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REMEDIAL INVESTIGATION REPORT
MR. C CLEANERS SUPERFUND SITE

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

JUNE 1995

MALCOLM PIRNIE, INC.

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**MR C CLEANERS
REMEDIAL INVESTIGATION**

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1.0 INTRODUCTION

1.1 INTRODUCTION

The Mr. C Cleaners Site (Site No. 9-15-157) in East Aurora, New York has been listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites. Under the authority of the Environmental Conservation Law Section 27, the NYSDEC assigned Malcolm Pirnie, Inc. to perform a Remedial Investigation (Work Assignment D-002852-7) to collect and evaluate site data in support of the development and analysis of remedial alternatives for the site. Malcolm Pirnie completed a Remedial Investigation (RI) in two phases. The first was performed in July 1994. The Phase II RI was performed between December 1994 and April 1995. This document presents the findings of both phases of the remedial investigation and provides recommendations for a feasibility study of remedial alternatives.

1.2 BACKGROUND

The NYSDEC was called to investigate chemical-like odors detected in the First Presbyterian Church in East Aurora, New York. Odors were first noticed in December 1991 in the supply closet and basement classrooms of the most recent addition on the southwest corner of the church. The NYSDEC and New York State Department of Health (NYSDOH) collected air samples on several occasions and detected the presence of tetrachloroethene (PCE), a common dry cleaning solvent.

Based on information from the air sampling events, the NYSDEC directed their Contractor, Huntingdon Analytical Services (HAS), to complete an investigation to determine the source and potential path of migration of the chemical-type odors detected in the church basement. The investigation found PCE contamination in the sanitary sewers, groundwater, and soil vapor. The NYSDEC identified the sanitary sewers as a likely contaminant migration pathway and Mr. C Cleaners, located approximately 400 feet from the Church, as a suspected source. The site was designated as a Class "2" site, meaning that the site is believed to pose a significant threat to the public health and the environment.

1.3 PURPOSE AND OBJECTIVES

The purpose of the Remedial Investigation was to fill data gaps from previous investigations, summarize existing data (see Section 3.0), determine the extent and nature of contamination, and develop a conceptual model of the distribution and migration of contaminants to aid in completion of the Feasibility Study. Phase I of the RI, completed in July 1994, partially delineated the extent of the groundwater plume and recommended a second phase of investigation. Phase II was performed to further delineate the horizontal and vertical extent of the plume and to analyze the potential qualitative health risks that may prevail in the absence of remedial action.

The approach of the Phase I RI investigative and reporting activities was identified in the January 1994 Work Plan. Phase II work was described in a Supplemental Work Plan which is provided in Appendix A. The procedures and methodologies used in Phase II are outlined in the 1994 Work Plan. The NYSDEC-approved Work Plans identified all the field investigative activities and methodologies, including sample collection procedures and analytical protocols as well as the quality assurance/quality control procedures that were employed to perform the investigation.

Information discovered and/or mitigating circumstances encountered during field investigative activities resulted in a number of modifications to the scope of work and (or investigative procedures). These modifications are identified in Appendix A. All modifications were implemented after mutual agreement by Malcolm Pirnie, Inc. and the NYSDEC.

The specific methods that were employed to generate the data presented in this document will only be referenced and/or summarized in the text of this document as appropriate for interpretation of results and findings. The reader is referred to the Work Plan (Malcolm Pirnie, Inc., January 1994), and Appendix A for a detailed presentation of the specific investigative procedures and methods employed.

The results of the preliminary investigations are discussed in Sections 2.0 (Site Description) and 3.0 (Previous Investigations). Section 4.0 presents the results of the subsurface investigations. Environmental sampling and analyses, excluding the soil gas survey, are discussed in Section 5.0. Site mapping and the survey of all monitoring well locations and elevations were performed by Deborah Naybor P.L.S., P.C. This map is

presented in the pockets at the back of this report as Plate 1. A Habitat-Based Assessment is presented in Appendix C. Section 7.0 presents conclusions from the remedial investigation and recommendations for additional site activities.

1.4 CHRONOLOGY OF REMEDIAL INVESTIGATION ACTIVITIES

A chronology of major RI work activities is outlined in Table 1-1. As the chronology indicates, some types of activities were completed during both Phase I and II. This document presents the consolidated results of all RI activities identified in Table 1-1.

TABLE 1-1
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
CHRONOLOGY OF REMEDIAL INVESTIGATION ACTIVITIES

Activity	Date Performed
Literature Search/Site Reconnaissance	12/93
Habitat Based Assessment	12/93
Phase I Soil Gas Survey	2/94
Phase I Exploratory Soil Borings	2/94
Phase I Monitoring Well Installation (MPI-1S, 1I, 2S, 3S, 4S, 4I, 5S, 5I, 6S, 7I, 8S, 9S)	2/94 - 3/94
Phase I Indoor Air Monitoring	3/94
Phase I Groundwater Sampling	4/94
Phase I Sanitary Sewer Sampling	5/94
Parking Lot Soil Gas Survey	5/94
Phase I Site Mapping and Survey	6/94
Phase II Hydropunch® Groundwater Sampling	12/94
Phase II Source Area-Soil Sampling	12/94
Phase II Monitoring Well Installation (MPI-10B, 11B, 12B, 13B, 14B, 4D)	12/94 - 1/95
Phase II Groundwater Sampling	2/95
Phase II Site Mapping and Survey	3/95
Phase II Indoor Air Monitoring	4/95
Exposure Pathway Analysis	6/95

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

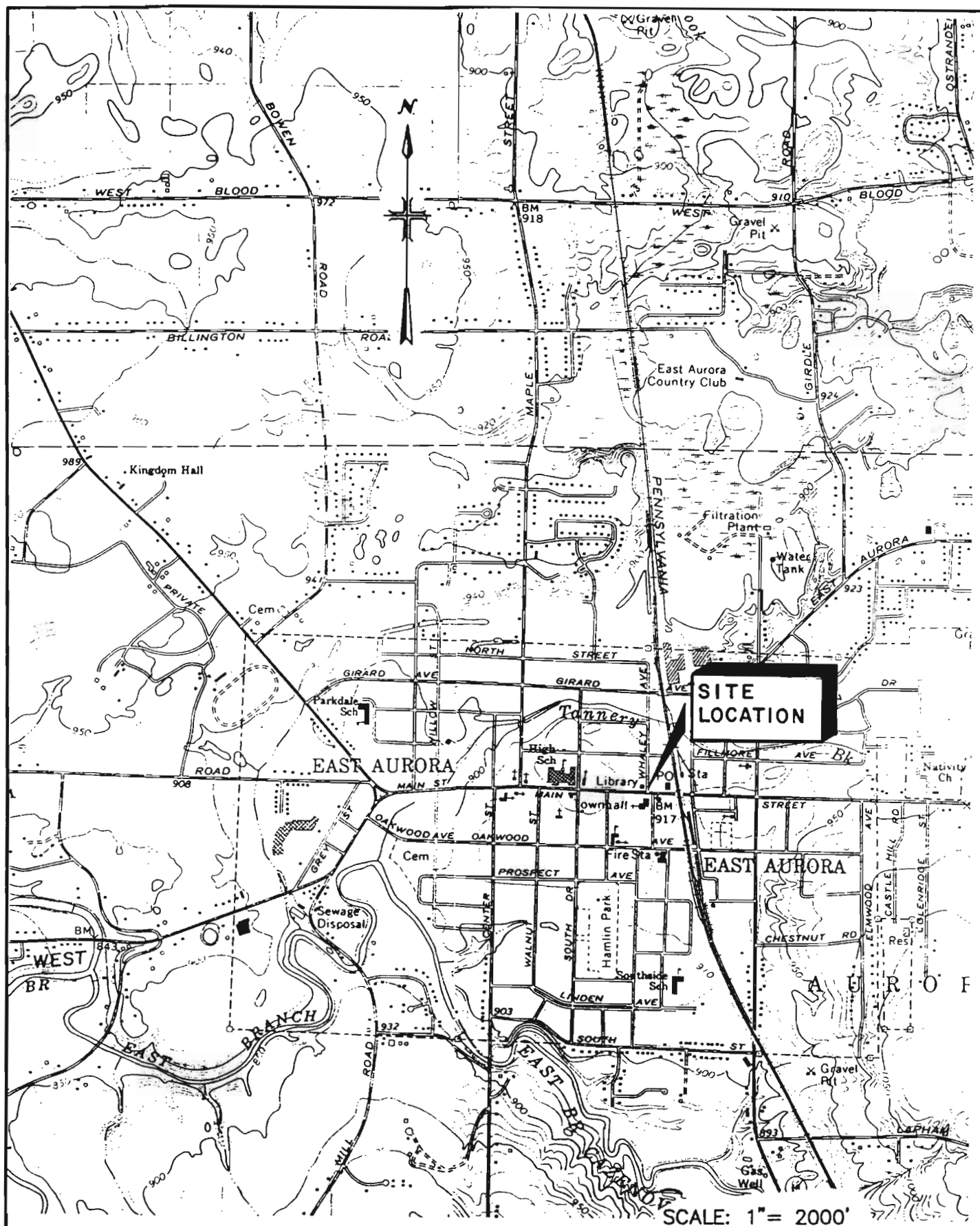
The Mr. C Cleaners site is located in an area occupied, in part, by Mr. C Cleaners, Inc., an operating dry cleaning business, at 586 Main Street in the Village of East Aurora, New York (see Figures 2-1 and 2-2). Mr. C Cleaners, Inc. has been in business since 1974. The 1/2-acre property includes a one floor building on a concrete slab foundation and an adjacent paved parking lot. The rear-half of the building is rented to three separate businesses including: Auto Plate Glass, PO Box Plus, and a barber shop. The front half of the building is dedicated to the dry cleaning business.

2.2 SITE HISTORY

Historic land use in the vicinity of Mr. C Cleaners was identified from Sanborn fire insurance maps dating from 1912 to 1958. The Sanborn maps, illustrating historic land use are presented in Appendix B. Information on recent site history was obtained from records of a NYSDEC interview with the Site owner (NYSDEC File No. 915157, March 27, 1992). In general, the corner of Main Street between Mr. C Cleaners and Whaley Avenue has been occupied by hotels, auto sales and service, and gas stations since 1912. Railroad service has been available east of Mr. C Cleaners since at least 1920.

The existing building used by Mr. C Cleaners is believed to have been built around 1927. The former uses of the property as identified on the available Sanborn maps and in NYSDEC file information are listed below:

- 1912 - hotel
- 1920 - auto and tractor service station
- 1927 - auto repair, garage
- 1951 - auto sales and service, spray painting
- 1958 - laundry
- ?-1970 - Dates Drycleaning, Inc. (out of business in 1970)
- 1970-1974 - Sweet Kleen, Inc. (drycleaners)
- 1974-present - Mr. C Cleaners, Inc.



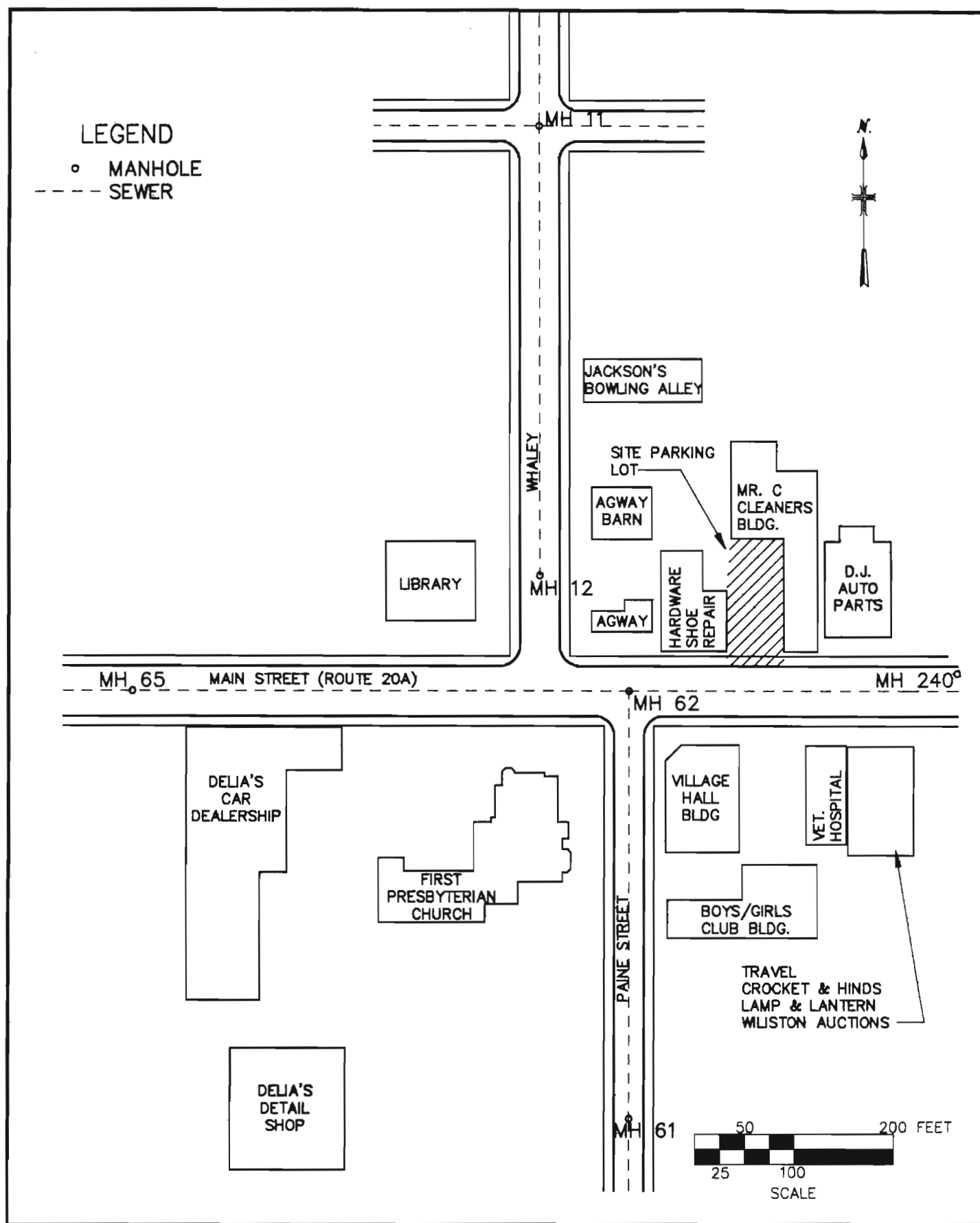
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DEC-31-MAP

MR. C DRY CLEANER
NYSDEC STANDBY CONTRACT
SITE LOCATION MAP

NYSDEC

JUNE 1994



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**MR C CLEANERS
REMEDIAL INVESTIGATION REPORT
SITE VICINITY MAP**

The parking lot area was formerly occupied by businesses as described below:

- 1912 - Hotel
- 1920 - Auto sales, tin shop, shed
- 1927 - Store, dwelling, garage
- 1951 & 1958 - Bake Shop
- ?-1974 - Paved asphalt parking lot

A petroleum spill was identified west of Mr. C Cleaners at the Agway Energy Products in 1987 (NYSDEC Spill No. 8703755). Agway facilities include a former office and gasoline pumps located on Main Street, a storage barn facing Whaley Avenue, and a store behind the Mr. C Cleaners building. The gasoline pumps and underground storage tanks were removed in February 1993 (Mattix Env.Tech.1993) and a groundwater recovery well with an air stripper was installed. The groundwater extraction and treatment systems are not currently in operation. Dry cleaning solvent constituents have been detected in groundwater removed by the collection system during previous monitoring at the Agway property.

The 1951 Sanborn map identifies the Agway storage barn as a laundry. Thus, the Mr. C Cleaners property and/or the Agway property have been occupied by laundry-type businesses since 1951.

A 1987 petroleum spill (NYSDEC Spill No. 8705612) was also identified at the Cumberland Farms gas station on Main Street approximately 900 feet west of Mr. C Cleaners.

2.3 LAND USE

Property in the vicinity of Mr. C Cleaners is zoned commercial and residential. The area along Main Street is primarily in commercial use, and the adjacent side streets are residential. The nearest residential area is 300 feet to the northwest. Nearly all of the residences in the area are single family dwellings with basements.

Plate 1 shows the location of Mr. C Cleaners and nearby land use. To the north of the Site is Agway Energy Products, a bowling alley and residences along Whaley Avenue; to the east is the D.J.'s Auto Parts building and a railroad spur and viaduct. To the south is the East Aurora Village Hall, a veterinary hospital, and a commercial retail building. The First Presbyterian Church of East Aurora is located southwest of Mr. C Cleaners. West of the Church is Delia's Automobile Dealership. Directly west of Mr. C Cleaners are two

commercial storefront-type buildings, storage buildings belonging to Agway Energy Products, and the East Aurora Public Library.

Because the area is a commercial storefront setting and includes a sidewalk, the area is frequented by pedestrians and business users. The two commercial buildings directly west of Mr. C Cleaners are occupied by a shoe repair business and Dubois Hardware. Additionally, the Shoe Repair building is rented to a styling salon and the Hardware building to Catalog Shopping Network. The second floor of both buildings is commercial office space. The Public Library is used extensively by residents in the area.

The Site and surrounding area are serviced by municipal and public utilities including: the Village sanitary sewer system, the Erie County Water Authority (ECWA), electricity, natural gas, and telephones. Storm water from roads and parking lots is drained to storm sewers. The Village has been using the ECWA since June 1980 when the Village discontinued the use of a municipal groundwater supply system. Conversations with Village residents indicate that some residents in the Village have their own wells for general use, such as, irrigation and other nonpotable uses. To determine which residents had wells, a door-to-door survey was completed on Whaley Avenue to the intersection with Fillmore, and on Fillmore Avenue between Whaley and North Grove. Table 2-1 summarizes the results of the survey. Four homeowners on Fillmore Avenue have wells; three of the wells were sampled during the Phase II RI. Additionally, the three wells were surveyed for water level elevations. There are no other known sources of water use in this area.

2.4 TOPOGRAPHY, SOILS, AND DRAINAGE

The topography of the immediate area surrounding Mr. C Cleaners is relatively flat in a landscaped residential and business district. The ground surface area along Main Street has been built up with up to four feet of fill creating lower areas in the rear of the properties. A railroad viaduct approximately 15 feet above grade traverses to the east of the site. Kame and kettle terrain can be found 0.25 to 0.5 miles to the northeast of the site. Scattered ponds and swamps are common in this hummocky landscape.

The soils in the study area are Palmyra gravelly loam and Varysburg gravelly loam (USDA, 1986). These nearly level soil types are derived from glacial outwash deposits, and contain a high sand and limestone gravel content. The substratum is characterized as a very

TABLE 2-1

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

RESIDENTIAL WELL SURVEY SUMMARY

	House Number	Well On Property	Comments					
			Depth	Diam.	Method of Water Removal	Approx. Location	Use	Approx. Date Installed
Fillmore Avenue	517	Yes	17'	1.5"	pump	behind garage	none	1988
	518	Yes	11'	1.5"	pump	basement	car washing watering lawn kids playwater	June 1990
	524	Yes	unknown	approx. 2"	pump	behind garage	garden	unknown
	531	Yes	15'-18'	3"	jet pump	30' behind house	garden watering lawn car washing	
	542	No						
	498	No						
Whaley Avenue	31	No						
	35	No						

gravelly loamy sand and very gravelly sand. The upper 4 feet of soil in the area can be characterized as a clayey silt fill or till with varying amounts of gravel and sand.

East Aurora lies within the Erie-Niagara basin which borders Lake Erie and the Niagara River. The basin extends from the Cattaraugus Creek basin on the south to the Tonawanda Creek basin on the north. Surface water in the Village is drained by Tannery Brook approximately 0.25 miles north of the site and the East Branch of Cazenovia Creek approximately one mile south of the site. Both creeks flow in a westward direction into Cazenovia Creek, the Buffalo River, and into Lake Erie (located approximately 12.5 miles east of the site).

2.5 HABITAT-BASED ASSESSMENT

Malcolm Pirnie conducted a habitat-based assessment of Mr. C Cleaners and its vicinity to evaluate potential ecological exposure pathways. The intent of this assessment was to identify sensitive species or habitat potentially affected by the off-site migration of contaminants. Elements of the assessment include:

- A summary of the environmental setting of East Aurora
- A characterization of naturally-occurring flora and fauna found in the study area
- The presence of threatened and endangered flora and fauna or species of special concern
- Identification of significant habitat recognized by the NYSDEC
- Proximity to NYSDEC and/or federal wetland areas
- Values of resources to humans

Based on the results of the Phase I RI (see Sections 4.0 and 5.0), contaminated groundwater appears to be the only potential ecological exposure pathway associated with the site. Local drainage patterns, groundwater flow directions (inferred from topography) and the nature of the contaminants originating from Mr. C Cleaners suggest that the groundwater contaminant plume described further herein would not likely affect any significant or sensitive flora or fauna. The full assessment report is presented in Appendix C.

3.0 PREVIOUS INVESTIGATIONS

This section describes the history of environmental investigations undertaken in the vicinity of the Mr. C Cleaners site prior to the Remedial Investigation, including petroleum spill investigations at the Agway site, indoor air monitoring at the First Presbyterian Church, sanitary sewer sampling, a review of dry cleaning operations at Mr. C Cleaners, and a preliminary subsurface environmental assessment. The sequence of historic sampling events are summarized on Table 3-1. These investigations characterized shallow subsurface conditions and established the nature of the contamination.

3.1 FIRST PRESBYTERIAN CHURCH

Odors were detected in the basement of the First Presbyterian Church in late October 1991 (Griffis, 1991). After preliminary investigations by members of the Church, the NYSDEC was notified and the incident was assigned Spill No. 9109437. Indoor air sampling using Porapak sorbent tubes and analysis by EPA Method 8240 identified tetrachloroethene as the most likely cause of the odors. Table 3-2 summarizes the results of indoor air analyses conducted by NYSDEC. Ventilation of the church basement subsequently reduced contaminant air concentrations below odor thresholds.

3.2 SEWER SAMPLING

The NYSDEC collected water samples from selected sanitary sewers located along Main Street, Paine Street, Whaley Avenue, and Oakwood Avenue (see Plate 1 for sewer locations). The samples were collected during three different events in January, February, and March 1992. Concentrations of 12 chlorinated organic compounds and three aromatic hydrocarbon compounds were detected. Table 3-3 summarizes the 1992 sewer sampling results. During the initial (January 1992) sampling event, manholes MH-61, MH-62, and MH-65 were sampled before and after flushing the sewer mains. Tetrachloroethene concentrations increased to a maximum concentration of 1900 ug/l in MH-61 after flushing. The highest tetrachloroethene concentrations were detected in manholes downstream from the sewer lateral servicing the Mr. C Cleaners building. Subsequent sampling events

TABLE 3-1

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

HISTORIC SAMPLING EVENTS

Matrix	Sampling Date	Sampling Location	Source of Data
Indoor Air	12/02/91	Church Basement	EA-FPC
	12/06/91	Church Basement	EA-FPC
	12/19/91	Church Basement	NYSDEC/AES
	01/14/92	Church Basement	NYSDEC/AES
	02/28/92	Church Basement	NYSDEC/AES
Sewer Flow	01/14/92	MH61, MH62, MH65	NYSDEC/AES
	02/21/92	MH56, MH61, MH62, MH64, MH65	NYSDEC/AES
	03/27/92	MH11, MH61, MH62, MH64, MH65	NYSDEC/AES
Groundwater	01/28/92	Agway Wells	NYSDEC/AES
	05/21/92	ESI Wells/Agway Wells/Cumberland Farms	Huntingdon
	11/09/92	Agway Wells & Airstripper	Marcor
	12/29/92	Agway Wells	Marcor
	01/19/93	ESI Wells	NYSDEC/Recra
	10/01/93	Agway Wells	Matrix
Notes: EA-FPC = East Aurora - First Presbyterian Church ESI = Empire Soils Investigation NYSDEC/AES = NYSDEC/Advanced Environmental Services Marcor = Marcor of New York, Inc. Huntingdon = Huntingdon Analytical Services Matrix = Matrix Environmental Technologies			

TABLE 3-2

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORTPREVIOUS INDOOR AIR SAMPLE RESULTS⁽¹⁾

Sampling Date	Sampling Location	EPA 8240 Parameter	Concentration	
			$\mu\text{g}/\text{m}^3$	ppm
01/14/92	Closet Area A	Methylene Chloride Tetrachloroethene	38 130	.019
	Closet Area B	Tetrachloroethene Trans 1,2 Dichloroethene Trichloroethene 1,2 Dichloropropane Toluene	1900 140 99 28 21	.28
02/28/92	Room 114	Tetrachloroethene Benzene Toluene Ethylbenzene	110 280 280 7.5	.016
	Hallway (adj. to Rms 112, 113, 114)	Tetrachloroethene Benzene Toluene	67 120 130	.0099
	Old Section	Tetrachloroethene Benzene Toluene	26 13 16	.0038
12/19/91	Closet	Tetrachloroethene	400	.059
	Room 113	Tetrachloroethene	57	.0084
Note (1): All samples collected from basement of the East Aurora First Presbyterian Church.				

TABLE 3-3

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
SUMMARY OF HISTORIC SEWER SAMPLING RESULTS

Compound (ug/l) ⁽²⁾	Date of Sampling	MH 11	MH 56	MH ⁽¹⁾ 61A	MH ⁽¹⁾ 61B	MH 61	MH ⁽¹⁾ 62A	MH ⁽¹⁾ 62B	MH 62E	MH 62W	MH 64	MH ⁽¹⁾ 65A	MH ⁽¹⁾ 65B	MH 65
Methylene Chloride	1/14/92	-	-	539	110	-	ND	522	-	-	-	ND	11.9	-
	2/21/92	-	23.2	-	-	18.7	-	-	ND	111	208	-	-	ND
	3/27/92	ND	-	-	-	ND	-	-	ND	5.46	75	-	-	ND
Trans 1,2 Dichloroethene	1/14/92	-	-	12.7	499	-	ND	12.6	-	-	-	ND	ND	-
	2/21/92	-	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
	3/27/92	ND	-	-	-	ND	-	-	ND	ND	ND	-	-	ND
Chloroform	1/14/92	-	-	ND	ND	-	ND	ND	-	-	-	16.8	11.9	-
	2/21/92	-	4.74	-	-	5.58	-	-	6.15	5.37	4.91	-	-	6.96
	3/27/92	4.53	-	-	-	5.00	-	-	3.07	8.52	4.18	-	-	15.5
1,1,1 Trichloroethane	1/14/92	-	-	ND	ND	-	5.5	ND	-	-	-	ND	ND	-
	2/21/92	-	7.78	-	-	5.18	-	-	4.04	8.01	6.82	-	-	3.53
	3/27/92	ND	-	-	-	ND	-	-	ND	6.53	ND	-	-	ND
Trichloroethene	1/14/92	-	-	5.37	142	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	1.34	-	-	1.19	-	-	3.43	ND	ND	-	-	ND
	3/27/92	ND	-	-	-	ND	-	-	ND	ND	ND	-	-	ND
Vinyl Chloride	1/14/92	-	-	ND	38.6	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
	3/27/92	ND	-	-	-	ND	-	-	ND	ND	ND	-	-	ND
1,1,2,2 Tetrachloroethane	1/14/92	-	-	ND	61.8	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
	3/27/92	ND	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
Tetrachloroethene	1/14/92	-	-	287	1,910	-	ND	106	-	-	-	ND	ND	-
	2/21/92	-	18.9	-	-	16.8	-	-	203	16.2	7.61	-	-	3.11
	3/27/92	ND	-	-	-	22.4	-	-	21.6	16.0	ND	-	-	ND

TABLE 3-3

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
SUMMARY OF HISTORIC SEWER SAMPLING RESULTS

Compound (ug/l) ⁽²⁾ Date of Sampling	MH 11	MH 56	MH ⁽¹⁾ 61A	MH ⁽¹⁾ 61B	MH 61	MH ⁽¹⁾ 62A	MH ⁽¹⁾ 62B	MH 62E	MH 62W	MH 64	MH ⁽¹⁾ 65A	MH ⁽¹⁾ 65B	MH 65
1,1 Dichloroethene	1/14/92	-	ND	ND	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	-	-	1.59	-	-	1.48	ND	ND	-	-	ND
	3/27/92	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
Bromodichloromethane	1/14/92	-	ND	ND	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	-	-	3.49	-	-	ND	5.95	8.16	-	-	3.07
	3/27/92	1.66	-	-	1.11	-	-	ND	1.03	1.10	-	-	7.63
Dibromochloromethane	1/14/92	-	-	-	-	-	-	-	-	-	-	-	-
	2/21/92	-	1.20	-	1.30	-	-	ND	ND	ND	-	-	1.59
	3/27/92	ND	-	-	1.48	-	-	1.16	1.38	ND	-	-	2.74
1,2 Dichloropropane	1/14/92	-	-	ND	-	ND	ND	-	-	-	ND	ND	-
	2/21/92	-	119	-	106	-	-	27.8	381	97.2	-	-	ND
	3/27/92	ND	-	-	ND	-	-	ND	ND	ND	-	-	ND
M/P Xylene	1/14/92	-	-	ND	-	ND	9.02	-	-	-	ND	ND	-
	2/21/92	-	-	-	-	-	-	-	-	-	-	-	-
	3/27/92	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	1/14/92	-	-	9.24	ND	-	ND	-	-	-	ND	ND	-
	2/21/92	-	-	-	-	-	-	-	-	-	-	-	-
	3/27/92	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	1/14/92	-	-	ND	ND	-	ND	-	-	-	ND	ND	-
	2/21/92	-	-	-	-	-	-	-	-	-	-	-	-
	3/27/92	-	-	-	-	-	-	-	-	-	-	-	-

Notes

- (1) Sample designated "A" collected prior to flushing the sewer line.
 Sample designated "B" collected after flushing the sewer line.
- (2) 1/14/92 samples analyzed by EPA SW-846 Method 8240.
 2/21/92 and 3/27/92 samples analyzed by EPA Method 601.
- Not sampled, or flushing procedure not used.
 ND Analyzed for but Not Detected.

detected substantially lower concentrations of chlorinated organics. The NYSDEC concluded that pools of organics were disturbed during the cleaning event.

No volatile organics were detected in laboratory samples collected from the storm sewers (sampled on January 14, 1992). Laboratory results from a sample collected on January 28, 1992 from a grease trap at the Delia auto dealership that drains to the sanitary sewer indicated the presence of 300 ug/l tetrachloroethene. Sampling on March 27, 1992 from a condensate line discharging to the sewer lateral at Mr. C Cleaners, which discharges to the sanitary sewer, indicated the presence of 47 ug/l tetrachloroethene.

3.3 NYSDEC INTERVIEW WITH SITE OWNER

This section presents a summary of NYSDEC file information on the dry cleaning operation at Mr. C Cleaners. The information is based on notes from interviews conducted on March 27, 1992 and August 7, 1992, and correspondence provided by the site owner at the NYSDEC's request.

The dry cleaning operations at Mr. C Cleaners use a cleaning solvent comprised of approximately 99.1 to 100% tetrachloroethene, with traces of 1,2 dichloroethene (20 ppm), tetrachloromethane (50 ppm), and trichloroethene (100 ppm). Cleaning solvent usage was 1200 gallons in 1989, 800 gallons in 1990, and 430 gallons in 1991. The reduction in cleaning solvent usage occurred due to a changeover from a transfer type to closed-loop type dry cleaning machines. One closed-loop machine went on-line in February 1992, and a second closed-loop machine went on-line approximately 1½ years earlier (Fall 1990).

Wastes generated during dry cleaning that contain residual solvent are as follows:

- Cartridge filters used to remove solids from spent cleaning solvent.
- Sludge residue from the distillation of used cleaning solvent.
- Wastewater generated during the distillation of used solvent.

All dry cleaning wastes have been disposed of through a commercial waste disposal firm since 1985. Prior to 1985 sludge and filters were placed into a dumpster located behind the hardware store building and collected by the Village of East Aurora.

The NYSDEC identified the following potential mechanisms of release of tetrachloroethene:

- Possible past practices of disposing of wastes in sewers or on grounds.
- Leaks in transfer type cleaning machines that collected in floor drains.
- Steam stripping of carbon in solvent reclamation process and release of steam condensate to the floor drains.
- Release of steam condensate to the floor drains from vacuum tank in clothes steam/press operation.

Laboratory analyses of water from the steam condensate line indicated the presence of 47 ug/l of tetrachloroethene. No single event that may have released a slug of tetrachloroethene into the sanitary sewer system was identified by the owner of Mr. C Cleaners or the NYSDEC.

3.4 AGWAY ENERGY PRODUCTS

A petroleum product release was detected at Agway Energy Products in 1987. Five monitoring wells (MW-1 through MW-5) and recovery well RW-1 were installed in 1989. The groundwater recovery system consisted of a submersible pump which discharged into the storm sewer catch basin located on the corner of Main and Whaley Avenue (Marcor, 1992). In June, 1991 a new groundwater recovery and treatment system was installed. This system pumped water from a new recovery well RW-2 (near MW-5), through an air stripper prior to discharge into the storm sewer. Marcor of New York monitored five wells on a quarterly basis for purgeable aromatic hydrocarbons.

In January 1992, the NYSDEC sampled three Agway wells and detected chlorinated organics in the groundwater. Subsequent sampling by Huntingdon, Marcor and Matrix Environmental at the Agway site confirmed the presence of chlorinated organics. The results of these sampling events are summarized in Table 3-4. The groundwater recovery and treatment system was subsequently shut down due to the detection of vinyl chloride in the air discharge. In November 1993, Matrix Environmental installed five additional monitoring wells (MW-6 through MW-10) on the Agway site.

TABLE 3-4
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
RESULTS OF HISTORIC GROUNDWATER SAMPLING AT AGWAY

Compound (ug/l) Date of Sampling	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	Infl. (1)
Vinyl Chloride											
01/28/92	—				—	—	—	—	—	—	—
05/21/92					810	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	244
12/29/92					3,300	—	—	—	—	—	310
10/01/93	ND	—	—	ND	1,350	ND	ND	ND	ND		—
1,1, Dichloroethane											
01/28/92	—				—	—	—	—	—	—	—
05/21/92					—	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	—
12/29/92					—	—	—	—	—	—	—
10/01/93	ND	—	—	ND	ND	ND	ND	ND	ND	ND	—
1,1,1 Trichloroethane											
01/28/92	—				—	—	—	—	—	—	—
05/21/92					—	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	5
12/29/92	8	6		5	—	—	—	—	—	—	28
10/01/93	6	—	—	ND	ND	ND	6	ND	ND	ND	—
1,1, Dichloroethene											
01/28/92	—				—	—	—	—	—	—	—
05/21/92		2	3	16	45	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	—
12/29/92	5	1			—	—	—	—	—	—	—
10/01/93	ND	—	—	ND	ND	ND	ND	ND	ND	ND	—
1,2 Dichloroethene (T)											
01/28/92	—				—	—	—	—	—	—	—
05/21/92					6,700	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	1,870
12/29/92					12,800	—	—	—	—	—	2,010
10/01/93	4.5	—	—	6	191	ND	1	15	14	14	—
Trichloroethene											
01/28/92					—	—	—	—	—	—	—
05/21/92	150	5		34	1,100	—	—	—	—	—	—
11/09/92			—	—	—	—	—	—	—	—	153
12/29/92	68	5		32	182	—	—	—	—	—	284
10/01/93	54	—	—	ND	ND	0.6	5	23	ND	ND	—

TABLE 3-4
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
RESULTS OF HISTORIC GROUNDWATER SAMPLING AT AGWAY

Compound (ug/l) Date of Sampling	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	Infl. (1)
Tetrachloroethene											
01/28/92	—	348	—	—	—	—	—	—	—	—	—
05/21/92	3200	270	2	4400	450	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	303
12/29/92	5500	245	—	86	—	—	—	—	—	—	285
10/01/93	1360	—	—	ND	ND	23	711	980	13	193	—
Acetone											
01/28/92	—	—	—	—	—	—	—	—	—	—	—
05/21/92	—	—	—	—	76	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	—
12/29/92	—	—	—	—	—	—	—	—	—	—	—
10/01/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	—
Benzene											
01/28/92	—	—	278	—	—	—	—	—	—	—	—
05/21/92	—	4	290	34	700	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	340
12/29/92	—	—	380	—	—	—	—	—	—	—	442
10/01/93	0.5	—	—	48	752	55	0.8	0.9	369	27	—
Toluene											
01/28/92	—	—	194	—	—	—	—	—	—	—	—
05/21/92	—	—	160	—	81	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	31
12/29/92	—	—	110	—	—	—	—	—	—	—	33
10/01/93	1	—	—	6	88	9	ND	3	21	53	—
Ethylbenzene											
01/28/92	—	—	101	—	—	—	—	—	—	—	—
05/21/92	—	0.9	12	—	870	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	230
12/29/92	—	—	59	—	—	—	—	—	—	—	217
10/01/93	ND	—	—	ND	ND	ND	ND	ND	51	321	—
Xylenes (T)											
01/28/92	—	—	601	—	—	—	—	—	—	—	—
05/21/92	—	0.7	360	21	1,300	—	—	—	—	—	—
11/09/92	—	—	—	—	—	—	—	—	—	—	392
12/29/92	—	—	—	—	—	—	—	—	—	—	NR
10/01/93	0.5	—	—	62	1,213	424	—	—	78	1,070	—
Notes: — = Not sampled ND = Parameter analyzed for, but not detected. (1) Air stripper influent											

The Agway wells have been renamed several times. During preparation of the RI Report, the NYSDEC requested that a consistent set of well names be used that are as close as possible to the original nomenclature. Table 3-5 lists original well names and revised well names.

3.5 ENVIRONMENTAL SITE ASSESSMENT

The NYSDEC retained Huntingdon Analytical Services (HAS) to conduct an environmental site assessment. Huntingdon performed a soil gas survey and installed monitoring wells ESI-1 through ESI-6. The soil gas survey was performed in April 1992 using a portable gas chromatograph. The soil gas sample locations are shown on Plate 2 and the results are summarized on Table 3-6. Tetrachloroethene was detected at 15 of 38 sampling locations. The highest concentrations were detected near the sewer lateral at Mr. C Cleaners.

Groundwater sampling was conducted in May 1992 for the Environmental Site Assessment at the new wells installed by HAS, monitoring wells at the Agway site, and at the Cumberland Farms site. Chlorinated organics were detected at locations north and south of Main Street, and on the Agway site. Maximum concentrations of tetrachloroethene were detected at ESI-3, located near the Mr. C Cleaners sewer lateral; ESI-6, located near the Church; and on the Agway site (see Table 3-4). No chlorinated organics were detected in groundwater samples from the Cumberland Farms site. The NYSDEC resampled the ESI wells in January 1993 and obtained results that were consistent with the May 1992 results. Table 3-7 summarizes the laboratory results from two rounds of sampling at the ESI wells.

3.6 CONCLUSIONS FROM PREVIOUS INVESTIGATIONS

The investigation results summarized above indicated to the NYSDEC that the dry cleaning operations at Mr. C Cleaners are the source of the tetrachloroethene and other chlorinated organics detected in the groundwater, soil gas, and sewers. Analytical testing indicated that the maximum tetrachloroethene concentrations in soil gas and groundwater were present near the Mr. C Cleaners sanitary sewer lateral. Also, the distribution of tetrachloroethene concentrations detected in the sanitary sewers was consistent with a

TABLE 3-5

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

IDENTIFICATION OF EXISTING WELL NAMES

Original Well Name	Revised Name of Monitoring Well	Drilling Firm	Notes
MW-1 MW-2 MW-3	MW-1 MW-2 MW-3	Earth Dimensions Parratt Wolff Earth Dimensions	Called MW-3 by Matrix Destroyed; Called MW-4 by Matrix Destroyed
MW-4 MW-5 MW-5	MW-4 MW-5 MW-10	Earth Dimensions Parratt Wolff Matrix	Called MW-1 by Matrix Called MW-2 by Matrix
MW-6 MW-7 MW-8	MW-6 MW-7 MW-8	Matrix Matrix Matrix	
MW-9 RW-1 RW-2	MW-9	Matrix Earth Dimensions ?	Abandoned 6/91
ESI-1 ESI-2 ESI-3	ESI-1 ESI-2 ESI-3	Empire Soils Invest. Empire Soils Invest. Empire Soils Invest.	
ESI-4 ESI-5 ESI-6	ESI-4 ESI-5 ESI-6	Empire Soils Invest. Empire Soils Invest. Empire Soils Invest.	

TABLE 3-6

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF SOIL GAS SURVEY RESULTS (APRIL 1992)

Sample Location	Concentration (ppb)		Notes
	Toluene	PCE	
1	ND	ND	Church
2	ND	ND	Church
3	ND	ND	Church
4	ND	ND	Church
5	1.9	104.3	Church
6	2.25	130.8	Church
7	ND	12.56	Church
8	ND	ND	Church
9	ND	ND	Church
10	ND	ND	Church
11	ND	ND	Church
12	ND	ND	Church
13	ND	ND	Church
14	ND	ND	Village Hall
15	ND	ND	Village Hall
16	ND	ND	Village Hall
17	ND	14.6	Shoe Repair
18	ND	ND	Church
19	ND	ND	Church
20	ND	ND	Church
21	ND	ND	Church
22	ND	ND	Church
23	ND	ND	Church
24	ND	ND	Church
25	ND	10.17	Church
26	ND	11.03	Library
27	9.15	1585	Mr. C Cleaner
28	ND	160.3	Mr. C Cleaner
29	ND	6.42	Mr. C Cleaner
30	ND	ND	Mr. C Cleaner
31	ND	ND	D.J.Auto Parts
32	ND	746.2	Mr. C Cleaner
33	ND	18.39	Mr. C Cleaner
34	ND	94.59	Village Hall
35	ND	3.91	Village Hall
36	10.25	565.4	Agway
37	ND	10.5	Church
38	ND	ND	Travel Agency

ND = Not Detected

PCE = Tetrachloroethylene

TABLE 3-7
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
PREVIOUS SAMPLING RESULTS FROM ESI WELLS

Parameter (ug/l)	Date	Upgradient		Mr. C	Paine Street		Church
		ESI-1	ESI-2	ESI-3	ESI-4	ESI-5	ESI-6
1,2 Dichloroethene (T)	5/21/92 1/19/93	2J 2J		2J	16 5J	14	44J 53
Trichloroethene	5/21/92 1/19/93	2J 3J		6J 42J	6J 3J	28 2J	14J 17J
Tetrachloroethene	5/21/92 1/19/93	2J 0.9J	1J	5600E 9800	91 44	15 13	570 580
1,1 Dichloroethene	5/21/92 1/19/93			2J			
Vinyl Chloride	5/21/92 1/19/93						6J
1,1 dichloroethane	5/21/92 1/19/93			2J			
Toluene	5/21/92 1/19/93			0.8J 63J	0.5J	0.3J	
Ethylbenzene	5/21/92 1/19/93			4J			
Total Xylenes	5/21/92 1/19/93			20			
Benzene	5/21/92 1/19/93			55J			
1,1,1 Trichloroethane	5/21/92 1/19/93				5J		
J = Estimated. E = Exceeded calibration range of instrument Blanks = Parameter not detected.							

source located at Mr. C Cleaners. The migration of tetrachloroethene may have occurred along the sanitary sewers; however, HAS concluded that the distribution of chlorinated organics southwest of Mr. C Cleaners near the Church (at ESI-6), and northwest of Mr. C Cleaners near Agway indicates that groundwater is an important migration pathway.

No unique release of tetrachloroethene has been identified at Mr. C Cleaners. The detection of chemical odors in the Church basement during a limited period in Fall 1991; however, suggests that a slug of tetrachloroethene may have been released to the sewers and the groundwater within a short time interval.

4.0 SUBSURFACE INVESTIGATION

4.1 INVESTIGATIVE METHODOLOGY

The geologic and hydrogeologic investigations for Phase I and II of the Mr. C Cleaners Remedial Investigation (RI) were conducted from February through May 1994 and December 1994 through April 1995. The scope of these investigations and specific work tasks were performed in accordance with the RI Work Plan (Malcolm Pirnie, January 1994) and the Phase II Supplemental Work Plan as modified based on information collected during the field work.

Phase I field work performed to characterize the geologic and hydrogeologic conditions at the site involved the following tasks:

- Selection of monitoring well locations based on the results of a quantitative soil gas survey
- Qualitative soil gas survey in the site parking lot to determine the need for excavation or additional on-site soil borings
- Drilling and soil sampling at four deep exploratory soil borings
- Drilling, installation, and development of 12 monitoring wells
- In situ hydraulic conductivity testing of 25 monitoring wells
- Monitoring of groundwater levels and survey of well locations and elevations

Phase II field work included the following tasks:

- Selection of monitoring well locations based on the quantitative results of groundwater samples collected with a Hydropunch® sampler.
- Drilling, installation, and development of 6 monitoring wells.
- In situ hydraulic conductivity testing of 6 monitoring wells.
- Monitoring of groundwater levels and survey of wells.

4.1.1 RI Soil Gas Surveys

Tetra K Testing, Inc. performed a soil gas survey on February 8 through 10, 1994 to assist in the selection of Phase I monitoring well locations. Soil gas sample points were located in the northern and eastern perimeter of the First Presbyterian Church, and at the fringes of the suspected plume as defined in the Environmental Site Assessment conducted by HAS. A supplemental soil gas survey was performed on March 7 and 8, 1994, again by Tetra K Testing, to define a suspected soil gas plume northward along Whaley Avenue. The supplemental soil gas survey was prompted by the detection of comparatively high concentrations of tetrachloroethene in soil gas and groundwater northwest of the site near Agway well MW-8.

Analyses were performed using a mobile laboratory equipped with a gas chromatograph. The Tetra K Testing sampling report in Appendix D should be consulted for a description of sampling and analytical methodologies. It should be noted that soil gas analyses are only an indication of potential groundwater contamination. The presence or absence of VOCs in groundwater has to be verified by direct sampling and analysis.

A total of 54 soil gas samples and 3 manhole samples were collected and analyzed for the volatile organic compounds (VOCs) listed in Table 4-1. Analytical results and the general location of the samples are presented on Table 4-2. Specific sample locations are illustrated on Plate 2. Tetrachloroethene was the most common analyte detected. Trichloroethene was also detected in some samples that exhibited high concentrations of tetrachloroethene. Concentrations of 1,1,1-trichloroethane were also detected at 2 of 54 locations. Tetrachloroethene was detected in the following general locations:

- In the vicinity of the Mr. C Cleaners building and parking lot
- North and east of the Agway storage barn (northwest of the site)
- Northward along Whaley Avenue (northwest of the site)
- In the Village Town Hall parking lot (south of the site)

No VOCs were detected in soil gas samples collected in the vicinity of the First Presbyterian Church or the Public Library.

The highest concentrations of tetrachloroethene (ranging from 12,000 to 13,000 ppb) were detected in soil gas samples collected at the Mr. C Cleaners parking lot near the foundation of the shoe repair building (sample nos. 63 and 64), northwest of the Agway

TABLE 4-1

**MR. C CLEANERS SUPERFUND SITE
PHASE I REMEDIAL INVESTIGATION REPORT**

SOIL GAS ANALYTES

Methylene Chloride
Vinyl Chloride

1,2-Dichloroethene
1,1-Dichloroethene

1,1,1-Trichloroethane
1,1,2-Trichloroethane

Trichloroethene
Tetrachloroethene

1,2 Dichloropropane
Chloroform

Benzene
Toluene
Xylenes (Total)
Ethylbenzene

TABLE 4-2

MR. C CLEANERS SUPERFUND SITE
PHASE I REMEDIAL INVESTIGATION REPORT

SOIL GAS SURVEY RESULTS

Location	Sample No.	Analyte Detected	mg/m ³	PPB
INITIAL SURVEY February 8-10, 1994				
East of Village Hall	39	PCE	9.8	1300
	40	PCE	5.2	700
		1,1,1 TCA	1.5	280
Church	41		ND	—
	42		ND	—
	43		ND	—
	44		ND	—
	45		ND	—
	46		ND	—
	47		ND	—
	48		ND	—
	49		ND	—
	50		ND	—
	51		ND	—
	52		ND	—
Library	53		ND	—
	54		ND	—
	55		ND	—
	56		ND	—
North and East of Agway Storage Barn	57	PCE	86	12,000
		TCE	3.1	520
	58	PCE	7.3	990
	59	PCE	0.90	110
	60	Toluene	3.1	750
		Ethylbenzene	3.0	630
		Total Xylenes	37	7,600
	61	PCE	11	1,500
	62	PCE	23	3,100
Mr. C Cleaners	63	PCE	91	12,000
	64	PCE	94	13,000
	65	PCE	27	3,600
	66	PCE	0.33	44
	67		ND	—
	68	PCE	0.44	59
	69	PCE	11	1,500

TABLE 4-2
**MR. C CLEANERS SUPERFUND SITE
PHASE I REMEDIAL INVESTIGATION REPORT**
SOIL GAS SURVEY RESULTS

Location	Sample No.	Analyte Detected	mg/m ³	PPB
Sewers	MH-12		ND	—
	MH-61	Total Xylenes	0.12	25
	MH-62	PCE	0.20	28
		Ethylbenzene	0.30	63
		Total Xylenes	8.2	1,700
SUPPLEMENTAL SURVEY - March 7-8, 1994				
Center of Whaley Ave.	71	PCE	11	1,500
	72	PCE	13	1,800
	86	PCE	0.16	22
	87	PCE	3.4	460
	90	PCE	0.14	19
		Toluene	0.09	22
	91	PCE	0.18	24
	78		ND	—
	MH-11		ND	—
East of Whaley Ave.	70	PCE	92	12,000
		TCE	0.6	100
		1,1,1 TCA	1.8	300
	79		ND	—
	80		ND	—
	81		ND	—
	82		ND	—
	83		ND	—
West of Whaley Ave.	73		ND	—
	74	PCE	0.19	26
	75	PCE	1.0	130
	76		ND	—
	77		ND	—
	78		ND	—
	84		ND	—
	85		ND	—
Legend: PPB = Parts Per Billion PCE = Tetrachloroethene 1,1,1 TCA = 1,1,1 Trichloroethane TCE = Trichloroethene				

storage barn (No. 57), and across the Agway driveway near Jackson Bowling Alley foundation (No. 70).

Soil gas survey results indicated that tetrachloroethene is present to the northwest of the Mr. C Cleaners site. Samples collected along the sidewalk and residences on the west and east side of Whaley Avenue exhibited trace to nondetectable concentrations of volatile organics. Concentrations of tetrachloroethene detected along the sanitary sewer in the center of Whaley indicated that the sanitary sewer may carry groundwater contaminated with volatile organic compounds, and that more permeable materials such as building foundations and sewer bedding materials provide a pathway for contaminants volatilized from VOC-contaminated groundwater.

The results of the soil gas surveys were used to modify the number and location of monitoring wells that were proposed in the RI Work Plan. The following modifications to the RI Work Plan based on soil gas survey results were approved by the NYSDEC:

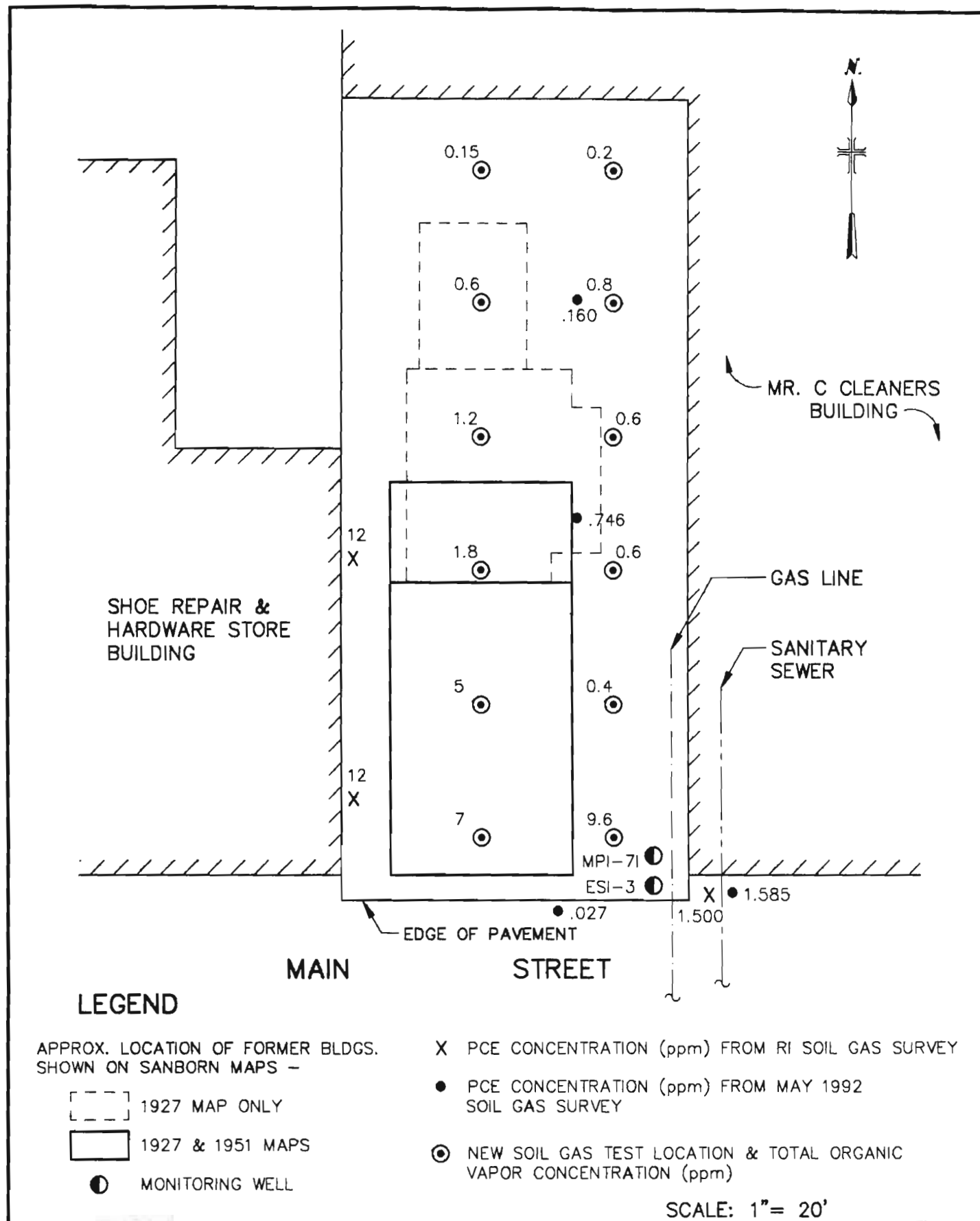
- MPI-1S was moved to the southwest corner of Main Street and Paine
- MPI-5S was moved closer to Whaley Avenue
- MPI-6S was moved northwest of the Library
- MPI-8S and MPI-9S were added along the west side of Whaley Avenue

The additional monitoring wells were installed to determine whether the sanitary sewer on Whaley Avenue was intercepting VOC contamination in the shallow groundwater.

4.1.2 Parking Lot Soil Gas Survey/Test Pits

The RI Work Plan proposed that two test pits would be excavated in the Mr. C Cleaners parking lot to locate the sanitary sewer lateral, visually inspect the integrity of the pipe, and obtain samples for analytical testing. Conversations with the Village of East Aurora Department of Public Works and inspection of building plans indicated that the sewer lateral is located beneath the building floor slab and is not accessible to excavation. Also, the gas service line is located beneath the parking lot within five feet of the building.

Because the sewer lateral is not easily accessible, Malcolm Pirnie performed a soil gas survey to investigate the remainder of the parking lot area as a suspected source of contamination. A total of 12 locations in the parking lot (illustrated in Figure 4-1) were monitored for total volatile organics (TVO) using an HNu photoionization detector with a 10.2 ev lamp.



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MR. C CLEANERS
REMEDIAL INVESTIGATION REPORT
PARKING LOT SOIL GAS SURVEY

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The HNu was calibrated before the initial test hole using isobutylene gas according to manufacturers specifications. The accuracy of the TVO concentrations detected by an HNu photoionization detector (PID) is dependent upon the relative sensitivity of the detector to the calibration gas and the environmental analyte. Volatile compounds identified as parameters of interest at the Mr. C Cleaners site have a lower sensitivity to a PID than isobutylene. Therefore, the survey results only show relative TVO concentrations between sampling locations. A detailed discussion of monitoring procedures is presented in Appendix A.

As illustrated on Figure 4-1, the highest soil gas concentrations (9.6 ppm TVO) were detected adjacent to the Mr. C Cleaners sanitary sewer lateral. The TVO concentrations decreased in a northwest direction to a value of 0.15 ppm near the barber shop. The source of TVO concentrations detected in soil gas beneath the parking lot appears to be located in the southeast corner, and do not support the theory of a separate source of VOCs under the parking lot.

4.13 Parking Lot Soil Borings

Shallow soil borings of the unsaturated zone were completed at two locations in the Mr. C Cleaners parking lot to investigate elevated soil gas readings. One boring was located near Mr. C Cleaners' sewer lateral and the second boring was located near the Shoe Repair. The first boring, SB-1, was performed to determine whether VOCs detected in groundwater were associated with the sanitary sewer lateral at Mr. C Cleaners. The boring was located approximately 4-feet east of the sewer lateral's approximate location and 6-feet south of the store front of Mr. C. Cleaners. Split-spoon soil samples were collected every two feet from the unsaturated zone from ground surface to 12-feet below grade (viz. 0-2', 2-4', ...).

Representative portions of each 2-foot split-spoon sample were immediately placed in laboratory precleaned jars and a 6 oz. glass archive jar after opening the split-spoon. The archived samples jar headspace were monitored for TVO using a PID. Samples exhibiting the highest TVO were analyzed for volatile organic compounds in the on-site field laboratory (see Section 4.1.5). Two samples (viz., 6-8' and 8-10') were submitted for testing.

Soil gas survey results indicated high concentrations of PCE near the foundation of the shoe repair building (Sample Nos. 63 and 64). Therefore, the second boring was

performed and soil samples were collected from the unsaturated zone near soil gas location No. 63 (Boring H-13). The split-spoon sample that exhibited the highest TVO concentration (viz. 8-10') was analyzed for volatile organic compounds in the on-site field laboratory. Soil boring locations are shown on Plate 1, and boring logs are presented in Appendix E. The analytical results of the soil borings are discussed in Section 5.2.

4.1.4 Exploratory Soil Borings

The RI Work Plan proposed the installation of four bedrock monitoring wells based on an anticipated depth to bedrock of approximately 30 feet. Rock depths are approximately 150 to 200 feet beneath the site; therefore, the Work Plan was modified with NYSDEC approval to complete four deep soil borings in place of the bedrock wells. These borings were designated MPI-1D (near the Church), MPI-4D (near the Library), MPI-5D (north of Agway), and MPI-7D (near Mr. C Cleaners). Boring locations are illustrated on Plate 1. Boring MPI-4D, the initial deep boring, was drilled and sampled to a depth of 78 feet, where it was apparent that a substantial thickness of low permeability soil was present. One Shelby tube sample was collected from the interval of fine-grained soil in each deep boring for physical soil testing. The three subsequent borings were completed to various depths in order to demonstrate a general continuity of geologic conditions between boring locations. Soil boring logs are presented in Appendix E and the results of the exploratory borings are discussed in Section 4.3. Each deep boring was abandoned by backfilling to the surface with cement-bentonite grout. Based on the results of the exploratory borings, the NYSDEC approved the installation of four intermediate depth overburden monitoring wells (MPI-1I, MPI-4I, MPI-5I, and MPI-7I).

4.1.5 Hydropunch® Groundwater Sampling and Irrigation Well Sampling

The extent and direction of VOC plume migration was assessed based on the analysis of groundwater samples in an on-site mobile laboratory operated by Commonwealth Analytical, of Westfield, Massachusetts. Samples were collected at various depths using a Hydropunch® sampler. Analyses were performed for volatile organic compounds (VOCs) using a Hewlett Packard Gas Chromatograph. Data was processed on a personal computer and preliminary field reports were provided within 4 hours of sample collection permitting rapid selection of additional sample boring locations and final monitoring well locations.

Sixteen boring locations were drilled in areas west/southwest of the Presbyterian Church, west of MPI-6S, northwest of Mr. C Cleaners along Fillmore Avenue and in areas near Mr. C Cleaners. Additionally, three borings were located on the Agway property, one near MW-7 and two near the Agway barn (viz., former laundry, as discussed in Section 2.2). Boring locations are illustrated on Plate 1 and results are listed on Table 5-7 with the discussion of analytical results in Section 5.3.

A minimum of two groundwater samples were collected at each boring location, except at borings located adjacent to an existing well. One sample was collected at the water table (approximately 11-14 feet below grade), and one sample at the base of the outwash sand and gravel (approximately 25-28 feet below grade). In addition, groundwater samples were collected from the base of the outwash adjacent to water table wells at ES1-3, MW-7 and MPI-3S. Borings were also completed into the lacustrine sandy silt at MPI-6S, MPI-3S, at H-10 (360 feet west of MPI-6S), and near MPI-4I to determine the extent of PCE migration into the less permeable lower zone of the water table aquifer.

Groundwater samples were also collected in MPI-6S, MW-7 and MPI-3S and in three residential shallow wellpoints used for irrigation purposes. Groundwater from existing wells was collected for analysis of volatile organics in the mobile field laboratory to supplement Hydropunch® sampling and analysis data. Final Phase II monitoring well locations were selected after review of the mobile laboratory analyses.

4.1.6 Drilling and Monitoring Well Installation

Boring Location and Soil Sampling

Twelve Phase I boreholes/monitoring wells were completed in accordance with the January 1994 Work Plan, the results of the soil gas surveys, and the results of the exploratory soil borings. Five Phase II boreholes/monitoring wells were completed after review of the Hydropunch® groundwater sampling results.

Stratigraphic information and physical soil samples were obtained during drilling at the deepest boring at each location. Spilt spoon samples were logged, placed in glass jars with aluminum foil seals, and monitored for total organic vapors later in the day. Sample descriptions/boring logs are presented in Appendix E.

A total of four well pairs were constructed to determine whether VOCs were migrating downward. Each cluster included a shallow overburden well with the screened

portion of the well straddling the water table, and an intermediate zone well screened approximately 20 to 22 feet deeper than the shallow well. Shallow and intermediate wells are designated "S" and "I", respectively. Wells MPI-4I and MPI-5I were installed adjacent to MPI-4S and MPI-5S, respectively. Well MPI-1I and MPI-7I were installed next to existing shallow wells ESI-4 and ESI-3, respectively. Single shallow wells were installed (MPI-1S, MPI-2S, MPI-3S, MPI-6S, MPI-8S, and MPI-9S) to identify the lateral extent of VOC contamination and to assess the influence of sanitary sewers on VOC migration in groundwater.

The results of the groundwater screening and previous data were used to locate MPI-10B, MPI-11B, MPI-12B, MPI-13B and MPI-14B. The "B" designation indicates that the screen bottom is at the base of the outwash (viz., at approx. 30 feet bgs). Well screens are 15-feet long extending from near the water table (approx. 11 feet bgs) to the base of the outwash.

A single monitoring well (MPI-4D) was installed adjacent to MPI-4I to determine PCE concentrations in the stratified till zone.

Well Construction and Development

The monitoring well construction details are documented in Appendix E and are summarized in Table 4-3. Intermediate wells were constructed similar to the shallow wells, except that a smaller screen slot size was used due to the occurrence of finer sands in the intermediate zone and the riser annulus was backfilled with a bentonite slurry.

Monitoring well MPI-4D, installed adjacent to MPI-4I, is constructed with 66 feet of 2-inch PVC riser and a screen extending to 76 feet below grade. Permanent steel casing was installed to 43.5 feet bgs during borehole advancement to prevent the downhole migration of volatile organics detected in MPI-4I during the Phase I RI. A 6-inch casing advanced the borehole to 70 feet below grade, and a roller bit from 70-76.5 feet. Split-spoon samples were collected from 64.5 to 76 feet below grade to verify the geologic conditions in the monitoring interval.

All new monitoring wells with the exception of MPI-4D, and selected existing wells were developed by suction lift pumping until turbidity values were less than 50 NTU or until the pH, specific conductivity, and turbidity had stabilized. MPI-4D was developed by bailing due to the slow recharge. All Phase I wells were developed and sampled by Malcolm Pirnie, Inc. Phase II wells were developed and sampled by Lu Engineers. A summary of well

TABLE 4-3

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

WELL CONSTRUCTION SUMMARY

Well No.	Ground Elev.	PVC Riser Elev.	Borehole Diam./ Well Diam. (in.)	DEPTHS (ft below grade)					Type of Sand Pack	Screen Slot Size	Installation Date
				Top of Seal	Top of Sand Pack	Top of Screen	Screen Bottom	Bottom of Sand Pack			
ESI-1	917.24	916.80	8.25/2	4.5	7.0	8.0	18.0	20.0	#0 Morie	0.010	5/92
ESI-2	918.05	917.79	8.25/2	6.0	8.0	9.0	19.0	20.0	#0 Morie	0.010	5/92
ESI-3	916.41	915.85	8.25/2	4.1	6.0	7.0	17.0	18.0	#0 Morie	0.010	5/92
ESI-4	913.56	913.25	8.25/2	2.0	4.0	5.0	15.0	16.0	#0 Morie	0.010	5/92
ESI-5	912.90	912.64	8.25/2	2.0	4.0	5.0	15.0	16.0	#0 Morie	0.010	5/92
ESI-6	914.92	914.48	8.25/2	3.8	6.0	7.0	17.0	18.0	#0 Morie	0.010	5/92
MW-1	915.48	915.12	10.5/2	9.0	10.6	12.0	22.0	22.0	#2	.010	6/88
MW-4	914.47	914.02	12.5/4	4.7	6.6	7.3	17.3	18.0	#2	-	1/89
MW-5	914.84	914.50	10.5/2	-	-	10.0	15.0	-	-	-	5/84
MW-6	915.05	914.68	8.0/2	3.0	-	5.0	14.5	15.0	-	0.020	9/93
MW-7	916.34	915.96	8.0/2	3.0	-	5.0	14.5	15.0	-	0.020	9/93
MW-8	915.97	915.62	8.0/2	3.0	-	5.0	14.5	15.0	-	0.020	9/93
MW-9	916.99	916.64	8.0/2	3.0	-	5.0	14.5	15.0	-	0.020	9/93
MW-10	914.85	914.54	8.0/2	2.0	-	4.0	13.5	14.0	-	0.020	9/93
MPI-1S	915.38	915.08	12.0/2	5.3	7.2	9.0	19.0	19.5	#0 Morie	0.010	3/94
MPI-1I	913.53	913.23	12.0/2	2.0	29.2	31.0	41.0	41.5	#00 Morie	0.006	3/94
MPI-2S	917.34	917.10	12.0/2	3.8	6.0	8.0	18.0	18.5	#0 Morie	0.010	3/94
MPI-3S	914.79	914.40	12.0/2	3.7	5.7	8.0	18.0	18.5	#0 Morie	0.010	3/94
MPI-4S	915.12	914.82	12.0/2	6.8	8.8	11.0	21.0	21.5	#0 Morie	0.010	3/94
MPI-4I	916.12	915.66	12.0/2	4.0	29.8	32.0	42.0	42.5	#00 Morie	0.006	3/94
MPI-5S	916.78	916.45	12.0/2	3.9	5.9	8.0	18.0	18.4	#0 Morie	0.010	3/94
MPI-5I	916.78	916.43	12.0/2	8.0	30.0	32.0	42.0	42.5	#00 Morie	0.006	3/94
MPI-6S	915.35	915.03	12.0/2	7.9	10.0	12.3	22.3	23.0	#0 Morie	0.010	3/94
MPI-7I	916.42	916.14	12.0/2	5.3	27.1	29.5	39.5	40.0	#00 Morie	0.006	3/94
MPI-8S	915.01	914.64	12.0/2	4.0	6.0	8.0	18.0	18.5	#0 Morie	0.010	3/94
MPI-9S	915.24	914.88	12.0/2	4.5	6.5	8.0	18.0	18.5	#0 Morie	0.010	3/94

- = unknown

TABLE 4-3 (Continued)

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

WELL CONSTRUCTION SUMMARY

Well No.	Ground Elev.	PVC Riser Elev.	Borehole Diam./ Well Diam. (in.)	DEPTHS (ft below grade)					Type of Sand Pack	Screen Slot Size	Installation Date
				Top of Seal	Top of Sand Pack	Top of Screen	Screen Bottom	Bottom of Sand Pack			
MPI-10B	916.07	915.68	12.0/2	11.0	13.0	16.5	31.5	32.0	#00 Morie	.010	12/94
MPI-11B	913.58	913.15	12.0/2	8.5	13.0	15.0	30.0	30.5	#00 Morie	.010	12/94
MPI-12B	911.44	911.19	12.0/2	11.5	15.0	20.0	35.0	35.0	#00 Morie	.010	12/94
MPI-13B	913.49	913.25	12.0/2	10.0	15.0	17.0	32.0	32.0	#00 Morie	.010	1/95
MPI-14B	913.68	913.18	12.0/2	8.5	11.0	15.0	30.0	30.0	#00 Morie	.010	1/95
MPI-4D	915.97	915.70	6.0/2	60.0	63.9	66.0	76.0	76.0	#00 Morie	.010	1/95

development data is presented in Table 4-4. Well development data sheets are presented in Appendix E for Phase I and in Appendix I for Phase II.

Physical Soils Testing

The following samples were collected for physical soils testing:

- Shelby tube samples from each exploratory boring. All Shelby Tube samples were collected from a confining layer that underlies the shallow aquifer.
- Composite split spoon samples from the screened interval or the adjacent exploratory boring of MPI-7D, MPI-6S, MPI-3S, MPI-1I, MPI-5S, and MPI-5I were submitted to determine grain size distribution (ASTM D422-92) in the shallow aquifer.

Samples collected from the confining layer were analyzed for the following parameters:

- Moisture Content (ASTM D2216-92)
- Grain Size Analysis (ASTM D422-92)
- Atterberg Limits (ASTM D4318-84)
- Falling Head Permeability (ASTM D5084-90)
- Organic Content (ASTM D2974-82)

Physical soil testing results are presented in Appendix F and are summarized in Table 4-5. These results are discussed in Section 4.3 and 4.4.

4.1.7 In Situ Hydraulic Conductivity Testing

In situ hydraulic conductivity tests were performed by Malcolm Pirnie, Inc. on all Phase I and existing monitoring wells, except ESI-2. Lu Engineers performed slug testing on Phase II monitoring wells. The field tests consisted of rising head slug tests using an electronic data logger to monitor water level recovery. Time and head were analyzed by the method of Bouwer and Rice (1976). Phase I field data and slug test analyses are presented in Appendix G. Phase II slug test data are presented in Appendix I. Construction details for some of the existing wells are not fully documented; therefore, assumptions were made in order to analyze the slug test data. These assumptions are documented in Appendix G. Table 4-6 summarizes the results of the in situ hydraulic conductivity analyses. These results are discussed in Section 4.4.

TABLE 4-4
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF FIELD MEASUREMENTS FOR RI WELL DEVELOPMENT⁽¹⁾

Location	Date Developed	Volume of Water In Casing (gal.)	Total Volume of Water Purged (gal.)	Temp. (°C)	pH (units)	Specific Conductance umhos/cm (2)	Turbidity (NTU)	Recharge Rate	Appearance/ Odor
MPI-1S	3/21/94	1.6	105	9.6	7.32	2520	48	slow/moderate	slt sheen/clear/no odor
MPI-1I	3/25/94	5.7	110	11.8	7.29	1645	20	moderate	clear/no odor
MPI-2S	3/28/94	1.1	85	11.7	7.32	1491	11	fast	clear/solvent
MPI-3S	3/21/94	1.4	60	11.3	7.26	1720	29	slow/moderate	clear/no odor
MPI-4S	3/22/94	1.9	65	12.6	7.65	1572	31	slow	clear/no odor
MPI-4I	3/22/94	5.5	110	10.8	7.52	1576	30	moderate	clear/no odor
MPI-5S	3/15/94	1.2	95	8.3	7.34	1620	15	fast	clear/no odor
MPI-5I	3/21/94	5.0	70	10.3	7.26	1684	10	fast	clear/no odor
MPI-6S	3/15/94	2.0	85	9.6	7.07	1684	14	moderate	clear/no odor
MPI-7I	3/22/94	5.0	130	11.6	7.35	1813	16	moderate	clear/no odor
MPI-8S	3/25/94	1.5	65	4.7	7.42	1737	32	slow	clear/no odor
MPI-9S	3/25/94	1.5	80	5.4	7.43	1851	40	moderate	slt sheen/clear/no odor
ESI-1	3/15/94	1.1	90	9.6	7.32	1145	41	fast	clear/no odor
ESI-3	3/17/94	1.1	145	9.9	7.33	1912	49	fast	clear/no odor
ESI-4	3/16/94	1.1	55	8.7	7.21	7290	8	fast	clear/no odor
ESI-5	3/17/94	1.2	25	6.9	7.42	1182	8	slow	clear/no odor
ESI-6	3/18/94	1.1	185	10.7	7.14	1920	9	fast	clear/slt solvent
MW-4	3/16/94	6.1	48	7.0	6.95	2840	30	slow	sheen/clear/slt solvent
MW-5	3/16/94	0.8	7.0	6.0	6.82	2014	>100	moderate	sheen/cloudy/solvent

TABLE 4-4 (Continued)
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF FIELD MEASUREMENTS FOR PHASE II RI WELL DEVELOPMENT⁽¹⁾

Location	Date Developed	Volume of Water In Casing (gal.)	Total Volume of Water Purged (gal.)	Temp. (°C)	pH (units)	Specific Conductance umhos/cm (2)	Turbidity (NTU)	Recharge Rate	Appearance/ Odor
MPI-10B	1/20/95	3.46	50.0	10.9	7.74	1083	> 200	moderate	opaque, silty
MPI-11B	1/20/95	3.18	60.0	10.3	8.42	995	> 200	moderate	opaque, silty w/ fine sand
MPI-12B	1/23/95	4.43	70.0	9.6	9.1	2110	> 200	moderate	Viscous and silty
MPI-13B	1/19/95	3.66	80.0	10.4	7.49	1340	> 200	moderate	opaque
MPI-14B	1/23/95	3.39	60.0	7.4	8.31	960	184	moderate	silty
MPI-4D	1/20/95	10.70	67.5	9.7	7.61	305	> 200	(3)	very opaque

Notes:

- (1) All measurements are readings obtained from last volume of water.
- (2) Conductance corrected to 25°C.
- (3) Developed to dryness on 1/20/95 and 1/24/95 after 37.5 and 27.5 gallons were removed.

TABLE 4-5

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

PHYSICAL SOIL TESTING SUMMARY

Boring No. (ft.)	Depth (ft.)	Moisture Content %	Gravel %	Sand %	Silt %	Clay %	Classif. USCS	Liquid Limit %	Plasticity Index	Hydraulic Conductivity (cm/s)	Organic Content %
MPI-1D	66-68	26.1	0.0	1.1	59.2	39.7	CL	30	11	4.7×10^{-8}	0.7
MPI-4D	46-48	20.8	0.0	3.8	72.9	23.3	CL-ML	22	6	5.8×10^{-8}	0.6
MPI-5D	54-56	21.3	0.0	2.4	61.6	36.0	CL	29	10	4.4×10^{-8}	0.8
MPI-7D	58-60	27.6	0.0	1.2	58.9	39.9	CL	32	13	4.3×10^{-8}	1.0
MPI-3S	8-14		43.7	41.1	15.2*						
MPI-3S	14-18		3.0	35.6	60.5	0.9					
MPI-5D	8-14		29.3	54.0	16.7*						
MPI-5D	14-18		0.0	68.4	31.6	0.0					
MPI-1D	30-40		0.0	47.5	52.5	0.0					
MPI-5D	32-42		0.0	41.1	58.2	0.7					
MPI-6S	12-18		27.8	54.6	17.6*						
	18-24		0.0	71.3	24.6	4.1					
MPI-7D	12-20		48.2	38.9	12.9*						
	20-26		47.9	38.2	13.9*						
	26-28		0.0	85.9	14.1*						

* Presented as percent silt and clay combined.
Blank space indicates that testing was not required.

TABLE 4-6

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORTIN SITU HYDRAULIC CONDUCTIVITY TEST RESULTS⁽¹⁾

Location	SHALLOW WELLS ⁽²⁾				INTERMEDIATE & DEEP WELLS ⁽³⁾		BASE OF OUTWASH ⁽⁴⁾	
	K (cm/s)	Location	K (cm/s)	Location	K (cm/s)	Location	Location	K (cm/s)
MPI-1S	4.1 E-3	ESI-1	2.0 E-2	MW-1	1.8 E-3	MPI-1I	MPI-10B	4.2 E-3
MPI-2S	1.1 E-2	ESI-3	9.0 E-2	MW-4	8.2 E-4	MPI-4I	MPI-11B	5.6 E-4
MPI-3S	6.0 E-3	ESI-4	4.8 E-2	MW-5	3.0 E-2	MPI-5I	MPI-12B	6.7 E-2
MPI-4S	1.1 E-3	ESI-5	4.9 E-3	MW-6	E-2*	MPI-7I	MPI-13B	1.2 E-2
MPI-5S	2.6 E-2	ESI-6	2.2 E-2	MW-7	4.4 E-2	MPI-4D**	MPI-14B	5.5 E-4
MPI-6S	8.5 E-3			MW-8	2.5 E-2			
MPI-8S	9.9 E-4			MW-9	1.8 E-3			
MPI-9S	8.5 E-3			MW-10	1.8 E-3			

Notes:

- (1) All tests analyzed by Method of Bouwer and Rice (1976).
- (2) Geometric mean of 21 shallow wells = 8.6 E-3 cm/s.
- (3) Geometric mean of 4 intermediate wells = 2.8 E-4 cm/s.
- (4) Geometric mean of 5 base of outwash wells = 4.0 E-3 cm/s.
- * Estimated minimum value. Well recovery too rapid to collect analyzable data.
- ** Deep well.

4.1.8 Water Level Monitoring and Site Survey

The locations and elevations of all Phase I and existing monitoring wells were surveyed by Deborah Naybor P.L.S., P.C. in June 1994, and for Phase II monitoring wells and residential irrigation wells in March 1995.

Malcolm Pirnie collected five rounds of groundwater elevations in 26 wells. Water levels were measured in April 1994 for a period of four consecutive weeks after well development and during the well survey on June 15, 1994. Groundwater levels were also monitored on September 21, 1994 and December 14, 1994. Groundwater elevations determined during the RI are summarized on Table 4-7.

Lu Engineers monitored water levels in all Phase I and II wells, existing wells, and residential irrigation wells on January 18 and 19, 1995.

4.2 REGIONAL GEOLOGY

4.2.1 Physiography

The site is located at the boundary of the Allegheny Plateau and the Lake Erie/Ontario Lowland physiographic provinces of New York State. The Allegheny Plateau in this area is deeply dissected by north-south trending valleys that are up to 300 feet below the upland elevations. The Village of East Aurora is located at the northern end of one such north trending valley, the valley of the East Branch of Cazenovia Creek. Upland topography is abruptly truncated to the south and east of the Village where Cazenovia Creek exits the Allegheny Plateau and enters the Erie/Ontario Lowland. The Erie/Ontario Lowland slopes gently north and west toward Lake Erie with a series of low ridges comprised of glacial debris.

4.2.2 Bedrock Geology

The major rock formation underlying the site, as mapped by Buehler and Tesmer (1963), is the Rhinestreet Shale member of the West Falls Formation. The Rhinestreet Shale is composed largely of fissile to massive black shale, which may be slightly petroliferous. Medium and dark gray shales occur interbedded with black shale in the upper third of the Rhinestreet member.

TABLE 4-7
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
SUMMARY OF WATER LEVELS FROM TOP OF RISER

Well No.	Ref. Elev. (amsl)	4/5/94		4/13/94		4/20/94		4/27/94	
		Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)
MPI-1S	915.08	9.48	905.60	9.21	905.87	9.44	905.64	9.69	905.39
MPI-1I	913.23	7.63	905.60	7.34	905.89	7.56	905.67	7.82	905.41
MPI-2S ⁽⁶⁾	916.81	10.92	906.18	10.71	906.39	10.91	906.19	11.20	905.90
MPI-3S	914.40	9.63	904.77	9.31	905.09	9.58	904.82	9.79	904.61
MPI-4S	914.82	9.16	905.66	8.97	905.85	9.13	905.69	9.42	905.40
MPI-4I	915.66	10.15	905.51	9.96	905.70	10.10	905.56	10.38	905.28
MPI-4D	915.70	(3)							
MPI-5S	916.45	10.58	905.87	10.25	906.20	10.51	905.94	10.81	905.64
MPI-5I	916.43	10.62	905.81	10.34	906.09	10.52	905.91	10.86	905.57
MPI-6S	915.03	10.10	904.93	9.79	905.24	10.02	905.01	10.28	904.75
MPI-7I	916.14	9.95	906.19	9.71	906.43	9.91	906.23	10.21	905.93
MPI-8S	914.64	9.33	905.31	9.19	905.45	9.03	905.61	9.29	905.35
MPI-9S	914.88	9.31	905.57	9.01	905.87	9.25	905.63	9.54	905.34
MPI-10B ⁽³⁾	915.68								
MPI-11B ⁽³⁾	913.15								
MPI-12B ⁽³⁾	911.19								
MPI-13B ⁽³⁾	913.25								
MPI-14B ⁽³⁾	913.18								
MW-1	915.12	9.30	905.82	9.04	906.08	9.26	905.86	9.57	905.55
MW-4	914.02	8.26	905.76	7.99	906.03	8.16	905.86	8.50	905.52
MW-5	914.50	8.70	905.80	8.40	906.10	8.66	905.84	8.96	905.54
MW-6	914.68	8.66	906.02	8.44	906.24	8.66	906.02	8.99	905.69
MW-7	915.96	8.66	906.02	8.44	906.24	8.66	906.02	8.99	905.69
MW-8	915.62	9.95	906.01	9.64	906.32	(1)	—	10.22	905.74
MW-9	916.64	9.97	905.65	9.64	905.98	9.91	905.71	10.20	905.42
MW-10	914.54	8.57	905.97	8.29	906.25	8.54	906.00	8.84	905.70
ESI-1	916.80	10.53	906.27	10.31	906.49	10.45	906.35	10.79	906.01
ESI-2	917.79	11.62	906.17	11.36	906.43	11.58	906.21	11.90	905.89
ESI-3	915.85	9.68	906.20	9.43	906.45	9.64	906.24	9.95	905.93
ESI-4	913.25	7.49	905.76	7.23	906.02	7.50	905.75	7.75	905.50
ESI-5	912.64	7.47	905.17	7.23	905.41	7.51	905.13	7.63	905.01
ESI-6	914.48	9.79	904.69	9.47	905.01	9.75	904.73	9.95	904.53
Fillmore #531 ⁽⁴⁾	913.96								
Fillmore #524 ⁽⁴⁾	916.61								
Fillmore #517 ⁽⁴⁾	914.45								

Notes:

- (1) Not able to obtain water level measurements.
- (2) New riser elevation.
- (3) Installed 12/94 through 1/95.
- (4) Residential irrigation wells.
- (5) From ground surface.
- (6) Flushmount casing & top of riser were destroyed 1/4/95 and repaired prior to sampling.
MPI-2S top of riser was re-surveyed after repair. The new elevation is presented for Ref. Elev.

TABLE 4-7 (Continued)

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF WATER LEVELS FROM TOP OF RISER

Well No.	Ref. Elev. (amsl)	6/15/94		9/21/94		12/14/94		1/18 & 19/95 ⁽⁷⁾	
		Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)
MPI-1S	915.08	10.25	904.83	10.80	904.28	NA	—	10.75 ⁽⁸⁾	904.33 ⁽⁸⁾
MPI-1I	913.23	8.37	904.86	8.92	904.31	NA	—	7.93	905.30
MPI-2S	916.81	11.83	905.27	12.36	904.74	NA	—	11.07(6)	905.74
MPI-3S	914.40	10.19	904.21	10.65	903.75	10.13	904.27	9.79	904.61
MPI-4S	914.82	10.00	904.82	10.35	904.47	9.92	904.90	9.51	905.31
MPI-4I	915.66	10.93	904.73	11.38	904.28	10.20	905.46	10.42	905.24
MPI-4D	915.70	(3)	—	—	—	—	—	9.82	905.88
MPI-5S	916.45	11.45	905.00	11.98	904.47	NA	—	10.99	905.46
MPI-5I	916.43	11.48	904.95	11.99	904.44	NA	—	11.13	905.30
MPI-6S	915.03	10.80	904.23	11.49	903.54	10.75	904.28	10.41	904.62
MPI-7I	916.14	10.88	905.26	11.34	904.80	NA	—	10.46	905.68
MPI-8S	914.64	9.88	904.76	10.41	904.23	NA	—	9.43	905.21
MPI-9S	914.88	(1)	—	10.65	904.23	10.05	904.83	9.70	905.18
MPI-10B ⁽³⁾	915.68							10.13	905.55
MPI-11B ⁽³⁾	913.15							8.59	904.56
MPI-12B ⁽³⁾	911.19							6.78	904.41
MPI-13B ⁽³⁾	913.25							8.63	904.62
MPI-14B ⁽³⁾	913.18							8.53	904.65
MW-1	915.12	10.15	904.97	10.80	904.32	NA	—	9.73	905.39
MW-4	914.02	9.09	904.93	9.72	904.30	NA	—	8.50	905.52
MW-5	914.50	9.57	904.93	10.17	904.33	NA	—	9.11	905.39
MW-6	914.68	9.62	905.06	10.20	904.48	NA	—	9.08	905.60
MW-7	915.96	9.62	905.06	11.45	904.51	10.83	905.13	10.40	905.56
MW-8	915.62	10.85	905.11	11.42	904.20	NA	—	10.31	905.31
MW-9	916.64	10.73	904.89	12.00	904.64	NA	—	11.31	905.33
MW-10	914.54	9.47	905.07	10.04	904.50	NA	—	9.08	905.46
ESI-1	916.80	11.51	905.29	11.81	904.99	10.49	906.31	11.02	905.78
ESI-2	917.79	12.60	905.19	12.91	904.88	NA	—	12.14	905.65
ESI-3	915.85	10.62	905.26	10.96	904.89	10.60	905.25	10.17	905.68
ESI-4	913.25	8.36	904.89	8.77	904.48	8.24	905.01	7.83	905.42
ESI-5	912.64	8.01 ⁽²⁾	904.69	8.42	904.22	7.90	904.74	7.75	904.89
ESI-6	914.48	10.33	904.15	10.97	903.51	10.90	903.58	9.93	904.55
Fillmore #531 ⁽⁴⁾	913.96					9.30(5)	903.78	9.34	904.62
Fillmore #524 ⁽⁴⁾	916.61					10.50(5)	904.07	12.20	904.41
Fillmore #517 ⁽⁴⁾	914.45					9.50(5)	904.08	9.86	904.59

Notes:

- (1) Not able to obtain water level measurements.
- (2) New riser elevation.
- (3) Installed 12/94 through 1/95.
- (4) Residential wellpoints.
- (5) From ground surface.
- (6) Flushmount casing & top of riser were destroyed 1/4/95 and repaired prior to sampling. MPI-2S top of riser was re-surveyed after repair.
- (7) Obtained by Lu Engineers.
- (8) Water level elevation at MPI-1S was not used to contour the groundwater surface due to a probable incorrect reading of the water level.

