N	SEMI VOA PAH	SEMI VOA Other	MISC PEST / PCB	MISC TPH 418.1	MISC PET ID	METALS PP13	METALS RCRA 8	METALS Other *3	METALS Filtered (Y/N)	OTHER Chloride	OTHER Wet Chem	OTHER TOC	OTHER NH_3			
MW-28d	12-9	10:30	W	8	98-08769			2			1								1	N	1	1	1	1			
MW-29d	12-9	13:30	W	8	98-08770			2			1								1	N	1	1	1	1			
TB-1A	12-9	15:30	W	8	98-08771			2			1								1	N	1	1	1	1			
MW-28	12-9	10:15	W	~~8~~ 5	98-08772			2			1								1	N	1						
EQ: BLANK	12-9	13:30	W	3	98-08773			2											1	N							
Container Type:								V			G								P		P	P	G	P			
Preservative:								A			-								B		-	-	C	C			
Volume:								40l			1l								.5l		.1l	.5l	.25l	.5l			

A - HCl D - NaOH P - Plastic
B - HNO_3 E - NaThio G - Glass
C - H_2SO_4 F - Other V - Vial

Samples Received:
- Cooler Temperature: _____ °C
- Chilled/properly preserved? ☐ yes ☐ no
- In good condition? ☐ yes ☐ no
- Evidence of tampering? ☐ yes ☐ no

Instructions:
Fax Results ☐
State Forms ☐
SMART Report ☐
Disk Deliverable ☐
(_____) TICS ☐

Sampled & Relinquished by:	Date	Time	Received by:	Date	Time
Matt J. Colone	12-9-98	17:00	R Lally	12/10/98	10:30
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Shipper/Airbill#: Custody Seal#: Method of Shipment: ☐ Courier ☐ Airborne ☒ Fed-ex ☐ UPS ☐ Hand ☐ Other

NOTE: All samples submitted subject to Standard Terms & Conditions

Comments:
*1 8260 + dichlorodifluoromethane
*2 BIS (2ethylhexl) phthalate
*3 NORTH CAROLINA APPENDIX I METALS + Mercury

North Wake UL - CDM - 021

Wet Chem = SO_4, Alk, NO_3, O-Phos as per Tim Grant

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Tim Grant
Camp, Dresser, McKee
5400 Glenwood Ave. Suite # 300
Raleigh, NC

Date 02-03-99

Report Number: G175-39

Project ID: N. Wake Assessment

Dear Mr. Grant:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 54786
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99.
Dilution: 8.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	200	BQL
Acrylonitrile	400	BQL
Benzene	8.0	**5** J
Bromochloromethane	8.0	BQL
Bromodichloromethane	8.0	BQL
Bromoform	8.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	8.0	BQL
Chloroethane	10	**18**
Chloroform	8.0	BQL
Chlorodibromomethane	8.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	40	BQL
Ethylene dibromide (EDB)	8.0	BQL
o-Dichlorobenzene	8.0	BQL
p-Dichlorobenzene	8.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	8.0	**53.0**
Ethylene dichloride	8.0	BQL
Vinylidene chloride	8.0	BQL
cis-1,2-Dichloroethene	8.0	**13.0**
t-1,2-Dichloroethene	8.0	BQL
Propylene dichloride	8.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	8.0	**15.0**
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	40	**160**
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	8.0	BQL
1,1,2,2-Tetrachloroethane	8.0	BQL
Tetrachloroethylene	8.0	**9.0**
Toluene	8.0	**83.0**
1,1,1-Trichloroethane	8.0	BQL
1,1,2-Trichloroethane	8.0	BQL
Trichloroethene	8.0	**10.0**
CFC-11 (Trichlorofluoromethane)	8.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	16.0	**59**
Dichlorodifluoromethane	8.0	BQL

Reviewed by: LOW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 54786
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 8.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.2	102
1,2-Dichloroethane-d4	10.0	10.1	101
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: LAW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54787
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54787
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.1	101
1,2-Dichloroethane-d4	10.0	9.9	99
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23
Client Project ID: N. Wake Assessment
Lab Sample ID: 54788
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**13.0**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23
Client Project ID: N. Wake Assessment
Lab Sample ID: 54788
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.1	101
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	10.1	101

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 54789
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 12.5

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	313	BQL
Acrylonitrile	625	BQL
Benzene	12.5	**7 J**
Bromochloromethane	12.5	BQL
Bromodichloromethane	12.5	BQL
Bromoform	12.5	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	13	BQL
Chlorobenzene	12.5	BQL
Chloroethane	13	**19**
Chloroform	12.5	BQL
Chlorodibromomethane	12.5	BQL
DBCP (1,2-Dibromo-3-chloropropane)	63	BQL
Ethylene dibromide (EDB)	12.5	BQL
o-Dichlorobenzene	12.5	BQL
p-Dichlorobenzene	12.5	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	12.5	**140**
Ethylene dichloride	12.5	BQL
Vinylidene chloride	12.5	BQL
cis-1,2-Dichloroethene	12.5	**36**
t-1,2-Dichloroethene	12.5	BQL
Propylene dichloride	12.5	BQL
cis-1,3-Dichloropropene	13	BQL
t-1,3-Dichloropropene	13	BQL
Ethylbenzene	12.5	BQL
Methyl butyl ketone	63	BQL
Methyl bromide	13	BQL
Methyl chloride	13	BQL
Methylene bromide	13	BQL
Methylene chloride	63	**320**
MEK (2-Butanone)	100	BQL
Methyl iodide	13	BQL
Methyl isobutyl ketone	100	BQL
Styrene	13	BQL
1,1,1,2-Tetrachloroethane	12.5	BQL
1,1,2,2-Tetrachloroethane	12.5	BQL
Tetrachloroethylene	12.5	**14**
Toluene	12.5	BQL
1,1,1-Trichloroethane	12.5	BQL
1,1,2-Trichloroethane	12.5	BQL
Trichloroethene	12.5	**18**
CFC-11 (Trichlorofluoromethane)	12.5	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	63	BQL
Vinyl chloride	13	BQL
Xylenes (total)	25.0	BQL
Dichlorodifluoromethane	12.5	BQL

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

Reviewed by: LAW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 54789
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 12.5

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.8	98
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	10.1	101

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

Reviewed by: LAV

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-22
Client Project ID: N. Wake Assessment
Lab Sample ID: 54790
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**8.0**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by:

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-22
Client Project ID: N. Wake Assessment
Lab Sample ID: 54790
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.5	95
1,2-Dichloroethane-d4	10.0	10.3	103
Toluene-d8	10.0	7.0	70

Comments:

All results are corrected for dilution.
Low surrogate recovery confirmed by reanalysis.

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-32
Client Project ID: N. Wake Assessment
Lab Sample ID: 54791
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID:	MW-32	Date Analyzed:	1/21/99
Client Project ID:	N. Wake Assessment	Analyzed By:	RNP
Lab Sample ID:	54791	Date Collected:	1/11/99
Lab Project ID:	G175-39	Date Received:	1/12/99
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries	Spike Added	Surrogate Result	%Rec
Compound	(ug/L)	(ug/L)	
Bromofluorobenzene	10.0	9.0	90
1,2-Dichloroethane-d4	10.0	11.0	110
Toluene-d8	10.0	8.8	88

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54792
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID:	MW-31d	Date Analyzed:	1/20/99
Client Project ID:	N. Wake Assessment	Analyzed By:	RNP
Lab Sample ID:	54792	Date Collected:	1/11/99
Lab Project ID:	G175-39	Date Received:	1/12/99
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result (ug/L)**

Surrogate Spike Recoveries	**Spike Added**	**Surrogate Result**	**%Rec**
Compound	(ug/L)	(ug/L)	
Bromofluorobenzene	10.0	10.1	101
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	10.2	102

Comments:

All results are corrected for dilution.

Reviewed by: NW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31
Client Project ID: N. Wake Assessment
Lab Sample ID: 54793
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31
Client Project ID: N. Wake Assessment
Lab Sample ID: 54793
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.0	100
1,2-Dichloroethane-d4	10.0	10.5	105
Toluene-d8	10.0	7.2	72

Comments:

All results are corrected for dilution.
Low surrogate recovery confirmed by reanalysis.

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: TB-1A
Client Project ID: N. Wake Assessment
Lab Sample ID: 54794
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	**16**
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**21.0**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	**6.0**
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	**11.0**
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	**5.0**
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	**6.0**
Dichlorodifluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: TB-1A
Client Project ID: N. Wake Assessment
Lab Sample ID: 54794
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.3	103
1,2-Dichloroethane-d4	10.0	10.4	104
Toluene-d8	10.0	9.4	94

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 54795
Lab Project ID: G175-39
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/11/99
Date Received: 1/12/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID:	Trip Blank	Date Analyzed:	1/20/99
Client Project ID:	N. Wake Assessment	Analyzed By:	RNP
Lab Sample ID:	54795	Date Collected:	1/11/99
Lab Project ID:	G175-39	Date Received:	1/12/99
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result (ug/L)**

Surrogate Spike Recoveries	**Spike Added**	**Surrogate Result**	**%Rec**
Compound	(ug/L)	(ug/L)	
Bromofluorobenzene	10.0	10.5	105
1,2-Dichloroethane-d4	10.0	10.4	104
Toluene-d8	10.0	10.1	101

Comments:

All results are corrected for dilution.

Reviewed by: MJR

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-24	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54786	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	**0.0005**	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-23d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54787	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments
BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-23	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54788	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	**0.0002**	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-10	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54789	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MV

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-22	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54790	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	**0.0015**	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	**0.202**	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	**0.0555**	0.0500	MG/L	6010B.	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments
BQL = Below Quantitation Limits

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-32	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54791	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	**0.0265**	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments

BQL = Below Quantitation Limits

Reviewed By: mw

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-31d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54792	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	**0.0191**	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-31	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54793	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments
BQL = Below Quantitation Limits

Reviewed By: mw

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	TB-1A	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/11/99
Lab Sample ID:	54794	Date Received:	1/12/99
Lab Project ID:	G175-39	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/26/99
Arsenic	BQL	0.0100	MG/L	6010B	1/26/99
Barium	BQL	0.500	MG/L	6010B	1/26/99
Beryllium	BQL	0.0020	MG/L	6010B	1/26/99
Cadmium	BQL	0.0010	MG/L	6010B	1/26/99
Chromium	BQL	0.0100	MG/L	6010B	1/26/99
Cobalt	BQL	0.0100	MG/L	6010B	1/26/99
Copper	BQL	0.200	MG/L	6010B	1/26/99
Lead	BQL	0.0100	MG/L	6010B	1/26/99
Mercury	BQL	0.0002	MG/L	7470	1/26/99
Nickel	BQL	0.0500	MG/L	6010B	1/26/99
Selenium	BQL	0.0200	MG/L	6010B	1/26/99
Silver	BQL	0.0100	MG/L	6010B	1/26/99
Thallium	BQL	0.0100	MG/L	6010B	1/26/99
Vanadium	BQL	0.0400	MG/L	6010B	1/26/99
Zinc	BQL	0.0500	MG/L	6010B	1/26/99

Comments
BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 09454

Page _____ of _____

Client: CDM
Address: 5400 Glenwood Ave, Suite 300
Address: Raleigh, NC 27612
Quote #:

Project ID: NAVAL ASSESSMENT
P.O. Number:
Contact: TIM GRANT
Phone: (919) 787-5620

Date: 1/11/99
Turnaround: STANDARD
Job Number: 6172-22910

Report To: MATT COLONE
CDM - RALEIGH
Invoice To: TIM GRANT

Sample ID	Date	Time	Matrix	Preservatives				Analyses									Comments: Please specify any special reporting requirements
				HCl	HNO3			8260 *1	Metals + Hg *2								
MW-34	1/11/99	9:50	W	3	1			3	1								
MW-33d	1/11/99	11:25	W	3	1			3	1								
MW-23	1/11/99	11:15	W	3	1			3	1								
MW-10	1/11/99	12:10	W	3	1			3	1								
MW-22	1/11/99	12:35	W	3	1			3	1								
MW-32	1/11/99	14:00	W	3	1			3	1								
MW-31d	1/11/99	15:30	W	3	1			3	1								
MW-31	1/11/99	15:25	W	3	1			3	1								
TB-1A	1/11/99	14:15	W	3	1			3	1								
TRIP BLANK			W	2				2									

G175-39

*1 NORTH CAROLINA APPENDIX I LIST PLUS DICHLORODIFLUOROMETHANE

*2 NORTH CAROLINA APPENDIX I LIST PLUS MERCURY.

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Matt J Colone	1/11/99	17:30	Emily Rals	1/12/99	9:55	0.3C		

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Tim Grant
Camp, Dresser, McKee
5400 Glenwood Ave. Suite # 300
Raleigh, NC

Date 02-03-99

Report Number: G175-40

Project ID: N. Wake Assessment

Dear Mr. Grant:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-28	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54868	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments

BQL = Below Quantitation Limits

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-28d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54869	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-29d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54870	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-30	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54871	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MN

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	DUP	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54872	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	EQ. Blank	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	1/12/99
Lab Sample ID:	54873	Date Received:	1/13/99
Lab Project ID:	G175-40	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	1/27/99
Arsenic	BQL	0.0100	MG/L	6010B	1/27/99
Barium	BQL	0.500	MG/L	6010B	1/27/99
Beryllium	BQL	0.0020	MG/L	6010B	1/27/99
Cadmium	BQL	0.0010	MG/L	6010B	1/27/99
Chromium	BQL	0.0100	MG/L	6010B	1/27/99
Cobalt	BQL	0.0100	MG/L	6010B	1/27/99
Copper	BQL	0.200	MG/L	6010B	1/27/99
Lead	BQL	0.0100	MG/L	6010B	1/27/99
Mercury	BQL	0.0002	MG/L	7470	2/2/99
Nickel	BQL	0.0500	MG/L	6010B	1/27/99
Selenium	BQL	0.0200	MG/L	6010B	1/27/99
Silver	BQL	0.0100	MG/L	6010B	1/27/99
Thallium	BQL	0.0100	MG/L	6010B	1/27/99
Vanadium	BQL	0.0400	MG/L	6010B	1/27/99
Zinc	BQL	0.0500	MG/L	6010B	1/27/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-28
Client Project ID: N. Wake Assessment
Lab Sample ID: 54868
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-28
Client Project ID: N. Wake Assessment
Lab Sample ID: 54868
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.9	99
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	9.3	93

Comments:
All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-28d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54869
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-28d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54869
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.4	104
1,2-Dichloroethane-d4	10.0	10.5	105
Toluene-d8	10.0	10.1	101

Comments:
All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-29d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54870
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-29d
Client Project ID: N. Wake Assessment
Lab Sample ID: 54870
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/20/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.4	104
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	9.9	99

Comments:
All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: hm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-30
Client Project ID: N. Wake Assessment
Lab Sample ID: 54871
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Flags: BQL = Below Quantitation Limit

Reviewed by: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: MW-30
Client Project ID: N. Wake Assessment
Lab Sample ID: 54871
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.9	99
1,2-Dichloroethane-d4	10.0	10.2	102
Toluene-d8	10.0	10.1	101

Comments:
All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 54872
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by:

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 54872
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.5	105
1,2-Dichloroethane-d4	10.0	9.9	99
Toluene-d8	10.0	10.1	101

Comments:
All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: EQ. Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 54873
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles
by GCMS 8260B

Client Sample ID: EQ. Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 54873
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.9	99
1,2-Dichloroethane-d4	10.0	10.3	103
Toluene-d8	10.0	9.9	99

Comments:
All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 54874
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorofluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 54874
Lab Project ID: G175-40
Matrix: Water

Date Analyzed: 1/21/99
Analyzed By: RNP
Date Collected: 1/12/99
Date Received: 1/13/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.0	100
1,2-Dichloroethane-d4	10.0	10.5	105
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 09451

Page 1 of 1

Client: CDM
Address: 5400 Glenwood Ave, Suite 300
Address: Raleigh, NC 27612
Quote #:

Project ID: N WAKE ASSESSMENT
P.O. Number:
Contact: TIM GRANT
Phone: (919) 787-5620

Date: 1/12/99
Turnaround: STANDARD
Job Number: 6172-22910

Report To: MAT CLOONE
CDM - RALEIGH, NC

Invoice To: TIM GRANT

Sample ID	Date	Time	Matrix	Preservatives: HCl	Preservatives: HNO_3	Preservatives	Preservatives	Analyses: 8260 *1	Analyses: Appendix I Metals + Hg *2	Analyses	Analyses	Analyses	Analyses	Analyses	Analyses	Analyses	Comments: Please specify any special reporting requirements
																	6175-40
MW-28	1/12/99	10:00	W	✓	✓			3	1								*1 N.C. Appendix I VOC + DICHLORODIFLUOROMETHANE
MW-28d	1/12/99	9:50	W	✓	✓			3	1								*2 N.C. Appendix I metals plus Mercury
MW-29d	1/12/99	11:00	W	✓	✓			3	1								
MW-30	1/12/99	12:20	W	✓	✓			3	1								
DUP	1/12/99	—	W	✓	✓			3	1								
EQ. BLANK	1/12/99	8:40	W	✓	✓			2	1								
TRIP BLANK			W	✓				2									

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Matt J. Cloone	1/12/99	14:00	Emily Baker	1/13/99	1045	3.8°C		948843556

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Tim Grant
Camp, Dresser, McKee
5400 Glenwood Ave. Suite # 300
Raleigh, NC

Date 03-01-99

Report Number: G175-50

Project ID: N. Wake Assessment

Dear Mr. Grant:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-31d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56389	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-31	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56390	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	TB-1A	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56391	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-32	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56392	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	**0.0240**	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments
BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-23d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56393	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-23	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56394	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	**0.0002**	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MWC

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-24	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56395	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	**0.0004**	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments
BQL = Below Quantitation Limits

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-22	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56396	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	**0.0020**	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	**0.168**	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-10	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56397	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	DUP	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/8/99
Lab Sample ID:	56398	Date Received:	2/9/99
Lab Project ID:	G175-50	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments
BQL = Below Quantitation Limits

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56389
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56389
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.8	98
1,2-Dichloroethane-d4	10.0	9.8	98
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31
Client Project ID: N. Wake Assessment
Lab Sample ID: 56390
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-31
Client Project ID: N. Wake Assessment
Lab Sample ID: 56390
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.0	100
1,2-Dichloroethane-d4	10.0	9.8	98
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: TB-1A
Client Project ID: N. Wake Assessment
Lab Sample ID: 56391
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	**15**
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**18**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	**7.0**
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	**10**
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	**8.0**
Dichlorodifluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: TB-1A
Client Project ID: N. Wake Assessment
Lab Sample ID: 56391
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.4	104
1,2-Dichloroethane-d4	10.0	9.0	90
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-32
Client Project ID: N. Wake Assessment
Lab Sample ID: 56392
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-32
Client Project ID: N. Wake Assessment
Lab Sample ID: 56392
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.0	100
1,2-Dichloroethane-d4	10.0	9.6	96
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56393
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56393
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.9	99
1,2-Dichloroethane-d4	10.0	9.7	97
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23
Client Project ID: N. Wake Assessment
Lab Sample ID: 56394
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**8.0**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-23
Client Project ID: N. Wake Assessment
Lab Sample ID: 56394
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/15/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.0	100
1,2-Dichloroethane-d4	10.0	9.6	96
Toluene-d8	10.0	9.7	97

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 56395
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	BQL
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**17**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**47**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**11**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	**15**
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	**130**
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	BQL
Toluene	10.0	**50**
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	BQL
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	**61**
Dichlorodifluoromethane	10.0	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 56395
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.3	103
1,2-Dichloroethane-d4	10.0	9.1	91
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-22
Client Project ID: N. Wake Assessment
Lab Sample ID: 56396
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	**8.0**
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-22
Client Project ID: N. Wake Assessment
Lab Sample ID: 56396
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.5	105
1,2-Dichloroethane-d4	10.0	9.5	95
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 56397
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	BQL
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**24**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**140**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**41**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	**17**
Toluene	10.0	BQL
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	**21**
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	**20**
Dichlorodifluoromethane	10.0	BQL

Reviewed by: MV

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 56397
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.4	94
1,2-Dichloroethane-d4	10.0	9.8	98
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 56398
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	BQL
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**20**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**130**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**38**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	**13**
Toluene	10.0	BQL
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	**17**
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	BQL
Dichlorodifluoromethane	10.0	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 56398
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.5	95
1,2-Dichloroethane-d4	10.0	10.5	105
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56399
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56399
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.5	105
1,2-Dichloroethane-d4	10.0	9.3	93
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 08107

Page 1 of 2

Client: CDM
Address: 5400 Glenwood Ave Suite 300
Address: Raleigh, NC 27612
Quote #:

Project ID: NWAKE ASSESMENT
P.O. Number:
Contact: TIM GRANT
Phone: (919)787-5220

Date: 2/8/99
Turnaround: STANDARD
Job Number: 6172-22940

Report To: MAT COLONE
CDM-Raleigh

Invoice To: TIM GRANT

Sample ID	Date	Time	Matrix	Preservatives HCl	Preservatives HNO_3	Preservatives	Preservatives	Analyses B260T Dichlorodifluoro.	Analyses Metals + Mercury	Analyses	Analyses	Analyses	Analyses	Analyses	Analyses	Analyses	Comments: Please specify any special reporting requirements
																	G175-50
MW-31d	2/8/99	14:30	W					3	1								NORTH CAROLINA APP. I VOC. plus Dichlorodifluoromethane + NORTH CAROLINA APPI Metals plus MERCURY
MW-31	2/8/99	14:40	W					3	1								
TB-1A	2/8/99	14:50	W					3	1								
MW-32	2/8/99	15:10	W					3	1								
MW-23d	2/8/99	10:00	W					3	1								
MW-23	2/8/99	10:10	W					3	1								
MW-24	2/8/99	10:15	W					3	1								
MW-22	2/8/99	11:00	W					3	1								
MW-10	2/8/99	12:00	W					3	1								
DUP	2/8/99	—	W					3	1								

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Matthew J. Colone	2/8/99	16:00	Emily Rahus	2/9/99	10:13	4.0°C		9958916772

ORIGINAL

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 08106

Page 2 of 2

Client: CDM
Address: RALEIGH
Address:
Quote #:

Project ID: N. WAKE ASSESSMENT
P.O. Number:
Contact: TIM GRANT
Phone: (919) 787-5820

Date: 2/8/99
Turnaround: STANDARD
Job Number: 6172-22910

Report To: MAT COLONE

Invoice To: TIM GRANT

Sample ID	Date	Time	Matrix	Preservatives: HCl	Analyses: 8260+ DCDFM	Comments: Please specify any special reporting requirements
						G175-50
TRIP BLANK	2/2/99		W	1	2	- APP I VOC + Dichlorodifluoromethane
TEMP. BLANK			W			

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Matt Colone	2/8/99	16:00	Emily Rahus	2/9/99	10:13	4.0°C		748829167 2

ORIGINAL

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Tim Grant
Camp, Dresser, McKee
5400 Glenwood Ave. Suite # 300
Raleigh, NC

Date 03-02-99

Report Number: G175-53

Project ID: N. Wake Assessment

Dear Mr. Grant:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-28
Client Project ID: N. Wake Assessment
Lab Sample ID: 56493
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: WM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-28
Client Project ID: N. Wake Assessment
Lab Sample ID: 56493
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.5	105
1,2-Dichloroethane-d4	10.0	9.1	91
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Flags: BQL = Below Quantitation Limit

Reviewed by: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-28d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56494
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-28d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56494
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.7	107
1,2-Dichloroethane-d4	10.0	9.1	91
Toluene-d8	10.0	9.8	98

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-30
Client Project ID: N. Wake Assessment
Lab Sample ID: 56495
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-30
Client Project ID: N. Wake Assessment
Lab Sample ID: 56495
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.6	106
1,2-Dichloroethane-d4	10.0	9.3	93
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-29d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56496
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by:

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-29d
Client Project ID: N. Wake Assessment
Lab Sample ID: 56496
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.6	106
1,2-Dichloroethane-d4	10.0	9.3	93
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by: mw

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Eq. Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56497
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/23/99
Analyzed By: RNP
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: mw

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Eq. Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56497
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/23/99
Analyzed By: RNP
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.1	101
1,2-Dichloroethane-d4	10.0	10.0	100
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56498
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/23/99
Analyzed By: RNP
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	100	BQL
Acrylonitrile	200	BQL
Benzene	5.0	BQL
Bromochloromethane	5.0	BQL
Bromodichloromethane	5.0	BQL
Bromoform	5.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	5.0	BQL
Chloroethane	10	BQL
Chloroform	5.0	BQL
Chlorodibromomethane	5.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	25	BQL
Ethylene dibromide (EDB)	5.0	BQL
o-Dichlorobenzene	5.0	BQL
p-Dichlorobenzene	5.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	5.0	BQL
Ethylene dichloride	5.0	BQL
Vinylidene chloride	5.0	BQL
cis-1,2-Dichloroethene	5.0	BQL
t-1,2-Dichloroethene	5.0	BQL
Propylene dichloride	5.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	5.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	10	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	5.0	BQL
1,1,2,2-Tetrachloroethane	5.0	BQL
Tetrachloroethylene	5.0	BQL
Toluene	5.0	BQL
1,1,1-Trichloroethane	5.0	BQL
1,1,2-Trichloroethane	5.0	BQL
Trichloroethene	5.0	BQL
CFC-11 (Trichlorofluoromethane)	5.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	5.0	BQL
Dichlorodifluoromethane	5.0	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: Trip Blank
Client Project ID: N. Wake Assessment
Lab Sample ID: 56498
Lab Project ID: G175-53
Matrix: Water

Date Analyzed: 2/23/99
Analyzed By: RNP
Date Collected: 2/9/99
Date Received: 2/10/99
Dilution: 1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.1	101
1,2-Dichloroethane-d4	10.0	9.2	92
Toluene-d8	10.0	10.1	101

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-28	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/9/99
Lab Sample ID:	56493	Date Received:	2/10/99
Lab Project ID:	G175-53	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-28d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/9/99
Lab Sample ID:	56494	Date Received:	2/10/99
Lab Project ID:	G175-53	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-30	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/9/99
Lab Sample ID:	56495	Date Received:	2/10/99
Lab Project ID:	G175-53	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: JMF

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix 1 Metals

Client Sample ID:	MW-29d	Analyzed By:	JMF
Client Project ID:	N. Wake Assessment	Date Collected:	2/9/99
Lab Sample ID:	56496	Date Received:	2/10/99
Lab Project ID:	G175-53	Matrix:	Water

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Antimony	BQL	0.0300	MG/L	6010B	2/22/99
Arsenic	BQL	0.0100	MG/L	6010B	2/22/99
Barium	BQL	0.500	MG/L	6010B	2/22/99
Beryllium	BQL	0.0020	MG/L	6010B	2/22/99
Cadmium	BQL	0.0010	MG/L	6010B	2/22/99
Chromium	BQL	0.0100	MG/L	6010B	2/22/99
Cobalt	BQL	0.0100	MG/L	6010B	2/22/99
Copper	BQL	0.200	MG/L	6010B	2/22/99
Lead	BQL	0.0100	MG/L	6010B	2/22/99
Mercury	BQL	0.0002	MG/L	7470	2/23/99
Nickel	BQL	0.0500	MG/L	6010B	2/22/99
Selenium	BQL	0.0200	MG/L	6010B	2/22/99
Silver	BQL	0.0100	MG/L	6010B	2/22/99
Thallium	BQL	0.0100	MG/L	6010B	2/22/99
Vanadium	BQL	0.0400	MG/L	6010B	2/22/99
Zinc	BQL	0.0500	MG/L	6010B	2/22/99

Comments

BQL = Below Quantitation Limits

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 08111

Page 1 of 1

Client: CDM
Address: 5400 Glenwood Ave Ste. 300
Address: Raleigh, NC 27612
Quote #:

Project ID: N. WAKE ASSESSMENT
P.O. Number:
Contact: TIM GRANT
Phone: (919) 787-5220