Blackmon (1956) describes a buried bedrock valley that was the course of the pre-glacial Cazenovia Creek. The pre-glacial Cazenovia Creek valley was deepened by ice erosion as ice was funneled into the valley during numerous glacial advances. Figure 4-2 illustrates the trend of the bedrock valley as inferred by Blackmon, who also indicates that the depth to bedrock may be 150 to 200 feet below grade. These depth figures are most likely good estimates of the depth to bedrock beneath the Mr. C Cleaners site. Immediately east and west of the buried bedrock valley, bedrock is found at 20 to 30 feet below grade. In the uplands east and south of the Village, the bedrock surface rises approximately 300 feet above the Village. The total change in bedrock topography between the base of the pre-glacial valley and the uplands is approximately 400 to 500 feet.

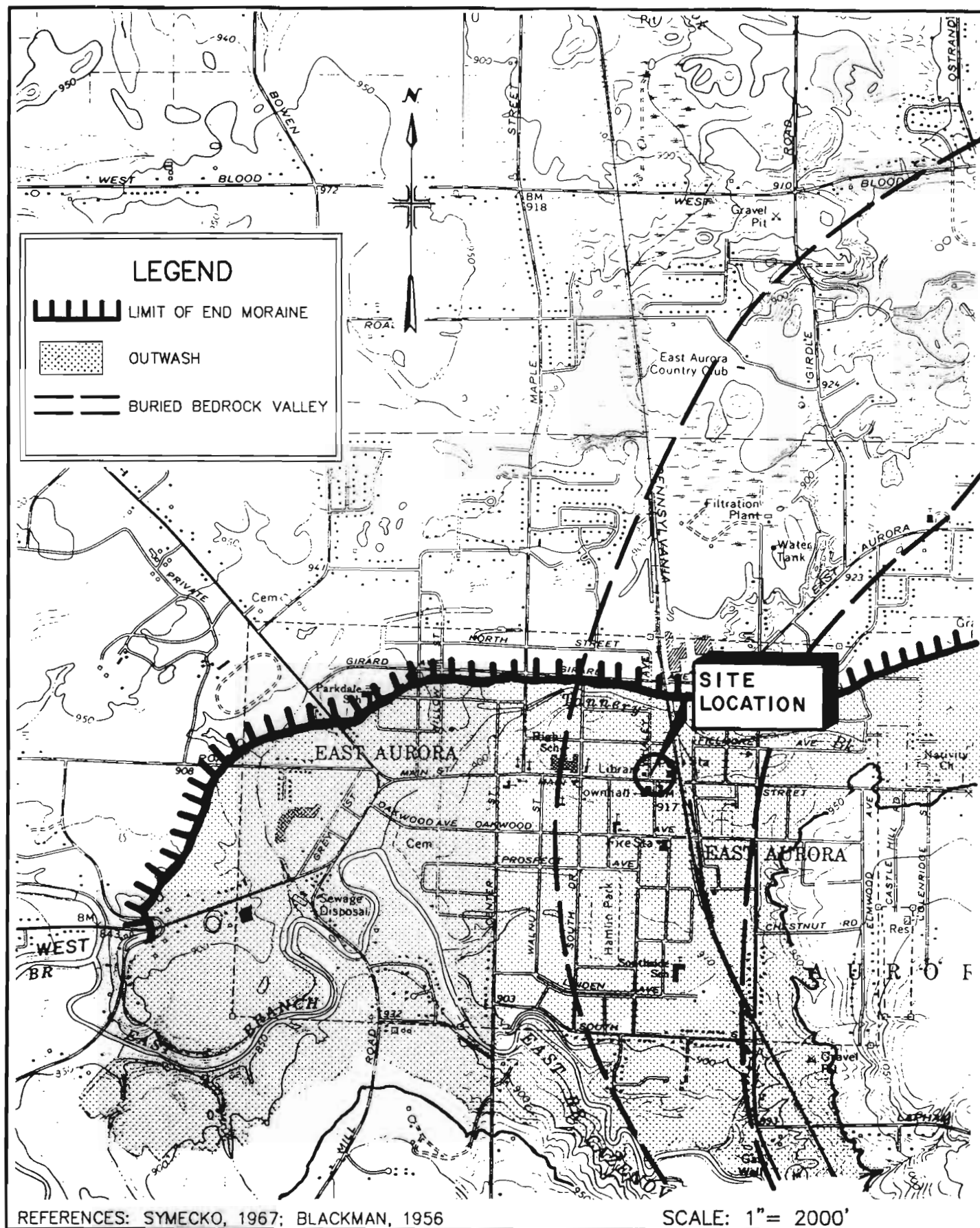
4.2.3 Glacial Geology

Surficial geologic deposits in the vicinity of the site were deposited during the most recent advance and recession of glacial ice. A knowledge of these deposits assists in the interpretation of site specific geologic conditions, which were observed during the RI drilling program and are discussed in Section 4.3.

Directly north of the Village is an area marked by an elevated hummocky terrain separated by closed depressions with poor drainage. The hummocky material is a glacial deposit termed the Hamburg-Marilla Moraine by Leverett (1902) and represents a standstill of the ice during northward recession. The southern limits of the Moraine are illustrated on Figure 4-2. This position of the ice blocked northward drainage and created a body of standing water between the ice and uplands to the south.

South of the moraine, the Village of East Aurora is underlain by a gravelly outwash deposit that has the approximate extent shown in Figure 4-2. According to Blackmon (1956) water dammed at the 950-foot elevation by the Hamburg-Marilla Moraine received sediment (sand and gravel) from higher altitude lakes, from drainage out of the East Branch of Cazenovia Creek, and drainage off of the glacier. As the ice retreated to the north, leaving the Hamburg-Marilla Moraine in its path, drainage channels opened allowing the ice dammed waters of Cazenovia Creek to drain to a lower elevation.

Coarse sand and gravel deposits, such as that underlying East Aurora, are typically deposited by rapidly aggrading streams. An aggrading stream is one which is carrying more



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sediment than its capacity load and, therefore, deposits its sediment as bars or over its banks on flood plains. The character of the surficial outwash deposit is likely laterally variable.

Approximately 150 to 200 feet of glacial deposits may occur beneath the surficial gravels under the Village and the morainal deposit north of the Village. From the 1930s to the 1970s, the Village of East Aurora maintained municipal water supply wells at the Filtration Plant approximately 4,000 feet north of the Mr. C Cleaners site (see Figure 4-2). A boring log of Water Well #4 described by Blackmon (1956) indicates that coarse granular deposits occurred at the intervals of 60 to 70 feet, and 107 to 123 feet below grade. The remaining intervals are described as various combinations of gravel, sand, and clay. The well field yielded approximately 500 million gallons per day in the 1960s and presented sufficient aquifer yield. In June 1980, the Village abandoned its groundwater supply and switched to the Erie County Water Authority due to the economics of maintaining the well field.

4.3 SITE GEOLOGY

This section presents a discussion of site geologic conditions based upon the RI drilling program, the results of previous investigations at the Mr. C Cleaners and Agway sites, and information provided in the literature concerning regional geologic conditions.

Stratigraphic units identified during the RI from youngest to oldest and illustrated on Figure 4-3 include:

- fill material
- clayey silt till
- gravel and sand outwash
- lacustrine sandy silt
- stratified till

As stated in Section 4.1.3, bedrock was not encountered.

Table 4-8 presents survey data and a summary of the stratigraphic unit thicknesses determined from wells/boreholes completed during the RI. Stratigraphic cross-sections are presented in Plate 5. Cross-section locations are shown on Plate 6.

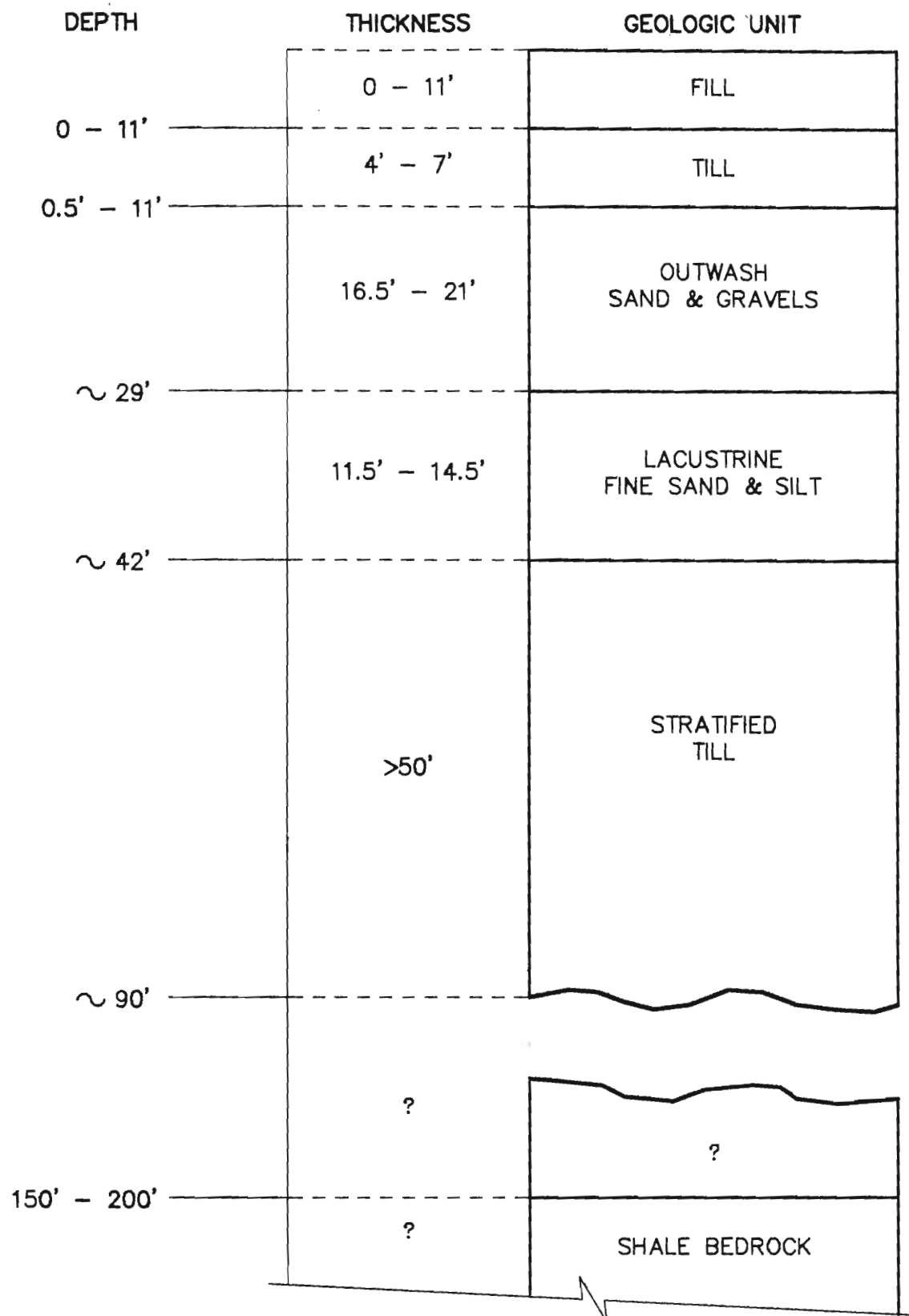


TABLE 4-8

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF GEOLOGIC UNITS

Well Bore #	Ground Surface Elev.	Fill Mat'l Ft. Below Grade/ Top Elev.	Till Ft. Below Grade/ Top Elev.	Gravel Outwash Ft. Below Grade/ Top Elev.	Medium, Coarse Sand Outwash Ft. Below Grade/ Top Elev.	Fine, Very Fine Sand Outwash Ft. Below Grade/ Top Elev.	Lacustrine Deposit Ft. Below Grade/ Top Elev.	Stratified Till Deposits Ft. Below Grade/ Top Elev.
1D	913.95	—	0.5 - 6.0 913.45	6.0 - 11.0 907.95	—	11.0 - 27.0 902.95	27.0 - 40.5 886.95	40.5 - 90.0 873.45
1S	915.38	—	1.0 - 8.0 914.38	—	—	8.0 - 20.0 907.38		
2S	917.34	0 - 1.0 917.34	1.0 - 5.5 916.34	—	5.5 - 10.0 911.84	10.0 - 20.0 907.34		
3S	914.79	—	0.4 - 6.0 914.39	6.0 - 14.5 908.79	—	14.5 - 18 900.29		
4D	916.14	1.0 - 5.0 915.14	5.0 - 11.0 911.14	11.0 - 14.0 905.14	—	14.0 - 27.5 902.14	27.5 - 42.0 888.64	42.0 - 78.0 874.14
5D	916.49	0.0 - 2.0 916.49	2.0 - 8.0 914.49	8.0 - 12.5 908.49	12.5 - 14.0 903.99	14.0 - 28.0 902.49	28.0 - 42.5 888.49	42.5 - 64.0 873.99
6S	915.35	0.0 - 3.5 915.35	3.5 - 8.5 911.85	* 8.5 - 12.5 906.85	12.5 - 17.5 902.85	17.5 - 24.0 897.85		
7D	916.67	0.0 - 11.0 916.67	—	11.0 - 26.5 905.67	26.5 - 29.0 890.17	—	29.0 - 40.5 887.67	40.5 - 60.0 876.17
8S	915.01	0.0 - 4.0 915.01	4.0 - 9.6 911.01	* 9.6 - 14.0 905.41	14.0 - 18.0 901.01	18.0 - 20.0 897.01		
9S	915.24	0.0 - 4.0 915.24	4.0 - 8.0 911.24	8.0 - 12.4 907.24	12.4 - 20.0 902.84	—		
Notes:								
* Lacustrine Unit								
— Indicates that the unit was not encountered.								
Blank space indicates that the boring was completed prior to the expected geologic unit.								

TABLE 4-8 (Continued)

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF GEOLOGIC UNITS

Well Bore #	Ground Surface Elev.	Fill Mat'l Ft. Below Grade/ Top Elev.	Till Ft. Below Grade/ Top Elev.	Gravel Outwash Ft. Below Grade/ Top Elev.	Medium, Coarse Sand Outwash Ft. Below Grade/ Top Elev.	Fine, Very Fine Sand Outwash Ft. Below Grade/ Top Elev.	Lacustrine Deposit Ft. Below Grade/ Top Elev.	Stratified Till Deposits Ft. Below Grade/ Top Elev.
MPI-10B	916.07	0 - 10.4 916.07	—	—	10.4 - 14.0 905.67	14.0 - 30.6 902.07	30.6 - ? 885.47	
MPI-11B	913.58	0 - 0.3 913.58	0.3 - 8.0 ⁽¹⁾ 913.28	8.0 - 22.0 905.58	—	22.0 - 26.3 891.58	26.3 - ? 887.28	
MPI-12B	911.44	0 - 4.0 911.44	4.0 - 8.0 907.44	8.0 - 34.0 903.44	—	34.0 - 36.0 877.44	36.0 - ? 875.44	
MPI-13B	913.49	0 - 2.8 913.49	2.8 - 8.0 910.69	16.0 - 18.0 897.49	8.0 - 10.0 905.49 *10.0 - 16.0 903.49 16.0 - 28.0 897.49	—	28.0 - ? 885.49	
MPI-14B	913.68	0 - 6.0 913.68	*6.0 - 8.8 907.68	9.1 - 12.2 904.58	16.0 - 23.0 897.68	12.2 - 16.0 901.48	23.0 - ? 890.68	

Notes:

(1) Includes layer of topsoil from 0.3 - 2.0' bgs.

* Lacustrine Unit

— Indicates that the unit was not encountered.

Blank space indicates that the boring was completed prior to the expected geologic unit.

4.3.1 Fill Material

Fill was encountered at drilling locations near the Library, Agway, Mr. C Cleaners, Presbyterian Church, Fillmore Avenue, and the Town Hall. The composition of the fill material varies across the site.

Fill encountered at Mr. C Cleaners was clayey silt with gravel underlain by gravel with clayey silt and a trace of brick fragments. Fill at MPI-7D occurs from grade to 11.0 feet below ground surface. The occurrence of a substantial thickness of fill material is consistent with the existence of former structures in the Mr. C Cleaners parking lot (see Section 2). Fill material at MPI-5D on the Agway site occurs in the uppermost two feet and was characterized as a moist gravel with sand. The occurrence of substantial fill in the Agway parking lot south of the barn at MPI-10B is due to the removal of former underground tanks in this area (Matrix Env. Tech. 1993). The fill encountered near the Library at MPI-4D and MPI-6S is a clayey silt with traces of brick fragments. The proportion of gravel and sand content is highly variable. The thickness of fill in this area ranges from 3.5 (MPI-6S) to 4.0 feet (MPI-4D).

Boring MPI-2S is located in the Town Hall parking lot. Therefore, asphalt was encountered overlying light gray fine gravel size crystalline material with a low specific gravity to 1.0 foot. MPI-8S in Whaley Avenue also encountered pavement overlying gravel, sand, silt, and clay to four feet below ground surface. Borings completed in Fillmore Avenue encountered up to 6.0 feet of fill. The occurrence of fill in the road is likely due to road and utility construction. Near the First Presbyterian Church fill was only encountered in the boring south of the Church at MPI-12B.

Substantial fill was not encountered at MPI-11B, north of Main Street, 360 west of MPI-6S.

4.3.2 Clayey Silt Till

Till composed mostly of brown clayey silt was encountered in all locations except MPI-7D at Mr. C Cleaners, MPI-10B at Agway and MPI-14B in Fillmore Avenue. The absence of till at the latter three areas is likely due to previous construction in these areas. Till ranged in thickness from 4.0 feet in borings MPI-9S and MPI-12B to 7.0 feet in boring MPI-1S and MPI-11B. At most locations the till is comprised of clayey silt with varying amounts of sand and gravel-size shale fragments. In borings MPI-5D, and MPI-8S, the till

has a higher a proportion of gravel and sand. Till at MPI-1S and MPI-13B graded from a clayey silt toward a silty sand with gravel. Weak stratifications were observed at most locations.

4.3.3 Outwash Sand and Gravel

Glacial outwash material is present in each borehole ranging in thickness from 13.9 to 28 feet. As described by Blackmon (1956), the outwash unit is comprised of sediment transported out of the ice-mass by meltwater, and sediment washed in to a floodplain from higher level pro-glacial lakes. The outwash grades from sandy gravel near the top of the unit to very fine sand at the base, which is approximately 27 feet below ground surface. The upward coarsening of the material is most likely due to a re-advance of the ice, which passed over the outwash and deposited the clayey silt till.

As indicated in Table 4-8, gravel outwash is present at Mr. C Cleaners (MPI-7D), Agway (MPI-5D), Whaley Avenue (MPI-9S), the Library (MPI-4D), north of Main Street 360 west of MPI-6S (MPI-11B), on Fillmore Avenue (MPI-13B and MPI-14B), and the Church (MPI-3S, MPI-1D, and MPI-12B) and ranges in thickness from 2.0 to 26.0 feet. The greatest thicknesses of gravel occur at MPI-12B and MPI-7D where gravel comprises most of the outwash unit.

Medium to coarse sand with varying amounts of fine sand underlies gravel at MPI-5D, MPI-9S, MPI-7D, MPI-13B and MPI-14B and is present without gravel at MPI-2S, MPI-6S, MPI-8S and MPI-10B. The sand ranges in thickness from 1.5 to 12.0 feet. Fine and very fine sand units occurred at the base of the outwash unit in all borings except for MPI-7D, MPI-9S, MPI-13B and MPI-14B. Fine and very fine sand has a tendency to liquify when disturbed and defines the bottom of the outwash sequence.

Grain size analyses were performed on soil samples from the gravel zone and the sand zone in borings MPI-3S and MPI-5D (see Table 4-5). Samples were collected from the screened intervals from 8-18 feet below ground surface at each well. As indicated on Table 4-8, sand and gravel extended from 8 to 14 feet. The remaining 4 feet in MPI-3S was sandy silt and in MPI-5D, silty sand. Although the outwash generally coarsens upward, the unit is laterally heterogeneous and contacts between different subunits within the outwash do not correlate between widely-spaced borings.

Samples were also analyzed from MPI-6S and MPI-7D to determine the grain size distribution of the entire outwash sequence. The interval from 12-28 feet below grade was analyzed in boring MPI-7D and 12-24 feet in boring MPI-6S. Gravel samples were analyzed from 12-26 feet in MPI-7D. Boring MPI-6S contained a sand with gravel interval, and a sand interval.

4.3.4 Lacustrine Deposits

Lacustrine sandy silt underlies the outwash sequence. The occurrence of very fine granular material is consistent with the pro-glacial lake described by Blackmon (see Regional Geology Section 4.2.3).

The lacustrine deposit ranges in thickness from 11.5 to 14.5 feet. The top of this unit is present in all four exploratory borings at an elevation of approximately 888 feet. As indicated in Table 4-5, grain size analyses were performed in lacustrine material collected from borings MPI-1D and MPI-5D. The material is mostly silt and fine to very fine sand; has a tendency to liquify when disturbed; and exhibits uniform textural characteristics where encountered.

4.3.5 Stratified Till and Sand

Underlying the lacustrine unit is a sequence of interbedded fine grained till and sand at least 49.5 feet thick. Stratified till and sand was encountered to a depth of 90 feet at MPI-1D, the deepest exploratory boring. Regional geologic (see Section 4.2) information indicates that bedrock may be approximately 150 feet deep.

This unit contains lenses of stratified medium and fine sand interbedded with layers of clayey silt and silty clay till. The till contains trace to little amounts of sand, and commonly breaks along a faintly visible internal fabric. A sharp contact separates the two lithologies. As shown in Table 4-9, the proportion of sand layers is substantially less than the proportion of layers comprised of fine-grained till. Silty clay till layers range from thin laminae to layers 5 to 11 feet thick. The sand layers also occur as thin laminae, but the thickest layers are only 3 feet thick. The two lithologies are typical of ablation and/or flow till deposited at an ice front and waterlaid sands washed out of the ice mass by glacial meltwater. According to Evenson, et al (1976), the "interfingering of stratified meltwater sands and (ice contact) tills documents simultaneous deposition of the two sediment types

TABLE 4-9

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THICKNESS OF STRATIFIED TILL AND SAND LAYERS

Boring No.	Thickness of Till Layers		% of Total Unit Thickness Drilled	Thickness of Sand Layers		% of Total Unit Thickness Drilled
	Range	Average		Range	Average	
MPI-1D	0.08-6'	1.34'	81	0.02-3'	0.31'	19
MPI-4D	0.01-11'	0.59'	78	0.006-1.4'	0.20'	22
MPI-5D	0.25-6'	2.43'	79	0.25-1.5'	0.75'	21
MPI-7D	0.02-5'	0.19'	61	0.02-3'	0.14'	39

from adjacent but separate sources". The stratified till unit may grade laterally into permeable outwash or lacustrine sand. However, the sand layers observed in the four deep borings are not encountered at the same elevations in each boring and, therefore, may not be physically continuous between boring locations.

In each boring, a thicker silty clay or clayey silt unit is present ranging from 5 feet in MPI-7D to 11 feet in MPI-4D. A Shelby tube was collected in this thicker (flow) till layer to determine the hydraulic conductivity, grain size distribution, Atterberg limits, moisture content, and organic content. These results are presented on Table 4-5. In general, this material contains 23.3 to 39.9 percent clay.

4.4 SITE HYDROGEOLOGY

4.4.1 Hydrostratigraphic Units

Hydrostratigraphic units are sequences of geologic materials that are hydraulically connected and possess similar hydrogeologic properties including hydraulic conductivity, head, and porosity. The hydrostratigraphy of the site, as derived from an assessment of hydraulic properties of the geologic units previously described, is illustrated in Table 4-10. The major hydrostratigraphic units include an unconfined (water table) aquifer consisting of saturated outwash deposits (the outwash aquifer); the underlying saturated lacustrine deposits (the lacustrine aquifer); and a confining layer comprised of the stratified till deposits. Regional information indicates that a confined aquifer may occur at depth; however, not site-specific confirmation is available.

The outwash and lacustrine units are hydraulically connected aquifers that possess distinctly different hydraulic properties. Hydraulic heads (i.e. groundwater flow direction) in the two units are nearly the same and the two units are physically continuous. However, the outwash and lacustrine aquifers have different hydraulic conductivities and porosities. From a contaminant migration perspective, the two units should be monitored separately. As discussed in Section 4.1, 27 wells are screened in the outwash aquifer, and four wells, designated "I", are screened in the lacustrine aquifer.

The water table aquifer overlies clayey silt that occurs in the stratified till unit. Drilling completed during the RI indicates that the stratified till unit has a minimum

TABLE 4-10

**MR. C CLEANERS SUPERFUND SITE
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HYDROSTRATIGRAPHIC UNIT TABLE

Hydrostratigraphic Unit	Geologic Units
Outwash Aquifer	Outwash Sand and Gravel
Lacustrine Aquifer	Lacustrine Sandy Silt
Confining Layer	Stratified Till

thickness of 49 feet. Blackmon (1956) indicates that bedrock is 150 to 200 feet below ground surface. One well, MPI-4D, is screened in the stratified till unit.

4.4.2 Outwash Aquifer

Groundwater in this unit occurs under unconfined (water table) conditions. The saturated thickness of the outwash aquifer is approximately 18 feet and shows little variation across the study area. Eight rounds of groundwater elevations are shown on Table 4-7. The April 13, 1994 ground water levels were approximately 9.5 feet below ground surface. The water table fell approximately 0.9 feet by June 15, 1994 and in January 1995 the water levels fell an additional 0.5 feet as compared to the April 13, 1994 levels. Hydraulic head distributions within this unit are depicted in isopotential maps presented as Plate 6.

North of Main Street, ground water flows toward decreasing head in a northwest direction. The ground water flow divides at Main Street and generally flows southwest toward the First Presbyterian Church. The location of the groundwater divide shown on Plate 6 may vary seasonally.

Recharge of the aquifer occurs principally through infiltration of precipitation. Because the sanitary sewers are old and are constructed of clay tile pipe which is subject to leakage, it is possible that exfiltration from sewers situated above the water table also contributes to recharge of the outwash aquifer. Based on the weekly water level fluctuations observed in April 1994 (see Table 4-7), recharge to the water table appears to occur relatively quickly, and then dissipates rapidly. Therefore, sewer exfiltration may cause a localized mound in the vicinity of a leaking sewer.

Horizontal hydraulic gradients for the water table unit range from 0.004 to 0.002 ft/ft depending on the date; and they were slightly higher south of Main Street. These are very low hydraulic gradients, reflective of the low topographic relief and the comparatively high hydraulic conductivity. Hydraulic gradients were slightly lower during the June water level measuring event. Groundwater levels measured in MPI-6S, MPI-11B, Fillmore #531, and Fillmore #517 on January 18, 19, 1995 were equal in elevation indicating an extremely low hydraulic gradient west and north of MPI-6S during the January 1995 event.

Vertical hydraulic gradients calculated from water elevations at monitoring well couplets are presented in Table 4-11. Gradients are very slightly vertically downward in April and June 1994 and January 1995. A comparison of the horizontal and vertical

TABLE 4-11

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF VERTICAL HYDRAULIC GRADIENTS

	Screen Midpoint Elevation	Elev. Water 4/13/94	Vertical Gradient ft./ft.	Elev. Water 6/15/94	Vertical Gradient ft./ft.	Elev. Water 1/18,19/95	Vertical Gradient ft./ft.
MPI-4I	879.12	905.70		904.73		905.24	
MPI-4S	899.12	905.85	-.008	904.82	-.005	905.31	-.004
MPI-4D	844.70	(1)	(1)	(1)	(1)	905.88	
MPI-4I	879.12					905.24	+.019
MPI-1I	877.53	905.89		904.86		905.30	
ESI-4	903.56	906.02	-.005	904.89	-.001	905.42	-.005
MPI-7I	881.72	906.43		905.26		905.68	
ESI-3	904.41	906.45	-.001	905.26	0	905.68	0
MPI-5I	879.78	906.09	-.005	904.95		905.30	
MPI-5S	903.78	906.20		905.00	-.002	905.46	-.007

Note:

- indicates downward vertical gradient.
- (1) MPI-4D was installed in January 1995.

hydraulic gradients indicate that ground water flow in the water table aquifer is essentially horizontal.

In situ hydraulic conductivity values were determined for the water table unit using data described in Section 4.1.5. The hydraulic conductivity testing results are summarized in Table 4-6. The geometric mean of hydraulic conductivity results for upper zone wells is 8.6 E-3 cm/s . Wells screened across the entire outwash sequence (i.e., "B" wells) have a geometric mean hydraulic conductivity of 4.0 E-3 cm/s .

Horizontal groundwater seepage velocities for the outwash aquifer for the northwest and southwest flow directions were calculated using measured horizontal gradients (from the April 13, 1994 measuring round) and average hydraulic conductivity values. Effective porosity values used in the velocity calculations were selected from the low end of a range of total porosity values in the hydrogeologic literature for sand and gravel (Freeze and Cherry, 1979). The calculated seepage velocities and hydrogeologic properties of the outwash aquifer are summarized in Table 4-12.

Slug test results are representative of the average hydraulic characteristics of the saturated screened interval. Most wells installed in the outwash aquifer are screened across a thin overlying zone of sandy gravel or medium to coarse sand and an underlying zone of fine to very fine sand (see Table 4-8). The slug test results may be representative of the hydraulic characteristics of the thin gravel zone. Therefore, if water levels fall below the gravel layer due to natural fluctuations or pumping, the hydraulic conductivity of the upper zone wells may decrease.

4.4.3 Lacustrine Aquifer

Hydrogeologic properties of the lacustrine aquifer are summarized in Table 4-12. The saturated thickness is approximately 13 feet. Hydraulic conductivity tests performed in the four lacustrine aquifer wells ranged from 1.5E-4 cm/s to 4.9E-4 cm/s , and averaged 2.8E-4 cm/s . Boring descriptions, grain size distributions, and hydraulic conductivity values exhibit little variation between the four lacustrine well locations. Therefore, the hydrogeologic properties of the lacustrine unit are more uniform than in the outwash unit.

Based on groundwater levels measured in four lacustrine aquifer wells (see Table 4-7), the horizontal hydraulic gradient ranges from .002 to .003, which is very similar to gradients in the outwash aquifer. Groundwater flow directions in the lacustrine and

TABLE 4-12

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

SUMMARY OF HYDROGEOLOGIC PROPERTIES

TABLE 4-12

MR. C CLEANERS SUPERFUND SITE
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SUMMARY OF HYDROGEOLOGIC PROPERTIES

Hydrostratigraphic Unit	Geologic Unit	Physical Properties			Groundwater Flow Properties		
		Saturated Thickness (ft.) ⁽¹⁾⁽⁴⁾	Hydraulic Conductivity (cm/s) ⁽³⁾	Effective Porosity ⁽²⁾	Principal Flow Direction	Horizontal Gradient ⁽¹⁾ (ft./ft.)	Flow Velocity ⁽¹⁾ (ft./day)
<i>Overburden Water-Bearing Zone:</i>							
Outwash Aquifer	Outwash (north of Main St.)	17.8	8.6×10^{-3}	.25	NW	.003	.29
	Outwash (south of Main St.)	18.3	8.6×10^{-3}	.25	SW	.004	.39
Lacustrine Aquifer	Lacustrine Sandy Silt	13.0	2.8×10^{-4}	.35	SW/NW	.003	.007

Notes:

(1) Groundwater level data from 4/13/94.
 (2) Effective porosity values are estimated from the low end of a range of total porosity values provided in the literature (Freeze and Cherry, 1979 and Fetter, 1980).
 (3) Geometric Mean.
 (4) Average Value.

outwash aquifers appear to be very similar; however, the number and spacing of lacustrine aquifer wells and the low hydraulic gradient make a comparison of flow directions in the two units uncertain. Horizontal seepage velocities calculated between MPI-7I and MPI-4I are 40 to 60 times slower than in the outwash unit.

4.4.4 Stratified Till Unit

The stratified till confining layer at Mr. C Cleaners is comprised of layers of clayey silt and sand. Laboratory permeability analyses of undisturbed (Shelby tube) samples from the thicker unit of clayey silt in each of the deep borings yielded an average hydraulic conductivity value of $4.8 \text{ E-}8 \text{ cm/s}$. Particle size analyses indicated clay content ranging from 23.3 to 39.9 percent. The texture of the sand occurring in the stratified till would likely be described as a poorly graded medium and fine sand and, if tested, would likely result in hydraulic conductivity values in the range of $\text{E-}2$ to $\text{E-}3 \text{ cm/s}$. Slug testing performed at MPI-4D resulted in a hydraulic conductivity of $8.8 \text{ E-}6 \text{ cm/s}$. This value is slightly higher than the laboratory hydraulic conductivity and reflects the average hydraulic conductivity of the clayey silt and sandy intervals in the screened zone.

The vertical hydraulic gradient calculated from MPI-4I and MPI-4D is vertically upward in January 1995, as shown on Table 4-11. This is the only upward gradient of those calculated at the site, and MPI-4D groundwater elevation is the highest at the site overall. Groundwater collected from the stratified till at MPI-4D was analyzed for enriched tritium isotope to determine the presence of recently recharged groundwater into the stratified till. Recently recharged water is defined as water with a detectable concentration of tritium (viz., greater than 0.8 tritium units). The testing resulted in 2.7 tritium units in groundwater indicating that recent recharge does occur in the stratified till unit. The upward hydraulic gradient would indicate that recharge to the stratified till does not originate from the water table aquifer beneath the Mr. C Cleaners site. Appendix H includes the laboratory report of the analysis for enriched tritium isotope.

5.0 SITE CONTAMINANT CHARACTERIZATION

The nature and extent of contamination within the Mr. C Cleaner's site study area was characterized through groundwater, air and wastewater sample collection and analyses. All samples were collected by Malcolm Pirnie, Inc. (Phase I) or Lu Engineers (Phase II) personnel. Groundwater and wastewater samples were analyzed by NYTEST Environmental Laboratories for the parameters listed in Table 5-1. Air samples were analyzed by General Testing Corporation for tetrachloroethene. These parameters were identified by the NYSDEC as the parameters of concern based on the results of previous investigations conducted in the study area (see Section 3.0). The historical data summarized in Section 3.0 were also used to characterize site contaminants. The analytical data packages prepared by NYTEST were evaluated for compliance with the 1991 NYSDEC ASP for Superfund CLP (Protocol A) reporting and deliverable requirements. A data validation report for the April 1994 and February 1995 sampling event is presented in Appendix H.

Specific procedures and rationale for groundwater, air and sanitary sewer sample collection and analysis have been presented in the RI Work Plan dated January 1994. A summary of the sample collection and analysis program is presented below; detailed discussion of sample collection procedures are provided in the RI Work Plan.

5.1 RI SAMPLING PROGRAM

5.1.1 Groundwater Sampling Methodology

Groundwater samples were collected by Malcolm Pirnie Inc. personnel between April 4 and 7, 1994 from a total of 25 monitoring wells located in the Mr. C Cleaners study area. Lu Engineers sampled groundwater from 22 monitoring wells between January 25 and 31, 1995. Table 5-2 presents the monitoring wells sampled during each event. Twelve monitoring wells were installed and developed as part of the Phase I RI, 13 monitoring wells are existing wells installed during previous investigations, and six wells were installed and developed as part of the Phase II RI. Twenty-six of the monitoring wells are screened in the outwash. Twenty-one of the 26 (designated S) are screened across the water table with screen lengths up to 10 feet; the remaining five wells (designated B) are screened over the majority of saturated outwash interval with screen lengths of 15 feet. Four of the sampled

TABLE 5-1

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT*ANALYTICAL PARAMETERS*

Matrix	Parameter	Method
Groundwater ⁽¹⁾	Volatile Organics	ASP 91-1
	Semi-Volatile Organics	ASP 91-2
	Pesticides/PCBs	ASP 91-3
	Target Analyte List Metals	ASP 12/91 D-V-1 through D-V-149
	Cyanide	335.2
	Remediation Assessment Parameters:	
	Soluble Iron	200.7
	Soluble Manganese	243.1
	Hardness	130.2
	Alkalinity	310.1
	Total Suspended Solids	160.2
	Total Dissolved Solids	160.1
	pH	Field
	Turbidity	Field
	Specific Conductivity	Field
	eH	Field
Wastewater	Volatile Organics	ASP 91-1
Air	Tetrachloroethene	NYSDOH 311-7
Note: (1) 3 groundwater samples were analyzed for the full parameter list during Phase I. 22 additional groundwater samples were analyzed for volatile organics only during Phase I. 22 groundwater samples were analyzed for volatile organic compounds during Phase II.		

TABLE 5-2

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

GROUNDWATER SAMPLING LOCATIONS

Groundwater Sampling Locations in April 1994:			
Outwash Aquifer			Lacustrine Aquifer
MPI-1S	MW-1	ESI-1	MPI-1I
MPI-2S	MW-4	ESI-3	MPI-4I
MPI-3S	MW-5	ESI-4	MPI-5I
MPI-4S	MW-6	ESI-5	MPI-7I
MPI-5S	MW-7	ESI-6	
MPI-6S	MW-8		
MPI-8S	MW-9		
MPI-9S	MW-10		
Groundwater Sampling Locations in January 1995:			
Outwash Aquifer			Lacustrine Aquifer
MPI-1S	MPI-10B	ESI-3	MPI-1I
MPI-2S	MPI-11B	ESI-4	MPI-4I
MPI-3S	MPI-12B	ESI-5	MPI-5I
MPI-4S	MPI-13B	ESI-6	MPI-7I
MPI-5S	MPI-14B		
MPI-6S			
MPI-8S			
MPI-9S			
			Stratified Till Unit
			MPI-4D

wells (designated "I") monitor the lacustrine aquifer. One well, MPI-4D monitors the stratified till unit. All three aquifers were sampled to assess the vertical extent of contamination. Monitoring well locations are presented on Plate 1.

Each monitoring well was thoroughly purged prior to sample collection. Groundwater samples were collected using a new polyethylene disposal bailer for each well. Field sampling logs for the April 1994 and January 1995 sampling event are provided in Appendix H and Appendix I respectively.

Field filtration was performed on samples collected for soluble iron and soluble manganese analyses. Filtration was accomplished by pressurizing the sampling bailer and allowing the sample to pass through tubing with an in-line 0.45 um filter and then directly into a pre-cleaned, laboratory-supplied sample container.

5.1.2 Hydropunch® Groundwater Sampling

Groundwater was collected with a Hydropunch® sampler at 16 boring locations. Groundwater samples were collected using a Hydropunch® sampler by advancing 2¼-inch augers to one foot above the top of the sampling interval, driving the Hydropunch® sampler three-feet, and pulling the sampler back two-feet. The sampler was allowed to fill with groundwater for at least 15 minutes, removed from the ground and emptied of groundwater into 40 mil vials. The vials were immediately transported to the mobile laboratory and analyzed the same day for volatile organics by EPA Method 8010/8020 in Commonwealth Analytical's on-site mobile laboratory. Table 5-7 summarizes Commonwealth Analytical's test results. Commonwealth Analytical's sampling report in Appendix J should be consulted for a description of analytical methodologies including a description of the Quality Control Procedures. Appendix J Quality Control includes a description of Initial Calibration, Calibration Check Standards, QC Standards, Method Blanks, Surrogate Standards, Duplicates and Matrix Spike Analyses.

Duplicate water samples were collected at H-5, 26-28 feet and H-10, 26-28 feet, and tested in Commonwealth Analytical's laboratory. Duplicate water samples were also collected at H-9, 26-28 feet, and H-13, 13-15 feet and submitted to NYTEST for additional confirmation. An equipment blank was obtained from the Hydropunch® sampler during the field work. The duplicate results are also included in Table 5-7.

5.1.3 Air Monitoring Methodology

Indoor air samples were collected from the basements of four public buildings near the Mr. C Cleaners site on March 13, 1994 and from the basements of two public buildings and four residential homes on Whaley and Fillmore Avenue between April 13 and 21, 1995 to determine the potential presence of organic vapor containing PCE. Sampling locations included the basements of the East Aurora First Presbyterian Church, the East Aurora Boys/Girls Club, Jackson's Bowling Alley, the Town Hall, 31 Whaley Avenue, 34 Whaley Avenue, 517 Fillmore Avenue, and 531 Fillmore Avenue. The First Presbyterian Church and the bowling alley were sampled on both dates (i.e., Phase I and Phase II). In addition, at the joint request of NYSDEC and NYSDOH personnel, outside ambient air in the vicinity of the First Presbyterian Church was monitored in addition to indoor air to determine background PCE concentration. Table 5-3 summarizes the sampling locations. Air monitoring was accomplished by pumping 30 liters of air through pre-conditioned sample cartridges containing Porapak-N medium, followed by laboratory analysis of the cartridges in accordance with NYSDOH Method 311-7. Air sample collection procedures are described in Appendix H and in the RI Work Plan.

5.1.4 Wastewater/Sanitary Sewer Sampling Methodology

On April 11 and 13, 1994 a total of seven (7) wastewater samples were collected from manholes located in the Mr. C Cleaners study area to determine whether volatile organic compounds were present in the sanitary sewer system. Wastewater samples were collected from the manholes listed on Table 5-3 and analyzed for volatile organic compounds. A description of the sampling event is presented in Appendix H.

Location MH12 also was originally designated as a sampling location; however, MH12 is a flush-out manhole and cannot be sampled. A soil gas sample was collected from MH-12 during the RI soil gas survey, but no VOCs were detected.

Wastewater samples were obtained by lowering a stainless steel cup attached to a pole into the sewer flow. The cup was decontaminated after each sample was collected by rinsing with distilled water (DI), washing with Alconox soap, triple rinsing with DI and air drying. In addition to wastewater sample collection, visual inspection of the sanitary sewer system was conducted to determine the current structural condition of the sanitary sewers.

TABLE 5-3
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
SAMPLING LOCATIONS
SEWER SAMPLING LOCATIONS:

Sample No.	Manhole Location
MH-11	Intersection of Whaley & Fillmore Ave.
MH-61	Paine St.
MH-62E	Intersection of Main & Paine Sts.
MH-62W	Intersection of Main & Paine Sts.
MH-64	Near corner of Main & Elm St. on the sidewalk
MH-65	Main St. in front of Delia's car dealership

INDOOR AIR SAMPLING LOCATIONS:

Sample No. ⁽¹⁾	Sample Location ⁽²⁾
BG-1/BG-2	Boys/Girls Club, 16 Paine St. - NE corner of basement
BA-1/BA-2 (Phase I)	Jackson's Bowling Alley, 30 Whaley Ave. - SE corner of basement
#1, #2 - Bowling Alley (Phase II)	
C-1/C-2 (Phase I)	First Presbyterian Church, 9 Paine St. - Classroom #114 (center of room) in NW corner of former day-care center.
#1, #2 - 1st Pres.Church (Phase II)	
VH-1/VH-2	Village Hall, 571 Main St. - NE corner of basement (records room)
OB	Outdoor Background - SE corner of First Presbyterian Church
#1 - 31 Whaley #2 - 31 Whaley	31 Whaley Avenue - Northern edge of basement, middle
#1 - 34 Whaley #2 - 34 Whaley	34 Whaley Avenue - Northeast corner of basement
#1 - 517 Fillmore #2 - 517 Fillmore	517 Fillmore Avenue - Northeast corner of basement
#1 - 531 Fillmore #2 - 531 Fillmore	531 Fillmore Avenue - center of basement toward western edge

Notes:

- (1) Samples collected in duplicate except for OB.
- (2) All samples collected at floor or ground level.

5.2 SOIL ANALYTICAL RESULTS

Soil was analyzed at two locations in the unsaturated zone to identify the source of PCE concentrations. Analytical data from the soil sampling is summarized in the Commonwealth Analytical Report (see Appendix J) and Table 5-7. Two soil samples were collected from SB-1, located near Mr. C Cleaners sewer lateral. One soil sample was collected from SB-2, located near the side entrance of the shoe repair.

The highest PCE concentration was detected from SB-1, collected 6 to 8 feet below grade (48,000 ug/kg). The East Aurora Department of Public Works does not have records that indicate the depth of the sewer lateral. However, the high concentrations and the proximity to the lateral indicate that past leakage from the sewer lateral is a likely source of PCE. Past leakage of PCE from the sewer lateral may extend beneath the building.

The sample analyzed from SB-2, 8-10' below grade contained 12,000 ug/kg PCE. Because the groundwater table is near 10 feet and rises and falls throughout the seasons, the concentrations of PCE in unsaturated soil may be derived from PCE dissolved in the shallow groundwater.

5.3 GROUNDWATER ANALYTICAL RESULTS

Groundwater samples collected in support of the RI were analyzed for volatile organic compounds. Because available information indicated that only dry cleaning wastes were suspected, only three (3) wells were monitored during Phase I for the complete Target Compound List (TCL) of parameters: MPI-5S, MPI-7I, and ESI-3 (see Table 5-1). Field measurements are summarized in Table 5-4. The laboratory analytical results are summarized on Tables 5-5 and 5-6, which present only those parameters for which a concentration greater than the laboratory detection limit was found at a minimum of one monitoring well or manhole. The complete analytical data package prepared by NYTEST Environmental is available for review.

Table 5-7 presents all analytical results obtained by the mobile laboratory, including Hydropunch® sampling data, soil analytical results, and groundwater analytical results from monitoring wells and residential irrigation well points. To facilitate understanding of the contaminant distribution, Table 5-7 includes the area of Hydropunch® borings and the depths of Hydropunch® samples.

TABLE 5-4
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
SUMMARY OF FIELD MEASUREMENTS FOR PHASE I RI SAMPLING⁽¹⁾

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Eh (mV)	Conductance (umhos/cm) ⁽²⁾	Turbidity ⁽³⁾ (NTU)	Sample Appearance/Odor
MPI-1S	4/4/94	14:14	9.2	7.45	+82	2220	> 100	clear/no odor
MPI-1I	4/6/94	10:36	8.8	7.35	+151	1531	9	clear/no odor
MPI-2S	4/4/94	15:33	10.2	7.38	+101	1522	> 100	clear/no odor
MPI-3S	4/4/94	14:48	8.4	7.29	+55	1657	> 100	clear/no odor
MPI-4S	4/4/94	12:28	8.2	7.46	+82	1933	> 100	clear/no odor
MPI-4I	4/4/94	12:15	11.0	7.45	+81	1619	16	clear/no odor
MPI-5S ⁽⁴⁾	4/6/94	12:18	6.2	7.48	+5	1650	35	clear/no odor
MPI-5I	4/6/94	12:08	9.6	7.44	+49	1598	6	clear/no odor
MPI-6S	4/4/94	14:40	8.5	7.21	+53	1691	98	clear/no odor
MPI-7I ⁽⁴⁾	4/7/94	10:10	8.7	8.01	+68	1820	6	clear/no odor
MPI-8S	4/4/94	10:58	7.9	7.27	+148	1915	12	clear/no odor
MPI-9S	4/4/94	11:08	10.2	7.07	+141	2140	> 100	turbid/no odor
ESI-1	4/5/94	15:27	9.8	7.52	+78	1080	> 100	turbid/no odor
ESI-3 ⁽⁴⁾	4/7/94	10:50	9.6	7.77	+55	1934	> 100	turbid/no odor
ESI-4	4/6/94	10:43	5.9	7.44	+139	3360	64	clear/no odor
ESI-5	4/6/94	10:50	6.3	7.68	+145	481	> 100	clear/no odor
ESI-6	4/4/94	14:56	10.7	7.60	+70	2920	> 100	milky/no odor
MW-1	4/5/94	10:36	8.3	7.41	+23	2130	21	clear/no odor
MW-4	4/5/94	13:28	9.9	7.15	-47	3260	6	clear/petroleum
MW-5	4/5/94	12:45	8.2	7.06	-90	1744	45	clear/petroleum
MW-6	4/5/94	10:54	6.3	12.61	-122	2120	> 100	clear/slt solvent
MW-7	4/5/94	11:05	7.9	7.66	+20	1126	> 100	clear/no odor
MW-8	4/5/94	11:15	7.7	7.44	+60	1280	> 100	clear/no odor
MW-9	4/5/94	13:05	11.0	7.26	-70	1414	> 100	clear/petroleum
MW-10	4/5/94	14:36	8.2	7.17	-36	1293	73	clear/petroleum

Notes: (1) Except where noted, all measurements are readings obtained from first bailer of water.

(2) Conductance corrected to 25°C.

(3) Turbidity and Sample Appearance based on first bailer measurements only (i.e., undisturbed groundwater).

(4) Measurements are averages of readings obtained from first and last bailers of water.

TABLE 5-4
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
SUMMARY OF FIELD MEASUREMENTS FOR PHASE II RI SAMPLING⁽¹⁾

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Eh (mV)	Conductance (umhos/cm) ⁽²⁾	Turbidity ⁽³⁾ (NTU)	Sample Appearance/Odor
MPI-1S	1/31	11:50	9.3	7.8	-1	1980	29.1	clear
MPI-1I	1/31	10:50	11.2	7.8	-48	1580	3.3	clear
MPI-2S	1/25	15:36	9.1	7.7	+130	1390	57.0	clear
MPI-3S	1/30	11:57	8.1	7.4	-38	3560	>200	orange colored silt
MPI-4S	1/30	16:26	7.9	7.4	-22	5600	>200	silty
MPI-4I	1/31	16:35	9.4	7.4	-41	152	60	clear
MPI-4D	1/31	15:33	8.8	8.2	+1	210	>200	slightly silty
MPI-5S	1/27	14:15	9.2	7.6	+50	2830	71	bacterial growth in water
MPI-5I	1/27	15:17	9.4	7.3	-40	3610	1.7	clear
MPI-6S	1/26	14:52	7.4	7.8		1515	28.1	clear
MPI-7I	1/26	11:38	7.2	6 ⁽⁴⁾	+9	1222	1.6	clear
MPI-8S	1/27	11:25	9.3	7.6	+12	4720	9.6	clear
MPI-9S	1/27	10:00	10.0	8.0	+51	2930	93.0	silty
MPI-10B	1/25	16:54	8.8	7.5	+112	1008	170	silty
MPI-11B	1/26	16:05	6.7	8.1		1112	32	clear
MPI-12B	1/25	14:40	6.4	6.2	+128	1611	>200	silty, opaque
MPI-13B	1/25	11:20	6.7	5.7	+150	1331	>200	silty, opaque
MPI-14B	1/25	9:51	7.8	5.9	+113	1130	6.3	clear
ESI-3	1/26	9:45	8.6	6 ⁽⁴⁾	+78	678	158	slightly silty
ESI-4	1/31	9:41	8.4	6.0	0	3040	<200	orange brown silty
ESI-5	1/30	15:02	7.2	8.0	+52	765	189	silty
ESI-6	1/30	14:01	11.0	7.5	-1	4310	<200	silty
Notes	(1) Except where noted, all measurements are readings obtained from first bailer of water. (2) Conductance corrected to 25C. (3) Turbidity and Sample Appearance based on first bailer measurements only (i.e., undisturbed groundwater). (4) Measurements are averages of readings obtained from first and last bailers of water.							

TABLE 5-5
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
PHASE I (APRIL 1994) GROUNDWATER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	MPI 1S	MPI 1I	MPI 2S	MPI 3S	MPI 4S	MPI 4I	MPI 5S	MPI 5I	MPI 6S	MPI 7I	MPI 8S	MPI 8S ⁽³⁾	MPI 9S	GWQ Stds ⁽⁴⁾
vinyl chloride							9J							2
methylene chloride	10UJ		10UJ	10UJ	10UJ	10UJ			20UJ	10UJ	10UJ	10UJ	10UJ	5
acetone		11				91		41		39				50**
1,1-dichloroethene									19J					5
1,2-dichloroethene (T)	20				2J		39		24J		16J	15J	24	5
chloroform					3J					2J				7
2-butanone														
1,1,1 trichloroethane			14											5
bromodichloromethane														
trichloroethene	10J					10J	12		110		22J	23J	22	5
benzene					12									0.7
tetrachloroethene	290	3J			59	350	56	1J	1600	140	500	530	350	5
toluene														5
ethylbenzene														5
xylene (T)														5

Notes: (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit.

(2) Analyzed by ASP Method 91-1.

(3) Duplicate Sample.

(4) NYSDEC Class GA Groundwater Quality Standards.

** Guidance Value

J = estimated value due to limitations identified during quality control review.

UJ = Estimated Detection Limit

TABLE 5-5
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
PHASE I (APRIL 1994) GROUNDWATER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	ESI-1	ESI-3	ESI-4	ESI-5	ESI-6	MW-1	MW-1 ⁽³⁾	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	GWQ Std ⁽⁴⁾
vinyl chloride									240				8J		2
methylene chloride	10UJ				10UJ	61J	120J	10UJ	54J	10UJ	10UJ	11J	10UJ	27UJ	5
acetone										46					50**
1,1-dichloroethene															5
1,2-dichloroethene (T)			2J		62			24	45J			6J	27	1J	5
chloroform															7
2-butanone															
1,1,1 trichloro- ethane			4J												5
bromodichloro- methane															50**
trichloroethene	3J		1J		16J	37J	64J	46				26J	2J		5
benzene								55	3200	3J			110	28J	0.7
tetrachloroethene		8,200	32	2J	390	3100	4400	220			120	390		36J	5
toluene								3J	740	2J			6J	10J	5
ethylbenzene								30	430	3J			47	230	5
xylene (T)								41	1900	6J			37	410	5

Notes: (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit.
 (2) Analyzed by ASP Method 91-1.

(3) Duplicate sample

(4) NYSDEC Class GA Groundwater Quality Standards

** Guidance Value

J = Estimated value due to limitations identified during quality control review.

UJ = Estimated Detection Limit.

TABLE 5-5

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORTPHASE II (JANUARY 1995) GROUNDWATER SAMPLING RESULTS⁽¹⁾

Parameter (ug/l)	MPI-1S	MPI-2S	MPI-3S	MPI-4S	MPI-5S	MPI-6S	MPI-8S	MPI-9S	MPI-10B	MPI-11B	MPI-12B	GWQ Sids ⁽²⁾
Methylene Chloride						10UJ	10UJ	10UJ	10UJ		10UJ	5
Acetone				5J	10UJ							50**
2-Butanone				5J								
1,1,1-Trichloroethane		12		3J	5J	280	16	14	4J	4J		5
Trichloroethene	6J			36	16	1800	630	190	1700			5
Tetrachloroethene	170											5
1,2-Dichloroethene	13			4J	19	28	13	15	4J	2J	3J	5
1,1-Dichloroethene					6J	14						5
Vinyl Chloride												2
Benzene		2J		4J	1J	1J		1J		4J	2J	0.7
Toluene										4J		5
Chlorobenzene										3J		
1,2-Dichloropropane						3J						
Chloroform										1J		7
Parameter (ug/l)	MPI-13B	MPI-14B	ESI-3	ESI-4	ESI-5	ESI-6	MPI-1I	MPI-4I	MPI-5I	MPI-7I	MW-4D	GWQ Sids ⁽²⁾
Methylene Chloride	10UJ	10UJ	10UJ	3J	2J	14J	3J	14J	10	10UJ	5J	5
Acetone												50**
2-Butanone												
1,1,1-Trichloroethane			4J	4J								5
Trichloroethene			3J	2J		20J		59				5
Tetrachloroethene	2J		3600	36	2J	520		460		130		5
1,2-Dichloroethene			12	2J		82		5J				5
1,1-Dichloroethene												5
Vinyl Chloride												2
Benzene	1J				1J							0.7
Toluene												5
Chlorobenzene												
1,2-Dichloropropane												
Chloroform												7

Notes (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown. J = Estimated value due to limitations identified during quality control review.

(2) Blank space means compound was not detected above the Analytical Detection Limit.

UJ = Estimated Detection Limit

(3) Analyzed by ASP Method 91-1.

** = Guidance Value

(3) NYSDEC Class GA Groundwater Quality Standards

**TABLE 5-6
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

MAY 1994 GROUNDWATER SAMPLING RESULTS – ADDITIONAL PARAMETERS

Parameter (ug/l)	ESI-3	MPI-7I	MPI-5S	MPI-7I ⁽¹⁾	GWQ Stds ⁽³⁾
Target Compound List - Semi-Volatile Organics:					
bis(2-ethylhexyl)phthalate	10J	3J		12	50
Butylbenzylphthalate	8J			6J	50**
Diethylphthalate	75			2J	50**
Di-n-butylphthalate	2J				
Target Compound List - Inorganics:					
Aluminum	6200	200UJ	792	200UJ	
Barium	220	117J	214	114J	1000
Calcium	189,000	175,000	126,000	169,000	
Cobalt	16.1J				
Copper	44.1		25UJ		200
Iron	21,200		4,480		300
Lead	11.9		7.4J		25
Magnesium	35,800	37,800	20,700	35,200	35,000**
Manganese	792	814	944	784	300
Mercury	0.21				2
Nickel	40UJ				
Potassium	7,230	5,530	7,380	5,220	
Silver			10UJ		50
Sodium	205,000	157,000	192,000	152,000	250
Vanadium	50UJ		50UJ		
Zinc	104	20UJ	20UJ		300
Soluble Iron			1,090		
Soluble Managanese	130	782J	734J	130J	
Remediation Assessment Parameters: (mg/l)					
Alkalinity, Total	276	299	356		
Hardness	503	578	377		
Total Cyanide			0.02		0.10
Total Dissolved Solids	1,180	1,100	930		
Total Suspended Solids	1,090	1	70		
Notes: (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit. (2) Duplicate Sample (3) NYSDEC Class GA Groundwater Quality Standards J = Estimated value due to limitations identified during quality control review. UJ = Estimated Detection Limit.					

TABLE 5-7
**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**
MOBILE LABORATORY RESULTS

Area	Location No.	Type	Depth	Analyte Detected	Result (ug/l)	Detection Limit (ug/l)
Fillmore Avenue	H-1(1)	HP	14-17'	None	ND	1.0
	H-1(2)	HP	25-27'	None	ND	1.0
	H-2(1)	HP	11-13'	None	ND	1.0
	H-2(2)	HP	25-27'	None	ND	1.0
	H-3(1)	HP	12-15'	PCE	33	1.0
	H-3(2)	HP	25-27'	PCE Toluene	3.7 BQL	1.0
	#517	PW	15'	PCE TCE	100 BQL	10
	#524	PW	14'	PCE	2.6	1.0
	#531	PW	17'	PCE TCE C-1,2 DCE	210 17 BQL	10
	H-10(1)	HP	12-14'	Toluene M&P Xylene	BQL BQL	1.0
Whaley Avenue	H-10(2)	HP	26-28'	Toluene	BQL	1.0
	H-10(3)	HP	40-42'	Toluene M&P Xylene	1.5 1.2	1.0
	H-4(1)	HP	12-14'	None	ND	1.0
	H-4(2)	HP	26-28'	None	ND	1.0
	MPI-6S	MW	12.3-22.3	PCE TCE	2,000 260	100
	H-11(1)	HP	26-28'	PCE	8,700	1000
	H-11(2)	HP	40-42'	PCE	11	1.0
	MPI-4D(1)	HP	12-14'	VC MC 1,2 DCE TCE 1,1,1 TCA Benzene PCE	2J 1J 9J 10 2J 4J 450	10 50
	MPI-4D(2)	HP	26-28'	1,2 DCE PCE	5J 12	10
	MPI-4D(3)	HP	40.5-42'	None	ND	10

TABLE 5-7

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

MOBILE LABORATORY RESULTS

Area	Location No.	Type	Depth	Analyte Detected	Result (ug/l)	Detection Limit (ug/l)
Agway	H-9(1) (*)	HP	26-28'	PCE 1,2 DCE (**) TCE (**) 1,1,1 TCA (**) Toluene	400 3J 3J 1J 12	10
	MW-7	MW	5-14.5	PCE	1,800	100
	H-14(1)	HP	14-16'	PCE	880	100
	H-14(2)	HP	26-28'	PCE	920	100
	H-15(1)	HP	13-15'	PCE t-1,2 DCE Benzene Toluene Ethylbenzene M&P-Xylene O-Xylene	2.2 BQL 20 1.5 10 11 1.8	1.0
	HP-15(2)	HP	26-28'	PCE TCE C-1,2 DCE t-1,2 DCE	22 5 5 BQL	1.0
Mr. C. Cleaners	H-12	HP	26-28'	PCE TCE C-1,2 DCE t-1,2 DCE	9.7 1.6 2.2 BQL	1.0
	SB-1	SOIL	6-8' 8-10'	PCE PCE	48,000(ug/kg) 6,400(ug/kg)	1000 1000
	SB-2(H-13)	SOIL	8-10'	PCE	12,000(ug/kg)	1000
	H-13 (*)	HP	13-15'	PCE 1,2 DCE (**) TCE (**) 1,1,1 TCA (**)	4,700 11 6J 2J	1000
Church	H-5(1)	HP	13-15'	Toluene Ethylbenzene M&P-Xylene O-Xylene	BQL 1,400 4,300 440	100
	H-5(2)	HP	26-28'	C-1,2 DCE Toluene Ethylbenzene M&P-Xylene O-Xylene	BQL 1.6 11 42 4.4	1.0

TABLE 5-7

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

MOBILE LABORATORY RESULTS

Area	Location No.	Type	Depth	Analyte Detected	Result (ug/l)	Detection Limit (ug/l)
Church (Continued)	H-6(1)	HP	12-14'	VC	3.9	1.0
				C-1,2 DCE	1.9	10
				Benzene	93	
				Toluene	37	
				Ethylbenzene	410	
				M&P-Xylene	70	
				O-Xylene	17	
	H-6(2)	HP	26-28'	C-1,2 DCE	34	10
				Benzene	15	
				Toluene	44	
				Ethylbenzene	120	
				M&P-Xylene	500	
				O-Xylene	170	
	H-7(1)	HP	12-14'	VC	BQL	1.0
				C-1,2 DCE	BQL	
				Benzene	390	
				Toluene	210	
				Ethylbenzene	880	
				M&P-Xylene	3,400	
				O-Xylene	920	
	H-7(2)	HP	26-28'	VC	13	1.0
				t-1,2 DCE	BQL	
				1,1 DCA	BQL	
				C-1,2 DCE	62	
				1,1,1 TCA	BQL	
				TCE	7.1	
				PCE	7.9	
				Benzene	19	
				Toluene	1.1	
				Ethylbenzene	1.9	
				M&P-Xylene	5.9	
				O-Xylene	1.7	

TABLE 5-7

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

MOBILE LABORATORY RESULTS

Area	Location No.	Type	Depth	Analyte Detected	Result (ug/l)	Detection Limit (ug/l)
Church (Continued)	H-8(1)	HP	26-28'	M&P-Xylene	BQL	1.0
	H-8(2)	HP	40-42'	None	ND	1.0
	MPI-3S	MW	8-14' 14-18'	None	ND	1.0
HP Hydropunch Sample PW Private Irrigation Well Sample MW Monitoring Well Sample BQL Detected Below Quantitation Limit ND Not Detected (*) Duplicate Sample analyzed by Nytest (**) Results obtained by NYTEST PCE Tetrachloroethene TCE Trichloroethene DCE Dichloroethene DCA Dichloroethane TCA Trichloroethane VC Vinyl Chloride MC Methylene Chloride						

5.3.1 Water Table

Groundwater was analyzed from the water table at 35 locations during RI sampling (including monitoring wells, irrigation wells, and Hydropunch® locations). Groundwater data obtained during the April 1994 and January 1995 monitoring events indicate substantial shallow volatile organic contamination in the outwash aquifer. Plate 3 summarizes the distribution of volatile organic compounds detected in groundwater at the water table. The principal volatile organic contaminants detected in groundwater are presented in Table 5-8. The two principal groups of VOCs detected during the RI, chlorinated organics and petroleum hydrocarbons, are discussed below.

Chlorinated Organics

Tetrachloroethene (PCE) or the potential degradation products of PCE were detected at 26 of 35 sampling locations. The potential degradation products of PCE form as a result of reductive dehalogenation reactions that are biologically mediated under anaerobic conditions. Dehalogenation reactions in chlorinated ethenes proceed from PCE to trichloroethene (TCE) to dichloroethene isomers (DCEs) or dichloroethanes (DCA) to vinyl chloride (VC) (Vogel et al, 1987). Small quantities of TCE and DCE may also have been present in the dry cleaning solvent.

Low concentrations of 1,1,1 trichloroethane (TCA) were detected east of the Village Hall at MPI-2S (14 ug/l TCA), at Mr. C Cleaners (4J ug/l TCA), and farther downgradient at ESI-4 (4J ug/l TCA). Soil gas analyses also detected TCA east of the Village Hall and east of Whaley Avenue near Jackson's Bowling Alley (see Table 4-2). No other occurrence of TCA was detected during the RI. However, low concentrations of TCA (5 to 28 ug/l) have previously been detected in groundwater on the Agway property (see Table 3-4). TCA is not a breakdown product of PCE. Additionally, MPI-2S is cross-gradient from Mr. C Cleaners and neither PCE nor its breakdown products were found in MPI-2S. Therefore, TCA found at the site is likely from a separate source other than Mr. C Cleaners.

Methylene chloride was detected in 20 of 25 groundwater samples collected during Phase I at concentrations ranging from 1J ug/l - 120J ug/l. Phase II sampling detected methylene chloride in 7 of 22 groundwater samples at a concentration of 10 ug/l. This compound is a common laboratory contaminant and most of the methylene chloride data was qualified as estimated due to blank contamination.

TABLE 5-8

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT**

GROUNDWATER CONTAMINANTS

Parameter	Concentration Range Detected (ug/l)
Tetrachloroethene	1J - 8200
Potential Degradation Products/Contaminants of Tetrachloroethene: • Trichloroethene • 1,2 Dichloroethene • 1,1 Dichloroethene • Vinyl Chloride	1J - 280 1J - 82 2J - 19J 6J - 240
Petroleum Hydrocarbons: • Benzene • Toluene • Ethylbenzene • Xylene • Chlorobenzene	1J - 3200 3J - 740 3J - 430 6J - 1900 3J
Other Parameters: • 1,1,1 Trichloroethane • Acetone • Chloroform • Methylene Chloride • 2-Butanone • 1,2-Dichloropropane	4J - 14 5J - 91 1J - 3J 1J - 120J 5J - 10UJ 3J

The greatest concentration of PCE was detected in the sample collected from monitoring well ESI-3 (8,200 ug/l) which is located immediately adjacent to the suspected source area at Mr. C Cleaners. Somewhat lower PCE concentrations were detected at monitoring wells MW-7 (1,800 ug/l), MW-1 (3,100 ug/l), and MPI-6S (1,600 ug/l), which are directly downgradient from Mr. C Cleaners in a northwesterly direction. PCE concentrations were also detected from Hydropunch® sampling locations between Mr. C Cleaners and MPI-6S at H-13 (4,700 ug/l) and H-14 (880 ug/l).

Concentrations of PCE or PCE breakdown products were also detected at 15 additional sample locations located west and northwest of Mr. C Cleaners at Agway, on Whaley Avenue, the Library, west of MPI-6S in the two irrigation wells, and on Fillmore Avenue. However, samples collected from MPI-1S (290 ug/l PCE) and ESI-6 (390 ug/l PCE) indicate the presence of PCE in a southwesterly direction also.

Tetrachloroethene and its breakdown products were either not detected, or were detected at trace concentrations (<5 ug/l) at ESI-1, MW-9, F#524, MPI-3S, ESI-5, MPI-2S, and Hydropunch® sampling locations H-1, H-2, H-4, H-5, H-7, H-10, and H-15. Locations ESI-1, ESI-5, and MPI-2S are upgradient or cross-gradient of the suspected source area. Locations H-15, MW-9, H-4, H-2, H-1, H-10, MPI-3S, H-5, and H-7 represent the suspected outer limits of the plume in a northwesterly, westerly, and southwesterly direction. Figure 5-1 illustrates the limits of the shallow PCE groundwater plume at concentrations greater than the drinking water standard (5 ug/l) and at concentrations greater than 100 ug/l. The distribution of PCE and PCE breakdown products at concentrations greater than 5 ug/l includes a very broad PCE plume that originates at Mr. C Cleaners and bifurcates into two branches extending southwest to the church and northwest to approximately 300 feet west of MPI-6S.

The cause of the branching is not indicated by the available groundwater elevation data, but can be inferred from the regional topography. As illustrated on the USGS topographic map (see Figure 1-1), the area along Main Street west of the Library is a hill mapped with an elevation above 920 feet. Because the water table tends to be a subdued replica of the ground surface, it is reasonable to predict that the water table elevation increases west of MPI-3S. The general configuration of the water table is most likely that of a saddle, with an elevated surface east and west of MPI-3S and depressed surface northwest and southwest of MPI-3S. Therefore, the potential migration pathway of the PCE

plume is toward discharge areas located north and south of Main Street. The highest concentration of PCE detected in the plume extending toward the church in a southwesterly direction is at ESI-6 (520 ug/l). As indicated above, the highest concentrations detected in the northeasterly direction is MW-1 (3,100 ug/l), and MPI-6S (1,600 ug/l). The northwest plume has higher concentrations and is larger than the southwest plume. Therefore, it appears that the average groundwater flow directs the PCE plume more to the northwest than to the southwest.

Although wells MW-6, MW-7, and MW-10 are located in the center of the PCE plume at Agway, the concentrations of PCE or PCE degradation products detected in these wells during the Phase I sampling event were comparatively low (120 ug/l PCE to nondetectable). Concentrations of PCE at the suspected source and at the perimeter of the monitoring well network were substantially higher than at the center. The observed PCE distribution can be explained in terms of two conceptual models:

- PCE concentrations in groundwater increase with depth in the outwash aquifer and the greatest mass of PCE passes underneath MW-6, MW-7, and MW-10. These three wells are comparatively shallow and groundwater samples collected from these wells are only representative of the uppermost 3 to 5 feet of the outwash aquifer. Locations exhibiting higher concentrations of PCE (viz. MW-1 and MPI-6S) are screened over the uppermost 12 to 13 feet of the outwash aquifer. Also, Hydropunch® sampling below the screened interval at MPI-6S demonstrated an increase in PCE concentration with depth (see Section 5.3.2).
- A second release of PCE occurred downgradient from MW-7. Historical information indicates that the Agway storage barn was occupied by a laundry in the 1950's, although the use of PCE cannot be documented.

Time of travel for PCE in the outwash aquifer from the area of the suspected release at Mr. C Cleaners to the known limits of the chlorinated organics groundwater plume at MPI-6S and ESI-6 can be estimated from the groundwater seepage velocities calculated in Section 4.4. Assuming a seepage velocity of 0.29 ft/day and no retardation, PCE could migrate from Mr. C Cleaners to MPI-6S (a distance of 465 feet) in approximately 4.4 years; and to well Fillmore #517 (a distance of 750 feet) in approximately 7.1 years. The extremely low hydraulic gradient observed in the vicinity of MPI-6S, MPI-11B, and MPI-14B retards the migration of the plume beyond MPI-6S. However, this natural hydraulic control mechanism may only occur seasonally. South of Main Street a slightly

higher hydraulic gradient produces a seepage velocity of 0.39 ft/day, and a travel time between Mr. C Cleaners and ESI-6 (a distance of 365 feet) of approximately 2.6 years.

Petroleum Hydrocarbons

Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in samples collected from: MW-4, MW-5, MW-6, MW-9, MW-10, H-15, and MPI-4S, which are located west of Mr. C Cleaners on or near the Agway property. These groundwater contaminants are known constituents of gasoline and have been previously detected on the Agway property during remediation of a former gasoline spill. Samples collected from MW-5 exhibited the greatest concentration of total BTEX (6,270 ug/l). Monitoring well MW-5 is adjacent to the inactive product recovery well. The existing Agway wells appear to adequately define the limits of the BTEX contamination which is associated with Agway spills. BTEX compounds were not detected in ESI-3 near Mr. C Cleaners. BTEX compounds were also detected west/southwest of the Presbyterian Church. The highest concentrations of total BTEX were detected in H-7 (5,800 ug/l) and H-5 (6,140 ug/l). BTEX compounds were not found in MPI-1S and ESI-6, the wells between Mr. C Cleaners and the church. Figure 5-1 illustrates the limits of the BTEX plume west/southwest of the church and on the Agway property. The BTEX plumes are not related to the PCE concentrations found near Mr. C Cleaners.

As shown in Tables 3-4 and 5-5, substantial concentrations of vinyl chloride ranging from 3,300 to 240 ug/l have been detected at MW-5 between May 1992 and the RI sampling event in April 1994. As discussed below, the chlorinated organics may be undergoing sequential reduction (serving as an electron acceptor) from the highly chlorinated tetrachloroethene to trichloroethene, dichloroethene isomers, and finally to vinyl chloride (chloroethene).

The microbial oxidation of aromatic hydrocarbons (i.e., BTEX compounds) under aerobic conditions consumes dissolved oxygen and produces carbon dioxide and organic acids. Dissolved oxygen is used as an electron acceptor during the oxidation process. As dissolved oxygen is depleted, anaerobic conditions may develop in which microbial oxidation is coupled to the reduction of other electron acceptors, such as nitrate, ferric iron, and organic carbon. Field measurements of redox potential (eH) obtained during the April RI sampling event indicate that the redox potentials at MW-4, MW-5, MW-6, MW-9, and MW-10 are negative (-36 mv to -122 mv; see Table 5-4). Groundwater samples from all

other monitoring wells sampled during Phase I exhibited a positive redox potential. The eH values are evidence that dissolved oxygen is comparatively depleted near these wells and that biologic conditions are more anaerobic. The reduction of chlorinated ethenes has been shown to occur comparatively rapidly under biologically mediated anaerobic conditions (Vogel et al, 1987). Therefore, the presence of high concentrations of vinyl chloride may reflect the interaction of the PCE groundwater plume and the BTEX groundwater plume. Outside of the zone of low redox potential, vinyl chloride only occurs at MPI-5S, which also exhibits a low positive eH value (+5 mv).

Phthalates, Pesticides, PCBs

Trace concentrations of phthalate esters were detected in the three wells monitored for the complete TCL. However, phthalates are most likely laboratory contaminants. No pesticides/PCBs were detected in the wells monitored for the complete TCL.

Metals

Three well locations in the study area were monitored for inorganics: MPI-7I and ESI-3, near the suspected source; and the downgradient well, MPI-5S. Total iron, manganese, and magnesium concentrations exceeded the NYSDEC Class GA Groundwater Quality Standards or guidance values. Total iron and manganese concentrations at ESI-3 are most likely influenced by the presence of filterable solids in the groundwater sample, because sample turbidity values were greater than 100 NTU. The soluble iron concentrations at MW-5S (1,090 ug/l), which is downgradient of the petroleum hydrocarbon plume near MW-9, may indicate that there is a general increase in iron concentrations due to chemically reducing conditions in the Agway petroleum hydrocarbon plume. Sodium concentrations (152,000 to 205,000 ug/l) are slightly above levels commonly observed in groundwater from glacial aquifers and may be attributed to the use of deicing salt on Village roads and exfiltration from sanitary sewers. In general, substantial concentrations of inorganic parameters do not appear to be associated with the distribution of PCE in groundwater.

5.3.2 Base of Outwash

Groundwater was analyzed from the base of outwash at 22 locations during Phase II RI sampling (including monitoring wells, and Hydropunch® locations). The data obtained indicate substantial volatile organic contamination in the base of the outwash aquifer.

Plate 4 summarizes the distribution of volatile organic compounds detected in groundwater in the base of the outwash aquifer.

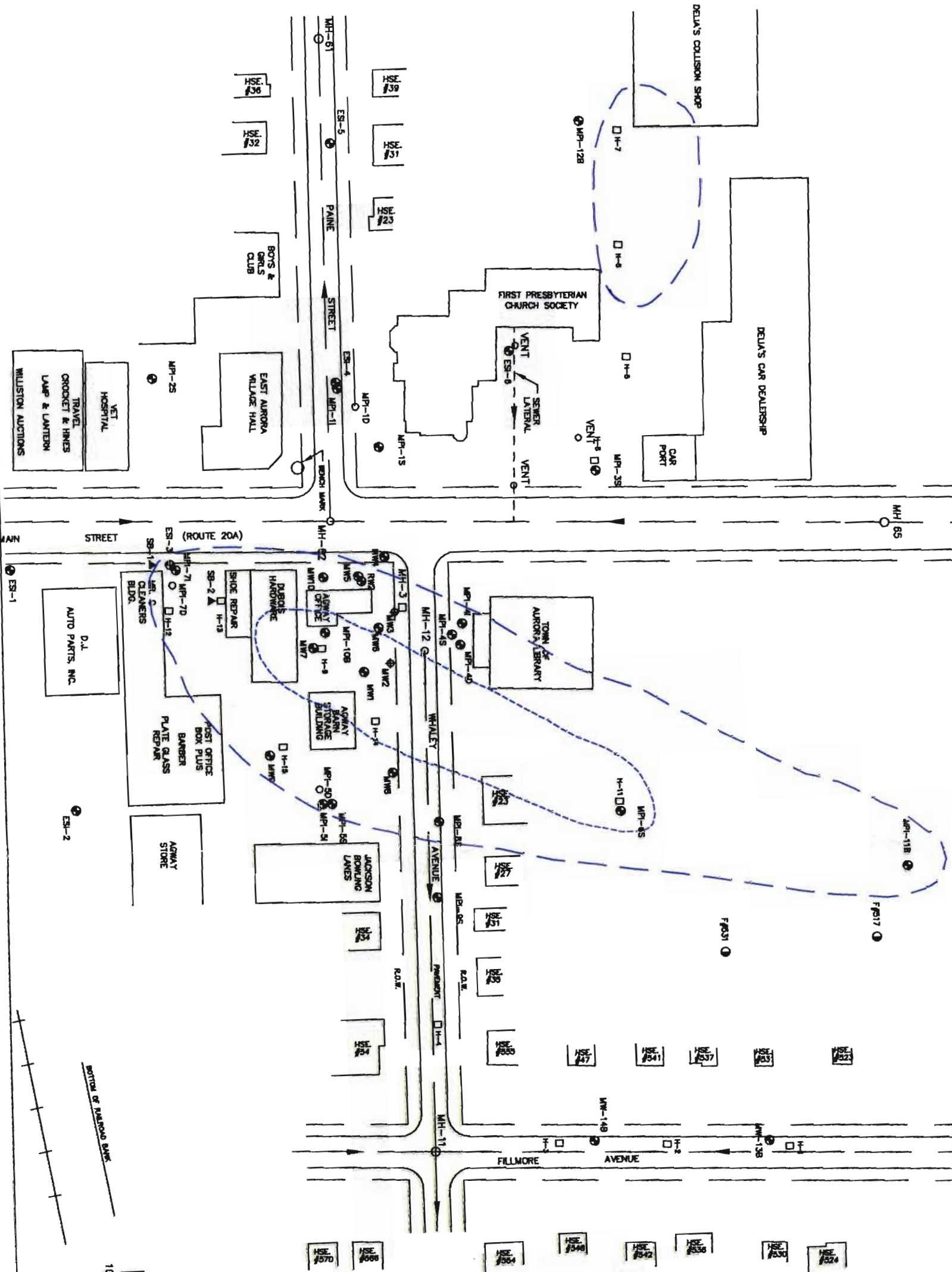
Chlorinated Organics

PCE or the potential degradation products of PCE were detected at 15 of 22 sampling locations. The greatest concentration of PCE detected from the base of the outwash was collected from Hydropunch® location H-11 (8,700 ug/l) near MPI-6S. Substantial concentrations of PCE were also detected in monitoring wells MW-1 (3,750 ug/l), MPI-10B (1,700 ug/l), and MPI-6S (1,600 ug/l) downgradient of Mr. C Cleaners in a northwesterly direction. The highest PCE concentration at the base of the outwash southwest of Mr. C Cleaners was detected at Hydropunch® location H-7 (7.9 ug/l PCE and 82.1 ug/l total degradation products).

High concentrations of PCE were detected greater than 1000 ug/l in a narrow band in the base of the outwash zone extending from Agway northwest to MPI-6S as illustrated on Figure 5-2. Sampling locations within this band include H-9 (400 ug/l), MPI-10B (1,700 ug/l), MW-1 (3,750 ug/l), H-14 (920 ug/l), H-11 (8,700 ug/l), and MPI-6S (1,800 ug/l).

The distribution of PCE determined from Hydropunch® samples may reflect the heterogeneity of the outwash aquifer. The outwash unit contains occasional thin well sorted sandy strata in a silty matrix. The monitoring wells have screens 10 to 15 feet long and contaminant concentrations are averaged over the entire saturated portion of the screened interval. Conversely, the Hydropunch® analyses represent concentrations from a small volume within the aquifer. Typical Hydropunch® sampling volumes ranged from 100 to 200 ml. The Hydropunch® only collects groundwater from what is essentially a very small point source, thereby producing a sampling bias not present in monitoring well data. Selected Hydropunch® samples were collected near adjacent monitoring wells within this narrow band:

- H-9 (400 ug/l) versus MPI-10B (1,700 ug/l)
- Hydropunch® MPI-4D-1 (460 ug/l) versus MPI-4S (59 ug/l)
- H-14 (920 ug/l) versus MW-1 (3,750 ug/l)



GRAPHIC S

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- MH-14
- MH-15
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- MH-100

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Comparison of these data clearly indicate that Hydropunch® sampling does produce some bias.

Additionally, the data within the 1000 ug/l PCE band do not exhibit a clear pattern of PCE concentration decreasing from the source (viz. H-9 (400 ug/l)/MPI-10B (980 ug/l) to MW-1 (3,750 ug/l)/H-14 (920 ug/l) to H-11 (8,700 ug/l). This could be explained by the sampling bias toward PCE concentrations in thin strata and a very heterogeneous distribution of PCE and/or by other PCE sources.

Petroleum Hydrocarbons

BTEX compounds were detected in three of five base-of-outwash monitoring wells, and seven base-of-outwash Hydropunch® sample locations. BTEX compounds were qualified as estimated in six of the eight samples. The highest total BTEX concentrations were found west of the Presbyterian Church in H-6 (849 ug/l). The remaining four Hydropunch® locations with BTEX contamination included three locations west of the church and one location at Agway.

5.3.3 Lacustrine

Groundwater from the lacustrine unit was analyzed at four Hydropunch® sampling locations and at the four "I" wells. The "I" monitoring wells were sampled twice, once during each phase. The data indicate that substantial PCE concentrations have not migrated into the lacustrine unit. Tables 5-5 and 5-7 present the data.

PCE or its degradation products were detected in 3 of the eight sample locations but at much lower concentrations than the outwash unit. The highest concentration was detected in the sample collected from MPI-4I (460 ug/l) at the library. PCE concentrations were also detected at MPI-7I (130 ug/l) at Mr. C Cleaners, and at H-11 (11 ug/l) near MPI-6S.

A substantial difference in PCE concentration was observed between samples collected from MPI-7I (140 ug/l) and ESI-3 (8,200 ug/l). Because these two wells are adjacent, but are screened in different intervals, the sampling results indicate a slight vertical migration of PCE into the lacustrine aquifer.

The density of undissolved or liquid PCE is greater than the density of water. Therefore, liquid PCE can potentially migrate downward through the outwash sand and gravels observed in the area of the suspected release (at MPI-7D) and into the lacustrine

fine sand and silt. Based on the substantially lower PCE concentration in MPI-7I and the low total organic vapors detected in split spoon soil samples during drilling, the occurrence of substantial free phase PCE in the lacustrine aquifer is not likely. However, residual concentrations of PCE may occur near the base of the outwash sand and gravel observed at MPI-7D.

Downgradient of the suspected source at MPI-4S/MPI-4I, PCE concentrations analyzed from monitoring well samples are higher in the lacustrine aquifer (460 ug/l) and lower in the outwash aquifer (59 ug/l). However, Hydropunch® samples collected during the advancement of augers at MPI-4D show the reverse trend. Three Hydropunch® samples, collected at the intervals 12-14 feet, 26-28 feet, and 40.5-42 feet, exhibited PCE concentrations of 450 ug/l, 12 ug/l, and not detected, respectively. The results are summarized in Table 5-7. The sand pack of monitoring well MPI-4I reaches upward into the bottom of the outwash at this location and is suspected to be drawing some PCE concentrations from a coarse sand strata at the base of the outwash.

Time of travel for PCE in the lacustrine fine sand and silt from MPI-7I to MPI-4I is substantially longer than in the outwash sand and gravels. Assuming a seepage velocity of 0.007 ft/day (see Section 4.4) and no retardation, a release of PCE would require approximately 100 years to travel laterally through the lacustrine fine sand and silt from Mr. C Cleaners to MPI-4I (a distance of 263 feet). The PCE detected at MPI-4I is probably the result of a hydraulic connection between the shallow and intermediate wells, and has likely not migrated to MPI-4I.

Acetone was detected in groundwater collected from the lacustrine unit. Concentrations during Phase I ranged from 11 ug/l to 91 ug/l at MPI-4I and from 3J to 10 ug/l at MPI-5I during Phase II. Acetone is a common laboratory contaminant; therefore, the Phase I results probably reflect laboratory contamination and not the characteristics of the groundwater. All Phase II results for acetone were qualified as estimated and/or were well below the NYSDEC Class "GA" Groundwater Quality Standards.

5.3.4 Stratified Till

Groundwater was collected and analyzed from one well (viz. MPI-4D) screened in the stratified till unit. Acetone was the only compound detected at 5J ug/l and is likely due

to laboratory contamination. PCE concentrations were not detected in groundwater collected from MPI-4D.

The stratified fill is a confining layer that defines the base of the water table aquifer. Since the vertical gradient is upward, dissolved contaminants should not migrate into the stratified till unit.

5.4 WASTEWATER/SANITARY SEWER SAMPLING RESULTS

The analytical results of sanitary sewer wastewater samples are summarized in Table 5-9. The only detections of PCE were at trace concentrations (<5 ug/l) in samples collected from MH-62E (1J ug/l) and MH-61 (4J). Based on groundwater elevations discussed in Section 4.5, the sewer run between MH-62 and MH-61 may receive infiltration from groundwater. A comparison of PCE concentrations in wastewater to PCE concentrations at ESI-4 (32 ug/l), which is a water table well located next to the Paine Street sewer in the area of potential infiltration, indicates that the northern end of the Paine Street sewer may be intercepting a small volume of contaminated groundwater. However, trace concentration of volatile organic compounds could also potentially be discharged to the sewer system from Village residents or businesses. Sampling results from MPI-8S and MPI-9S, located west of the Whaley Avenue sewer and upstream from Manhole MH-11, indicate that the Whaley Avenue sewer is not intercepting contaminated groundwater. It is unlikely that the sewer system is presently having a substantial influence on the migration of PCE or PCE degradation products in the RI study area.

The sample collected from MH-62 West exhibited the greatest concentrations of contaminants including acetone (84 ug/l), 2-butanone (15J ug/l), chloroform (9 ug/l), toluene (10 ug/l) and total xylenes (21 ug/l) which exceeded NYSDEC Class GA groundwater quality standards. Also, location MH-65 exhibited concentrations of chloroform (16 ug/l) above NYSDEC Class GA standards.