Date: 2/9/99
Turnaround: STADD.
Job Number: 6122-22910

Report To: TIM GRANT/MAT COLONE
CDM RALEIGH

Invoice To: TIM GRANT

Sample ID	Date	Time	Matrix	Preservatives: HCl	Preservatives: HNO_3	Preservatives	Preservatives	Analyses: 8260 *1	Analyses: Metals + Hg *2	Analyses	Analyses	Analyses	Analyses	Analyses	Analyses	Comments: Please specify any special reporting requirements
																6175-53
MW-28	2/9	9:45	W	✓	✓			3	1							*1 NORTH CAROLINA APPENDIX I VOC plus Dichlorodifluoromethane
MW-28d	2/9	9:50	W	✓	✓			3	1							
MW-30	2/9	11:30	W	✓	✓			3	1							*2 NC. APPENDIX I plus Hg METALS
MW-29d	2/9	12:00	W	✓	✓			3	1							
EQ. BLANK	2/9	8:40	W	✓				3								
TRIP BLANK	2/2		W	✓				2								

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Matthew J. Colone	2/9/99	13:30	Emily Radus	2/10/99	9:53	2.5°C		

ORIGINAL

RECEIVED
MAR 09 1999
By

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Tim Grant
Camp, Dresser, McKee
5400 Glenwood Ave. Suite # 300
Raleigh, NC

Date 03-05-99

Report Number: G175-50

Project ID: N. Wake Assessment
Re: Revised data

Dear Mr. Grant:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 56395
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	BQL
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**17**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**47**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**11**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	**15**
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	**130**
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	**9 J**
Toluene	10.0	**50**
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	**9 J**
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	**61**

Reviewed by: CAW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-24
Client Project ID: N. Wake Assessment
Lab Sample ID: 56395
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/18/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	10.3	103
1,2-Dichloroethane-d4	10.0	9.1	91
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by:

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 56397
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	**9 J**
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**24**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**140**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**41**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	**17**
Toluene	10.0	BQL
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	**21**
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	**20**

Reviewed by: LDW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: MW-10
Client Project ID: N. Wake Assessment
Lab Sample ID: 56397
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.4	94
1,2-Dichloroethane-d4	10.0	9.8	98
Toluene-d8	10.0	10.0	100

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 56398
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	250	BQL
Acrylonitrile	500	BQL
Benzene	10.0	**8 J**
Bromochloromethane	10.0	BQL
Bromodichloromethane	10.0	BQL
Bromoform	10.0	BQL
Carbon disulfide	100	BQL
Carbon tetrachloride	10	BQL
Chlorobenzene	10.0	BQL
Chloroethane	10	**20**
Chloroform	10.0	BQL
Chlorodibromomethane	10.0	BQL
DBCP (1,2-Dibromo-3-chloropropane)	50	BQL
Ethylene dibromide (EDB)	10.0	BQL
o-Dichlorobenzene	10.0	BQL
p-Dichlorobenzene	10.0	BQL
t-1,4-Dichloro-2-butene	100	BQL
1,1-Dichloroethane	10.0	**130**
Ethylene dichloride	10.0	BQL
Vinylidene chloride	10.0	BQL
cis-1,2-Dichloroethene	10.0	**38**
t-1,2-Dichloroethene	10.0	BQL
Propylene dichloride	10.0	BQL
cis-1,3-Dichloropropene	10	BQL
t-1,3-Dichloropropene	10	BQL
Ethylbenzene	10.0	BQL
Methyl butyl ketone	50	BQL
Methyl bromide	10	BQL
Methyl chloride	10	BQL
Methylene bromide	10	BQL
Methylene chloride	50	BQL
MEK (2-Butanone)	100	BQL
Methyl iodide	10	BQL
Methyl isobutyl ketone	100	BQL
Styrene	10	BQL
1,1,1,2-Tetrachloroethane	10.0	BQL
1,1,2,2-Tetrachloroethane	10.0	BQL
Tetrachloroethylene	10.0	**13**
Toluene	10.0	BQL
1,1,1-Trichloroethane	10.0	BQL
1,1,2-Trichloroethane	10.0	BQL
Trichloroethene	10.0	**17**
CFC-11 (Trichlorofluoromethane)	10.0	BQL
1,2,3-Trichloropropane	15	BQL
Vinyl acetate	50	BQL
Vinyl chloride	10	BQL
Xylenes (total)	20.0	**19 J**

Reviewed by: LAW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Appendix I Volatiles

by GCMS 8260B

Client Sample ID: DUP
Client Project ID: N. Wake Assessment
Lab Sample ID: 56398
Lab Project ID: G175-50
Matrix: Water

Date Analyzed: 2/19/99
Analyzed By: CKC
Date Collected: 2/8/99
Date Received: 2/9/99
Dilution: 10.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)

Surrogate Spike Recoveries

Compound	Spike Added (ug/L)	Surrogate Result (ug/L)	%Rec
Bromofluorobenzene	10.0	9.5	95
1,2-Dichloroethane-d4	10.0	10.5	105
Toluene-d8	10.0	9.9	99

Comments:

All results are corrected for dilution.

Reviewed by: LAW

Flags: BQL = Below Quantitation Limit
J = Detected, but below quantitation limit

NORTH WAKE UNLINED LANDFILL

BORING LOGS AND WELL CONSTRUCTION DETAILS

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 31-Mar-98
Drilling Co.: SAEDACCO
Total Depth: 53 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger / Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-10a
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 40' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
			0 - 5 cuttings		0.8	- Topsoil and rootmat (3 inches) - Reddish brown SILT/SAND		
2								
4								
		7-11-15-16	5'-7'	24	0.1	-Reddish brown, silty SAND saprolite		
6								
8								
10		5-8-9-9	10'-12'	8	0.3	-Weathered granite, sampled as silty SAND saprolite		
12								
14								
16		6-9-9-11	15'-17'	24	0.1	- SAA		
18								
20		5-6-9-8	20'-22'	24	82	- Light brown to gray silty, SAND saprolite, moist (weathered granite)		
22								
24								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # MW-10a
Page 2 of 2
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		9-11-26-40	25'-27'	24	40.6	- Fine to medium grained feldspar, mica, quartz SAND saprolite, moist, some silt (weathered granite)		
28						-pegmatite vein @ 27' +/-		
30		50/4	30'-32'	4	48.4	- SAA		
32						-Auger refusal @ 30.5', left hole open and switched to air rotary methods.		
34								
36								
38								
40						-Fracture @ 40' +/-		
42								
44						-Fracture @ 44' +/-		
46								
48								
50						-Boring terminated @ 53' bls		

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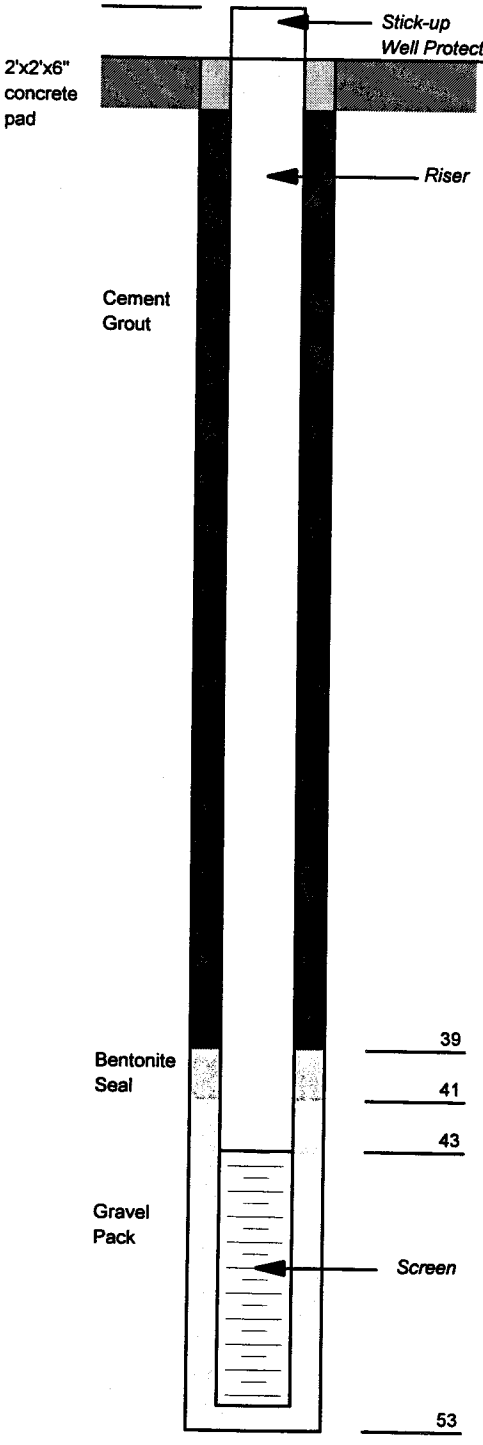
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-10a
Permit No.:

TOC elev.:



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in / 6 in	Drilling Fluid:	N/A
Bits/Depths:	HSA (0'-30.5' bls) and Air Rotary (30.5'-53.0')		
Total Depth:	53.0 ft.	Depth To Water	42.61 ft btoc (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	43 to 53 ft bls
Filter Material:	#2 Filter Sand	Setting:	41 to 53 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	39 to 41 ft bls
Grout:	type I portland cement	Setting:	39 to 1 ft. bls
Well Protection:	Above Grade Steel		

TIME LOG

	Started	Completed
Drilling:	3/31/98	4/1/98
Installation:	4/1/98	4/21/98
Development:	4/1/98	4/1/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 20-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 94 ft. bls
Method Used: 12.25 in. O.D. Hollow Stem Auger/ Air Rotary
Inspector: Mat Colone / Andrea Putscher
Organic Vapor Inst:

BORING # MW-23 deep
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 50' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
5						- Augers were advanced through overburden to the top of rock, with no samples being taken. Upon reaching auger refusal (top of rock), a 6 inch I.D. surface casing was grouted into place using a cement/ bentonite mixture. After allowing 24 hours for the grout to cure, the boring was avanced into rock by using air rotary methods.		
10								
15								
20		cuttings				-Brown sandy SILT, large rock frags		
25								
30		cuttings				-Lt. brown sandy SILT, large rock frags dark green and white gneiss/schist		
35								
40		cuttings				-Lt. brown/ tan sandy SILT, micaceous		
45						Auger Refusal @ 43 ft. bls -Set 6 in. surface casing -Switch to air rotary methods		
50								
55						-Fracture (53' - 56' bls) -first packer test interval (53'-63')		
60								
65								

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LOG OF BORING

BORING # MW-23 deep
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
70						-second packer test interval (66'-76') -competent bedrock @ 68' +/-		
75						-fracture @ 73' +/-		
80						-third packer test interval (78'-94') -fracture @ 80' +/-		
85								
90								
95						Boring Terminated @ 94 ft. bls		
100								
105								
110								
115								
120								
125								

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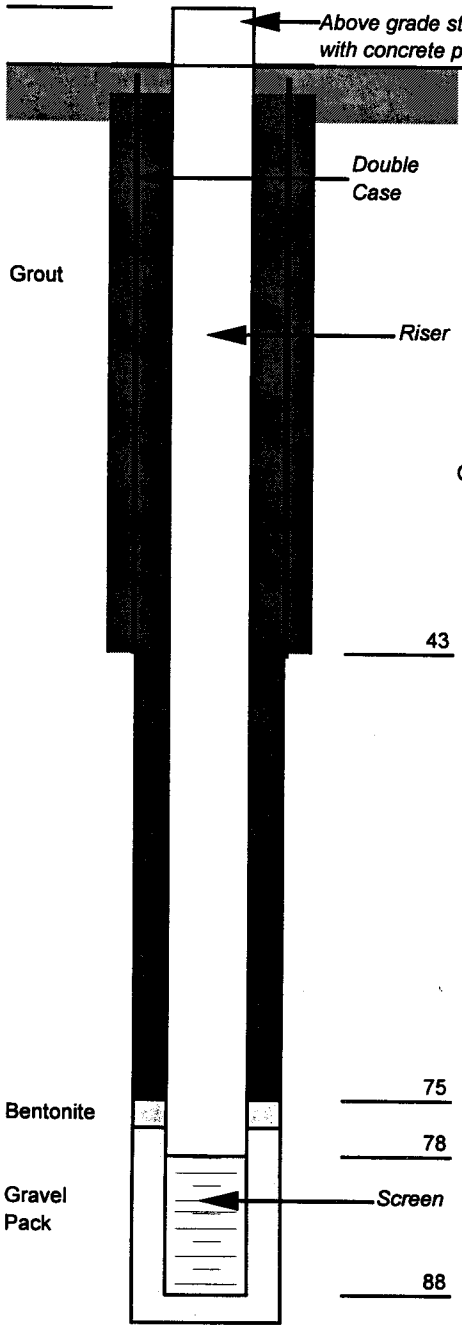
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-23 deep
Permit No.:

TOC elev.:



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameters: 12.25 in./ 6 in.
Bits/Depths: 12.25 in. O.D. HSA/ 6 in. Air Rotary
Total Depth: 88 ft. Depth To Water: 42.1 ft btoc (static)
Supervisor Geologist: Andrea Putscher

WELL DESIGN

		Diameter	Length
Outer Casing Material:	Schedule 40 PVC	6 in.	43 ft.
Casing Material:	Schedule 40 PVC	2 in.	78 ft.
Screen Material:	Schedule 40 PVC	2 in.	10 ft.
Slot Size:	0.010 in.	Setting:	78 to 88 ft bls
Filter Material:	#2 Filter Sand	Setting:	77 to 88 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	75 to 77 ft bls
Grout:	type I portland cement	Setting:	1 to 75 ft bls
Well Protection:	Above grade steel riser with 2ft x 2ft x 6 in concrete pad		

TIME LOG

	Started	Completed
Drilling:	4/20/98	4/27/98
Installation:	4/27/98	4/27/98
Development:	5/5/98	5/5/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 15-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 15 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-27
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 4' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			-Wet, dark brown/ black organic sand and SILT (2' +/-) -Wet, gray sand and SILT		
4								
6		5-9-14-5	5'-7'	22		-Wet, gray sand and SILT with rounded quartz and feldspar fragments		
8								
10		6-7-4-8	10'-12'	18		-Wet, lt. brown to lt. red/ brown silty SAND (rounded quartz and feldspar fragments)		
12								
14								
16						Boring Terminated @ 15 ft. bls		
18								
20								
22								
24								

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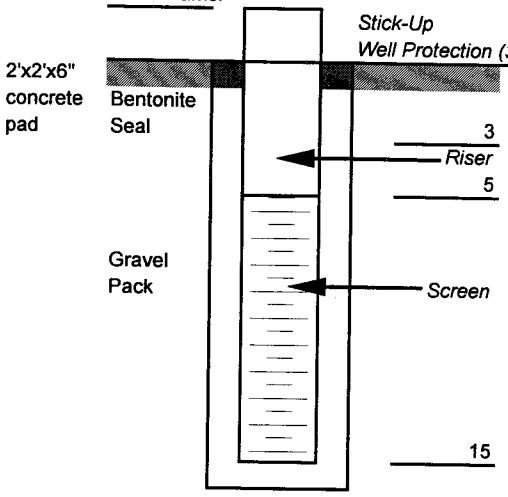
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-27
Permit No.:

TOC elev.: 215.54 amsl



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameter: 8.25 in Drilling Fluid: N/A
Bits/Depths:
Total Depth: 15 ft. Depth To Water 6.3 ft btoc (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	5 to 15 ft bls
Filter Material:	#2 Filter Sand	Setting:	3 to 15 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	1 to 3 ft bls
Grout:	type I portland cement	Setting:	0 to 1 ft. bls
Well Protection:	Above grade steel		

TIME LOG

	Started	Completed
Drilling:	4/15/98	4/15/98
Installation:	4/15/98	4/15/98
Development:	4/15/98	4/15/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 9-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 30 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-28
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 20' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Reddish brown sandy SILT (fill) -Weathered granite as silty SAND saprolite		
4								
6		4-6-11-11	5'-7'	24	0	-SAA		
8								
10		8-15-15-21	10'-12'	18	0	-SAA		
12								
14								
16		12-18-21-25	15'-17'	22	0	- SAA		
18								
20		8-19-18-19	20'-22'	24	0	-SAA (21.2') -Brown micaceous SILT saprolite and dark green sandy SILT saprolite		
22								
24								

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LOG OF BORING

BORING # MW-28
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		20-50/6	25'-27'	12	0	-Brown micaceous SILT saprolite and dark green sandy SILT saprolite (pegmatite vein @ 25.8' +/-)		
28								
30						Boring Terminated @ 30 ft. bls		
32								
34								
36								
38								
40								
42								
44								
46								
48								

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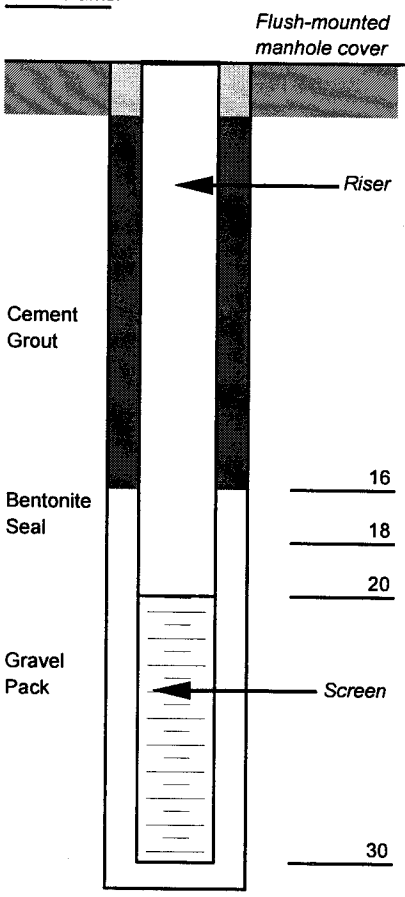
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-28
Permit No.:

TOC elev.: 237.89 amsl



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	30 ft.	Depth To Water	16.4 ft bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	20 to 30 ft bls
Filter Material:	#2 Filter Sand	Setting:	18 to 30 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	16 to 18 ft bls
Grout:	type I portland cement	Setting:	1 to 16 ft. bls
Well Protection:	flush mount manhole	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/9/98	4/9/98
Installation:	4/9/98	4/15/98
Development:	4/9/98	4/9/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 20-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 52 ft. bls
Method Used: 12.25 in. O.D. Hollow Stem Auger/ Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-28d
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 20' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
5						- Augers were advanced through overburden to the top of rock, with no samples being taken. Upon reaching auger refusal (top of rock), a 6 inch I.D. surface casing was grouted into place using a cement/ bentonite mixture. After allowing 24 hours for the grout to cure, the boring was avanced into rock by using air rotary methods.		
10								
15		cuttings				-Brown and gray silty SAND and rock fragments (weathered granite)		
20		cuttings				-Weathered granite		
25		cuttings				-Weathered granite		
30						Auger Refusal @ 27 ft. bls -Set 6 in. surface casing (0'-27') -Switch to air rotary methods		
35								
40						-Fracture/ soft zone (36'-38') -Fracture (40' +/-)		
45								
50								
55						Boring Terminated @ 52 ft. bls		
60								
65								

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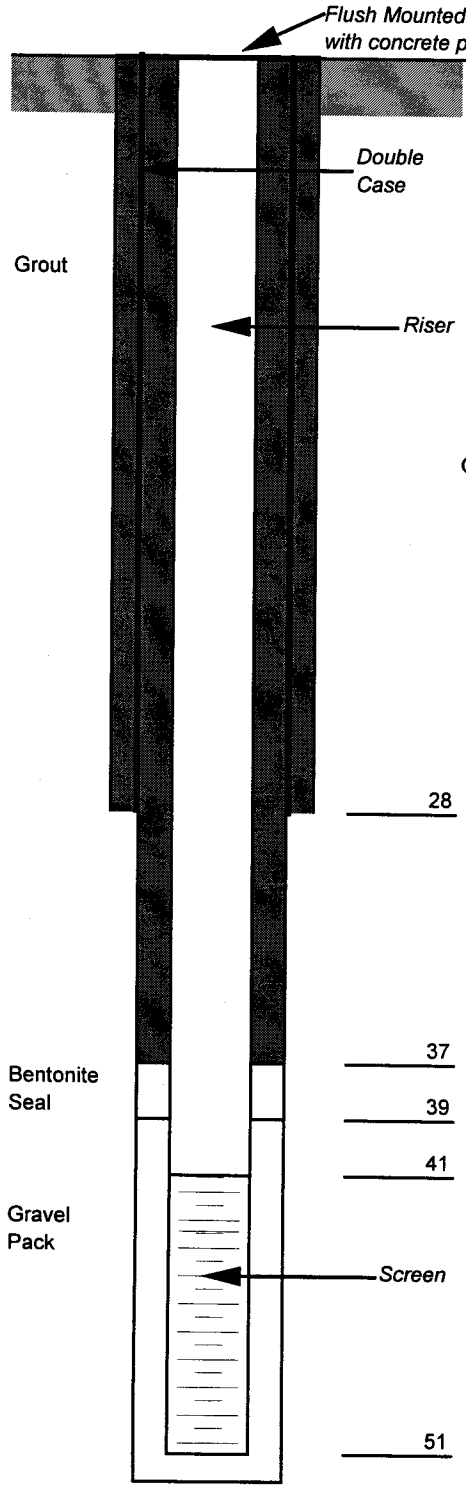
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-28d
Permit No.:

TOC elev.: 238.44 amsl



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameters: 12.25 in./ 6 in.
Bits/Depths: 12.25 in. O.D. HSA/ 6 in. Air Rotary
Total Depth: 51 ft. Depth To Water: 19.4 ft bls (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

		Diameter	Length
Outer Casing Material:	Schedule 40 PVC	6 in.	28 ft.
Casing Material:	Schedule 40 PVC	2 in.	41 ft.
Screen Material:	Schedule 40 PVC	2 in.	10 ft.
Slot Size:	0.010 in.	Setting:	41 to 51 ft bls
Filter Material:	#2 Filter Sand	Setting:	39 to 51 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	37 to 39 ft bls
Grout:	type I portland cement	Setting:	1 to 37 ft bls
Well Protection:	Flush mounted manhole with 2ft x 2ft x 6 in concrete pad		

TIME LOG

	Started	Completed
Drilling:	4/20/98	4/22/98
Installation:	4/22/98	4/23/98
Development:	4/30/98	4/30/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 6-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 40 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-29
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 39' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Wood chips and topsoil (1 foot) - Reddish brown SILT		
4								
6		3-3-4-6	5'-7'	24		-Moist, light reddish brown, sandy SILT, some mica		
8								
10		3-3-4-5	10'-12'	24	0	-Moist, light brown, white, and green, fine sandy SILT saprolite		
12								
14								
16		3-4-6-7	15'-17'	24	0	- SAA		
18								
20		3-10-13-14	20'-22'	24	0	-SAA (green and white unit becoming dominant		
22								
24								

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LOG OF BORING

BORING # MW-29
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		8-13-14-15	25'-27'	24	0	-SAA (8 inch quartz vein @ 26.5' +/-)		
28								
30		13-26-50/6	30'-32'	16	0	- SAA		
32								
34								
36		13-50/6	35'-37'	12	0	-SAA		
38								
40						Auger Refusal @ 40' bls		
42								
44								
46								
48								

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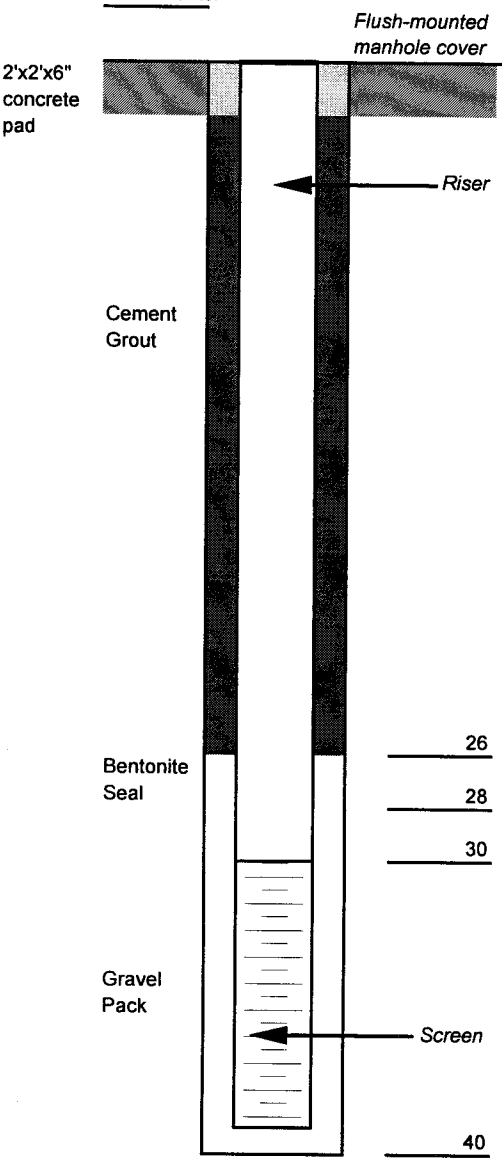
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-29
Permit No.:

TOC elev.: 275.42 amsl



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	40 ft.	Depth To Water	38.8 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	30 to 40 ft bls
Filter Material:	#2 Filter Sand	Setting:	28 to 40 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	26 to 28 ft bls
Grout:	type I portland cement	Setting:	1 to 26 ft. bls
Well Protection:	flush mount	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/6/98	4/6/98
Installation:	4/6/98	4/14/98
Development:	4/6/98	4/6/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 21-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 52 ft. bls
Method Used: 12.25 in. O.D. Hollow Stem Auger/ Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-29d
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 45' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
5						- Augers were advanced through overburden to the top of rock, with no samples being taken. Upon reaching auger refusal (top of rock), a 6 inch I.D. surface casing was grouted into place using a cement/ bentonite mixture. After allowing 24 hours for the grout to cure, the boring was avanced into rock by using air rotary methods.		
10								
15		cuttings				-Medium light brown sandy SILT, some mica		
20		cuttings				-Medium light brown sandy SILT, some mica		
25		cuttings				-Medium light brown sandy SILT, some mica and rock fragments		
30		cuttings				-Gray/ green sandy SILT and rock fragments		
35		cuttings				-Brown, micaceous, sandy SILT		
40						Auger Refusal @ 40.5 ft. bls -Set 6 inch surface casing (0'-40.5') -Switch to air rotary methods		
45						-Fracture (45')		
50						-Fracture (46'-48')		
55						Boring Terminated @ 52 ft. bls		
60								
65								

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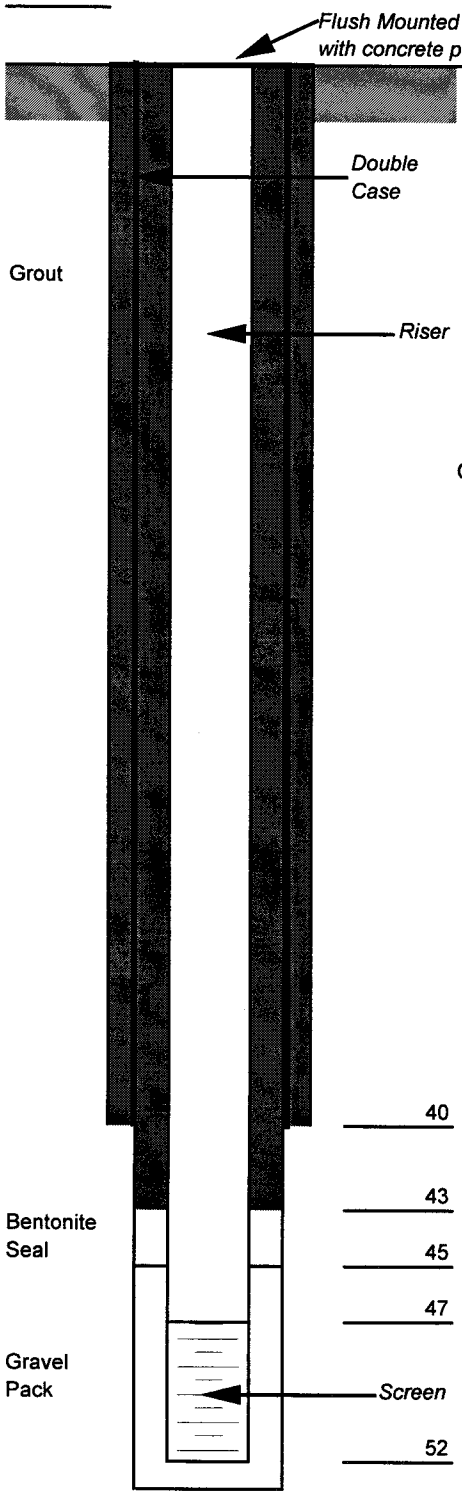
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-29d
Permit No.:

TOC elev.: 275.06 amsl



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameters: 12.25 in./ 6 in.
Bits/Depths: 12.25 in. O.D. HSA/ 6 in. Air Rotary
Total Depth: 52 ft. Depth To Water: 38.8 ft bls (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

		Diameter	Length
Outer Casing Material:	Schedule 40 PVC	6 in.	40.5 ft.
Casing Material:	Schedule 40 PVC	2 in.	47 ft.
Screen Material:	Schedule 40 PVC	2 in.	5 ft.