5.5 AIR MONITORING RESULTS

The analytical results of the air monitoring during Phase I and Phase II are presented in Table 5-10. Low concentrations of PCE were detected in air samples collected from the basement of Jackson's Bowling Alley (0.032 ppm during Phase I and .023 during

TABLE 5-9
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
APRIL 1994 SEWER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	MH-11	MH-61	MH-62E	MH-62E ⁽³⁾	MH-62W	MH-64	MH-65	GWQ Stds ⁽⁴⁾
vinyl chloride								2
methylene chloride	10UJ	10UJ	10UJ	10UJ	10UJ	10UJ	10UJ	5
acetone	10	21J	19J	17J	84J	20J	38J	50**
1,1-dichloroethene								5
1,2-dichloroethene (T)		3J						5
chloroform	6J	5J	6J	6J	9J	5J	16	7
2-butanone					15J			
1,1,1 trichloroethane								5
bromodichloromethane		2J	2J	2J	1J	2J	3J	50**
trichloroethene								5
benzene								0.7
tetrachloroethene		4J	1J					5
toluene					10			5
ethylbenzene					2J			5
xylene (T)					21			5
Notes: (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit. (2) Analyzed by ASP Method 91-1. (3) Duplicate Sample. (4) NYSDEC Class GA Groundwater Quality Standards ** Guidance Value J Estimated value due to limitations identified during quality control review. UJ = Estimated Detection Limit								

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TABLE 5-10

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT

INDOOR AIR MONITORING RESULTS

Location	Phase	Sample No.	Tetrachloroethene Concentration	
			ug/m ³	ppm
Boys/Girls Club	I	BG-1	1.7U	0.00025U
		BF-2	1.8	0.00026
Jackson's Bowling Alley	I	BA-1	220	0.032
		BA-2	130	0.019
	II	#1-Bowling Alley	153	0.023
		#2 Bowling Alley	133	0.020
—	II	Trip Blank	2.5U	0.00037U
First Presbyterian Church	I	C-1	16	0.002
		C-2	9.4	0.001
	II	#1-1st Pres. Church	28	0.0041
		#2-1st Pres. Church	9	0.0014
Village Hall	I	VH-1	1.7	0.00025
		VH-2	1.7U	0.00025U
Outside of First Presbyterian Church	I	Outside background (OB)	1.7U	0.00025U
—	I	Trip Blank (TB)	1.7U	0.00025U
31 Whaley Avenue	II	#1-31 Whaley	2.5U	0.00037U
		#2-31 Whaley	43	0.0064
34 Whaley Avenue	II	#1-34 Whaley	2.5U	0.00037U
		#2-34 Whaley	2.5U	0.00037U
517 Fillmore Avenue	II	#1-517 Fillmore	5	0.00079
		#2-517 Fillmore	2.5U	0.00037U
531 Fillmore Avenue	II	#1-531 Fillmore	2.5U	0.00037U
		#2-531 Fillmore	2.5U	0.00037U
—	II	Trip Blank	2.5U	0.00037U
NOTE: Phase I Air Monitoring was performed in March 1994. Phase II Air Monitoring was performed in April 1995.				

Phase II), located northwest of Mr. C Cleaners, and the ground floor of the First Presbyterian Church (0.002 ppm during Phase I and 0.004 during Phase II), located southwest of Mr. C Cleaners. Concentrations of PCE were also detected at 31 Whaley Avenue (.0064 ppm) and 517 Fillmore Avenue (.00079 ppm). Air samples collected from the Boys/Girls club and the Village Hall, located south of Mr. C Cleaners, each exhibited PCE at the detection limit concentration of 0.00025 ppm and from 34 Whaley Avenue, and 531 Fillmore Avenue at the detection limit concentration of 0.00037 ppm. PCE was not detected in the outside air background sample or in the trip blanks.

The analytical laboratory indicated that in addition to the trace levels of PCE, trichloroethene (TCE) was detected in replicate samples collected from the Bowling Alley at 0.00025 and 0.0005 ppm, and 1,1,1-trichloroethane (1,1,1-TCA) was detected in each of the samples at concentrations ranging from 0.0003 ppm to 0.0030 ppm.

6.0 EXPOSURE PATHWAY ANALYSIS

6.1 INTRODUCTION

The purpose of this Exposure Pathway Analysis is to qualitatively evaluate the potential for current or future adverse human health effects which might result from exposure to contaminants at or migrating from the Mr. C Cleaners Superfund site, in the absence of any action to control or mitigate such contamination. The analysis consists of a discussion of potential human exposure pathways to site contaminants and identification of potential receptors, based on available data from the RI. It has been prepared to assist in determining the need for remediation in accordance with U.S. Environmental Protection Agency methodology, to the extent practical for a qualitative assessment (USEPA 1989), and has four components:

- **Identification of Media of Concern** - Environmental media and chemicals of potential concern are identified, based on a review of relevant site data.
- **Identification of Potential Routes of Exposure** - Actual or potential chemical release pathways are characterized; potentially exposed populations, exposure pathways and exposure routes are identified; and the potential for exposure is evaluated.
- **Identification of Pathways Considered Complete** - The information assembled in steps (1) and (2) is assessed to determine which pathways are viable, for current or future site conditions in the absence of remedial action. The adverse health effects which may be associated with exposure to the chemicals of potential concern are discussed.
- **Conclusions** - An assessment of the likelihood of adverse human health effects resulting from exposure to the chemicals of potential concern at the site is made.

6.2 IDENTIFICATION OF MEDIA OF CONCERN

As a result of the RI, chemicals of potential concern for the site, by environmental medium, have been identified, as described below. The selection of chemicals of potential concern was based on such factors as frequency of detection, range of concentrations and toxicity.

6.2.1 Site Contamination

The 1/2-acre Mr. C Cleaners Superfund site is a one floor building and adjacent paved parking area. Since 1958, the site has been used as a laundry and/or dry cleaning business. Mr. C Cleaners has been in business since 1974.

The dry cleaning operations at Mr. C Cleaners use a cleaning solvent comprised of approximately 99.1 to 100 percent tetrachloroethene (PCE) with traces of 1,2-dichloroethene, tetrachloromethane and trichloroethene (TCE). Wastes generated (cartridge filters, sludge residue and wastewater) during dry cleaning operations contain traces of solvent. A commercial waste disposal firm has disposed of all dry cleaning wastes generated since 1985. Prior to 1985, sludge and filters were placed into a dumpster and collected by the Village of East Aurora.

Neither the NYSDEC nor the owner of Mr. C Cleaners identified a major release of PCE. Potential mechanisms of PCE release are:

- Possible past practices of disposing of wastes in sewers or on ground.
- Leaks in cleaning machines that collected in floor drains.
- Release of steam condensate to the floor drains.

The suspected original mechanism of PCE release to groundwater is leakage from the sanitary sewer lateral serving the Mr. C Cleaner building. Soil borings collected adjacent to the sewer line detected high levels of PCE.

PCE released into surface water or soil will rapidly evaporate. When released to the subsurface, PCE will dissolve in water and can migrate to groundwater. PCE was detected in the groundwater collected from monitoring wells, residential irrigation wells, and Hydropunch® samples on and adjacent to the site. PCE biodegrades slowly in groundwater as a result of reductive dehalogenation reactions. Dehalogenation reactions in chlorinated ethenes proceed from PCE to TCE to dichloroethene isomers or dichloroethanes to vinyl chloride (Vogel et al., 1987). Traces of all these breakdown products were detected in the groundwater from the Mr. C Cleaners Superfund site.

Provided below is a summary of relevant information regarding contaminated media on-site. An overview of the dynamics of site contamination is presented in Table 6-1, which identifies possible release sources, potential release mechanisms, and receiving media for past, current, and future releases.

TABLE 6-1

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAYS ANALYSIS**

IDENTIFICATION OF ENVIRONMENTAL MEDIA OF CONCERN IN ABSENCE OF REMEDIAL ACTION

Medium of Concern (Release Source)	Release Mechanism	Receiving Medium
Contaminated Groundwater	Lateral and vertical movement through the gravel and sand outwash	The deeper lacustrine sandy silt aquifer; off-site groundwater. There is some indication of groundwater degradation which may be associated with the site.
	Discharge	There is the potential for off-site surface water and sediment to be impacted by contaminated groundwater although the time-of-travel is likely to be very long. In addition, chemicals of potential concern will volatilize once they enter the surface water.
	Volatilization	Air in on-site and off-site Structures (e.g., homes on Whaley Avenue and Fillmore Avenue, commercial/municipal structures on Main Street and Whaley Avenue). Air monitoring data detected PCE in basement samples that may be associated with activities that occurred at the site.
Contaminated Subsurface ¹ Soil	Leaching/infiltration	Groundwater (e.g., volatile organics)- There is some indication of groundwater degradation that may be associated with the subsurface soil which serves as a reservoir for contamination.
	Volatilization	Air in on-site and off-site structures (e.g., homes on Whaley Avenue and Fillmore Avenue, commercial/municipal structures on Main Street and Whaley Avenue). Air monitoring data detected PCE in basement samples that may be associated with activities that occurred at the site.
Sanitary Sewer	Leaks	On and off-Site Subsurface Soil, on- and off-site groundwater. Soil boring samples adjacent to sewer had high PCE concentrations. Surface water (not a major route, drainage patterns and nature of contaminants suggest no impact to surface water).

6.2.2 Selection of Chemicals of Potential Concern

As described in Section 5 of this RI, significant levels of groundwater contamination were detected on site.

Results of the RI sampling indicate a broad PCE plume in the shallow portion of the aquifer that originates at the Mr. C Cleaners site and extends into two branches; one to the southwest and one to the northwest (see Figure 5-1). The northwest plume has higher concentrations of PCE and is larger than the southwest plume. It appears that the average groundwater flow directs the PCE plume more to the northwest than to the southwest. At the base of the aquifer, the plume is a narrow band that extends from Mr. C Cleaners to the northwest (see Figure 5-2).

A total of 48 on-site and one background monitoring well groundwater samples were collected during the two phases of the remedial investigation from 31 locations. The samples represent two zones of the unconfined water table aquifer, outwash and lacustrine. The groundwater data were combined because the aquifers are hydraulically connected. Phase I groundwater sampling occurred during April 1994. Twenty-five monitoring wells were sampled and analyzed for volatile organic compounds. Three of these sample locations were also analyzed for semi-volatile organics and inorganics: MPI-7I and ESI-3, near the suspected source; and the down gradient well, MPI-5S. Phase II groundwater sampling occurred during January 1995. This phase sampled 6 new monitoring wells in addition to 16 Phase I monitoring wells. These 22 samples were analyzed for volatile organic compounds. The range of volatile organic compound concentrations and the location of the maximum detected concentrations from the 16 monitoring wells sampled during each phase are presented in Table 6-2. The frequency of detection and the range of concentrations are similar between sampling efforts. The maximum concentration of PCE was detected in monitoring well ESI-3 in each sampling effort.

In addition to the monitoring well samples, 34 Hydropunch® samples were collected and analyzed for volatile organic compounds. These are biased on-site and off-site screening samples used to locate final monitoring well locations. These samples were included in the contaminant screening but kept separate from the monitoring well data.

Three residential well samples were collected and analyzed for volatile organic compounds. These Fillmore Avenue residential wells are used for irrigation. In addition, seven sanitary sewer samples from along Paine Street and Whaley Avenue were collected

TABLE 6-2

MR. C CLEANERS SUPERFUND SITE
EXPOSURE PATHWAYS ANALYSIS

SUMMARY OF MONITORING WELL DATA: VOLATILE ORGANIC COMPOUNDS

Chemical	Phase I				Phase 2			
	Frequency of Detection	Range of Concn. (µg/L)	Average Concn. (µg/L)	Location of Maximum	Frequency of Detection	Range of Concn. (µg/L)	Average Concn. (µg/L)	Location of Maximum
Acetone	4/16	11 - 91	45.5	MPI-4I	8/16	2 - 14	6.22	ESI-6
Benzene	1/16	12	12	MPI-4S	5/16	1 - 4	1.8	MPI-4S
2-Butanone	0/16	ND	—	—	1/16	5	5	MPI-4S
Chloroform	2/16	2 - 3	2.5	MPI-4S	0/16	ND	—	—
1,1-Dichloroethene	1/16	19	19	MPI-6S	1/16	14	8	MPI-6S
1,2-Dichloroethene(T)	8/16	2 - 62	23.63	ESI-6	11/16	2 - 82	17.9	ESI-6
Tetrachloroethene	14/16	1 - 8200	857	ESI-3	13/16	2 - 3600	663	ESI-3
1,1,1-Trichloroethane	2/16	4 - 14	9	MPI-2S	3/16	4 - 12	6.67	MPI-2S
Trichloroethene	6/16	1 - 110	30.67	MPI-6S	11/16	2 - 280	37.45	MPI-6S
Vinyl Chloride	1/16	9	9	MPI-4I	1/16	6	6	MPI-5S

Notes:
 ND = Not Detected
 Only chemicals detected above analytical detection limits in one or more samples are shown.
 — = Not applicable.

and analyzed for volatile organic compounds. This sewer may intercept contaminated groundwater via infiltration.

Monitoring Well ESI-1 serves as the background well for the site. Table 6-3 presents the screening results of monitoring wells, Hydropunch®, residential wells, and sanitary sewer samples against background and the NYSDEC Class GA water quality standards for volatile organic compounds. Table 6-4 summarizes the screening of the three Phase I wells analyzed for semi-volatile organic and inorganic compounds.

The results of screening against the NYSDEC Class GA Water Quality Standards indicated the average concentration of the following chemicals exceeded the standards:

- PCE and trichloroethene (TCE) in on-site monitoring wells, residential wells, and Hydropunch® samples.
- Toluene and xylene in on-site monitoring wells, sewer samples and Hydropunch® samples.
- Vinyl chloride, 1,2-dichloroethene, benzene, and ethylbenzene in on-site monitoring wells and Hydropunch® samples.
- Methylene chloride, 1,1-dichloroethene and 1,1,1-trichloroethane (TCA) in on-site monitoring wells.
- Chloroform in sewer samples.

In addition, one on-site monitoring well sample and one sewer sample had a concentration of acetone above the NYSDEC GA water quality standard. As indicated in Table 6-4, dimethyl phthalate, iron, magnesium, manganese, and sodium exceeded the NYSDEC GA Water Quality Standards in at least one sample.

PCE and its degradation products (TCE, 1,1-dichloroethene, 1,2-dichloroethene and vinyl chloride), and chloroform were chosen as chemicals of potential concern for the Mr. C Cleaners Superfund Site. The maximum concentration of PCE was detected in Hydropunch® sample H-11 located on Whaley Avenue approximately 500 feet west of the Mr. C Cleaners site. TCA was chosen as a chemical of potential concern. The source of the TCA is unknown.

Benzene, toluene, ethylbenzene and xylenes (BTEX) were not considered chemicals of potential concern for this site. BTEX was detected in the six wells and two Hydropunch®

TABLE 6-3
MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAYS ANALYSIS

SUMMARY OF GROUNDWATER VOLATILE DATA

Chemical	NYSDEC WQS* (µg/L)	Background Well (ESI-1)	Combined Phase 1 and Phase 2 Monitoring Wells				Residential Wells			
			Frequency of Detection	Range of Concen. (µg/L)	Average Concen. (µg/L)	Frequency of Guidance Exceedance	Frequency of Detection	Range of Concen. (µg/L)	Average Concen. (µg/L)	Frequency of Guidance Exceedance
Acetone	50**	ND	13/48	2 - 91	20.29	1/47	0/3	ND	-	0/3
Benzene	0.7	ND	14/48	1 - 3200	244.5	14/47	0/3	ND	-	0/3
Bromodichloromethane	50**	ND	0/48	ND	-	0/47	0/3	ND	-	0/3
2-Butanone	NA	ND	1/48	5	5	0/47	0/3	ND	-	0/3
Chlorobenzene	5	ND	1/48	3	3	1/47	0/3	ND	-	0/3
Chloroform	7	ND	2/48	2 - 3	2.5	0/47	0/3	ND	-	0/3
1,1-Dichloroethene	5	ND	3/48	2 - 19	11.67	2/47	0/3	ND	-	0/3
1,2-Dichloroethene(T)	5	ND	26/48	1 - 82	19.5	18/47	0/3	ND	-	0/3
Ethylbenzene	5	ND	5/48	3 - 430	148	5/47	0/3	ND	-	0/3
Methylene chloride	5	ND	4/48	11 - 120	61.50	4/47	0/3	ND	-	0/3
Tetrachloroethene	5	ND	35/48	1 - 8200	835	30/47	3/3	2.6 - 210	104.2	2/3
Toluene	5	ND	6/48	2 - 740	127.5	6/47	0/3	ND	-	0/3
1,1,1-Trichloroethane	5	3	5/48	4 - 14	7.6	2/47	0/3	ND	-	0/3
Trichloroethene	5	ND	24/48	1 - 280	33.21	16/47	1/3	17	17	1/3
Vinyl chloride	2	ND	4/48	6 - 240	65.75	3/47	0/3	ND	-	0/3
Xylene(T)	5	ND	5/48	6 - 1900	399	5/47	0/3	ND	-	0/3

TABLE 6-3 (Continued)
MR. C CLEANERS SUPERFUND SITE
REMEDIATION INVESTIGATION REPORT
EXPOSURE PATHWAYS ANALYSIS

COMPARISON OF GROUNDWATER DATA WITH GROUNDWATER STANDARDS AND BACKGROUND: VOLATILE ORGANIC DATA

Chemical	Hydropunch Samples			Sanitary Sewer Samples		
	Frequency of Detection	Range of Concn. (µg/L)	Average Concn. (µg/L)	Frequency of Guidance Exceedance	Frequency of Detection	Average Concn. (µg/L)
Acetone	0/34	ND	—	0/34	7/7	10 - 84
Benzene	6/34	4 - 390	90.17	6/34	0/7	ND
Bromodichloromethane	0/34	ND	—	0/34	6/7	1 - 3
2-Butanone	0/34	ND	—	0/34	1/7	15
Chlorobenzene	0/34	ND	—	0/34	0/7	ND
Chloroform	0/34	ND	—	0/34	7/7	5 - 16
1,1-Dichloroethene	0/34	ND	—	0/34	0/7	ND
1,2-Dichloroethene(T)	9/34	1.9 - 62	14.79	4/34	1/7	3
Ethylbenzene	7/34	1.9 - 1400	404.7	6/34	1/7	2
Methylene chloride	1/34	1	1	0/34	0/7	ND
Tetrachloroethene	16/34	2.2 - 8700	1246.97	14/34	2/7	1 - 4
Toluene	8/34	1.1 - 210	38.59	5/34	1/7	10
1,1,1-Trichloroethane	3/34	1 - 2	1.67	0/34	0/7	ND
Trichloroethene	7/34	1.6 - 260	41.81	4/34	0/7	ND
Vinyl chloride	3/34	2 - 13	6.3	2/34	0/7	ND
Xylene(T)	8/34	1.2 - 4740	1235.63	7/34	1/7	21

Notes: ND = Not Detected
NA = Not Available
* NYS Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards; 6NYCRR Part 703 Standards and Guidance Values for Class GA groundwater.
** Guidance Value

TABLE 6-4

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION
EXPOSURE PATHWAYS ANALYSIS**

SUMMARY OF ADDITIONAL ON-SITE GROUNDWATER PARAMETERS

Chemical	NYSDEC WQS* (µg/L)	Background Concentration (µg/l)	Frequency of Detection	Range of Concentrations (µg/L)	Average Concentration (µg/L)	Frequency of Guidance Ex- ceedance
Semi-Volatile Organics:						
Bis(2-ethylhexyl)phthalate	50	ND	3/3	3 - 12	8.33	0/4
Butylbenzylphthalate	50**	ND	2/3	6 - 8	7	0/4
Diethylphthalate	50**	ND	2/3	2 - 75	38.5	1/4
Di-n-butylphthalate	50	ND	1/3	2	2	0/4
Inorganics:						
Aluminum	NA	792	1/3	6,200	6,200	--
Barium	1000	214	3/3	114 - 220	150	0/3
Calcium	NA	126,000	3/3	169,000 - 189,000	177,667	--
Cobalt	NA	ND	1/3	16.1	16.1	--
Copper	200	ND	1/3	44.1	44.1	0/3
Iron	300	4,480	1/3	21,200	21,200	2/3
Lead	25	7.4	1/3	11.9	11.9	0/3
Magnesium	35,000**	20,700	3/3	35,200 - 37,800	36,267	3/3
Manganese	300	944	3/3	792 - 814	797	3/3
Mercury	2	ND	1/3	0.21	0.21	0/3

TABLE 6-4

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION
EXPOSURE PATHWAYS ANALYSIS

SUMMARY OF ADDITIONAL ON-SITE GROUNDWATER PARAMETERS

Chemical	NYSDEC WQS* (µg/L)	Background Concentration (µg/l)	Frequency of Detection	Range of Concentrations (µg/L)	Average Concentration (µg/L)	Frequency of Guidance Ex- ceedance
Inorganics (Continued):						
Potassium	NA	7,380	3/3	5,220 - 7,230	5,993	--
Sodium	250	192,000	3/6	152,000 - 205,000	171,333	3/3
Zinc	300	ND	1/3	104	104	0/3

Notes:

NA = Not Available

ND = Not Detected

* NYS Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards; 6NYCRR Part 703 Standards and Guidance Values for Class GA Groundwater

** Guidance Value

samples located west of Mr C Cleaners on or near the Agway property. These groundwater contaminants are known constituents of gasoline and have been previously detected on the Agway property during remediation of a former gasoline spill. Monitoring Well MW-5 which is adjacent to an inoperative product recovery well and is presumably near the center of the gasoline release, exhibited the greatest concentration of BTEX. BTEX was detected in six Hydropunch® samples collected west/southwest of the church. BTEX compounds were not used by Mr. C Cleaners in the dry cleaning process.

In addition, methylene chloride, acetone and diethylphthalate were not considered chemicals of potential concern. These chemicals are common laboratory contaminants. In addition, most of the methylene chloride data were qualified as estimated due to blank contamination.

Manganese was not present above background, therefore, this is not a chemical of potential concern. Iron, magnesium, and sodium are essential nutrients that are toxic only at very high levels, and therefore are not considered chemicals of potential concern for this site.

Air Monitoring Samples

A total of 20 air monitoring samples were collected; eight during Phase I sampling and 12 during Phase II sampling and analyzed for PCE. The Phase I air monitoring samples were collected in March 1994 from the basements of four commercial/municipal buildings near the Mr. C Cleaners site. Sampling locations included the basement of the First Presbyterian Church, the East Aurora Boys/Girls Club, Jackson's Bowling Alley, and the Town Hall. During Phase II sampling, these four buildings were resampled in April 1995. Four residential basements, two on Whaley Avenue and two on Fillmore Avenue, were also sampled.

The range of concentrations and the location of the maximum detected concentration are presented in Table 6-5. The NYSDEC has developed a guidance value of $1.2 \mu\text{g}/\text{m}^3$ for PCE in outdoor air emitted from a point source (NYSDEC Air Guide 1991). This value corresponds to a one in a million cancer risk over a lifetime of exposure. The American Conference of Government Industrial Hygienists (ACGIH) has developed a threshold limit value for PCE of $170 \text{ mg}/\text{m}^3$. This value is the time weighted average (TWA) concentration that nearly all workers may be repeatedly exposed day after day, without adverse effect (ACGIH 1994). The New York State Department of Health (NYSDOH) has recommended

TABLE 6-5

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAY ANALYSIS**

SUMMARY OF AIR DATA FOR TETRACHLOROETHENE

Sample Location	NYSDEC Air-1 Guidance * (ug/m ³)	NYSDOC Recommendation*** (ug/m ³)	ACGIH Threshold Exposure Limit ** (ug/m ³)	Frequency of Detection	Range of Concen. (ug/m ³)	Frequency of Guidance Exceedance			Location of Maximum Concentration (ug/m ³)
						NYSDEC	ACGIH	NYSDOH	
Residential	1.2	100	170,000	2/8	5 - 43	2/8	0/8	0/8	31 Whaley Avenue
Commercial	1.2	100	170,000	10/12	1.7 - 220	10/12	0/12	4/12	Jackson's Bowling Alley

Notes:

* New York State Air Guide-1, Guidelines for the Control of Toxic Ambient Air Contaminants

** American Conference of Government Industrial Hygienists 1994-1995 Threshold Limit Values for Chemical Substances, Physical Agents and Biological Exposure Indices.

*** New York State Department of Health Fact Sheet, Air Contamination Above Dry Cleaners, 1992.

that the average levels of PCE in indoor air not exceed $100 \mu\text{g}/\text{m}^3$ (NYSDOH 1992). This value is based on NYSDOH's evaluation of human studies and laboratory data.

PCE was detected in two residential samples and 10 commercial samples at concentrations exceeding the NYSDEC Air Guide-1 value. No samples exceeded the ACGIH guidance value. Additionally, no residential samples exceeded the NYSDOH guidance value. All four samples collected from the bowling alley exceeded the NYSDOH recommended value.

Subsurface Soils

Three samples were collected from on-site subsurface boring at depths of 6 to 8 feet or 8 to 10 feet. Two samples were collected from the unsaturated soil zone adjacent to the Mr. C Cleaner sewer lateral and one from a boring adjacent to the Shoe Repair Shop (at 8-10 feet bgs) and analyzed for PCE and concentrations ranged from 6.4 to 48 ppm. All three samples exceeded the NYSDEC recommended soil cleanup objective of 1.4 ppm (NYSDEC TAGM 4046).

6.3 IDENTIFICATION OF POTENTIAL ROUTES OF EXPOSURE

The property is located on Main Street which is also known as State Route 20A, a major thoroughfare in the Village of East Aurora. The site is bordered by commercial storefronts along Main Street. The adjacent side streets are primarily residential. To the south and southwest are the East Aurora Village Hall and the First Presbyterian Church of East Aurora, respectively. West of the site is the East Aurora Library. Because the area is a commercial storefront/municipal area and includes sidewalks, the area is frequented by pedestrians.

There are currently no potable water supply wells on site or immediately downgradient of the site. The area has been serviced by the Erie County Water Authority since 1980. However, several nearby Village residents have shallow wells that are used for irrigation purposes and three were sampled for the RI. Surface water runoff from the site is drained to storm sewers.

The possible means by which people (e.g., site occupants, off-site residents, municipal workers) could come in contact with site contaminants, either now or in the future, are itemized in Table 6-6. Each of these possible exposure scenarios have been analyzed to

TABLE 6-6

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAY ANALYSISIDENTIFICATION OF POTENTIAL ROUTES OF EXPOSURE
(CURRENT AND FUTURE LAND USE)

Potentially Exposed Population	Exposure Route, Medium, and Exposure Point	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
Site Occupants, Site Visitors	Inhalation of chemicals of potential concern from groundwater and subsurface soil.	Yes	Air samples from adjacent commercial basements indicate contamination.
Adjacent Commercial Occupants, Adjacent Visitors, Off-site Residents	Incidental ingestion of, dermal contact with and inhalation of chemicals of potential concern in groundwater.	Yes	Although the site is serviced by public water supply, several nearby residents have groundwater wells that are used for irrigation. Future use of groundwater as a source of potable water cannot be precluded based on its GA classification. Air samples from residences indicate potential contamination as a result of volatilization from groundwater and subsurface soils.
Off-site Residents/ Recreationalists	Incidental ingestion of, dermal contact with and inhalation of chemicals in surface water and sediment.	No	Cazonovia Creek, Tannery Brook and the Sinking Ponds wetland are within 2 miles of the site. However, the drainage patterns and nature of the contaminants suggest no current impact. The potential for future contamination exists although the time of travel is likely to be very long.
Utility Workers and Future Construction Workers	Incidental ingestion of, dermal contact with and inhalation of chemicals of potential concern in groundwater and subsurface soil.	Yes	Groundwater and soil contamination may be encountered by laborers working on the Main Street, Whaley Avenue or Fillmore Avenue sewer lines. The water table is close to the surface, therefore; the potential for exposure exists from construction that requires excavation.

determine whether they are viable; and the reason associated with each determination has been provided.

The only exposure scenarios which were excluded from further consideration were incidental ingestion of, dermal contact with, and inhalation of chemicals of potential concern in off-site surface water and sediment. The surface water exposure scenario is unlikely due to the nature of the contaminants. The contaminants of concern will rapidly volatilize once they enter the streams. In addition, the time-of-travel for contaminated groundwater to reach a surface water discharge point is likely to be lengthy.

6.4 IDENTIFICATION OF PATHWAYS CONSIDERED COMPLETE

From the information presented in Table 6-6, exposure pathways were identified which can be considered complete, i.e., pathways which have: (1) a source or chemical release from a source; (2) an exposure point where contact can occur; and (3) an exposure route by which contact can occur. The complete pathways are presented in Table 6-7.

Toxicological data for each of the chemicals of potential concern are provided in Table 6-8 and summarized in Appendix K.

6.5 SUMMARY OF EXPOSURE PATHWAY ANALYSIS

6.5.1 Groundwater

The groundwater is classified by the NYSDEC as GA (best use, drinking water source). Groundwater is not used as a potable supply in the area; the Village of East Aurora is on public supply. However, some village residents use groundwater for irrigation purposes. Therefore, the potential exists for exposure to contaminants in groundwater resulting from residential use. Another potential for exposure to chemicals of potential concern would be via volatilization from subsurface soils and groundwater to on-site and adjacent properties.

The shallowest groundwater levels encountered are approximately 7.5 feet below ground surface. Therefore, there is the potential for exposure to contaminants in groundwater resulting from excavations for either new basements construction or utility repair. Another potential for exposure of utility workers to chemicals of potential concern

TABLE 6-7

MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAY ANALYSIS

IDENTIFICATION OF PATHWAYS CONSIDERED COMPLETE

Exposure Medium/ Exposure Route	Site Occupants and Visitors	Utility Workers/ Construction Workers	Off-Site Population ⁽¹⁾
Groundwater:			
Incidental Ingestion	—	A	C,L
Dermal Contact	—	A	C,L
Inhalation of Vapor Phase Chemicals	A	A	C,L
Subsurface Soil:			
Incidental Ingestion	—	A	—
Dermal Contact	—	A	—
Inhalation of Vapor Phase Chemicals	A	A	C,L

Notes:

- A = Exposure to adults only
 C = Exposure in children may be significantly greater than in adults
 L = Lifetime Exposure
 (1) Indicates adjacent commercial occupants, adjacent visitors and off-site residents.
 — = Exposure in this population via this route is not likely to occur.

TABLE 6-8

**MR. C CLEANERS SUPERFUND SITE
REMEDIAL INVESTIGATION REPORT
EXPOSURE PATHWAYS ANALYSIS
TOXICOLOGICAL SUMMARY**

Chemical	EPA Cancer Classification	Health Effects Summary
Tetrachloroethene	B2	Tetrachloroethene may irritate the eyes, nose and throat, and cause flushing of the face and neck, vertigo, dizziness, incoordination, headaches, drowsiness, skin redness, and liver damage. Target organs include the eyes, skin, respiratory system, liver, kidneys and central nervous system. In animals, chronic exposure is associated with liver and kidney cancer.
1,1,1-Trichloroethane	D	1,1,1-Trichloroethane may irritate the eyes and skin, and cause headaches, weakness, depression of the central nervous system, poor equilibrium, dermatitis, cardiac arrhythmia and liver damage. Target organs include the eyes, skin, central nervous system, heart and liver.
Trichloroethene	pending	Trichloroethene may irritate the eyes and skin, and cause headaches, vertigo, visual disturbances, fatigue, giddiness, tremors, drowsiness, nausea, vomiting, dermatitis, cardiac arrhythmias, paresthesia, and possibly liver injury. Target organs include the eyes, skin, respiratory system, heart, liver, central nervous system. In animals, chronic exposure is associated with liver and kidney cancer.
1,2-Dichloroethene	D	1,2-Dichloroethene may irritate the eyes and lungs and cause central nervous system depression. Target Organs include the eyes, lungs, and central nervous system.
1,1-Dichloroethene	C	1,1-Dichloroethene may irritate the eyes, skin, and throat, and cause dizziness, headaches, nausea, difficulty in breathing, dysfunction of the liver and kidney, and pneumonitis. Target organs include the eyes, skin, lungs, central nervous system, liver, and kidneys. In animals, chronic exposure is associated with liver and kidney tumors.
Vinyl chloride	A	Vinyl chloride may cause weakness, abdominal pain, GI bleeding, enlargement of the liver, and pallor of the extremities. Target organs include the liver, central nervous system, circulatory system, lungs, and lymphatic system. Workers occupationally exposed to air concentrations of vinyl chloride have been associated with liver cancer.
Chloroform	B2	Chloroform may irritate eyes and skin, and cause dizziness, mental dullness, nausea, confusion, headaches, fatigue, anesthesia, and enlargement of the liver. Target organs include liver, kidneys, heart, eyes, skin, and central nervous system. In animals, chronic exposure is associated with liver and kidney tumors.

Source: USEPA Integrated Risk Information System (IRIS) and NIOSH Pocket Guide to Chemical Hazards, 1994.

would be via volatilization from subsurface and groundwater to the air from excavation activities.

The groundwater serves as a continuing source of degradation of off-site groundwater and has the potential to impact on air quality in on-site and adjacent properties. Two phases of indoor air sampling of four commercial buildings indicates continuing poor indoor air quality. Elevated concentrations of VOC contamination (i.e., in excess groundwater standards) were detected in site groundwater.

6.5.2 Indoor Air Quality

Groundwater and subsurface soil contamination may be serving as a continuing source of PCE vapors in buildings on and adjacent to the site. Indoor air may pose a hazard to the business occupants and visitors. PCE levels exceeding guidance limits were detected in indoor air at Jackson's Bowling Alley.

6.5.3 Subsurface Soil

Subsurface soil contamination serves as a continuing source of groundwater contamination, and could pose a hazard to utility workers who may contact contaminants during excavation and repair of utility lines. Another potential for exposure would be to on-site and adjacent business occupants and visitors from chemicals of potential concern in subsurface soils migrating and volatilizing into the buildings.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 SUMMARY AND CONCLUSIONS

The principal findings/conclusions developed from the remedial investigation activities at the Mr. C Cleaners site are summarized below.

7.1.1 Hydrogeologic Setting

1. The site is underlain by a bedrock valley that is filled with approximately 140 to 200 feet of unconsolidated glacial deposits.
2. Geologic strata underlying the RI study area to a depth of 90 feet include:
 - surficial fill
 - till
 - outwash sand and gravel
 - lacustrine fine sand and silt
 - stratified tills and sand
3. The water table aquifer occurs in saturated outwash and is directly underlain by saturated lacustrine deposits. Hydraulic conductivity values and groundwater flow rates are substantially greater in the outwash sand and gravel. Therefore, the outwash and lacustrine units are classified as two separate aquifers (viz., the outwash aquifer and the lacustrine aquifer) although the two units are hydraulically connected and exhibit similar hydraulic heads.
 - Saturated outwash exhibits a mean hydraulic conductivity of $8.6\text{E-}3$ cm/s; hydraulic gradients ranging from 0.002 to 0.004 ft/ft; and groundwater seepage velocities of 0.3 to 0.5 ft/day.
 - Saturated lacustrine deposits exhibit a mean hydraulic conductivity of $2.8\text{E-}4$ cm/s; a hydraulic gradient of 0.003 ft/ft; and an estimated groundwater seepage velocity of 0.007 ft/day.

4. The stratified till is comprised of clayey silt and silty clay till interlayered with thin layers of medium to fine sand. Fine grained till comprises approximately 60% to 80% of the total thickness of the stratified till unit at four exploratory boring locations. The mean laboratory hydraulic conductivity of the fine grained till is 4.8×10^{-8} cm/s. Hydraulically, the stratified till is a confining layer that defines the base of the lacustrine aquifer.
5. An NYSDEC Principal Aquifer is known to occur approximately 4000 feet northeast of Mr. C Cleaners. Principal aquifers are defined by the NYSDEC as formations known to be highly productive, but which are not intensively used for water supply at the present time. Such aquifers are viewed as important potential future sources of water supply. Aquifer depth is approximately 127 to 140 feet below grade in the buried valley. The lateral extent of the aquifer, and the hydraulic connection(s) to potential contaminant migration pathways have not been defined. However, the vertical hydraulic gradient between the confining layer and the shallow aquifers is upward, indicating that contaminants would not be expected to migrate downward into the stratified till or a deeper aquifer.
6. Groundwater flow in the outwash aquifer moves west from a groundwater high located east of Mr. C Cleaners. A groundwater divide approximately underlies Main Street and separates groundwater flow west of Mr. C Cleaners into southwest and northwest flow directions. Groundwater flow directions in the lacustrine and outwash aquifers appear to be similar.
7. Sanitary sewer inverts were above the water table during the Phase I RI in the site vicinity except for a short distance along Paine Street. Groundwater infiltration to the sanitary sewer system has a minimal influence on shallow groundwater flow.

7.1.2 Contaminant Characterization

1. A total of 63 groundwater samples were analyzed for volatile organic compounds from 40 locations across the RI study area. The following parameters were detected in groundwater samples.

<u>Parameter</u>	<u>Concentration Range</u>
■ Tetrachloroethene (PCE)	1 - 8700 ug/l
■ PCE Degradation Products/Contaminants	
- Trichloroethene	1 - 280
- 1,2 Dichloroethene	1 - 82
- 1,1 Dichloroethene	19
- Vinyl Chloride	8 - 240
■ Petroleum Hydrocarbons	
- Benzene	3 - 3200
- Toluene	3 - 740
- Ethylbenzene	3 - 1400
- Xylenes	6 - 4320
■ Other Parameters	
- 1,1,1 Trichloroethane	4 - 14
- Acetone	11 - 91
- Chloroform	2 - 3
- Methylene Chloride	1 - 120

2. Tetrachloroethene or potential degradation products/contaminants of tetrachloroethene (PCE) were detected in 23 of 63 analyses, indicating substantial volatile organic contamination of the outwash aquifer (saturated outwash sand and gravel).
3. The distribution of PCE in the lacustrine aquifer (saturated lacustrine sand and silt) is more localized and occurs at lower concentrations.
4. Petroleum hydrocarbons were detected in the vicinity of the known petroleum product spill on the Agway property. The existing Agway groundwater monitoring well network adequately defines the limits of the petroleum hydrocarbon groundwater plume.

Petroleum hydrocarbons were also detected at monitoring locations west/southwest of the Presbyterian Church. The extent of the petroleum hydrocarbon groundwater plume in this area has not been defined.

5. Volatile organics were detected in wastewater samples collected from sanitary sewers at low to trace concentrations.
6. Four indoor air samples were collected from the basements of the First Presbyterian Church, the Boys/Girls Club, the Village Hall, and Jackson's Bowling Alley and four residential basements. Tetrachloroethene was detected at the analytical detection limit in the Village Hall and Boys/Girls Club basements. Slightly higher concentrations of PCE were detected in air samples from the Church, Jackson's Bowling Alley, and two of the residential basements.
7. Concentrations of semivolatile organics, pesticides, PCBs, and inorganic parameters on the Target Compound List were not detected at concentrations of concern.

7.1.3 Contaminant Migration

1. The chlorinated organics plume in the outwash aquifer extends from Mr. C Cleaners in a southwest direction toward the First Presbyterian Church, and in a northwest direction toward the rear of residential homes west of Whaley Avenue. The leading edges of the chlorinated organics plumes have been identified.
2. The suspected original mechanism of PCE release to groundwater is leakage from the sanitary sewer lateral serving the Mr. C Cleaners building. This conclusion is supported by the distribution of PCE concentration in groundwater downgradient of Mr. C Cleaners, and the distribution of total volatile organics in soil gas beneath the Mr. C Cleaners parking lot, and the concentration of PCE in soil adjacent to the sewer lateral. Continuing PCE

releases are likely occurring by the dissolution of residual PCE in the unsaturated and saturated soil beneath the sewer lateral. A linear source of residual PCE may extend along the full length of the sewer lateral.

3. Sampling for volatile organics performed in the sanitary sewers along Paine Street and Whaley Avenue indicates that potential groundwater infiltration to the sanitary sewers intercepts only minimal contaminated groundwater, if any. Infiltration to the sewers has minimal impact on the distribution of chlorinated organics in groundwater.
4. The distribution of PCE and PCE breakdown products south of Main Street may be the result of PCE migration from Mr. C Cleaners through the sanitary sewers, with subsequent exfiltration. Alternatively, based on the available data, the PCE detected south of Main Street could originate from an/other source(s).
5. Sampling data demonstrates that the concentrations of chlorinated organics increase with depth in the outwash aquifer. The highest PCE concentration in groundwater are localized in a narrow but elongated plume extending downgradient from Mr. C Cleaners, and occurring near the base of the outwash aquifer.
6. There is no indication that liquid PCE, which is more dense than water, has migrated downward to the top of the lacustrine sandy silt or occurs as a substantial accumulation of liquid.
7. The extent and concentration of PCE in the lacustrine aquifer is much less than concentrations observed in the outwash aquifer. Concentrations of PCE in the lacustrine aquifer that appear to increase downgradient of the Site are most likely an artifact of a hydraulic connection along the sand pack of a deep monitoring well.

8. Soil gas monitoring results indicate that PCE is volatilizing from the water table and entering unsaturated soils. Indoor air monitoring results indicate that PCE volatilization from groundwater is a source of indoor air contamination in basements.

7.1.4 Habitat Based Assessment

1. A habitat-based assessment was performed in accordance with NYSDEC Guidance for preparing Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites dated June 18, 1991.
2. Local drainage patterns and the nature of contaminants originating at Mr. C Cleaners suggest that a groundwater contaminant plume, as defined herein, would not likely affect any significant or sensitive flora or fauna.

7.1.5 Exposure Pathway Analysis

1. Chemicals of concern detected at the Mr. C Cleaners site include tetrachloroethene, trichloroethene, 1,2-dichloroethene, 1,1-dichloroethene, vinyl chloride, 1,1,1-trichloroethane.
2. Potential media of concern and routes of exposure to the chemicals of concern include:
 - Groundwater from which volatile contaminants can be lost by volatilization into soil gas and then into buildings, or transported by advection to discharge points, such as wells or subsurface excavations
 - Subsurface soil from which volatile contaminants can be lost by volatilization into soil gas and then into buildings, or otherwise released during subsurface excavations
3. Potential routes of exposure to chemicals in groundwater include incidental ingestion, dermal contact, and inhalation of vapors. These exposure

scenarios may affect the users of residential irrigation wells, or workers involved in the construction of subsurface utilities or other excavations.

Potential routes of exposure to chemicals in soil include incidental ingestion, dermal contact, and the inhalation of vapors. These exposure scenarios affect workers involved in the construction/repair of subsurface utilities or other excavations.

4. The detection of PCE in samples of indoor air indicates that a complete exposure pathway leading from the source (soil or groundwater) to a receptor (building occupants) is present in the vicinity of the Mr. C Cleaners site. Concentrations of PCE in indoor air may pose a hazard to building occupants, off-site population, or site visitors.

7.2 RECOMMENDATIONS

Based on the results of the Phase I and II Remedial Investigation, media of concern include:

- Groundwater in the outwash aquifer
- Soils surrounding the sanitary sewer lateral which are likely acting as a PCE source
- Indoor air impacted by PCE in structure basements

A focused Feasibility Study (FS) of remedial alternatives and a pump test are recommended to select a remedial strategy for the media of concern at the Mr. C Cleaners site and in the surrounding area. The FS will develop and analyze remedial alternatives. Pump tests at two locations are recommended to provide hydrogeologic data necessary to evaluate groundwater collection alternatives in the FS. The recommended scope of the FS and the pump test are discussed below.

7.2.1 Feasibility Study Scope

A focused FS will be conducted to select remedial alternatives for the media impacted by contamination from the Mr. C Cleaners site. The focused FS will reduce the number of remedial alternatives evaluated as compared to a standard feasibility study. Remedial alternatives will be developed based on previous experience with chlorinated solvent remediation. The FS will include limited bench-scale treatability studies of potential treatment technologies. The major elements of the FS scope include:

- FS Work Plan
- Treatability Study
- FS Report
- Public Meetings

The scope of each element is described below.

7.2.1.1 FS Work Plan

The FS will be conducted in accordance with New York State guidance provided in NYSDEC Technical and Administrative Guideline (TAGM) #4025, "Guidelines for Remedial Investigations/Feasibility Studies", and TAGM #4030, "Selection of Remedial Actions at Inactive Hazardous Waste Sites". TAGM #4025 lists various Federal and New York State guidances on conducting feasibility studies, including "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (USEPA, 1988). The FS Work Plan will outline the steps that will be taken to complete the FS in conformance with these guidances and is presented as Appendix L.

7.2.1.2 Treatability Studies

Air stripping and activated carbon are well-established groundwater treatment technologies and extensive data is available in the industry to model treatment of PCE and its degradation products by these two technologies. AOP is also a well-established technology for PCE treatment, however, reactor sizing and operating condition optimization typically requires bench-scale testing. Thus, only AOP bench-scale testing will be conducted during the FS to provide data for full scale AOP system sizing and reagent addition rates. Groundwater for the AOP treatability test will be collected during the pump test, since groundwater obtained under dynamic pumping conditions is typically more representative

of contaminant concentrations that will be observed during full-scale pumping as compared to groundwater collected from monitoring wells under static conditions.

7.2.1.3 Feasibility Study Report

The FS for the Mr. C Cleaners site will be conducted using standard evaluation criteria for a limited number of alternatives for each impacted media. The FS report will include the following sections:

- Executive Summary
- Introduction
- Identification of Remedial Action Objectives
- Development and Screening of Alternatives
- Detailed Analysis of Alternatives
- Recommended Remedial Alternative

7.2.1.4 Public Meetings

Malcolm Pirnie will present and discuss the results of the draft FS report at up to two public information meetings. Malcolm Pirnie will also assist NYSDEC in preparing a Responsiveness Summary which answers and discusses public comments and concerns associated with the FS and recommended remedial alternative.

7.2.2 Pump Test Scope

Pump testing is required to determine the hydrogeologic properties of the outwash aquifer. The specific objectives of the pump test are to:

- Estimate the hydraulic characteristics of the two groundwater recovery zones,
- Predict the area of influence of the recovery wells, and
- Evaluate the need for a third recovery well.

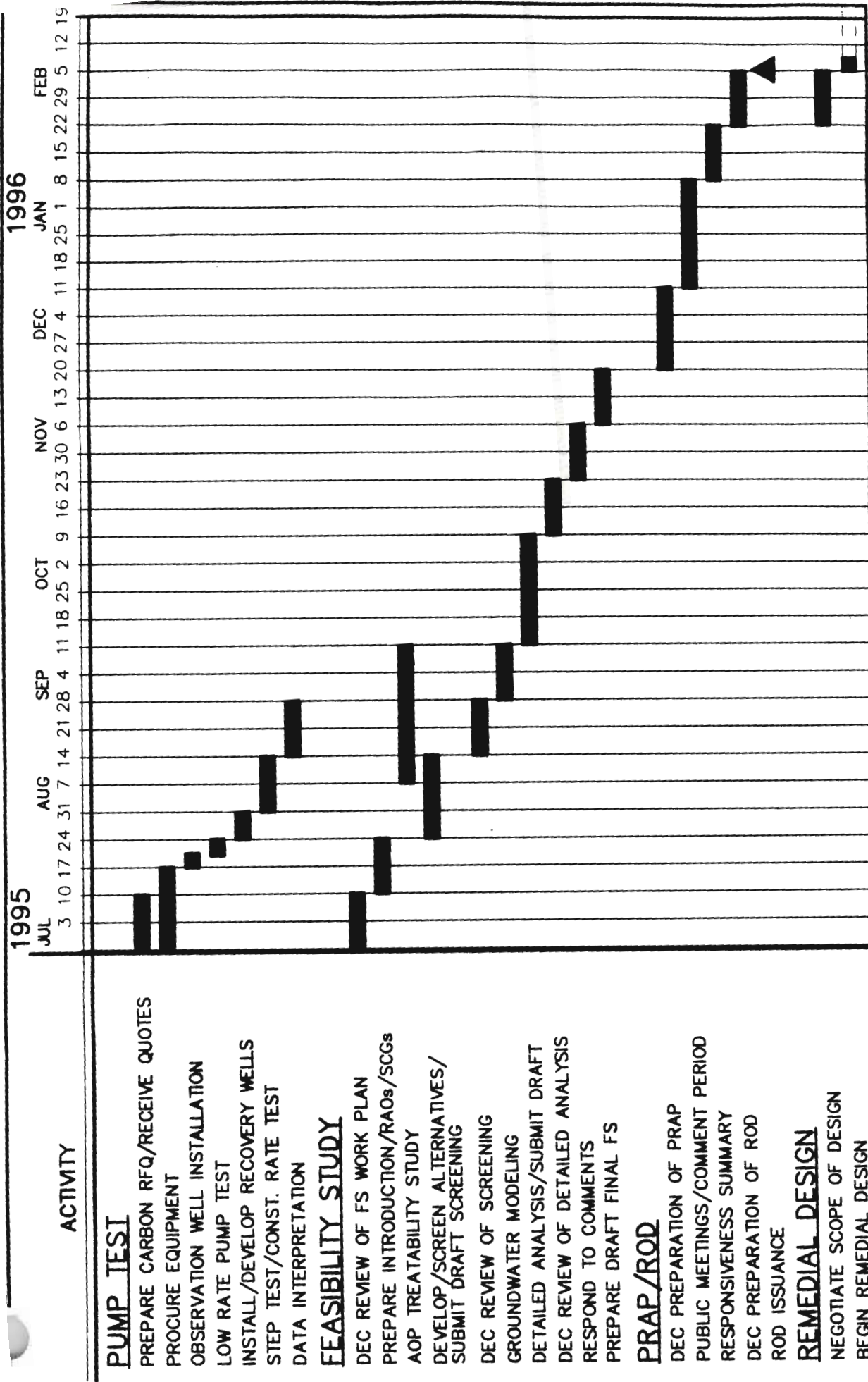
Due to the broad areal extent of outwash aquifer contamination and the variation of contaminant concentrations within this area, at least two groundwater recovery zones will be evaluated for groundwater remediation and thus pump testing at two locations is recommended. The need for a third recovery well will be evaluated should the two areas of influence not intersect. Preliminary low rate pump testing of the existing monitoring well northwest of the Town of Aurora library (viz., MPI-6S) will be conducted to determine if groundwater recovery using a vertical pumping well in this area is feasible from a

groundwater drawdown standpoint. If well MPI-6S produces sufficient drawdown, a recovery well will be installed in the vicinity of this well. However, if insufficient drawdown is observed, use of horizontal collection wells will be considered for this area and further pump testing will not be conducted in this area. A recovery well will be installed near well ESI-3 in the Mr. C Cleaners parking lot. The pump test will continue with step testing followed by 72-hour constant rate testing, concluding with a 12-hour recovery period. Water produced during the pump test will be treated using a temporary activated carbon treatment system prior to discharge to the storm sewer per NYSDEC's recommendation. The sanitary sewer will not be used for treated water discharge since this sewer is known to produce exfiltration which could potentially provide recharge to the pump test area and influence pump test results.

The Pump Test Work Plan, which defines the scope of the pump test, provides observation well installation details and standard operating procedures, outlines pump test field procedures specific to the Mr. C Cleaners site, and presents data reduction procedures, is provided as Appendix M.

7.2.3 Schedule

The proposed schedule for the Pump Test and Feasibility Study is presented in Figure 7-1.



MR. C CLEANERS

REMEDIAL INVESTIGATION REPORT

PUMP TEST/FEASIBILITY STUDY SCHEDULE

NYSDEC

JUNE 1995

**MALCOLM
PIRNIE**

MRC-SCH

LIST OF REFERENCES

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APPENDIX A

- **Documentation of Modifications to Work Plan**

ATTACHMENT A

MR. C CLEANERS REMEDIAL INVESTIGATION PROPOSED INVESTIGATION TO LOCATE A PCE SOURCE IN THE PARKING LOT

Based on our current understanding of site conditions, we are proposing that the sewer bedding test pit task described in the RI Work Plan for the above referenced site be modified as outlined herein. The estimated cost of the additional work is also presented below.

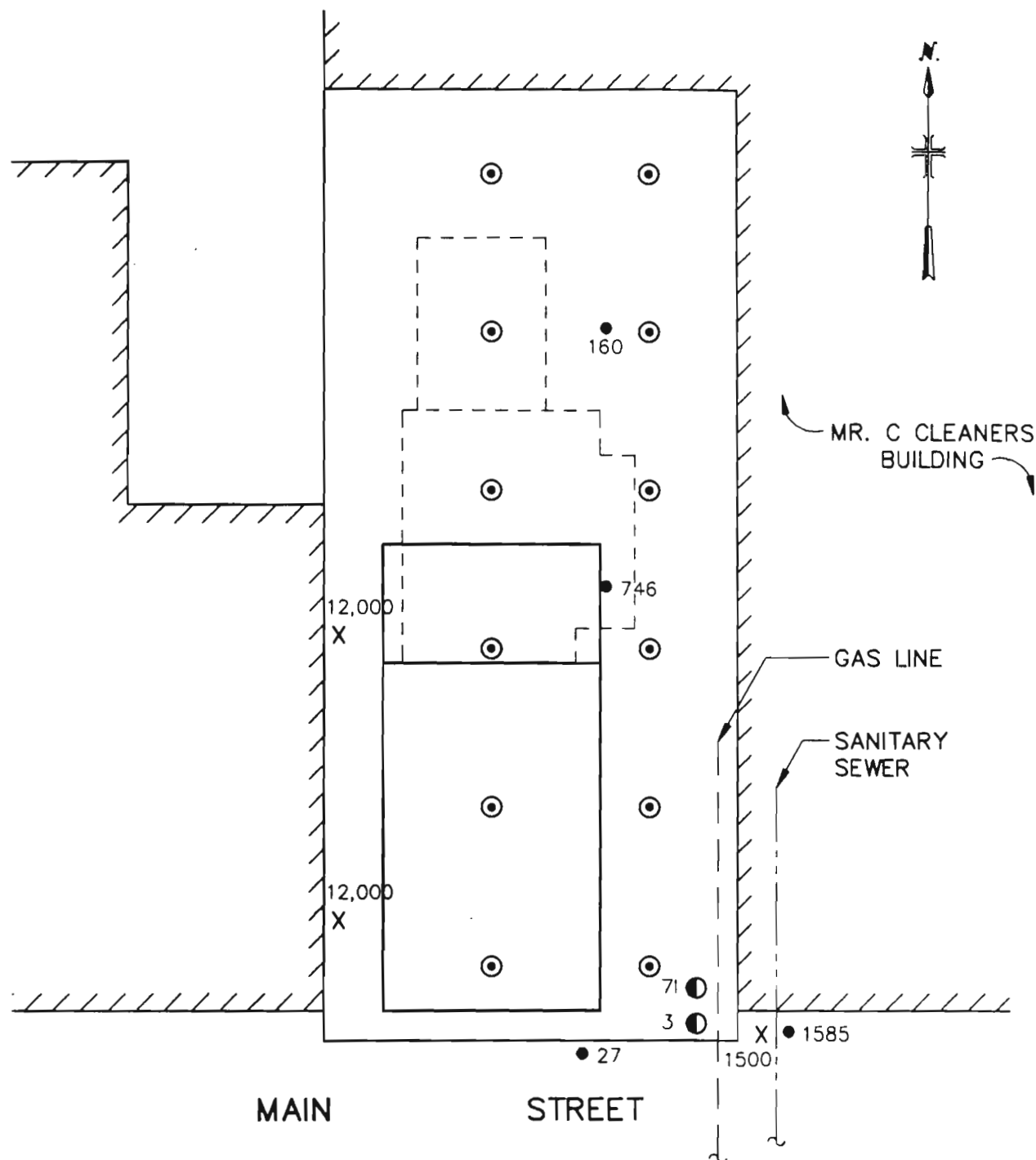
Site Conditions

The RI Work Plan proposed that two test pits would be excavated in the Mr. C's parking lot to locate the sanitary sewer lateral, visually inspect the integrity of the pipe, and obtain samples for analytical testing. Conversations with the Village of East Aurora Department of Public Works and inspection of building plans indicate that the sewer lateral is located beneath the building floor slab and is not accessible to excavation. Also, the gas service line is located beneath the parking lot within five feet of the building.

During the February 1994 soil gas survey performed by Tetra-K, Inc., the parking lot was found to be underlain by a dense material that Tetra-K personnel could not penetrate with monitoring equipment. Inspection of Sanborn maps for the site show that the area of the parking lot had been occupied by buildings from at least 1912 through 1958. The Sanborn maps also show that a laundry occupied the Mr. C's building as early as 1958.

NYSDEC file information indicates that the current owner of the dry cleaning business may have discharged TCE residuals to a floor drain, and prior to 1985 PCE residuals were disposed of in a dumpster located in the parking lot. Disposal practices of previous owners of the dry cleaning business (prior to 1974) are not known. It is possible that the floor drain is connected to the sanitary sewer or to a former dry well.

Proposed Revisions



LEGEND

APPROX. LOCATION OF FORMER BLDGS.
SHOWN ON SANBORN MAPS -

- 1927 MAP ONLY
- 1927 & 1951 MAPS

- X PCE CONCENTRATION FROM PREVIOUS SOIL GAS SURVEYS
- PCE CONCENTRATION FROM PREVIOUS SOIL GAS SURVEYS
- ⊙ PROPOSED SOIL GAS TEST LOCATION

SCALE: 1" = 20'

**MALCOLM
PIRNIE**

DEC-31-PAR

**MR. C CLEANERS
NYSDEC STANDBY CONTRACT
PARKING LOT SOIL GAS SURVEY**

NYSDEC

APRIL 1994

May 20, 1994

New York State Department of
Environmental Conservation
Division of Hazardous Waste Remediation
Bureau of Western Remedial Action
50 Wolf Road
Albany, New York 12233

Attention: Mr. Brad Brown

Re: Revised Scope of Remedial Investigation
Mr. C Dry Cleaners Site, East Aurora, New York

Gentlemen:

As discussed during our telephone conversation between Brad Brown (NYSDEC), Anne Marie McManus (Malcolm Pirnie), and Rob O'Laskey (Malcolm Pirnie) on May 9, 1994, the preliminary results of the groundwater quality sampling performed on April 4 through 5, 1994 indicate that additional groundwater investigation may be required to establish the limits of the PCE groundwater plume at the Mr. C Dry Cleaners Site. Malcolm Pirnie will formally submit a revised budget on Schedule 2.11 forms after the scope of additional groundwater investigation has been defined. However until that time, to keep you current on the status of the project budget to-date, we have summarized the revisions to the scope of the remedial investigation made to-date. These revisions were established based on the original soil gas survey results; the geology identified during the deep boring at the Library; our meeting at Malcolm Pirnie's office on February 17, 1994 between Brad Brown and Greg Sutton (NYSDEC), and Dave Harty, Robert O'Laskey, and Jeanne Asquith (Malcolm Pirnie); and subsequent discussions identified below. The total cost of the revised scope of work that has been performed to-date is approximately \$33,615. This includes the additional subcontractor expenses identified on Table 1 and the labor costs on Table 2. All of the scope revisions have been performed within Task 002 of the project budget. The individual scope revisions are discussed below.

Soil Gas Survey

Due to the presence of relatively high concentrations of tetrachloroethylene (PCE) in the soil gas at the northern and western edges of the Agway property, it was agreed in our discussion on February 17, 1994 that a supplemental soil gas survey should be performed in the area northwest of the site. Tetra-K, Inc., the soil gas contractor, conducted the supplemental survey on March 7 and 8, 1994. A total of 23 soil gas points were installed, sampled and analyzed as well as samples from one manhole location and a sample of the drilling water from the drilling contractor's water tank. Based on these results, the limit of the soil gas plume in the area northwest of the site was defined. Costs were based on unit prices quoted for the initial survey conducted in February 8 through 10, 1994.

Exploratory Borings

Because the site appears to be underlain by a buried bedrock valley rather than by shallow bedrock, it was agreed during the February 17, 1994 meeting that the location, depths, and types of groundwater monitoring wells should be revised to monitor overburden groundwater. Furthermore, it was agreed that in order to properly redefine the well network it would be necessary to advance four exploratory borings at the locations of the three originally proposed deep wells and at the location of MPI-5. The purpose of the exploratory borings was to characterize the geology, determine the continuity of relatively low permeability strata, and to sample low permeability soils for soils testing. After the initial boring, it was agreed to drill the remaining exploratory holes with 4 1/4-inch augers, and abandon the borings after completion.

As shown on Table 1, a total of 284 linear feet of exploratory boring beyond that originally estimated was drilled, sampled, and abandoned. A total of 12 drums were used to containerize drill cuttings.

Bedrock Wells

Due to the substantial depth to bedrock, and the predominance of low permeability soil observed at depth in the exploratory borings, it was agreed during the February 17, 1994 meeting that the three proposed bedrock wells should be replaced by four deep overburden wells screened above the zone of low permeability soils.

Monitoring Network

As agreed in the February 17, 1994 meeting, and in the field during the March soil gas survey, the revised groundwater monitoring network is comprised of eight shallow overburden wells and four intermediate depth overburden wells. The revisions include the addition of three overburden wells. Intermediate depth overburden wells were installed with 10 feet of six slot screen at a depth of approximately 42 feet. Shallow wells were installed as described in the project work plan.

The locations of the three additional wells were selected based on the results of the supplemental soil gas survey, our understanding of site geology from the exploratory borings, and historic groundwater level data.

Test Pits/Parking Lot Soil Gas Survey

The sanitary sewer lateral connecting Mr. C's building to the sanitary sewer is located beneath the building floor slab. A buried gas service line is located beneath the parking lot within five feet of the building. The sewer lateral is not accessible by backhoe and visual inspection of the pipe and sampling of the sewer bedding material is not feasible.

As requested during the telephone conversation of April 6, 1994 between Brad Brown (NYSDEC), Anne Marie McManus (Malcolm Pirnie), and Rob O'Laskey (Malcolm Pirnie), a work plan for a soil gas survey to identify other suspected sources in the parking lot was forwarded to the NYSDEC and verbally approved on April 26, 1994. The soil gas survey was conducted on May 10, 1994. No potential contaminant source was detected during the survey, other than in the vicinity of the existing well cluster (ESI-3/MPI-7I). Therefore, no additional investigation is recommended in this area parking lot.

Mr. Brad Brown
NYSDEC-Albany

May 20, 1994
Page 3

Sample Analysis/Data Validation

Revisions to the groundwater sampling plan were presented in our letter dated March 30, 1994.

Waste Disposal

We are preparing to solicit bids for waste disposal from three hazardous waste brokers. We will send you our proposed bidders list, the requested scope of services, and a copy of the proposed subcontract with the waste broker. Waste disposal costs, including analytical testing, will be estimated based on the requirements defined by the waste broker.

Indoor Air Monitoring

The original scope identified 13 Method 311-7 air analyses to be performed. However, air analyses by Method 311-7 requires samples to be analyzed in duplicate. Also, as jointly requested in the field on March 13, 1994 by Cameron O'Connor (NYSDOH) and Greg Sutton (NYSDEC), an outside background air sample was added to the program. Therefore, a total of 16 Method 311-7 analyses were performed as follows:

- Six upfront QC samples
- Eight samples (4 samples in duplicate)
- One trip blank
- One outside background sample (requested by NYSDEC and NYSDOH in the field)

Sewer Televising

As requested by Brad Brown during our telephone conversation on April 6, 1994, sewer televising has been deleted due to NYSDEC concerns regarding the integrity of the sewers.

Site Mapping and Surveying

Malcolm Pirnie had planned to provide surveying services using in-house staff. However Malcolm Pirnie is now subcontracting all surveying work. We have received five written quotations for surveying services (see attached) as follows:

- Deborah Naybor, PLS, PC - \$1,750
- E & M Engineers, PC - \$4,144
- Lu Engineers, PC - \$5,480
- DeLaPlante-LaJeunesse and Assoc. - \$9,400
- S.P.E.C. Technologies - \$12,375

We propose to use Deborah Naybor PLS, PC of Elma, New York, a certified Women's Business Enterprise, to provide surveying services at the Mr. C's Cleaners site. This firm produced the existing site map for the Phase II investigation and will update the map with new well locations, building footprints, and a larger area.

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Mr. Brad Brown
NYSDEC-Albany

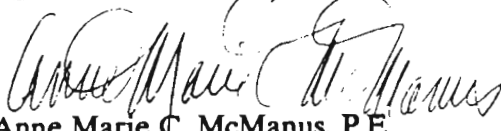
May 20, 1994
Page 4

We will contact you to discuss potential additional revisions to the RI scope to determine the limits of the PCE contamination when we have received the complete data set from the laboratory. As stated earlier, once we have decided on a course of action we will formally revise the project budget to reflect the cumulative changes including a revised schedule and 2.11 forms.

Please do not hesitate to contact us if you have any further questions.

Very truly yours,

MALCOLM PIRNIE, INC.



Anne Marie C. McManus, P.E.
Associate

c: Rob O'Laskey
Jeanne Asquith

0266-314-002
ACM05174.L3

March 30, 1994

Mr. Brad Brown
NYSDEC
Division of Hazardous Waste Remediation
Bureau of Western Remedial Action
50 Wolf Road
Albany, NY 12233

Re: Revised Analytical Program
Mr. C Cleaners Site
East Aurora, New York

Dear Mr. Brown:

Due to the changes made in the number and location of wells at Mr. C Cleaners, and in order to aid in the development of the conceptual model for the site, we are proposing that the analytical testing program be modified as outlined in this letter. The number and cost of tests for waste disposal are also presented in this letter.

Groundwater Monitoring

Table 1 details the proposed well sampling program based on the monitoring network and the need to further develop the conceptual model for the site. Table 1 adds the supplemental wells that we have installed and one of the Agway wells (AG-1). Agway well AG-1 was sampled by Matrix Environmental Technologies, known as MW3 and was found to contain 1,360 ug/l tetrachloroethylene, 54 ug/l trichloroethylene, 4.5 ug/l dichloroethylene and 0.5 ug/l benzene. At the time of preparation of work plan this well was believed destroyed. Since this well is very likely in the plume and sampling it will help define the limits of the contamination, we are recommending that it be added to the sampling program.

Three wells will be sampled for the TCL semi-volatiles, TCL pesticides/PCBs, TAL metals, as well as remediation assessment parameters (iron, manganese, hardness, alkalinity, TSS and TDS). As we have discussed, wells that will be sampled for these additional parameters are wells: MPI-7I, MPI-5, and ESI-3. These wells are located near the probable source of tetrachloroethylene contamination or in the area of the suspected plume; and if these non-volatile compounds are present, analysis at these locations should be able to determine their presence or absence. For purposes of remediation evaluation these wells near or in the plume are appropriate for the evaluation of the groundwater quality for the design of remediation systems.

In total, 25 wells will be monitored for TCL volatile organic compounds. The work plan calls for the monitoring of 21 locations; therefore, the work plan will be amended to include the additional four locations. The number of trip blanks has been increased to four, as it is anticipated that the sampling program may take up to four days to complete. Duplicate samples are changed to reflect 1 per 20 samples and, therefore, will increase to a total of

amend work
plan

two. MS/MSD are also modified to be 1 per 20. Table 3-2 attached in the Work Plan has been changed to reflex these changes.

Sewer Bedding Test Pits

In addition to the volatile analysis of the soils from the test pits, Malcolm Pirnie would like to add one TOC sample to each of the soil samples analyzed to provide data relative to partitioning of the volatiles in the soil matrix.

Waste Disposal

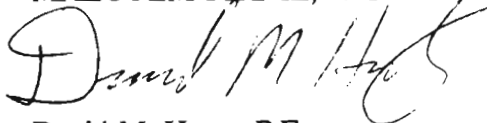
Prior to disposal it is necessary to determine if the soil cuttings are hazardous or solid waste. Determination of the disposal requirements will be in accordance with the NYSDEC TAGM 4032 - Disposal of Drilling Cuttings, November 21, 1989. Drilling cuttings from the off-site wells have been placed into thirty-two 55-gallon drums. We are proposing to group the drums into four groups of eight drums each for both sampling and disposal determination. Eight drums with soils are present at Mr. C's property. These drums will be composited and analyzed for the same parameters as the drums stored off-site. A composite sample (subsample from each drum) from the soil in each group will be sent to NYTEST for analysis. The soils will be tested for TCLP, corrosivity, ignitability and reactivity to determine if the soil is hazardous; and for total TCL volatiles to determine whether, if hazardous, the soils are subject to the land ban restrictions. The cost for these additional analyses have been added to Table 2.11(f) Subcontract Laboratory Services - NYTEST, attached.

We are preparing to solicit bids for waste disposal from three or more hazardous waste brokers. We will send you our proposed bidders list, the requested scope of services and a copy of proposed subcontract with the waste broker.

Please review these proposed additions and modifications to the scope of work so that these can be incorporated into the rebudgeting process for this job. If you have any questions please call.

Very truly yours,

MALCOLM PIRNIE, INC.



David M. Harty, P.E.
Senior Project Engineer

c: Anne Marie McManus
Rob O'Laskey
Jeanne Asquith
0266-314-002/DMH03284.L

TABLE 1 GROUNDWATER MONITORING LOCATIONS MR. C CLEANERS SITE	
Well No.	Location
ESI-1 ESI-3 ESI-4 ESI-5 ESI-6	East of former Post Office Adjacent to Mr. C Paine St. near Church Paine St. Church lawn
AG-1	South of Agway Barn
AG-4 AG-5 AG-6	Corner of Whaley & Main St. South of Agway South of Agway office, near southeast corner
AG-7 AG-8 AG-9 AG-10	North of Agway office, near northwest corner North of Agway office, near northeast corner Northwest of northwest corner of Agway Barn Between Agway Barn and P.O. Box Plus, north
MPI-1 MPI-1I	Corner of Main & Paine Sts. on church property Paine St. near church/ESI-4
MPI-2 MPI-3	Village Hall parking lot Church lawn near Main St.
MPI-4 MPI-4I	Library - east side Library - east side
MPI-5 MPI-5I	North of Agway Barn North of Agway Barn
MPI-6 MPI-7I	Library parking lot Mr. C Parking lot near Main St.
MPI-8 MPI-9	Whaley St. Whaley St.

TABLE 3-2

**PROPOSED GROUNDWATER MONITORING FOR RI
MR. C CLEANER SITE
EAST AURORA, NEW YORK**

Parameter	Analytical Method	Ground-water	Trip Blanks	MS	MSD	Duplicates	Total
Volatiles	91-1	25	4	2	2	2	35
Semi-Volatiles	91-2	3	0	1	1	1	6
Pesticide/PCB	91-3	3	0	1	1	1	6
TAL Metals	(1)	3	0	1	1	1	6
Cyanide	335.2	3	0	0	0	0	3
Iron (T)	200.7	3	0	0	0	0	3
Iron (D)	200.7	3	0	0	0	0	3
Manganese (T)	243.1	3	0	0	0	0	3
Manganese (D)	243.1	3	0	0	0	0	3
Hardness	130.2	3	0	0	0	0	3
Alkalinity	310.1	3	0	0	0	0	3
pH	Field	25	0	0	0	0	25
Turbidity	Field	25	0	0	0	0	25
Spec.Conductance	Field	25	0	0	0	0	25
TSS	160.2	3	0	0	0	0	3
TDS	160.1	3	0	0	0	0	3

T = Total; D = Dissolved
(1) Superfund CLP Inorganics (NYSDEC-ASP 12/91 D-V-1 through D-V-149).

TABLE 2.11(f)

SUBCONTRACTOR LABORATORY SERVICES - NYTEST

TABLE 2.11(f)						
SUBCONTRACTOR LABORATORY SERVICES - NYTEST						
Subtask	Parameter	Method	Matrix	Number Tests	Unit Rate ¹ (\$)	Total
Sanitary Sewer Investigation	Volatiles	91-1	W	11	206	2266
	Volatiles	91-1	S	5	206	1030
Groundwater Monitoring	Volatiles	91-1	W	35	202	7070
	Semi-Volatiles	91-2	W	6	556	3336
	Pesticide/PCB	91-3	W	6	196	1176
	TAL Metals	ASP	W	6	150	900
	Iron	200.7	W	6	7	42
	Manganese	200.7	W	6	7	42
	Hardness	130.2	W	3	10	30
	Alkalinity	310.1	W	3	10	30
	TSS	160.2	W	3	10	30
	TDS	160.1	W	3	10	30
Waste Disposal Testing • Composite of every 8 drums 8 on-site 32 off-site • Sample from upper 6 inches	Cyanide	335.2	W	3	27	81
	TCLP	*	S	5	980	4900
	Ignitability	*	S	5	37	185
	Corrosivity	*	S	5	37	185
	Reactivity	*	S	5	37	185
	TCL Volatiles	91-1(A)	S	5	175	875
	Total					\$22,393
* NYSDEC ASP Volume 3, Part XV.						

16,000

TABLE 2.11(f)
SUBCONTRACT DATA VALIDATION SERVICES - ECHEM, INC.

Subtask	Parameter	Method	Matrix	Number Tests	Unit Rate (\$)	Total
Sanitary Sewer Investigation	Volatiles	91-1	W	11	40	440
Sewer Bedding Test Pits	Volatiles	91-1	S	5	40	200
Groundwater Monitoring	Volatiles	91-1	W	35	40	1,400
	Semi-Volatiles	91-2	W	6	50	300
	Pesticide/PCB	91-3	W	6	40	240
	TAL Metals	ASP	W	6	65	390
	Cyanide	335.2	W	3	5	15
						\$2,985

ATTACHMENT A

MR. C CLEANERS SUPERFUND SITE

PHASE II REMEDIAL INVESTIGATION PROJECT SCOPE

INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has assigned to Malcolm Pirnie a Remedial Investigation (RI) at the Mr. C Cleaners site, East Aurora, New York (Work Assignment D-002852-7). Malcolm Pirnie completed a Phase I RI at Mr. C Cleaners in July 1994, which recommended that a Phase II RI be completed at the site. The Phase I RI Report, dated July 1994 and approved by the NYSDEC in October 1994, should be consulted for a detailed description of the results of the Phase I RI. As described in the Phase I RI Report, the primary objectives of the Phase II investigation are to:

- Delineate the horizontal extent of the PCE groundwater plume at the water table and in the basal zone of the outwash sand and gravel.
- Delineate the horizontal extent of the PCE plume in the lacustrine sandy silt.
- Identify the presence or absence of PCE in the stratified till unit and assess the potential for PCE migration to the principle aquifer.
- Analyze the potential qualitative health risks that may prevail in the absence of remedial action.

Investigative methodologies will be as described in the Phase I RI Work Plan dated January 1994 or as amended herein.

INVESTIGATIVE APPROACH

The investigative approach to the Phase II RI is described below:

Plume Identification

Because the actual extent and direction of plume migration cannot be accurately predicted from the available information, the distribution of chlorinated organics downgradient from the Phase I RI monitoring well locations will be assessed using a screening methodology. The concentration of volatile organics in groundwater will be determined in a field laboratory, and the results will be used to locate additional test borings and final monitoring well locations.

A maximum of 20 test borings will be drilled to a maximum depth of 40 feet using 2 1/2-inch hollow stem augers. A limited number of split spoon samples will be collected in each boring to confirm the depth of geologic contacts identified during the Phase I RI. Groundwater samples will be collected using a Hydropunch™ sampler by advancing the augers to the top of the sampling interval, driving the Hydropunch™ sampler five feet ahead of the augers, and allowing the sampler to fill with groundwater from the target interval. Although some degree of downhole VOC migration may occur during drilling, downhole VOC migration is not expected to mask substantial increases or decreases in VOC concentrations with depth.

A minimum of two groundwater samples will be collected from each boring, except at borings located adjacent to an existing well. One sample will be collected at the water table (estimated depth 10 feet below grade), and one sample at the base of the outwash sand and gravel (estimated depth 30 feet below grade). In addition, groundwater samples from the base of the outwash sand and gravel will be collected near ESI-3, MW-7, and MPI-3S. Test borings will be advanced into the lacustrine sandy silt at MPI-6S and MPI-3S to determine the extent of PCE migration in the less permeable lower zone of the water table aquifer.

Preliminary test boring locations are identified on Plate 1 (attached). In general, borings will be located west of the First Presbyterian Church and north/northwest of MPI-6S along Fillmore Avenue.

Village residences reportedly have shallow wellpoints that are used for irrigation purposes. A private well survey questionnaire will be circulated to homeowners located in the study area to determine the location, construction, and use of the wells. Selected private wells will be sampled for analysis of volatile organics in the on-site field laboratory. This

information will be used to supplement data collected during Hydropunch™ sampling. An elevation and location survey will be performed on selected private wells.

Final monitoring well locations will be selected after reviewing all preliminary groundwater analyses with the NYSDEC.

Source Investigation

Soil borings will be performed to determine whether VOCs detected in groundwater originated from the sanitary sewer lateral at Mr. C Cleaners. Soil samples will be collected from the unsaturated zone as close to the sewer lateral as possible.

Representative portions of each split spoon sample will be transferred to a laboratory-cleaned sample jar and a 6 oz. glass archive jar immediately after opening the split spoon. The archive sample will be tested for Total Volatile Organics (TVO) in the headspace using a PID. Laboratory-cleaned jars exhibiting the highest TVO concentrations will be analyzed for volatile organic compounds in the on-site field laboratory.

Additional subsurface soil samples may be collected from the parking lot area for analyses of VOCs.

Monitoring Well Installation

Between 5 and 10 new monitoring wells will be installed with a maximum of two wells screened in the lacustrine deposit (maximum depth 42 feet), and a maximum of 8 wells installed in the outwash deposit (maximum depth 30 feet). These will be used to verify the results of preliminary field groundwater analyses, to monitor the progress of future groundwater remedial measures. Well installation procedures will be consistent with the procedures used during the Phase I RI.

A single monitoring well will be installed adjacent to MPI-4I to a depth of 76 feet to verify the predicted absence of PCE concentrations in the stratified till. This will be a double cased well designed to prevent the downhole migration of volatile organics detected in MPI-4I during the Phase I RI. Based on the geologic log for soil boring MPI-4D, a 10-inch steel casing will be installed through 12-inch hollow-stem augers to a depth of 45 feet, or approximately three feet below the base of the lacustrine deposit. The 10-inch casing will be tremie grouted in-place using a cement-bentonite grout. After allowing the grout to set overnight, 4 1/4-inch augers will be advanced to a total depth of 66 feet without

sampling, and then another 10 feet with continuous sampling to verify the geologic conditions in the monitoring interval. The monitoring well will be comprised of a 10-foot long, 2-inch I.D., 10 slot SCH 40 PVC well screen with flush threaded, 2-inch I.D., SCH 40 PVC riser to grade. The borehole and annulus will be backfilled with Morie #0 sand pack to 2-feet above the screen, one to two feet of bentonite pellets, followed by a high-solids bentonite grout to grade. Well development and slug testing will be performed by Joe Lu, P.C. with oversight by Malcolm Pirnie, Inc. An elevation and location survey for each well will be performed by Deborah Naybor, P.L.S.

Groundwater Sampling

All Phase I and Phase II monitoring wells (a maximum of 23 wells), and existing wells ESI-3, ESI-4, ESI-5, and ESI-6 will be sampled for volatile organics in accordance with the quality control/quality assurance procedures identified in the January 1994 RI Work Plan. Table 1 summarizes the groundwater sampling and analysis program. Groundwater levels will be measured in all existing and new monitoring wells, and selected private wells prior to groundwater sampling. Groundwater sampling for volatile organics will be performed by Joe Lu, P.D. with oversight by Malcolm Pirnie, Inc.

In addition, the deep well screened in the stratified till will be sampled for enriched tritium isotope analyses to determine the presence of recently recharged groundwater in the stratified till. Recently recharged water is herein defined as water with a detectable concentration of tritium (viz. greater than 0.8 Tritium Units). The absence of recently recharged water and no detectable volatile organics would indicate a low potential for hydraulic connections to the contaminated water table aquifer.

Indoor Air Sampling

Indoor air from basements overlying the PCE groundwater plume will be sampled for PCE using the sampling and analysis procedures specified by NYSDOH Method 311-7 and identified in the January 1994 RI Work Plan. Sampling locations will be selected after the PCE groundwater plume has been delineated. Analytical expenses are based on analyses of an estimated 10 new locations sampled in duplicate, resampling of 4 Phase I RI locations in duplicate, one outdoor background, one trip blank and 6 method calibration samples in accordance with NYSDOH Method 311-7 (a total of 28 analyses).

Exposure Pathway Analysis

Perform an Exposure Pathway Analysis, as described in the January 1994 RI Work Plan, including assessments of exposure to volatilized PCE in basements overlying the PCE groundwater plume and exposure from potential groundwater use.

Final RI Report

A final RI report will be prepared to present the following:

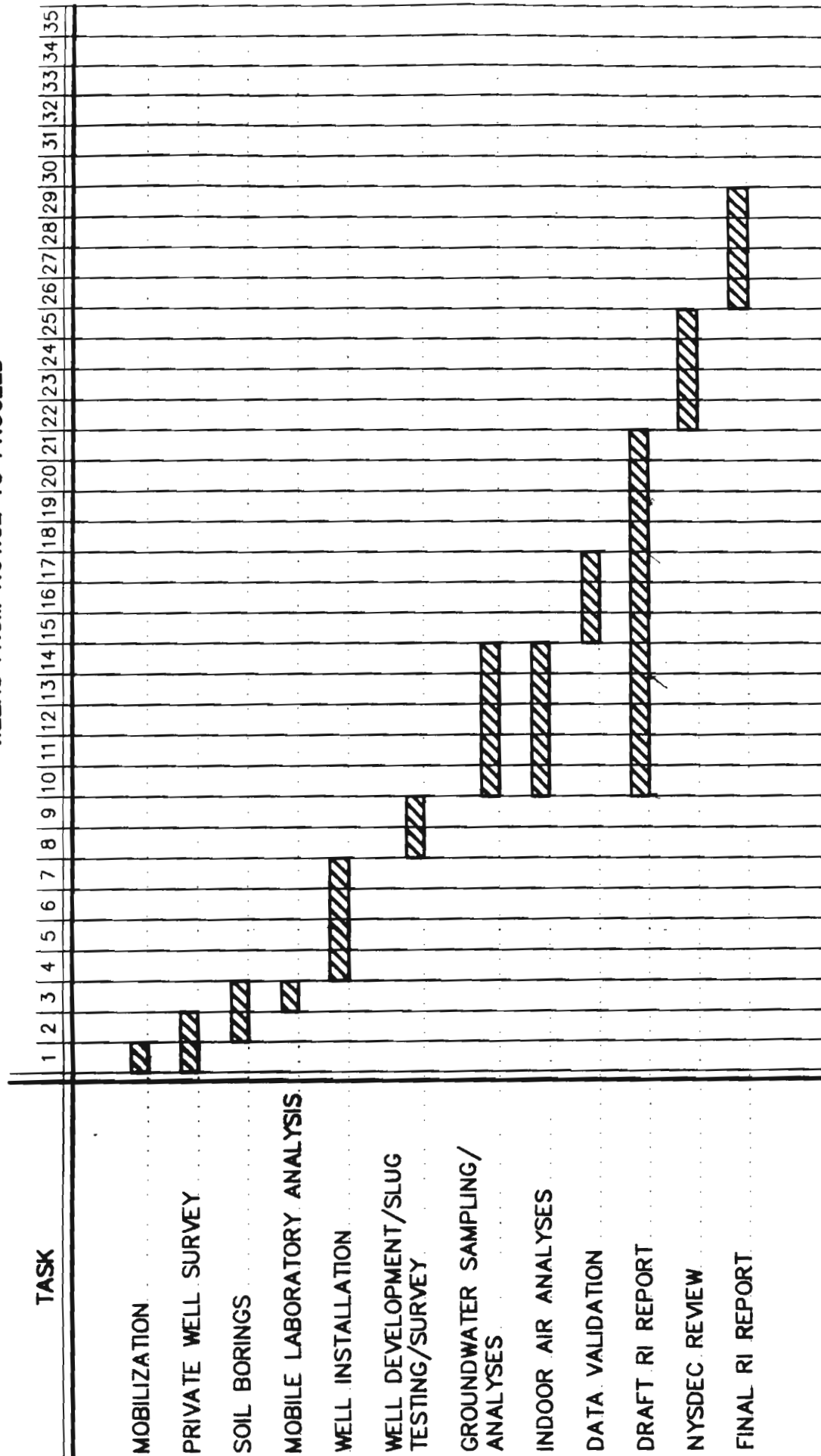
- Combined findings and conclusions of the Phase I and Phase II field activities.
- An Exposure Pathway Analysis to evaluate the potential qualitative health risks that may prevail in the absence of remedial action.
- Recommendations for aquifer testing to support an engineering analysis of the alternatives for remediation of the aquifer.

The final report will present a complete discussion of all phases of RI activity.

Schedule

Figure 1 presents a schedule for the Phase II RI activities. The work is anticipated to take approximately 7 months (29 weeks) from the Notice to Proceed to submission of the Final RI Report.

WEEKS FROM NOTICE TO PROCEED



MR. C CLEANERS SUPERFUND SITE
PHASE II REMEDIAL INVESTIGATION PLAN
PHASE II SCHEDULE

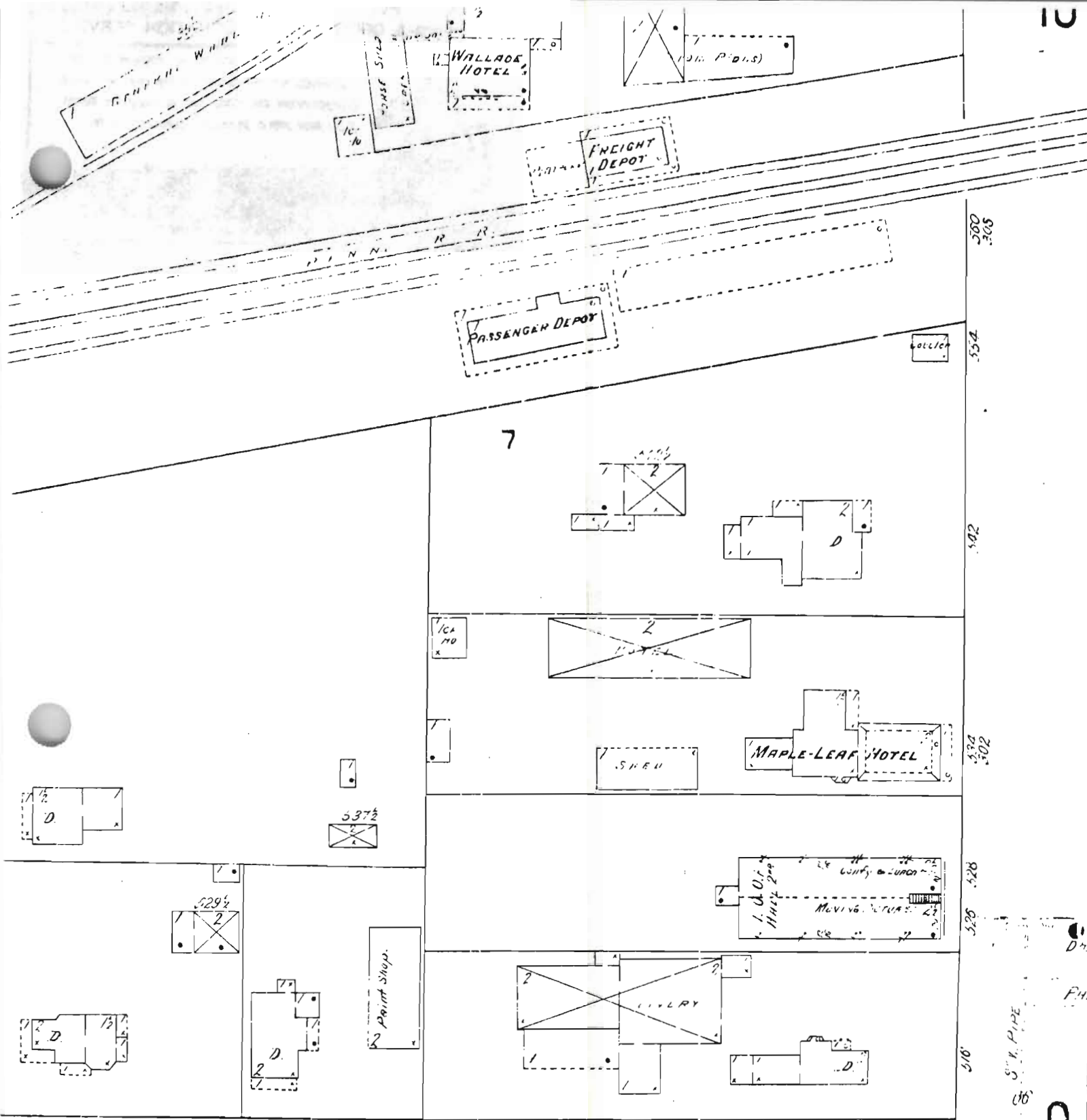
NYSDEC

DEC-00-SFS

**MALCOLM
PERRINE**

APPENDIX B

- Sanborn Maps



WHALEY 3 AV.

Scale of Feet.

50 40 30 20 10 0 50 100 150

MAPPING & GEOGRAPHIC POSITION SERVICE

THIS SANBORN MAP IS A CERTIFIED COPY PRODUCED BY SANBORN FROM ITS ARCHIVES. INFORMATION ON THIS MAP IS DERIVED FROM SANBORN FIELD SURVEYS CONDUCTED IN:

1912

WHALEY

FILLMORE

AV.

MAPPING & GEOGRAPHIC INFORMATION SERVICE



THIS SENBORN MAP IS A CERTIFIED COPY
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CORRECTION ON THE MAP IS DERIVED FROM
SENBORN FIELD SURVEYS CONDUCTED BY:

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529

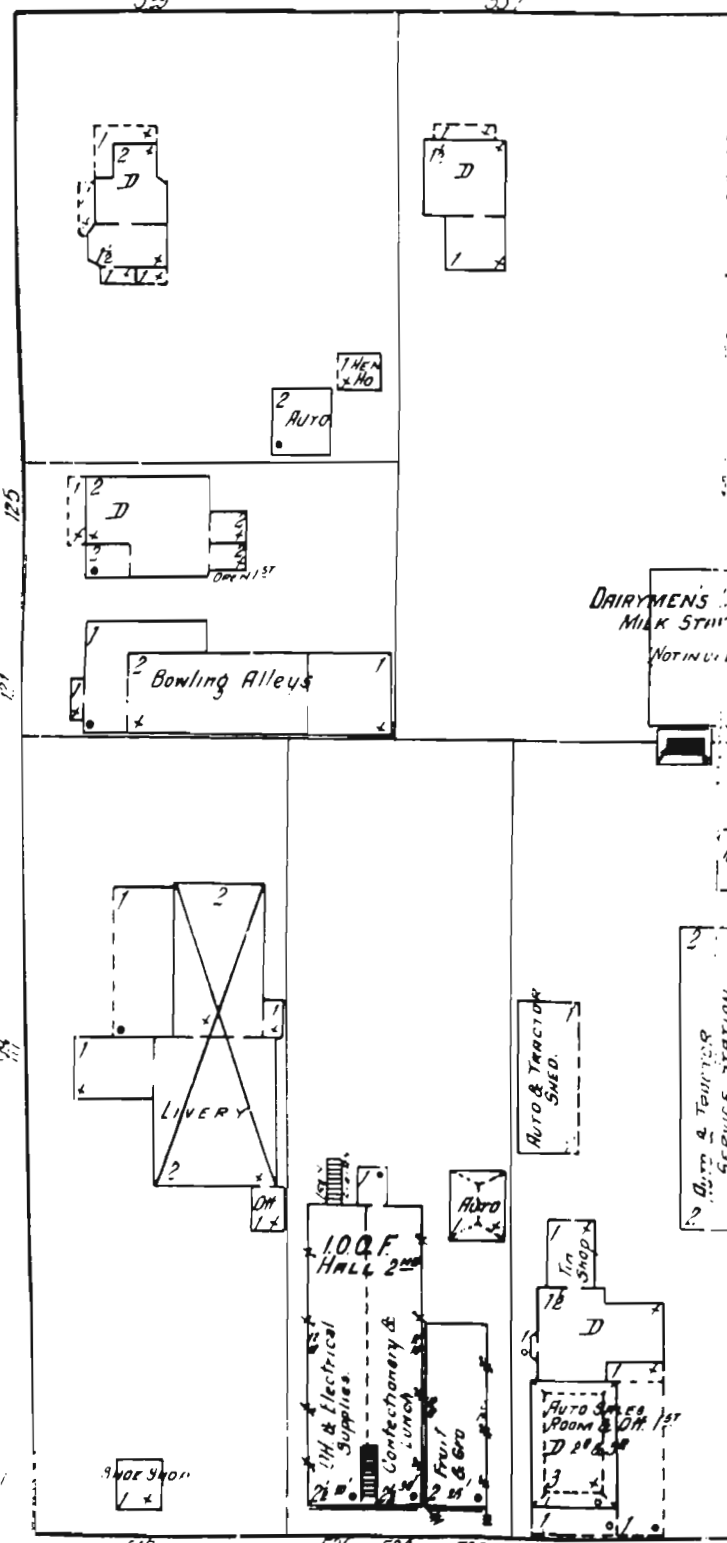
537

125

(51)

(52)

55



DAIRY MEN'S LEAGUE
MILK STATION

NOT IN USE

ICE HO.

AUTO & TRACTOR
SERVICE STATION
CEMENT FLOOR ELEVATOR

AUTO & TRACTOR
SHED

1st Shop
12
D
AUTO SALES
ROOM & OFFICE
D 2nd

100 F.
HALL 2nd
Electrical
Supplies
Confectionery &
Lunch
Fruit & Gro.
2nd

LIVERY

Garage

CRUSHED
STONE
MATERIAL

CRUSHED
STONE
MATERIAL

7

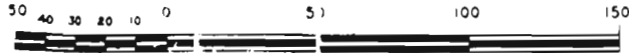
PENNA. R.R.
FREIGHT STATION



(53)

8" WIDE (WIND)

Scale of Feet.



Copyright 1920 by the Senborn Map Co.

6

PAINE
ST

7

M

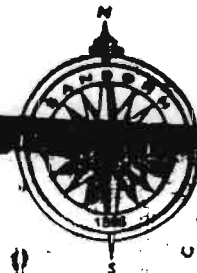
FILMORE

AV.

PLANNING & GEOGRAPHIC

INFORMATION SERVICE

THIS SANBORN MAP IS A CERTIFIED COPY
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INFORMATION ON THIS MAP IS DERIVED FROM
SANBORN FIELD SURVEYS CONDUCTED IN:



1927

VILEY

DAIRYMEN'S LEAGUE
COOPERATIVE ASSN INC
EAST AURORA PLANT

WHEEL AUTO
SALES SERVICE

GARAGE
CAR AUCTION
CONC

100' HALL
2ND

AUTO
REPAIR SHOP
34 & 1116
AUTO
CHLDR ROOM

P.R.R. FREIGHT STATION

P.R.R. PASSENGER STATION

Scale of Feet

MAIN

PRINCE ST.

6

7

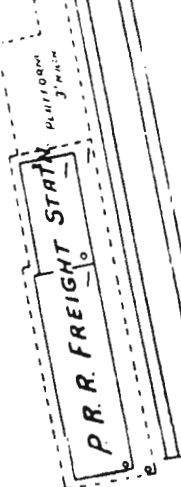
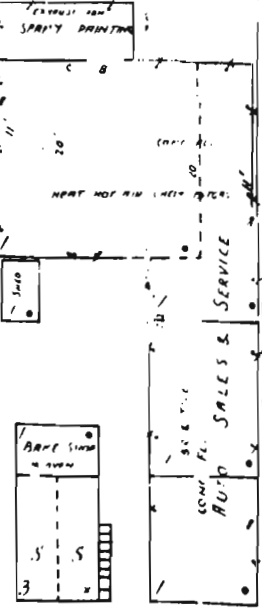
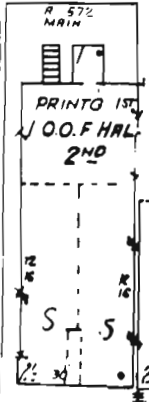
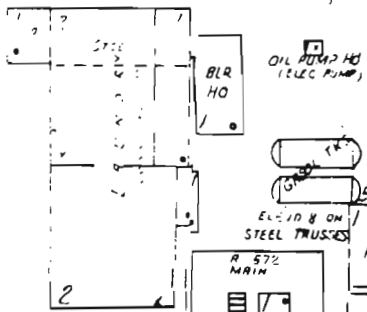
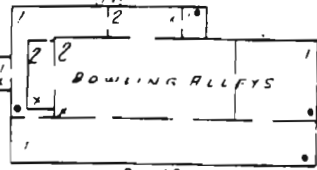
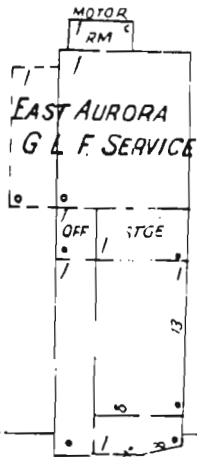
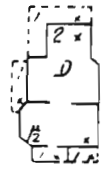
WHALEY AV.

THIS SANBORN MAP IS A CERTIFIED COPY
PRODUCED BY SANBORN FROM ITS ARCHIVES.
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SANBORN FIELD SURVEYS CONDUCTED IN:

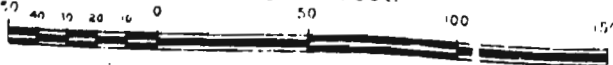
1951



FILMORE AV.



Scale of Feet.



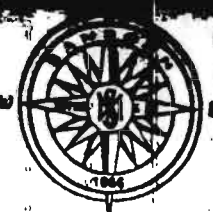
MAIN

10

THIS SANBORN MAP IS A CERTIFIED COPY

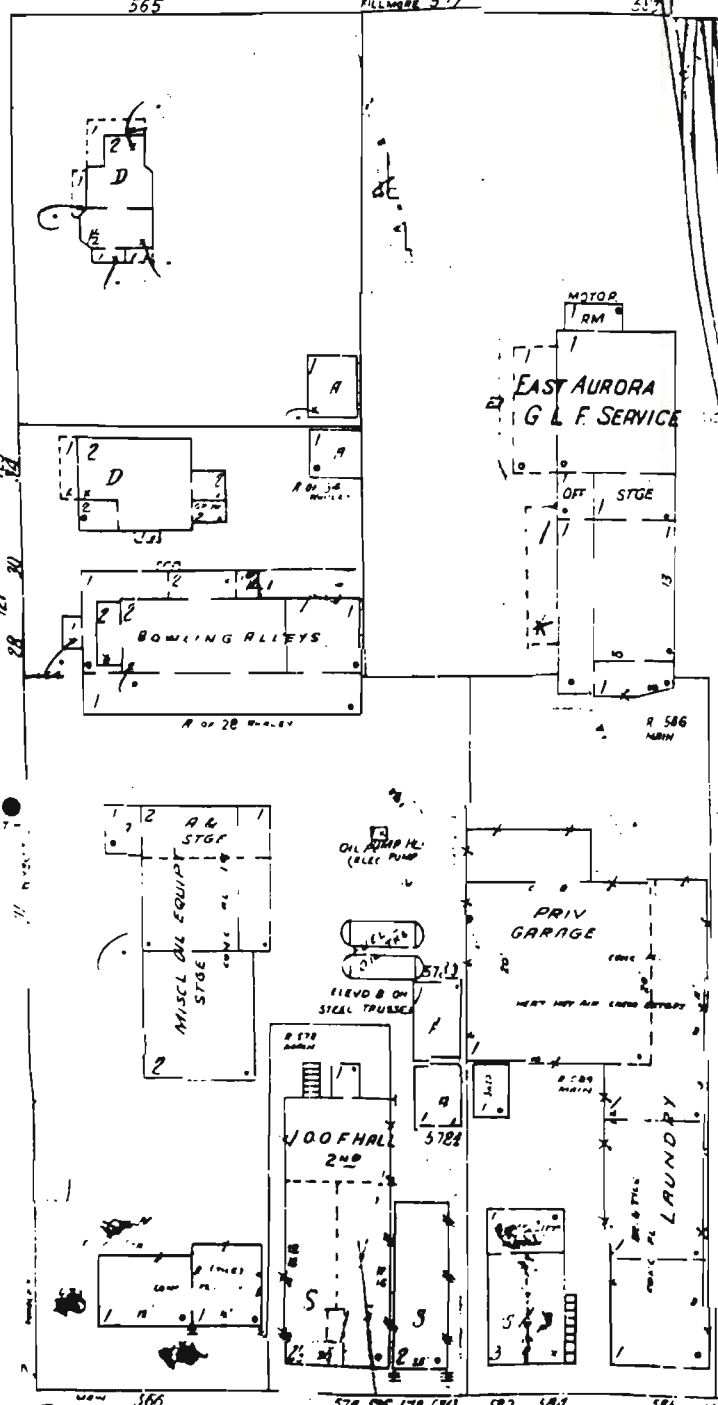
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SANBORN FIELD SURVEYS CONDUCTED IN:

1958

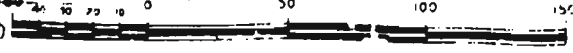


WHALEY AV.

FILLMORE AV.



Scale of Feet



MAIN

6

PRING ST.

7



APPENDIX C

■ Habitat Based Assessment

I. INTRODUCTION

Malcolm Pirnie conducted a habitat-based assessment of Mr. C Cleaners and its vicinity to evaluate potential ecological exposure pathways. The intent of this investigation is to identify sensitive species or habitat potentially affected by the off-site migration of chemicals from the project site. Considerations discussed in this report include:

- a summary of the environmental setting of East Aurora, NY
- a characterization of naturally occurring flora and fauna found in the study area
- presence of threatened and endangered flora and fauna or species of special concern
- identification of significant habitats recognized by the NYSDEC
- proximity to NYSDEC and/or federal wetland areas
- values of resources to humans

The report includes information as directed by the New York State Department of Environmental Conservation (NYSDEC) in their guidance for preparing Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (1991). Data were collected from field observations, the NYSDEC, and from other municipal agencies.

II. SITE DESCRIPTION

Topology - Mr. C Cleaners is centrally located in East Aurora, NY near the following geographic coordinates: 42°45'49" north and 78°36'58" west. A 1965 USGS topographic map of East Aurora, NY highlights the extensive development of this area (See Figure 1). The Pennsylvania Railroad runs in a north to south direction immediately east of the site.

The location of Mr. C Cleaners is approximately 915 feet above mean sea level (MSL). The surrounding relief ranges from 900 to 920 feet above MSL. The village lies in a flat expanse between two watercourse that eventually merge. East Aurora lies in the Erie-Ontario Plain province. This area is characterized by slight topographic relief, except in the immediate vicinity of the major drainage-ways (USDA-SCS, 1986).

Approximately 1050 feet north of Mr. C Cleaners, Tanner Brook flows in a southwest direction, is diverted through a culvert underneath Main Street, East Aurora, and eventually feeds the East Branch of Cazenovia Creek west of the village. The East Branch of Cazenovia Creek flows in a northwest direction, past Tannery Brook, and merges with the West Branch to form Cazenovia Creek, a tributary of Buffalo River and eventually Lake Erie. Both Cazenovia Creek and Buffalo River are main drainage-ways of central Erie County. Most streams in Erie County drain in a northwesterly to westerly direction.

Land Use and Coverture - A 1978 aerial photograph shows the extensive residential and commercial development that exists within a half-mile radius of the site (See Figure 2). Few areas of natural habitat occur in this area. In the developed areas, residences are landscaped and vegetation is typified by lawns and foundation plantings of evergreen and deciduous trees and shrubs. Typical vegetation includes sugar maple, spruce, and oak. Field observations within a half-mile radius confirmed the absence of significant habitat and provided no evidence of obviously stressed vegetation.

Fish and Wildlife Resources - Cazenovia Creek and Buffalo Creek are in the Lake Erie (East End) - Niagara River Drainage Basin. The East Branch of Cazenovia Creek is a perennial stream that generally measures more than 40 feet across. The watercourse has cut through the bedrock to form a river valley. Therefore, wetland areas rarely occur along the Creek's banks. Field observations revealed depositional islands sporadically occurring along and within the watercourse, supporting small pockets of wetland vegetation (i.e., cattails). The Creek's substrate consists primarily of sediment. Gauge station data collected near East Aurora during the 1960s measured discharge rates ranging from 6.03 feet³/second to 73.8 feet³/second (USGS 1979). This fluctuation suggests that the Creek's flow is largely dependent upon precipitation and season.

The NYSDEC classifies the potentially impacted section of the East Branch of Cazenovia Creek as a Class B, Standard B watercourse. This implies that the waters are pristine enough for primary contact (i.e., swimming, diving, water skiing, etc.) and secondary contact recreation (i.e., fishing, boating, etc.). Further, the waters are suitable for fish propagation and survival; however, NYSDEC does not indicate that this watercourse is a trout stream. The standards presented in Title 6, Chapter X, Part 701 of the New York

State Code of Rules and Regulations set measurable limits on pollution indicators including turbidity, colloidal solids, oil and floating substances, phosphorus and nitrogen, and taste-, color-, and odor- producing toxic or deleterious substances. In addition, Standard B surface waters should have a pH greater than 6.5 and no more than 8.5. For non-trout waters, the average daily dissolved oxygen should not be less than 5.0 mg/l, and at no time less than 4.0 mg/l.

The USGS map indicates that Tannery Brook is a perennial stream that generally measures less than 40 feet across. Field observations revealed that the actual stream width ranges from 10 to 15 feet across. Its substrate consists primarily of rocks and gravel. Vegetation was not observed in the brook, however, in some areas, vegetation grows immediately along the banks of the brook. Gauging station data are not available for the Brook. Based on field observations conducted during June 1994, the depth of Tannery Brook is generally less than one foot (MPI, 1994).

Tannery Brook is designated as Class C, implying that the waters are best used for fishing. These waters are suitable for primary and secondary contact recreation, although other factors such as extensive development may limit the use for these purposes. Water quality standards designated for this brook are B standards.

Significant Natural Resources - Based upon field observations and correspondence from the NYSDEC, no significant habitats and threatened or endangered species exist within two miles of Mr. C Cleaners. The following discussion focuses on wetlands that occur within a two-mile radius of the site and that could be affected by contamination emanating from Mr. C Cleaners.

Wetlands - Six New York State regulated wetlands exist within a two-mile radius north of the site (See Figure 3). Due to its proximity and the relatively flat topography, only one system, known as Sinking Ponds, could conceivably be affected by chemicals of potential concern released from Mr. C Cleaners. This wetland system is located approximately one-half mile north of the site and extends in a northeast direction toward Buffalo Creek. According to the National Wetlands Inventory (USFWS, 1981), Sinking Ponds consists of five distinct ecosystems as presented in Table 1 and Figure 4. The New York State Department of Transportation (NYSDOT) map for Erie County indicates that an area of

the Sinking Ponds ecosystem has been designated as a wildlife sanctuary. In addition, classified archaeological sites exist in the area. Based on the general northwest drainage patterns of the watershed and the surface features of the area (i.e., Tannery Brook and the railroad bed), surface water and groundwater are not expected to affect this wetland area.

TABLE 1	
SUMMARY OF WETLAND ECOSYSTEMS IN SINKING PONDS MR. C CLEANERS SITE	
PFO1E	Palustrine, broad-leaved deciduous forest; seasonally saturated
P ^{ss1} /EM5	Palustrine mixed: scrub/shrub (broad-leaved, deciduous) and emergent, narrow-leaved persistent
PSSE	Palustrine scrub/shrub; seasonally saturated
POWH	Palustrine open water; permanent
PEM5F	Palustrine emergent; narrow-leaved, persistent; semipermanent

However, neither the NYSDEC Freshwater Wetlands maps nor the National Wetlands Inventory maps depict any wetland areas within the village of East Aurora, between the branches of Tannery Brook and the East Branch of Cazenovia Creek. Based on the topography and hydrogeography of the area, the wetland areas identified within a mile radius south of the site on the NWI maps are not expected to be affected by chemical migration from Mr. C Cleaners.

Biota - Mr. C Cleaners is centrally located in the village of East Aurora. Consequently, typical wildlife species known to occur include those that have adapted to suburban and urban environments (i.e., raccoons, skunks, house sparrows, etc.). The New York State Natural Heritage Program reported one species of significance to the area. That is the Bigeye Chub, a fish species last seen near Orchard Park in 1920. Although classified as very vulnerable in New York State, the species is apparently secure globally and unprotected by either federal or statutory law. Past chemical releases from Mr. C Cleaners are not believed to have any potential impact upon sensitive species.

Resource to Humans - According to the NYSDEC Division of Lands and Forest, several historic structures exist within a half-mile radius west of the site. These include the Millard Fillmore House and the Roycraft Campus. Hamlin Park also exists approximately one-half mile south of Mr. C

Cleaners. Because groundwater is the principle migration route of chemical contaminants, minimal impacts to these historical structure and outdoor facilities would be expected.

As mentioned previously, the New York State Office of Parks, Recreation and Historic Preservation confirmed the existence of classified archeological sites near the Sinking Ponds wetlands. However, the general northwest drainage patterns of the watershed and its topography suggest that chemical migration from Mr. C Cleaners would not affect this sensitive area.

III. EXPOSURE ASSESSMENT

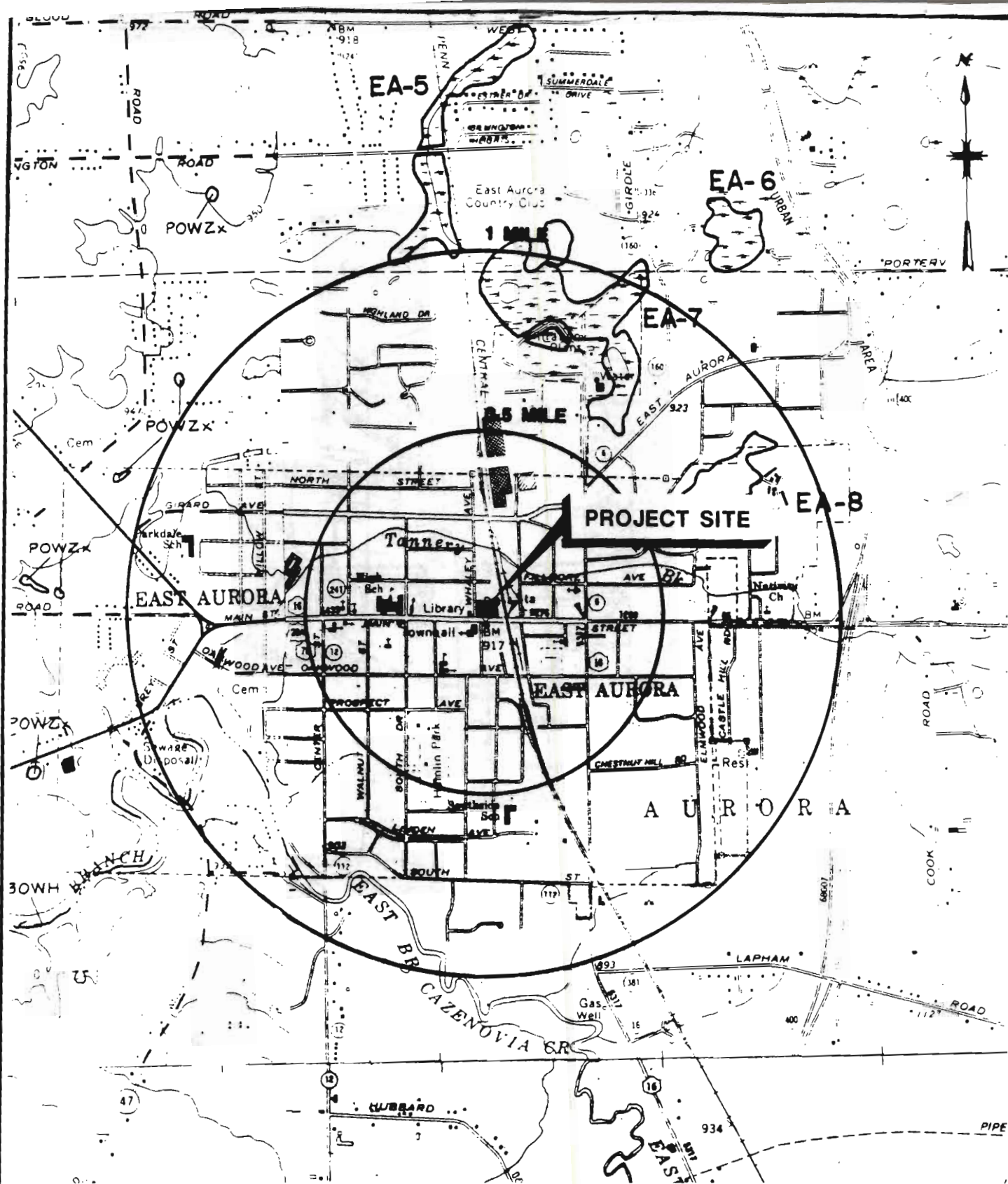
Based on the site history, the suburban/urban landscape, and the impervious surfaces that surround Mr. C Cleaners, groundwater contamination appears to be the only potential migration and exposure pathway associated with the site. Sample analysis of stormwater and sewage discharge provide no evidence of contamination, indicating that surface water is an unlikely pathway of chemical migration. Contaminated groundwater may impact the Sinking Ponds wetland system located approximately 1/2 mile northeast of the site. However, the topographic features and watershed characteristics suggest that groundwater flows in a northwest direction, away from this sensitive area.

A preliminary list of chemicals of potential concern and their fate-and-transport characteristics are presented in Table 2. If contaminated groundwater reaches open surface water bodies, sensitive species may incur adverse effects. However, the vapor pressures and Henry Law constants for all the chemicals of concern are high, indicating that these chemicals volatilize into the atmosphere before impacting the environment. The chemicals are moderately to highly water soluble, indicating that chemicals released onto soils are likely to leach down into the groundwater. All of the chemicals have low log Kow and bio-concentrations-factor (BCF) values indicating that little potential exists for long term bioconcentration in any chronically exposed population.

The drainage patterns of the Lake Erie-Niagara River Drainage Basin, the topology of East Aurora, and the nature of the contaminants potentially emanating from Mr. C Cleaners suggest that a plume of contamination as defined during the Phase I Remedial Investigation would not likely affect any significant or sensitive flora and fauna.

REFERENCES

- Howard, PH. 1989. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Volume I. Large Production and Priority Pollutants . Chelsea, MI: Lewis Publishers.
- Howard, PH. 1990. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Volume II. Solvents . Chelsea, MI: Lewis Publishers.
- New York State Department of Environmental Conservation. 1991. Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites. Division of Fish and Wildlife.
- New York State Department of Environmental Conservation. 1994. Personal communication between Gail Spann, NYSDEC, Division of Fish and Wildlife and Gina Oliverio Senia, MPI.
- New York State Department of Environmental Conservation. 1994. Personal communication between Nicholas Conrad, NYS Natural Heritage Program and Kathleen Bailey, MPI.
- New York State Office of Parks, Recreation and Historic Preservation. 1994. Personal communication between Elisabeth A. Johnson, Program Analyst for the Field Services Bureau and Kathleen Bailey, MPI.
- NYSCRR Title 6, Chapter X, Part 701: Official Compilation of Codes, Rules and Regulations of the State of New York, Volume A-6,. 1986.
- United States Department of Agriculture - Soil Conservation Service. 1986. Soil Survey of Erie County, New York.



SOURCE: NYSDEC,
EAST AURORA, NY QUAD 1986
HOLLAND, NY QUAD 1986
COLDEN, NY QUAD 1986
ORCHARD PARK, NY QUAD 1986

NOTE: NOMENCLATURE INDICATES SITE IDENTIFICATION
NUMBER FOR REFERENCE TO THE NYSDEC

SCALE: 1" = 24,000'

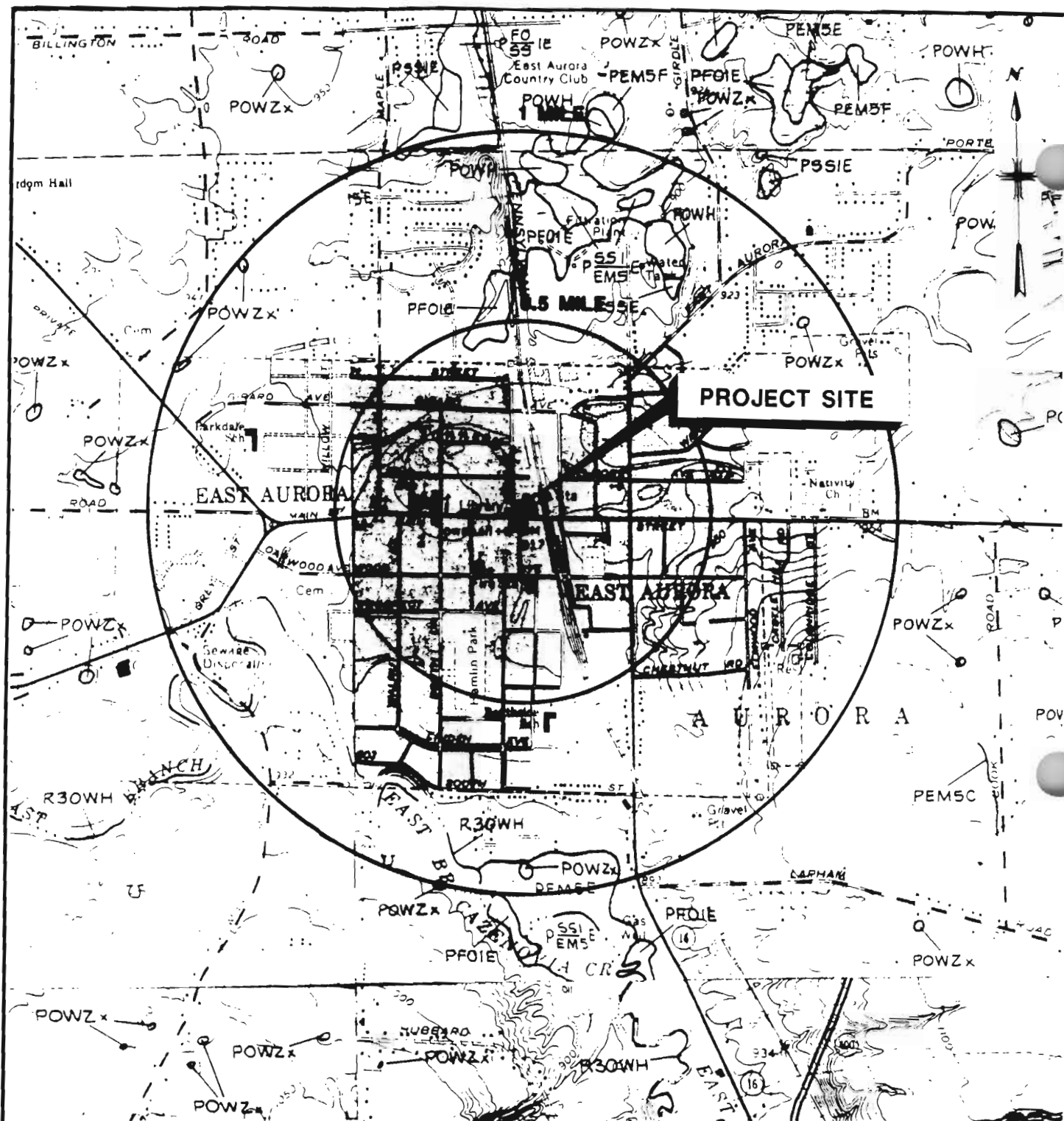
**MALCOLM
PIRNIE**

NYSDEC

MALCOLM PIRNIE, INC

MR. C CLEANERS

NEW YORK STATE FRESHWATER WETLANDS MAP



LEGEND:

- PFOIE - PALUSTRINE, BROAD-LEAVED DECIDUOUS FOREST; SEASONALLY SATURATED
- PSEI/em5 - PALUSTRINE MIXED: SCRUB/SHRUB (BROAD-LEAVED DECIDUOUS) AND EMERGENT NARROW-LEAVED PERSISTENT
- PSSE - PALUSTRINE SCRUB/SHRUB; SEASONALLY SATURATED
- POWH - PALUSTRINE OPEN WATER; PERMANENT
- PEM5F - PALUSTRINE EMERGENT; NARROW-LEAVED, PERSISTENT; SEMI-PERMANENT

SOURCE: NWI

EAST AURORA, NY QUAD 1981

HOLLAND, NY QUAD 1981

COLDEN, NY QUAD 1978

ORCHARD PARK, NY QUAD 1978

SCALE: 1" = 24,000'

**MALCOLM
PIRNIE**

NYSDEC

MR. C CLEANERS

NATIONAL WETLANDS INVENTORY MAP

MALCOLM PIRNIE, INC

NYSDEC
MR. C CLEANERS
GENERAL SOILS MAP

APPENDIX D

- Soil Gas Reports



TETRA · K TESTING

1 March 1994
E354-7-08

Mr. David Harty
Malcolm Pirnie
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219

RE: Soil Gas Survey Report
Mr. C Cleaners Site
East Aurora, NY

Dear Mr. Harty,

Please find the final results and report on the soil gas survey conducted at the above-mentioned site.

Thank you for using Tetra K Testing on this project and we look forward to working with Malcolm Pirnie again in the future.

Very truly yours,
TETRA K TESTING



Stephen L. Knollmeyer
Mobile Laboratory Supervisor

j:\ltr\slk\E354.mp

SECTION 1.0 NARRATIVE

A soil gas survey was conducted at the Mr. C Cleaners site in East Aurora, New York on February 8 through February 10, 1994. A total of 35 samples were analyzed; 32 soil gas points were installed, sampled and analyzed, and 3 manhole locations were sampled and analyzed in this three day project.

1.1 Soil Gas Sampling

Soil gas points were installed using a slide hammer and $\frac{7}{8}$ " hollow stem steel rods with threaded connectors and a 6-inch screened section attached to the lead rod. The screen section was driven to a depth of five feet below ground surface (BGS). In some cases refusal was encountered at 4.0'-4.5' BGS and those locations were sampled from that depth. Sample location No. 60, in the rear area on the western side of the Mr. C Cleaners building was sampled from 3.0 ft BGS due to obstruction. At least six borings were made in an approximately 10 ft diameter area around the proposed sample location all with refusal at 2.5-3.0 ft BGS. After installation of the probe a sampling system was attached to the last steel rod. The sampling system consisted of a sample port, flow control valve, vacuum pump and flow meter. The vacuum pump was started and the time and flow rate were noted in the field notes. If possible, the flow was set at 2000 mL/min. and allowed to purge for 2 minutes. This allowed for ambient air to be purged from the rods and brought soil gas into the sample port. When no flow or low flow was encountered, the rods were pulled back to a depth that allowed free flow and sample collection. Samples were collected in a 5.0 mL gas tight syringe fitted with a shut-off valve. Samples were transported to the mobile laboratory for injection into the analytical system.

1.2 Manhole Location Sampling

Manhole locations were sampled using the sampling system described in section 1.1 above. At MH-61 and MH-62 a length of $\frac{1}{8}$ " ID teflon tubing was attached to the sampling system and lowered through a vent hole in the manhole cover to approximately 1 foot above the floor of the manhole. The system purged for 5 minutes to clean the sampling system of ambient air and bring sample to the sample port. At location MH-12 the lid had to be pried open to sample as there was no vent hole in the cover. The cover was opened only enough to slide the teflon tubing down to within 1 foot of the bottom of the manhole and sample collection was the same as for MH-61 and MH-62 locations.

1.3 Sample Analysis

Soil gas samples were injected into the analytical system upon arrival at the mobile laboratory. The soil gas samples were analyzed on a Hewlett Packard Model 5890II Gas Chromatograph (GC) with electrolytic conductivity (ELCD) and photoionization (PID) detectors in series. The analytical system and parameters are similar to those used in EPA methods 8010/8020. The compound list consisted of the following:

Methylene Chloride
Vinyl Chloride

1,2-Dichloroethene
1,1-Dichloroethene

1,1,1-Trichloroethane
1,1,2-Trichloroethane

Trichloroethene
Tetrachloroethene

1,2-Dichloropropane

Benzene
Toluene
Xylenes (Total)
Ethyl Benzene

1.4 Data Results

Over three days of analysis, from February 8 through February 10, 1994 a total of 35 samples were analyzed; 32 soil gas points were installed, sampled and analyzed and 3 manhole locations were sampled and analyzed for the presence of target compounds. The attached data sheets (Section 2) present the data results, detected compounds, detection limits and other analytical parameters.

In general, significant concentrations of Tetrachloroethene (PCE) were detected along the west side of the Mr. C Cleaners building. PCE was also detected to the south and east of the building. The locations sampled around the library to the west of the site across Whaley Street and the church to the southwest across Main Street showed no detection of target compounds. With the exception of the manhole locations and sample point No. 60 where BTEX compounds were detected, and sample point No. 40 (adjacent to the Police station/Town Hall building) where 1,1,1-Trichloroethane was detected, in addition to PCE, the only target compound reported was PCE or Trichloroethene (TCE) a degradation product of PCE.

TETRA · K TESTING

A DIVISION OF TIGHE & BOND, INC.

MR. C CLEANERS East Aurora, New York Sample Summary Table

DATE	SAMPLE ID	DEPTH	ANALYTE	mg/cu. m.	PPB
8-Feb-94	No. 65	5.0	PCE	27	3600
	No. 66	5.0	PCE	0.33	44
	No. 67	4.0	ND		
	No. 64	5.0	PCE	94	13000
	No. 63	5.0	PCE	91	12000
	No. 59	5.0	PCE	0.90	110
	No. 58	4.5	PCE	7.3	990
	No. 57	4.0	PCE	86	12000
			TCE	3.1	520
	No. 62	5.0	PCE	23	3100
9-Feb-94	No. 40	5.0	PCE	5.2	700
			1,1,1-TCA	1.5	28
	No. 56	4.0	ND		
	No. 39	5.0	PCE	9.8	1300
	No. 55	5.0	ND		
	No. 54	4.5	ND		
	No. 53	5.0	ND		
	No. 60	3.0	Toluene	3.1	750
			Ethylbenzene	3.0	630
			Total Xylenes	37	7600
	No. 61	4.5	PCE	11	1500
	No. 43	4.5	ND		
	No. 42	5.0	ND		
	No. 69	4.0	PCE	11	1500
	No. 68	5.0	PCE	0.44	59
10-Feb-94	No. 44	4.5	ND		
	No. 45	5.0	ND		
	MH-61	~7 ft b.g.	Total Xylenes	0.12	25
	MH-62	~7 ft b.g.	PCE	0.20	28
			Ethylbenzene	0.30	63
			Total Xylenes	8.2	1700
	MH-12	~7 ft b.g.	ND		
	No. 46	4.0	ND		
	No. 47	4.5	ND		
	No. 48	5.0	ND		
	No. 49	4.5	ND		
	No. 48D	7.5	ND		
	No. 51	5.5	ND		
	No. 50	5.0	ND		
	No. 41	5.0	ND		
	No. 52	3.5	ND		

TETRA · K TESTING

14 March 1994
E354-7-08

Mr. David Harty
Malcolm Pirnie
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219

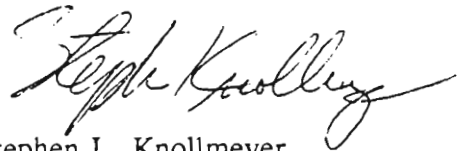
RE: Soil Gas Survey Report
Mr. C Cleaners Site
East Aurora, NY
March 7-8, 1994

Dear Mr. Harty,

Enclosed please find the final results and report on the soil gas survey conducted at the above-mentioned site.

Thank you for using Tetra K Testing to complete this project and we look forward to working with Malcolm Pirnie again in the future.

Very truly yours,
TETRA K TESTING



Stephen L. Knollmeyer
Mobile Laboratory Supervisor

j:\ltr\slk\le354.mp2

A DIVISION OF TIGHE & BOND, INC

WESTFIELD EXECUTIVE PARK
53 SOUTHAMPTON ROAD
WESTFIELD, MA 01085
TEL. 413-562-9193
FAX. 413-562-5317

SECTION 1.0 NARRATIVE

A second soil gas survey was conducted at the Mr. C Cleaners site in East Aurora, New York on March 7 and 8, 1994 as a follow up to the initial soil gas survey conducted February 8 through 10, 1994. A total of 25 samples were analyzed; 23 soil gas points were installed, sampled and analyzed, and 1 manhole location, and one sample of decontamination water from the SJB Services drill rig were analyzed in this two day project.

1.1 Soil Gas Sampling

Soil gas points were installed using a slide hammer and $\frac{7}{8}$ " hollow stem steel rods with threaded connectors and a 6-inch screened section attached to the lead rod. The screen section was driven to a depth of five feet below ground surface (BGS). In some cases refusal was encountered at 3.0'-3.5' BGS and those locations were sampled from that depth. After installation of the probe a sampling system was attached to the last steel rod. The sampling system consisted of a sample port, flow control valve, vacuum pump and flow meter. The vacuum pump was started and the time and flow rate were noted in the field notes. If possible, the flow was set at 2000 mL/min. and allowed to purge for 2 minutes. This allowed for ambient air to be purged from the rods and brought soil gas into the sample port. When no flow or low flow was encountered, the rods were, pulled back to a depth that allowed free flow and sample collection. Samples were collected in a 5.0 mL gas tight syringe fitted with a shut-off valve. Samples were transported to the mobile laboratory for injection into the analytical system.

1.2 Manhole Location Sampling

Manhole locations are sampled using the sampling system described in section 1.1 above. At MH-11 a length of $\frac{1}{8}$ " ID teflon tubing was attached to the sampling system and lowered through a vent hole in the manhole cover to approximately 1 foot above the floor of the manhole. The system purged for 2 minutes to clean the sampling system of ambient air and bring sample to the sample port.

1.3 Sample Analysis

Soil gas samples were injected into the analytical system upon arrival at the mobile laboratory. The soil gas samples were analyzed on a Hewlett Packard Model 5890II Gas Chromatograph (GC) with electrolytic conductivity (ELCD) and photoionization (PID) detectors in series. The analytical system and parameters are similar to those used in EPA methods 8010/8020. The compound list consisted of the following:

Methylene Chloride
Vinyl Chloride

1,2-Dichloroethene
1,1-Dichloroethene

1,1,1-Trichloroethane
1,1,2-Trichloroethane

Trichloroethene
Tetrachloroethene

1,2-Dichloropropane
Chloroform

Benzene
Toluene
Xylenes (Total)
Ethyl Benzene

1.4 Data Results

Over two days of analysis, March 7 and 8, 1994 a total of 25 samples were analyzed; 23 soil gas points were installed, sampled and analyzed, 1 manhole location, and one sample of decontamination water from the SJB Services drill rig sampled and analyzed for the presence of target compounds. The attached data sheets (Section 2) present the data results, detected compounds, detection limits and other analytical parameters.

This follow-up investigation was focused to the north and west of the previous investigation. The primary analyte detected was Tetrachloroethene (PCE). Sample location SG 70-94 located adjacent to the bowling alley had the highest detected level of PCE at 12,000 ppb. Also detected in that sample was Trichloroethene (TCE) and 1,1,1-Trichloroethane (1,1,1-TCA). PCE was detected in the samples collected in Whaley St. directly to the west of the driveway behind the Agway property. Samples collected north and south along Whaley Street showed no reportable levels of VOCs. Across Whaley Street in front of the residences, the highest level of PCE detected was 130 ppb at location SG 75-94. The sewer line down the center of Whaley Street appears to be acting as a barrier or is redirecting the movement of the PCE plume.

TETRA · K TESTING

A DIVISION OF TIGHE & BOND, INC.

MR. C CLEANERS East Aurora, New York

March 7-8, 1994

Sample Summary Table

DATE	SAMPLE ID	DEPTH (ft)	ANALYTE	mg/cu. m.	PPB v/v
7-Mar-94	SG 70-94	3.0	1,1,1-TCA	1.8	300
			TCE	0.6	100
			PCE	92	12,000
			PCE	11	1500
	SG 71-94	3.0	PCE	13	1800
	SG 72-94	3.0	PCE		
	SG 73-94	4.5	ND		
	SG 74-94	5.0	PCE	0.19	26
	SG 75-94	5.0	PCE	1.0	130
	SG 76-94	4.5	ND		
	SG 77-94	4.0	ND		
	SG 78-94	4.5	ND		
	SG 79-94	5.0	ND		
	SG 80-94	3.5	ND		
	SG 81-94	3.5	ND		
8-Mar-94	SG 82-94	4.5	ND		
	SG 83-94	5.0	ND		
	SG 84-94	4.0	ND		
	SG 85-94	4.5	ND		
	SG 86-94	4.5	PCE	0.16	22
	SG 87-94	4.5	PCE	3.4	460
	SG 88-94	5.0	TCE	0.21	36
			PCE	20	2700
			TCE	0.08	14
			PCE	13	1800
	SG 89-94	5.0	PCE	0.14	19
	SG 90-94	5.0	PCE	0.09	22
	SG 91-94	2.5	PCE	0.18	24
	MH-11	~8.0 b.g.s.*	ND		
	SG 92-94	4.5	PCE	2.2	300
DATE	SAMPLE ID		ANALYTE	ug/L	PPB
8-Mar-94	DECON 7		Chloroform	6.2	6.2
			PCE	1.2	1.2
			Total Xylenes	4.7	4.7

* b.g.s. = below ground surface

APPENDIX E

- Boring Logs
- Well Construction Details
- Phase I Well Development Data



BOREHOLE LOG MPI-1S

PROJECT: MR. C CLEANERS RI

PROJECT NO.: 0288-31-4

LOCATION: EAST AURORA, NEW YORK

SURVEY COORDINATES:

SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC

DRILLING DATES: 03/17/84 - 03/18/84

DRILLING METHOD: 8.25-inch ID HSA

LOGGED/CHECKED BY: JPH/RHO

SURFACE ELEVATION: 915.38ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.		
1	914.38	TOPSOIL Dark brown CLAYEY SILT, trace fine sand, grass rootlets		1 SS	1 2 3 3	0.8	5						JHS=0.1 ppm
2	913.38	TILL Light-moderate brown CLAYEY SILT, little clay, little subangular fine gravel, firm, CL			2 4 8 8	0.8	13						JHS=0.2 ppm
3	912.38	Light brown-olive moist CLAYEY SILT, some fine-coarse sand, little fine shale subangular gravel, blocky texture, stiff, CL		2 SS	3 7 4 11	1.8	11						JHS=0.1 ppm
4	911.38	Grayish brown moist CLAYEY SILT, w/iron staining & mottling, trace-little clay, some plasticity, little subrounded gravel to 3/4" dia., little fine-course sand, stiff, CL		3 SS	4 5 5 5	1.2	10						JHS=0.3 ppm
5	910.38	Moderate olive-brown moist SANDY SILT, little-some fine gravel, numerous black shale clasts to 1/4" thick x 1" dia., trace-little clay, some coarse-very fine sand, loose, SM		4 SS	2 2 2 3	0.3	4						JHS=0.1 ppm
6	909.38	Moderate brown wet v.fine-fine SAND, trace silt, loose, SP-SM		5 SS	2 2 3 4	1.3	5						JHS=0.2 ppm
7	908.38	Moderate brown wet mostly fine, trace v.fine SAND w/faint bedding fabric as lighter, finer sand partings <1/4" thickness, liquifies when disturbed, loose, SP-SM w/SAND layer w/trace fine round gravel to 1/4" from 13.7-13.8' and brown wet SILTY SAND layer w/mostly v.fine sand, trace fine, liquifies when disturbed, compact, SP-SM, from 13.8-14.0'		6 SS	5 8 8 12	2.0	12						JHS=0.5 ppm
8	907.38	Moderate gray wet v.fine SAND, trace-occ.fine gravel, trace-little silt, liquifies when disturbed, compact, SM		7 SS	1 5 5 5	1.8	10						JHS=0.8 ppm
9	906.38	SILT & v.fine SAND, light brown-tan		8 SS	WR WR 3 8	2.0	3						JHS=0.8 ppm
10	905.38	Brown wet v.fine-fine SAND, trace medium, w/very fine sand partings as bedding fabric, liquifies when disturbed, loose, SP-SM		9 SS	3 4 4 5	1.4	8						
11	904.38	Brownish gray wet v.fine-fine SAND, trace silt & v.fine sand as bedding fabric, loose, SM		10 SS									
12	903.38												
13	902.38												
14	901.38												
15	900.38												
16	900.38												
17	899.38												
18	898.38												
19	897.38												
20	896.38	Boring complete at 20'. Set well.											

BOREHOLE LOG MPI-1D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: New York State Survey Grid

CLIENT: NYSDEC
 DRILLING DATES: 02/18/84 - 2/22/84
 DRILLING METHOD: 4.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 813.95ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('M' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	812.95	TOPSOIL moist dark brown SILT LOAM, soft, fine size roots, ML		1 SS	1 2 3 5	1.2	5						JHS=0.2 ppm
2	811.95	TILL Brown moist CLAYEY SILT, with 15-40% subrounded to subangular gravel, trace-little sand, blocky, Firm, CL											JHS=0.3 ppm
3	810.95	becoming stiff at 2.0'		2 SS	5 5 8 8	1.1	11						JHS=0.1 ppm
4	809.95												JHS=0.1 ppm
5	808.95			3 SS	3 4 5 8	1.1	9						JHS=0.1 ppm
6	807.95	no recovery, stiff											JHS=0.1 ppm
7	806.95			SS	5 4 4 3	0	8						JHS=0.1 ppm
8	805.95	no recovery, very loose											JHS=0.1 ppm
9	804.95			SS	2 2 2 2	0	4						JHS=0.1 ppm
10	803.95												JHS=0.1 ppm
11	802.95	STRATIFIED Brown moist SILTY SANDY GRAVEL w/80-80% gravel, little sand and silt, loose when disturbed, GM		4 SS	8 5 4 5	1.5	8						JHS=0.3 ppm
12	801.95	Brown wet SILTY SAND, mostly fine, little very fine sand, trace iron staining in layers, occasional silt lenses ~1/4" thick, loose, liquifies when disturbed, SM											JHS=0.2 ppm
13	800.95			5 SS	3 5 5 8	1.0	10						JHS=0.1 ppm
14	899.95												JHS=0.1 ppm
15	898.95	Brown wet SILTY SAND, mostly fine-little medium and very fine sand, loose, liquifies when disturbed, SM		6 SS	4 4 8 4	0.8	10						JHS=0.1 ppm
16	897.95												JHS=0.1 ppm
17	896.95	Brown wet SILTY SAND, mostly fine, little very fine sand, compact, liquifies when disturbed, SM		7 SS	2 4 8 13	1.4	12						JHS=0.1 ppm
18	895.95	occasional coarse Gravel (~1" in diameter)											JHS=0.1 ppm
19	894.95			8 SS	7 5 8 8	1.4	11						JHS=0.1 ppm
20	893.95												JHS=0.1 ppm

BOREHOLE LOG MPI-1D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: New York State Survey Grid

CLIENT: NYSDEC
 DRILLING DATES: 02/18/84 - 2/22/84
 DRILLING METHOD: 4.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.95ft.

SYMBOLS AND DEFINITIONS

SB Split Spoon (2in.ID)
 SSB Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	892.95	STRATIFIED Brown wet SAND, trace-little Silt, medium-fine sand, compact, liquifies when disturbed, SP-SM Becoming loose at 22'		9 SS	3 5 8 7	1.3	13						JHS=0.1 ppm
22	891.95												JHS=0.1 ppm
23	890.95			10 SS	2 3 8 8	0.4	9						JHS=0.1 ppm
24	889.95			Becoming very loose at 24'									JHS=0.1 ppm
25	888.95			11 SS	WH 1 2 3	0.9	3						JHS=0.5 ppm
26	887.95												JHS=0.5 ppm
27	886.95			12 SS	1 2 4 5	1.0	8						JHS=0.5 ppm
28	885.95												JHS=0.5 ppm
29	884.95	Brownish gray wet SILTY SAND, mostly very fine sand, little fine, trace-no medium size, loose, readily liquifies when disturbed, SM		13 SS	4 8 8 8	1.2	18						JHS=0.5 ppm
30	883.95	Alternating grayish brown to brownish gray wet SILTY SAND, with Silt partings ~8-10 layers per 1/2" thick, mostly fine and very fine sand, some silt, compact, liquifies when disturbed, SM										JHS=0.5 ppm	
31	882.95			14 SS	5 7 8 8	1.8	15					JHS=0.5 ppm	
32	881.95	Grayish brown wet SAND, mostly fine and medium sand, trace silt, compact, loose when disturbed, SP-SM										JHS=0.5 ppm	
33	880.95	Brownish gray wet SAND, mostly fine-medium sand, trace-no silt, occasional silt lenses, compact, loose when disturbed, SP		15 SS	WH WH 2 3	1.3	2						JHS=0.4 ppm
34	879.95												JHS=0.4 ppm
35	878.95			16 SS	8 4 5 8	1.5	9						JHS=0.5 ppm
36	877.95												JHS=0.5 ppm
37	876.95	Brownish gray wet SANDY SILT, mostly silt, some very fine sand and little fine sand, occasional clayey silt lenses, very soft, liquifies when disturbed, ML		17 SS	2 2 3 3	0.9	5						JHS=0.4 ppm
38	875.95	becoming stiff at 34' becoming loose at 38'										JHS=0.4 ppm	
39	874.95			18 SS	3 3 3 3	1.3	8					JHS=0.4 ppm	
40	873.95												

BOREHOLE LOG MPI-1D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0286-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: New York State Survey Grid

CLIENT: NYSDEC
 DRILLING DATES: 02/18/84 - 2/22/84
 DRILLING METHOD: 4.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 813.85ft.

SYMBOLS AND DEFINITIONS

88 Split Spoon (2in.ID)
 883 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.		
41	872.95	LAMINATED Gray wet CLAYEY SILT, with little fine sand, silt lenses ~1/8" thick, an occasional SAND lenses ~1/4-1" thick, soft, CL becoming firm at 42'		19 SS	3 2 2 3	1.4	4						JHS=0.5 ppm
42	871.95												JHS=0.5 ppm
43	870.95			20 SS	3 3 3 3	1.2	8						JHS=0.4 ppm
44	869.95												JHS=0.4 ppm
45	868.95	Gray extremely moist SILTY CLAY with little-some silt, trace sand, stiff, CL		21 SS	3 3 2 3	1.3	5						JHS=0.5
46	867.95												JHS=0.5
47	866.95			22 SS	2 3 6 8	1.3	8						JHS=0.5 ppm
48	865.95												JHS=0.5 ppm
49	864.95	Gray wet SAND, mostly medium sand, little fine, trace coarse, compact, loose when disturbed, SP		23 SS	2 8 11 11	1.2	17						JHS=0.4 ppm
50	863.95												JHS=0.4 ppm
51	862.95			24 SS	8 5 7 8	1.8	12						JHS=0.5 ppm
52	861.95												JHS=0.5 ppm
53	860.95	Gray extremely moist SILTY CLAY, with little-some silt, trace sand, stiff, CL		25 SS	2 4 5 8	1.8	8						JHS=0.5 ppm
54	859.95												JHS=0.5 ppm
55	858.95			26 SS	1 2 4 5	1.8	8						JHS=0.5 ppm
56	857.95												JHS=0.5 ppm
57	856.95	Occasional gray extremely moist medium SAND lenses ~1-3" thick at 56.5', 57', 57.5', 58', and 58.5'		27 SS	2 2 3 3	1.8	5						JHS=0.5 ppm
58	855.95												JHS=0.8 ppm
59	854.95			28 SS	WH 2 5 5	1.7	7						JHS=0.8 ppm
60	853.95												JHS=0.8 ppm

BOREHOLE LOG MPI-1D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0208-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: New York State Survey Grid

CLIENT: NYSDEC
 DRILLING DATES: 02/18/84 - 2/22/84
 DRILLING METHOD: 4.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.95ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHB HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft. AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.		
61	852.85	Gray extremely moist SILTY CLAY with little-some silt, trace sand, stiff, CL, with gray medium SAND partings approx 1-3" thick at 80', 80.5', 81', 82', and 82.5'		28 SS	3 4 8 8	1.8	10						JHS=0.5 ppm
62	851.95	becoming firm at 82', medium SAND from 82-82.5'		30 SS	WH WH 5 5	1.5	5						JHS=0.5 ppm
63	850.95	thinner SAND lenses at 83'		31 SS	1 2 4 5	1.8	8						JHS=0.5 ppm
64	848.95	thin medium sand partings at 84.8', 85', 85.1'.		32 SS	WH WH 2 8	1.8	2						JHS=0.5 ppm
65	848.85			33 SS	1 2 5 8	1.9	7						JHS=0.7 ppm
66	847.85	3" medium SAND lenses		34 SS	WH 1 2 3	2.0	3						JHS=0.8 ppm
67	848.95			35 SS	WH 1 3 8	2.0	4						JHS=0.8 ppm
68	845.95	3" medium SAND lenses. Gray moist-extremely moist SILTY CLAY, little-some silt, occasional silt partings, soft, CL		36 SS	8 8 8 8	2.0	17						JHS=0.5 ppm
69	844.95			37 SS		1.7							JHS=0.5 ppm
70	843.95	Gray moist SAND from 70-70.5', mostly medium sand, loose, SP		38 SS									JHS=0.5 ppm
71	842.95	Gray wet SAND at 71.5, SP		39 SS									JHS=0.5 ppm
72	841.95	Interlayered gray moist SILTY CLAY ~4-8" thick, w/little-some silt, soft, CL & SILTY SAND w/ little silt, mostly fine sand, very loose, liquifies when disturbed, SM		40 SS									JHS=0.5 ppm
73	840.95			41 SS									JHS=0.5 ppm
74	839.95	Gray moist SILTY CLAY, little silt, soft, CL		42 SS									JHS=0.5 ppm
75	838.95			43 SS									JHS=0.5 ppm
76	837.95	Gray moist SILTY SAND, very fine sand, compact, liquifies when disturbed, SM		44 SS									JHS=0.5 ppm
77	836.95	Gray moist CLAYEY SILT, some clay, occ v. thin fine sand partings, v. stiff, CL		45 SS									JHS=0.5 ppm
78	835.95	Gray moist SILTY SAND, some silt, mostly fine & very fine sand, compact, liquifies when disturbed, SM-ML		46 SS									JHS=0.5 ppm
79	834.95			47 SS									JHS=0.5 ppm
80	833.95	Gray wet SILTY CLAY, little silt, v. soft, CL		48 SS									JHS=0.5 ppm

BOREHOLE LOG MPI-1D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: New York State Survey Grid

CLIENT: NYSDEC
 DRILLING DATES: 02/18/84 - 2/22/84
 DRILLING METHOD: 4.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.95ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('M' %)

DEPTH (ft.BGS)	ELEVATION (ft. AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / B"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
81	832.95	Gray wet SANDY SILT, trace clay, some fine sand, occasional clayey silt parting ~1/4-1/2" thick, loose, liquifies when disturbed, SM		38 SS	WR WH WH 1	2.0	0						JHS=0.7 ppm
82	831.95			39 SS	1 2 2 2	1.7	4						JHS=0.5 ppm
83	830.95			40 SS	WR WR 1 5	2.0	1						JHS=0.5 ppm
84	829.95			41 SS	WR WR WH 3	2.0	0						JHS=0.5
85	828.95	Gray wet CLAYEY SILT tending toward SILTY CLAY, some clay, very soft, CL		42 SS	WR WR WH 1	2.0	0						JHS=0.5 ppm
86	827.95	8-10 SILT partings ~0.2' in length.											
87	826.95	Laminated SILT parting											
88	825.95												
89	824.95												
90	823.95	Gray wet SILT with little very fine sand, liquifies when disturbed, ML											
91	822.95	Boring complete at 90.0'. Grouted hole with cement bentonite grout. Moved rig feet. Installed MPI-1I.											
92	821.95												
93	820.95												
94	819.95												
95	818.95												
96	817.95												
97	816.95												
98	815.95												
99	814.95												
100	813.95												

WELL/BOREHOLE MPI-1I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS

CLIENT: NYSDEC

PROJECT NO.: 0200-31-4

DRILLING DATES: 3/94

LOCATION: EAST AURORA, NEW YORK

DRILLING METHOD: 8.25-inch ID HSA

SURVEY COORDINATES:

LOGGED/CHECKED BY: JMA/RHO

SURVEY DATUM: NEW YORK STATE SURVEY GRID

SURFACE ELEVATION: 913.53ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 2.0 feet

 BENTONITE SLURRY SEAL
2.0 to 28.2 feet

 MORIE #00 SAND PACK
28.2 to 41 feet

 2-INCH DIAMETER SLOTTED (0.008")SCREEN
31.0 to 41.0 feet

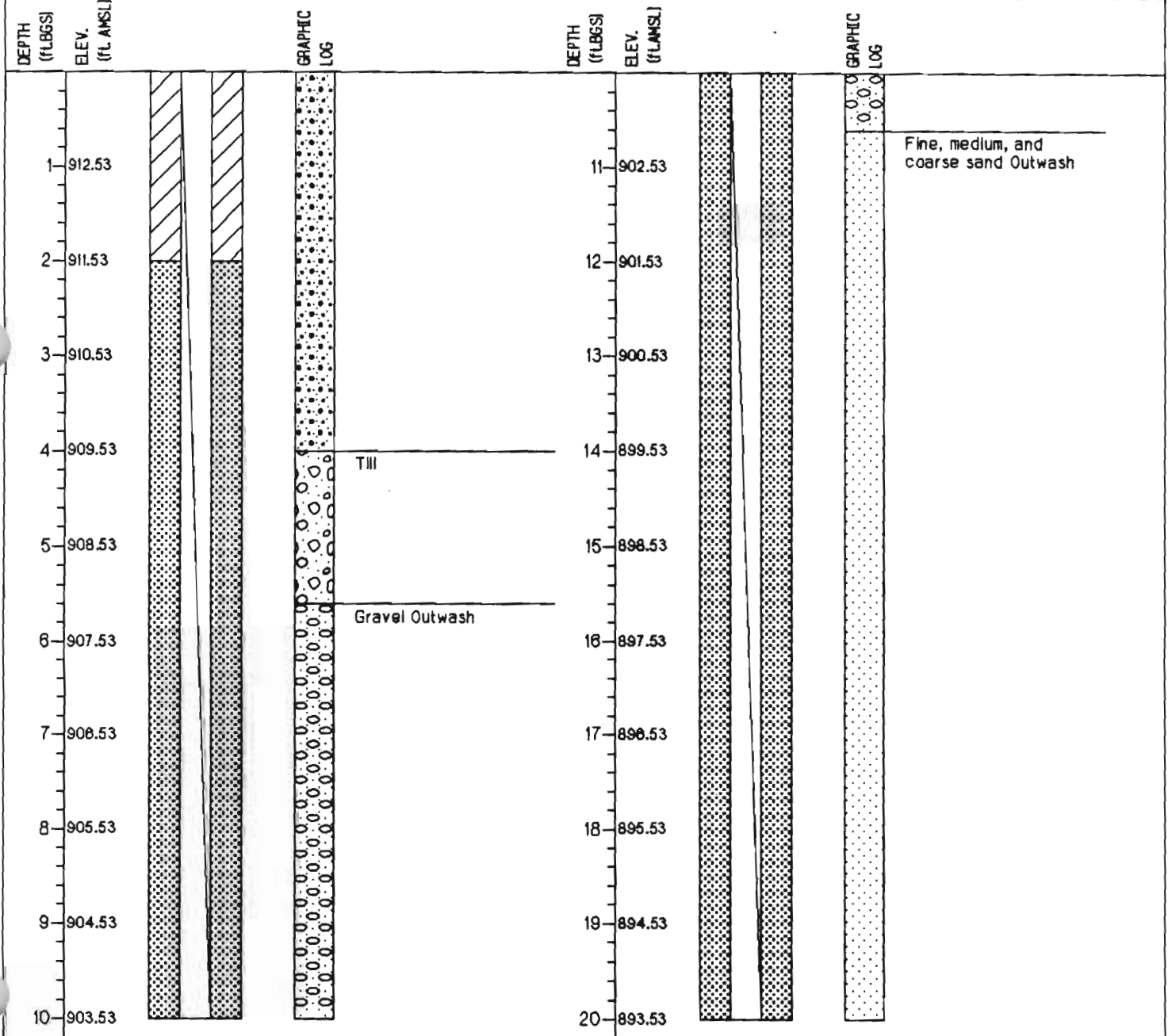
 4-INCH DIAMETER CASING
0 feet

 2-INCH DIAMETER RISER
0 to 31.0 Feet

 8-INCH DIAMETER BOREHOLE
0 feet

 4-INCH DIAMETER BOREHOLE
0 feet

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-ID
for a
complete
description



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-1I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/94
 DRILLING METHOD: 8.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.531t.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 2.0 feet

 BENTONITE SLURRY SEAL
2.0 to 28.2 feet

 MORIE #00 SAND PACK
28.2 to 41 feet

 2-INCH DIAMETER BLOTTED (0.006") BSCREEN
31.0 to 41.0 feet

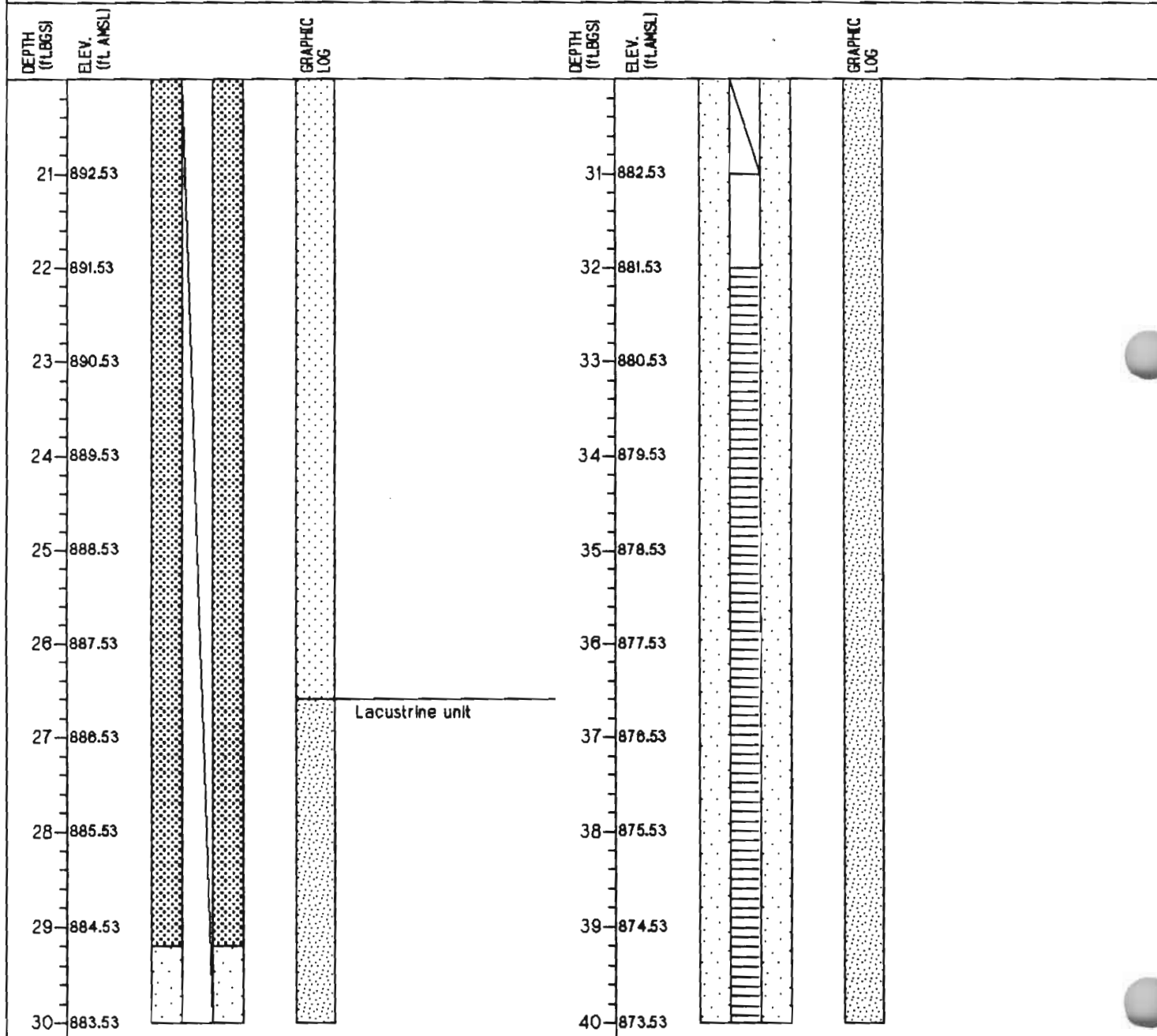
 4-INCH DIAMETER CASING
0 feet

 2-INCH DIAMETER RISER
0 to 31.0 Feet

 8-INCH DIAMETER BOREHOLE
0 feet

 4-INCH DIAMETER BOREHOLE
0 feet

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-1D
for a
complete
description



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-1I CONSTRUCTION DETAILS

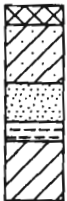
PROJECT: MR C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

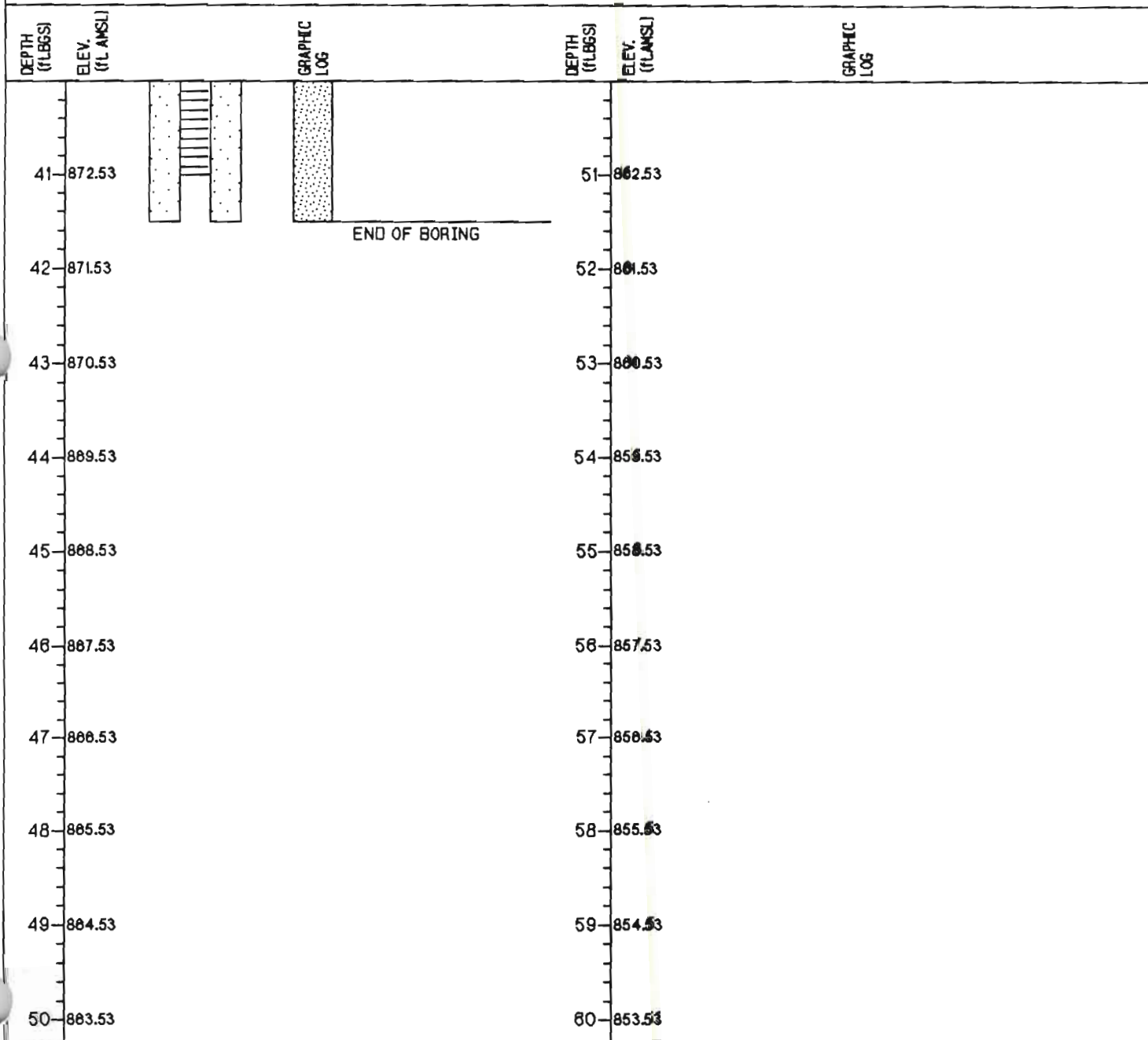
CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 8.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 813.53ft.

SYMBOLS AND DEFINITIONS

-  BENTONITE-CEMENT BEAL
0 to 2.0 feet
-  BENTONITE BLURRY BEAL
2.0 to 28.2 feet
-  MORIE #00 SAND PACK
28.2 to 41 feet
-  2-INCH DIAMETER SLOTTED (0.008")SCREEN
31.0 to 41.0 feet

-  4-INCH DIAMETER CASING
0 feet
-  2-INCH DIAMETER ROVER
0 to 31.0 Feet
-  8-INCH DIAMETER BOREHOLE
0 feet
-  4-INCH DIAMETER BOREHOLE
0 feet

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-ID
for a
complete
description



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft.
 BGS.

BOREHOLE LOG MPI-2S

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 03/14/84
 DRILLING METHOD: 8.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 917.34ft.

SYMBOLS AND DEFINITIONS

88 Split Spoon (2in.ID)
 883 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHB HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('M' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	918.34	BLACKTOP											JHS=0.3 ppm
		Light gray crystalline material (Salty) with low specific gravity		1 SS	8 7 4	1.0	13						
2	915.34	TOPSOIL dark brown frozen loam w/white specks			1								JHS=0.3 ppm
3	914.34	TILL, brown moist CLAYEY SILT, little-some sand, little gravel, firm, CL		2 SS	2 3 3	0.8	5						
4	913.34	Brown moist CLAYEY SILT, some sand, 25-40% gravel, stiff, CL			4 8 4 4								JHS=0.3 ppm
5	912.34			3 SS		0.8	10						
6	911.34	STRATIFIED brown moist SILTY SAND, mostly coarse sand, trace-little silt, loose when disturbed, loose, SM			3 4 8 8								JHS=0.3
7	910.34			4 SS		0.4	10						
8	909.34	Brown moist SAND, mostly fine-medium sand, trace coarse, trace-no silt, loose when disturbed, very loose, SP-SM			1 1 1 3	1.1	2						JHS=0.3 ppm
9	908.34			5 SS									
10	907.34	Brown moist becoming wet at 11.0 SAND, mostly fine, little very fine sand, trace silt, liquefies when disturbed, loose, SP			1 1 3 3	1.5	4						JHS=0.2 ppm
11	906.34			6 SS									
12	905.34	Brown wet SAND, mostly fine-medium sand, trace silt & gravel, gravel mostly subrounded and subangular, loose when disturbed, loose, SP			3 3 5 8	1.8	8						JHS=0.2 ppm
13	904.34			7 SS									
14	903.34	Brown wet SILTY SAND, mostly fine & very fine sand, trace medium size, little silt, liquefies when disturbed, loose, SP-SM occasional Cobbles at 14.5'			1 12 14 17	1.1	28						JHS=0.3 ppm
15	902.34			8 SS									
16	901.34				1 2 5 5	1.2	7						JHS=0.2 ppm
17	900.34			9 SS									
18	899.34				2 3 5 7	1.4	8						JHS=0.3 ppm
19	898.34			10 SS									
20	897.34	Boring complete at 20' w/augers at 18.5'. Set well											

BOREHOLE LOG MPI-3S

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 03/18/94
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JPH/RHO
 SURFACE ELEVATION: 914.79ft.

SYMBOLS AND DEFINITIONS

SB Split Spoon (2in.ID)
 SB3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	913.79	TOPSOIL dark brown moist gray CLAYEY SILTY, trace fine gravel, trace-little clay		1 SS	1 2	1.2	3						JHS=0.1 ppm
2	912.79	TILL brown ext. moist SANDY SILT, little fine-coarse sand trace-little gravel shale clasts, trace clay, blocky, v. loose, SM			1								JHS=0.1 ppm
3	911.79	Light brown moist SANDY SILT, trace-little black shale gravel clasts, little very fine-coarse sand & trace clay, soft, ML		2 SS	1 1 1	0.8	2						JHS=0.2 ppm
4	910.79				1								
5	909.79	Light brown-olive moist SILTY SAND, w/iron stained mottling, little-some fine gravel to 1/4" diameter, little very fine-coarse sand, compact, SP-SM		3 SS	4 7 8	1.1	11						
6	908.79				4								
7	907.79	No Recovery		4 SS	3 2 4	0	5						
8	906.79	Grayish brown wet Sandy Gravel, fine-coarse sand, w/gravel, trace silt, mottled, iron stained, black shale gravel clasts to 1/2" dia., thin light gray silt parting to 1/2", loose when disturbed, compact, GW-GM			2 4 8 12	1.0	13						JHS=0.8 ppm
9	905.79			5 SS	4 10 9 16	0.5	19						JHS=1.8 ppm
10	904.79	Grayish brown wet GRAVEL, w/fine-coarse sand, little silt, black shale gravel clasts to 1/2" dia., lgt gray silt partings to 1/2", compact, GW-GM			10 12 14 19	1.4	28						JHS=1.2 ppm
11	903.79	Grayish brown wet fine-coarse GRAVEL w/1" diameter, some very fine-coarse sand, mottled, iron stains throughout, trace silt, compact, GW-GM		7 SS	8 8 5 4	1.8	11						JHS=0.1 ppm
12	902.79												JHS=0.1 ppm
13	901.79	Orange-brown wet SAND, iron stained, v. fine-fine sand, trace-little silt, liquifies when disturbed, compact, SM		8 SS	WR 2 2 2	0.9	4						
14	900.79	Gray wet SAND, v. fine-fine sand, trace-little silt, liquifies when disturbed, compact, SM											
15	899.79	Gray wet SAND, v. fine sand, trace-little silt, occ. silty clay parting to 1/4" thick as bedding fabric, liquifies when disturbed, compact, SM		9 SS									
16	898.79												
17	897.79												
18	896.79												
19	895.79												
20	894.79												
		Boring complete at 18'. Set Well.											

BOREHOLE LOG MPI-4D

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0208-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 2/15/94 & 12/29/94 through 1/8/95
 DRILLING METHOD: BOREHOLE FOR WELL, 10.25"HSA-43.5", 8" CA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.97 ft. NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace

x---x Penetration Resistance ('N' Blows/1 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft. AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	914.97	TOPSOIL dark brown (frozen from 0-.2), moist SILT LOAM, little sand, some roots, stiff, (CL-ML)		1 SS	3 4 7	0.3	11						JHS=.1
2	913.97												JHS=1.2
3	912.97			SS	3 3 3	0.0	8						JHS=0
4	911.97	no recovery, firm											
5	910.97	FILL, dark brown moist CLAYEY SILT with trace ang to subang gravel and sand, noticed one piece brick frag, firm, (CL)		2 SS	2 3 3	1.0	8						JHS=0.2
6	909.97	TILL, brown moist CLAYEY SILT with little sand and gravel, trace roots, stiff, (CL)											JHS=0.1
7	908.97	TILL, grayish brown moist CLAYEY SILT with 15-40% mostly angular shale gravel, trace to little sand, stiff, (CL)		3 SS	5 7 7	0.5	14						JHS=0.1
8	907.97												JHS=0.1
9	906.97			4 SS	4 5 8	0.2	11						JHS=0.1
10	905.97												JHS=0.1
11	904.97	STRATIFIED, Dark brown moist-extremely moist SILTY SANDY GRAVEL W40- 80% mostly subrounded gravel, little shale frag, little-some medium to coarse sand, little silt, trace clay, loose, (GM)		5 SS	2 3 4	0.9	7						JHS=0.2
12	903.97	becoming wet at 12'											JHS=0.1
13	902.97			8 SS	2 3 3	0.8	8						JHS=0.1
14	901.97	Brown wet SAND, mostly fine sand with trace medium, liquifies when disturbed, loose, (SP-SM)		7 SS	2 2 4	1.1	8						JHS=0.1
15	900.97	becoming compact at 18'											JHS=0.1
16	899.97			8 SS	5 5 7	1.3	12						JHS=0.1
17	898.97												JHS=0.1
18	897.97	Grayish brown wet SAND, mostly fine sand with trace very fine, liquifies when disturbed, compact, contains occasional lenses of SAND, mostly medium w/some fine sand, loose, (SP)		9 SS	2 3 5	1.4	8						JHS=0.1
19	896.97												
20	895.97												

BOREHOLE LOG MPI-4D

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

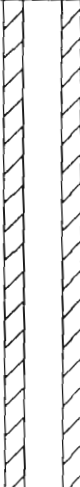
CLIENT: NYSDEC
 DRILLING DATES: 2/15/94 & 12/29/94 through 1/8/95
 DRILLING METHOD: BOREHOLE FOR WELL, 10.25"HSA-43.5", 8" CASING
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.97 ft. NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace

x---x Penetration Resistance ('N' Blows/ft.)
 o---o Moisture Content ('N' %)

Sampler Refusal		SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
DEPTH (ft.BGS)	ELEVATION (ft AMSL)		GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.			
21	894.97	continued from page 1		10 SS	2 3 5 7	2.0	8						JHS=0.1	
22	893.97												JHS=0.1	
23	892.97			11 SS	1 5 5 7	1.0	10						JHS=0.8	
24	891.97	Brownish gray wet SAND, mostly very fine and fine size sand, trace silt, compact, liquifies when disturbed, (SP)												JHS=0.8
25	890.97			12 SS	2 4 2 3	0.9	8							JHS=1.0
26	889.97													
27	888.97			13 SS	2 3 5 8	2.0	8							JHS=0.5
28	887.97	Gray wet SAND, mostly very fine size, little silt, liquifies when disturbed, loose, (SM)												JHS=0.5
29	886.97	Brownish gray wet SAND, mostly fine to medium size sand, little silt, trace to no gravel, liquifies when disturbed, very loose, (SP-SM)			14 SS	1 2 2 4	2.0	4						JHS=0.2
30	885.97													
31	884.97	Gray wet SAND, mostly very fine to fine size sand, little to some silt, trace to few clay, liquifies when disturbed, compact, (SM) two clayey silt lenses at 31.0', approximately 1/8" thick one clayey silt lenses at 32.5'	15 SS		4 8 15 18	1.3	23					JHS=0		
32	883.97												JHS=0	
33	882.97		16 SS		3 4 6 10	1.4	10						JHS=0	
34	881.97												JHS=0	
35	880.97		17 SS		3 4 5 5	1.5	9						JHS=0	
36	879.97												JHS=0	
37	878.97		18 SS		8 8 5 5	1.3	11						JHS=0.1	
38	877.97											JHS=0.1		
39	876.97		19 SS	8 8 8 7	1.8	18								
40	875.97													

BOREHOLE LOG MPI-4D

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 2/15/94 & 12/29/94 through 1/6/95
 DRILLING METHOD: BOREHOLE FOR WELL, 10.25"HSA-43.5", 8" CA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.97 ft. NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace

x---x Penetration Resistance ('N' Blows/1 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)		ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / B"	RECOVERY (in)	'N'-VALUE	ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)			
									FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.					
41	874.97		continued from page 2		20 SS	4 5 6 8	1.7	11						JHS=0			
42	873.97		LAMINATED, Brownish gray wet SANDY SILT, w/mostly very fine -fine sand,occasional silty clay lenses approx.1/8" thick, sandy silt liquifies when disturbed, loose (ML)		21 SS	2 3 4 4	1.8	7						JHS=0.1			
43	872.97																
44	871.97																JHS=0
45	870.97					Brownish gray wet CLAYEY SILT w/little fine sand, firm, CL	22 SS	1 1 2 2	1.4	3							JHS= -
46	869.97		Brownish gray wet SANDY SILT w/mostly v.fine-fine sand, alternating w/CLAYEY SILT, w/little clay, approx 8-8 layers per inch, sandy silt liquifies when disturbed, very loose SM and CL		ST	- - -	2.0	-						JHS= -			
47	868.97																
48	867.97		SILTY SAND .1' thick,mostly v.fine sand		23 SS	5 6 8 9	1.8	14						JHS=0.1			
49	866.97		SILTY SAND .3' thick,mostly v.fine sand														
50	865.97		Gray extremely moist CLAYEY SILT w/occ. v.fine size sand parting, CL		24 SS	3 5 7 8	1.4	12						JHS=0.1			
51	864.97		Gray ext.moist CLAYEY SILT tending toward SANDY SILT, v.thin fine sand partings making clayey silt lenses app. 1/2" thick, CL														
52	863.97		Brownish gray wet alternating layers SANDY SILT & CLAYEY SILT app. 1/16"-1/4" thick, sandy silt layers liquify when disturbed, 2-1" sandy silt layers @ 49.0'&49.5'		25 ST	- - -	2.0	-						JHS=0			
53	862.97																
54	861.97				26 SS	2 4 4	1.5	6						JHS=0.1			
55	860.97		Gray ext. moist SILTY CLAY w/an occasional very thin silt parting, stiff, CL														
56	859.97		Grey ext.moist SANDY SILT w/v.fine-fine sand, liquifies when disturbed,SM, w/occ. lenses of ext. moist SILTY CLAY, CL		27 SS	1 4 4 8	2.0	8						JHS=0.2			
57	858.97																
58	857.97		Gray wet SAND,mostly med. size,loose when disturbed, SP w/ gray ext. moist SILTY CLAY, soft, CL from 54-54.5'		28 SS	2 3 4 4	2.0	7						JHS=0.1			
59	856.97																
60	855.97																

BOREHOLE LOG MPI-4D

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 2/15/94 & 12/29/94 through 1/8/95
 DRILLING METHOD: BOREHOLE FOR WELL, 10.25" HSA-43.5', 8" CASING
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.97 ft. NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in. ID)
 SSS Split Spoon (3in. ID)
 ST Shelby Tube (2.8in. ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace

x---x Penetration Resistance ('N' Blows/ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft. BGS)	ELEVATION (ft. AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 6"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.		
61	854.97	Becoming stiff at 80.0'.		29 SS	2 4 8 8	2.0	10						JHS=0.1
62	853.97			30 SS	1 5 4 8	1.8	11						JHS=0.1
63	852.97			1 SS	1 8 8 8	2.0	12						JHS=0.1
64	851.97			2 SS	16 22 23 25	1.9	45						JHS=0
65	850.97	Gray ext. moist CLAYEY SILT, thin sand partings throughout, med. consist, CL		3 SS	3 5 8 10	2.0	13						JHS=0.1
66	849.97	Gray wet SILT, trace v. fine sand, liquifies when dist., muck like consistency, loose, ML		4 SS	8 5 5 8	1.4	10						JHS=0.1
67	848.97	Gray wet CLAYEY SILT, sand partings of fine & med sand throughout, larger seam 0.5" thick @ 87.7', hard, CL		5 SS	8 7 7 9	2.0	14						JHS=0.1
68	847.97	Gry ext moist SILTY CLAY, CL		8 SS	7 9 10 10	2.0	19						JHS=0.1
69	846.97	Gray wet CLAYEY SANDY SILT, some f. sand & silt, trc- little clay, CL		4 SS	4 4 8 9	2.0	10						JHS=0.1
70	845.97	Gray wet SILT, trace v. fine sand, liquifies when disturbed, firm, ML											
71	844.97	Gray wet CLAYEY SILT w/3 silty sand seams 0.1' thick @ 70.3, 70.5, & 70.9, occ v. thin sand partings throughout, med. consist, CL											
72	843.97	Gray wet med SAND 0.7' thick, trace silt, loose, SP/ Gray wet SILTY CLAY from 72.9-74.2', med consist, CL											
73	842.97	Gray wet SAND, mostly f. sand, trace silt, liquifies when disturbed, firm, SP											
74	841.97	Gray wet SILTY CLAY, stiff, CL											
75	840.97												
76	839.97												
77	838.97												
78	837.97	Borehole complete @ 77.5'. Borelog is a compilation of MPI-4D from 1994 data.											
79	836.97	MPI-4D-95 boring approx 10' from MPI-4D-94. Borehole was adv. w/10.25" augers to 43.5'. Permanent 8" casing installed to 43.5'. 8" casing adv. to 70.5'. Monitoring well installed @ 70.5'.											
80	835.97												

WELL/BOREHOLE MPI-4S CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS
 PROJECT NO.: 0208-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/18/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.12ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
 0 to 6.6 feet

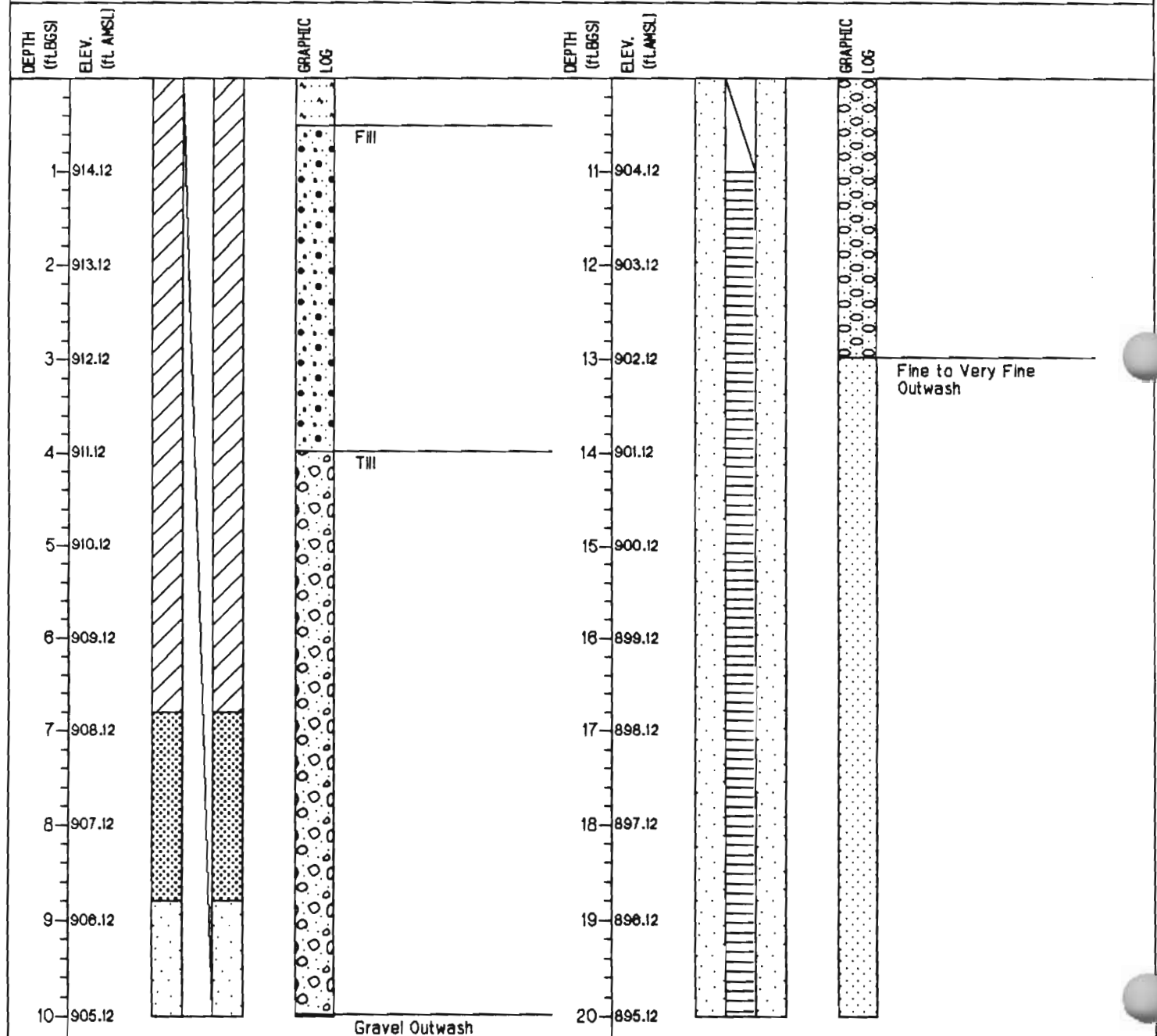
 BENTONITE PELLET SEAL
 6.6 to 8.6 feet

 MORE #0 SAND PACK
 8.6 to 21.6 feet

 2-INCH DIAMETER BLOTTER (0.01" SCREEN)
 11.0 to 21.0 feet

 2-INCH DIAMETER RIBER
 0 to 11.0 feet

 GRAPHIC LOG
 refer to
 BOREHOLE LOG MPI-4D
 for a
 complete
 description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to approx .7 ft BGS.