Slot Size: 0.010 in. Setting: 47 to 52 ft bls
Filter Material: #2 Filter Sand Setting: 45 to 52 ft bls
Seal Material: 3/8 in. bentonite pellet Setting: 43 to 45 ft bls
Grout: type I portland cement Setting: 1 to 43 ft bls
Well Protection: Flush mounted manhole with 2ft x 2ft x 6 in concrete pad

TIME LOG

	Started	Completed
Drilling:	4/21/98	4/22/98
Installation:	4/22/98	4/23/98
Development:	5/4/98	5/4/98

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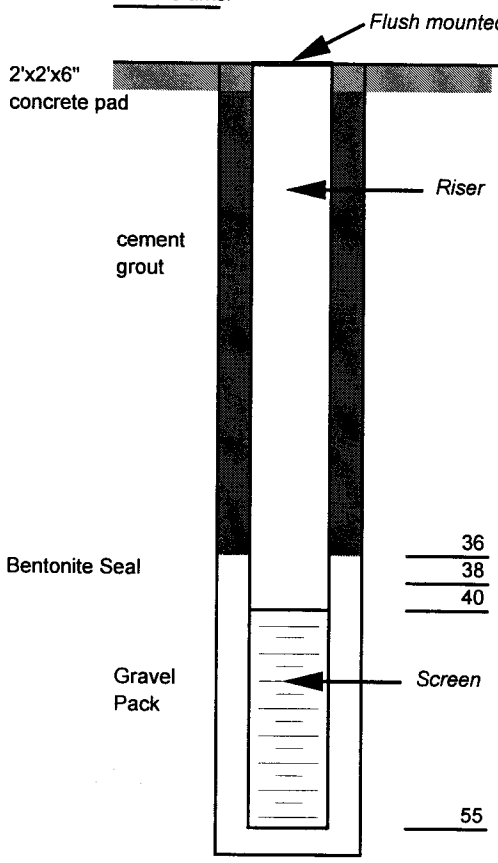
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-30
Permit No.:

TOC elev.: 282.23 amsl



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	55 ft. bls	Depth To Water	47.7 ft bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	15 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	40 to 55 ft bls
Filter Material:	#2 Filter Sand	Setting:	38 to 55 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	36 to 38 ft bls
Grout:	Portland cement type I	Setting:	1 to 36 ft bls
Well Protection:	Flush mounted manhole		

TIME LOG

	Started	Completed
Drilling:	4/7/98	4/7/98
Installation:	4/7/98	4/14/98
Development:	4/14/98	4/14/98

Note: Well was originally installed on 4/7/1998, with the screened interval from 53 ft. bls to 63 ft. bls. Due to a large difference between the top of the screen and the top of the static water column, TB-4a was pulled and re-set with fifteen feet of screen from 40 ft. bls to 55 ft. bls. The remaining 10 ft. was backfilled with sand and bentonite pellets.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 7-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 65 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-30
Page 1 of 3
Permit #:
Job #: 6172-22910
Water elv: 50' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			-Topsoil and rootmat (4 inches) -Reddish brown sandy SILT		
4								
6		4-7-6-7	5'-7'	24	0	-Reddish brown CLAY/ SILT, moist, micaceous (6.5') -Quartz vein (6.6')		
8						-Lt. reddish brown, silty, coarse SAND saprolite, moist		
10		3-10-10-8	10'-12'	24	0	-Reddish brown, moist, micaceous, sandy SILT saprolite (11.2') -Quartz vein (11.4') -Medium lt. brown, moist, micaceous, sandy SILT saprolite		
12								
14								
16		4-4-5-6	15'-17'	24	0	-SAA (16.5') -Lt. reddish brown sandy SILT saprolite, moist, black mineralization along fractures, moist		
18								
20		5-7-8-10	20'-22'	24	0	-Light brown, moist, micaceous, sandy SILT saprolite (20.5') -Light reddish brown, moist, sandy SILT saprolite, black mineralization along fractures, some highly micaceous bands		
22								
24								

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LOG OF BORING

BORING # MW-30
Page 2 of 3
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		5-7-8-8	25'-27'	24	0	-SAA, some mica throughout; no bands		
28								
30		5-6-8-12	30'-32'	24	0	-Light brown, moist, micaceous, sandy SILT saprolite, interbedded with light reddish brown sandy SILT saprolite, black oxidized mineralization throughout entire split spoon sample (pegmatite in nose of spoon)		
32								
34								
36		9-12-12-14	35'-37'	22	0	-Moist, dark green, white, and light brown sandy SILT saprolite, some mica		
38								
40		16-19-21-24	40'-42'	24	0	-SAA		
42								
44								
46		8-16-23-21	45'-47'	22	0	-SAA		
48								
50								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # MW-30
Page 3 of 3
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
52		cuttings				-SAA, moist		
54								
56		cuttings				-SAA, wet		
58								
60								
62								
64								
66						Boring Terminated @ 65 ft. bls		
68								
70								
72								
74								
76								

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 2-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 35.5 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-31
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 30' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Topsoil and rootmat (3 inches) - Reddish brown SILT		
4								
6		6-8-10-12	5'-7'	8	42	- Reddish brown silty/clayey SAND, large quartz and feldspar fragments, moist		
8								
10		4-5-4-5	10'-12'	18	24.5	- Very light reddish brown, quartz and feldspar SAND saprolite, moist		
12						- Reddish brown clay/SILT saprolite, micaceous, black oxidation bands, moist	11.5 ft.	
14								
16		3-4-5-6	15'-17'	24	43.4	- SAA		
18								
20		3-6-7-9	20'-22'	24	35	- Light brown SILT saprolite, very micaceous, moist (4 inch quartz and feldspar inclusion @ 21 ft +/-)		
22								
24								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # MW-31
Page 2 of 2
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		28-50/4	25'-27'	9	12	- White quartz and feldspar medium/ coarse SAND saprolite, dry (weathered granite)		
28								
30		50/2	30'-32'	2	40	- SAA, some fines, wet		
32								
34								
36						Auger Refusal @ 35.5 ft. bls		
38								
40								
42								
44								
46								
48								

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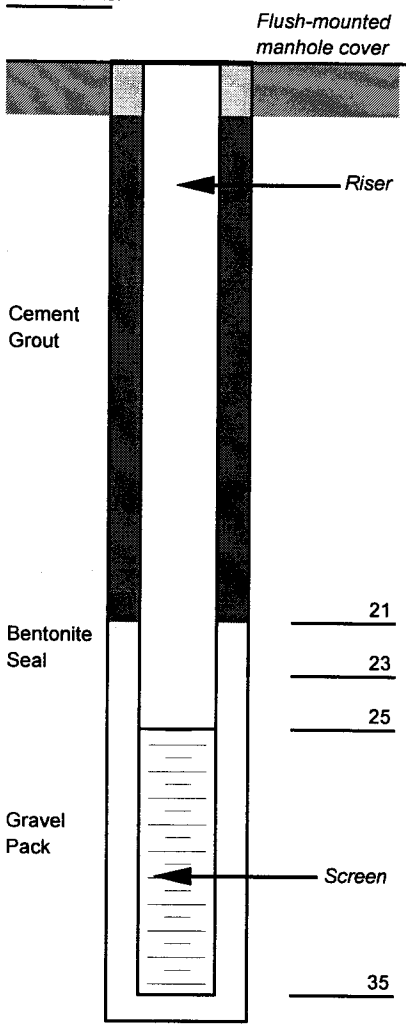
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-31
Permit No.:

TOC elev.: 261.67 amsl



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	35.5 ft.	Depth To Water	27 ft bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	25.5 to 35.5 ft bls
Filter Material:	#2 Filter Sand	Setting:	23 to 35.5 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	21 to 23 ft bls
Grout:	type I portland cement	Setting:	23 to 1 ft. bls
Well Protection:	flush mount	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/2/98	4/2/98
Installation:	4/2/98	4/13/98
Development:	4/2/98	4/2/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 16-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 66 ft. bls
Method Used: 12.25 in. O.D. Hollow Stem Auger/ Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING #: MW-31d
Page 1 of: 1
Permit #:
Job #: 6172-22910
Water elv: 30' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
5						- Augers were advanced through overburden to the top of rock, with no samples being taken. Upon reaching auger refusal (top of rock), a 6 inch I.D. surface casing was grouted into place using a cement/ bentonite mixture. After allowing 24 hours for the grout to cure, the boring was avanced into rock by using air rotary methods. For a description of the soil lithology, see TB-1.		
10								
15								
20								
25								
30								
35								
40								
45								
50						Auger Refusal @ 51 ft. bls -Set 6 inch surface casing (0'-51') -Switch to air rotary methods		
55								
60						-Consistency of bedrock varies from fair to poor. Many fractures throughout entire air run.		
65						-Boring Terminated @ 66 ft. bls		

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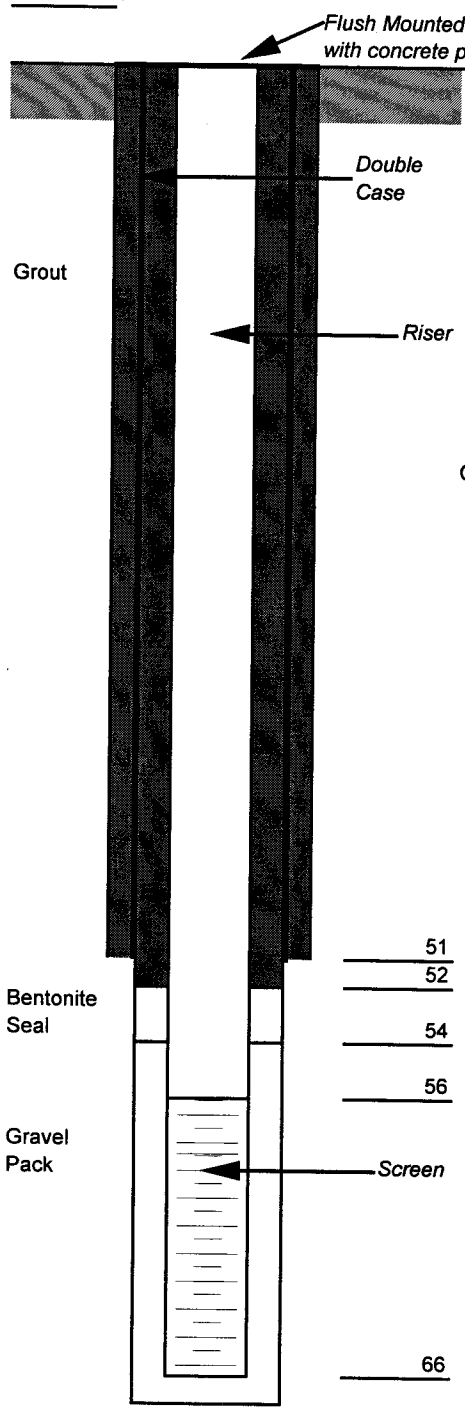
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill

Location: Raleigh, North Carolina

Well No.: MW-31d
Permit No.:

TOC elev.: 260.92 amsl



DRILLING SUMMARY

Drilling Company: SAEDACCO
Driller: Steve Poloniewicez
Drill Rig/Model: Mobile Drill B-59
Borehole Diameters: 12.25 in./ 6 in.
Bits/Depths: 12.25 in. O.D. HSA/ 6 in. Air Rotary
Total Depth: 66 ft.
Depth To Water: 27.3 ft bls (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

		Diameter	Length
Outer Casing Material:	Schedule 40 PVC	6 in.	51 ft.
Casing Material:	Schedule 40 PVC	2 in.	56 ft.
Screen Material:	Schedule 40 PVC	2 in.	10 ft.
Slot Size:	0.010 in.	Setting:	56 to 66 ft bls
Filter Material:	#2 Filter Sand	Setting:	54 to 66 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	52 to 54 ft bls
Grout:	type I portland cement	Setting:	1 to 52 ft bls
Well Protection:	Flush mounted manhole with 2ft x 2ft x 6 in concrete pad		

TIME LOG

	Started	Completed
Drilling:	4/16/98	4/23/98
Installation:	4/23/98	4/23/98
Development:	4/23/98	4/23/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 3-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 23 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-32
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 12' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
			0 - 5 cuttings			- Topsoil and rootmat (8 inches) - Light reddish brown sandy SILT		
2								
4								
6		7-13-13-15	5'-7'	24	0	- Reddish brown silty/clayey SAND, moist		
8								
10		3-3-4-6	10'-12'	24	25	-Wet, dark green and reddish brown micaceous silt, some organics		
12								
14								
16		10-20-20-31	15'-17'	24	23	-Wet, dark green/blue and reddish brown micaceous SAND and SILT, trace organics		
18								
20		50/6	20'-22'	4	25	-SAA		
22								
24						Auger Refusal @ 23' bls		