WELL/BOREHOLE MPI-4S CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

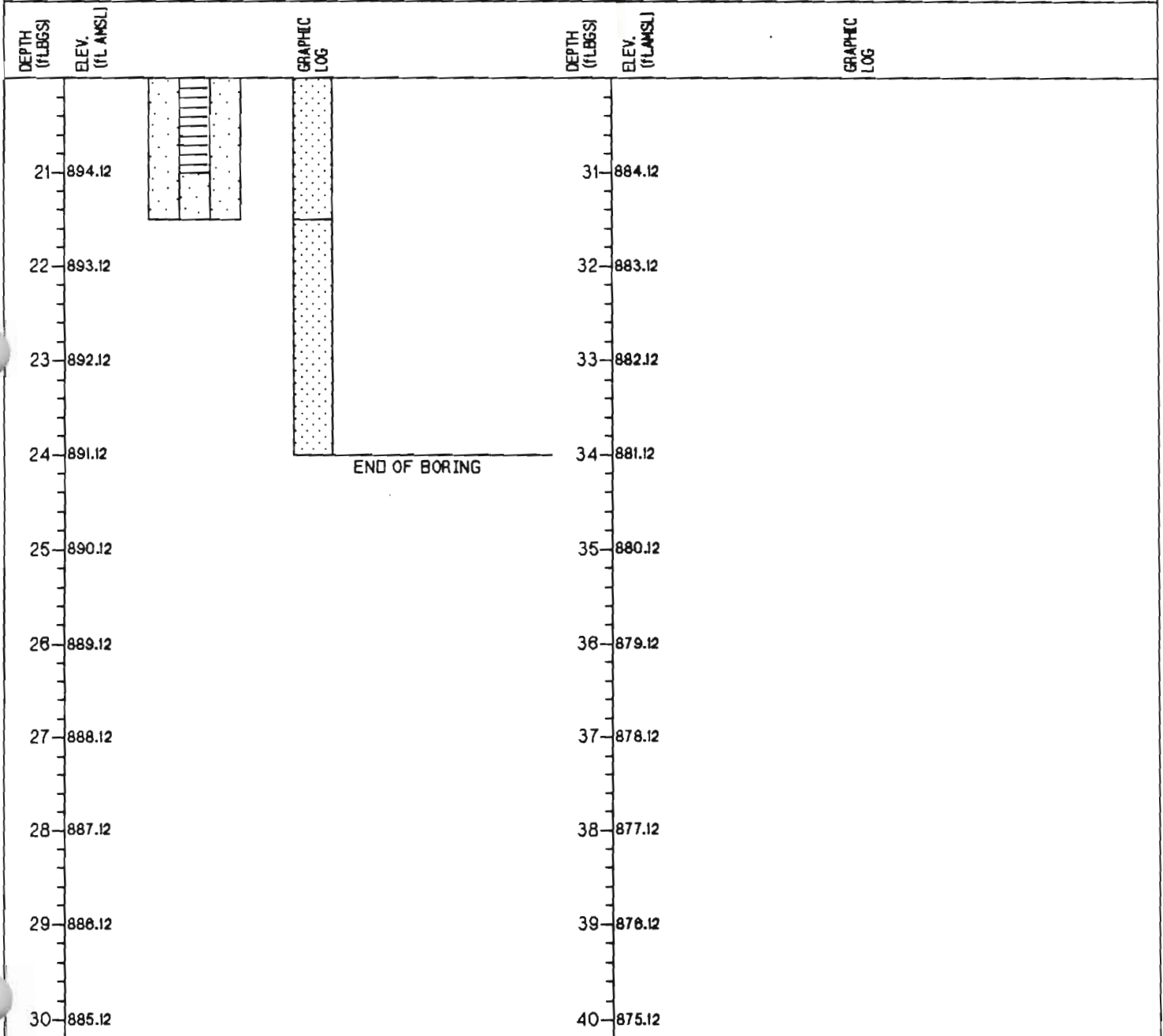
CLIENT: NYSDEC
 DRILLING DATES: 3/18/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 815.121t.

SYMBOLS AND DEFINITIONS

-  BENTONITE-CEMENT SEAL
0 to 0.5 feet
-  BENTONITE PELLET SEAL
0.5 to 0.8 feet
-  MORIE #0 SAND PACK
0.8 to 21.5 feet
-  2-INCH DIAMETER BLOTED (0.01")SCREEN
11.0 to 21.0 feet

-  2-INCH DIAMETER RIBBER
0 to 11.0 feet

 GRAPHIC LOG
 refer to
 BOREHOLE LOG MPI-4D
 for a
 complete
 description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to approx .7 ft BGS.

WELL/BOREHOLE MPI-4I CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 6.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 916.12ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 4.0 feet

 BENTONITE SLURRY SEAL
4.0 to 29.6 feet

 MORIE #00 SAND PACK
29.6 to 42.5 feet

 2-INCH DIAMETER SLOTTED (0.005")SCREEN
32.0 to 42.0 feet

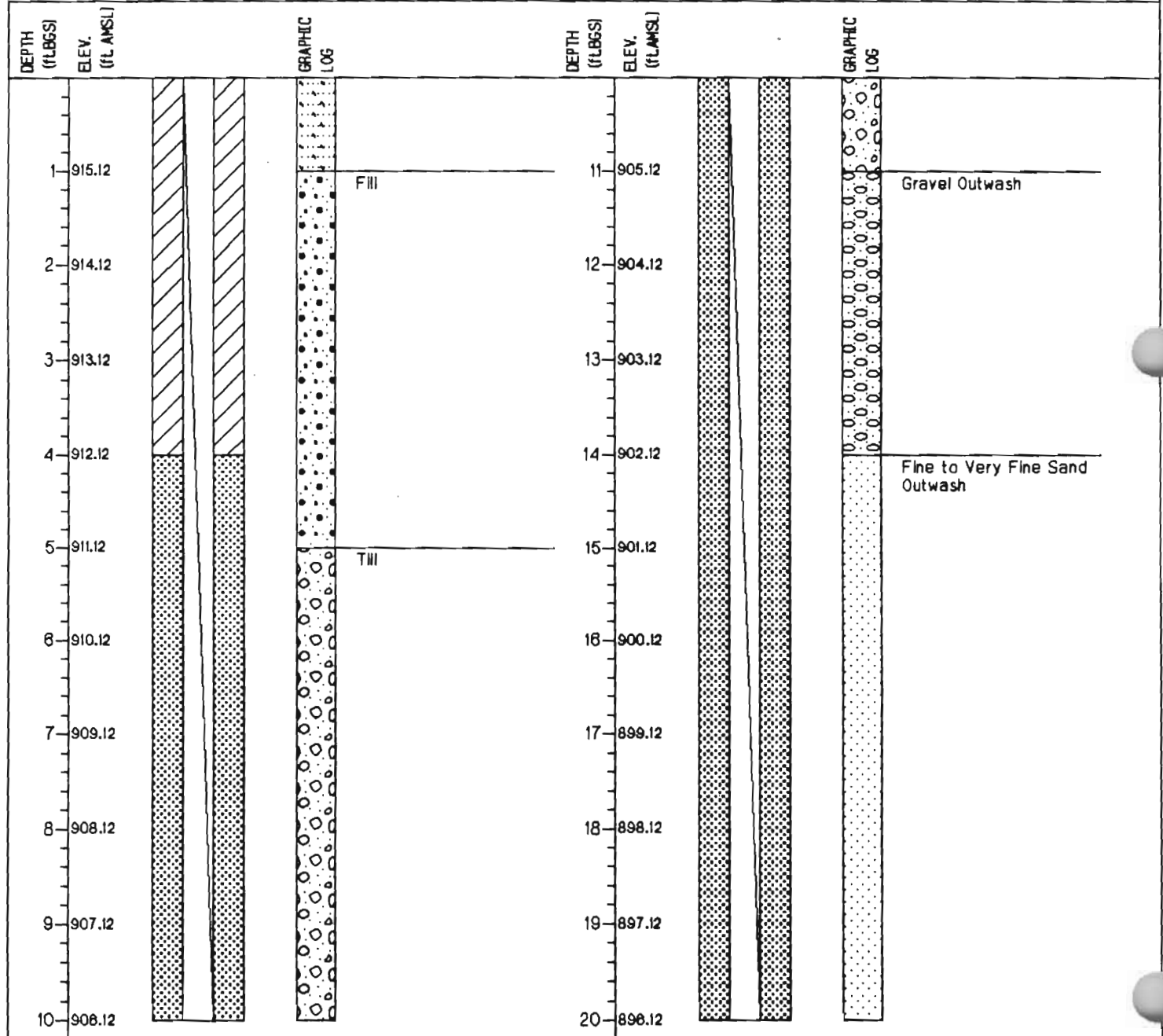
 4-INCH DIAMETER CASING

 2-INCH DIAMETER RISER
0 to 32.0 feet

 8-INCH DIAMETER BOREHOLE

 4-INCH DIAMETER BOREHOLE

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-4D
for a
complete
description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-4I CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

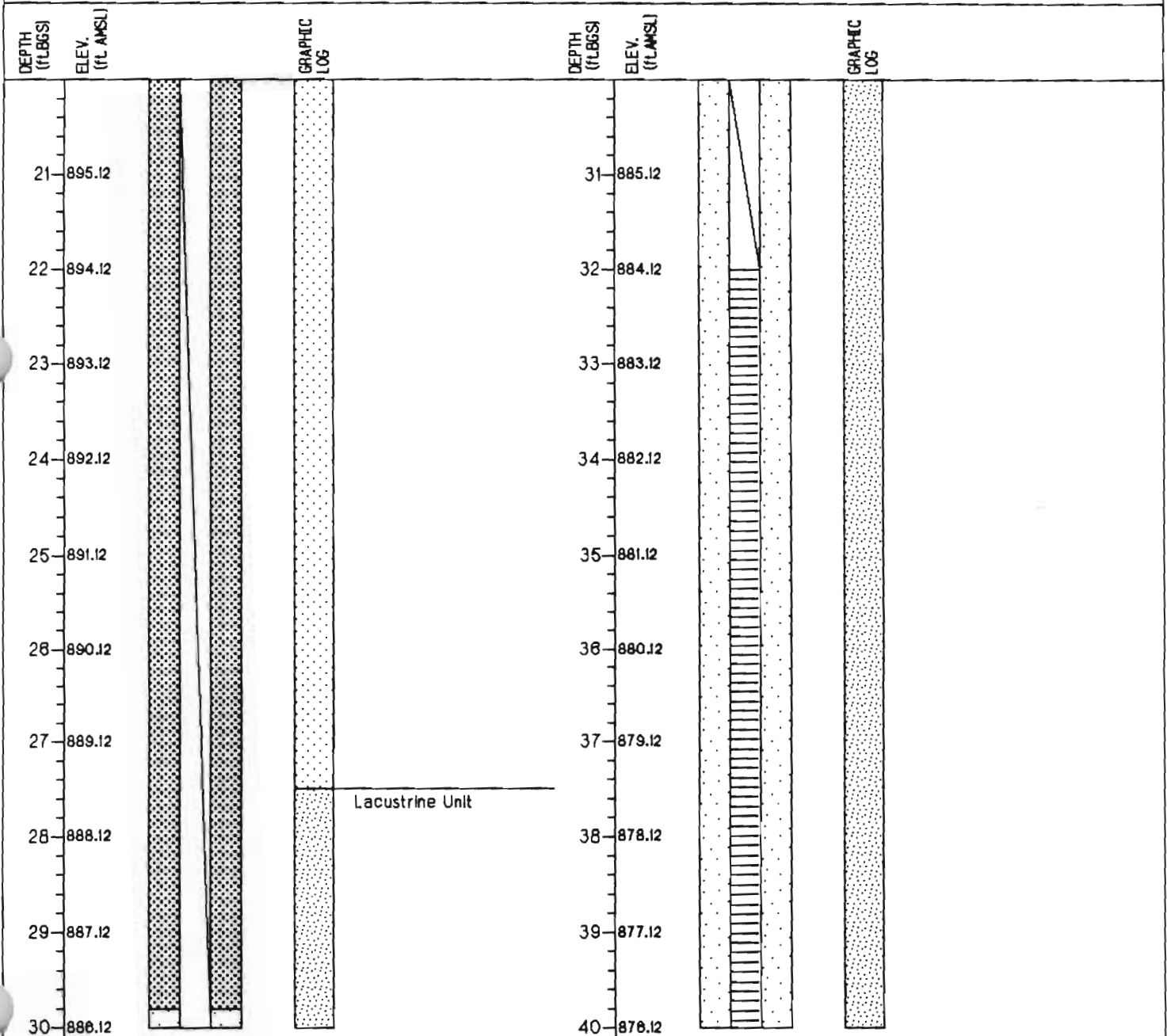
CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 816.12ft.

SYMBOLS AND DEFINITIONS

-  BENTONITE-CEMENT BEAL
0 to 4.0 feet
-  BENTONITE SLURRY BEAL
4.0 to 29.8 feet
-  MORIE #00 SAND PACK
29.8 to 42.5 feet
-  2-INCH DIAMETER SLOTTED (0.008")SCREEN
32.0 to 42.0 feet

-  4-INCH DIAMETER CASING
-  2-INCH DIAMETER RISER
0 to 32.0 feet
-  8-INCH DIAMETER BOREHOLE
-  4-INCH DIAMETER BOREHOLE

-  GRAPHIC LOG
refer to
BOREHOLE LOG MPI-4D
for a
complete
description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-4I CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

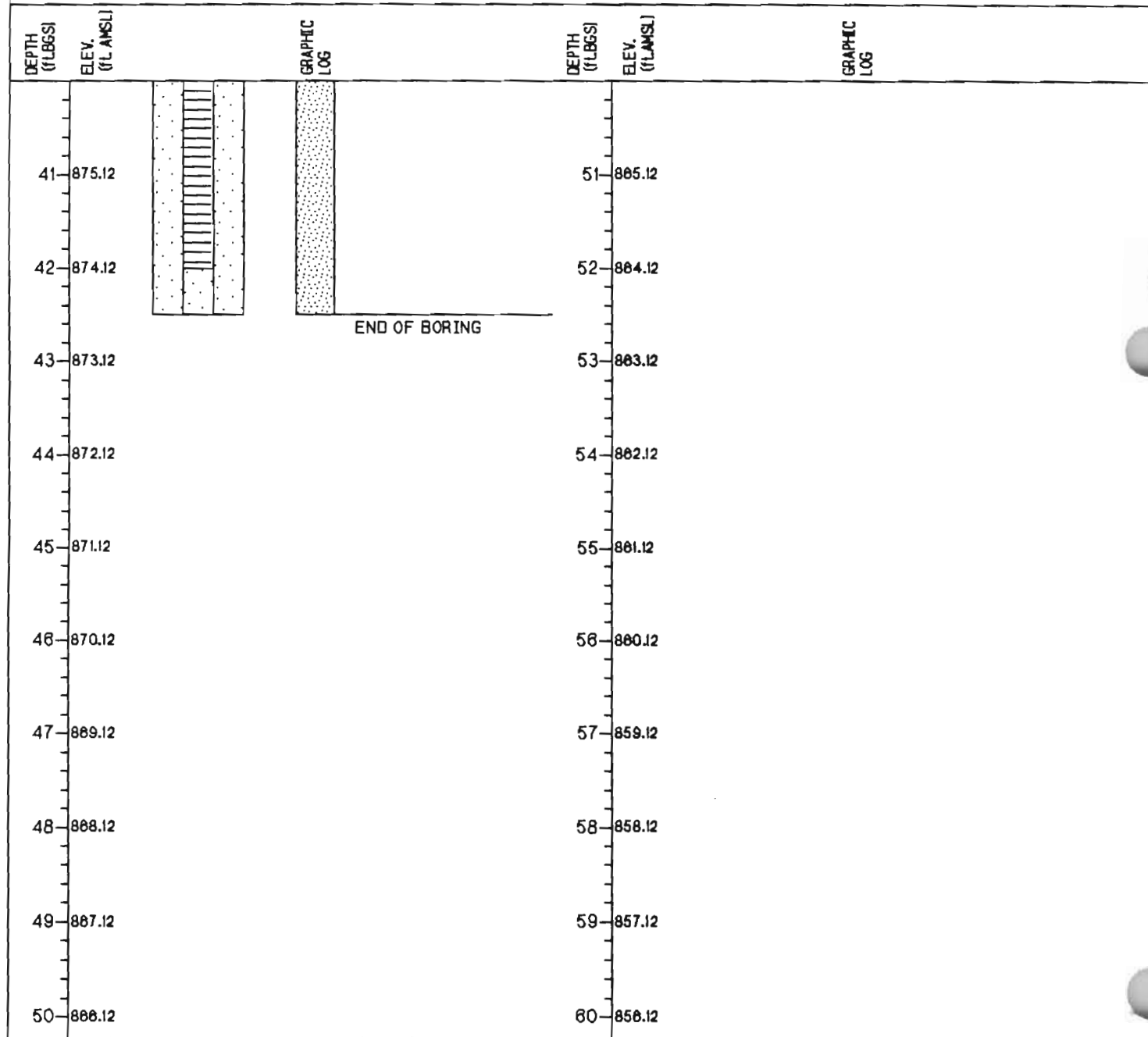
CLIENT: NYSDEC
 DRILLING DATES: 3/94
 DRILLING METHOD: 6.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 816.12ft.

SYMBOLS AND DEFINITIONS

-  BENTONITE-CEMENT SEAL
0 to 4.0 feet
-  BENTONITE BLURRY SEAL
4.0 to 28.8 feet
-  MORLE #00 SAND PACK
28.8 to 42.5 feet
-  2-INCH DIAMETER BLOTTED (0.008") SCREEN
32.0 to 42.0 feet

-  4-INCH DIAMETER CASING
-  2-INCH DIAMETER RISER
0 to 32.0 feet
-  8-INCH DIAMETER BOREHOLE
-  4-INCH DIAMETER BOREHOLE

 GRAPHIC LOG
 refer to
 BOREHOLE LOG MPI-4D
 for a
 complete
 description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

BOREHOLE LOG MPI-5D

PROJECT: MR. C CLEANERS RI
PROJECT NO.: 0200-31-4
LOCATION: EAST AURORA, NEW YORK
SURVEY COORDINATES:
SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
DRILLING DATES: 02/23/84 - 2/25/84
DRILLING METHOD: 4.25-inch ID HSA
LOGGED/CHECKED BY: JMA/RHO
SURFACE ELEVATION: 916.491t.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
SS3 Split Spoon (3in.ID)
ST Shelby Tube (2.8in.ID)
NR Height of Rods
NR No Recovery
- Sampler Refusal

JHB HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% ROD.				
1	915.49	Drilled to 0.5', FILL Grayish Brown slightly moist GRAVEL, some sand, little silt, trace clay, GM		1 SS	16 33 21	1.8	49						JHS=0.3 ppm	
2	914.49	Brown slightly moist CLAYEY SILTY GRAVEL, 15-40% gravel, some sand and silt, trace clay, trace foundry sand, hard, GM		2 SS	17 25 20 22	1.7	45						JHS=0.5 ppm	
3	913.49			3 SS	6 7 7 7	1.7	14						JHS=0.4 ppm	
4	912.49	TILL, Brown slightly moist CLAYEY SILT w/25-40% gravel, little fine-coarse sand, massive w/trace laminations, hard becoming stiff at 4.0', CL		4 SS	6 7 3 2	0.6	10						JHS=0.6 ppm	
5	911.49			5 SS	4 3 6 8	0.8	9						JHS=0.8 ppm	
6	910.49			6 SS	6 12 14 12	0.1	28						JHS=0.7 ppm	
7	909.49			7 SS	5 4 5 6	1.3	9						JHS=2.2 ppm	
8	908.49	STRATIFIED grayish brown moist GRAVELLY SAND, 40-80% mostly fine gravel, mostly coarse sand, loose, GP		8 SS	4 3 4 4	1.0	7						JHS=0.3 ppm	
9	907.49	becoming compact at 10.0'		9 SS	3 4 5 5	1.9	9						JHS=0.3 ppm	
10	906.49			10 SS	6 4 5 7	1.2	9						JHS=0.1 ppm	
11	905.49													
12	904.49													
13	903.49	Gray wet SAND, mostly medium-coarse sand, little fine, trace subangular and subround gravel, petroleum odor, loose, SP												
14	902.49	Brown wet SAND, mostly fine, some very fine sand, loose, liquifies when disturbed, SP-SM												
15	901.49													
16	900.49													
17	999.49													
18	998.49	Brown wet mostly v.fine SAND, trace v.fine sand trace-little silt, liquifies when disturbed, loose, SP-SM												
19	997.49													
20	996.49	Brown wet SAND, trace-no silt, mostly medium sand, little fine, loose, SP												

BOREHOLE LOG MPI-5D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 02/23/84 - 2/25/84
 DRILLING METHOD: 4.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 810.49ft.

SYMBOLS AND DEFINITIONS

SB Split Spoon (2in.ID)
 SB3 Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	895.49	STRATIFIED brown wet SILTY SAND, some silt, mostly very fine sand, compact, liquefies when disturbed, SM becoming loose at 24.0'		11 SS	3 3 4 5	1.0	7					JHS=0.2 ppm
22	894.49											JHS=0.1 ppm
23	893.49			12 SS	5 8 7 8	1.1	15					JHS=0.2 ppm
24	892.49											
25	891.49	Brownish gray wet SAND, trace-little silt, mostly fine sand, trace medium and very fine sand, compact, liquefies when disturbed, SM becoming compact at 30'		13 SS	5 4 5 7	1.0	9					JHS=0.2
26	890.49											JHS=0.2
27	889.49			14 SS	7 8 8 7	1.5	12					JHS=0.2 ppm
28	888.49											JHS=0.2 ppm
29	887.49	Brownish gray wet SAND, mostly very fine sand, little fine sand, trace to little silt, very dense, liquefies when disturbed, SM becoming loose at 32'		15 SS	18 35 34	1.1	88					JHS=0.1 ppm
30	886.49											JHS=0.1 ppm
31	885.49			16 SS	5 5 8 8	1.1	11					JHS=0.1 ppm
32	884.49											JHS=0.1 ppm
33	883.49			17 SS	5 3 3 3	1.2	8					JHS=0.1 ppm
34	882.49											JHS=0.1 ppm
35	881.49			18 SS	3 4 5 8	1.1	9					JHS=0.1 ppm
36	880.49											JHS=0.1 ppm
37	879.49			19 SS	5 4 4 3	1.0	8					JHS=0 ppm
38	878.49											JHS=0 ppm
39	877.49			20 SS	4 3 4 5	1.1	7					JHS=0 ppm
40	876.49											

BOREHOLE LOG MPI-5D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 02/23/84 - 2/25/84
 DRILLING METHOD: 4.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 918.49ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
41	875.49	STRATIFIED brownish gray wet SAND, mostly very fine, little fine sand, trace-little silt, loose, liquifies when disturbed, SM		21 SS	WR 1 3 5	1.3	4						JHS=0.1 ppm
42	874.49				2								JHS=0 ppm
43	873.49	LAMINATED Gray wet CLAYEY SILT, little clay, mostly silt, little fine sand, firm, CL		22 SS	3 3 4	1.5	8						JHS=0.1 ppm
44	872.49				8 8 8								JHS=0.1 ppm
45	871.49	Gray wet SILTY SAND, mostly fine sand, some silt, trace-little clay, very stiff, liquifies when disturbed, SM		23 SS	8 8 8	2.0	17						JHS=0.1 ppm
46	870.49	Gray wet CLAYEY SILT, with fine sand partings, making Clayey Silt 1/8"-1" thick, mostly silt, little-some clay, firm, CL		24 SS	3 2 3 4	2.0	5						JHS=0.1 ppm
47	869.49				3 3 4								JHS=0 ppm
48	868.49				3 3 4 5								JHS=0.1 ppm
49	867.49	Brownish gray wet SAND, medium sand, loose, SP		25 SS	1 3 5 8	2.0	8						JHS=0.1 ppm
50	866.49	Gray extremely moist SILTY CLAY, some silt, firm, CL, gray wet SILTY SAND at 54.0' and 55.5'		26 SS	1 3 4 4	2.0	7						JHS=0.1 ppm
51	865.49				ST		2.0	-					
52	864.49												
53	863.49	Gray wet SAND, mostly medium, trace fine sand, loose, SP		28 SS	8 8 8	2.0	14						JHS=0.1 ppm
54	862.49	Gray wet CLAYEY SILT, some clay, silt and sand partings .3' thick, stiff, CL			2 3 5 8	2.0	8						
55	861.49	Gray wet SAND, mostly medium, trace fine sand, loose, SP		29 SS									
56	860.49	Gray extremely moist SILTY CLAY, some silt, stiff, CL											
57	859.49												
58	858.49												
59	857.49												
60	856.49												

BOREHOLE LOG MPI-5D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

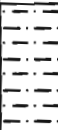
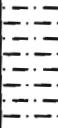
CLIENT: NYSDEC
 DRILLING DATES: 02/23/94 - 2/25/94
 DRILLING METHOD: 4.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 916.491t.

SYMBOLS AND DEFINITIONS

BB Split Spoon (2in.ID)
 BB3 Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.				
61	855.49	Gray extremely moist SILTY CLAY, some silt, stiff, CL		30 SS	2 4 8 11 2.0	12							JHS=0.1 ppm	
62	854.49													
63	853.49			31 SS	WR 4 8 9 2.0	10								JHS=0.1 ppm
64	852.49	Boring complete at 64' with augers at 62', sampled to 64'. Grouted hole with cement bentonite grout at completion.												
65	851.49													
66	850.49													
67	849.49													
68	848.49													
69	847.49													
70	846.49													
71	845.49													
72	844.49													
73	843.49													
74	842.49													
75	841.49													
76	840.49													
77	839.49													
78	838.49													
79	837.49													
80	836.49													

WELL/BOREHOLE MPI-5S CONSTRUCTION DETAILS

PROJECT: MR. C CLEANERS

PROJECT NO.: 0200-31-4

LOCATION: EAST AURORA, NEW YORK

SURVEY COORDINATES:

SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC

DRILLING DATES: 3/84

DRILLING METHOD: 8.25-inch ID HSA

LOGGED/CHECKED BY: JMA/RHO

SURFACE ELEVATION: 916.78ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 3.9 feet

 BENTONITE PELLET SEAL
3.9 to 5.9 feet

 MORIE #0 SAND PACK
5.9 to 16.4 feet

 2-INCH DIAMETER BLOTTED (0.01" IBCREEM
8.0 to 18.0 feet

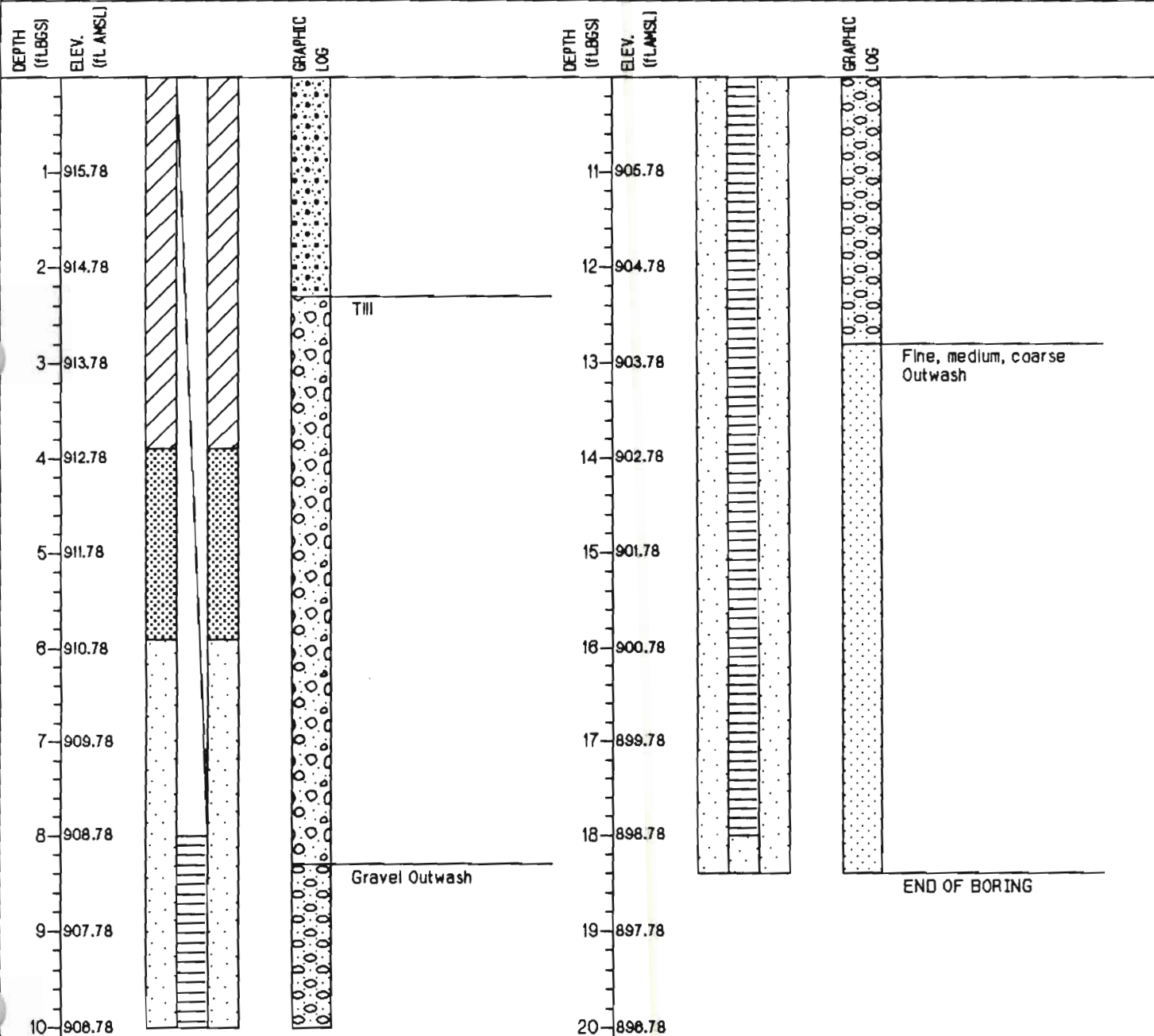
 4-INCH DIAMETER CASING

 2-INCH DIAMETER RIBER
0 to 8.0 feet

 8-INCH DIAMETER BOREHOLE

 4-INCH DIAMETER BOREHOLE

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-5D
for a
complete
description



NOTES: 1. 0.7 ft. long by 8-in. diameter curb box extends to 0.7 ft. BGS.

WELL/BOREHOLE MPI-5I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 918.78ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 8.0 feet

 BENTONITE SLURRY SEAL
8.0 to 30 feet

 MORIE #00 SAND PACK
30 to 42.5 feet

 2-INCH DIAMETER SLOTTED (0.008")SCREEN
32.0 to 42.0 feet

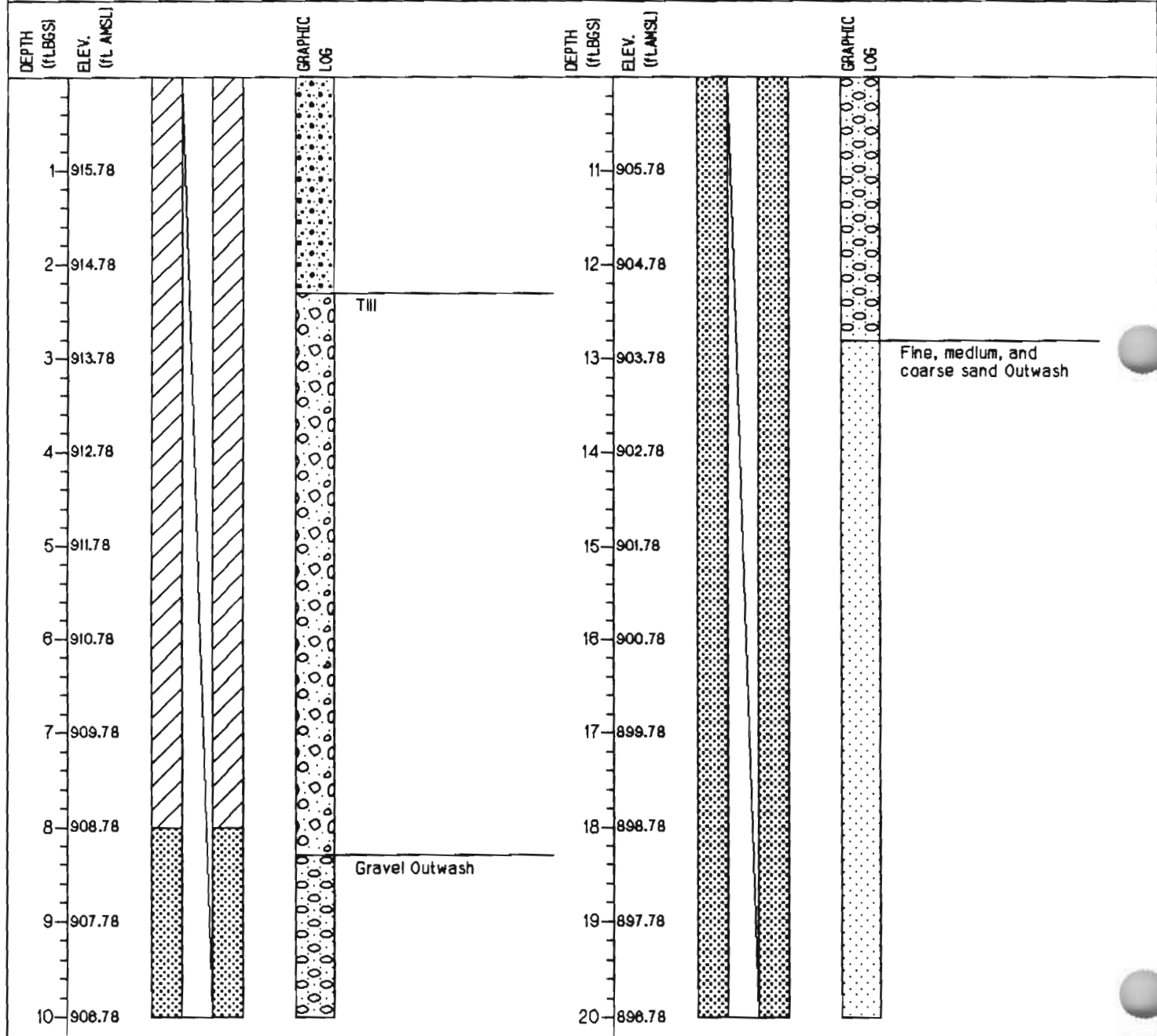
 4-INCH DIAMETER CASING
0 feet

 2-INCH DIAMETER RISER
0 to 32.0 Feet

 8-INCH DIAMETER BOREHOLE
0 feet

 4-INCH DIAMETER BOREHOLE
0 feet

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-5D
for a
complete
description



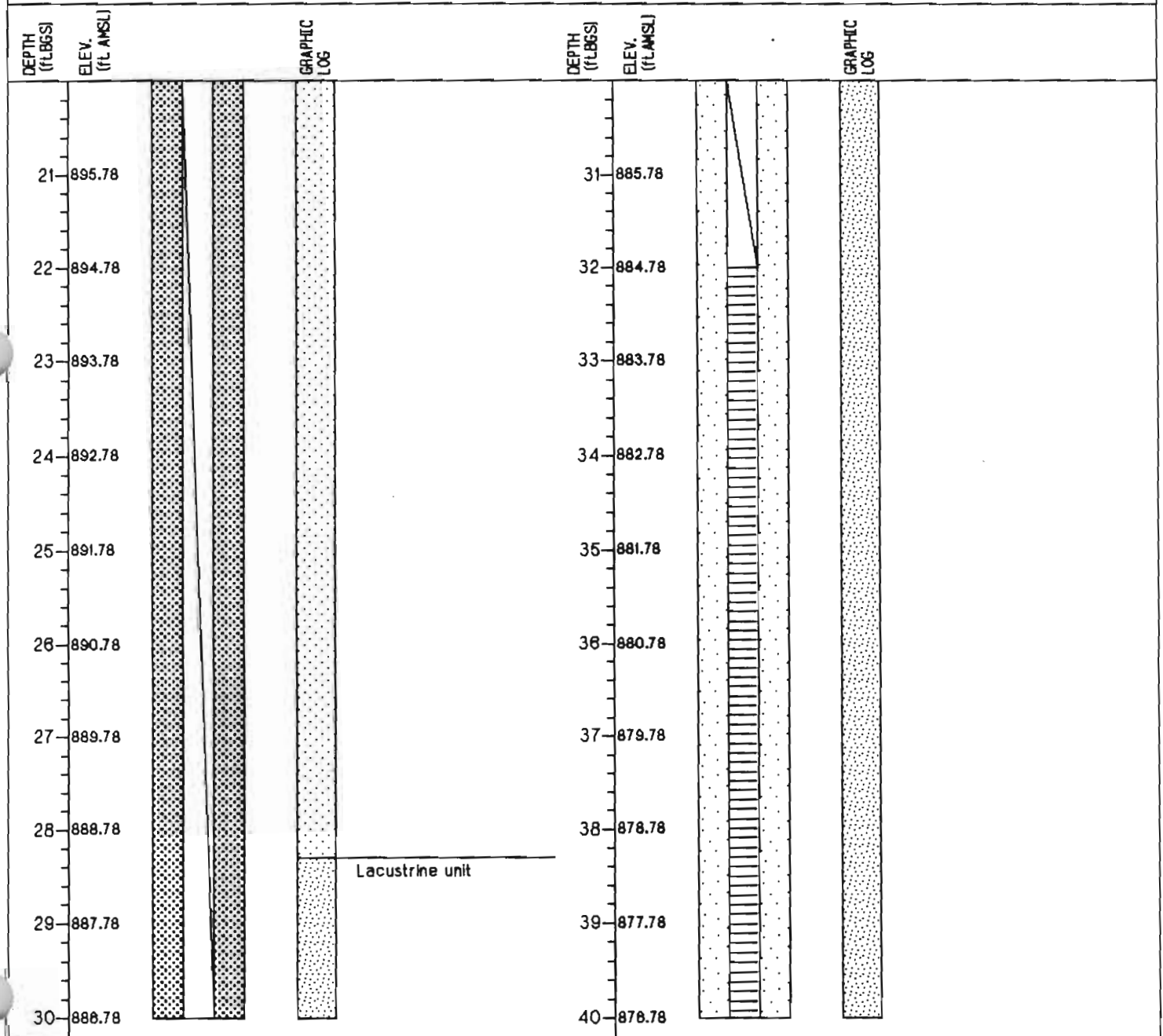
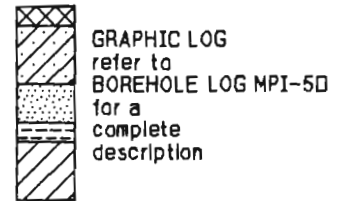
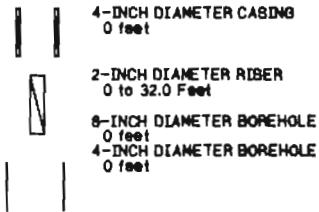
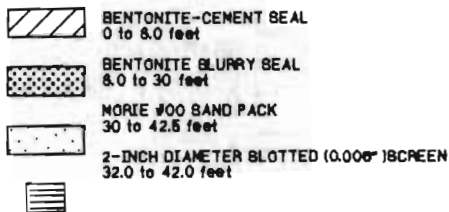
NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-5I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/94
 DRILLING METHOD: 0.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 818.78ft.

SYMBOLS AND DEFINITIONS



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-5I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

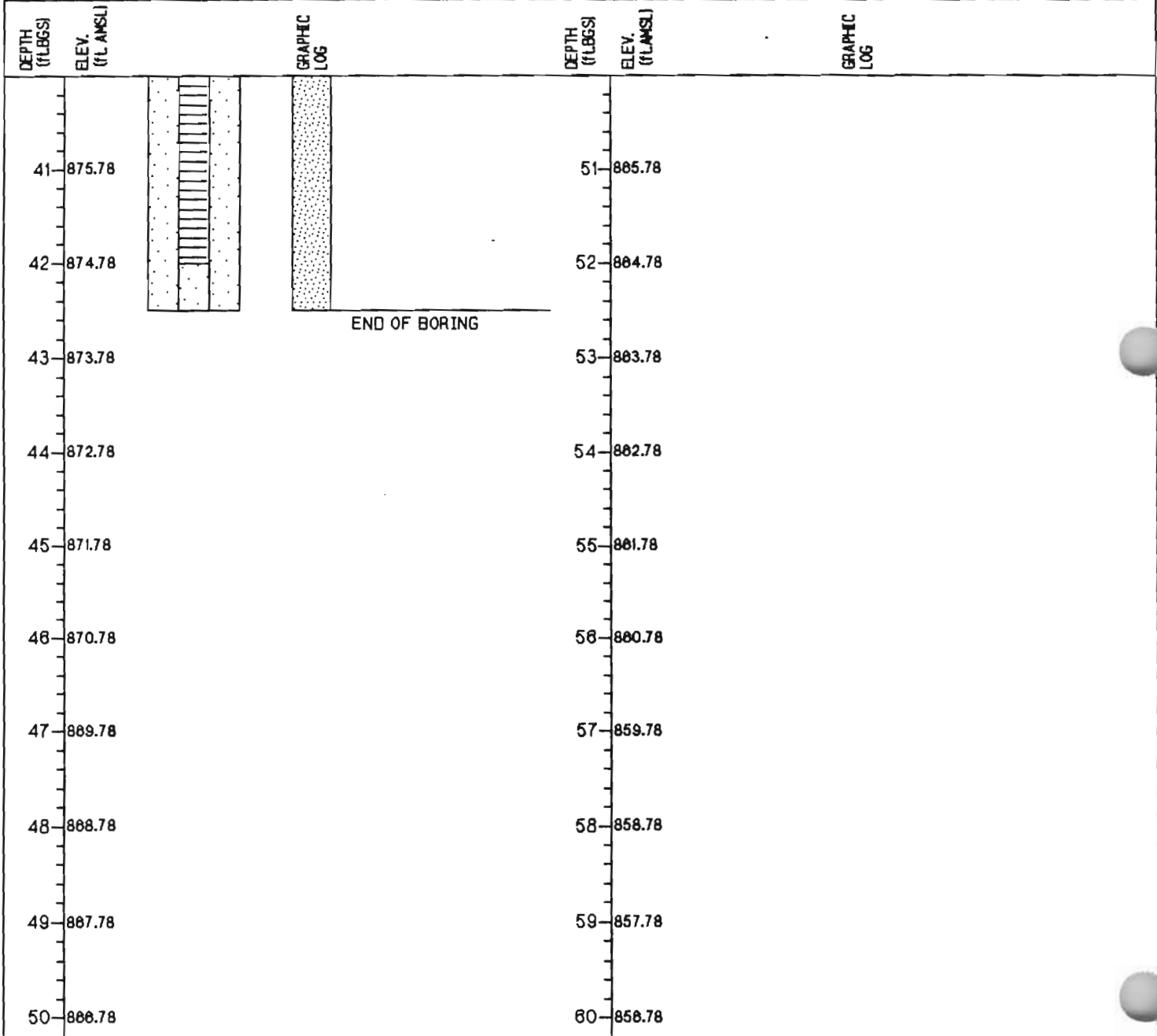
CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 918.78ft.

SYMBOLS AND DEFINITIONS

-  BENTONITE-CEMENT SEAL
0 to 8.0 feet
-  BENTONITE SLURRY SEAL
8.0 to 30 feet
-  MORIE #00 SAND PACK
30 to 42.5 feet
-  2-INCH DIAMETER SLOTTED (0.008")SCREEN
32.0 to 42.0 feet

-  4-INCH DIAMETER CASING
0 feet
-  2-INCH DIAMETER RISER
0 to 32.0 Feet
-  8-INCH DIAMETER BOREHOLE
0 feet
-  4-INCH DIAMETER BOREHOLE
0 feet

-  GRAPHIC LOG
refer to
BOREHOLE LOG MPI-5D
for a
complete
description



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

BOREHOLE LOG MPI-6S

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 03/10/94
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.35ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)		
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	"N"-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.				
1	914.35	FILL olive gray moist SANDY GRAVEL, some sand, 40-80% gravel, mostly angular, little silt, compact, GM		1 SS	12 8 8 4	1.5	14						JHS=0.4 ppm	
2	913.35	Black moist SILTY SAND, little silt, trace gravel, little organic matter, compact, SM				4								JHS=0.3 ppm
3	912.35	Dark brown moist CLAYEY SILT, little clay & gravel, trace roots, stiff, CL			2 SS	8 4 4	1.3	10						JHS=0.2 ppm
4	911.35	Brown moist SILTY SAND, some fine sand, trace v. fine, medium & coarse sand, trace gravel, loose, SM			3 SS	8 21 11 14	0.8	32						JHS=0.2 ppm
5	910.35	TILL, brown moist CLAYEY SILT, little clay & sand, trace gravel & roots, root channels filled w/gray clay, hard, CL			4 SS	3 5 4 8	0.5	9						JHS=0.2 ppm
6	909.35	STRATIFIED Brown ext moist to wet SILTY GRAVEL, some silt, little sand, mostly angular fine gravel, trace clay, loose, GM				5 SS	4 7 8 7	0.7	15					
7	908.35	becoming wet at 8.0'				8 SS	3 4 3 8	1.0	7					
8	907.35	LAMINATED, Brown moist SANDY SILT, w/clayey silt interbeds ~1" thick, sandy silt layers w/little clay, firm, loose, SM				7 SS	8 7 13 10	1.0	20					
9	906.35	STRATIFIED Brownish gray wet medium SAND, little fine sand, little fine angular shale gravel, compact, SP				8 SS	3 5 7 11	1.2	12					
10	905.35	Grayish brown wet SAND, mostly coarse, some medium sand, trace silt, little subangular and subrounded gravel, compact, SP				9 SS	3 8 13 18	1.1	21					
11	904.35	Brown ext. moist SANDY SILT, w/fine, medium, & coarse sand, little-some silt, trace fine gravel, compact, SM				10 SS	1 3 8 7	1.1	9					
12	903.35	Gray wet SILTY SAND, little silt, mostly fine sand, little very fine sand, liquifies when disturbed, loose, SM												
13	902.35													
14	901.35													
15	900.35													
16	899.35													
17	898.35													
18	897.35													
19	896.35													
20	895.35													

BOREHOLE LOG MPI-6S

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

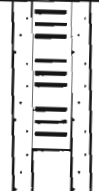
CLIENT: NYSDEC
 DRILLING DATES: 03/10/94
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 915.35ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAG Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" 1 2 5 5	RECOVERY (in) 1.0	'N'-VALUE 7	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.			
21	884.35	Gray wet SILTY SAND, little silt, mostly fine sand, little very fine sand, liquifies when disturbed, loose, SM		11 SS	1 2 5 5	1.0	7						JHS=112 ppm	
22	883.35													JHS=0.3 ppm
23	882.35			12 SS	1 2 8 7	1.0	8							
24	881.35	----- Sampled to 24',with augers at 23'.Set Well												
25	880.35													
26	889.35													
27	888.35													
28	887.35													
29	886.35													
30	885.35													
31	884.35													
32	883.35													
33	882.35													
34	881.35													
35	880.35													
36	879.35													
37	878.35													
38	877.35													
39	876.35													
40	875.35													

BOREHOLE LOG MPI-7D

PROJECT: MR. C CLEANERS RI
PROJECT NO.: 0288-31-4
LOCATION: EAST AURORA, NEW YORK
SURVEY COORDINATES:
SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
DRILLING DATES: 02/28/84
DRILLING METHOD: 4.25-Inch ID HSA
LOGGED/CHECKED BY: JMA/RHO
SURFACE ELEVATION: 918.87ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
SSS Split Spoon (3in.ID)
ST Shelby Tube (2.8in.ID)
WR Weight of Rock
NR No Recovery
- Sampler Refusal

JHS HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / ft	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	915.87	Augered to 1.0' through pavement and hard fill		1 SS	18 22	1.0	>18						JHS=3.5 ppm
2	914.87	FILL Brown frozen becoming moist to 2.2', CLAYEY SILT, with little sand and silt, w/10-25% subangular, subrounded and angular gravel, hard, CL becoming very stiff at 2.0'		2 SS	8 10 10 10	1.2	20						JHS=7.0 ppm
3	913.87												
4	912.87												JHS=4.2 ppm
5	911.87	Brown moist CLAYEY SILTY GRAVEL, some sand, 40-80% gravel, trace brick remnants, loose, GM		3 SS	43 18 12 11	0.2	28						JHS=18.8 ppm
6	910.87			4 SS	2 2 2 2	0.2	4						JHS=2.9 ppm
7	909.87			5 SS	3 5 4 4	0.2	8						JHS=18.8 ppm
8	908.87			6 SS	8 8 10 12	1.0	18						JHS=9.5 ppm
9	907.87			7 SS	5 8 7 5	0.8	13						JHS=1.2 ppm
10	906.87			8 SS	4 3 2 4	0.7	5						JHS=0.8 ppm
11	905.87			9 SS	4 8 8 8	0.8	14						JHS=3.4 ppm
12	904.87			10 SS	8 8 4 8	0.3	10						
13	903.87												
14	902.87												
15	901.87	STRATIFIED Brown moist SILTY SAND, some silt, 25-40% gravel, mostly subangular gravel, compact, SM											
16	900.87												
17	998.87	Brown wet SILTY GRAVEL, with little sand, little silt, compact, loose when disturbed, GM											
18	996.87												
19	997.87												
20	996.87												

BOREHOLE LOG MPI-7D

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 02/28/84
 DRILLING METHOD: 4.25-Inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 810.87ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	"N"-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	885.87	STRATIFIED brown wet SILTY GRAVEL, with some medium and coarse sand, 40-80% gravel, little silt, compact, loose when disturbed, GM		11 SS	4 8 8 7	0.8	14						JHS=1.8 ppm
22	884.87												JHS=2.0 ppm
23	883.87			occasional sandstone cobble	12 SS	12 12 8 8	0.5	21					JHS=0.9 ppm
24	882.87												
25	881.87			13 SS	13 8 8 8	0.8	17						JHS=0.2
26	880.87												JHS=0.1 ppm
27	889.87			Brown wet SAND, mostly fine, little medium sand, trace-no silt, compact, loose when disturbed, SP	14 SS	7 5 5 5	1.1	10					JHS=0.1 ppm
28	888.87												
29	887.87	Gray wet SAND, mostly fine, little medium sand, compact, loose when disturbed, SP		15 SS	8 5 8 8	1.3	13						JHS=0.2 ppm
30	886.87	Gray wet SILTY SAND, with little silt, mostly fine sand, compact, liquifies when disturbed, SM											JHS=0.1 ppm
31	885.87				16 SS	7 8 7 7	0.3	18					JHS=0.2 ppm
32	884.87			becoming loose at 32.0'									JHS=0.1 ppm
33	883.87			17 SS	3 3 3 4	2.0	8						JHS=0.1 ppm
34	882.87												JHS=0.1 ppm
35	881.87				18 SS	4 3 3 3	2.0	8					JHS=0.3 ppm
36	880.87												JHS=0.1 ppm
37	878.87	Gray wet SAND, mostly fine, trace very fine sand, loose, liquifies when disturbed, SP		19 SS	3 3 4 5	2.0	7						JHS=0.1 ppm
38	878.87												
39	877.87				20 SS	3 2 3 5	2.0	5					
40	878.87			Gray wet SILTY SAND, some silt, mostly very fine sand, loose, liquifies when disturbed, SM									

BOREHOLE LOG MPI-7D

PROJECT: MR. C CLEANERS RI

PROJECT NO.: 0288-31-4

LOCATION: EAST AURORA, NEW YORK

SURVEY COORDINATES:

SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC

DRILLING DATES: 02/28/84

DRILLING METHOD: 4.25-inch ID HSA

LOGGED/CHECKED BY: JMA/RHO

SURFACE ELEVATION: 818.871 ft.

SYMBOLS AND DEFINITIONS

88 Split Spoon (2in.ID)
883 Split Spoon (3in.ID)
BT Shelby Tube (2.8in.ID)
NR Weight of Rods
NR No Recovery
- Sampler Refusal

JHS HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.			
41	875.87	LAMINATED Gray wet CLAYEY SILT, with little-some clay, CL, alternating with SILTY SAND, with little- some silt, SM, each layer~1/4" thick, firm		21 SS	3 2 3 4	2.0	5						JHS=0.2 ppm	
42	874.87				1 2 3 3	2.0	5						JHS=0.1 ppm	
43	873.87		Gray moist CLAYEY SILT, with little-some clay, firm, CL		22 SS	1 2 3 3	2.0	5						JHS=0.1 ppm
44	872.87		Gray wet SILTY SAND, some silt, mostly very fine sand, loose, liquifies when disturbed, SM		23 SS	1 2 3 4	2.0	5						JHS=0.1 ppm
45	871.87	Gray wet CLAYEY SILT, with little-some clay, CL alternating with SILTY SAND, with little- some silt, clay layer~1/3" thick interbedded, SM sand layer 1/8-1/16" thick, firm		24 SS	2 4 4 7	2.0	8						JHS=0.1 ppm	
46	870.87												JHS=0.1 ppm	
47	869.87												JHS=0.1 ppm	
48	868.87	thicker Clayey Silt lenses ~1" thick one thicker Sand lense ~1" thick											JHS=0.1 ppm	
49	867.87	Gray wet SAND, mostly medium sand, trace fine, loose, liquifies when disturbed, SP-SM		25 SS	3 4 5 5	2.0	9						JHS=0.1 ppm	
50	866.87	Gray extremely moist SANDY SILT, with thin layers of clayey sandy silt ~1/8" thick, loose, SM		26 SS	3 4 5 8	2.0	9						JHS=0.1 ppm	
51	865.87												JHS=0.1 ppm	
52	864.87	Gray extremely moist SILTY CLAY, with some silt, occasional very thin sand lenses, stiff, CL		27 SS	3 8 8 8	2.0	12						JHS=0.1 ppm	
53	863.87	Gray wet SAND, mostly fine, trace medium, little very fine sand, compact, SP											JHS=0.1 ppm	
54	862.87	Gray alternating layers of extremely moist SILTY SAND and SANDY SILT, with thin clay layers ~1/8" thick, stiff, SM and ML		28 SS	4 5 8 8	2.0	11						JHS=0.1 ppm	
55	861.87												JHS=0.1 ppm	
56	860.87	Gray extremely moist SILTY CLAY, with some silt, stiff, CL		29 SS	3 4 8 8	2.0	10						JHS=0.1 ppm	
57	859.87													
58	858.87													
59	857.87	Boring complete at 60' with augers at 58'. Grouted hole with cement/bentonite grout at completion.		ST		2.0								
60	856.87													

WELL/BOREHOLE MPI-7I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 8.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 918.42ft.

SYMBOLS AND DEFINITIONS

 BENTONITE-CEMENT SEAL
0 to 5.3 feet

 BENTONITE SLURRY SEAL
5.3 to 27.1 feet

 MORIE #00 SAND PACK
27.1 to 40 feet

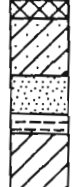
 2-INCH DIAMETER SLOTTED (0.008")SCREEN
32.0 to 42.0 feet

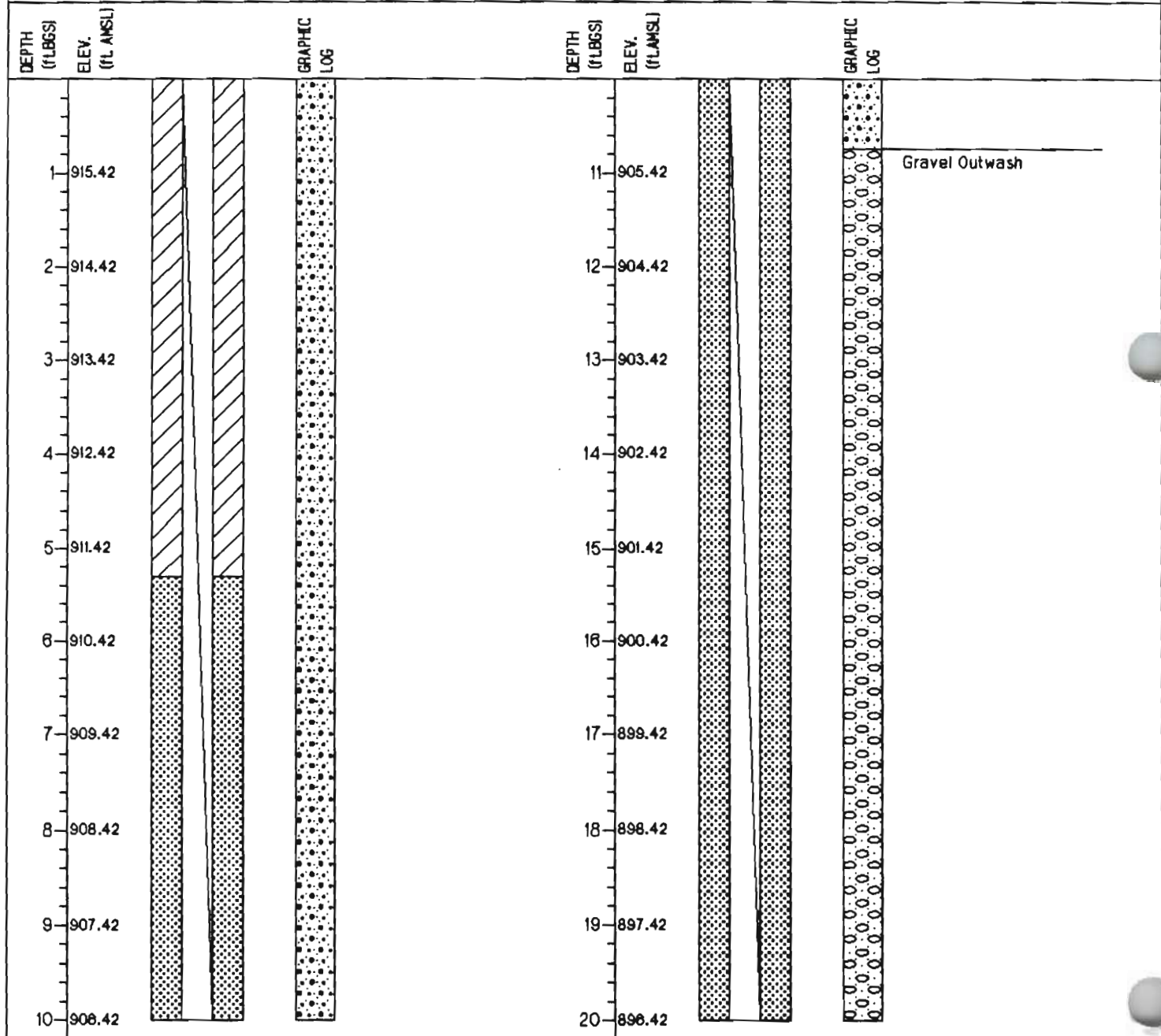
 4-INCH DIAMETER CASING
0 feet

 2-INCH DIAMETER RISER
0 to 29.5 Feet

 8-INCH DIAMETER BOREHOLE
0 feet

 4-INCH DIAMETER BOREHOLE
0 feet

 GRAPHIC LOG
refer to
BOREHOLE LOG MPI-7D
for a
complete
description



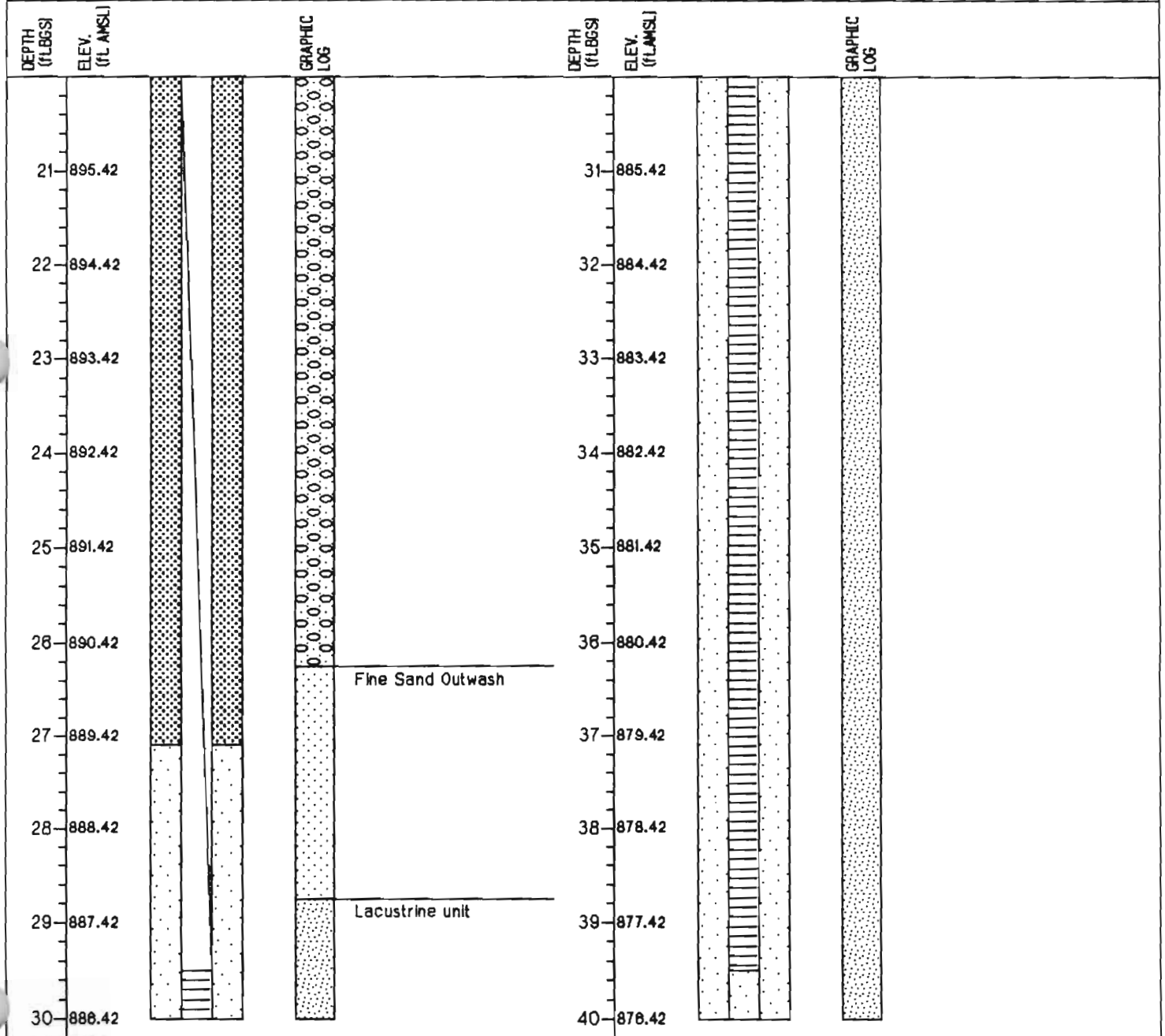
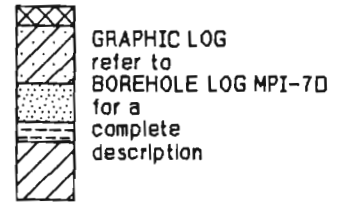
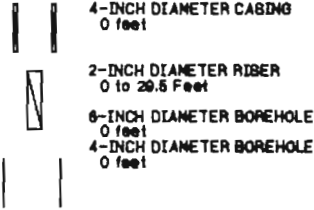
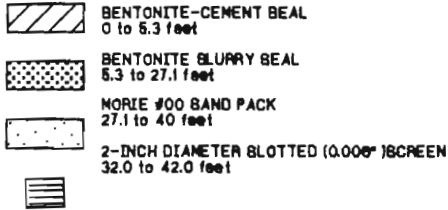
NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

WELL/BOREHOLE MPI-7I CONSTRUCTION DETAILS

PROJECT: MR C CLEANERS
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 3/84
 DRILLING METHOD: 6.25-inch ID HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 818.42ft.

SYMBOLS AND DEFINITIONS



NOTES: 1. 0.7 FT. long by 8-in. diameter curb box extends to 0.5 ft. BGS.

BOREHOLE LOG MPI-8S

PROJECT: MR. C CLEANERS RI
PROJECT NO.: 0288-31-4
LOCATION: EAST AURORA, NEW YORK
SURVEY COORDINATES:
SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
DRILLING DATES: 03/21/84
DRILLING METHOD: 0.25-inch ID HSA
LOGGED/CHECKED BY: JPH/RHO
SURFACE ELEVATION: 915.01ft.

SYMBOLS AND DEFINITIONS

BB Split Spoon (2in.ID)
BB3 Split Spoon (3in.ID)
BT Shelby Tube (2.8in.ID)
WR Weight of Rods
NR No Recovery
- Sampler Refusal

JHS HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('M' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	914.01	Augered 1' through asphalt, pavement, and concrete		1 SS	4	0.7							JHS=0.8 ppm
2	913.01	FILL dark brown moist CLAY and SILT, little coarse sand and fine gravel, CL			4								JHS=1.3 ppm
3	912.01	Brownish yellow moist SAND, fine-medium sand, trace-little fine gravel, compact, SP		2 SS	3	0.8	13						
4	911.01	Moderate-dark brown moist GRAVELLY SILT, little-some subround gravel (shale) to 3/4" diameter, trace-little sand, trace clay, few Brick fragments, compact, GM			10								JHS=0.7 ppm
5	910.01	TILL, SILTY SANDY GRAVEL, to 3/4" diameter, little-some brown-orange silt and fine-medium sand, compact, GM		3 SS	8	0.5	22						
6	909.01	Dark gray moist SANDY GRAVEL, with trace silt and some medium to coarse sand, fine gravel to 3/4" dia., loose when disturbed, compact, GW-GM			10								JHS=1.1 ppm
7	908.01			4 SS	13	0.9	18						
8	907.01				8								JHS=5.8 ppm
9	906.01			5 SS	9	1.2	8						
10	905.01	SILT light brown, bedded laminae, trace sand, moist, stiff			4								JHS=2.2 ppm
11	904.01	GRAVEL, to 1/4" diameter, little fine-medium sand, trace-little silt, loose, GM		6 SS	4	1.1	8						
12	903.01	Wet SILTY SAND, w/little silt, heavily stained iron/siderite contact with laminae			4								JHS=0.4 ppm
13	902.01	very fine-medium sand, liquifies when disturbed, loose, SM		7 SS	3	1.4	8						
14	901.01	Dark gray wet SAND, mostly medium, fine-course sand, well drained, loose, w/very fine grained laminae as bedding fabric, loose, SP			5								JHS=3.4 ppm
15	900.01			8 SS	2	1.1	8						
16	899.01				4								JHS=3.2 ppm
17	898.01			9 SS	2	1.0	8						
18	897.01	Dark gray wet SAND, very fine-fine sand, trace silt as thin laminated bedding fabric, loose, SM			3								JHS=8.2 ppm
19	896.01			10 SS	3	1.1	7						
20	895.01	Boring complete at 20'. Set well			4								

BOREHOLE LOG MPI-9S

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM: NEW YORK STATE SURVEY GRID

CLIENT: NYSDEC
 DRILLING DATES: 03/23/94
 DRILLING METHOD: 8.25-Inch ID HSA
 LOGGED/CHECKED BY: JPH/RHO
 SURFACE ELEVATION: 815.24ft.

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	814.24	Advanced augers through asphalt and concrete to 1' prior to sampling		1 SS	3	1.0							JHS=0.2 ppm
2	813.24	Dark brown moist SILTY SAND, w/fine, medium, coarse sand, little silt, little-some shale clasts as gravel, trace clay, SM			4								JHS=0.7 ppm
3	812.24	Light gray-brown moist SANDY SILT, fine, medium, and coarse sand, some silt, little-some subangular gravel to 1/2" diameter as Shale clasts, SM		2 SS	2	0.5	5						JHS=0.9 ppm
4	811.24				3								
5	810.24	Brown moist SILTY SAND, little silt, medium-course sand, little subround gravel to 1/2" diameter, loose w/cobbles > 3", SP-SM		3 SS	9	0.7	18						JHS=0.4 ppm
6	808.24				9								
7	808.24	GRAVEL and SAND with Cobbles > 3"		4 SS	12	0.2	18						JHS=1.2 ppm
8	807.24				9								
9	806.24	Brown wet SANDY GRAVEL, subround fine gravel w/ shale clasts to 3/4", medium-course sand, trace silt, loose when disturbed, compact, GP-GM		5 SS	5	1.1	11						JHS=1.0 ppm
10	805.24				5								
11	804.24	Wet GRAVEL and SAND, loose when disturbed		6 SS	2	1.2	13						JHS=0.8 ppm
12	803.24				6								
13	802.24	Light orange to brown wet SANDY SILT, little-some gravel, trace clay, grading to course gray sand at 13.1'		7 SS	18	1.3	23						JHS=1.8 ppm
14	801.24				14								
15	800.24	Grayish brown wet SAND, mostly medium, trace coarse, some bedding fabric as sorted laminae, loose, SP		8 SS	4	1.8	7						JHS=1.8 ppm
16	898.24				3								
17	898.24	Gray wet SAND, mostly medium, trace coarse, loose, SP			4								
18	897.24	Gray wet SAND, mostly medium, trace coarse, fine subrounded gravel to 1/2" diameter, loose, SP		9 SS	1	1.3	8						JHS=1.8 ppm
19	896.24				3								
20	895.24	Grayish brown wet SAND, mostly medium, trace coarse, subrounded gravel to 1/2" dia., unsorted, loose, SP		10 SS	2	1.1	4						
		Boring complete at 20'. Set well			2								
					5								

BOREHOLE LOG MPI-10B

PROJECT: MR. C CLEANERS RI
PROJECT NO.: 0200-31-4
LOCATION: EAST AURORA, NEW YORK
SURVEY COORDINATES:
SURVEY DATUM:

CLIENT: NYSDEC
DRILLING DATES: 12/22/84 - 12/23/84
DRILLING METHOD: 8-1/4" HSA
LOGGED/CHECKED BY: JMA/RHO
SURFACE ELEVATION: 910.07 ft. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
SS3 Split Spoon (3in.ID)
ST Shelby Tube (2.8in.ID)
NR Weight of Rods
NR No Recovery
- Sampler Refusal

JHS HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)		
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.					
1	915.07	FILL, gray and brown moist SAND AND GRAVEL, loose when disturbed, firm, GP		1 SS	7 9 4 12	0.8	13						JHS=0.2 ppm		
2	914.07	Brown CLAYEY SILTY GRAVEL, firm becoming loose @ 4', GC-GM		2 SS	15 12 9 8	1.2	21						JHS=0.2 ppm		
3	913.07												JHS=0.9 ppm		
4	912.07														
5	911.07					3 SS	2 3 3 5	0.5	8					JHS=0.5 ppm	
6	910.07	Brown moist GRAVELLY CLAYEY SILT, some fine - coarse sand, little silt, little clay, little gravel, loose, CL		4 SS	2 3 4 4	1.1	7						JHS=0.3 ppm		
7	909.07														
8	908.07	Brown moist SANDY CLAYEY SILT, little fine - medium sand, little sand, trace clay, little silt, little gravel, loose when disturbed, medium consistency, SM		5 SS	2 3 4 4	1.0	7						JHS=0.4 ppm		
9	907.07														
10	906.07													JHS=0.4 ppm	
11	905.07	STRATIFIED, Brown wet SAND, mostly fine and medium, trace coarse trace silt, loose when disturbed, loose, stratified, SP Occasional gravel		6 SS	2 4 3 4	0.8	7						JHS=0.8 ppm		
12	904.07														
13	903.07			7 SS	3 3 4 8	1.1	7							JHS=8.0 ppm	
14	902.07	Brown wet SAND, mostly fine size sand, trace medium and coarse sand, liquefies when disturbed, loose, (running sands), SP		8 SS	2 2 3 3	1.0	5							JHS=7.2 ppm	
15	901.07														
16	900.07														
17	899.07	Brown wet SILTY SAND, mostly very fine with occasional finer stratifications, liquefies when disturbed, firm, SP-SM		9 SS	4 4 8 8	1.3	12							JHS=0.2 ppm	
18	898.07														
19	897.07					10 SS	2 3 4 4	1.0	7						
20	896.07														

BOREHOLE LOG MPI-10B

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/22/84 - 12/23/84
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 818.07 ft. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA			WELL DIAGRAM	COMMENTS (USCS)			
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.			% RQD.		
21	885.07	Brown wet SAND, mostly fine size sand, little medium sand, trace silt, liqifies when disturbed, loose, SP		11 SS	1 2 3 7	1.1	5						JHS=11.0 ppm		
22	884.07				12 SS	8 6 7 7	1.0	13						JHS=12.8 ppm	
23	883.07			more numerous fine sand stratifications, firm		13 SS	4 5 6 8 9	0.8	11						JHS=9.6 ppm
24	882.07			Brown wet SAND, fine, medium & coarse sand, little gravel, (increasing amount of silt in bottom of spoon), firm, SP		14 SS	2 2 3 10	1.0	5						JHS=4.6 ppm
25	881.07	Brown wet SAND, mostly fine, little medium sand, trace silt, occasional fine sand lenses up to .03' in length, loose, SP		15 SS	2 2 3 10	1.5	5						JHS=3.4 ppm		
26	880.07	Brown wet SAND, mostly fine, little medium, trace silt, loose, SP		16 SS	2 3 6 10	0.9	9						JHS=2.3 ppm		
27	889.07	LAMINATED, Fine sand lenses at 30.8 and 30.7 (.5" -.75" in length)													
28	888.07	Brown wet SANDY SILT, liqifies when disturbed, loose													
29	887.07	Boring complete at 32'. Installed well.													
30	886.07														
31	885.07														
32	884.07														
33	883.07														
34	882.07														
35	881.07														
36	880.07														
37	879.07														
38	878.07														
39	877.07														
40	876.07														

BOREHOLE LOG MPI-11B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/27/84
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: RHO
 SURFACE ELEVATION: 913.5811 FT. ABOVE NGVD

SYMBOLS AND DEFINITIONS

88 Split Spoon (2in.ID)
 863 Split Spoon (3in.ID)
 8T Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHB HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)		ELEVATION (ft ANSL.)	SOIL/ROCK DESCRIPTION	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
				GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	"N"-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.			% RGD.
1	912.58		FILL, SILT, SAND AND GRAVEL, slag fill, moist,		1 SS	5	1.0	4						JHS= ppm
2	911.58		TOPSOIL, Dark brown moist SILTY FINE SAND, some medium sand, trace gravel, trace organic vegetation, loose, SM		2 SS	3								JHS= ppm
3	910.58		TILL, Brown moist fine SAND, little silt, little medium sand, trace rounded gravel, trace veg. fragments, firm, SM		2 SS	5	1.5	12						JHS= ppm
4	909.58		Brown moist SILT AND SAND, some gravel, gravel is fragments of black shale, greengray siltstone, loose, SM		3 SS	3	1.5	8						JHS= ppm
5	908.58		Brown wet SILT AND fine SAND, some gravel, gravel fragments of black shale, greengray siltstone, weathered, loose, SM		4 SS	2	0.7	4						JHS= ppm
6	907.58		STRATIFIED Brown wet SAND, mostly fine sand, liquifies when disturbed, loose, SP		5 SS	WH	0.8	4						JHS= ppm
7	906.58		Brown wet GRAVEL, mostly rounded gravel in a fine sand matrix, loose, GP		6 SS	8	0.5	15						JHS= ppm
8	905.58		Brown wet SAND & GRAVEL, fine to medium gravel, medium sand, trace fine sand, gravel-rounded, fine gravel in shale fragments, medium gravel is sandstone/siltstone, very compact, SW or GW		7 SS	48	1.0	54						JHS= ppm
9	904.58		Brown wet SAND & GRAVEL, fine-medium gravel, medium-coarse sand, trace silt, gravel-well rounded & well washed, loose, SW or GW		8 SS	4	0.8	9						JHS= ppm
10	903.58		Brown wet SAND, medium-coarse sand, trace fine sand, little fine gravel, trace medium gravel, trace silt, gravel-well rounded & well washed, firm, SW		9 SS	7	1.8	15						JHS= ppm
11	902.58		Brown wet GRAVELLY SAND, medium-coarse sand, some fine-medium gravel, trace fine sand, thin stratified medium sand layers, firm, SW		10 SS	17	1.2	22						JHS= ppm
12	901.58													
13	900.58													
14	999.58													
15	998.58													
16	997.58													
17	996.58													
18	995.58													
19	994.58													
20	993.58													

BOREHOLE LOG MPI-11B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0286-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/27/94
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: RHO
 SURFACE ELEVATION: 813.58ft.FT. ABOVE NGVD

SYMBOLS AND DEFINITIONS

GS Split Spoon (2in.ID)
 BS Split Spoon (3in.ID)
 BT Shelby Tube (2.8in.ID)
 WR Weight of Rod
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in auger

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / ft	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	892.58	Brown wet SANDY SILT, some fine sand, firm, ML		11 SS	4 8 5 8	0.8	11						JHS= ppm
22	891.58	Black SHALE FRAGMENTS											JHS= ppm
23	890.58	Brown wet SAND, mostly fine sand, trace to little silt, liquifies when disturbed, loose, SP-SM		12 SS	2 4 4 7	1.8	8						JHS= ppm
24	889.58	Grayish brown wet SAND, mostly fine, some medium, trace silt, loose, SP		13 SS	WR 1 2 3	1.0	3						JHS= ppm
25	888.58												JHS= ppm
26	887.58												JHS= ppm
27	886.58	LAMINATED, Gray wet SILT and SAND, mostly very fine, liquifies when disturbed, loose, SM		14 SS	3 3 4 7	1.5	7						JHS= ppm
28	885.58	Gray wet SAND, mostly medium, little fine, loose, SP		15 SS	WR 3 4 3	1.0	7						JHS= ppm
29	884.58	Gray wet SAND, mostly fine sand, little silt, loose, SM											JHS= ppm
30	883.58	Gray wet SILT and very fine SAND, loose, ML											JHS= ppm
31	882.58	Gray wet fine SAND, little silt, loose, SM											
32	881.58	Boring complete at 30'. Installed well.											
33	880.58												
34	879.58												
35	878.58												
36	877.58												
37	876.58												
38	875.58												
39	874.58												
40	873.58												

BOREHOLE LOG MPI-12B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/28/84
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: RHO
 SURFACE ELEVATION: 911.44ft.FT. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHB HNU reading in jar headspace
 GAB Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('M' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8" RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	910.44	FILL, Asphalt, subbase, gravel, sand to cobbles in cuttings firm		1 SS	5 8 8	0.7	12					JHS=0 ppm
2	909.44	Silty fine sand, slightly moist		2 SS	4 5 8	0.7	11					JHS=0 ppm
3	908.44											JHS=0 ppm
4	907.44	TILL, brown moist CLAYEY SILT, some gravel (fine to cobbles), moderate-extremely weathered till, medium consistency, CL		3 SS	5 8 8	0.7	12					JHS=0 ppm
5	908.44											JHS=0 ppm
6	905.44	Brown wet GRAVELLY CLAYEY SILT, black shale and greenish gray siltstone, clayey silt mottled reddish brown, medium consistency, CL		4 SS	5 3 3	0.5	8					JHS=0 ppm
7	904.44											JHS=0.8 ppm
8	903.44	STRATIFIED, brown wet SANDY GRAVEL, little fine to medium sand, gravel-well rounded, loose, SW		5 SS	1 2 3	0.2	5					JHS=7.0 ppm
9	902.44											JHS=5.5 ppm
10	901.44	Brown wet SAND & GRAVEL, little silt, firm, SM or GM		6 SS	1 3 5	0.3	8					JHS=7.8 ppm
11	900.44											JHS=4.5 ppm
12	998.44	Brown wet SANDY GRAVEL, little medium to coarse sand, loose, GW		7 SS	5 8 5	1.0	11					JHS=1.0 ppm
13	998.44											JHS=1.0 ppm
14	997.44	Brown wet SILTY SAND, mostly medium to fine sand, some medium-coarse gravel, gravel loose w/occasional layers of firm fine matrix, firm, SM		8 SS	2 3 3	0.7	8					JHS=4.5 ppm
15	996.44											JHS=4.5 ppm
16	995.44	Brown wet SANDY GRAVEL, some fine to medium sand, cobbles to fine gravel, trace silt, firm, GW		9 SS	7 5 7	1.0	12					JHS=1.0 ppm
17	994.44											JHS=1.0 ppm
18	993.44	Brown wet SANDY GRAVEL, some fine to medium sand, cobbles to fine gravel, trace silt, firm, GW		10 SS	5 8 13	1.0	18					JHS=1.0 ppm
19	992.44											JHS=1.0 ppm
20	991.44											

BOREHOLE LOG MPI-12B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/28/84
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: RHO
 SURFACE ELEVATION: 811.44 ft. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SSS Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rock
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	880.44	no recovery		11 SS	2 5 7 11	1.0	12						JHS=0.3 ppm
22	888.44												JHS=0.8 ppm
23	888.44			12 SS	17 27 10 11	0.8	37						JHS=0 ppm
24	887.44												
25	888.44			13 SS	3 8 10 11	NR	18						
26	885.44	Brown wet SAND and GRAVEL, fine gravel, coarse sand, some fine sand trace silt, firm, SW or GW		14 SS	12 8 8 10	0.5	12						JHS=0.4 ppm
27	884.44												
28	883.44			15 SS	3 3 7 8	0.5	10						JHS=0.3 ppm
29	882.44												
30	881.44			16 SS	4 7 8 7	0.5	18						JHS=0.2 ppm
31	880.44	Becoming Gray at 32.5'		17 SS	7 8 8 7	1.0	18						JHS=0 ppm
32	878.44												
33	878.44			18 SS	3 8 4 3	0.3	10						JHS=0.1 ppm
34	877.44												
35	876.44			18 SS	3 3 4 5	0.7	7						
36	875.44	LAMINATED, brownish gray wet SILTY CLAY, some silt, occasional round gravel, consistence, CL											
37	874.44												
38	873.44												
39	872.44												
40	871.44												
		Boring complete at 38'. Installed well to 35.0 feet.											

BOREHOLE LOG MPI-13B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 1/10/95
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.88ft.FT. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft ANSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)	
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RGD.			
1	912.88	FILL, Asphalt to 0.2' and concrete to 1.0, fill to 2.0 feet		-	-	-	-							
2	911.88	Brown moist SANDY SILT, little fine to coarse sand, trace fine gravel, blocky, loose, reworked soil		1 SS	1									JHS=0 ppm
3	910.88				3	1.3	8							
4	909.88	TILL, yellowish brown moist CLAYEY SANDY SILT, little f-c sand, trace clay & gravel, trace roots, blocky, loose, ML		2 SS	2									JHS=0.3 ppm
5	908.88				5	1.3	12							
6	907.88	Brown w/gray mottling moist CLAYEY SILT, w/15-25% mostly shale gravel, massive, medium consistence, CL		3 SS	9									JHS=0.4
7	906.88				5	0.9	10							
8	905.88	Brown wet SILTY GRAVELLY SAND, w/mostly coarse sand, little fine to medium, little silt, little gravel, exhibits some cohesion, medium consistency, SM		4 SS	WR									JHS=0.2 ppm
9	904.88				1	0.8	2							
10	903.88	STRATIFIED, Brown wet SAND, mostly coarse sand, little med. sand, trace-little silt & grav, loose when disturbed, loose, SP-SM		5 SS	1									JHS=0.1 ppm
11	902.88				2	0.7	3							
12	901.88	LAMINATED, brown wet SAND, mostly very fine and fine sand, trace-little silt, liquifies when disturbed, loose, SP-SM		6 SS	4									JHS=0.1 ppm
13	900.88				3	1.4	7							
14	899.88	Gray wet v fine & fine SAND, little silt, liq. when dist, loose, SP-SM		7 SS	1									JHS=0.1 ppm
15	898.88				2	0.9	3							
16	897.88	Gray wet CLAYEY SILT, w/some v. fine & fine sand, CL		8 SS	10									JHS=0.1 ppm
17	896.88				10	0.2	20							
18	895.88	Gray wet SANDY SILT, some v. fine & fine sand, 2 clay seams @ 14.3' 1/8" thick, liq. when dist, loose, ML		9 SS	2									JHS=0.1 ppm
19	894.88				4	1.2	12							
20	893.88	Brown wet GRAV SAND, f-c sand, some gray, trace silt, loose when dist, loose, SW												

BOREHOLE LOG MPI-13B

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 1/10/95
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.88ft. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)		
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.				
21	892.88	Brown wet SANDY GRAVEL, some medium - coarse sand, fine gravel, trace silt, loose when disturbed, firm, GW		10 SS	2 5 7 9	0.9	12							JHS=0.8 ppm	
22	891.88													JHS=0.4 ppm	
23	890.88			11 SS	7 5 9 9	1.4	14							JHS=0.4 ppm	
24	889.88			Brown wet medium-coarse SAND, trace to little gravel, loose when disturbed, firm, SP										JHS=0.4 ppm	
25	888.88			Brown wet SAND, medium sand, trace gravel, loose when disturbed, firm, SP	12 SS	5 9 7 9	1.0	18						JHS=0.3 ppm	
26	887.88	Brown wet GRAVEL and SAND, medium to coarse sand, fine subrounded gravel, loose when disturbed, SP		13 SS	8 12 10 12	1.4	22							JHS=0.3 ppm	
27	886.88													JHS=0.3 ppm	
28	885.88			LAMINATED,gray wet SAND, mostly fine, liquifies when disturbed, loose, SP	14 SS	WR WR 3 4	1.3	<4						JHS=0.3 ppm	
29	884.88			15 SS	5 8 5 8	1.4	11							JHS=0.3 ppm	
30	883.88													JHS=0.3 ppm	
31	882.88													JHS=0.3 ppm	
32	881.88													JHS=0.3 ppm	
33	880.88			16 SS	WR WR 1 2	0.3	<2							JHS=0.3 ppm	
34	879.88	Boring complete at 34'. Installed well @ 32.3'.													
35	878.88														
36	877.88														
37	876.88														
38	875.88														
39	874.88														
40	873.88														

BOREHOLE LOG MPI-14B

PROJECT: MR. C CLEANERS RI
PROJECT NO.: 0288-31-4
LOCATION: EAST AURORA, NEW YORK
SURVEY COORDINATES:
SURVEY DATUM:

CLIENT: NYSDEC
DRILLING DATES: 1/11/95
DRILLING METHOD: 8-1/4" HSA
LOGGED/CHECKED BY: JMA/RHO
SURFACE ELEVATION: 913.49ft. FT. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
SS3 Split Spoon (3in.ID)
ST Shelby Tube (2.8in.ID)
WR Weight of Rods
NR No Recovery
- Sampler Refusal

JHS HNU reading in jar headspace
GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	GRAPHIC LOG	SOIL DATA				ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
				SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	912.49	FILL, Asphalt, concrete, over gravel fill, advanced augers to 2 feet w/out sampling		-	-	-	-						
2	911.49	FILL, brown moist CLAYEY SILT, w/little fine to coarse sand, little gravel, medium consistency		1 SS	2	1.2	9						JHS=0.1 ppm
3	910.49				4								
4	909.49				5								JHS=0.1 ppm
5	908.49	Brown moist SILTY SAND, with medium to coarse sand, some silt, little to some gravel, loose		2 SS	1	0.7	3						
6	907.49				2								JHS=0.1 ppm
7	906.49	LAMINATED, brown wet SANDY SILT, little very fine sand, liquifies when disturbed, noticed fabric texture, loose, ML		3 SS	2	1.4	5						JHS=0.1 ppm
8	905.49				2								
9	904.49				3								JHS=0.1 ppm
10	903.49	Gray wet CLAYEY SILT (.15'), SANDY SILT (.15'), SILT (.1') SANDY SILT (.4'), sandy silt seams liquify when disturbed, soft		4 SS	2	1.4	8						JHS=0.5 ppm
11	902.49				4								
12	901.49	STRATIFIED, Brown wet SILTY SAND, liquifies when disturbed, grades to drier silt, loose, SM		5 SS	3	1.2	12						JHS=0.3 ppm
13	900.49				8								JHS=0.2 ppm
14	899.49	Brown wet GRAVEL and SAND, trace to little silt, fine to coarse sand, loose when disturbed, loose, SW or GW		6 SS	8	1.4	14						JHS=0.2 ppm
15	898.49				8								JHS=1.0 ppm
16	897.49	Brown wet SAND, mostly very fine to fine sand, trace silt, firm, SP		7 SS	2	0.3	9						JHS=0.9 ppm
17	896.49				3								
18	895.49	Brown wet SAND, mostly fine sand, loose when disturbed, firm, SP		8 SS	8	1.2	10						
19	894.49				5								
20	893.49	Brown wet SAND, mostly medium and fine sand, loose when disturbed, loose, SP		9 SS	4	1.2	8						
					8								
		Brown wet SAND, mostly medium and fine sand, loose when disturbed, loose, SP											
		Brown wet GRAVEL and SAND, trace to little silt, mostly medium to coarse sand, loose when disturbed, loose, SW or GW											
		one 0.05' silt seam @ 18.8' BGS											

BOREHOLE LOG MPI-14B

PROJECT: MR. C CLEANERS RI
 PROJECT NO.: 0288-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 1/11/95
 DRILLING METHOD: 8-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION: 913.49ft. ABOVE NGVD

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 NR No Recovery
 - Sampler Refusal

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft. AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / ft.	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
21	892.49	no recovery		10 SS	2 4 4 5	NR	8						JHS=3.0 ppm
22	891.49												JHS=3.0 ppm
23	890.49	Brown wet GRAVELLY SAND, mostly coarse sand, little gravel, little silt, loose when disturbed, loose, SW		11 SS	4 8 4 8	1.3	10						JHS=0.1 ppm
24	889.49	Gray wet GRAVELLY SAND, fine to coarse sand, little gravel, little silt, loose, SW											JHS=0 ppm
25	888.49	LAMINATED, gray wet SANDY SILT, some very fine sand, liquifies when disturbed, loose, ML		12 SS	1 4 4 5	1.2	8						JHS=0 ppm
26	887.49												JHS=0 ppm
27	886.49	Gray wet fine SAND, liquifies when disturbed, loose, SP		13 SS	4 5 5 5	0.5	10						JHS=0 ppm
28	885.49	Gray wet SILTY SAND, little silt, very fine and fine sand, liquifies when disturbed, loose, SM											JHS=0 ppm
29	884.49	Gray wet SILTY SAND, w/little to some silt, very fine sand liquifies when disturbed, loose, SM		14 SS	1 1 3 2	1.0	4						
30	883.49												
31	882.49	Boring complete at 30'. Installed well.											
32	881.49												
33	880.49												
34	879.49												
35	878.49												
36	877.49												
37	876.49												
38	875.49												
39	874.49												
40	873.49												

BOREHOLE LOG SB-1

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/14/94
 DRILLING METHOD: 2-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION:

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers
 SSLA Sample submitted for laboratory analysis

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / 8"	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	-1	FILL Concrete to 0.5 feet											JHS=0.1 ppm
2	-2	TILL, Brown moist SANDY SILT, with little gravel, trace clay, loose, ML		1 SS	2 3 5	0.2	5						JHS=0.3 ppm
3	-3	Brown moist CLAYEY SANDY SILT, with little gravel, trace to little clay, moist, medium consistence, ML		2 SS	2 5 7 8	0.8	12						JHS=0.7 ppm
4	-4	Brown moist SANDY GRAVELLY SILT, trace clay, gravel up to 1.5", fine to coarse sand, firm, massive, SM		3 SS	3 8 5 8	0.7	13						JHS=1.2 ppm
5	-5	Brown extremely moist SANDY GRAVEL W/SILT, little silt, loose, GM		4 SS	3 3 3 2	1.0	8						JHS=200 ppm SSLA
6	-6	STRATIFIED Brown wet SAND, with trace to little silt, mostly medium sand, trace coarse sand, loose, SP-SM		5 SS	2 3 4 4	1.0	7						JHS=220 ppm SSLA
7	-7			8 SS	2 2 4 4	1.0	8						
8	-8												
9	-9												
10	-10												
11	-11												
12	-12	Boring complete at 12'. Advanced augers to 10' BGS. Backfilled borehole with drill cuttings and cement.											
13	-13												
14	-14												
15	-15												
16	-16												
17	-17												
18	-18												
19	-19												
20	-20												

BOREHOLE LOG SB-2

PROJECT: MR. C CLEANERS REMEDIAL INVESTIGATION
 PROJECT NO.: 0200-31-4
 LOCATION: EAST AURORA, NEW YORK
 SURVEY COORDINATES:
 SURVEY DATUM:

CLIENT: NYSDEC
 DRILLING DATES: 12/15/94
 DRILLING METHOD: 2-1/4" HSA
 LOGGED/CHECKED BY: JMA/RHO
 SURFACE ELEVATION:

SYMBOLS AND DEFINITIONS

SS Split Spoon (2in.ID)
 SS3 Split Spoon (3in.ID)
 ST Shelby Tube (2.8in.ID)
 WR Weight of Rods
 WH Weight of Hammer
 NR No Recovery

JHS HNU reading in jar headspace
 GAS Combustible Gas reading in augers
 SSLA Sample submitted for laboratory analysis

x---x Penetration Resistance ('N' Blows/1.0 ft.)
 o---o Moisture Content ('N' %)

DEPTH (ft.BGS)	ELEVATION (ft AMSL)	SOIL/ROCK DESCRIPTION	SOIL DATA					ROCK DATA				WELL DIAGRAM	COMMENTS (USCS)
			GRAPHIC LOG	SAMPLE NO. / RUN NO.	BLOWS / ft*	RECOVERY (in)	'N'-VALUE	FROM/TO	DRILL RATE MIN./FT.	% REC.	% RQD.		
1	-1	FILL, Asphalt to 0.5 feet		1 SS	3	1.0	7						JHS=0.6 ppm
2	-2	Dark gray moist SILT with sand and gravel, loose, SM			4								
3	-3	TILL, Brown moist CLAYEY SILT, with little gravel and sand, medium consistence, CL		2 SS	2	1.3	12						JHS=0.6 ppm
4	-4	Brown moist CLAYEY SILTY SAND, with little shale gravel, loose when disturbed, loose, SM			5								
5	-5			3 SS	7	1.1	13						JHS=1.4 ppm
6	-6				8								
7	-7			4 SS	3	1.2	13						JHS=2.0 ppm
8	-8				5								
9	-9			5 SS	5	0.7	10						JHS=14.3 ppm SSLA
10	-10	STRATIFIED Brown moist GRAVELLY SAND, w/15-40% gravel, mostly coarse sand, little medium, trace silt, loose, SP			5								
11	-11	Boring complete at 10'. Collected water sample at 13' w/ Hydropunch sampler. Advanced augers to 10' BGS. Borehole backfilled with drill cuttings and cement.											
12	-12												
13	-13												
14	-14												
15	-15												
16	-16												
17	-17												
18	-18												
19	-19												
20	-20												



EARTH DIMENSIONS, INC.

Soil Investigations and Natural Resource Assessments

Roycroft Campus, 31 S. Grove St. • East Aurora, NY 14052 • (716) 655-1717

MONITORING WELL
HOLE NO. 1-88 (MW-1)

SURF. ELEV. _____

PROJECT Monitoring well installation
4F88 Agway Petroleum Station, East Aurora, NY
F882
CLIENT AGWAY PETROLEUM CORPORATION

LOCATION North side of station
DATE STARTED 6/20/88 COMPLETED 6/20/88

DEPTH Feet	SAMPLE NO.	BLOWS ON SAMPLER										DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0	1	2	3	4	5	6	7	8	N			
	1	100	4									Moist brown very gravelly (SILTY-SAND) fill with 40 to 60% gravel and concrete debris, fine to coarse size sand, little silt, loose when disturbed	Two (2) inch inside diameter PVC riser pipe Cement bentonite grout	Mostly sand and gravel fill with concrete debris with little silt to 2.0 feet over silty possible soil fill with some gravel to 4.0 feet over either water sorted and deposited or fill consisting of silt with some gravel, little sand to 10.0 feet over water sorted and deposited sand to of boring.
		32									46			
			14								6			
	2	5										Moist highly mottled olive brown shaly (CLAYEY-SILT) with 15 to 40% mostly flat, sharp edged shale fragments, very stiff, possible fill		
			10								23			
				13							31			
	3	11										----- grades downward to -----		
			14								23			
				9							7			
	4	4										Moist distinctly mottled olive brown shaly (CLAYEY-SILT) with 15 to 40% mostly flat, sharp edged shale fragments, little fine to coarse size sand, weakly stratified or possible fill		
			6								12			
				6							3			
	5	2										----- grades downward to -----	Two (2) inch inside diameter PVC riser pipe Cement bentonite grout	9.0
			3								6			
				3							4			
10	6	1										Wet black to 10.5 feet, distinctly mottled olive brown below, (SAND), fine to coarse size sand, trace silt, loose, thinly bedded		
			3								9			
				6							5			
	7	WH										----- grades downward to -----		
			4								8			
				4							2			
	8	1										Wet gray (SAND), fine to medium size, loose, thinly bedded		
15			2								6			
				4							5			
	9	WH											#10 two (2) inch slotted screen #2 size sand	(1) Bentonite seal. WH-Sampler penetration with weight of rods and hammer.
			2								5			
				3							5			
	10	2												
			4								9			
				5							5			
20														

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist
from collected soil samples

SHEET 1 OF 2

EARTH

DIMENSIONS, INC.

Soil Investigations and Natural Resource Assessments

Roycroft Campus, 31 S. Grove St. • East Aurora, NY 14052 • (716) 655-1717

MONITORING WELL

MONITORING WELL
HOLE NO. 1-88 continued (MW-1)

SURF. ELEV. _____

PROJECT Monitoring well installation

4F88 Acway Petroleum Station, East Aurora, NY

LOCATION North side of station

F882
CLIENT

AGWAY FERTILIZER CORPORATION

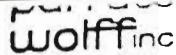
DATE STARTED 6/20/88 COMPLETED 6/20/88

[illegible]

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist
from collected soil samples

SHEET 2 OF 2



FISHER ROAD
EAST SYRACUSE NY 13057

Agway Petroleum Corporation
Bulk Plant

East Aurora, New York

5/1/84

DATE COMPLETED

5/1/84

HOLE NO B-2 (NW-2)

SURF. EL.

JOB NO. 8461

GROUND WATER DEPTH
WHILE DRILLING 10.0'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586. STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
 1/4" OR — % CORE RECOVERY

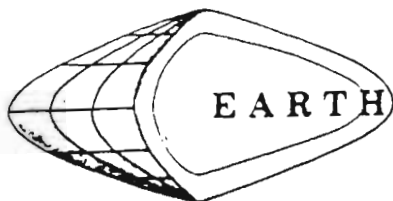
BEFORE CASING
REMOVED 12.5'

AFTER CASING
REMOVED 9.5'

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

[illegible]



EARTH DIMENSIONS, INC.

Soil Investigations and Monitoring Well Installations

Roycroft Campus, 31 S. Grove St. • East Aurora, NY 14052 • (716) 658-1717

MONITORING WELL
HOLE NO. 1-89 (MW-3)

SURF ELV _____

PROJECT Monitoring well installation

LOCATION Approx. 21.0 feet west of NW corner of

4F88b Main & Whaley Sts., East Aurora, NY

building on Whaley Road

CLIENT AGWAY PETROLEUM CORPORATION

DATE STARTED 1/26/89 COMPLETED 1/27/89

DEPTH FEET	SAMPLE NO	BLOWS ON SAMPLER										DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0	1	2	3	4	5	6	7	8	9			
	1											Concrete	0.4	Concrete to 0.4 feet over crush gravel fill to 1.0 feet over possible silty fill with some gravel to 6.0 feet over water sorted and deposited or fill consisting of silt with some gravel, little sand to 9.0 feet over water sorted and deposited sand to end of boring.
			13								25	Extremely moist gray crush gravel fill with 20 to 40% mostly concrete gravel, very fine to coarse sand size, compact, loose when disturbed		
											7			
	2	5											1.0	
			4								9	Extremely moist distinctly mottled olive gray shaly (CLAYEY-SILT) with 20 to 40% mostly flat shale gravel, very stiff becoming firm below 4.0 feet, noticed one (1) apparent concrete chunk at 3.8 feet		
	3	3												
	5			3							7			
	4	5												Four (4) inch inside diameter PVC riser pipe (1) (2) 6.1 7.0 Water level at 9.9 feet below ground surface with 8 1/2 inch hollow stem augers at 14.0 feet. Advanced jack hammer through 0.4 feet of concrete. (1) Cement bentonite grout. (2) Bentonite pellet seal.
														Four (4) inch PVC slotted screen #2 size sand
														Continued on sheet 2.

N = NUMBER OF BLOWS TO DRIVE 2 SPOON 12 WITH 140 lb WT FALLING 30 PER BLOW

LOGGED BY Dale M. Granza/Geologist

SHEET 1 OF 2



Rovercroft Campus, 31 S. Grove St. • East Aurora, NY 14052 • (716) 655-1717

SURF ELV

LOCATION Approx. 21.0 feet west of NW corner of

building on Whaley Road

DATE STARTED 1/26/89 COMPLETED 1/27/89

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB WT FALLING 30 " SEE BELOW.

SHEET 2 OF 2



EARTH DIMENSIONS, INC.

Soil Investigations and Monitoring Well Installations

Roycroft Campus, 31 S. Grove St. • East Aurora, NY 14052 • (716) 655-1717

MONITORING WELL
HOLE NO 2-89 (MW-4)

SURF ELV _____

PROJECT Monitoring well installation
#F88b Main & Whaley Sts., East Aurora, NY

LOCATION Approx. 10.0 feet south of SW corner
of pump island

CLIENT AGWAY PETROLEUM CORPORATION

DATE STARTED 1/27/89 COMPLETED 1/27/89

DEPTH FEET	SAMPLE NO	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N			
1							Concrete 0.4	Four (4) inch inside dia- meter PVC riser pipe. Concrete Bentonite Grout	Concrete to 0.4 feet over crush gravel fill to 0.9 feet over silty fill with some gravel to 2.5 feet over silty soil fill with little gravel trace to little sand to 4.0 feet over water sorted and de- posited silt with some gravel to 8.0 feet over water sort- ed and deposited sand and gravel with some silt to 11.0 feet over water sort- ed and deposited sand to end of boring.
		5				10	Extremely moist gray crush gravel fill with 20 to 40% mostly concrete gravel, very fine to coarse sand size, loose 0.9		
			4				Extremely moist dark gray shaly silt loam (CLAYEY-SILT) fill with 15 to 40% shale gravel, stiff		
			3			7	----- grades downward to ----- 2.5		
			4				Extremely moist olive brown silt loam (CLAYEY-SILT) fill with 5 to 15% gravel, trace to little very fine		
5		14				28	size sand, firm 4.0		
			14				Extremely moist distinctly mottled olive brown to olive gray shaly (CLAYEY-SILT) with 15 to 40% mostly shale gravel, very stiff becoming stiff below 6.0 feet, weakly strati- fied, noticed one (1) wet olive brown		
			7			13	(SAND) lens between 4.1 to 4.2 feet		
			4				----- grades downward to ----- 8.0		
			20			39	Extremely moist highly mottled olive gray very gravelly (SILTY-SAND) with 40 to 60% mostly subangular gravel, very fine to coarse size sand, some silt, compact, weakly stratified, noticed distinct petroleum odor		
			19				----- clear transition to ----- 11.0	Four (4) inch PVC slotted screen #2 size sand	Water level at 13.4 feet below ground surface with 8 1/4 inch hollow stem augers at 18.0 feet. (1) Bentonite pellet seal.
			18				Wet alternating olive brown and gray (SAND) very fine to medium size sand, dense, tends to liquify when disturb- ed, thinly bedded with coarse silt lenses, noticed distinct petroleum odor with some oil sheen		
			11			11	----- grades downward to ----- 12.0		
			11						
			11						
			11						
			11						
			11						
			11						
			11						
20									

Continued on sheet 2.

N = NUMBER OF BLOWS TO DRIVE 2 SPOON 12 WITH 140 lb WT FALLING 30 PER BLOW

LOGGED BY Dale M. Gramza/Geologist

SHEET 1 OF 2



Soil Investigations and Monitoring Well Installations

MONITORING WELL

SURF ELV

LOCATION Approx. 10.0 feet south of SW corner

~~of Puerto Island~~

DATE STARTED 1/27/89 COMPLETED 1/27/89

<u>OMV Readings</u>		
Sample#	Interval	omv
1	0.0 - 2.0	0
2	2.0 - 4.0	0
3	4.0 - 6.0	0
4	6.0 - 8.0	11
5	8.0 - 10.0	165
6	10.0 - 12.0	227
7	12.0 - 14.0	174
8	14.0 - 16.0	4.6
9	16.0 - 18.0	4.2

LOGGED BY Dale M. Gratza/Geologist

SHEET 2 OF 2

PROJECT	Agway Petroleum Corporation		
	Bulk Plant		
LOCATION	East Aurora, New York		
DATE STARTED	5/1/84	DATE COMPLETED	5/1/84

HOLE NO. 3-4 (MW-5)

SURF. EL.

JOB NO. 3461

GROUND WATER DEPTH
WHILE DRILLING 10.3'

BEFORE CASING
REMOVED 10.0'

AFTER CASING
REMOVED 12.0'

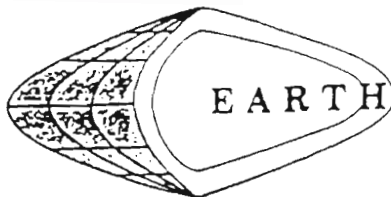
N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
 % CR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 1

[illegible]



EARTH DIMENSIONS, INC.

Soil Investigations and Monitoring Well Installations

1091 Jamison Road • Elma, NY 14059 • (716) 655-1717

RECOVERY WELL
HOLE NO. 1-90 (RW)

SUFF. ELV. _____

PROJECT Continuous soil sampling and installation of new 6 inch recovery well, Agway Petroleum Products, East Aurora, NY

CLIENT AGWAY PETROLEUM PRODUCTS

DATE STARTED 12/14/90

COMPLETED 12/14/90

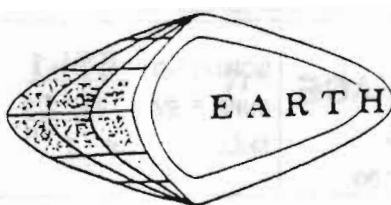
DEPTH FEET	SAMPLE NO.	BLOWS ON SAMPLER										DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		1	2	3	4	5	6	7	8	9	10			
												Cement pavement	0.45	Concrete to 0.45 feet
	1											Moist to extremely moist dark brown		over sand and gravel sub
			2									gravelly sandy loam (SILTY-SAND) fill		base fill to 1.0 feet
				2								with 20 to 40% gravel, very fine to		over silty soil fill with
					3							fine size sand, little silt, compact		little gravel to 4.0 feet
	2											in place, loose when disturbed	1.0	over coarse silty to silty
			2									Moist to extremely moist faintly mottled		ty soil fill with little
				2								dark brown gravelly silt loam		gravel to 5.0 feet over
					4							(CLAYEY-SILT) fill with 15 to 30%		apparent clayey soil fill
5												mostly shale gravel, little clay,		with little gravel to 8.
	3											soft		feet over apparent water
			5									----- grades downward to -----	4.0	sorted and deposited
				7								Extremely moist to wet light olive		(possible fill) sand with
					12							gray gravelly silt loam (SANDY-SILT)		little gravel and silt to
	4											tending toward silt loam (CLAYEY-SILT)		7.2
			2									fill with 15 to 30% mostly subangular		9.5 feet over appare
				3								shale gravel, little very fine size		coarse silty glacial
					6							sand, trace to little clay, very loose		drift (possible fill) to
												and soft		9.2
10			5									----- clear transition to -----	5.0	11.0 feet over water
				10								Extremely moist faintly mottled light		sorted and deposited
					13							gray shaly silty clay loam (CLAYEY-		sand with little gravel,
	6											SILT) fill with 15 to 40% mostly angu-		little to some silt to
												lar to subangular shale gravel, some		13.0 feet over water
												clay, stiff to firm	8.5	sorted and deposited sand
												Wet dark gray gravelly sandy loam		with trace silt to end
			3									(SILTY-SAND) with 15 to 30% subround-		of boring.
				5								ed gravel, very fine to medium size		
15					8							sand, little silt, loose	9.5	* Jack hammer and shovel
												Moist to extremely moist mixed dark		down without sampling to
	8											gray and light olive gray gravelly		1.0 feet
			1									silt loam (SANDY-SILT) with 15 to 30%		
				4								mostly subangular gravel, little very		(1) 550 fine size
					5							fine to fine size sand, compact	11.0	sand
												Extremely moist to wet dark gray grav-		
	9											elly sandy loam (SILTY-SAND) with 15		
			3									to 30% mostly subrounded to subangular		
				3								gravel, very fine to medium size sand,		
					6							little to some silt, compact, strati-		
20														

fied, (noticed oil sheen on water)
----- clear transition to ----- 13.0

N = NUMBER OF BLOWS TO DRIVE 2 SPOON 12 WITH 140 15 WT FALLING 20 PER BLOW

LOGGED BY Dale M. Granza/Geologist - Greg H. Gill/Geologist

SHEET 1 OF 1A



EARTH DIMENSIONS, INC.

Soil Investigations and Monitoring Well Installations

1091 Jamison Road • Elma, NY 14059 • (716) 655-1717

RECOVERY WELL

HOLE NO. 1-90 continued (RW)

SURF ELV. _____

PROJECT Continuous soil sampling and installation of new 6 inch recovery well, Agway Petroleum Products, East Aurora, NY

CLIENT AGWAY PETROLEUM PRODUCTS

DATE STARTED 12/14/90

COMPLETED 12/14/90

DEPTH FEET	SAMPLE NO.	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0	5	10	15	20			
		0	5	10	15	20			
	1	2							
		2							
			2						
				3					
	2	2							
		2							
			2						
				4					
5					4				
	3	2							
		5							
			7						
				6					
	4	3							
		3							
			3						
	5	2							
10		5							
			10						
				13					
	6	8							
			13						
				13					
					11				
	7	1							
		3							
			5						
15				6					
	8	2							
		1							
			4						
				7					
	9	2							
		3							
			3						
				4					
20	10	2							
		3							

See previous sheet.

Wet brown loamy sand (SAND) with very fine to fine size sand, trace silt, loose soil material tends to liquefy when disturbed, thinly bedded (noticed oil sheen on ground water) 20.0

Boring completed at 20.0 feet.

Count Intermittent
4.2

Antenna
7.2

6" PVC riser pipe
(1) 7.7

6" PVC screen #10 slot
#2 size gravel

OWM Readings
Internal
ppm

1.0-3.0	2.0
3.0-5.0	1.5
5.0-7.0	1.2
at 6.0	4.0
7.0-9.0	62.4
9.0-11.0	256.0
11.0-13.0	259.4
13.0-15.0	57.1
15.0-17.0	14.9
17.0-19.0	7.7
19.0-20.0	6.0

9.2
(1) 550 fine size sand

Water level at 11.5 feet below ground surface at completion.

19.2 20.0

N = NUMBER OF BLOWS TO DRIVE 2 - SPOON 12 - WITH 140 LB WT FALLING 30 IN PER BLOW

LOGGED BY Dale M. Gramza/Geologist - Greg H. Gill/Geologist

SHEET 1A OF 1A

DATE

STARTED: 5-7-92FINISHED: 5-7-92**EMPIRE**

SOILS INVESTIGATIONS INC.

**SUBSURFACE
LOG**

BTA-92-100

BORING NO.: ESI-1SURF. ELEV.: 917.2 ±SHEET 1 OF 1PROJECT: Spill No. 9109437LOCATION: First Presbyterian ChurchCLIENT: NYSDEC Pin No. SP91343East Aurora, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER						P. I. D.	SYMBOL	SOIL OR ROCK CLASSIFICATION	NOTES
			0	6	12	18	24	N				
0		1	1	4	3	6	7	BG-			3.5" TOPSOIL	
								2.2			Brown Clayey SILT, Some Sand, trace glass, trace roots (Moist, FILL)	
		2	10	7	7	6	14	BG-				
								2.3				
5		3	5	3	3	4	6	BG			Brown fine - coarse SAND and Silt, little fine Gravel (Moist, FILL)	
											Contains trace brick	
		4	8	6	6	7	12	BG				
											Brown fine - coarse SAND, little Silt, little Gravel (Moist-Wet, Loose)	
10		5	5	4	6	5	10	BG			Contains trace silt, trace gravel (Wet) (Firm)	Driller Notes Water at Approximately 11-feet
		6	21	5	5	6	10	BG				
		7	8	7	7	5	14	BG				
15		8	5	6	6	6	12	BG				Driller Notes "Running Sands" at 16-feet
		9	7	7	7	7	14	BG				Auger from 18.0' to 20.0'
			A	U	G	E	R					
20											Boring Complete at 20.0'	Free Standing Water Measured at 11' at Boring Completion
												P.I.D. = Organic vapor measurements taken with a Photoionization Detector (PID). Measurements recorded in parts per million (ppm). BG = Background PID measurements = 1.5 - 1.8 ppm
25											Ground Water Monitoring Well Installed at Boring Completion	
											Well Tip Set at 18' below ground surface. Refer to Well Installation Diagram for Details	
30												
35												
40												

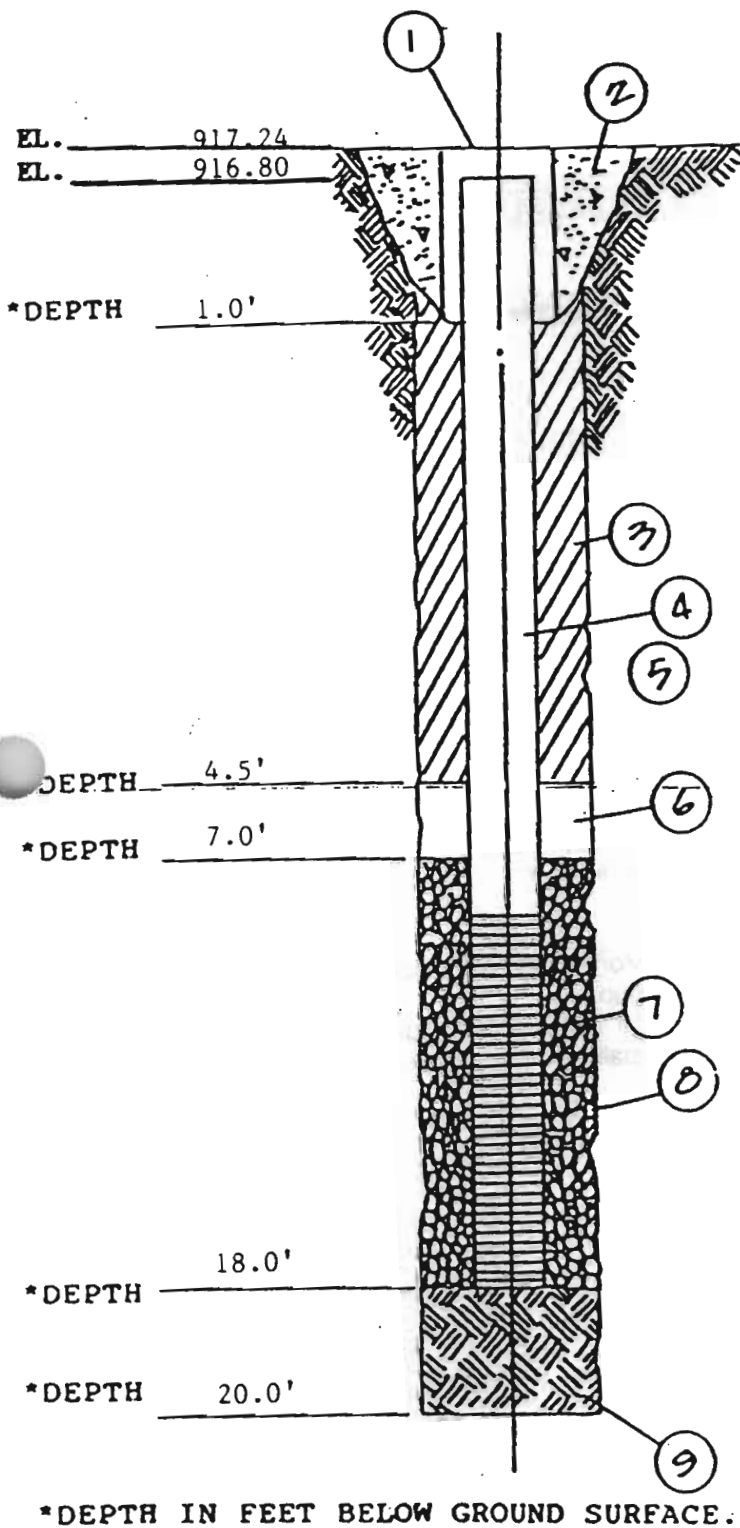
DRILLER: Ken FullerDRILL RIG: Acker ADIIMETHOD OF INVESTIGATION: ASTM D-1586 Using 4 - 1/4" Hollow Stem AugersWEATHER: Sunny, WarmCLASSIFIED BY: L.A. Zimmerman

MONITOR WELL COMPLETION REPORT:

WELL No. ESI-1 JOB No. BTA-92-100

PROJECT: NYSDEC SPILL NO. 9109437

FIRST PRESBYTERIAN CHURCH, EAST AURORA



1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE. "Quickrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES

- #### 4. RISER PIPE:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. LENGTH 7.8 FEET
- d. JOINT TYPE FLUSH COUPLE
THREADED

5. BACKFILL:

- a. TYPE TYPE I PORTLAND CEMENT
- b. INSTALLATION POUR FROM
SURFACE

6. TYPE OF SEAL: BENTONITE PELLET

7. SCREEN:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. SLOT SIZE 0.010 In.
- d. LENGTH 10 FT.

8. SCREEN FILTER TYPE: #0 DRY MORIE

9. BACKFILL TYPE: NATURAL RUNNING SANDS

DATE

STARTED: 5-7-92

FINISHED: 5-7-92

EMPIRE

SOILS INVESTIGATIONS INC.

**SUBSURFACE
LOG**

BTA-92-100

BORING NO.: **ESI-2**SURF. ELEV.: **918.1 ±**SHEET **1** OF **1**PROJECT: **Spill No. 9109437**LOCATION: **First Presbyterian Church**CLIENT: **NYSDEC Pin No. SP91343****East Aurora, New York**

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER						P.I.D.	SYMBOL	SOIL OR ROCK CLASSIFICATION	NOTES
			0	6	12	18	24	N				
0		1	4	4	5	6	9	BG			Black - Brown Sandy SILT, Some Cinders, trace slag (Moist, Fill)	Driller Notes Water at Approximately 12-feet
		2	4	4	6	11	10	BG			Brown Clayey SILT, Little Shale Rock Fragment (Moist, Medium)	
5		3	4	12	9	10	21	BG-2.8			Contains occasional Medium Sand Lense (Moist - Wet) Contains Little Sand	
		4	7	7	8	6	15	BG				
		5	6	4	3	4	7	2.5-3.0				
10		6	4	4	5	8	9	BG-2.5			Brown Fine - Coarse SAND, Some Clayey Silt, trace gravel (Moist, Loose)	
		7	6	7	8	9	15	BG-3.0			Contains "AND" Fine - Coarse Gravel (Wet, Firm)	
15		8	22	13	13	15	26	BG			Contains Occasional Shale Rock Fragment	
		9	10	12	10	10	22	BG			Contains Little Silt, trace gravel	
		10	10	4	7	7	11	BG			(Loose)	
20											Boring Complete at 20.0'	Free Standing Water Measured at 16.2' at Boring Completion P.I.D. = Organic vapor measurements taken with a Photoionization Detector (PID). Measurements recorded in parts per million (ppm). BG = Background PID Measurements = 1.8 - 2.4 ppm
											Ground Water Monitoring Well Installed at Boring Completion Well Tip Set at 19' below ground surface Refer to Well Installation Diagram for Details	
35												
40												

DRILLER: **Ken Fuller**DRILL RIG: **Acker ADII**METHOD OF INVESTIGATION: **ASTM D-1586 Using 4 - 1/4" Hollow Stem Augers**WEATHER: **Sunny, Warm**CLASSIFIED BY: **L.A. Zimmerman**

MONITOR WELL COMPLETION REPORT:

WELL No. ESI-2 JOB No. BTA-92-100
 PROJECT: NYSDEC SPILL NO. 9109437
FIRST PRESBYTERIAN CHURCH, EAST AURORA

1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE "Quickcrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES
4. RISER PIPE:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. LENGTH 9 FEET
- d. JOINT TYPE FLUSH COUPLE
THREADED

5. BACKFILL:

- a. TYPE TYPE I PORTLAND CEMENT
- b. INSTALLATION POUR FROM
SURFACE

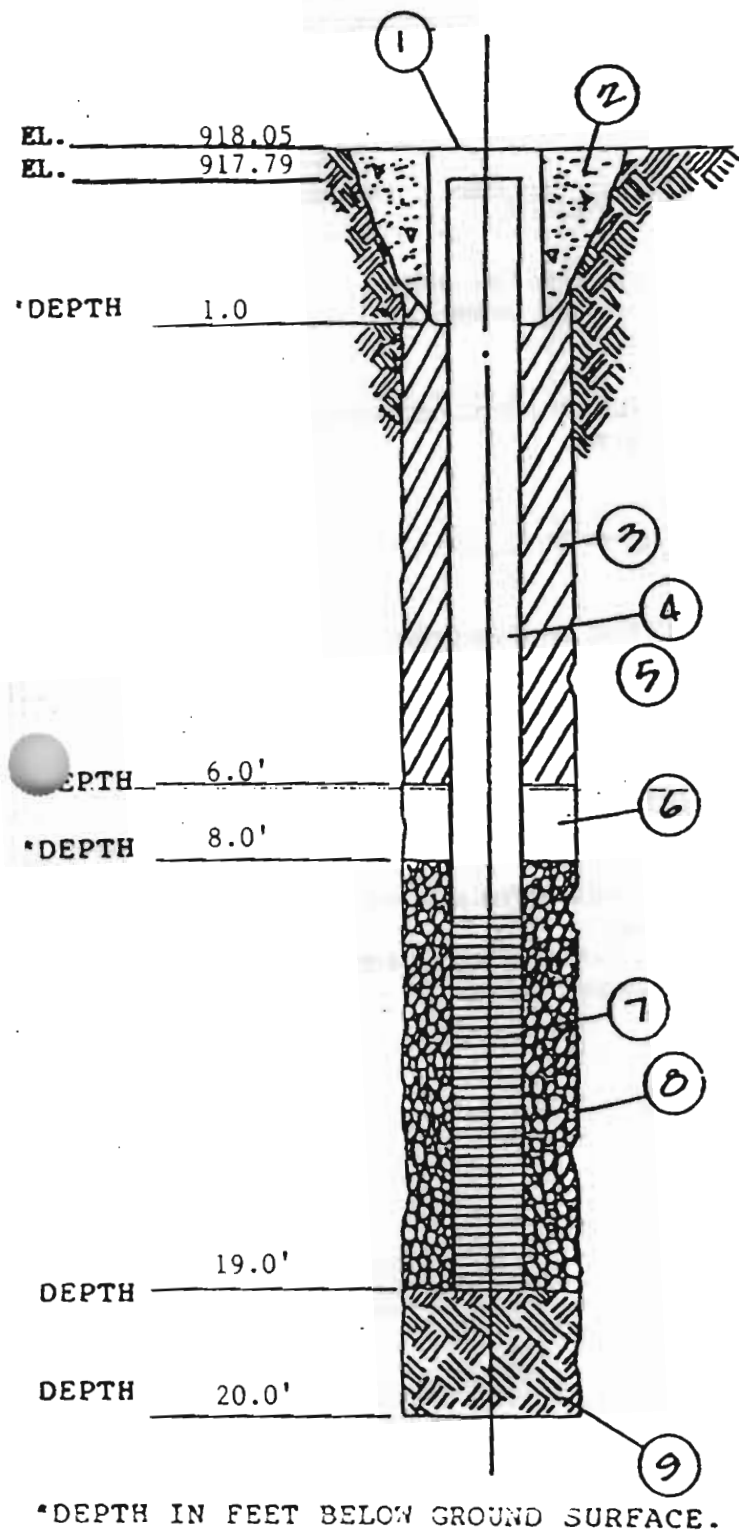
6. TYPE OF SEAL: BENTONITE PELLET

7. SCREEN:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. SLOT SIZE 0.010 In.
- d. LENGTH 10 FT.

8. SCREEN FILTER TYPE: #0 DRY MORIE

9. BACKFILL TYPE: NATURAL SANDS



DATE

STARTED: 5-11-92FINISHED: 5-11-92**EMPIRE**

SOILS INVESTIGATIONS INC.

**SUBSURFACE
LOG**

BTA-92-100

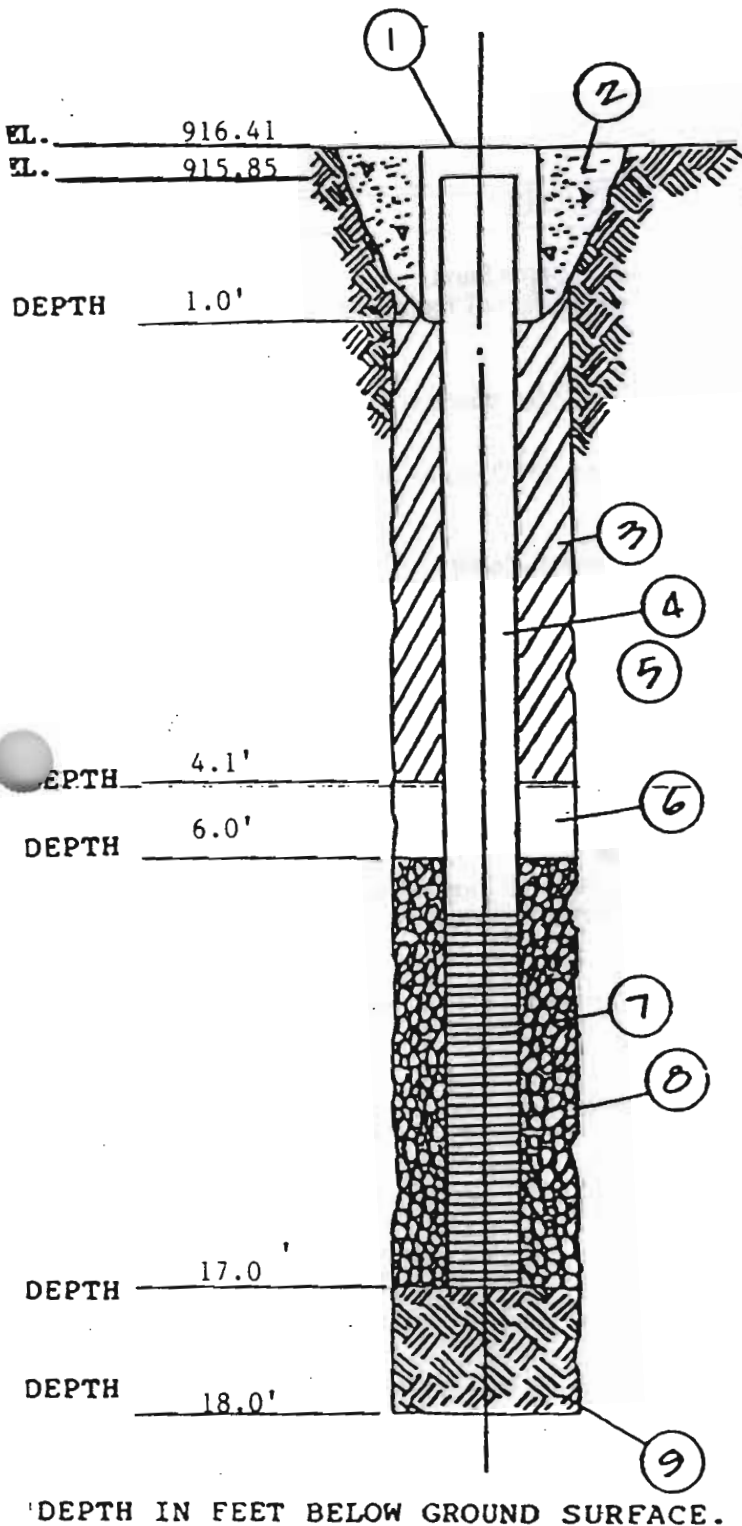
BORING NO.: ESI-3SURF. ELEV.: 916.4 ±SHEET 1 OF 1PROJECT: Spill No. 9109437LOCATION: First Presbyterian ChurchCLIENT: NYSDEC Pin No. SP91343East Aurora, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER					P. I. D.	SYMBOL	SOIL OR ROCK CLASSIFICATION	NOTES
			0	6	12	18	N				
0			6	12	18	24				1' ASPHALTIC CONCRETE	
1		1	7	7	8	6	15	BG-1.2		Brown Clayey SILT, Little Fine - Coarse Sand, trace gravel, trace broken rock fragment, trace brick (Moist, FILL)	
2		2	5	5	5	3	10	BG-1.8			
3		3	4	4	4	34	8	7.0-8.0		Brown Clayey SILT, Little Sand, occasional broken rock fragment (Moist, Medium)	
4		4	7	5	5	5	10	13.7-14			
5		5	11	5	3	4	8	9.5-10		Brown Fine - Coarse SAND, Little fine Gravel, Little Silt (Wet, Loose)	PID reading 10.5 - 11 ppm inside augers with augers set at 10'
6		6	5	7	12	8	19	2.5-3.0		Contains "AND" Fine - Medium Gravel, trace silt (Firm)	Driller Notes Water at Approximately 10-feet
7		7	6	8	10	14	18	2.5-3.0			
8		8	19	16	12	14	28	1.5-1.8			
18										Boring Complete at 18'	Free Standing Water measured at 15.5' at Boring Completion
20											
25										Ground Water Monitoring Well Installed at Boring Completion Well Tip Set at 17' below ground surface Refer to Well Installation Diagram for Details	P.I.D = Organic vapor measurements taken with a Photoionization Detector (PID). Measurements recorded in parts per million (ppm). BG = Background PID measurements = 0.8 - 1.0 ppm
30											
35											
40											

DRILLER: Ken FullerDRILL RIG: Acker ADIIMETHOD OF INVESTIGATION: ASTM D-1586 Using 4 - 1/4" Hollow Stem AugersWEATHER: Sunny, WarmCLASSIFIED BY: L.A. Zimmerman

MONITOR WELL COMPLETION REPORT:

WELL No. ESI-3 JOB No. BTA-92-100
PROJECT: NYSDEC SPILL NO. 9109437
FIRST PRESBYTERIAN CHURCH, EAST AURORA



1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE: "Quickrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES
4. RISER PIPE:
 - a. TYPE 40 SCHEDULE PVC
 - b. I.D. 2 INCHES
 - c. LENGTH 6.7 FEET
 - d. JOINT TYPE FLUSH COUPLE
THREADED
5. BACKFILL:
 - a. TYPE TYPE I PORTLAND CEMENT
 - b. INSTALLATION POUR FROM
SURFACE
6. TYPE OF SEAL: BENTONITE PELLET
7. SCREEN:
 - a. TYPE 40 SCHEDULE PVC
 - b. I.D. 2 INCHES
 - c. SLOT SIZE 0.010 in.
 - d. LENGTH 10 FT.
8. SCREEN FILTER TYPE: #0 DRY MORIE
9. BACKFILL TYPE: NATURAL RUNNING SANDS

FINISHED: 5-11-92

SOILS INVESTIGATIONS INC.

BTA-92-100

SHEET 1 OF 1

East Aurora, New York

[illegible]

CLASSIFIED BY: **L.A. Zimmerman**

MONITOR WELL COMPLETION REPORT:

WELL No. ESI-4 JOB No. BTA-92-100
PROJECT: NYSDEC SPILL NO. 9109437
FIRST PRESBYTERIAN CHURCH, EAST AURORA

1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE: "Quickrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES
4. RISER PIPE:

- a. TYPE 40 SCHEDULE PVC
b. I.D. 2 INCHES
c. LENGTH 4.7 FEET
d. JOINT TYPE FLUSH COUPLE
THREADED

5. BACKFILL:

- a. TYPE TYPE I PORTLAND CEMENT
b. INSTALLATION POUR FROM
SURFACE

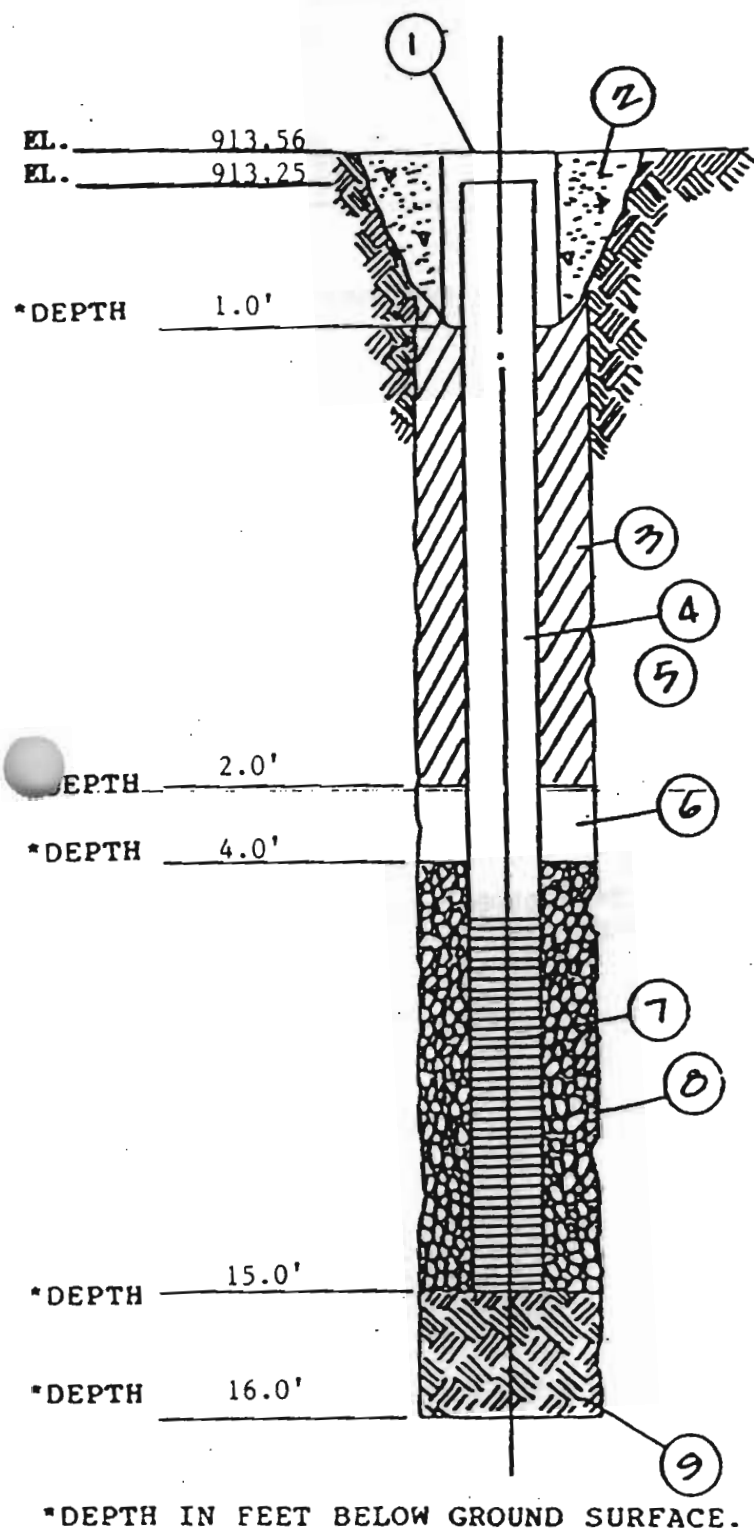
6. TYPE OF SEAL: BENTONITE PELLET

7. SCREEN:

- a. TYPE 40 SCHEDULE PVC
b. I.D. 2 INCHES
c. SLOT SIZE 0.010 In.
d. LENGTH 10 FT.

8. SCREEN FILTER TYPE: #0 DRY MORIE

9. BACKFILL TYPE: NATURAL RUNNING SANDS



DATE

STARTED: 5-8-92FINISHED: 5-8-92**EMPIRE**

SOILS INVESTIGATIONS INC.

**SUBSURFACE
LOG**

BTA-92-100

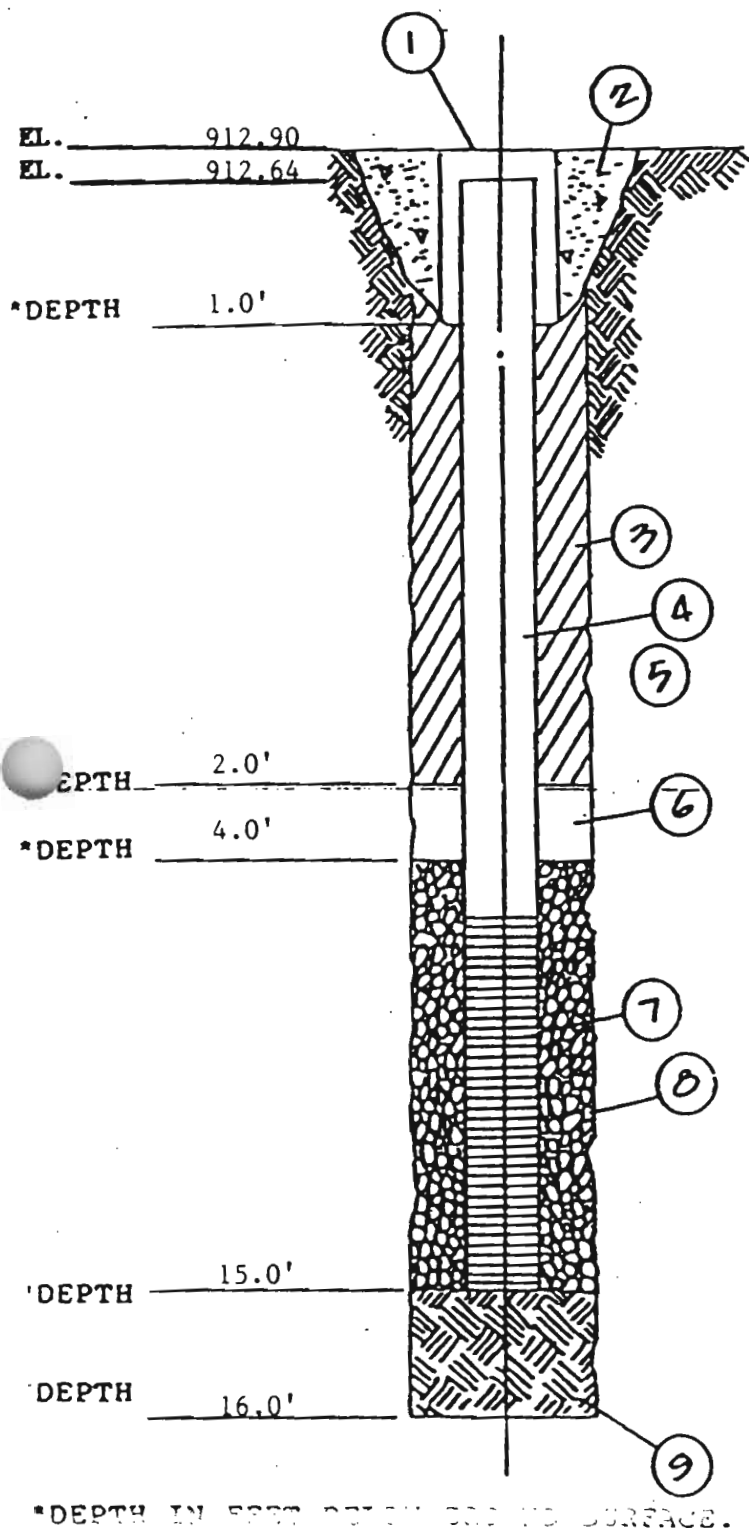
BORING NO.: ESI-5SURF. ELEV.: 912.9 ±SHEET 1 OF 1PROJECT: Spill No. 9109437CLIENT: NYSDEC Pin No. SP91343LOCATION: First Presbyterian ChurchEast Aurora, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER					P. I. D.	SYMBOL	SOIL OR ROCK CLASSIFICATION	NOTES
			0	6	12	18	N				
0			6	12	18	24				1' ASPHALTIC CONCRETE	
										6" SUBBASE STONE	
		1	9	7	7	11	14	BG		Brown Clayey Silt, Little Sand, trace broken shale fragment, trace cinder (Moist, FILL)	
		2	8	6	5	10	11	BG			
5		3	8	6	5	5	11	*			* No Recovery on Sample #3
		4	4	4	4	7	8	BG		Brown Fine - Medium SAND, Little Silt (Wet, Loose) (Firm)	Driller Notes Water at Approximately 8-feet
10		5	17	5	7	9	12	BG			
		6	7	7	10	13	17	BG			
15		7	4	4	6	7	10	BG			
										Boring Complete at 16'	Free Standing Water not measured at Boring Completion
20										Ground Water Monitoring Well Installed at Boring Completion	P.I.D. = Organic vapor measurements taken with a Photoionization Detector (PID). Measurements recorded in parts per million (ppm). BG = Background PID measurements = 1.5 - 2.0 ppm
										Well Tip Set at 15' below ground surface	
										Refer to Well Installation Diagram for Details	
25											
30											
35											
40											

DRILLER: Ken FullerDRILL RIG: Acker ADIIMETHOD OF INVESTIGATION: ASTM D-1586 Using 4 - 1/4" Hollow Stem AugersWEATHER: Sunny, WarmCLASSIFIED BY: L.A. Zimmerman

MONITOR WELL COMPLETION REPORT:

WELL No. BS-5 JOB No. BTA-92-100
 PROJECT: NYSDEC SPILL NO. 9109437
FIRST PRESBYTERIAN CHURCH, EAST AURORA



1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE: "Quickrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES
4. RISER PIPE:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. LENGTH 5 FEET
- d. JOINT TYPE FLUSH COUPLE
THREADED

5. BACKFILL:

- a. TYPE TYPE I PORTLAND CEMENT
- b. INSTALLATION POUR FROM
SURFACE

6. TYPE OF SEAL: BENTONITE PELLET

7. SCREEN:

- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. SLOT SIZE 0.010 In.
- d. LENGTH 10 FT.

8. SCREEN FILTER TYPE: #0 DRY MORIE

9. BACKFILL TYPE: NATURAL RUNNING SANDS

DATE

STARTED: 5-8-92FINISHED: 5-8-92**EMPIRE**

SOILS INVESTIGATIONS INC.

**SUBSURFACE
LOG**

BTA-92-100

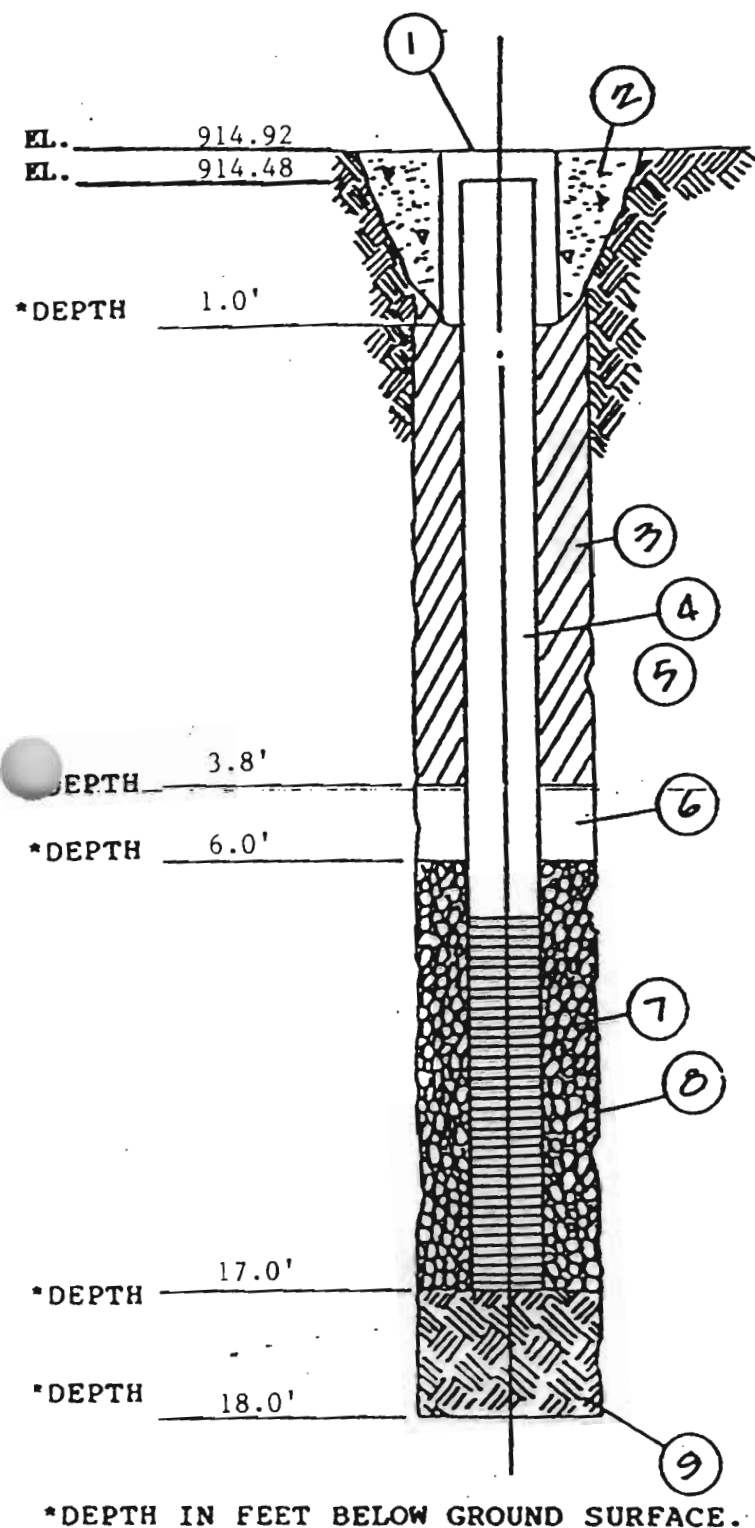
BORING NO.: ESI-6SURF. ELEV.: 914.9 ±SHEET 1 OF 1PROJECT: Spill No. 9109437LOCATION: First Presbyterian ChurchCLIENT: NYSDEC Pln No. SP91343East Aurora, New York

DEPTH-FT.	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER						P.I.D.	SYMBOL	SOIL OR ROCK CLASSIFICATION	NOTES
			0	6	12	18	24	N				
0		1	8	6	5	5	11	BG			3" TOPSOIL	
		2	4	3	3	5	6	BG			Brown Clayey SILT, Little Sand, trace roots, trace cinders, trace brick (Moist, FILL)	
5		3	16	17	19	17	36	BG			Brown Fine - Medium SAND and Silt, trace gravel, trace clay (Moist, Loose) (Compact)	Poor Recovery Sample #3
		4	10	10	9	6	19	BG			Becomes Mottled (Firm)	
		5	3	4	12	21	16	BG			Contains Little Broken Shale Rock Fragments (Moist - Wet)	Driller Notes Water at Approximately 10-feet
10		6	13	7	7	13	14	BG			Contains "AND" fine Gravel, trace silt (Wet, Firm)	
		7	16	11	13	13	24	BG			(Very Compact)	Driller notes "Running Sands" at bottom of hole
15		8	30	88	16	14	104	BG				
		9	10	9	10	7	19	BG				
20											Boring Complete at 18'	Free Standing Water measured at 10' at Boring Completion
											Ground Water Monitoring Well Installed at Boring Completion	P.I.D. = Organic vapor measurements taken with a Photoionization Detector (PID). Measurements recorded in parts per million (ppm). BG = Background PID measurements = 1.5 - 2.0 ppm
											Well Tip Set at 17' below ground surface	
25											Refer to Well Installation Diagram for Details	
30												
35												
40												

DRILLER: Ken T. ...SOILS INC. ...METHOD OF INVESTIGATION: ASTM D-1586 Using 4 - 1/4" Hollow Stem AugersWEATHER: Sunny, WarmCLASSIFIED BY: L.A. Zimmerman

MONITOR WELL COMPLETION REPORT:

WELL No. ESI-6 JOB No. BTA-92-100
PROJECT: NYSDEC SPILL NO. 9109437
FIRST PRESBYTERIAN CHURCH, EAST AURORA



1. GATE BOX I.D.: 12 INCHES
2. SURFACE SEAL TYPE: "Quickrete" Concrete
3. BOREHOLE DIAMETER 10 INCHES
4. RISER PIPE:
- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. LENGTH 7.0 FEET
- d. JOINT TYPE FLUSH COUPLE
THREADED
5. BACKFILL:
- a. TYPE TYPE I PORTLAND CEMENT
- b. INSTALLATION POUR FROM
SURFACE
6. TYPE OF SEAL: BENTONITE PELLET
7. SCREEN:
- a. TYPE 40 SCHEDULE PVC
- b. I.D. 2 INCHES
- c. SLOT SIZE 0.010 In.
- d. LENGTH 10 FT.
8. SCREEN FILTER TYPE: #0 DRY MORIE
9. BACKFILL TYPE: NATURAL RUNNING SANDS

MATRIX

ENVIRONMENTAL TECHNOLOGIES INC.

WELL CONSTRUCTION DETAIL

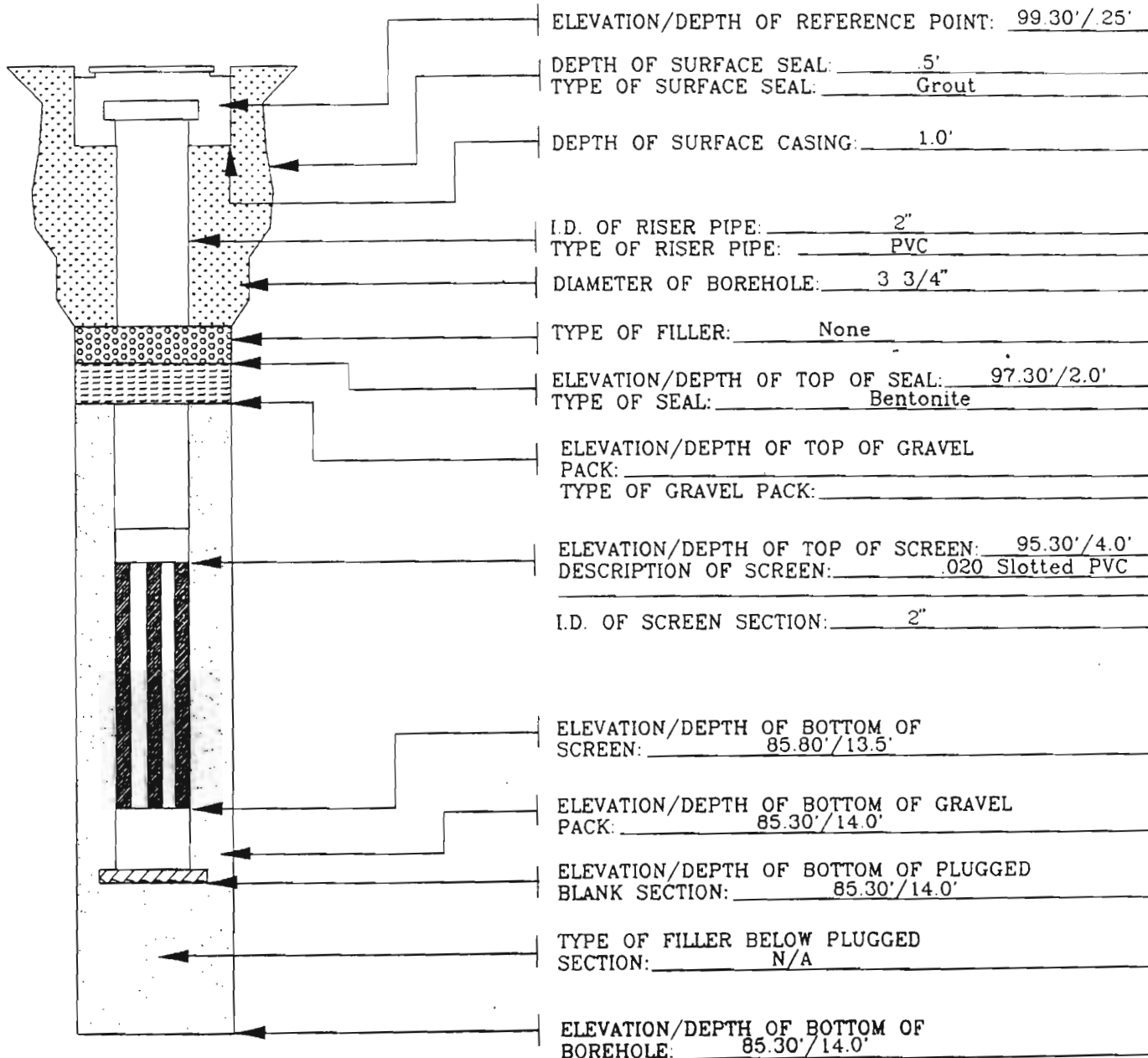
PROJECT NAME AGWAY/East Aurora PROJECT # 93-065

SITE Main Street, East Aurora, NY WELL # MW5 AGW

ADDRESS _____
(IF NOT SAME AS ABOVE)

DATE COMPLETED 9/24/93 SUPERVISED BY EAP

GENERALIZED STRATIGRAPHY



MATRIX

ENVIRONMENTAL TECHNOLOGIES INC.

WELL CONSTRUCTION DETAIL

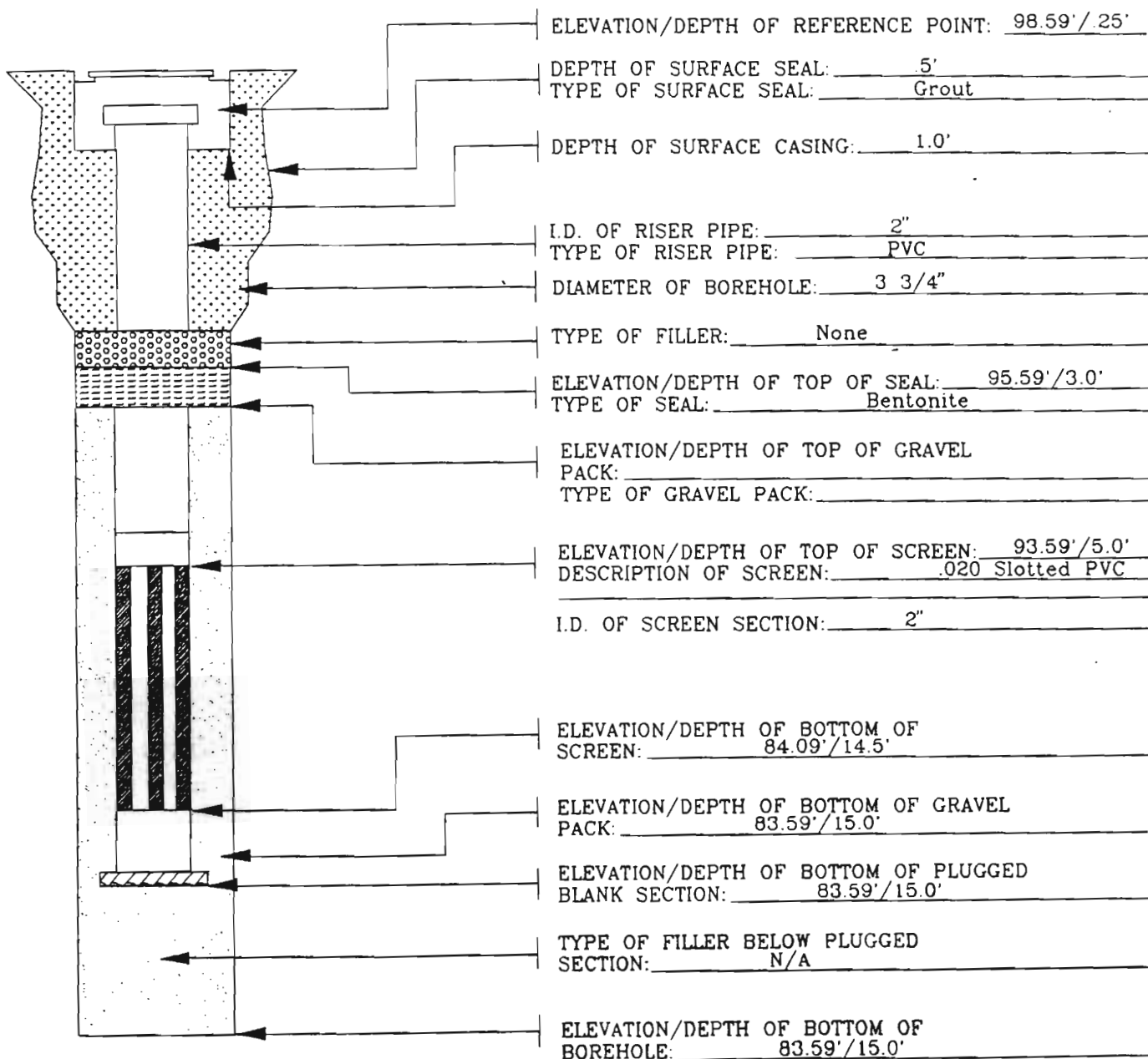
PROJECT NAME AGWAY/East Aurora PROJECT # 93-065

SITE Main Street, East Aurora, NY WELL # MW6 AG-7

ADDRESS _____
(IF NOT SAME AS ABOVE)

DATE COMPLETED 9/24/93 SUPERVISED BY EAP

GENERALIZED STRATIGRAPHY



MATRIX

ENVIRONMENTAL TECHNOLOGIES INC.

WELL CONSTRUCTION DETAIL

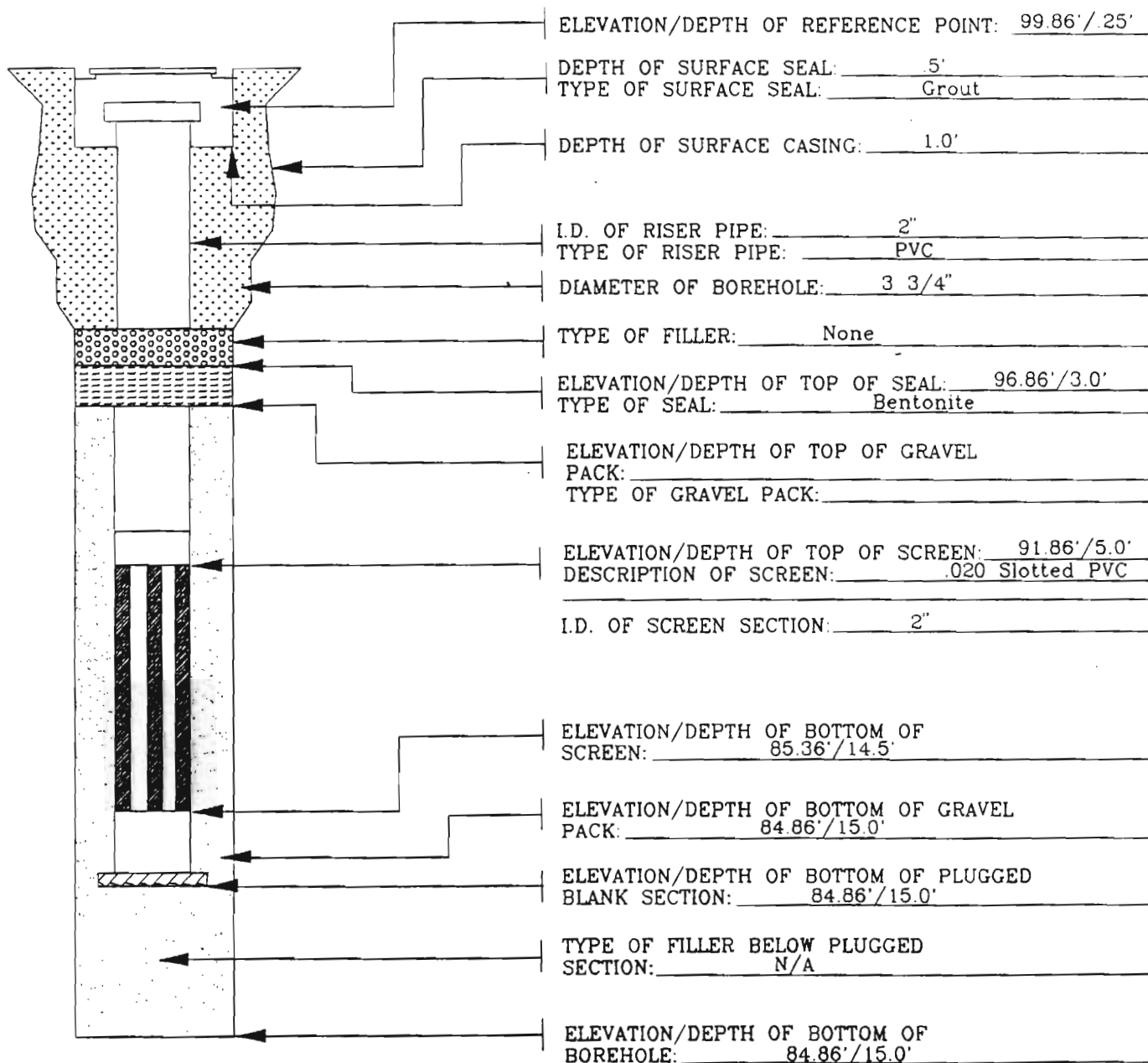
PROJECT NAME AGWAY/East Aurora PROJECT # 93-065

SITE Main Street, East Aurora, NY WELL # MW7 AG 8

ADDRESS _____
(IF NOT SAME AS ABOVE)

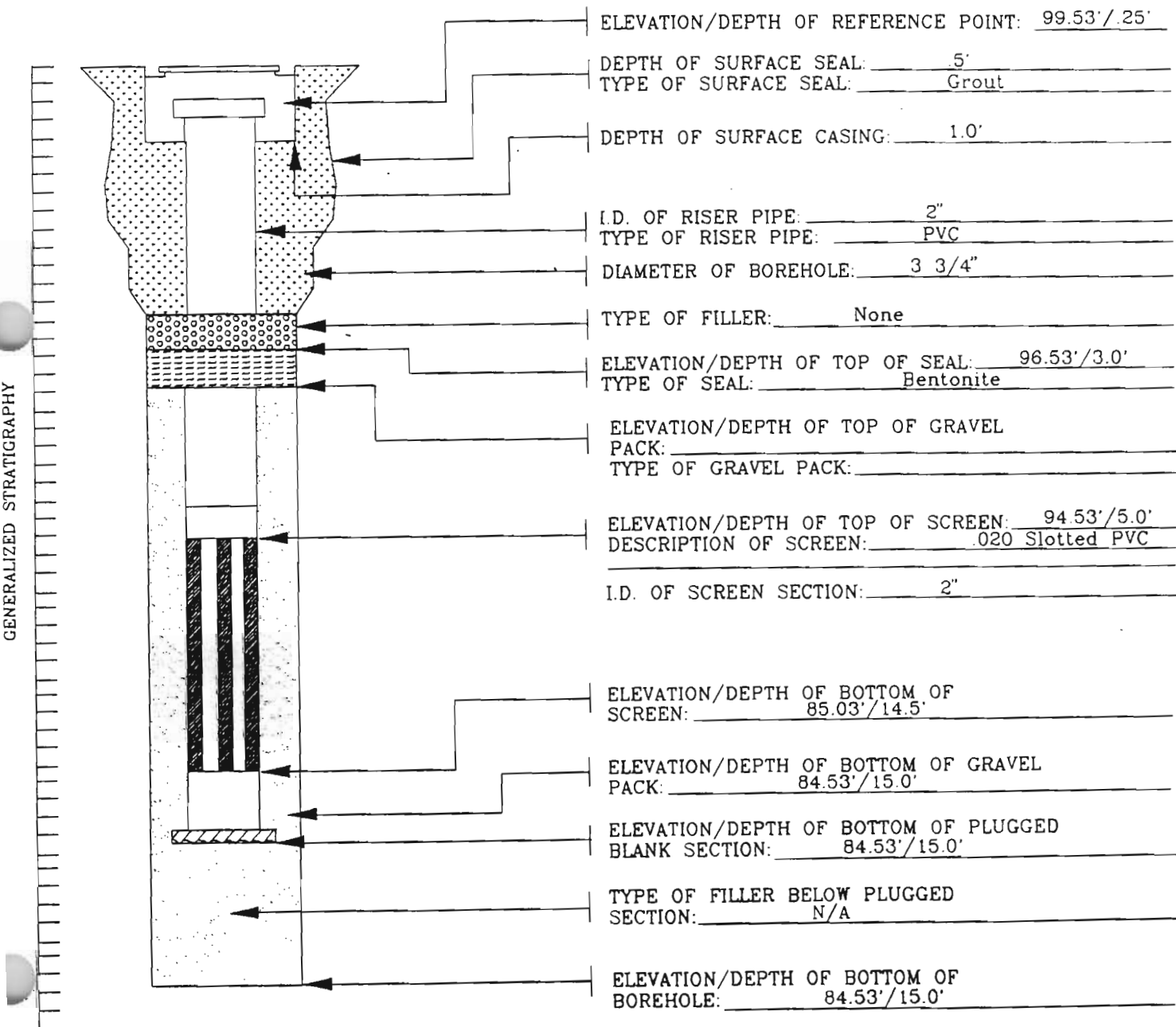
DATE COMPLETED 9/24/93 SUPERVISED BY EAP

GENERALIZED STRATIGRAPHY



WELL CONSTRUCTION DETAIL

PROJECT NAME AGWAY/East Aurora PROJECT # 93-065
SITE Main Street, East Aurora, NY WELL # MW8 AGW
ADDRESS _____
(IF NOT SAME AS ABOVE)
DATE COMPLETED 9/24/93 SUPERVISED BY EAP



MATRIX

ENVIRONMENTAL TECHNOLOGIES INC.

WELL CONSTRUCTION DETAIL

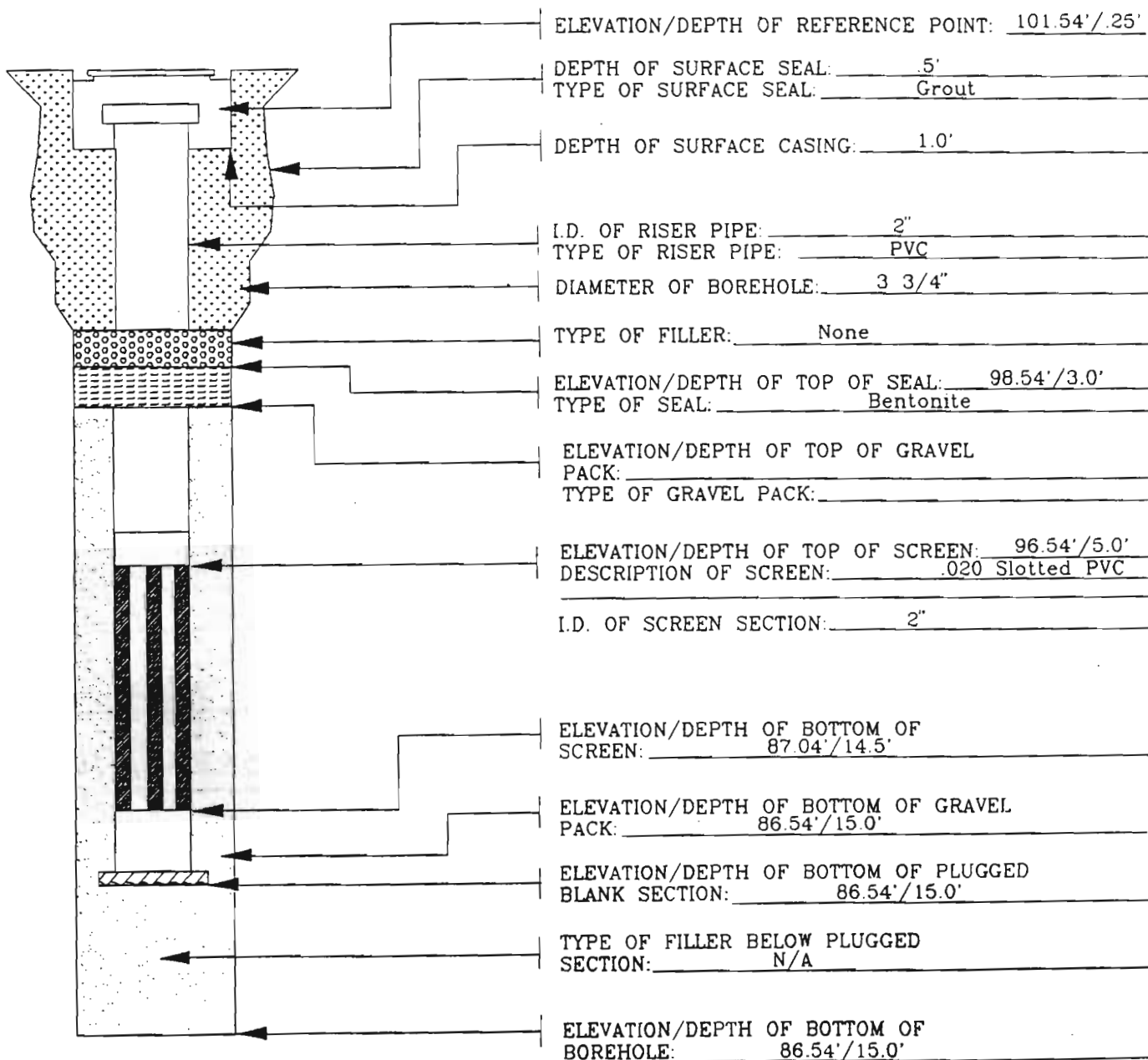
PROJECT NAME AGWAY/East Aurora PROJECT # 93-065

SITE Main Street, East Aurora, NY WELL # MW9 AG10

ADDRESS _____
(IF NOT SAME AS ABOVE)

DATE COMPLETED 9/24/93 SUPERVISED BY EAP

GENERALIZED STRATIGRAPHY



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: Mr C Cleaners

PROJECT NO.: 0266-31-4

STAFF: J.P. Hilton / S.T. Patterson

DATE: 3/14/94

WELL NO.: MPI-5 I BEHIND AGWAY STORAGE BARN

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 40.75
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 11.15
- 4 VOLUME OF WATER IN CASING (gal.)