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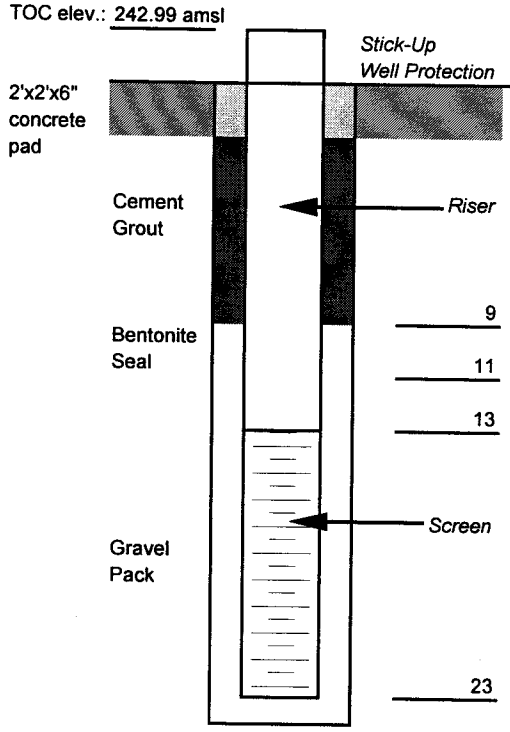
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-32
Permit No.:

TOC elev.: 242.99 amsl



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	23 ft.	Depth To Water	14.1 ft btoc (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	13 to 23 ft bls
Filter Material:	#2 Filter Sand	Setting:	11 to 23 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	9 to 11 ft bls
Grout:	type I portland cement	Setting:	1 to 9 ft. bls
Well Protection:	Above grade steel	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/3/98	4/3/98
Installation:	4/3/98	4/21/98
Development:	4/6/98	4/6/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 22-Jul-98
Drilling Co.: SAEDACCO
Total Depth: 25 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-33
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 11' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
						-Topsoil and Rootmat (8" +/-)		
2								
4								
6		2-2-6-5	5'-7'	20		-Light Brown/Tan Sandy SILT, some rock fragments, slightly micaceous, moist		
8								
10		2-3-4-5	10'-12'	0		-No sample recovered		
12								
14								
16		4-6-14-18	15'-17'	18		-Light Brown Sandy SILT, wet		
18								
20		6-14-14-14	20'-22'	22		-Reddish Brown Silty SAND Saprolite. 6 inch zone of white/gray Sandy CLAY Saprolite (21'-21.5')		
22								
24						Boring Terminated @ 25' bls.		

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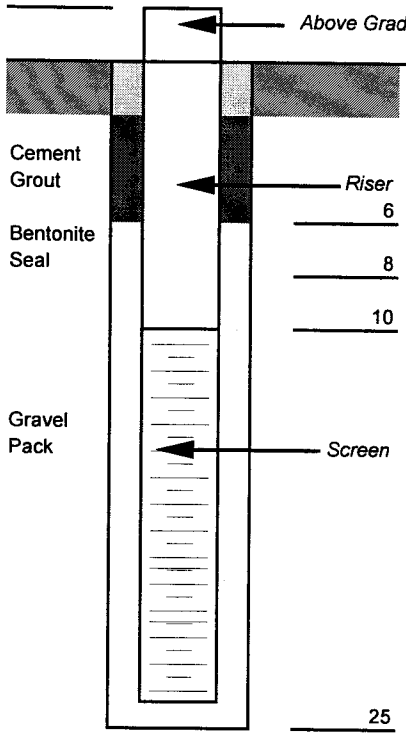
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-33
Permit No.:

TOC elev.:



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	25 ft.	Depth To Water	12.51 ft btoc (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	15 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	10 to 25 ft bls
Filter Material:	#2 Filter Sand	Setting:	8 to 25 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	6 to 8 ft bls
Grout:	type I portland cement	Setting:	1 to 6 ft. bls
Well Protection:	Above grade steel	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	7/22/98	7/22/98
Installation:	7/23/98	7/23/98
Development:	7/24/98	7/24/98

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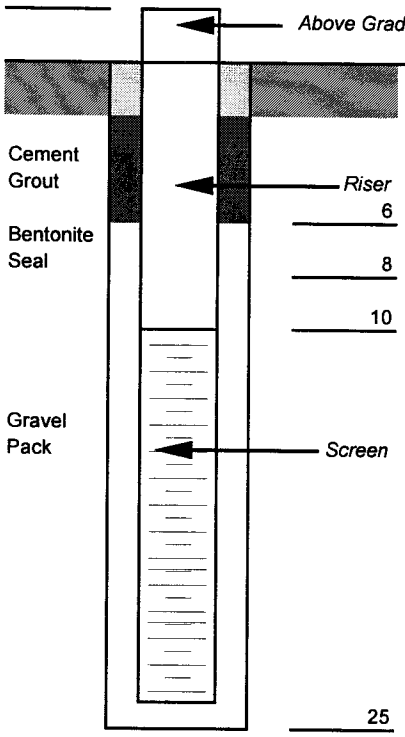
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-34
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	25 ft.	Depth To Water	14.39 ft btoc (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	15 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	10 to 25 ft bls
Filter Material:	#2 Filter Sand	Setting:	8 to 25 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	6 to 8 ft bls
Grout:	type I portland cement	Setting:	1 to 6 ft. bls
Well Protection:	Above grade steel	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	7/23/98	7/23/98
Installation:	7/23/98	7/23/98
Development:	7/24/98	7/24/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 23-Jul-98
Drilling Co.: SAEDACCO
Total Depth: 25 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-34
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 12' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2						-Topsoil and Rootmat (8" +/-)		
4		5-3-5-5	4'-6'	24		-Light Brown, Sandy SILT Saprolite, Black mineralized fractures, slightly micaceous, small quartz frag zones (<1 inch), moist		
6								
8								
10		3-2-4-4	9'-11'	24		Light Brown/Yellow/White, Sandy SILT Saprolite. Black mineralized fractures, trace plastic clay, very moist		
12								
14		2-3-5-8	14'-16'	24		-SAA -Weathered Granite (Pegmatite) in nos of spoon		
16								
18								
20		3-4-7-9	19'-21'	24		-Banded (2 mm) Brown and White Sandy SILT Saprolite. Black mineralized fractures.		
22								
24						Boring Terminated @ 25' bls.		

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 22-Jul-98
Drilling Co.: SAEDACCO
Total Depth: 55 ft. bls
Method Used: 8.25 in. I.D. Hollow Stem Auger / Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-34d
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 12' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Topsoil and rootmat (8 inches) - Brown SILT/SAND		
4								
6			5-10 cuttings			-Medium to Dark Brown Sandy SILT		
8								
10			10-15 cuttings			-Medium Light Brown Silty SAND Saprolite, moist to wet		
12								
14								
16			15-20 cuttings			-SAA		
18								
20			20-25 cuttings			-SAA		
22								
24								

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LOG OF BORING

BORING # MW-34d
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26			25-30 cuttings			-Medium Light Brown Sandy SILT Saprolite, wet.		
28								
30			30-38 cuttings			-SAA (Auger Refusal @ 38 ft bls set 6 inch casing and continued with air rotary methods on 7/23/98)		
32								
34						-Bedrock extremely fractured from 38 ft. to 48 ft.		
36								
38								
40								
42								
44						-Cuttings are coarse sand: quartz and feldspar fragments.		
46								
48								
50						-Large fracture set from 50 ft. to 55 ft. -Boring terminated @ 55' bls		

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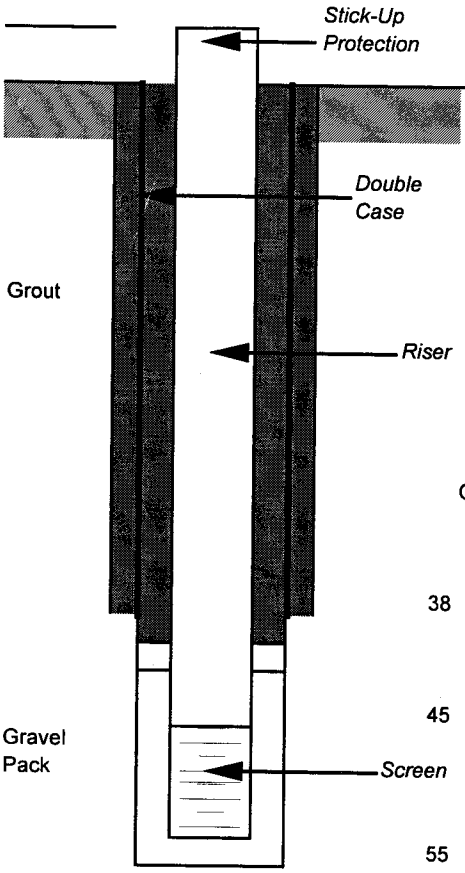
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill

Location: Raleigh, North Carolina

Well No.: MW-34d
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company: SAEDACCO
Drillers: Steve Poloniewicez
Drill Rig/Model: Mobile Drill B-59
Borehole Diameters: 12 inch/ 6 inch
Drilling Fluid: N/A
Bits/Depths: Air Rotary/ 38 ft. bls
Total Depth: 55 ft.
Depth To Water: 14.67 ft. btoc (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

		Diameter	Length
Outer Casing Material:	Schedule 80 PVC	6 inches	38 ft
Casing Material:	Schedule 40 PVC	2 inches	48 ft
Screen Material:	Schedule 40 PVC	2 inches	10 ft
Slot Size:	0.010 inch	Setting:	45 to 55 ft. bls
Filter Material:	#2 Filter Sand	Setting:	43 to 55 ft. bls
Seal Material:	3/8 inch bentonite pellet	Setting:	41 to 43 ft. bls
Grout:	type I portland cement	Setting:	1 to 41 ft. bls
Well Protection:	Above Grade Steel		

TIME LOG

	Started	Completed
Drilling:	7/22/98	7/23/98
Installation:	7/23/98	7/23/98
Development:	7/24/98	7/24/98

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 23-Jul-98
Drilling Co.: SAEDACCO
Total Depth: 25 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # MW-35
Page 1 of 1
Permit #:
Job #: 6172-22910
Water elv: 13' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2						-Topsoil and Rootmat (8" +/-)		
4		3-4-6-6	4'-6'	24		-Very Light Red/Yellow Brown SILT Saprolite, micaceous, moist		
6								
8								
10		3-4-6-7	9'-11'	24		-Light Brown and White Fine Sandy Silt Saprolite. Black mineralized fractures. Zones of weathered pegmatitic feldspar (<1 inch)		
12								
14		5-5-6-8	14'-16'	24		-SAA (slightly micaceous)		
16								
18								
20		5-5-6-7	19'-21'	24		-SAA (alternating Light Brown and White bands)		
22								
24						Boring Terminated @ 25' bls.		

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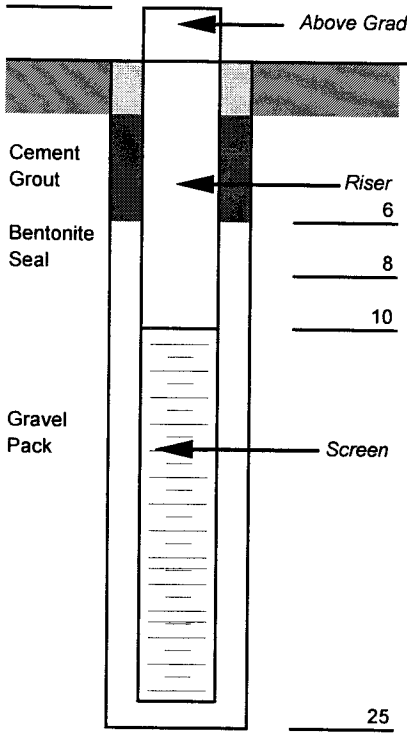
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: MW-35
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	25 ft.	Depth To Water	17.70 ft btoc (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	15 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	10 to 25 ft bls
Filter Material:	#2 Filter Sand	Setting:	8 to 25 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	6 to 8 ft bls
Grout:	type I portland cement	Setting:	1 to 6 ft. bls
Well Protection:	Above grade steel	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	7/23/98	7/23/98
Installation:	7/23/98	7/23/98
Development:	7/24/98	7/24/98

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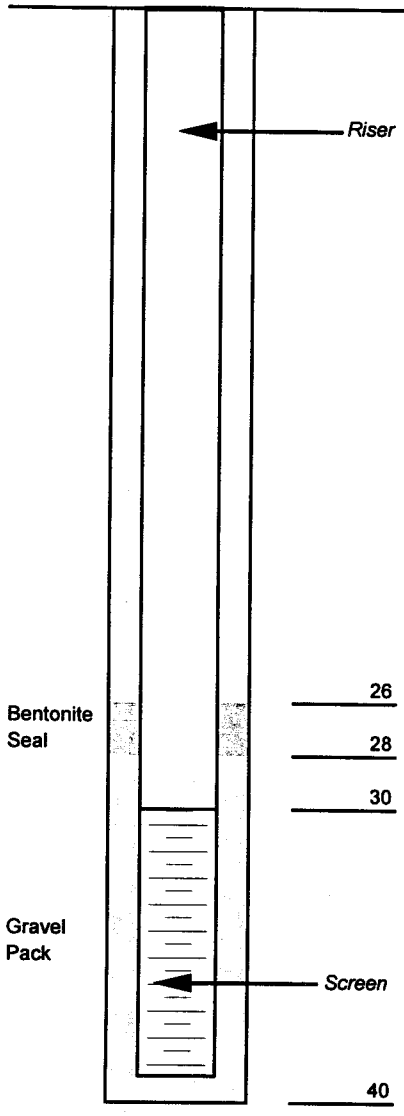
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-1a
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	40 ft.	Depth To Water	24.8 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	30 to 40 ft bls
Filter Material:	#2 Filter Sand	Setting:	28 to 40 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	26 to 28 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/7/98	4/7/98
Installation:	4/7/98	abandoned 4/14/98
Development:	4/7/98	4/7/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture. On 4/8/1998, TB-1a was redrilled by Atlantic Boring Contractors and set with 10 feet of screen from 20 feet to 30 feet bls in order to re-sample the edge of the buffer zone.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 7-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 40 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-1a
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 30' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Topsoil and rootmat (4 inches) - Reddish brown SILT, micaceous		
4								
6		2-4-4-6	5'-7'	24	0	-Moist, light reddish brown, sandy SILT saprolite, micaceous, black mineralization along fractures		
8								
10		4-8-6-8	10'-12'	24	0	-Moist, silty SAND saprolite weathered pegmatite (11 ft.) -Brown sandy SILT saprolite, moist, very micaceous		
12								
14								
16		3-6-7-9	15'-17'	24	0	-Lt. brown and dark green sandy SILT saprolite, moist, micaceous		
18								
20		3-7-15-50/6	20'-22'	24	0	-SAA (pegmatite in nose of spoon)		
22								
24								