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	15:15	15:27	15:35	15:37	15:42	15:47	15:53	16:02	16:06	16:13
Time / Gallons	<1	5	10	15	20	30	40	50	60	70
pH	8.02	8.07	7.76	7.55	7.40	7.24	7.27	7.45	7.27	7.26
Conductivity	622	631	929	1023	1116	1411	1520	1637	1635	1684
Temperature (°C)	10.7	10.3	11.0	10.9	11.0	9.9	10.3	10.5	10.6	10.3
Appearance / Turbidity	CLOY >100	CLOY >100	CLOY >100	CLOY >100	CLOY >100	CLOY >100	PRST CLOY >100	CLEAR 34	CLEAR 16	CLEAR 10

COMMENTS: • Started well development w/ 1 1/2" PVC bailer @ 15:15
• WELL WIZARD PUMP AFTER 5 GALLONS.
• EXHIBITED CONTINUOUS RECHARGE

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C's CLEANER

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/15/94

WELL NO.: MPI-6 BACK OF LIBRARY

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>22.3</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>10.5</u>
4	VOLUME OF WATER IN CASING (gal.)	

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{2.0} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	Time GALLONS	13:11 INITIAL	13:15 2.0	13:21 7.0	13:24 15	13:35 25	13:40 35	13:48 45	13:54 55	14:02 65	14:09 75	14:20 85
PH		7.21	7.12	7.11	7.08	7.14	7.14	7.14	7.18	7.12	7.08	7.07
CONDUCTIVITY		1455	1696	1693	1667	1596	1584	1694	1648	1656	1702	1684
TEMPERATURE		8.7	8.9	8.8	9.1	9.2	9.3	9.2	9.2	9.2	9.7	9.6
APPEARANCE TURBIDITY		CLO1 >100	CLO1 >100	CLO1 >100	CLO1 >100	CLO1 >100	CLO1 >100	MILKY 7100	MILKY 88	CLEAR 92	CLEAR 61	CLEAR 14

COMMENTS: CENTRIFUGAL Pump USED
H₂O LEVEL STAYED ABOVE 15.5' DURING PUMPING
EXHIBITED MODERATE RECHARGE
* CONDUCTIVITY CORRECTED TO 25°C

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANERS

PROJECT NO.: 0266-314-002

STAFF: JT PATTERSON

DATE: 3/22/94

WELL NO.: MP1-7D NEXT TO MR. C'S ENTRANCE

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 39.5
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.38
- 4 VOLUME OF WATER IN CASING (gal.)

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.0} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	3:20 10.0	3:29 5.0	3:36 10.0	3:43 20.0	3:54 40.0	4:08 60.0	4:20 80.0	4:34 100.0	4:47 120.0	5:05 130.0
TIME / GALLONS										
pH	9.73	9.51	9.56	9.01	8.24	7.71	7.61	7.63	7.40	7.35
CONDUCT.	1232	1332	1185	1164	1441	1524	1750	1766	1784	1813
TEMP	11.2	11.7	11.6	11.7	11.5	12.0	11.7	11.8	12.5	11.6
APP. TURBID	BEN CLD >100	BEN CLD 7100	BEN CLD >100	BEN CLD >100	BEN CLD >100	BEN CLD >100	CLD >100	PRICK >100	CLEAR 65	CLEAR 16

COMMENTS: WELL WIZARD DISPLACEMENT PUMP USED
• MOD. RECTANGLE

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'CLANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/22/94

WELL NO.: API - 4S NEXT TO LIBRARY

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>20.5</u>	1"	0.04
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>	2"	0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.28</u>	3"	0.38
4	VOLUME OF WATER IN CASING (gal.)		4"	0.66
			5"	1.04
			6"	1.50
			8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.9} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
Time / Gallons	11:41 INITIAL	11:45 1.9	12:11 10	12:30 20	12:54 30	13:09 40	13:23 50	13:45 60	13:55 65	
PH	7.89	7.85	7.59	7.60	7.60	7.51	7.64	7.73	7.65	
CONDUCT	801	759	922	1156	1348	1486	1444	1565	1572	
TEMP.	9.6	9.4	12.2	12.1	12.4	11.7	12.2	12.2	12.6	
API. TURBIDITY	BRN CLOT >100	BRN CLOT >100	BRN CLOT >100	BRN CLOT >100	MILKY >100	CLOT >100	MILKY >100	CLEAR 24	CLEAR 31	

COMMENTS:

- CENTRIFUGAL PUMP USED
- SLOW RECHARGE

↑
DISTURBED
SEDIMENT.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATERSON

DATE: 3/22/94

WELL NO.: MPI-45 NEXT TO LIBRARY

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 42.15
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.90
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.5} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)								
Time / GALLONS	9:23 INITIAL	9:30 5.0	9:34 10	9:40 20	10:10 50	10:40 70	10:49 90	11:16 110	
PH	7.92	7.75	7.88	7.84	8.13	7.76	7.59	7.52	
CONDUCTIVITY	862	1079	1080	1079	1350	1552	1553	1576	
TEMP.	9.7	10.2	10.1	10.7	10.9	10.9	10.7	10.8	
APPEARANCE / TURBIDITY	CLEAR >100	CLEAR >100	CLEAR 400	CLEAR 200	CLEAR >100	CLEAR 15	CLEAR 100	CLEAR 30	

COMMENTS: WELL WIZARD AIR DISPLACEMENT PUMP USED
 • MODSATE RECHARGE
 • BEN SAND FINES BROUGHT UP

AG-1 22.25

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C. CLANES

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/25/94

WELL NO.: MPI-85 IN WHALEY ST.

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>17.76</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>8.89</u>
4	VOLUME OF WATER IN CASING (gal.)	

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.5} \text{ gal.}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	3/28/94									
Time / GALLONS	11:52 INITIAL	11:57 1.5	12:06 5.0	12:30 10	12:59 15	13:14 20	14:01 25	8:50 35	9:35 55	10:09 65
PH	7.80	7.76	7.82	7.54	7.51	7.68	7.60	7.52	7.47	7.42
CONDUCT	1440	1138	785	1397	1534	1637	1578	1806	1891	1737
TEMP	6.3	6.6	9.6	6.9	7.3	6.8	6.6	4.9	4.1	4.7
APP / TURBIDITY	BEN 601 /100	/100	/100	/100	/100	/100	/100	/100	MILKY /100	CLEAR 32

COMMENTS: CENTRIFUGAL PUMP USED / BAILER (PVC) AFTER 7g
SLOW RECHARGE

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C. CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/25/94

WELL NO.: MPI-95 IN WHALEY ST.

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.84
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 8.82
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{15} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)								
	Time GALLONS	12:45 INITIAL	12:50 1.5	13:10 5	13:18 10	13:30 20	13:50 40	14:14 60	9:45 80
PH		7.57	7.60	7.72	7.67	7.52	7.41	7.49	7.43
CONDUCT		1305	1153	1051	1150	1647	1866	1996	1851
TEMP.		7.2	7.1	6.8	8.2	8.6	10.8	10.2	5.4
APP. TURBIDITY		BRY CLOZ 5100	CLOZ 5100	CLOZ 5100	CLOZ 5100	CLOZ 5100	CLOZ 5100	MILKY 98	CLEAR 40

COMMENTS: PVC BAILED USED
CENTRIFUGAL PUMP USED AFTER 10 G
SLIGHT SHEEN ON DEVELOPMENT H2O
MODERATE RECLAMER

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANER

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/15/84

WELL NO.: BSI 1 - NEAR AUTO PARTS STORE

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.5
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 11.10
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	3:30 INITIAL	3:40 1.5	3:50 10	4:04 20	4:15 30	4:22 40	4:34 50	4:36 60	4:43 70	4:51 80	4:58 1
TIME GALLONS											
pH	7.50	7.48	7.36	7.39	7.42	7.42	7.36	7.48	7.48	7.30	7.22
CONDUCTIVITY	1422	1296	1106	1119	1259	1130	1122	1121	1142	1082	1145
TEMP	7.9	7.8	9.5	9.7	11.1	9.5	9.1	11.5	12.4	10.1	9.0
APPEARANCE TURBIDITY	CLOUDY >100	CLOUDY >100	CLOUDY >100	CLOUDY >100	CLOUDY >100	MILKY >100	MILKY >100	MILKY >100	MILKY >100	CLEAR 44	CLEAR 41

COMMENTS:

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/17/94

WELL NO.: ESI-3S NEAR CORNER OF MR. C'S

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 16.7
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.13
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (16.7 - 3)) = \underline{1.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
Time / GALLONS	9:40 INITIAL	9:43 1.1	9:50 5	11:00 10	11:03 15	11:09 25	11:14 35	11:20 45	11:30 65	11:37 85	11:47 105	11:54 125
pH	7.35	7.33	7.30	7.46	7.23	7.48	7.44	7.27	7.30	7.31	7.41	7.30
CONDUCTIVITY	1724	1745	1736	1806	1893	1895	1927	1948	1948	1927	1906	1928
TEMPERATURE	7.5	7.4	7.6	8.1	8.4	9.2	9.7	7.8	9.5	9.5	8.8	9.2
APPEARANCE / TURBIDITY	BRO CLOT >100	CLOT >100	CLOT >100	CLOT >100	CLOT >100	MILKY >100	MILKY >100	MILKY >100	MILKY >100	CLEAR 94	CLEAR 74	CLEAR 54

COMMENTS:

- CENTRIFUGAL PUMP USED AT 9:55
- BROWN MUDDY WATER / FINE SANDS PUMPED UP.
- SLIGHT SOLVENT ODOR
- FAST RECHARGE

HNH of 5 ppm INSIDE H₂O TANK

HNH of 0 ppm IN CASING

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C. CLEAVERS

PROJECT NO.: 0266 314-007

STAFF: J. PATTERSON

DATE: 3/17/94

WELL NO.: ESI-4 IN PAINE ST. BY CHURCH

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 14.35
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 7.76
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
Time / GALLONS	13:45 INITIAL	13:47 1.5	13:51 B	14:04 7.5	14:05 15	14:10 25	14:21 35	14:32 45	14:48 55	
PH	7.07	7.09	7.12	7.10	7.13	7.25	7.14	7.17	7.21	
CONDUCT	6540	6880	7100	7180	7240	7430	7270	7220	7290	
TEMP	6.8	6.5	6.8	6.6	7.4	8.5	7.6	9.5	8.7	
APP TURBIDITY	SHEEP BROW 2100	SHEEP BROW 2100	MILKY 50	CLOU 2100	CLOU 2100	CLEAR 31	CLEAR 22	CLEAR 35	CLEAR 8	

COMMENTS:

CENTRIFUGAL PUMP USED
HOU'S @ 0PPM EVERYWHERE
FAST RECHARGE

↓
DISTURBED
SED. AT BOTTOM

FINE SAND PUMPED UP

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/17/94

WELL NO.: ESI-5 IN PAINE ST. 1/2 WAY DOWN ST.

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 14.38
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 7.62
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
Time / GALLONS	15:04 INITIAL	15:29 1.2	15:38 10	15:49 15	15:57 20	16:09 25				
PH	7.14	7.18	7.24	7.30	7.42	7.42				
CONDUCT.	2780	1980	1511	1283	1275	1182				
TEMP	4.6	6.5	6.4	6.1	6.5	6.9				
APP. TURBIDITY	BRO CLOSED 5100	CLO4 2100	MILKY 2100	MILKY 55	CLEAR 11	CLEAR 8				

COMMENTS: CENTRIFUGAL PUMP USED - (SHOULD HAVE BAILED)
SLOW RECHARGE
BROWN SAND FINES BROUGHT UP
NO ODOOR PRESENT

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANER

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/18/94

WELL NO.: ESI-6 NEXT TO CHURCH ON DEALERSHIP ^{5.05} WELL I.D.

		VOL. GAL./FT.
1	TOTAL CASING AND SCREEN LENGTH (ft.) <u>16.65</u>	1" 0.04
2	CASING INTERNAL DIAMETER (in.) <u>2"</u>	2" 0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.) <u>10.00</u>	3" 0.38
4	VOLUME OF WATER IN CASING (gal.)	4" 0.66
		5" 1.04
		6" 1.50
		8" 2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)												
Time / GALLONS	9:50 INITIAL	9:55 1.1	10:14 50	10:30 15	10:40 25	10:44 35	10:49 65	11:00 85	11:04 105	11:07 125	11:10 145	11:15 165	11:2 18
PH	7.26	7.16	7.09	7.07	7.13	7.08	7.09	7.09	7.11	7.12	7.12	7.09	7.1
CONDUCTIVITY	2980	2720	2810	2840	2710	2710	2930	2930	2930	2720	2940	2930	2920
TEMPERATURE	9.4	9.7	10.1	10.1	11.0	11.1	10.0	10.5	10.8	10.6	10.6	10.8	10.1
APPEARANCE / TURBIDITY	BEN CLOT >100	BEN CLOT >100	CLOT >100	CLOT >100	CLOT >100	CLOT >100	CLOT >100	MILKY >100	MILKY >100	MILKY >100	MILKY >100	CLEAR 52	CLEAR 9

COMMENTS: USED BAILEY FOR FIRST 10g.
 CENTRIFUGAL PUMP USED AFTER 10g
 • CONTINUOUS RECHARGE
 • BROWN FINE SAND BROUGHT UP
 • SLIGHT SOLVENT ODOR NOTICED

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR C CLEANERS

PROJECT NO.: 0266-317-002

STAFF: J. PATTERSON

DATE: 3/16/99

WELL NO.: AG-4 CORNER AGWAY BLD. BY ROAD

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.45
- 2 CASING INTERNAL DIAMETER (in.) 4"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 8.26
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{6.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Time / Gallons	9:40 INITIAL	9:51 64	10:25 12	11:15 18	11:55 24	13:41 30	14:51 36	15:44 42	16:15 48
pH		6.45	6.49	6.96	6.96	6.99	7.16	6.97	7.02	6.95
CONDUCT.		7200	7120	4940	3610	3460	3400	3050	2860	2840
TEMP		6.0	5.0	7.3	6.6	6.0	7.6	6.2	7.2	7.0
APP. TURBIDITY		CLO4 600 5100	CLO4 600 2100	MILKY 2100	MILKY 2100	CLO4 2100	MILKY 74	MILKY 44	CLEAR 43	CLEAR 30

COMMENTS: STARTED DEVELOPMENT W/ CENTRIFUGAL PUMP, BUT H₂O LEVEL DROPPED QUICKLY AFTER 5g. CONTINUED TO DEVELOP W/ PVC BAILER, LET RECHARGE AND DEVELOP AGAIN.
 STEEP/SLIGHT ODOOR FROM DEVELOP WATER INSIDE CASING H₂N @ 2ppm P424 H₂O

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS

PROJECT NO.: 0266-314-002

STAFF: JT PATTERSON

DATE: 3/14/94

WELL NO.: AG-5 FRONT CORNER OF AGWAY BLDG
NEXT TO MAN HOLE

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

- TOTAL CASING AND SCREEN LENGTH (ft.) 13.9
- CASING INTERNAL DIAMETER (in.) 2"
- WATER LEVEL BELOW TOP OF CASING (ft.) 9.10
- VOLUME OF WATER IN CASING (gal.)

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.8} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)								
	11:25 INITIAL	11:30 1.0	11:37 2.0	11:43 3.0	11:49 4.0	11:56 5.0	12:02 6.0	12:08 7.0	3/18
Time / Gall									
PH	6.75	6.74	6.93	6.51	6.66	6.73	6.78	6.82	
COND.	2250	2240	2010	2040	2020	1880	1890	204	
TEMP	5.5	5.4	5.0	5.4	5.3	4.8	4.6	6.0	
APP TURBIDITY	SHEEN MILKY >100	SHEEN MILKY >100	SHEEN MILKY >100	SHEEN MILKY >100	SHEEN CLOT >100	SHEEN CLOT >100	SHEEN CLOT >100	SHEEN CLOT >100	

COMMENTS: PVC BAILER USED FOR DEVELOPMENT
UPON BRINGING UP 1ST VOLUME, A STRONG SOLENT OOR. HOU'S IN
CASING OF $\approx 150-200$ PPM (HEAD SPACE 2 PPM) (20' AWAY 0-1 PPM)
STOPPED DEVELOPMENT $\approx 11:35$ TO FURTHER TEST. AIR MONITOR AIR $\approx$ EVERY $\frac{1}{2}$ HR.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C'S CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/21/94

WELL NO.: MPI-15 BY CHURCH, CORNER OF MAIN AND PINE ST.

	WELL I.D.	VOL. GAL./FT.
1 TOTAL CASING AND SCREEN LENGTH (ft.) <u>19.3</u>	1"	0.04
	2"	0.17
2 CASING INTERNAL DIAMETER (in.) <u>2"</u>	3"	0.38
	4"	0.66
3 WATER LEVEL BELOW TOP OF CASING (ft.) <u>9.82</u>	5"	1.04
	6"	1.50
4 VOLUME OF WATER IN CASING (gal.)	8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.6} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
Time / GALLONS	9:38 INITIAL	9:42 1.6	9:45 5	9:51 10	9:56 15	10:01 25	10:11 45	10:25 65	10:41 85	10:57 95	11:01 100
pH	7.14	6.95	6.86	6.96	6.94	6.96	7.16	7.20	7.39	7.33	7.1
CONDUCTIVITY	1518	1948	2450	2520	2640	2710	2590	2550	2520	2500	25
Temp.	8.1	8.2	9.4	9.5	9.4	9.6	10.0	9.5	10.2	10.4	9.
APPEARANCE / TURBIDITY	BEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN CLO4 >100	SHEEN MILKY >100	SHEEN MILKY >100	CLEAR 54

COMMENTS:

- CENTRIFUGAL PUMP USED → LOW SETTING
- BEN FINE SAND
- SPOTTY SHEEN SEEN ON DEVELOPMENT WATER
- SLOW RECHARGE/MODERATE

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C' CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J PATERSON

DATE: 3/25/94

WELL NO.: MPI - 1 I N PARK ST.

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 40.63
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 7.29
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.7} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	9:45 INITIAL	9:47 6.0	9:54 15	10:11 30	10:27 45	10:45 60	11:03 75	11:22 90	11:32 100	11:41 110
TIME GALLONS										
PH	7.48	7.64	7.54	7.44	7.49	7.33	7.49	7.41	7.31	7.29
CONDUCT.	1016	1071	1268	1445	1458	1572	1478	1608	1632	1645
TEMP.	10.2	11.8	11.9	11.6	11.9	11.8	11.4	11.7	11.6	11.8
APR TURBIDITY	BRN CLAY 2100	BRN CLAY 2100	BRN CLAY 2100	BRN CLAY 2100	BRN CLAY 2100	CLAY 2100	CLAY 2100	MILK 2100	CLAY 79	CLAY 20

COMMENTS: AIR DISPLACEMENT PUMP USED
5.75 GPM LEACHAGE

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C. CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/18/94

WELL NO.: MPI - 2 ACROSS ST. FROM MR. C'S IN TOWN HALL PARKING LOT.

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>17.75</u>	1"	0.04
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>	2"	0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>11.3</u>	3"	0.38
4	VOLUME OF WATER IN CASING (gal.)		4"	0.66
			5"	1.04
			6"	1.50
			8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
Time / GALCONS	1:05 INITIAL	1:10 1.1	1:14 5.0	1:19 15	1:28 25	1:34 45	1:44 55	1:50 65	2:02 75	2:05 80	2:11
PH	7.23	7.24	7.17	7.05	7.17	7.18	7.25	7.25	7.30	7.31	7.31
CONDUCTIVITY	1536	1566	1522	1538	1499	1492	1503	1486	1516	1501	1491
TEMPERATURE	9.6	9.5	9.7	10.2	10.0	10.0	9.6	10.0	11.8	12.0	11.8
APPEARANCE / TURBIDITY	BAN CLOUDY 5100	CLOUDY 2100	CLOUDY 200	CLOUDY 2100	CLOUDY 2100	MILKY 2100	MILKY 2100	MILKY 2100	CLEAR 78	CLEAR 16	CLEAR 1

COMMENTS:
CENTRIFUGAL PUMP USED
FAST RECHARGE
SOLVENT ODOR
FINE BAN. SAND PULLED UP

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS

PROJECT NO.: 0266-314-002

STAFF: J. PATTERSON

DATE: 3/21/94

WELL NO.: MPI-3 BETWEEN CHURCH AND CAR DEALERSHIP

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 18.25
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.92
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.4} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
Time / GALLONS	11:35 INITIAL	11:36 1.4	11:43 5.0	11:53 10	12:04 20	12:17 30	12:29 40	12:45 50	13:02 60	
PH	7.61	7.69	7.60	7.31	7.30	7.28	7.28	7.28	7.26	
CONDUCT.	1461	1001	1034	1220	1497	1554	1667	1696	1720	
TEMP.	10.2	7.8	10.3	9.7	10.8	10.3	11.1	11.2	11.3	
APP. TURBIDITY	BROWN CLO4 7100	CLO4 2100	CLO4 2100	CLO4 2100	CLO4 2100	CLO4 2100	MILKY 400	CLEAR 42	CLEAR 29	

COMMENTS: CENTRIFUGAL PUMP USED
 • SLOW/MONERATE RECHARGE
 • SLIGHT SCREEN ON DEVELOPMENT WATER (1ST 10g)

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: Mr C Cleaners

PROJECT NO.: 0266-31-4

STAFF: J. T. Patterson

DATE: 3/15/94

WELL NO.: MPI-55 BEHIND AGWAY STORAGE BARN

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 18.1
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 11.12
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	10:12	10:14	10:40	10:41	10:55	11:00	11:05	11:15	11:21	11:29	11:33	11:41
Time / Gallons	INITIAL	1.5	6.5	15.8	25.8	35.9	45.8	55.8	65.8	75.8	85.8	95.8
pH	7.21	7.20	7.12	7.26	7.13	7.16	7.26	7.37	7.29	7.34	7.35	7.35
Conductivity	1316	1386	1488	1541	1578	1615	1590	1611	1608	1612	1606	1606
Temperature (°C)	8.3	8.6	7.6	8.2	9.0	8.8	8.8	10.7	8.9	9.0	9.0	8.8
Appearance / Turbidity	CLOU	CLOU	CLOU	CLOU	CLOU	CLOU	PAC CLOU	PAC CLOU	MILKY	MILKY	CLEAR	CLEAR
	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	40	10

COMMENTS: PVC BAILER USED FOR 1ST VOLUME

• CENTRIFUGAL PUMP USED AFTER 1ST VOLUME

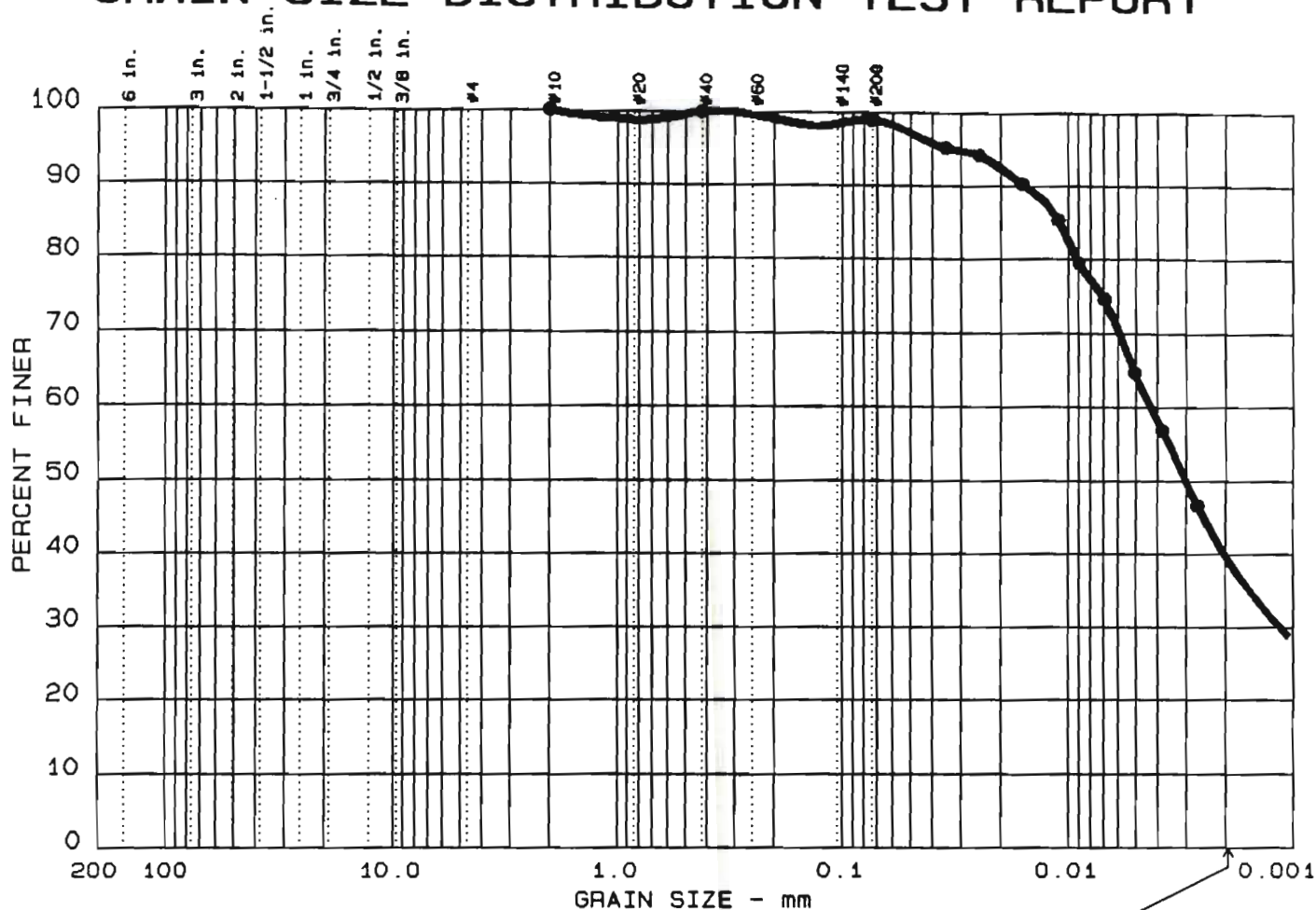
• H₂O LEVEL STAYED ABOVE 13' DURING PUMPING

• EXHIBITED CONTINUOUS RECHARGE

APPENDIX F

- Physical Soil Testing Results

GRAIN SIZE DISTRIBUTION TEST REPORT



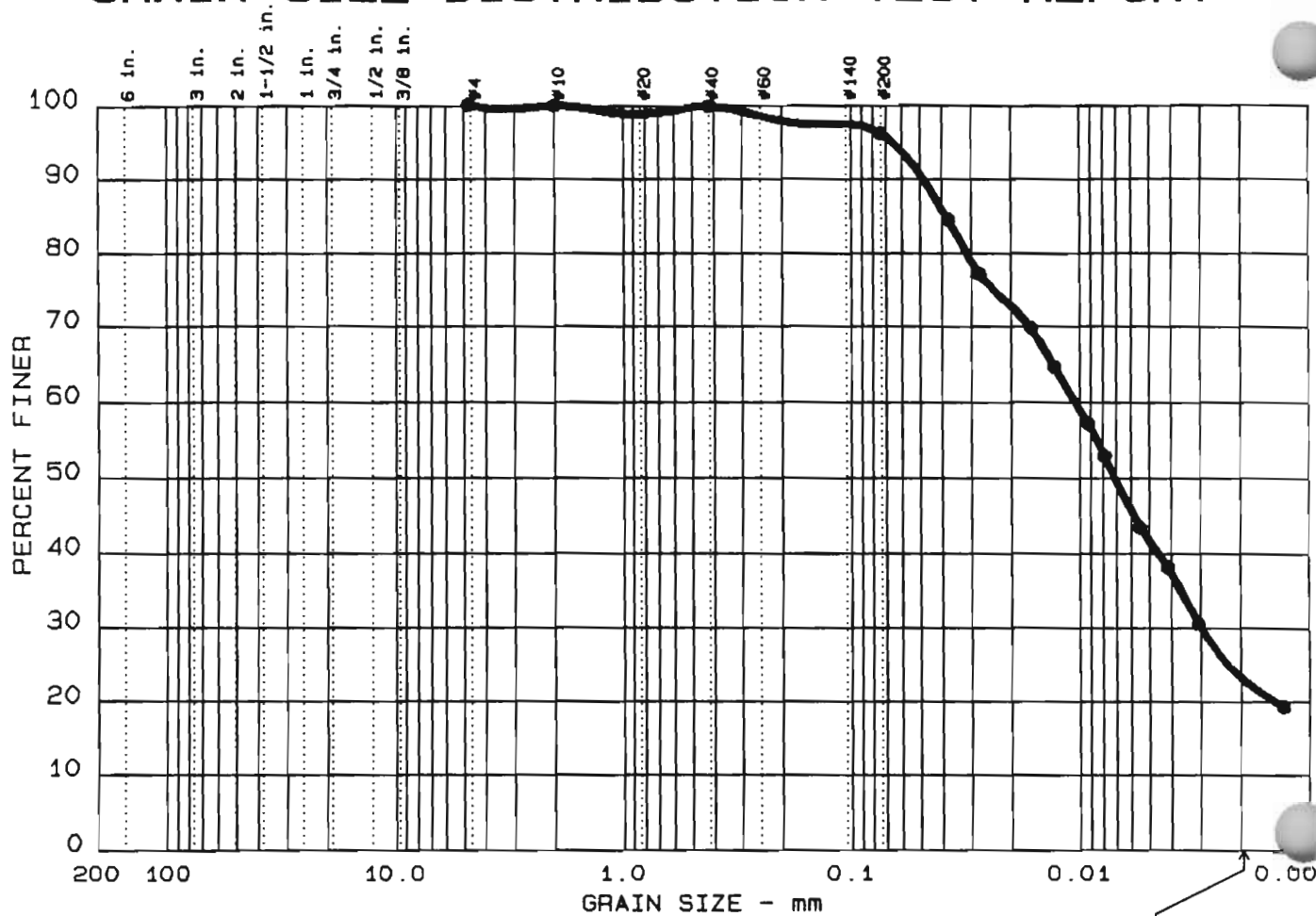
Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 8	0.0	0.0	1.1	59.2	39.7

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● 30	11			0.00	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAY LEAN CLAY	CL	

Project No.: 0266-31-4 Project: NYSDEC, MR. C CLEANERS ● Location: MPI-1D, 66-68'	Remarks:
Date: 04-18-94	
GRAIN SIZE DISTRIBUTION TEST REPORT MALCOLM PIRNIE, INC.	
Figure No.	

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 17	0.0	0.0	3.8	72.9	23.3

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● 22	6			0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAY SILTY CLAY	CL-ML	

Project No.: 0266-31-4
 Project: MR. C'S CLEANERS
 ● Location: MPI-4D, 46-48'

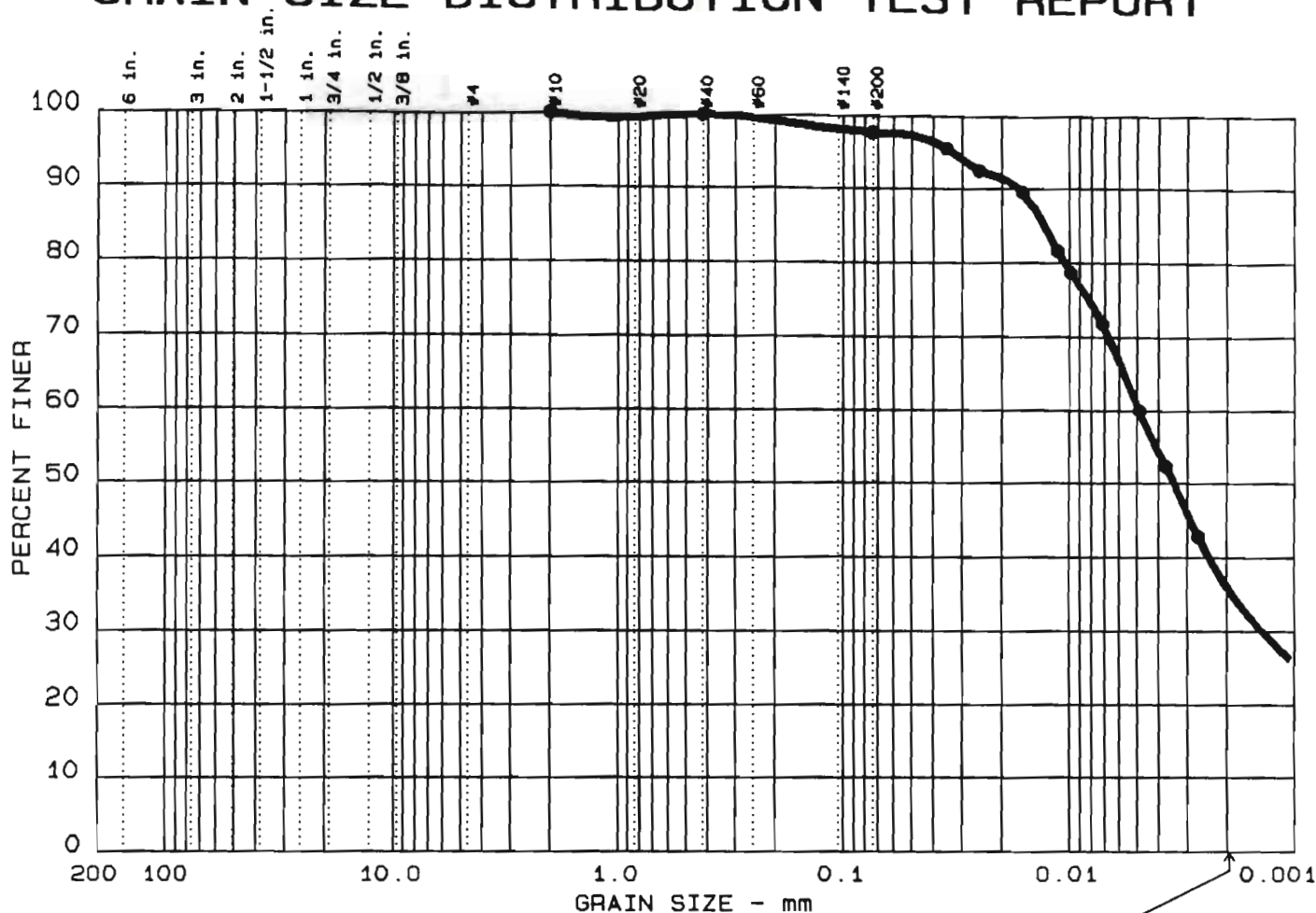
Date: 04-15-94

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Figure No.

GRAIN SIZE DISTRIBUTION TEST REPORT



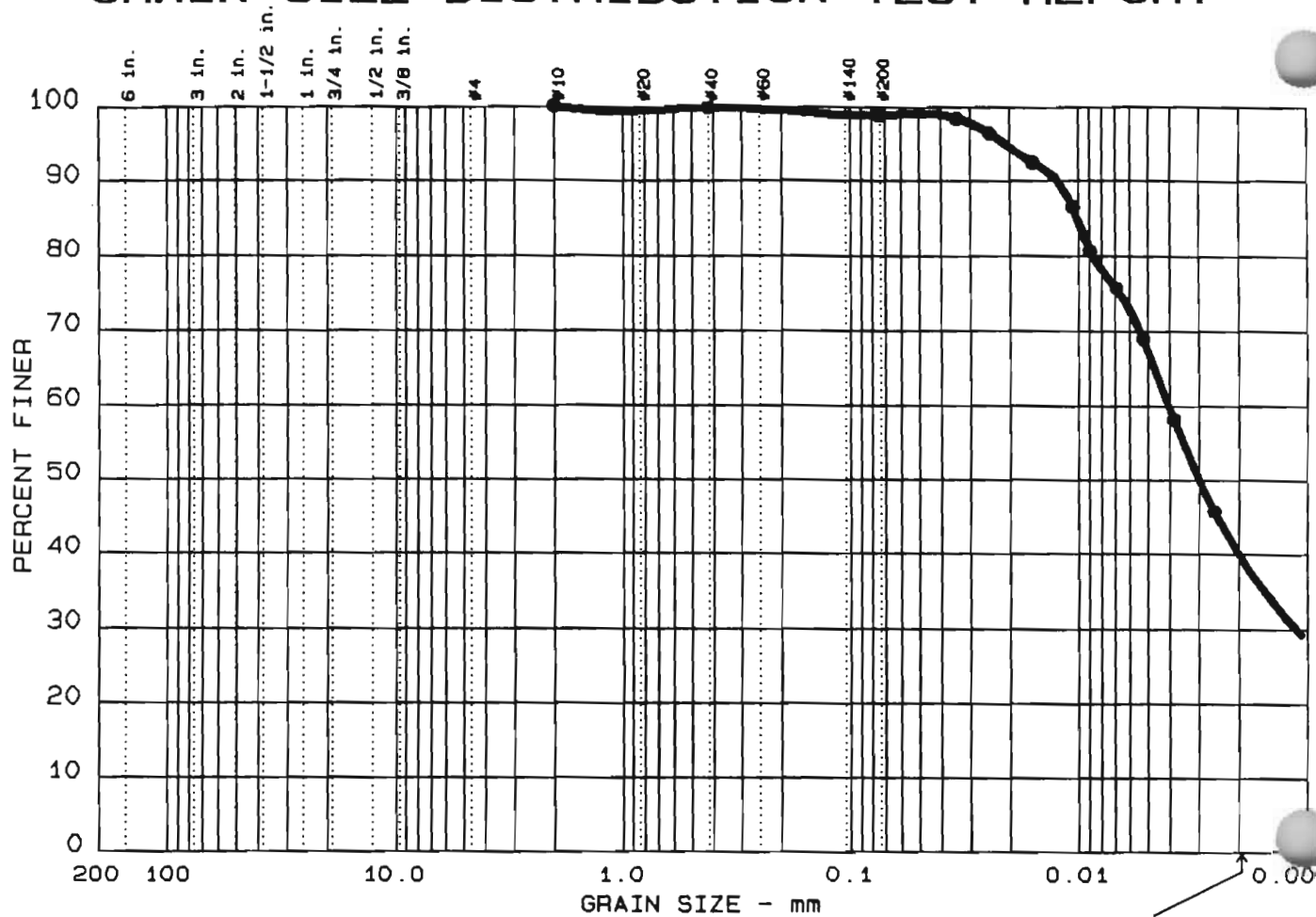
Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 14	0.0	0.0	2.4	61.6	36.0

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● 29	10			0.00	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAY LEAN CLAY	CL	

Project No.: 0266-31-4 Project: NYSDEC, MR. C CLEANERS ● Location: MPI-5D, 54-56' Date: 04-18-94	Remarks: Figure No.
GRAIN SIZE DISTRIBUTION TEST REPORT MALCOLM PIRNIE, INC.	

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 4	0.0	0.0	1.2	58.9	39.9

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● 32	13			0.00	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
● GRAY LEAN CLAY	CL	

Project No.: 0266-31-4
 Project: NYSDEC, MR. C CLEANERS
 ● Location: MPI-7D, 58-60'

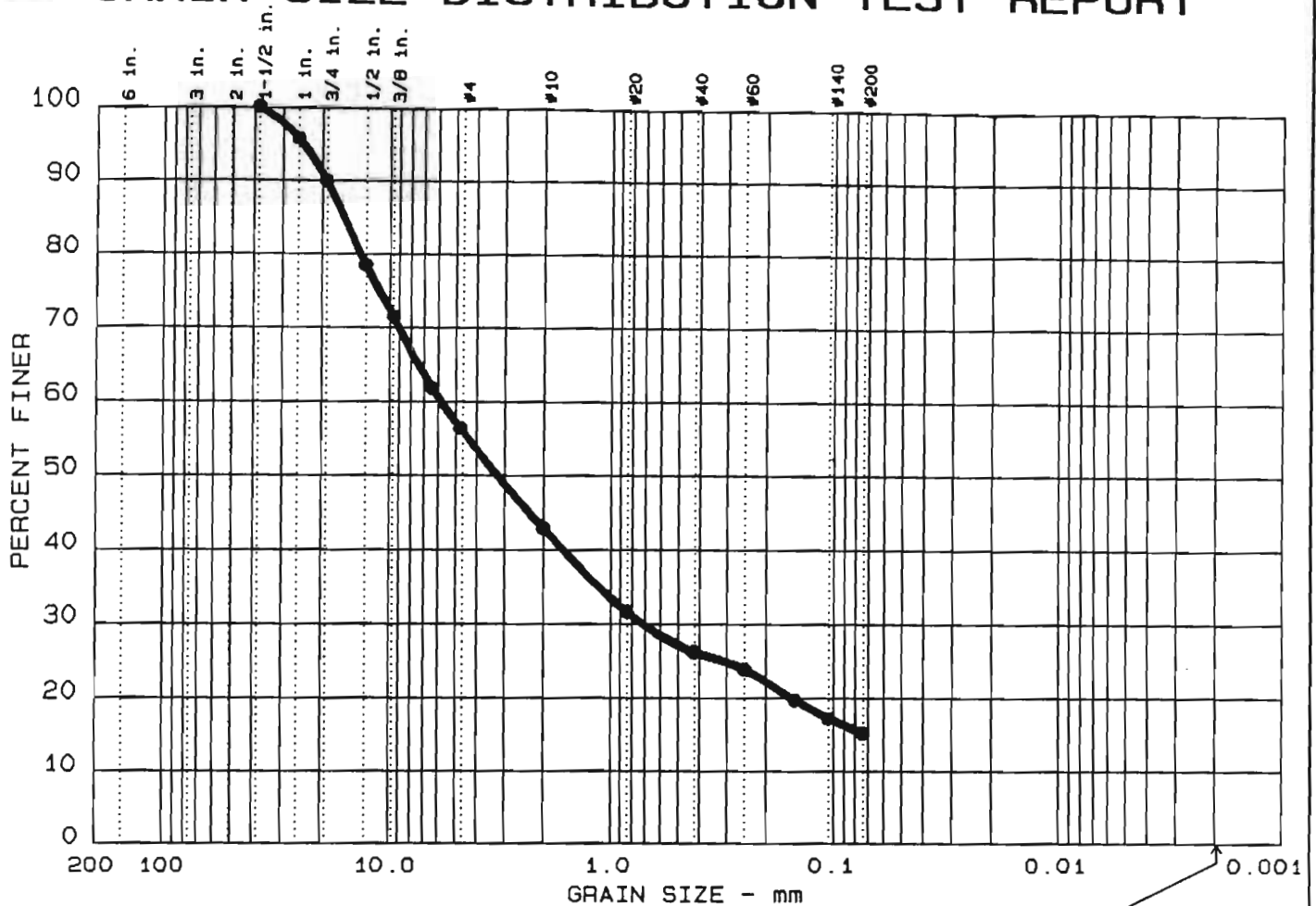
Date: 04-18-94

GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Remarks:

Figure No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 20	0.0	43.7	41.1	15.2	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●		15.85	5.82	3.20	0.716				

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 0266-31-4
 Project: Mr."C" Cleaners
 ● Location: MPI-3S / 8-14'

Date: 6-8-94

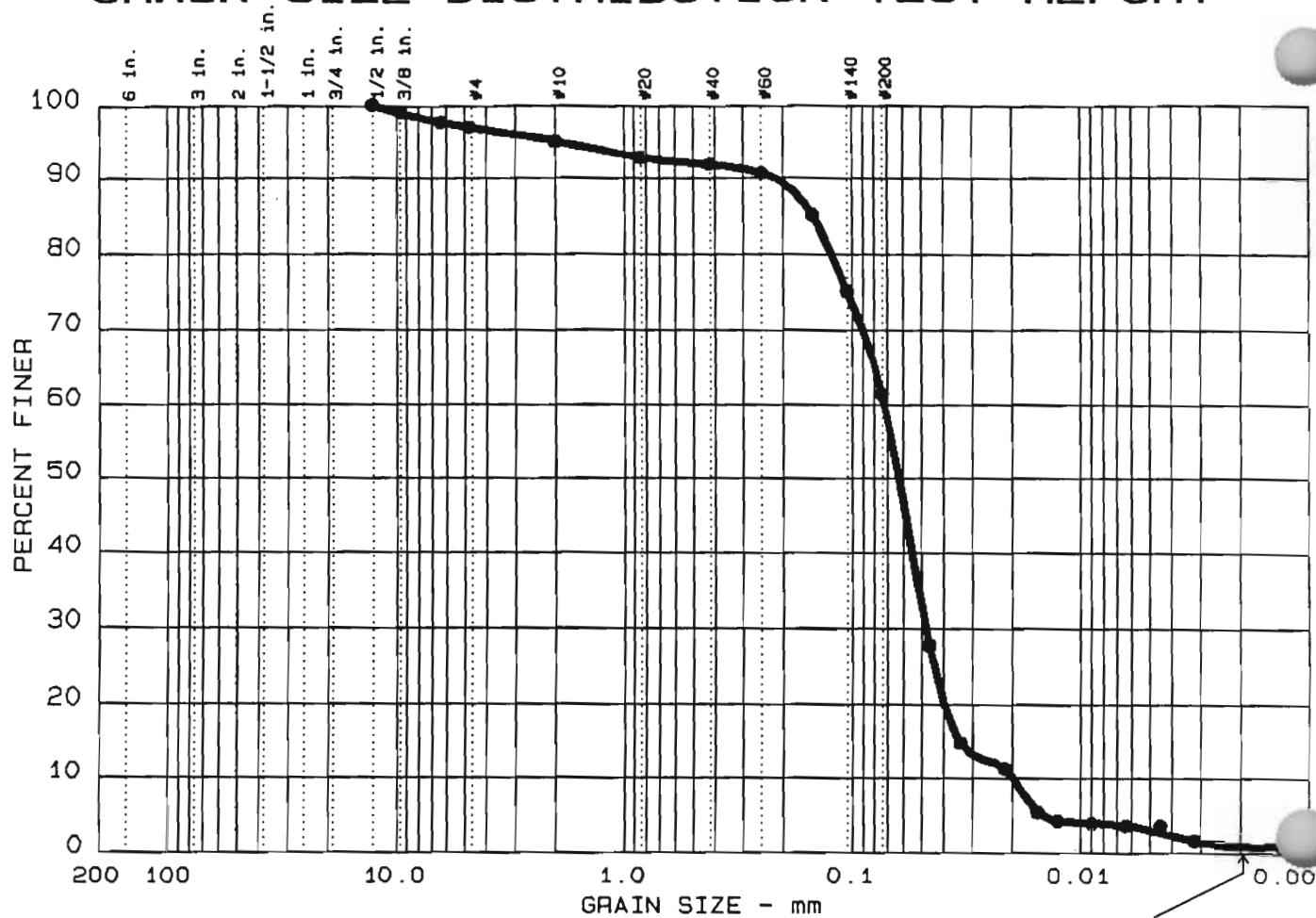
GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Remarks:

LAB I.D.#: 94-125

Figure No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 2	0.0	3.0	35.6	60.5	0.9

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●		0.15		0.06	0.048	0.0337	0.0196	1.60	3.7

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 0266-31-4
 Project: Mr. "C" Cleaners
 ● Location: MPI-3S / 14-18'

Date: 6-8-94

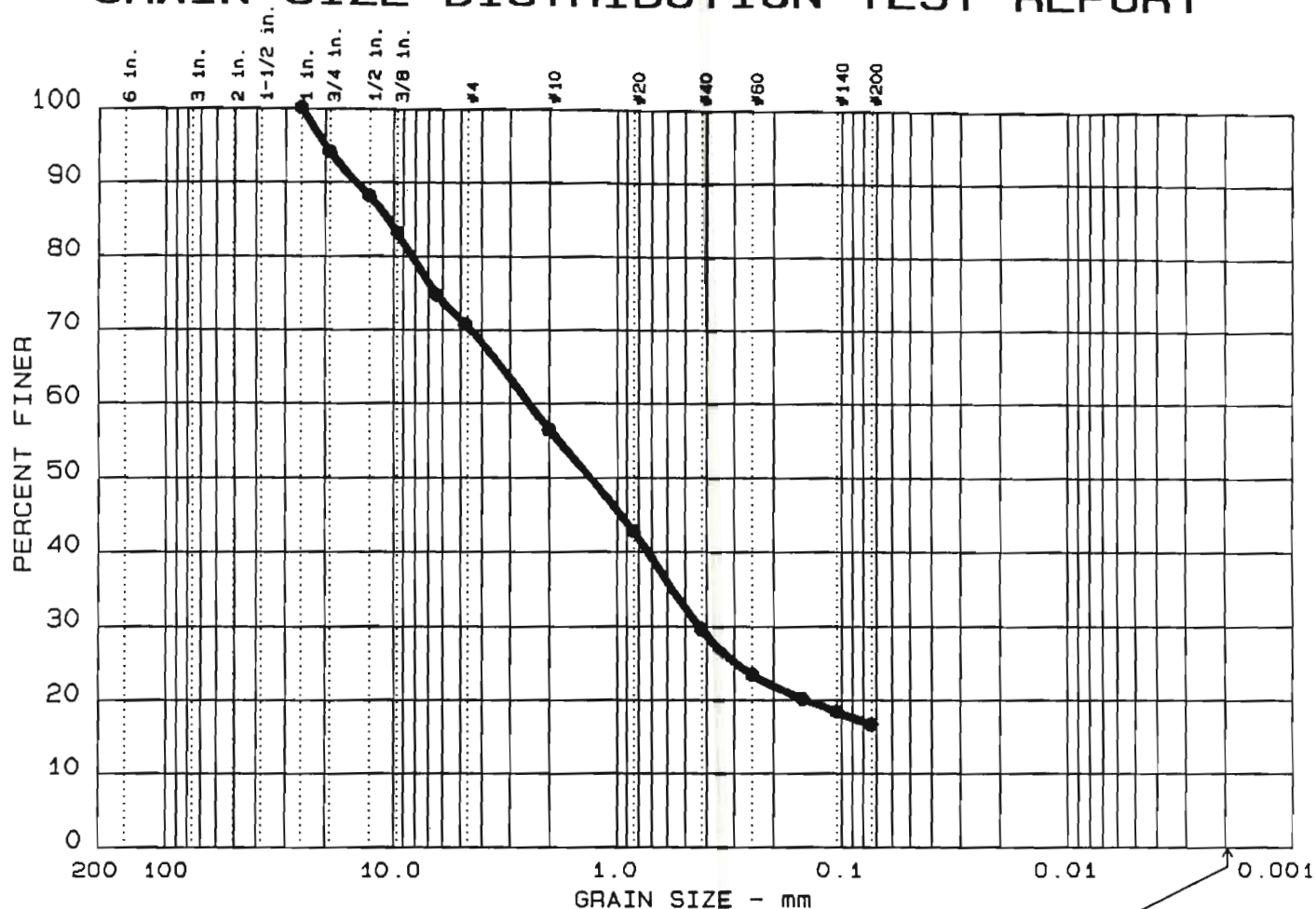
GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Remarks:

LAB I.D.#: 94-128

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 3	0.0	29.3	54.0	16.7	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●		10.35	2.45	1.32	0.432				

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 0266-31-4
 Project: Mr."C" Cleaners
 ● Location: MPI-5D (S) / 8-14'

Date: 6-8-94

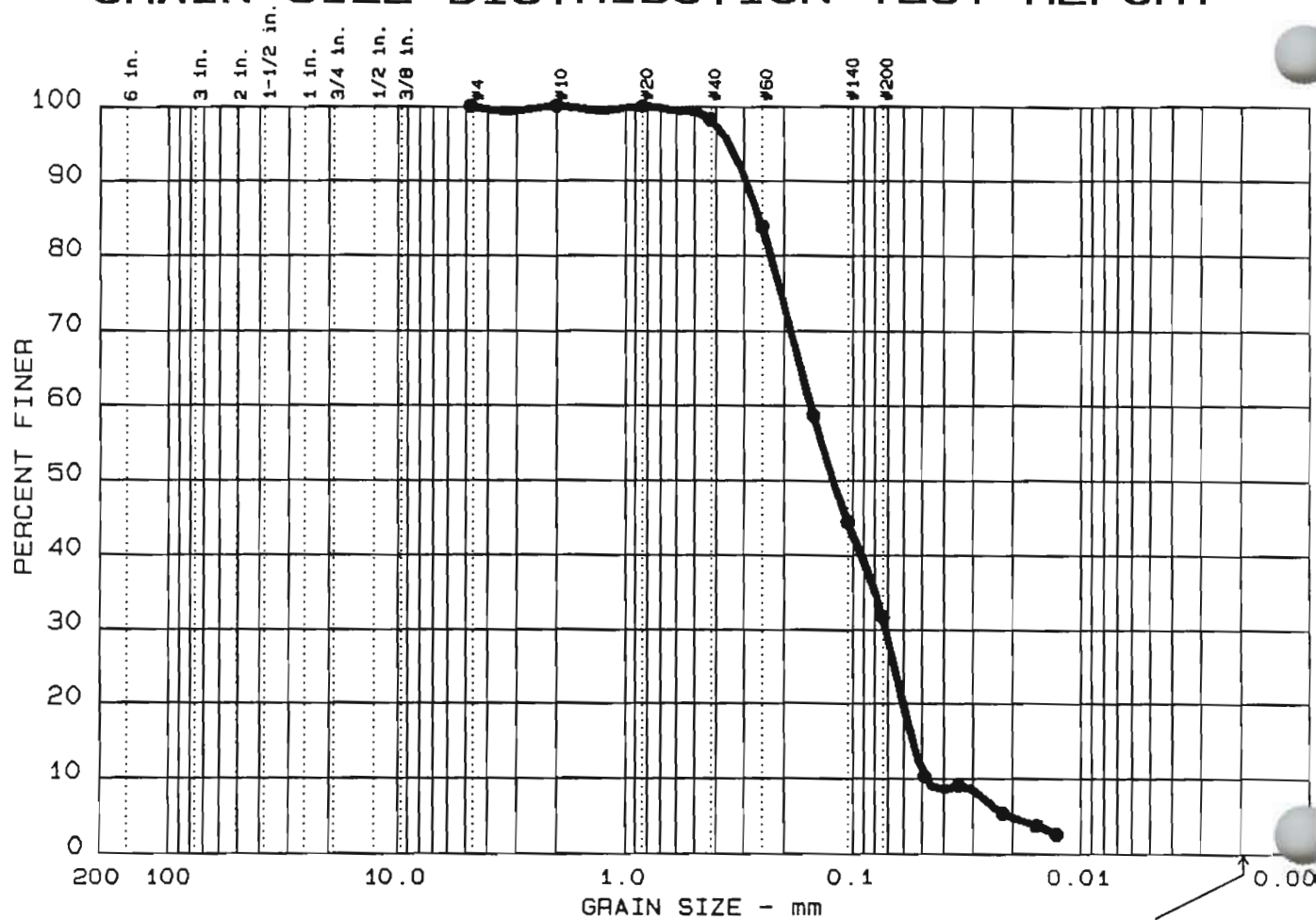
GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Remarks:

LAB I.D.#: 94-129

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT

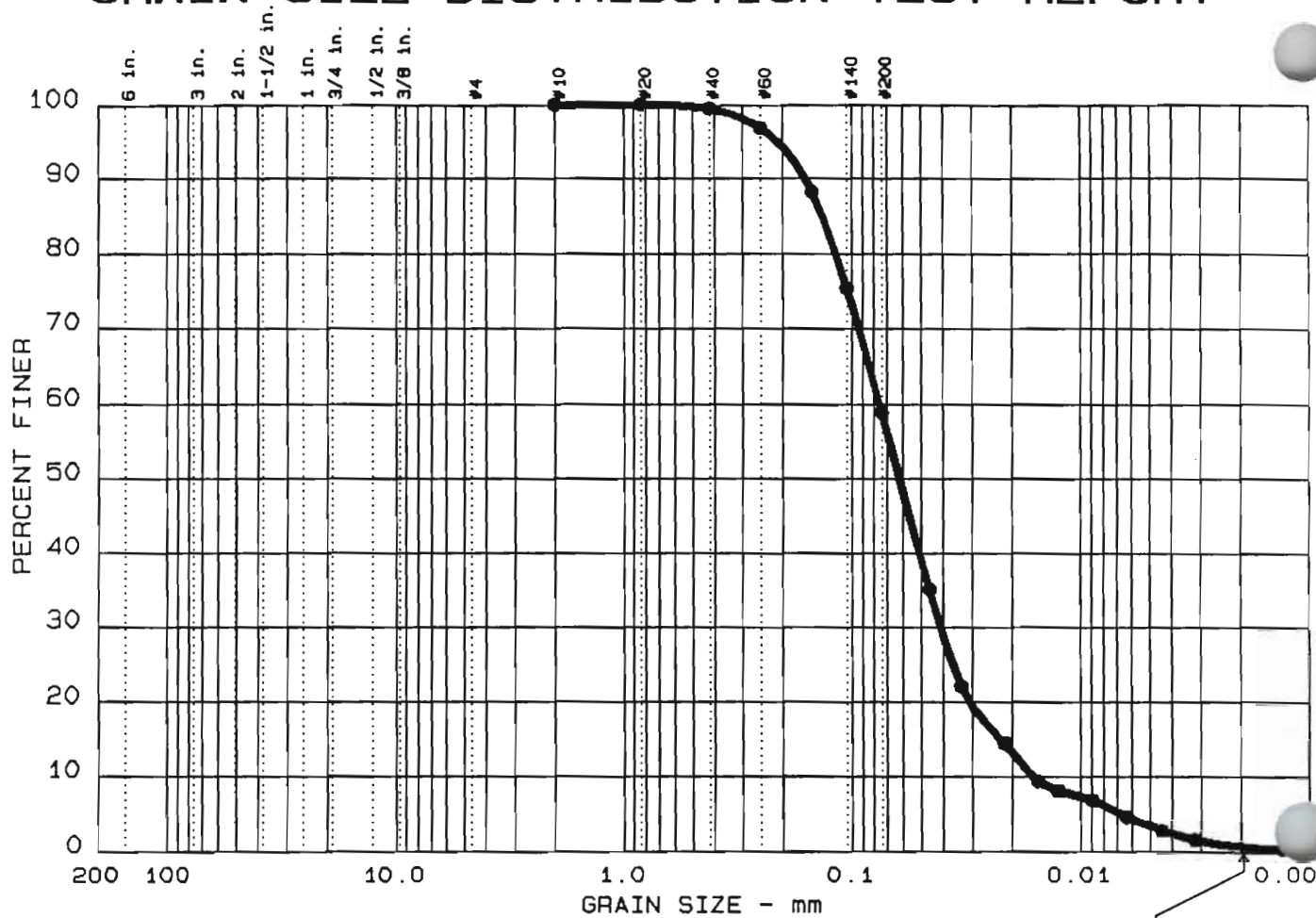


in. s. s. s.



Project No.: 0266-31-4 Project: Mr."C" Cleaners ● Location: MPI-1D / 30-34' & 36-40'	Remarks:
Date: 6-8-94	LAB I.D.#: 94-126
GRAIN SIZE DISTRIBUTION TEST REPORT MALCOLM PIRNIE, INC.	Figure No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 18	0.0	0.0	41.1	58.2	0.7

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●		0.13	0.08	0.06	0.041	0.0222	0.0161	1.38	4.7

MATERIAL DESCRIPTION	USCS	AASHTO
●		

Project No.: 0266-31-4
 Project: Mr. "C" Cleaners
 ● Location: MPI-5D (I) / 34-42'

Date: 6-8-94

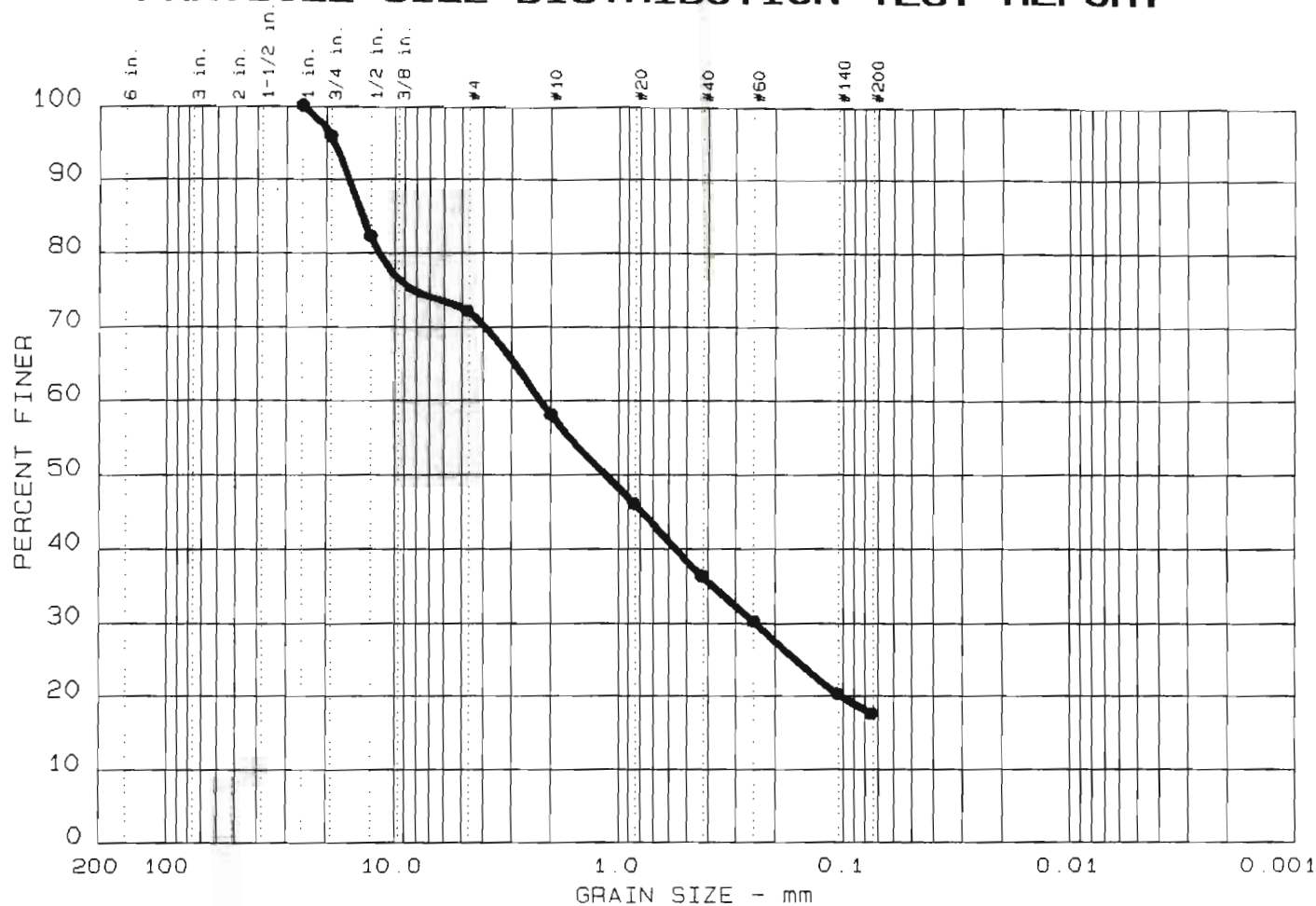
GRAIN SIZE DISTRIBUTION TEST REPORT
MALCOLM PIRNIE, INC.

Remarks:

LAB I.D.#: 94-124

Figure No.

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	27.8	54.6	17.6				

SIEVE inches size	PERCENT FINER		
1	100.0		
0.75	95.9		
0.5	82.3		
GRAIN SIZE			
D ₆₀	2.21		
D ₃₀	0.24		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
4	72.2		
10	58.1		
20	46.0		
40	36.2		
60	30.1		
140	20.3		
200	17.6		

Sample information:
 ● MPI-6S, 12-18'

Remarks:

LAB ID NO.: 95-335

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4
 Project: Mr. C Dry Cleaner
 Date: 5-23-95

Data Sheet No. _____

The graph displays the grain size distribution of a soil sample. The y-axis represents the percentage of soil finer than a given grain size, ranging from 0 to 100. The x-axis represents the grain size in millimeters, ranging from 200 mm to 0.00 mm. The curve shows a sharp drop between 0.075 mm and 0.075 mm, indicating a well-graded soil. The data points are plotted at various sieve sizes and grain sizes.

Sieve Size / Grain Size (mm)	Percent Finer (%)
6 in.	100
3 in.	100
2 in.	100
1-1/2 in.	100
1 in.	100
3/4 in.	100
1/2 in.	100
3/8 in.	100
#4	100
#10	100
#20	100
#40	98
#60	88
#140	45
#200	28
0.075 mm	12
0.06 mm	8
0.05 mm	6
0.04 mm	5
0.03 mm	4
0.02 mm	3
0.01 mm	2

[illegible]

Sieve inches size	PERCENT FINER		
	●		
	GRAIN SIZE		
D ₆₀	0.14		
D ₃₀	0.08		
D ₁₀	0.02		
	COEFFICIENTS		
C _c	1.58		
C _u	5.0		

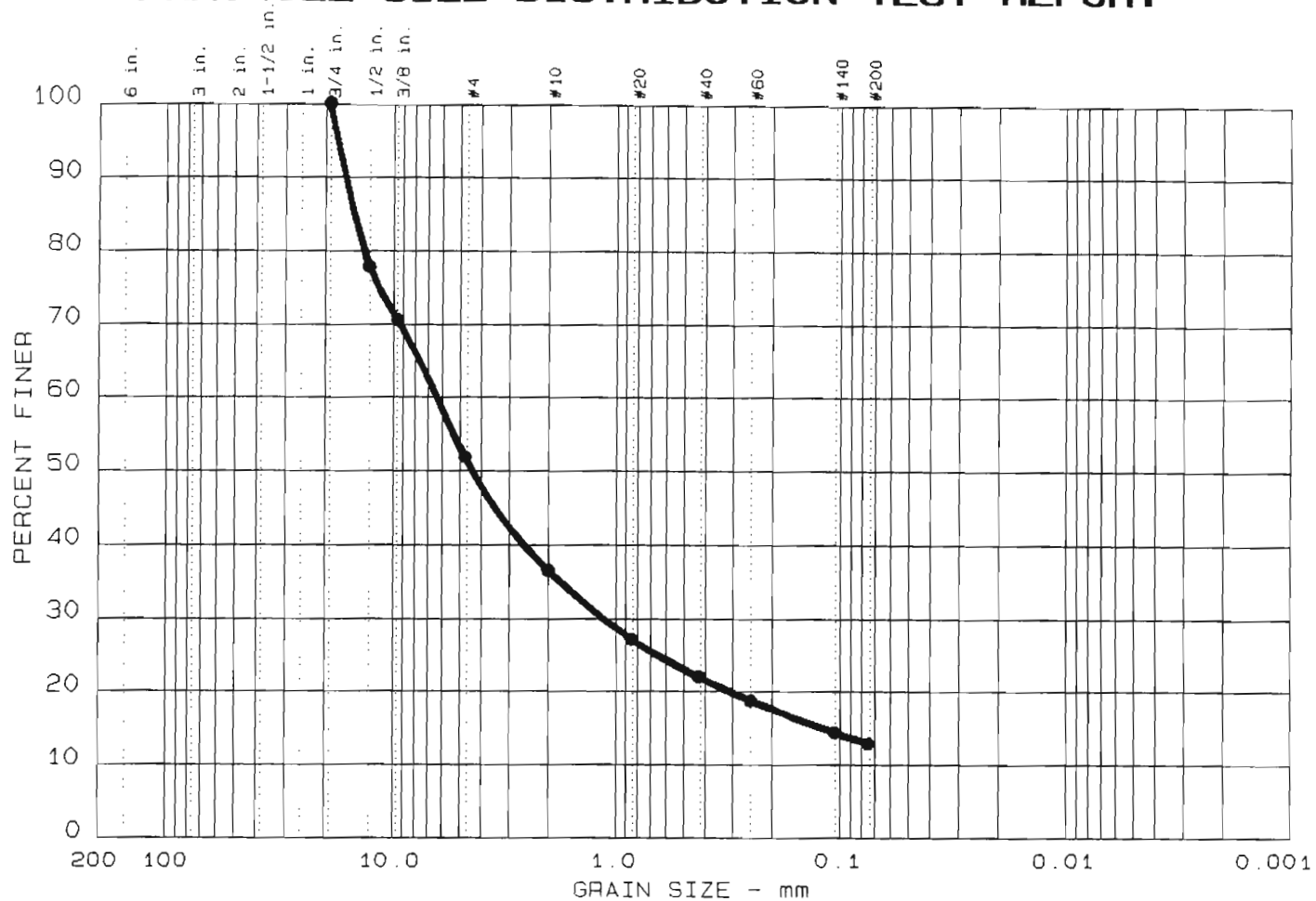
SIEVE number size	PERCENT FINER		
	●		
10	100.0		
20	99.9		
40	97.9		
60	88.8		
140	45.2		
200	28.7		

● MPI-6S, 18-24'

LAB ID NO.: 95-337

Data Sheet No.

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	48.2	38.9	12.9				

SIEVE inches size	PERCENT FINER		
0.75	100.0		
0.5	77.8		
0.375	70.6		
GRAIN SIZE			
D ₆₀	6.38		
D ₃₀	1.15		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
4	51.8		
10	36.4		
20	27.1		
40	22.0		
60	18.7		
140	14.4		
200	12.9		

Sample information:
 ● MPI-7D, 12-20'

Remarks:

LAB ID NO.: 95-338

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4
 Project: Mr. C Dry Cleaner
 Date: 5-23-95

Data Sheet No. _____

Grain size distribution curve showing Percent Finer versus Grain Size (mm). The curve is plotted on a semi-logarithmic scale, with Percent Finer on the y-axis (0 to 100) and Grain Size (mm) on the x-axis (logarithmic scale from 200 to 0.0075). The curve shows a well-graded material with a maximum grain size of approximately 4.75 mm and a minimum grain size of approximately 0.075 mm.

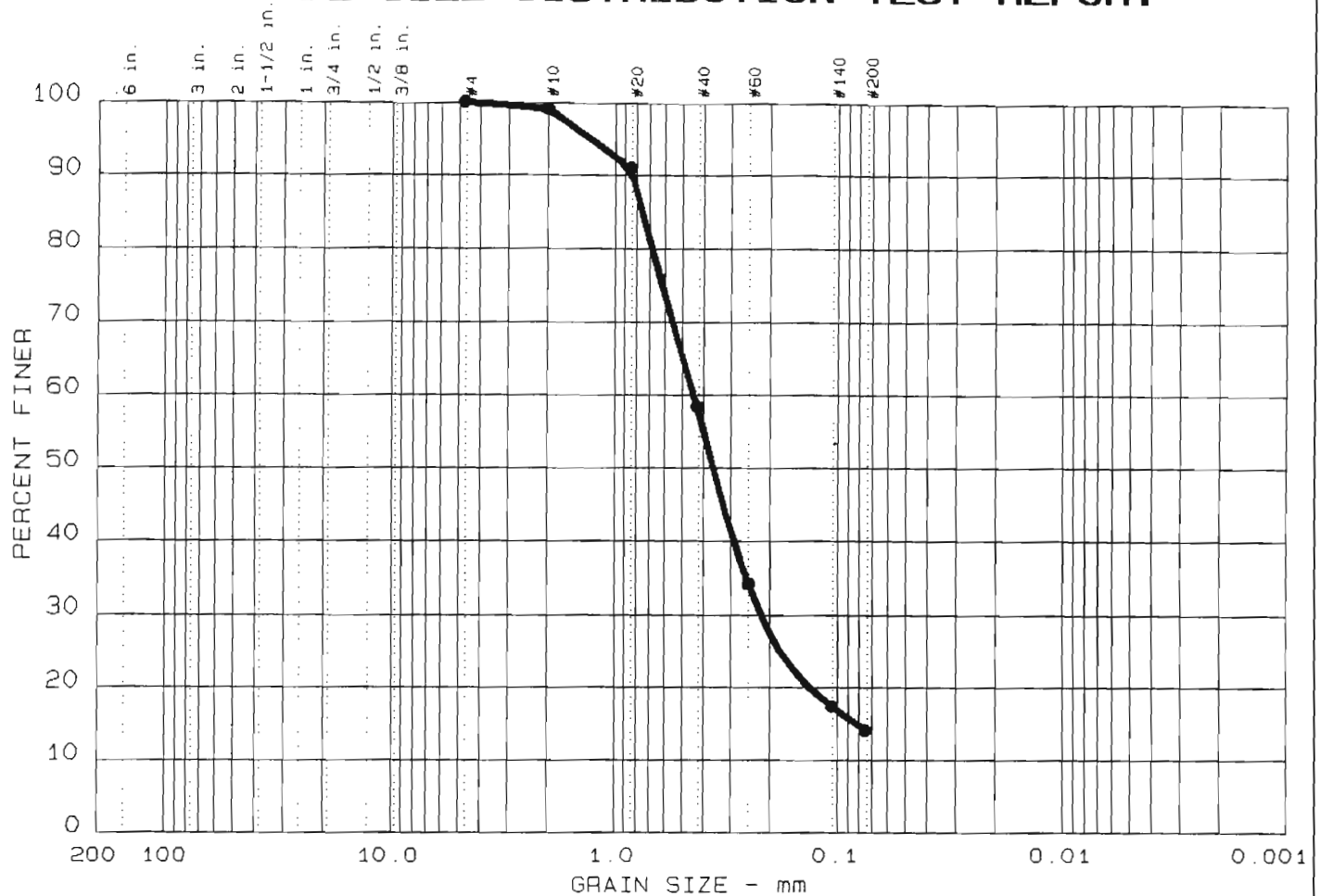
Grain Size (mm)	Percent Finer (%)
4.75	100
2.0	90
0.85	74
0.6	65
0.425	52
0.3	43
0.25	35
0.15	23
0.075	13

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER		
	●				●		
1.5	100.0			4	52.1		
1	89.3			10	43.2		
0.75	74.5			20	36.0		
0.5	65.6			40	29.2		
0.375	61.9			60	23.9		
				140	16.1		
				200	13.9		
X GRAIN SIZE							
□ 60	8.27						
□ 30	0.46						
□ 10							
X COEFFICIENTS							
C _c							
C _u							

LAB ID NO.: 95-339

Data Sheet No.