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LOG OF BORING

BORING # TB-1a
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		9-13-13-17	25'-27'	18	0	-Lt brown, moist, micaceous, sandy SILT saprolite (25.5')		
						-Orthoclase and quartz pegmatite (26')		
28						-Dk green, moist, sandy SILT saprolite some lt. brown, micaceous, sandy SILT saprolite interbedding		
30		7-14-18-28	30'-32'	24	0	-Light brown, micaceous, sandy SILT saprolite		
32								
34								
36		8-21-40-50/4	35'-37'	22	0	-SAA		
38								
40						Boring Terminated @ 40 ft. bls		
42								
44								
46								
48								

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 3-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 46 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-4
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 43' @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
			0 - 5 cuttings			- Topsoil and rootmat (6 inches) - Reddish brown sandy SILT		
2								
4								
6		8-10-14-14	5'-7'	24	2	- Reddish brown SILT with quartz/ feldspar pegmatite, moist		
8								
10		4-4-6-8	9'-11'	24	30	-Reddish brown sandy SILT, moist, micaceous		
12								
14		5-5-10-10	14'-16'	20	30	-SAA (14.5') -Weathered quartz and feldspar pegmatite		
16								
18								
20		5-5-6-7	19'-21'	20	32	-SAA		
22								
24								

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LOG OF BORING

BORING # TB-4
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sampl No.	Blows/6" 140 lbs.	Sample Inter.	Rec. (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		5-5-5-6	24'-26'	24	33	- SAA (25') -Medium light brown SILT saprolite, very micaceous, black mineralization along fractures		
28								
30		6-6-10-10	29'-31'	22	39	- Light brown and dark green, sandy SILT saprolite, micaceous		
32								
34								
36		5-6-10-16	34'-36'	24	30	-SAA (35.5') -Quartz and feldspar pegmatite interbedded with lt. brown micaceous SILT		
38								
40		10-16-50/5	39'-41'	15	17	-SAA		
42								
44								
46						Auger Refusal @ 46 ft. bls		
48								

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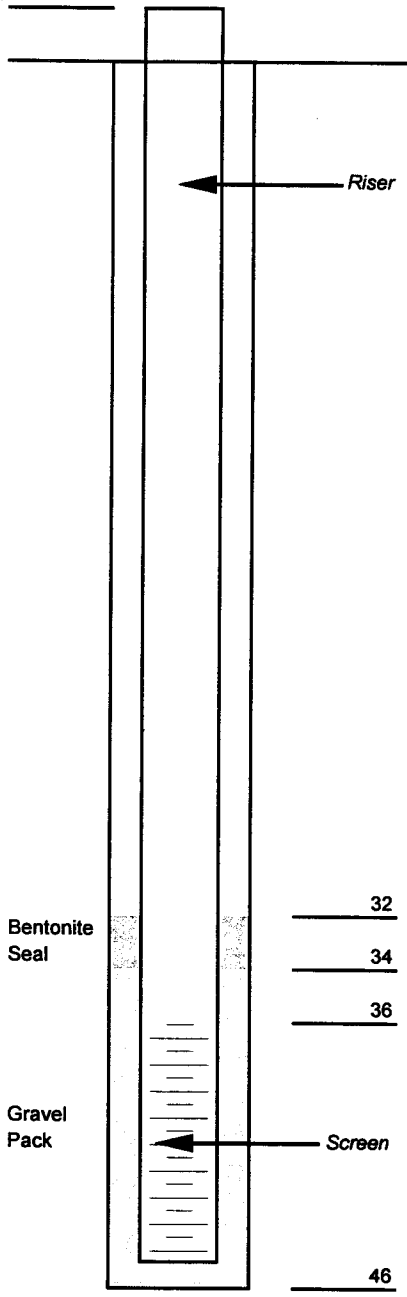
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-4
Permit No.:

TOC elev.:



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	46 ft.	Depth To Water	42.5 ft bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	36 to 46 ft bls
Filter Material:	#2 Filter Sand	Setting:	34 to 46 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	32 to 34 ft bls
Grout:	N/A	Setting:	N/A
Surface Casing Material:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/3/98	4/3/98
Installation:	4/3/98	Abandoned (4/14/98)
Development:	4/6/98	4/6/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 8-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 49 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-4b
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 44' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Topsoil and rootmat (4 inches) - Reddish brown SILT		
4		4-5-9-10	4'-6'	24	0	-Reddish brown, moist, clay/SILT, some mica		
6								
8								
10		6-7-8-7	9'-11'	24	0.2	-Lt. reddish brown sandy SILT saprolite, moist, black oxidized mineralization		
12								
14		4-5-5-7	14'-16'	24	0	-SAA		
16								
18								
20		5-6-6-8	19'-21'	18	0	-Tan and lt. reddish brown sandy SILT saprolite, moist, micaceous (pegmatite fragments @ 19')		
22								
24		5-6-8-9	24'-26'	24	0	-SAA, black mineral oxidation		

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LOG OF BORING

BORING # TB-4b
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26								
28								
30		17-28-50/6	29'-31'	15	0	-Weathered Granite, sampled as moist, silty SAND saprolite		
32								
34		10-11-24-20	34'-36'	24	0	-Brown, moist, very micaceous sandy SILT saprolite, grading into dark green and white sandy SILT saprolite. Dark green and white becoming dominant at 35.5' +/-		
36								
38								
40		8-12-17-17	39'-41'	24	0	-Dark green and white, moist, sandy SILT saprolite, gneissic texture, mineralized fracture @ 40.8' +/-		
42								
44		12-19-26-29	44'-46'	24	0	-SAA, wet, interbedded with brown, micaceous SILT saprolite		
46								
48						Auger Refusal @ 49 ft. bls		

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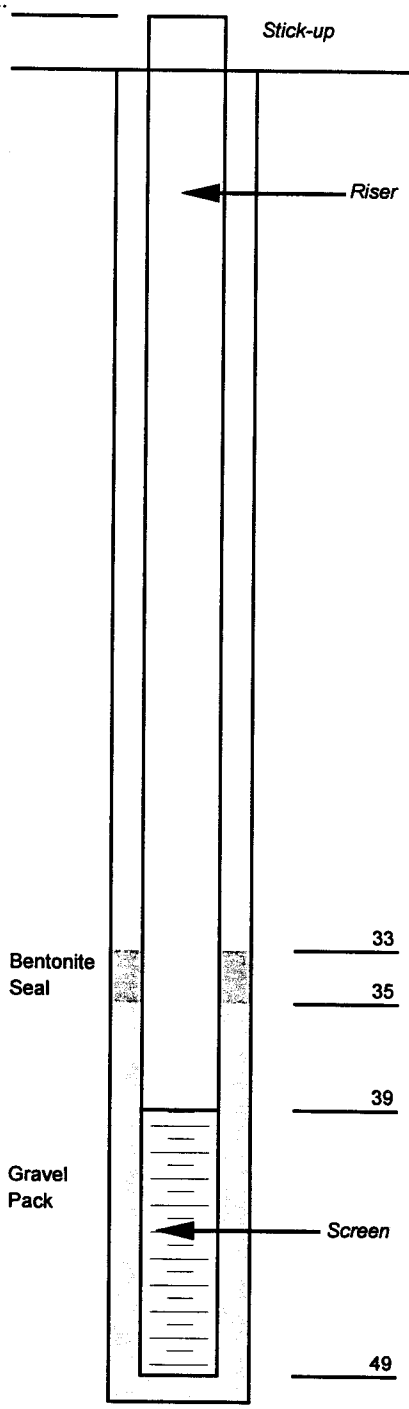
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-4b
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	49 ft.	Depth To Water	37.6 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	39 to 49 ft bls
Filter Material:	#2 Filter Sand	Setting:	35 to 49 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	33 to 35 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/8/98	4/8/98
Installation:	4/8/98	abandoned 4/14/98
Development:	4/8/98	4/8/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 8-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 45 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-4c
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 44' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
			0 - 5 cuttings			- Topsoil and rootmat (4 inches) - Reddish brown SILT		
2								
4								
		9-12-9-12	5'-7'	18	0	-Reddish brown sandy clay/SILT (pegmatite in nose of spoon)		
6								
8								
10		7-8-18-18	10'-12'	22	0	-SAA, moist, quartz and feldspar fragments		
12								
14								
		4-4-7-7	15'-17'	24	0	-SAA, moist, quartz and feldspar fragments		
16								
18								
20		8-9-7-7	20'-22'	24	0	-Weathered pegmatite, sampled as: Feldspar and quartz silty SAND (20.2') Micaceous sandy SILT		
22								
24								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # TB-4c
Page 2 of 2
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		3-14-18-23	25'-27'	22	0	-Moist, very light brown, micaceous sandy SILT saprolite (26') -Weathered pegmatite, iron staining as: silty coarse SAND saprolite, moist		
28								
30		6-15-16-25	30'-32'	24	0	-Weathered granite (pegmatite) as: silty coarse SAND saprolite		
32								
34								
36		50/4	35'-37'	4	0	-SAA		
38								
40		cuttings			0	-SAA, large pegmatitic pieces of mica and orthoclase feldspar		
42								
44								
46						-Auger Refusal @ 45 ft. bls		
48								

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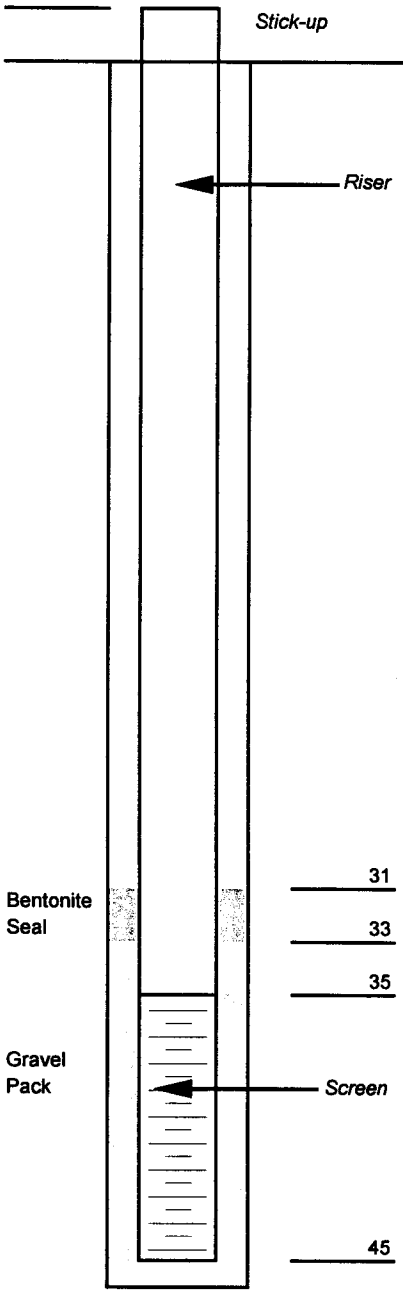
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-4c
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicz
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	45 ft.	Depth To Water	43.4 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	35 to 45 ft bls
Filter Material:	#2 Filter Sand	Setting:	33 to 45 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	31 to 33 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/8/98	4/8/98
Installation:	4/8/98	abandoned 4/14/98
Development:	4/8/98	4/8/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 16-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 50 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-4d
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 44' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
			0 - 5 cuttings			- Topsoil and rootmat (6 inches) - Reddish brown SILT		
2								
4								
6		5-5-8-11	5'-7'	24	0	-Moist, reddish brown micaceous SILT, some clay		
8								
10		4-4-5-7	10'-12'	24	0	-Moist, light to medium reddish brown SILT saprolite, some mica, black mineral oxidation bands		
12								
14								
16		4-4-5-5	15'-17'	18	0	-SAA (15.8' +/-) -Moist, orange and gray (mottled look), SILT saprolite, black mineral oxidation areas (not bands), trace to little mica		
18								
20		4-4-7-7	20'-22'	18	0	-SAA		
22								
24								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # TB-4d
Page 2 of 2
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		5-5-5-5	25'-27'	20	0	-SAA, increasing mica content		
28								
30		50/3	30'-32'	3	0	-Dry, white and gray silty SAND saprolite (partially weathered granite) 1 inch layer of brown sandy CLAY @ 30.5 ft. (weathered diabase?)		
32								
34								
36		13-50/6	35'-37'	12	0	-Dry, white and gray silty SAND saprolite (partially weathered granite)		
38								
40		8-13-11-12	40'-42'	20	0	-Moist, gray silty SAND saprolite (weathered granite)		
42								
44								
46		3-4-6-8	45'-47'	24	0	-Wet, brown, micaceous, SILT saprolite interbedded with dark green and white fine sandy SILT saprolite		
48						Boring Terminated @ 50 ft. bls		

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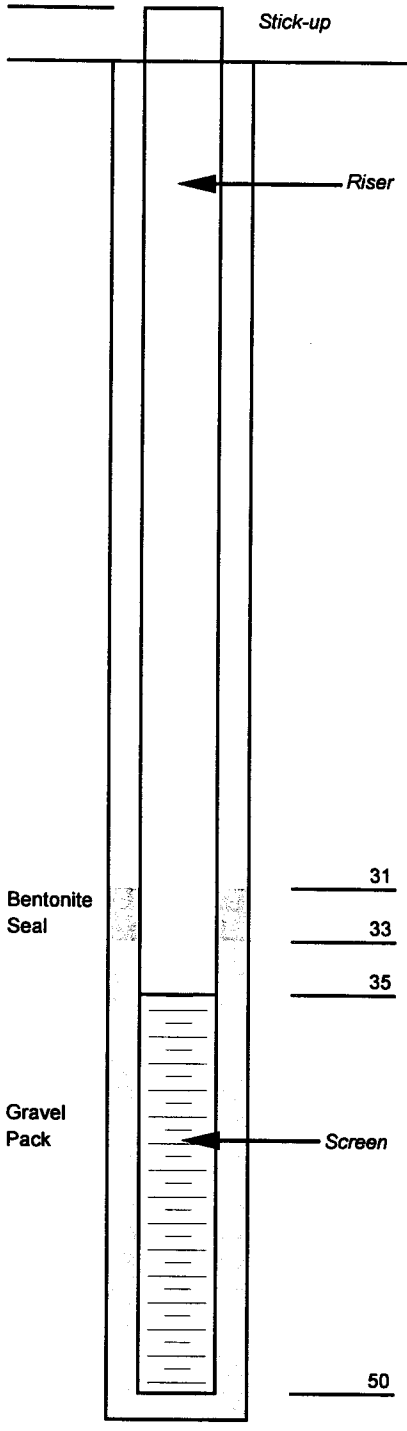
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-4d
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	50 ft.	Depth To Water	40.7 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	15 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	35 to 50 ft bls
Filter Material:	#2 Filter Sand	Setting:	33 to 50 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	31 to 33 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/16/98	4/16/98
Installation:	4/16/98	abandoned 4/21/98
Development:	4/16/98	4/16/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 6-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 75 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger / Air Rotary
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-5
Page 1 of 3
Permit #:
Job #: 6172-22910
Water elv: dry @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			-Reddish brown sandy SILT (fill)		
4								
6		8-8-8-8	5'-7'	24		-Lt. reddish brown fine sandy SILT saprolite, moist, black mineralization along fractures. Trace to no mica.		
8								
10		5-5-4-5	10'-12'	24		-SAA (11')		
12						-Lt. gray, moist, SILT and SAND saprolite (weathered granite), some mica, iron oxide mineralization		
14								
16		3-4-7-10	15'-17'	24		-SAA (15.5') -Lt. reddish brown sandy SILT saprolite, moist, black mineralization along fractures, trace to no mica		
18								
20		3-5-9-12	20'-22'	24		-Interbedded reddish brown, very micaceous SILT saprolite and green/ white SILT saprolite, moist		
22								
24								

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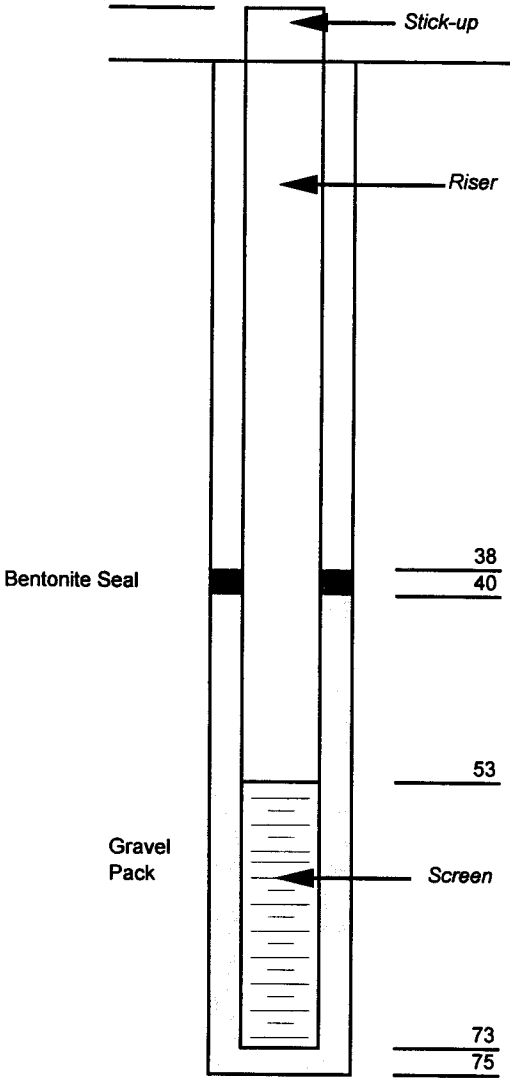
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-5
Permit No.:

TOC elev.:



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameter: 8.25 in / 6 in Drilling Fluid: N/A
Bits/Depths: HSA (0'-30' bls) and Air Rotary (30'-75')
Total Depth: 75 ft. bls Depth To Water 38 ft bls (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	20 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	53 to 73 ft bls
Filter Material:	#2 Filter Sand	Setting:	40 to 73 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	38 to 40 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A		

TIME LOG

	Started	Completed
Drilling:	4/6/98	4/22/98
Installation:	4/22/98	abandoned (4/27/98)
Development:	4/23/98	4/23/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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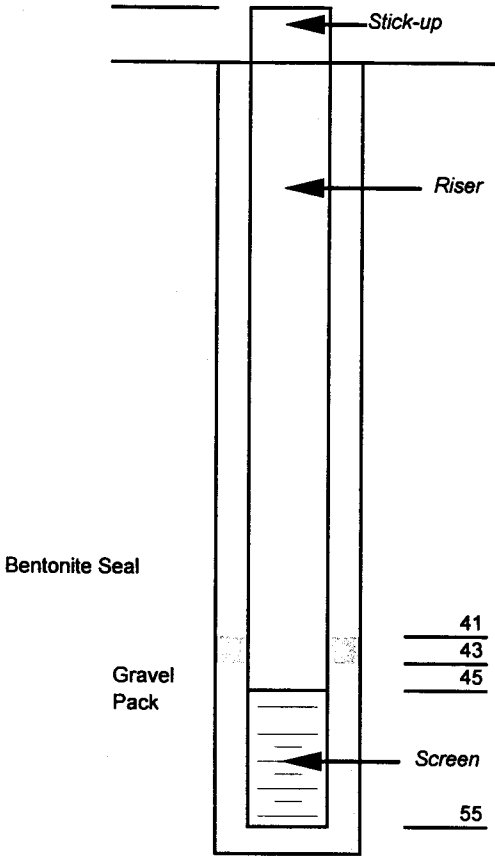
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-7
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company: SAEDACCO Driller: Steve Poloniewicz
Drill Rig/Model: Mobile Drill B-59
Borehole Diameter: 8.25 in Drilling Fluid: N/A
Bits/Depths:
Total Depth: 55 ft. bls Depth To Water 36.5 ft bls (static)
Supervisor Geologist: Mathew Colone

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	45 to 55 ft bls
Filter Material:	#2 Filter Sand	Setting:	43 to 55 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	41 to 43 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A		

TIME LOG

	Started	Completed
Drilling:	4/10/98	4/10/98
Installation:	4/10/98	abandoned 4/14/98
Development:	4/10/98	4/10/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 10-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 55 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-7
Page 1 of 3
Permit #:
Job #: 6172-22910
Water elv: 41' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			-Topsoil and rootmat (4 inches) -Reddish brown sandy SILT		
4								
6		6-12-18-14	5'-7'	24	0	-Reddish brown CLAY/ SILT, moist, micaceous (5.5') -Weathered granite as dry,silty SAND saprolite		
8								
10		3-4-6-8	10'-12'	24	0	-Lt. reddish brown sandy SILT saprolite, moist, black mineral oxidation some to little mica (11')		
12						-Red to reddish brown, moist, sandy SILT saprolite, micaceous		
14								
16		4-5-6-7	15'-17'	24	0.2	-SAA, interbedding of previous, moist, some clay		
18								
20		5-11-11-11	20'-22'	24	0.2	Brown, moist, micaceous, sandy SILT saprolite (20.8') -Weathered granite as silty SAND saprolite		
22								
24								

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LOG OF BORING

Project North Wake Unlined Landfill Location Raleigh, North Carolina

BORING # TB-7
Page 2 of 3
Permit #:

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		8-5-6-6	25'-27'	24	0.5	-Brown, moist, micaceous sandy SILT saprolite		
28								
30		3-6-9-10	30'-32'	24	0.2	-SAA, interbedded with reddish brown, SILT saprolite, black mineral oxidation		
32								
34								
36		6-7-7-9	35'-37'	24	0	-Weathered granite as white silty SAND saprolite (36') -Brown, moist, micaceous SILT saprolite and light reddish brown SILT saprolite, black mineral oxidation		
38								
40		3-5-8-9	40'-42'	24	0.2	- Light brown, moist, micaceous SILT saprolite and light reddish brown, SILT saprolite, some mica		
42								
44								
46		3-7-10-15	45'-47'	24	0	-Light brown, wet, micaceous SILT saprolite interbedded with dark green sandy SILT saprolite.		
48								

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LOG OF BORING

BORING # TB-7
Page 3 of 3
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
						-SAA, moist		
50		5-10-11-16	50'-52'	24	0	-Light brown, micaceous SILT saprolite interbedded with dark green SILT saprolite, black mineral oxidation, some granitic material in nose of spoon		
52								
54								
56						-Boring Terminated @ 55 ft. bls		
58								
60								
62								
64								
66								
68								
70								
72								
74								

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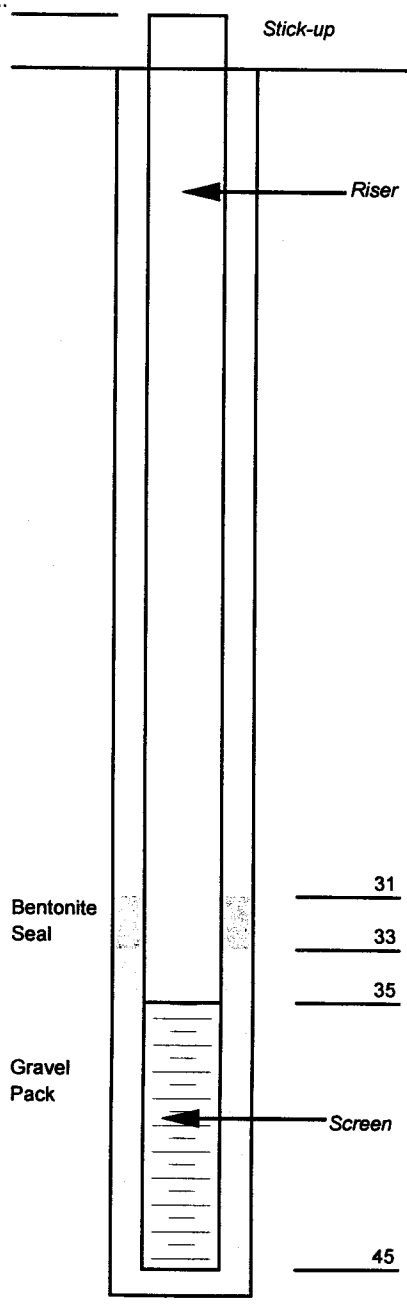
WELL CONSTRUCTION SUMMARY

Project: North Wake Unlined Landfill Location: Raleigh, North Carolina Well No.: TB-7a
Permit No.:

TOC elev.: _____



DRILLING SUMMARY

Drilling Company:	SAEDACCO	Driller:	Steve Poloniewicez
Drill Rig/Model:	Mobile Drill B-59		
Borehole Diameter:	8.25 in	Drilling Fluid:	N/A
Bits/Depths:			
Total Depth:	45 ft.	Depth To Water	32.4 ft. bls (static)
Supervisor Geologist:	Mathew Colone		

WELL DESIGN

Casing Material:	Schedule 40 PVC	Diameter:	2-in.
Screen Length:	10 ft.	Diameter:	2-in.
Slot Size:	0.010-in.	Setting:	35 to 45 ft bls
Filter Material:	#2 Filter Sand	Setting:	33 to 45 ft bls
Seal Material:	3/8 in. bentonite pellet	Setting:	31 to 33 ft bls
Grout:	N/A	Setting:	N/A
Well Protection:	N/A	Setting:	N/A

TIME LOG

	Started	Completed
Drilling:	4/13/98	4/13/98
Installation:	4/13/98	abandoned 4/21/98
Development:	4/13/98	4/13/98

Note: Temporary well was installed and sampled. Upon receipt of analytical data, the well was abandoned using a portland cement and bentonite powder mixture.

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LOG OF BORING

Project: North Wake Unlined Landfill
Location: Raleigh, North Carolina
Date Drilled: 13-Apr-98
Drilling Co.: SAEDACCO
Total Depth: 45 ft. bls
Method Used: 8.25 in. O.D. Hollow Stem Auger
Inspector: Mathew Colone
Organic Vapor Inst:

BORING # TB-7a
Page 1 of 2
Permit #:
Job #: 6172-22910
Water elv: 35' bls @ 0 hr.

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
2			0 - 5 cuttings			- Topsoil and rootmat (4 inches) - Reddish brown SILT		
4								
6		4-5-5-10	5'-7'	24	0	-Moist, red/brown fine sandy clay/SILT		
8								
10		4-8-7-8	10'-12'	16	0	-White/ lt. brown/ pink, silty SAND saprolite (weathered granite)		
12								
14								
16		8-11-14-14	15'-17'	24	0	-SAA		
18								
20		3-4-9-14	20'-22'	22	0	-SAA, with 1 ft. pegmatitic mica zone from 20'-21'		
22								
24								

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LOG OF BORING

BORING # TB-7a
Page 2 of 2
Permit #:

Project North Wake Unlined Landfill Location Raleigh, North Carolina

Depth (feet)	Sample No.	Blows/6" 140 lbs.	Sample Inter.	Rec (inches)	Org. Vap (ppm)	Sample Description	Strata Change	Remarks (time)
26		4-5-7-10	25'-27'	24	0	-Moist, lt. red/ brown SILT saprolite, zones of very micaceous, brown SILT saprolite, black mineral oxidation throughout entire sample		
28								
30		11-50/6	30'-32'	10	0	-Weathered granite (pegmatic feldspar mica, and quartz)		
32								
34								
36		12-25-33-33	35'-37'	24	0	-Weathered granite with pegmatic feldspar crystals		
38								
40		16-50/6	40'-42'	6	0	-SAA, wet		
42								
44								
46						Boring Terminated @ 45 ft. bls		
48								