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	0.0	85.9	14.1				

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			Sample information: ● MPI-7D, 26-28'
	●				●			
GRAIN SIZE								Remarks: LAB ID NO.: 95-336
D ₆₀	0.44			4	100.0			
D ₃₀	0.22			10	99.0			
D ₁₀				20	91.0			
COEFFICIENTS								
C _c				40	58.4			
C _u				60	34.1			
				140	17.4			
				200	14.1			

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4
Project: Mr. C Dry Cleaner

Date: 5-23-95

Data Sheet No. _____

APPENDIX G

- Phase I Hydraulic Conductivity Testing

Slug Test Assumptions

- Base of Shallow Aquifer @ 27' bgs unless documented with deep well data
- Base of Intermediate Aquifer @ 42' bgs per deep well strat log

Borehole diameter

- ESI wells drilled w/ 4 1/4" HSA, literature references a corresponding borehole dia. of 8 1/4" = .344' as r_w

- AG wells

- #1 and 5 drilled w/ 6 1/4" HSA $\therefore$ 10 1/2" borehole = .438' as r_w
- #4 drilled w/ 8 1/4" HSA $\therefore$ 12 1/2" borehole = .521' as r_w
- #6 - 10 drilled w/ 3 3/4" HSA $\therefore$ 8" borehole = .333' as r_w

8 1/4" HSA = 12 1/2" hole / literature

3 3/4" HSA = 8" hole / M. Gerstung @ Bflo Dalg

- MPI wells drilled with 6 1/4" HSA producing 12" hole per M. Gandy @ STB Services

Effective Radius

- for partially saturated sand pack

- formula $r_{eff} = \left[(1-n) r_c^2 + n (r_w^2) \right]^{1/2}$

$n = .3$

r_c = radius of casing

r_w = radius of borehole

refr cont'd

- ESI wells = $\left[(1-.3) (.083)^2 + (.3) (.344)^2 \right]^{1/2}$
 $= \left[(.00482) + (.0355) \right]^{1/2}$
 $= \underline{.20}$

• AG wells #5
$$\left[(1-.3)(.093)^2 + (.3)(.439)^2 \right]^{1/2}$$
$$\left[(.00482) + (.05755) \right]^{1/2}$$
$$= \underline{.25}$$

$$\# 4 \quad \frac{[(1-.3)(.167)^2 + (.3)(.521)^2]}{[(.01952) + (.08143)]^{1/2}} \\ = \underline{.32}$$

6-10
$$\left[(1-.3)(.093)^2 + (.3)(.333)^2 \right]^{1/2}$$
$$\left[(.00482) + (.03327) \right]^{1/2}$$
$$= .20$$

- MPI Wells

$$= \frac{[(1-.3)(.083)^2 + (.3)(.5)^2]}{[(.00482) + (.075)]}^{1/2}$$

$$= .28$$

- Base of Shallow Aquifer @ 27' bgs
- Base of Deeper Aquifer @ 42' bgs

Borehole diameter: / effective radius

ESI wells 1-6 drilled w/ 4 1/4" HSA / subsurface log documentation
8 1/4" $\therefore r_w = .344'$

AG wells

#15 drilled w/ 6 1/4" HSA assumption 10 1/2" $\therefore .438' = r_w$
#4 drilled w/ 8 1/4" HSA 12 1/2" $\therefore .521' = r_w$
#6-10 drilled w/ 3 3/4" HSA / Borehole 8" $\therefore .333' = r_w$

$$AG\ 15 = \left[(1-.3)(.083)^2 + (.3)(.438)^2 \right]^{1/2} \\ \left[(.00482) + .05755 \right]^{1/2} \\ = .25$$

$$AG\ 4 = \left[(1-.3)(.167)^2 + (.3)(.521)^2 \right]^{1/2} \\ \left[(.01952) + (.08143) \right]^{1/2} \\ = .318$$

$$AG\ 6-10 = \left[(1-.3)(.093)^2 + (.3)(.333)^2 \right]^{1/2} \\ \left[(.00482) + (.03327) \right]^{1/2} \\ .195$$

AG wells cont'd

- AG 1

- Sand pack depth 2' below screen bottom. ~~Assume bottom is 1' for determination~~
- Sand pack remains fully saturated $\therefore H \neq L$

- AG 4

- AG 5

- Partially saturated sandpack $H = L$
- No well construction diagram assume sand pack to .5' below screen,
- partially saturated sand pack

AG 6

- Bflo Data rpts 3 3/4" HSA create 8" borehole
- Partially saturated sand pack extends .5' below screen bottom

AG 7

- Partially saturated sandpack to .5' below screen

AG 8

- Partially saturated sandpack to .5' below screen

AG 9

- Partially saturated sandpack to .5' below screen

AG 10

- Partially saturated sandpack to .5' below screen

MPI Wells effective radius

$$r_{eff} = \left[(1-.3) (.083)^2 + (.3) (.5)^2 \right]^{1/2}$$

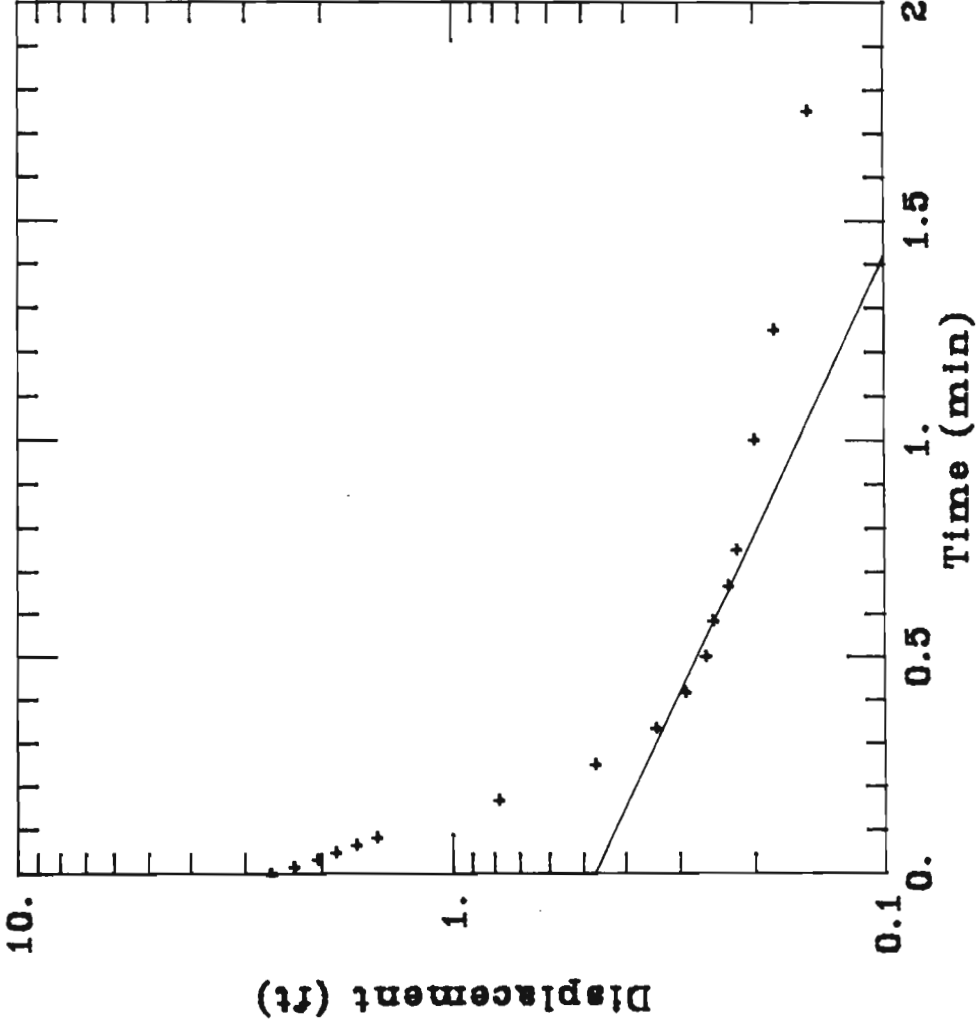
$$\left[(.00482) + (.075) \right]$$

$$.28$$

MPI

- 1s Partially saturated sandpack extends .5' below screen
- 2s
- 3s
- 4s base of shallow aquifer @ 27.5 per 4E data
- 5s base of shallow aquifer @ 26 per 5E data
- 6s H₂O Above sandpack prior to test, i.e. H > L
- 8s partially saturated sandpack .5' below screen
- 9s " " " " " "

Diab

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY
MPI-1S	
	DATA SET: MPI-1S 05/01/94
	AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 3/29/94 OBS. WELL: MPI-1S
	ESTIMATED PARAMETERS: $K = 0.005012 \text{ ft/min}$ $y_0 = 0.4711 \text{ ft}$
	TEST DATA: $H_0 = 2.61 \text{ ft}$ $r_c = 0.28 \text{ ft}$ $r_w = 0.5 \text{ ft}$ $L = 10.54 \text{ ft}$ $b = 17.74 \text{ ft}$ $H = 10.54 \text{ ft}$

SLUG TEST FIELD DATA FOR
WELL # MPI-1S

SE1000B
Environmental Logger
03/29 12:43

Unit# 00554 Test# 4

INPUT 1: Level (F) TOC

Reference 9.26
Scale factor 49.82
Offset 0.02

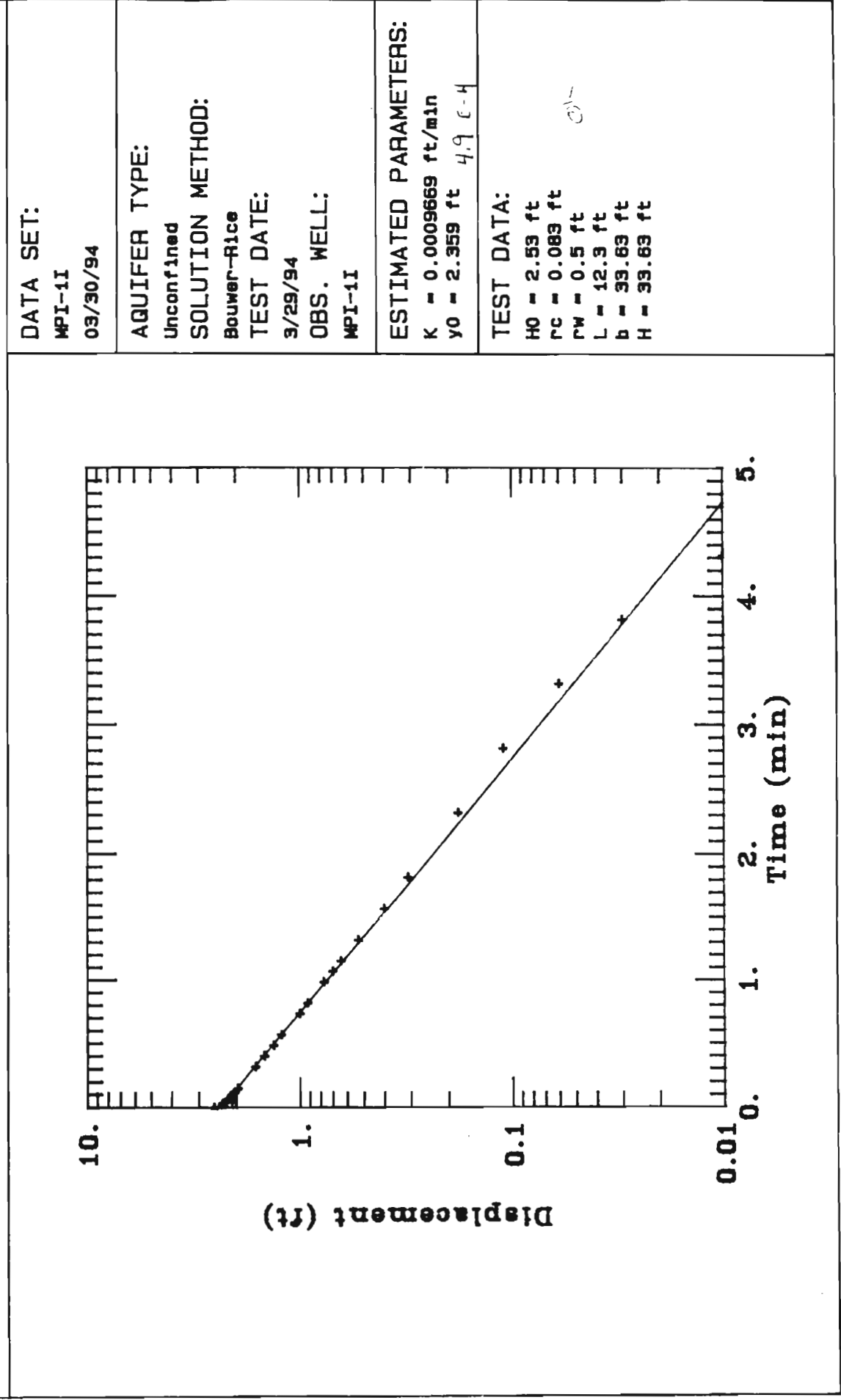
Step# 0 03/29 11:11

Elapsed Time Value

-----	-----	0.7500	9.52
		0.8333	9.51
		0.9167	9.49
		1.0000	9.48
0.0000	9.26	1.0833	9.48
0.0033	9.27	1.1667	9.46
0.0066	9.27	1.2500	9.46
0.0099	9.27	1.3333	9.44
0.0166	9.27	1.4166	9.44
0.0233	9.27	1.5000	9.44
0.0266	9.26	1.5833	9.43
0.0300	9.29	1.6667	9.43
0.0333	9.27	1.7500	9.43
0.0500	9.26	1.8333	9.43
0.0666	9.26	1.9167	9.41
0.0833	8.74	2.0000	9.41
0.1000	8.83	2.5000	9.40
0.1166	8.70	3.0000	9.40
0.1333	8.72	3.5000	9.38
0.1500	8.69	4.0000	9.37
0.1666	8.48	4.5000	9.35
0.1833	8.74	5.0000	9.35
0.2000	8.92	5.5000	9.35
0.2166	9.57	6.0000	9.33
0.2333	10.21	6.5000	9.33
0.2500	11.87	7.0000	9.33
0.2666	11.57	7.5000	9.32
0.2833	11.30	8.0000	9.32
0.3000	11.11	8.5000	9.32
0.3166	10.92		
0.3333	10.75		
0.4167	10.04		
0.5000	9.73		
0.5833	9.60		
0.6667	9.55		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-1I



Malcolm Pirnie		Client: NYSDEC																							
Project No.: 0266314		Location: East Aurora, NY																							
MPI-1I																									
DATA SET: MPI-1I 03/30/94		AQUIFER TYPE: Confined SOLUTION METHOD: Cooper et al. TEST DATE: 9/29/94 OBS. WELL: MPI-1I																							
ESTIMATED PARAMETERS: $T = 0.02102 \text{ ft}^2/\text{min}$ $S = 9.6728\text{E-}06$		TEST DATA: $H_0 = 2.53 \text{ ft}$ $rc = 0.083 \text{ ft}$ $rw = 0.5 \text{ ft}$																							
<table border="1"> <caption>Estimated data points from the plot</caption> <thead> <tr> <th>Time (min)</th> <th>H/H₀</th> </tr> </thead> <tbody> <tr><td>0.01</td><td>1.00</td></tr> <tr><td>0.02</td><td>0.95</td></tr> <tr><td>0.05</td><td>0.85</td></tr> <tr><td>0.10</td><td>0.75</td></tr> <tr><td>0.20</td><td>0.65</td></tr> <tr><td>0.50</td><td>0.50</td></tr> <tr><td>1.00</td><td>0.35</td></tr> <tr><td>2.00</td><td>0.25</td></tr> <tr><td>5.00</td><td>0.15</td></tr> <tr><td>10.00</td><td>0.05</td></tr> </tbody> </table>				Time (min)	H/H ₀	0.01	1.00	0.02	0.95	0.05	0.85	0.10	0.75	0.20	0.65	0.50	0.50	1.00	0.35	2.00	0.25	5.00	0.15	10.00	0.05
Time (min)	H/H ₀																								
0.01	1.00																								
0.02	0.95																								
0.05	0.85																								
0.10	0.75																								
0.20	0.65																								
0.50	0.50																								
1.00	0.35																								
2.00	0.25																								
5.00	0.15																								
10.00	0.05																								

SLUG TEST FIELD DATA FOR
WELL # MPI-1I

SE1000B
Environmental Logger
03/29 12:48

Unit# 00554 Test# 2

INPUT 1: Level (F) TOC

Reference 7.39
Scale factor 49.82
Offset 0.02

Step# 0 03/29 10:46

Elapsed Time Value

0.0000	7.39	0.6667	8.72
0.0033	7.39	0.7500	8.61
0.0066	7.39	0.8333	8.50
0.0099	7.39	0.9167	8.39
0.0133	7.39	1.0000	8.31
0.0166	7.39	1.0833	8.23
0.0200	7.39	1.1667	8.16
0.0233	7.21	1.2500	8.09
0.0266	7.05	1.3333	8.03
0.0300	6.71	1.4166	7.97
0.0333	6.76	1.5000	7.92
0.0500	6.27	1.5833	7.87
0.0666	6.22	1.6667	7.84
0.0833	5.95	1.7500	7.79
0.1000	6.28	1.8333	7.76
0.1166	6.77	1.9167	7.73
0.1333	6.57	2.0000	7.70
0.1500	8.06	2.5000	7.57
0.1666	9.18	3.0000	7.50
0.1833	9.92	3.5000	7.45
0.2000	9.70	4.0000	7.42
0.2166	9.71	4.5000	7.40
0.2333	9.67	END	
0.2500	9.57		
0.2666	9.51		
0.2833	9.48		
0.3000	9.43		
0.3166	9.38		
0.3333	9.35		
0.4167	9.16		
0.5000	9.01		
0.5833	8.86		

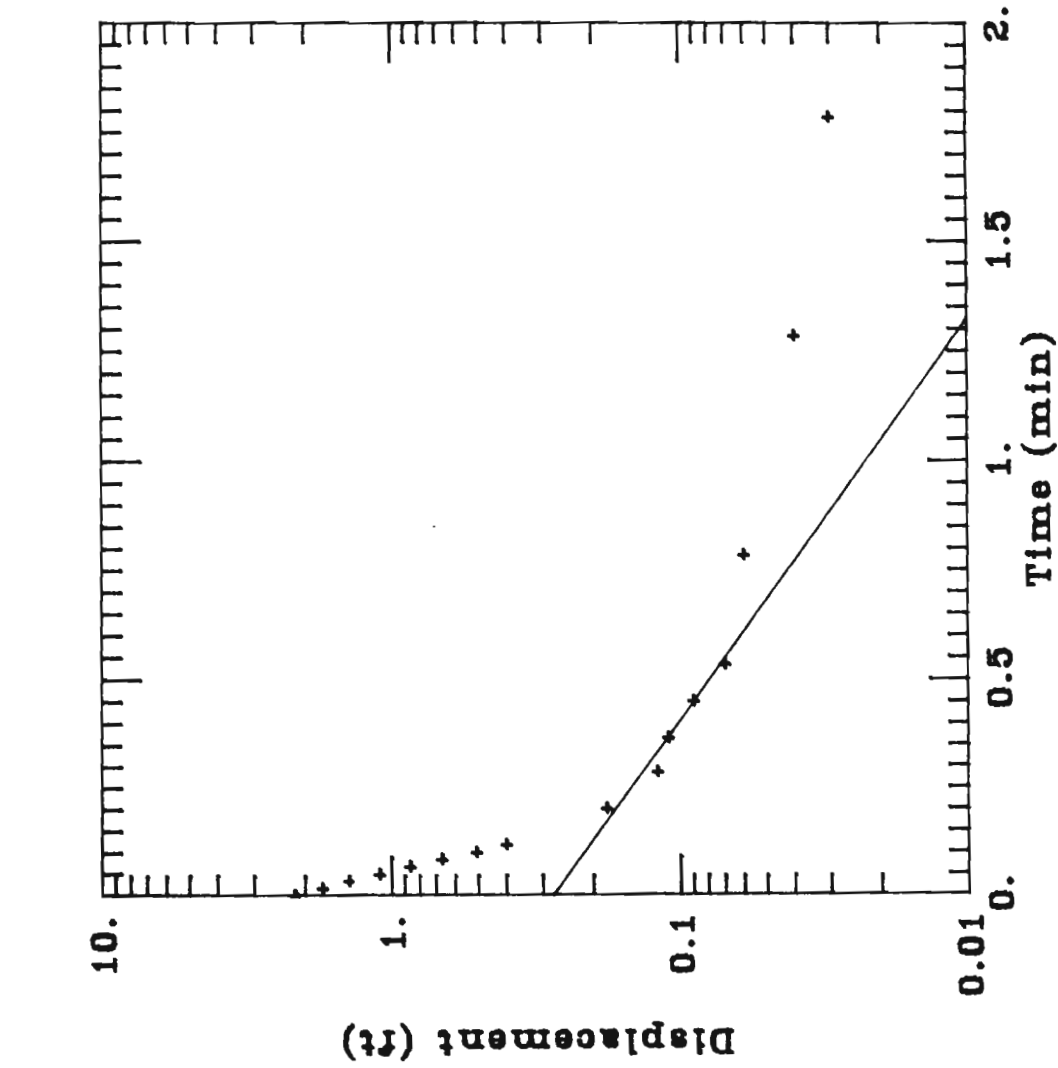
Malcolm Pirnie

Client: NYSDEC

Project No.: 0266314

Location: East Aurora, NY

MPI-2S



DATA SET:

MPI-2S

05/01/94

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

TEST DATE:

3/24/94

OBS. WELL:

MPI-2S

ESTIMATED PARAMETERS:

K = 0.02209 ft/min

y0 = 0.2761 ft

TEST DATA:

H0 = 2.17 ft

rc = 0.28 ft

rw = 0.5 ft

L = 7.4 ft

b = 16.15 ft

H = 7.4 ft

SLUG TEST FIELD DATA FOR
WELL # MPI-2S

SE1000B
Environmental Logger
03/28 11:01

Unit# 00554 Test# 8

INPUT 1: Level (F) TOC

Reference 10.85
Scale factor 49.82
Offset 0.02

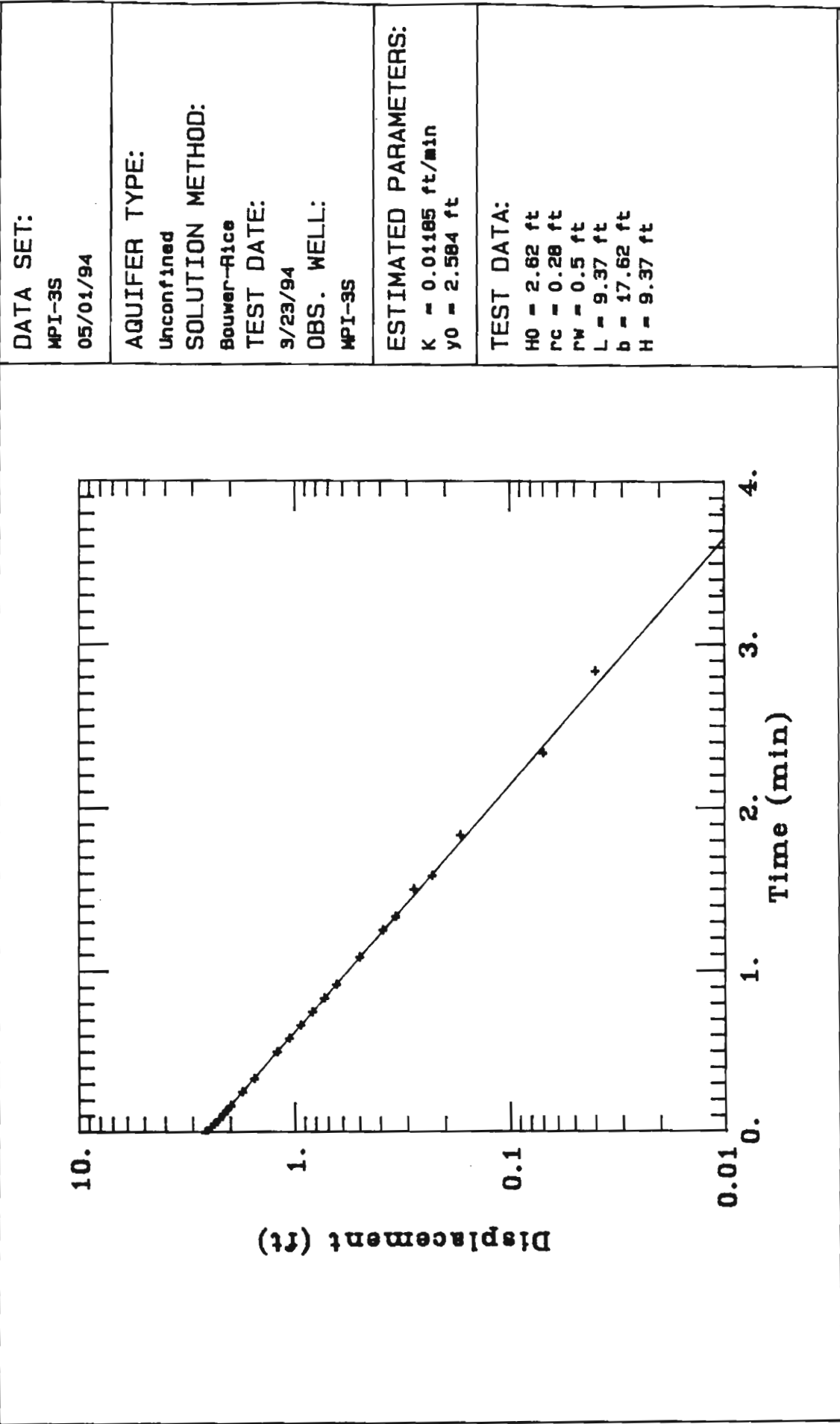
Step# 0 03/24 11:29

Elapsed Time Value

0.0000	10.85	0.6667	10.94
0.0033	10.85	0.7500	10.92
0.0066	10.85	0.8333	10.92
0.0099	10.86	0.9167	10.92
0.0133	10.85	1.0000	10.91
0.0166	10.86	1.0833	10.91
0.0200	10.85	1.1667	10.91
0.0233	10.85	1.2500	10.89
0.0266	10.85	1.3333	10.89
0.0300	10.85	1.4166	10.89
0.0333	10.85	1.5000	10.89
0.0500	10.85	1.5833	10.89
0.0666	10.47	1.6667	10.88
0.0833	10.55	1.7500	10.88
0.1000	10.39	1.8333	10.88
0.1166	10.31	1.9167	10.88
0.1333	10.94	2.0000	10.88
0.1500	10.69	2.5000	10.86
0.1666	11.30	3.0000	10.86
0.1833	11.91	3.5000	10.85
0.2000	12.95	4.0000	10.85
0.2166	13.02	4.5000	10.85
0.2333	12.59	5.0000	10.85
0.2500	12.26		
0.2666	11.95		
0.2833	11.71		
0.3000	11.52		
0.3166	11.36		
0.3333	11.25		
0.4167	11.03		
0.5000	10.97		
0.5833	10.96		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-3S



SLUG TEST FIELD DATA FOR
WELL # MPI-3S

SE1000B
Environmental Logger
03/28 10:54

Unit# 00554 Test# 4

INPUT 1: Level (F) TOC

Reference 9.38
Scale factor 49.82
Offset 0.02

Step# 0 03/23 17:45

Elapsed Time Value

0.0000	9.39	0.6667	10.59
0.0033	9.39	0.7500	10.44
0.0066	9.39	0.8333	10.32
0.0099	9.39	0.9167	10.21
0.0133	9.39	1.0000	10.11
0.0166	9.39	1.0833	10.02
0.0200	9.39	1.1667	9.96
0.0233	9.39	1.2500	9.88
0.0266	9.39	1.3333	9.83
0.0300	9.39	1.4166	9.77
0.0333	9.17	1.5000	9.72
0.0500	8.73	1.5833	9.69
0.0666	8.46	1.6667	9.66
0.0833	8.32	1.7500	9.61
0.1000	9.25	1.8333	9.58
0.1166	9.23	1.9167	9.56
0.1333	10.44	2.0000	9.55
0.1500	11.97	2.5000	9.45
0.1666	12.00	3.0000	9.42
0.1833	11.91	3.5000	9.39
0.2000	11.85	4.0000	9.39
0.2166	11.77	4.5000	9.39
0.2333	11.70	5.0000	9.39
0.2500	11.64	5.5000	9.39
0.2666	11.59	6.0000	9.39
0.2833	11.53	6.5000	9.39
0.3000	11.48		
0.3166	11.42		
0.3333	11.37		
0.4167	11.14		
0.5000	10.93		
0.5833	10.74		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY
MPI-4S	
	DATA SET: MPI-4S 05/01/94
	AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 3/29/94 OBS. WELL: MPI-4S
	ESTIMATED PARAMETERS: K = 0.002171 ft/min y0 = 2. ft
	TEST DATA: H0 = 2.56 ft rc = 0.28 ft rw = 0.5 ft L = 12.06 ft b = 18.56 ft H = 12.06 ft

SLUG TEST FIELD DATA FOR
WELL # MPI-4S

SE1000B
Environmental Logger
03/28 10:42

Unit# 00554 Test# 1

INPUT 1: Level (F) TOC

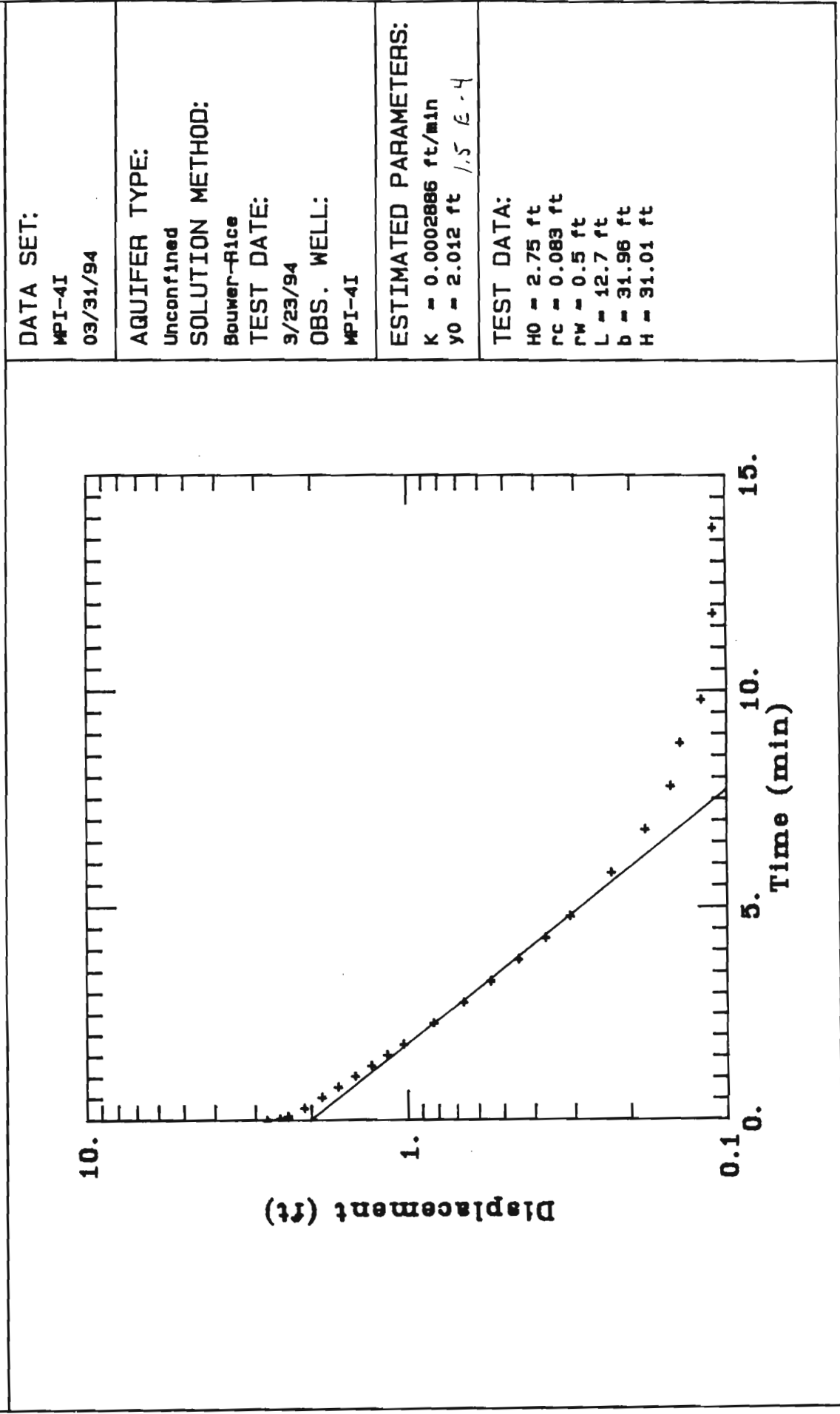
Reference 8.94
Scale factor 49.82
Offset 0.02

Step# 0 03/23 16:41

Elapsed Time	Value		
-----	-----		
0.0000	8.95	0.7500	10.73
0.0033	8.95	0.8333	10.67
0.0066	8.95	0.9167	10.62
0.0099	8.97	1.0000	10.56
0.0133	8.95	1.0833	10.51
0.0166	8.95	1.1667	10.46
0.0200	8.95	1.2500	10.41
0.0233	8.95	1.3333	10.37
0.0266	8.97	1.4166	10.32
0.0300	8.95	1.5000	10.29
0.0333	8.95	1.5833	10.24
0.0500	8.70	1.6667	10.21
0.0666	8.26	1.7500	10.18
0.0833	8.27	1.8333	10.13
0.1000	7.71	1.9167	10.10
0.1166	7.80	2.0000	10.07
0.1333	7.98	2.5000	9.88
0.1500	7.91	3.0000	9.74
0.1666	7.96	3.5000	9.61
0.1833	7.99	4.0000	9.52
0.2000	9.47	4.5000	9.44
0.2166	11.50	5.0000	9.36
0.2333	11.26	5.5000	9.31
0.2500	11.25	6.0000	9.27
0.2666	11.19	6.5000	9.22
0.2833	11.15	7.0000	9.19
0.3000	11.11	7.5000	9.16
0.3166	11.09	8.0000	9.12
0.3333	11.07	8.5000	9.11
0.4167	11.00	9.0000	9.09
0.5000	10.92	9.5000	9.08
0.5833	10.85	10.0000	9.06
0.6667	10.79	12.0000	9.05
		14.0000	9.03
		16.0000	9.01

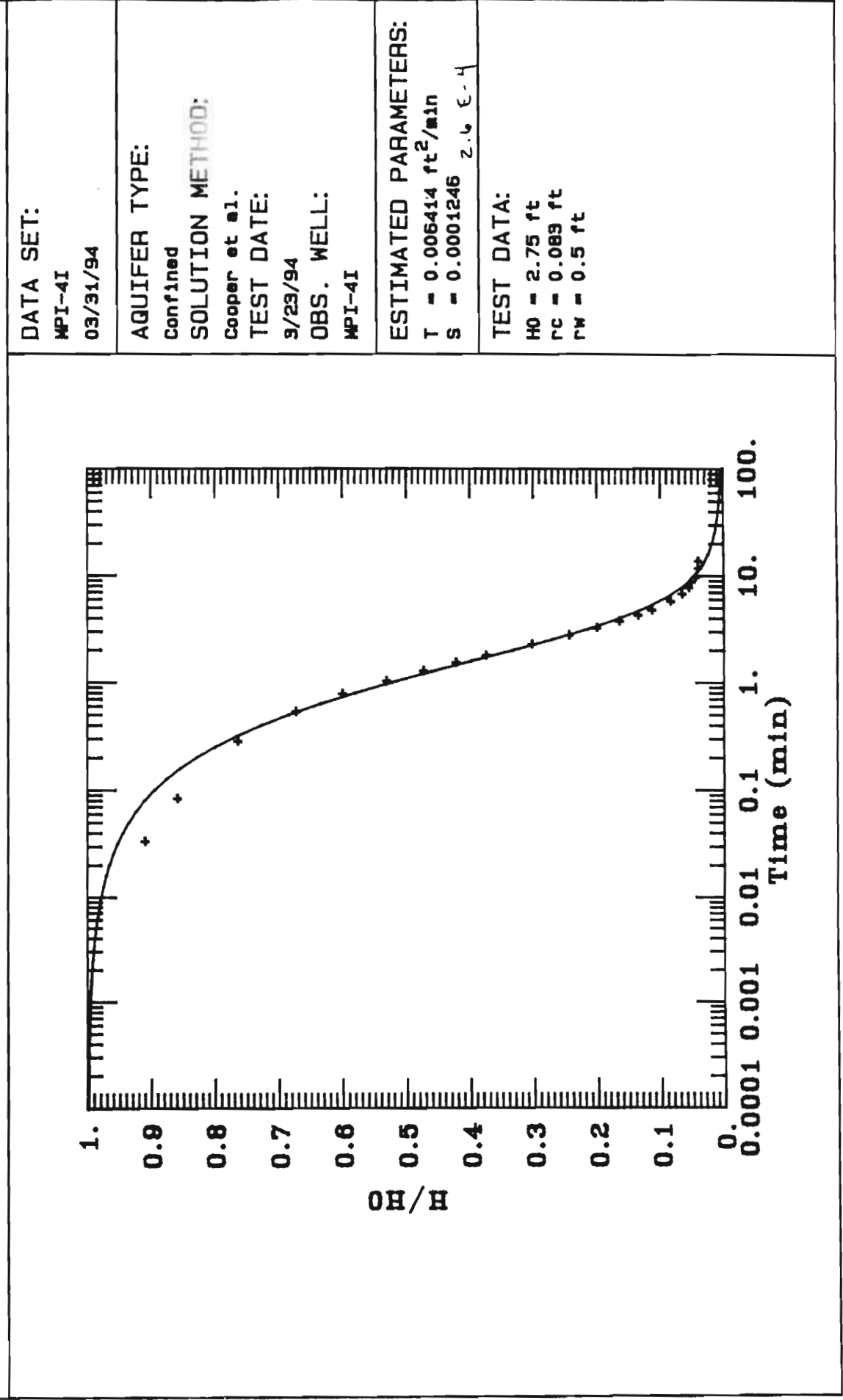
Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-4I



Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-4I



SLUG TEST FIELD DATA FOR
WELL # MPI-4I

SE1000B
Environmental Logger
03/28 10:40

Unit# 00554 Test# 0

INPUT 1: Level (F) TOC

Reference 10.04
Scale factor 49.82
Offset 0.02

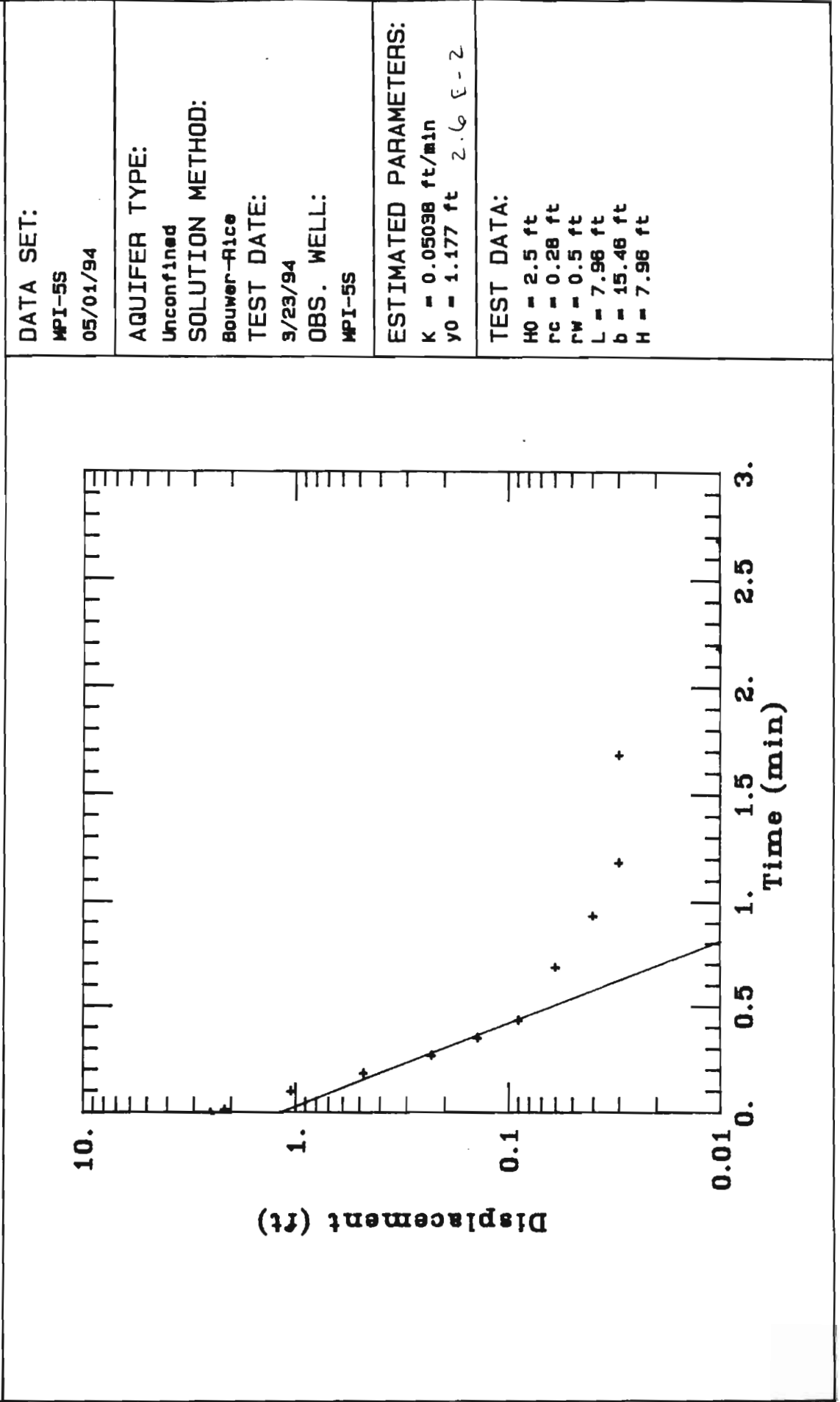
Step# 0 03/23 16:19

Elapsed Time Value

-----	-----	0.7500	11.89
0.0000	10.13	0.8333	11.83
0.0033	10.13	0.9167	11.75
0.0066	10.13	1.0000	11.69
0.0099	10.13	1.0833	11.62
0.0133	10.13	1.1667	11.56
0.0166	10.13	1.2500	11.50
0.0200	10.13	1.3333	11.45
0.0233	10.13	1.4166	11.39
0.0266	10.13	1.5000	11.34
0.0300	10.13	1.5833	11.29
0.0333	10.13	1.6667	11.25
0.0500	9.59	1.7500	11.20
0.0666	9.33	1.8333	11.15
0.0833	9.03	1.9167	11.12
0.1000	8.85	2.0000	11.07
0.1166	8.84	2.5000	10.87
0.1333	8.97	3.0000	10.71
0.1500	9.06	3.5000	10.59
0.1666	9.30	4.0000	10.49
0.1833	10.49	4.5000	10.41
0.2000	12.14	5.0000	10.35
0.2166	12.79	5.5000	10.30
0.2333	12.52	6.0000	10.27
0.2500	12.54	6.5000	10.24
0.2666	12.47	7.0000	10.22
0.2833	12.43	7.5000	10.21
0.3000	12.40	8.0000	10.19
0.3166	12.36	8.5000	10.18
0.3333	12.35	9.0000	10.18
0.4167	12.24	9.5000	10.16
0.5000	12.14	10.0000	10.16
0.5833	12.06	12.0000	10.15
0.6667	11.97	14.0000	10.15

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-5S



DATA SET:

MPI-5S

05/01/94

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

TEST DATE:

3/23/94

OBS. WELL:

MPI-5S

ESTIMATED PARAMETERS:

K = 0.05038 ft/min

y0 = 1.177 ft 2.6 E-2

TEST DATA:

H0 = 2.5 ft

rc = 0.28 ft

rw = 0.5 ft

L = 7.96 ft

b = 15.48 ft

H = 7.96 ft

SLUG TEST FIELD DATA FOR
WELL # MPI-5S

SE1000B
Environmental Logger
03/28 10:50

Unit# 00554 Test# 2

INPUT 1: Level (F) TOC

Reference 10.54
Scale factor 49.82
Offset 0.02

Step# 0 03/23 17:10

Elapsed Time Value

0.0000	10.54	0.6667	10.68
0.0033	10.55	0.7500	10.63
0.0066	10.54	0.8333	10.61
0.0099	10.55	0.9167	10.60
0.0133	10.55	1.0000	10.60
0.0166	10.55	1.0833	10.58
0.0200	10.55	1.1667	10.58
0.0233	10.55	1.2500	10.58
0.0266	10.55	1.3333	10.58
0.0300	10.55	1.4166	10.58
0.0333	10.55	1.5000	10.57
0.0500	10.54	1.5833	10.57
0.0666	10.54	1.6667	10.57
0.0833	10.54	1.7500	10.57
0.1000	10.47	1.8333	10.57
0.1166	10.08	1.9167	10.57
0.1333	9.92	2.0000	10.57
0.1500	10.25	2.5000	10.55
0.1666	10.41	3.0000	10.55
0.1833	10.33	3.5000	10.55
0.2000	10.44	4.0000	10.55
0.2166	10.42	4.5000	10.55
0.2333	10.46	5.0000	10.55
0.2500	10.46		
0.2666	11.18		
0.2833	11.49		
0.3000	12.55		
0.3166	13.04		
0.3333	12.69		
0.4167	11.59		
0.5000	11.02		
0.5833	10.77		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY
MPI-5I	
DATA SET: MPI-5I 03/30/94 AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 3/29/94 OBS. WELL: MPI-5I ESTIMATED PARAMETERS: K = 0.0007871 ft/min Y0 = 2.345 ft 3,9 E-4 TEST DATA: H0 = 2.47 ft rc = 0.083 ft rw = 0.5 ft L = 12.5 ft b = 32.14 ft H = 31.56 ft	
Displacement (ft) Time (min)	

Malcolm Pirnie

Client: NYSDEC

Project No.: 0266314

Location: East Aurora, NY

MPI-5I

DATA SET:

MPI-5I

03/30/94

AQUIFER TYPE:

Confined

SOLUTION METHOD:

Cooper et al.

TEST DATE:

9/29/94

OBS. WELL:

MPI-5I

ESTIMATED PARAMETERS:

$T = 0.01868 \text{ ft}^2/\text{min}$

$S = 4.8035E-06$

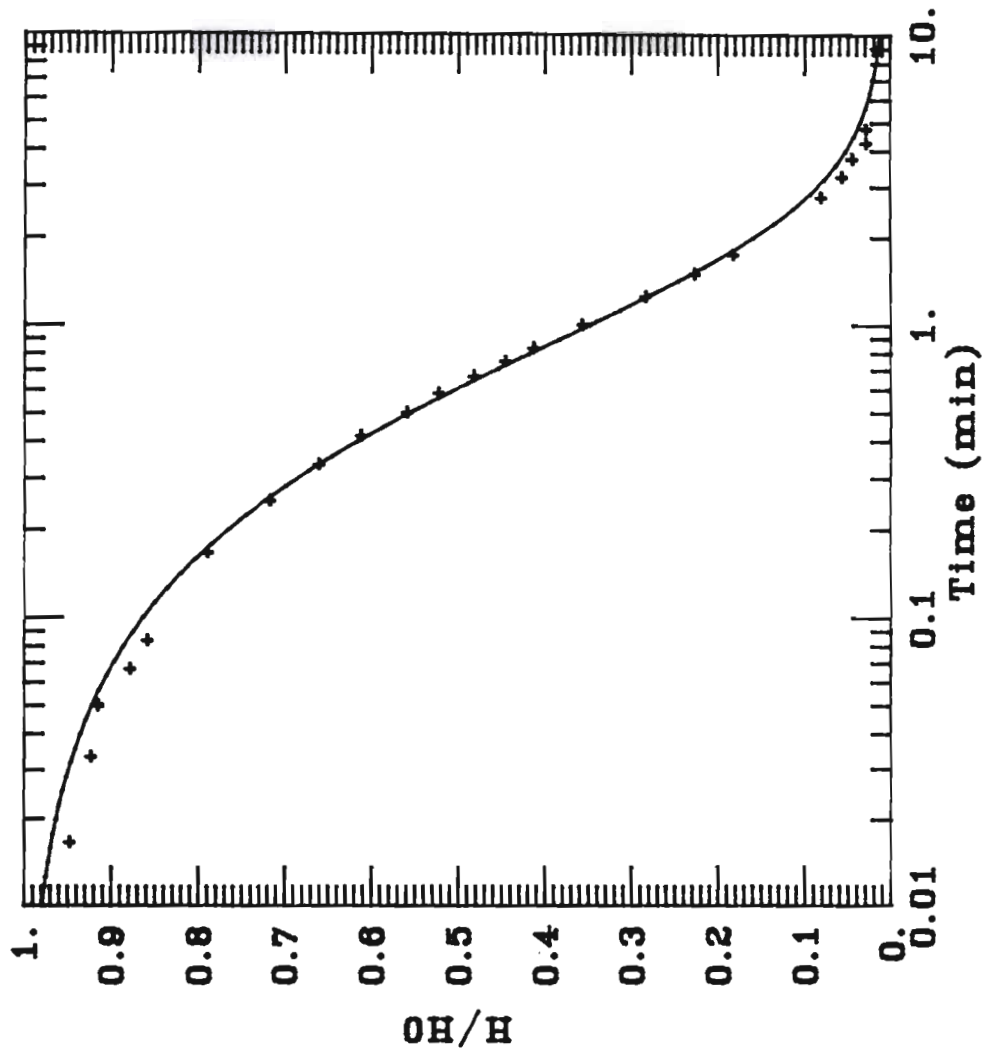
7.6 ft

TEST DATA:

$H_0 = 2.47 \text{ ft}$

$r_c = 0.083 \text{ ft}$

$r_w = 0.5 \text{ ft}$



SLUG TEST FIELD DATA FOR
WELL # MPI-5I

SE1000B
Environmental Logger
03/29 12:40

Unit# 00554 Test# 5

INPUT 1: Level (F) TOC

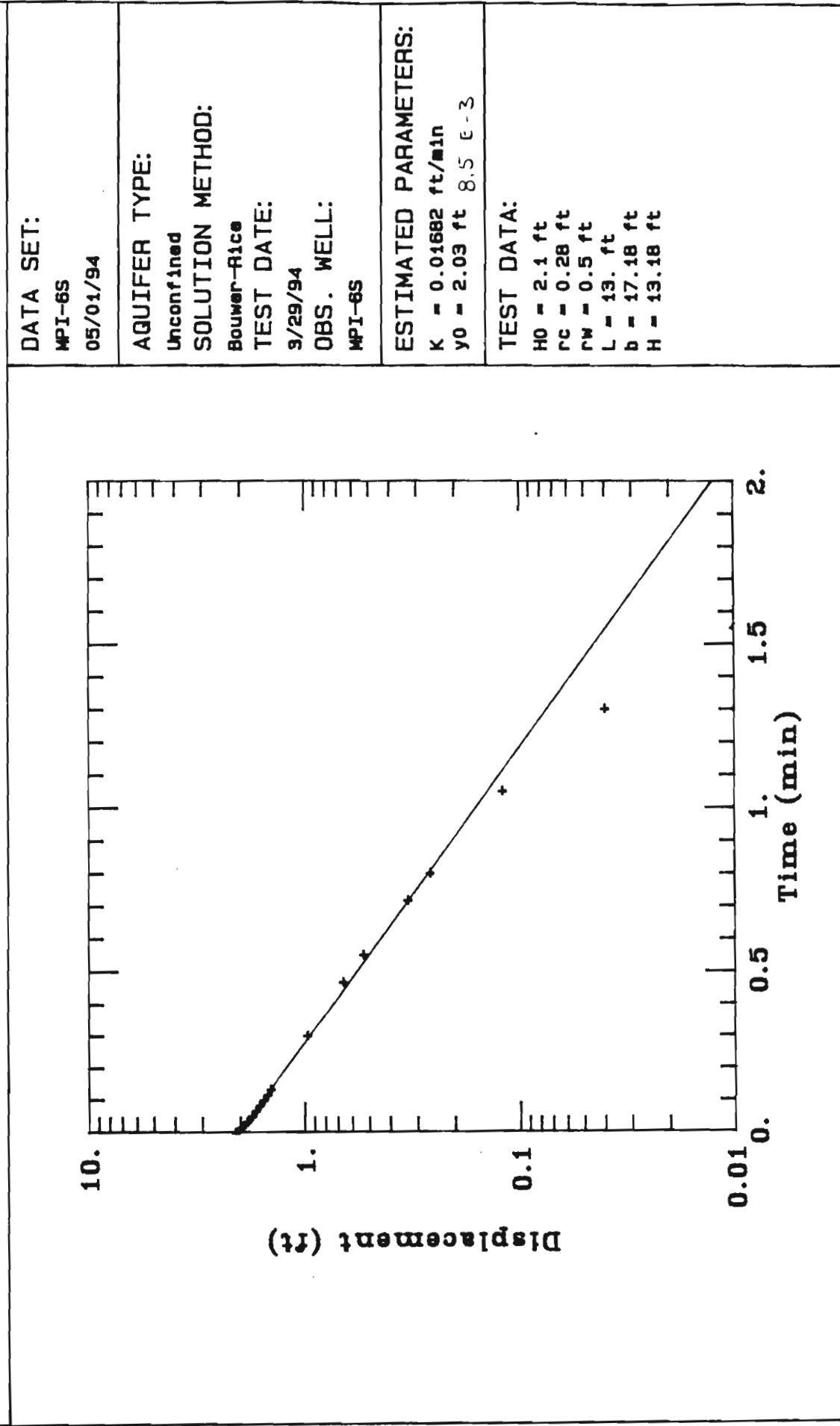
Reference 10.36
Scale factor 49.82
Offset 0.02

Step# 0 03/29 11:30

Elapsed Time	Value		
-----	-----		
		0.7500	11.74
		0.8333	11.65
0.0000	10.39	0.9167	11.55
0.0033	10.39	1.0000	11.46
0.0066	10.39	1.0833	11.38
0.0099	10.39	1.1667	11.30
0.0133	10.39	1.2500	11.24
0.0166	10.39	1.3333	11.17
0.0200	10.39	1.4166	11.11
0.0233	10.39	1.5000	11.06
0.0266	10.39	1.5833	11.02
0.0300	10.39	1.6667	10.97
0.0333	10.39	1.7500	10.92
0.0500	10.39	1.8333	10.89
0.0666	10.39	1.9167	10.84
0.0833	10.01	2.0000	10.81
0.1000	10.07	2.5000	10.67
0.1166	10.01	3.0000	10.56
0.1333	9.87	3.5000	10.50
0.1500	9.51	4.0000	10.47
0.1666	9.30	4.5000	10.43
0.1833	9.30	5.0000	10.43
0.2000	9.24		
0.2166	12.42		
0.2333	11.76		
0.2500	12.83		
0.2666	12.70		
0.2833	12.64		
0.3000	12.62		
0.3166	12.53		
0.3333	12.48		
0.4167	12.31		
0.5000	12.13		
0.5833	11.99		
0.6667	11.87		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-6S



SLUG TEST FIELD DATA FOR
WELL # MPI-6S

SE1000B
Environmental Logger
03/29 12:51

Unit# 00554 Test# 1

INPUT 1: Level (F) TOC

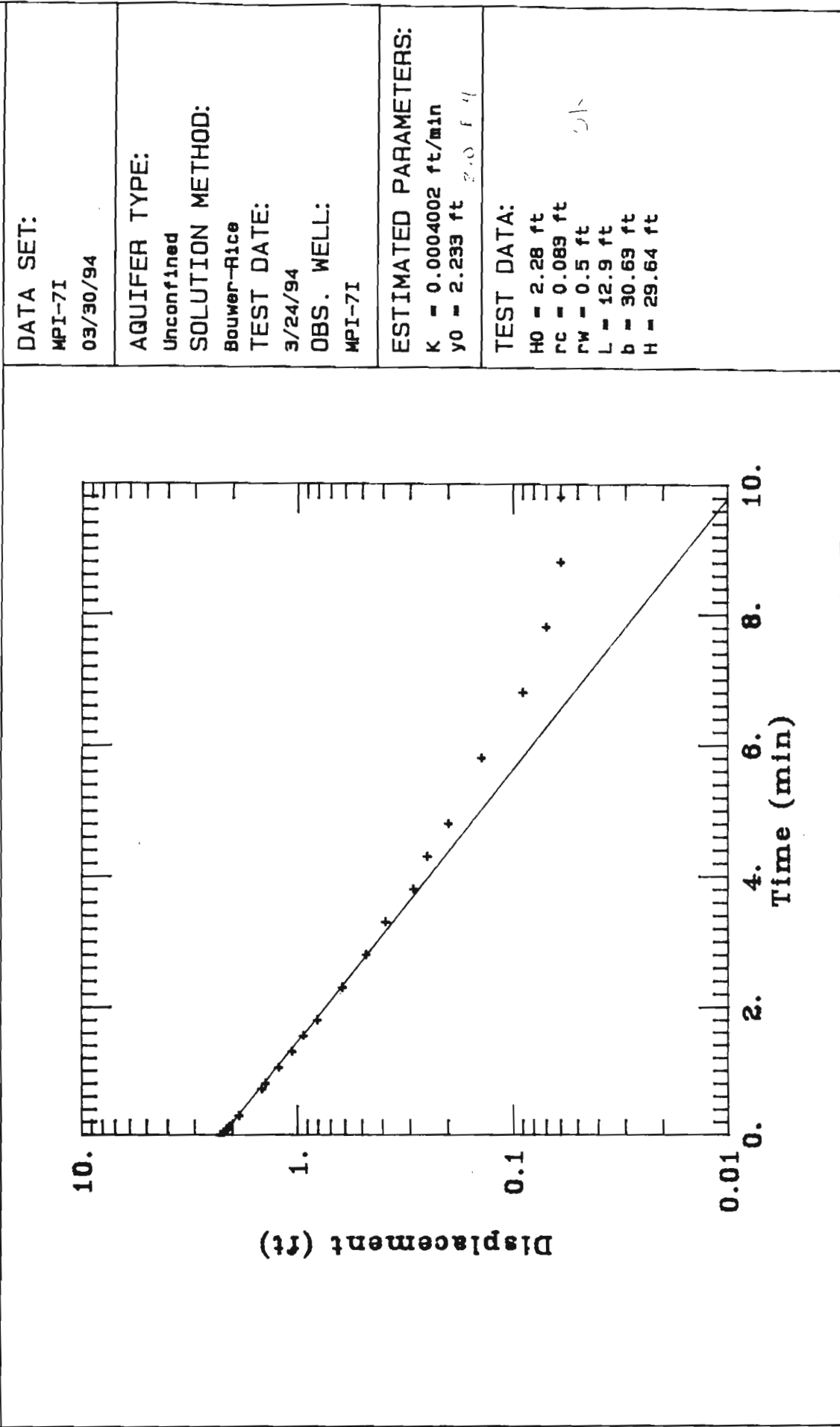
Reference 9.82
Scale factor 49.82
Offset 0.02

Step# 0 03/29 10:26

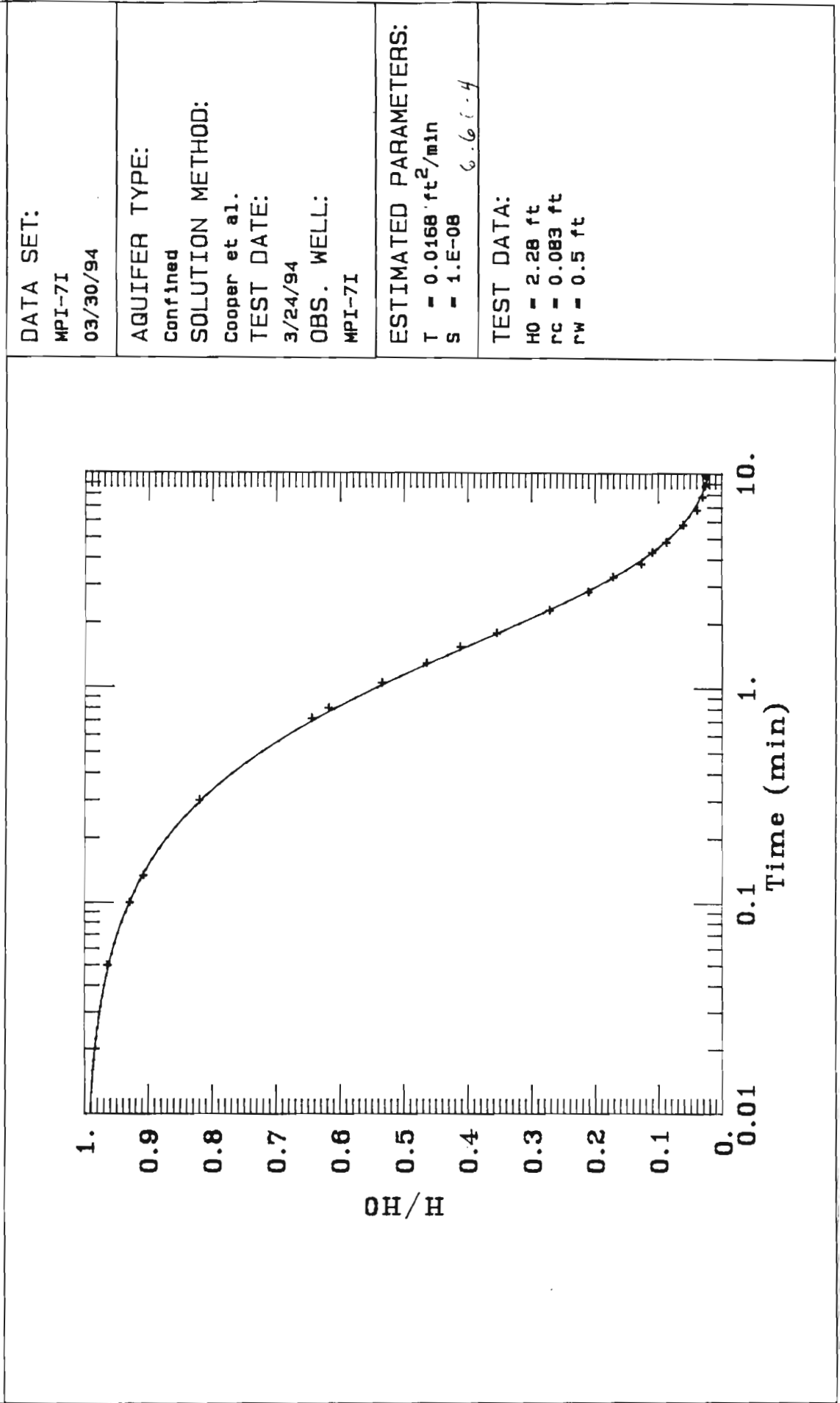
Elapsed Time	Value		
-----	-----		
0.0000	9.80	0.7500	10.35
0.0033	9.82	0.8333	10.24
0.0066	9.82	0.9167	10.15
0.0099	9.82	1.0000	10.08
0.0133	9.82	1.0833	10.02
0.0166	9.82	1.1667	9.97
0.0200	9.82	1.2500	9.94
0.0233	9.82	1.3333	9.91
0.0266	9.82	1.4166	9.88
0.0300	9.82	1.5000	9.86
0.0333	9.82	1.5833	9.85
0.0500	9.59	1.6667	9.83
0.0666	9.59	1.7500	9.83
0.0833	9.20	1.8333	9.82
0.1000	9.00	1.9167	9.82
0.1166	8.95	2.0000	9.82
0.1333	9.36	2.5000	9.80
0.1500	9.37	3.0000	9.80
0.1666	10.19	3.5000	9.80
0.1833	11.55	4.0000	9.80
0.2000	11.92	4.5000	9.80
0.2166	11.78	5.0000	9.80
0.2333	11.67		
0.2500	11.58		
0.2666	11.51		
0.2833	11.44		
0.3000	11.37		
0.3166	11.31		
0.3333	11.26		
0.4167	11.01		
0.5000	10.79		
0.5833	10.62		
0.6667	10.48		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-7I



Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY
MPI-7I	



SLUG TEST FIELD DATA FOR
WELL # MPI-7I

SE1000B
Environmental Logger
03/28 11:02

Unit# 00554 Test# 9

INPUT 1: Level (F) TOC

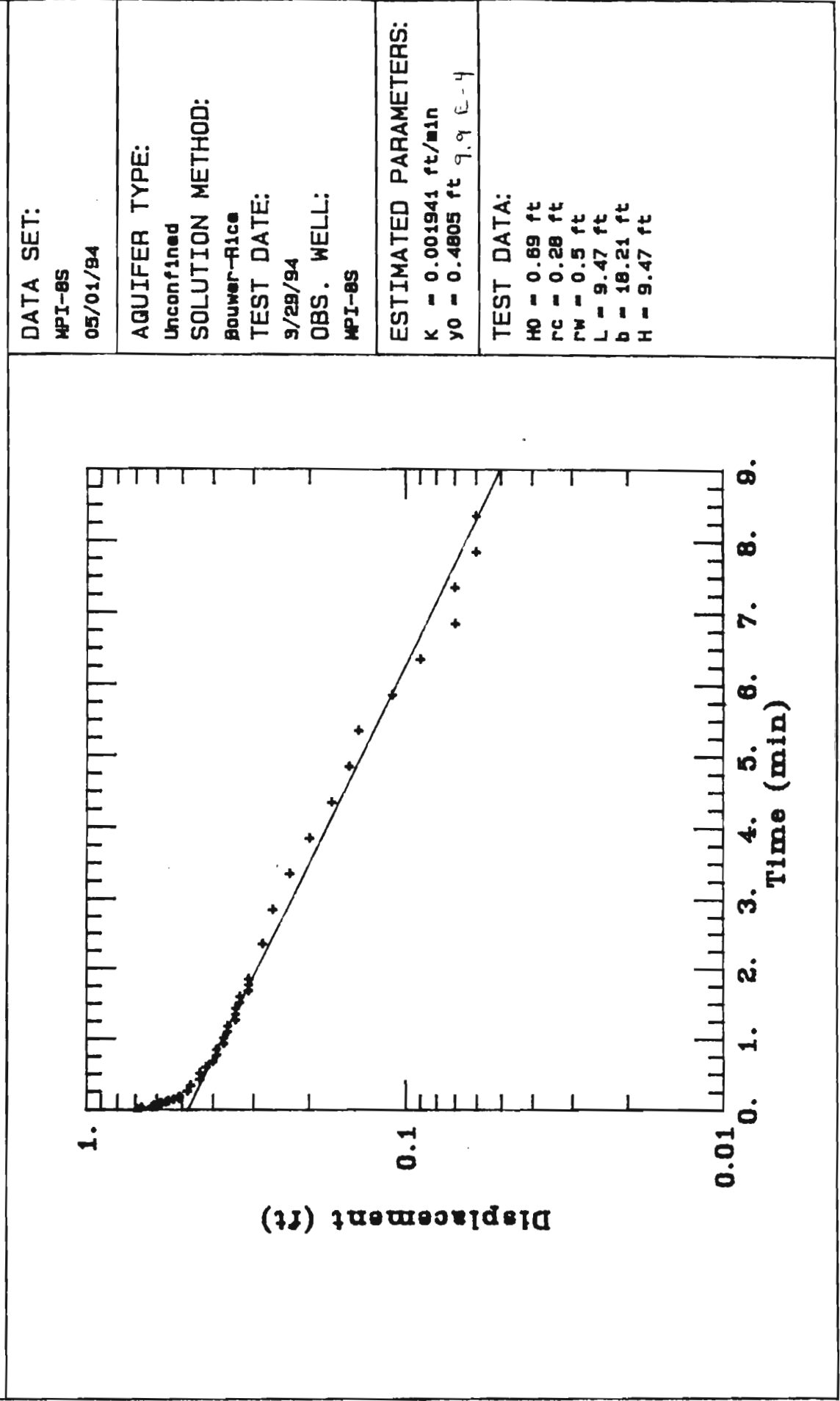
Reference 9.87
Scale factor 49.82
Offset 0.02

Step# 0 03/24 11:49

Elapsed Time	Value		
-----	-----		
0.0000	9.88	0.6667	11.58
0.0033	9.88	0.7500	11.49
0.0066	9.90	0.8333	11.42
0.0099	9.90	0.9167	11.34
0.0133	9.90	1.0000	11.28
0.0166	9.90	1.0833	11.22
0.0200	9.90	1.1667	11.16
0.0233	9.88	1.2500	11.09
0.0266	9.88	1.3333	11.05
0.0300	9.90	1.4166	10.98
0.0333	9.90	1.5000	10.93
0.0500	9.68	1.5833	10.89
0.0666	9.17	1.6667	10.86
0.0833	8.72	1.7500	10.81
0.1000	8.65	1.8333	10.76
0.1166	9.00	1.9167	10.73
0.1333	8.89	2.0000	10.68
0.1500	9.71	2.5000	10.49
0.1666	11.50	3.0000	10.35
0.1833	12.15	3.5000	10.26
0.2000	12.15	4.0000	10.16
0.2166	12.13	4.5000	10.12
0.2333	12.10	5.0000	10.07
0.2500	12.07	5.5000	10.02
0.2666	12.04	6.0000	10.01
0.2833	12.00	6.5000	9.98
0.3000	11.99	7.0000	9.96
0.3166	11.96	7.5000	9.96
0.3333	11.94	8.0000	9.94
0.4167	11.83	8.5000	9.94
0.5000	11.74	9.0000	9.93
0.5833	11.66	9.5000	9.93
		10.0000	9.93
		12.0000	9.93
		14.0000	9.93

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-8S



SLUG TEST DATA FOR MPI-8S

SE1000B
Environmental Logger
03/30 10:01

Unit# 00554 Test# 2

INPUT 1: Level (F) TOC

Reference 8.79
Scale factor 49.82
Offset 0.02

Step# 0 03/29 14:41

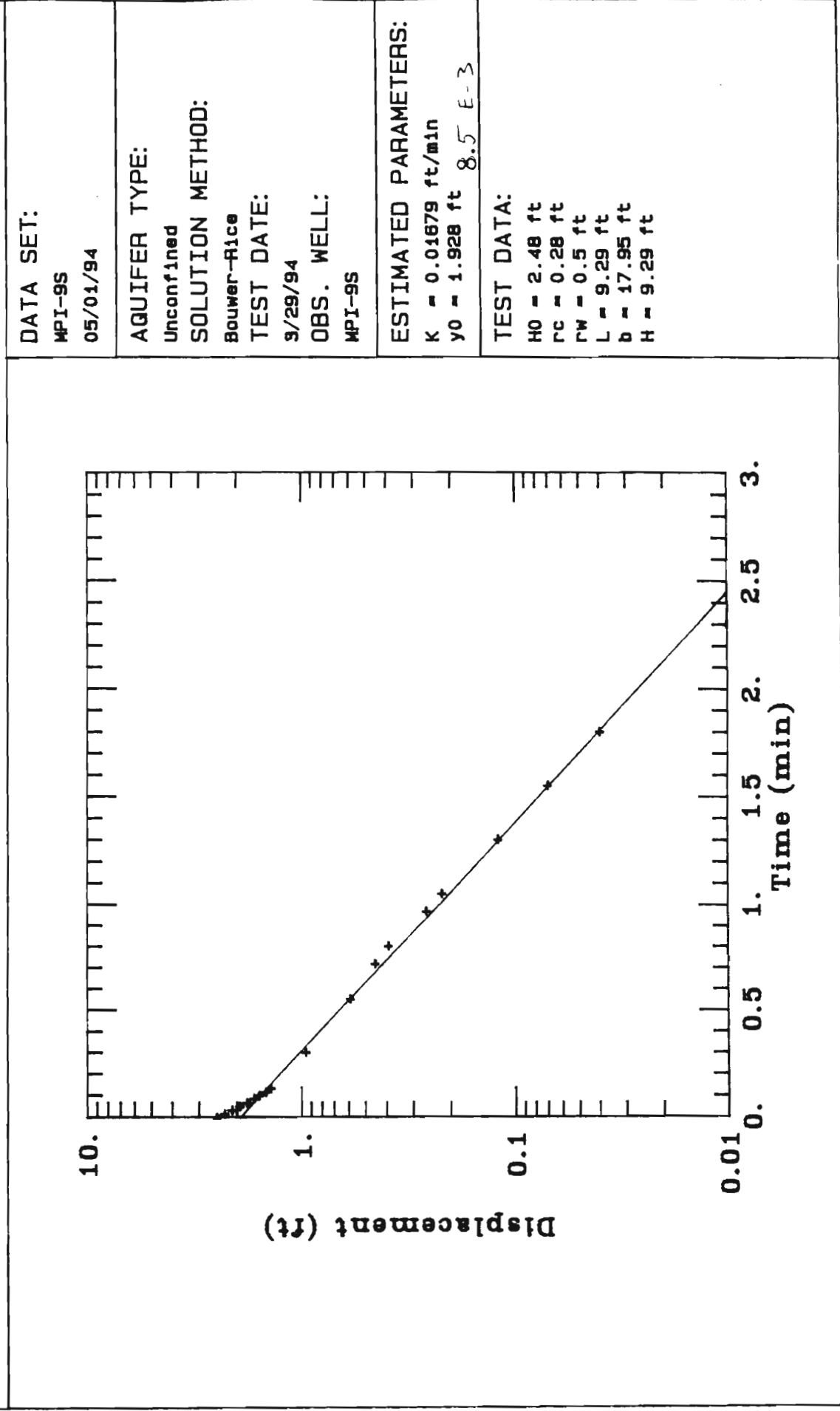
Elapsed Time Value

0.0000	8.79
0.0033	8.79
0.0066	8.79
0.0099	8.80
0.0133	8.79
0.0166	8.79
0.0200	8.79
0.0233	8.80
0.0266	8.80
0.0300	8.79
0.0333	8.80
0.0500	8.67
0.0666	8.64
0.0833	8.52
0.1000	8.56
0.1166	8.97
0.1333	9.46
0.1500	9.48
0.1666	9.48
0.1833	9.46
0.2000	9.41
0.2166	9.40
0.2333	9.38
0.2500	9.37
0.2666	9.35
0.2833	9.34
0.3000	9.32
0.3166	9.30
0.3333	9.30
0.4167	9.27
0.5000	9.26
0.5833	9.23

0.6667	9.23
0.7500	9.21
0.8333	9.19
0.9167	9.18
1.0000	9.18
1.0833	9.16
1.1667	9.16
1.2500	9.15
1.3333	9.15
1.4166	9.13
1.5000	9.13
1.5833	9.13
1.6667	9.12
1.7500	9.12
1.8333	9.10
1.9167	9.10
2.0000	9.10
2.5000	9.07
3.0000	9.05
3.5000	9.02
4.0000	8.99
4.5000	8.96
5.0000	8.94
5.5000	8.93
6.0000	8.90
6.5000	8.88
7.0000	8.86
7.5000	8.86
8.0000	8.85
8.5000	8.85

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

MPI-9S



SLUG TEST DATA FOR
WELL # MPI-9S

SE1000B
Environmental Logger
03/29 12:38

Unit# 00554 Test# 6

INPUT 1: Level (F) TOC

Reference 9.05
Scale factor 49.82
Offset 0.02

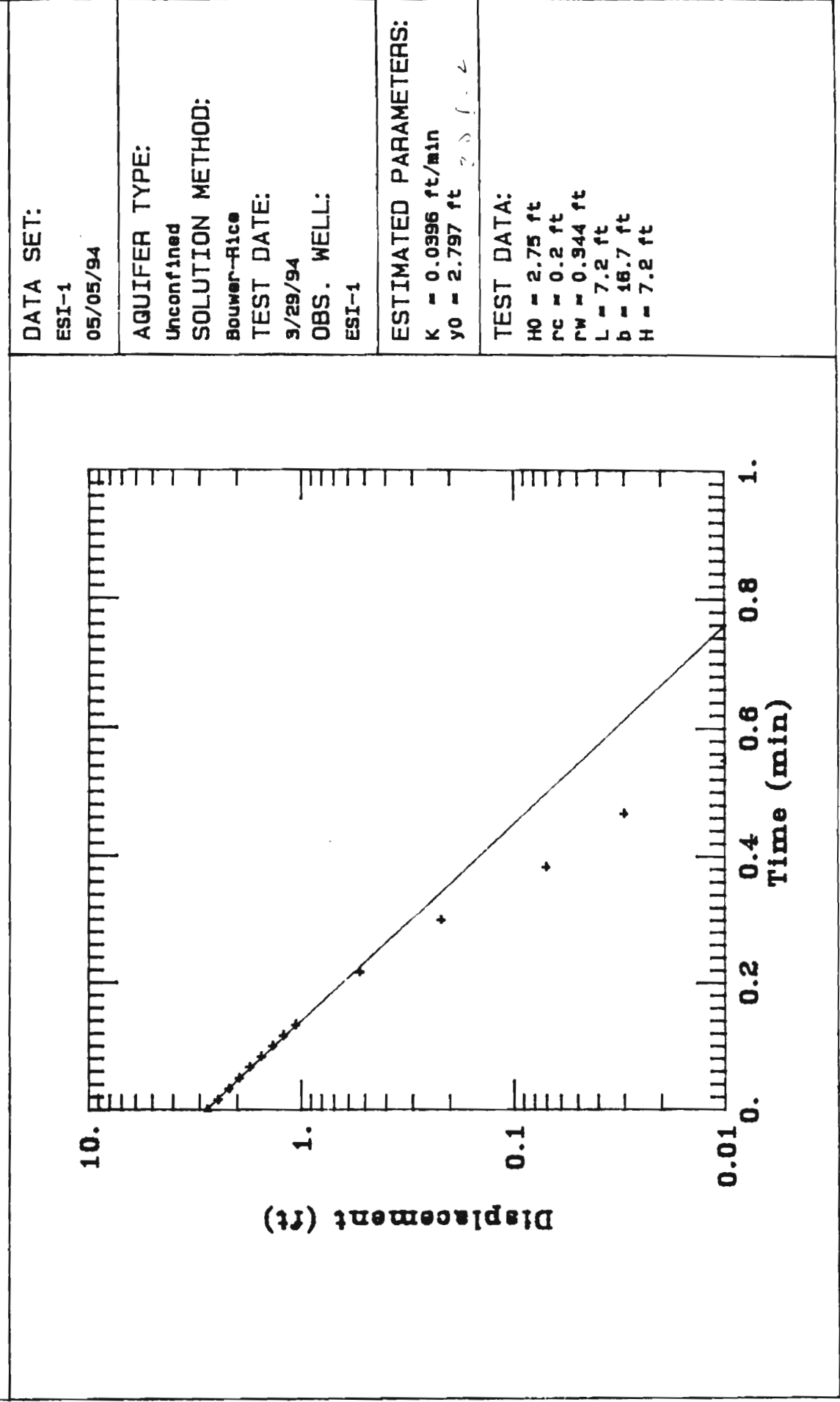
Step# 0 03/29 11:44

Elapsed Time Value

0.0000	9.05	0.5833	9.88
0.0033	9.05	0.6667	9.75
0.0066	9.05	0.7500	9.64
0.0099	9.05	0.8333	9.56
0.0133	9.05	0.9167	9.50
0.0166	9.05	1.0000	9.44
0.0200	9.05	1.0833	9.36
0.0233	9.05	1.1667	9.31
0.0266	9.05	1.2500	9.27
0.0300	9.05	1.3333	9.23
0.0333	9.05	1.4166	9.20
0.0500	8.23	1.5000	9.17
0.0666	8.31	1.5833	9.16
0.0833	8.20	1.6667	9.14
0.1000	8.89	1.7500	9.12
0.1166	8.65	1.8333	9.11
0.1333	8.68	1.9167	9.09
0.1500	8.75	2.0000	9.09
0.1666	9.71	2.5000	9.06
0.1833	11.18	3.0000	9.08
0.2000	11.53	3.5000	9.06
0.2166	11.33		
0.2333	11.15		
0.2500	10.98		
0.2666	10.84		
0.2833	10.71		
0.3000	10.62		
0.3166	10.51		
0.3333	10.43		
0.4167	10.15		
0.5000	10.00		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

ESI-1



SLUG TEST DATA FOR
WELL # ESI-1

SE1000B
Environmental Logger
03/29 12:32

Unit# 00554 Test# 8

INPUT 1: Level (F) TOC

Reference 10.30
Scale factor 49.82
Offset 0.02

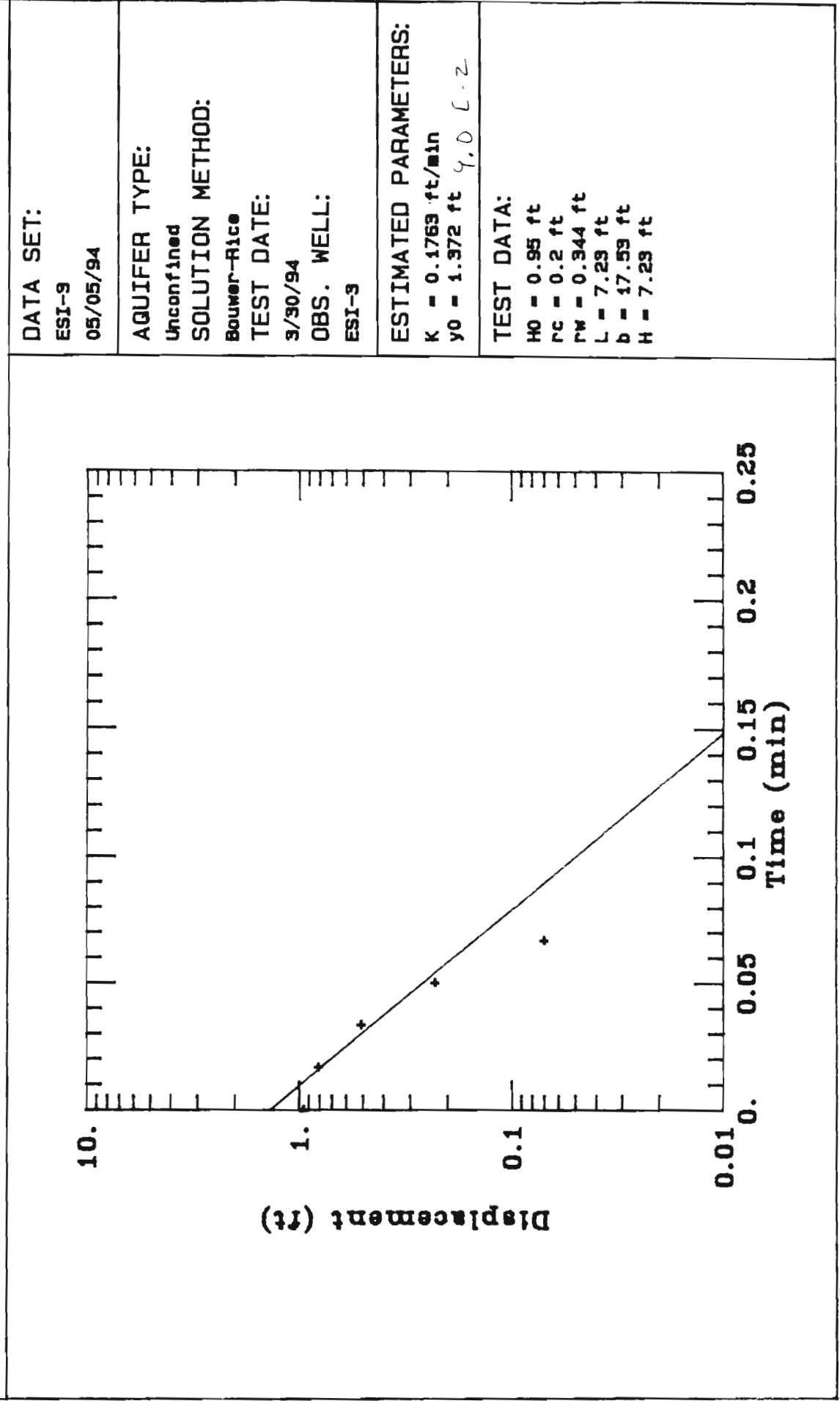
Step# 0 03/29 12:17

Elapsed Time Value

0.0000	10.30	0.5833	10.37
0.0033	10.30	0.6667	10.33
0.0066	10.30	0.7500	10.31
0.0099	10.30	0.8333	10.31
0.0133	10.30	0.9167	10.30
0.0166	10.30	1.0000	10.30
0.0200	10.30	1.0833	10.30
0.0233	10.30	1.1667	10.30
0.0266	10.30	1.2500	10.30
0.0300	10.31	1.3333	10.30
0.0333	10.30	1.4166	10.30
0.0500	9.87	1.5000	10.30
0.0666	9.90	1.5833	10.30
0.0833	9.85	1.6667	10.30
0.1000	9.82	1.7500	10.30
0.1166	9.85	1.8333	10.30
0.1333	10.07	1.9167	10.28
0.1500	10.14	2.0000	10.30
0.1666	11.73	2.5000	10.28
0.1833	12.56	3.0000	10.28
0.2000	13.05	3.5000	10.30
0.2166	12.75		
0.2333	12.48		
0.2500	12.25		
0.2666	12.04		
0.2833	11.84		
0.3000	11.66		
0.3166	11.51		
0.3333	11.36		
0.4167	10.83		
0.5000	10.52		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

ESI-3



DATA SET:
ESI-3
05/05/94

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
3/30/94
OBS. WELL:
ESI-3

ESTIMATED PARAMETERS:
K = 0.1763 ft/min
y0 = 1.372 ft
4.0 L-2

TEST DATA:
H0 = 0.95 ft
rc = 0.2 ft
rw = 0.344 ft
L = 7.23 ft
b = 17.53 ft
H = 7.23 ft

SLUG TEST DATA FOR ESI-3

SE1000B
Environmental Logger
03/30 10:08

Unit# 00554 Test# 6

INPUT 1: Level (F) TOC

Reference 9.47
Scale factor 49.82
Offset 0.02

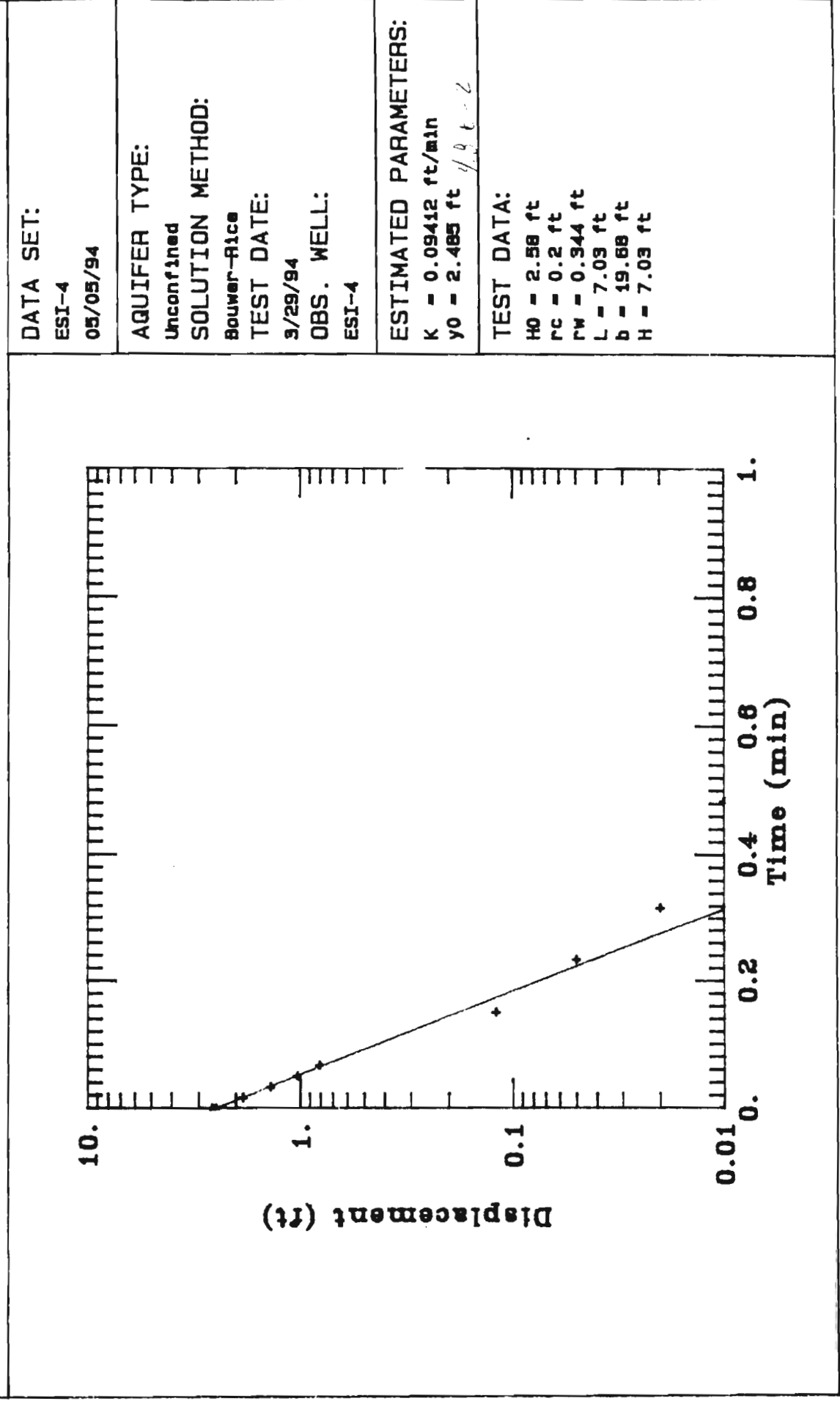
Step# 0 03/29 16:16

Elapsed Time Value

-----	-----	0.6667	9.37
0.0000	9.37	0.7500	9.37
0.0033	9.39	0.8333	9.37
0.0066	9.39	0.9167	9.37
0.0099	9.37	1.0000	9.37
0.0133	9.39	1.0833	9.37
0.0166	9.37	1.1667	9.37
0.0200	9.37	1.2500	9.37
0.0233	9.37	1.3333	9.37
0.0266	9.23	1.4166	9.37
0.0300	8.63	1.5000	9.37
0.0333	9.43	1.5833	9.37
0.0500	9.28	1.6667	9.37
0.0666	9.32	1.7500	9.39
0.0833	9.29	1.8333	9.37
0.1000	9.24	1.9167	9.37
0.1166	9.29	2.0000	9.37
0.1333	9.32	2.5000	9.37
0.1500	9.34	3.0000	9.37
0.1666	9.28	3.5000	9.37
0.1833	9.34		
0.2000	9.54		
0.2166	10.03		
0.2333	10.42		
0.2500	10.28		
0.2666	9.98		
0.2833	9.70		
0.3000	9.54		
0.3166	9.47		
0.3333	9.43		
0.4167	9.39		
0.5000	9.37		
0.5833	9.37		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

ESI-4



DATA SET:
ESI-4
05/05/94

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
3/29/94
OBS. WELL:
ESI-4

ESTIMATED PARAMETERS:
K = 0.09412 ft/min
y0 = 2.485 ft

TEST DATA:
H0 = 2.58 ft
rc = 0.2 ft
rw = 0.344 ft
L = 7.03 ft
b = 19.68 ft
H = 7.03 ft

SLUG TEST FIELD DATA FOR
WELL # ESI-4

SE1000B
Environmental Logger
03/29 12:46

Unit# 00554 Test# 3

INPUT 1: Level (F) TOC

Reference 7.32
Scale factor 49.82
Offset 0.02

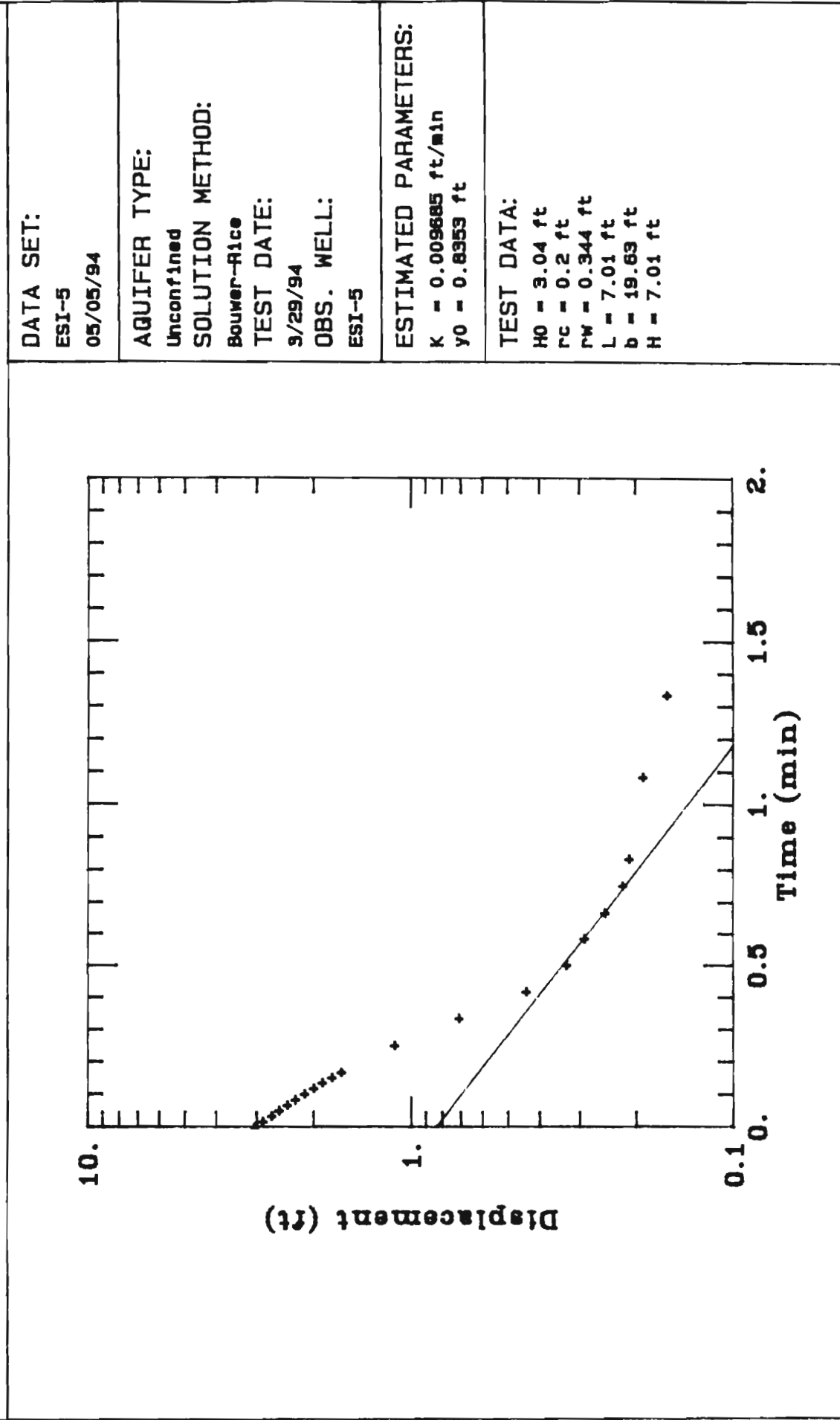
Step# 0 03/29 10:59

Elapsed Time Value

0.0000	7.32	0.6667	7.43
0.0033	7.32	0.7500	7.43
0.0066	7.32	0.8333	7.41
0.0099	7.32	0.9167	7.41
0.0133	7.32	1.0000	7.41
0.0166	7.32	1.0833	7.41
0.0200	7.32	1.1667	7.41
0.0233	7.32	1.2500	7.41
0.0266	7.32	1.3333	7.41
0.0300	7.32	1.4166	7.41
0.0333	7.32	1.5000	7.39
0.0500	7.25	1.5833	7.41
0.0666	7.25	1.6667	7.41
0.0833	7.24	1.7500	7.39
0.1000	7.00	1.8333	7.41
0.1166	6.58	1.9167	7.41
0.1333	7.08	2.0000	7.41
0.1500	7.05	2.5000	7.39
0.1666	6.78	3.0000	7.39
0.1833	6.61	3.5000	7.39
0.2000	7.14	4.0000	7.39
0.2166	6.97	4.5000	7.39
0.2333	7.22	5.0000	7.39
0.2500	9.36		
0.2666	9.90		
0.2833	9.27		
0.3000	8.79		
0.3166	8.45		
0.3333	8.23		
0.4167	7.54		
0.5000	7.47		
0.5833	7.44		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

ESI-5



SLUG TEST FIELD DATA FOR
WELL # ESI-5

SE1000B
Environmental Logger
03/29 12:35

Unit# 00554 Test# 7

INPUT 1: Level (F) TOC

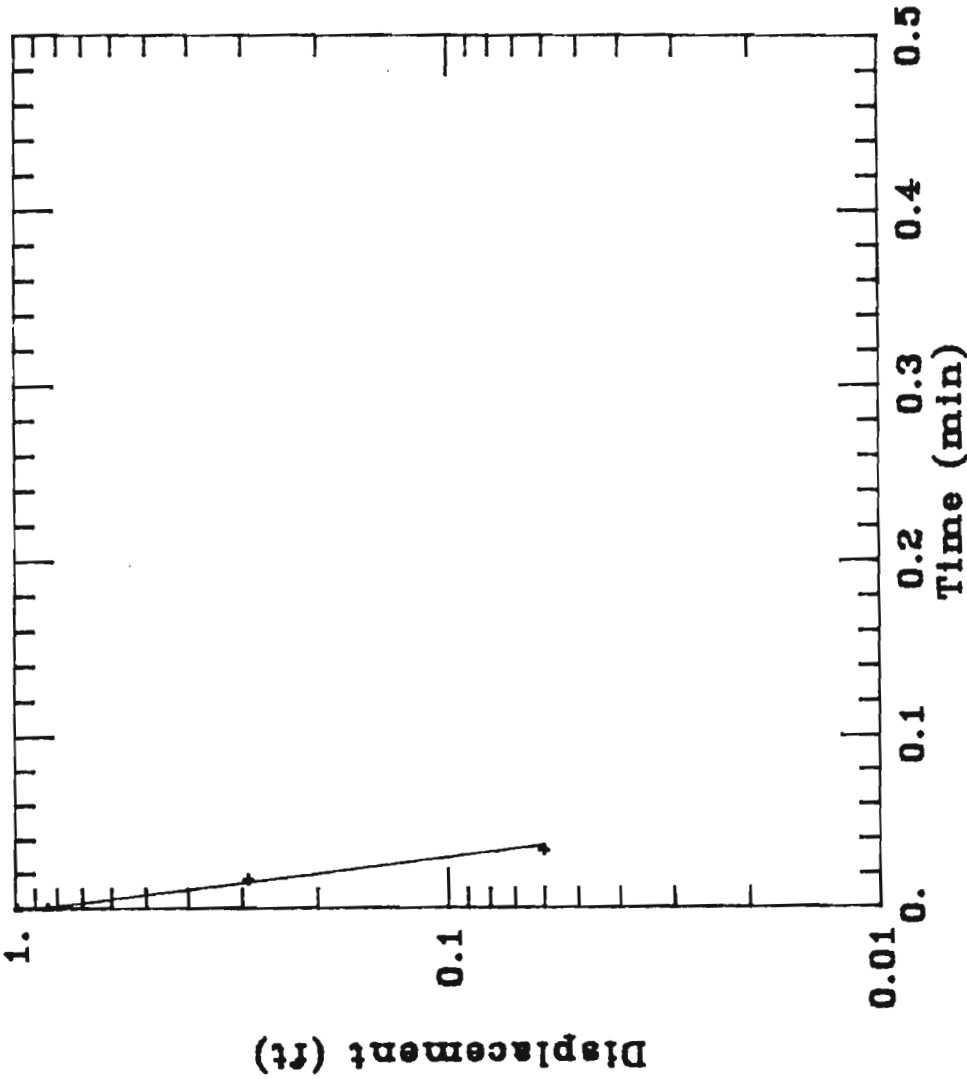
Reference 7.37
Scale factor 49.82
Offset 0.02

Step# 0 03/29 11:56

Elapsed Time Value

0.0000	1.21	0.6667	1.54
0.0033	1.21	0.7500	1.50
0.0066	1.21	0.8333	1.46
0.0099	1.21	0.9167	1.43
0.0133	1.21	1.0000	1.42
0.0166	1.21	1.0833	1.42
0.0200	1.21	1.1667	1.40
0.0233	1.20	1.2500	1.40
0.0266	1.06	1.3333	1.39
0.0300	1.04	1.4166	1.37
0.0333	0.88	1.5000	1.37
0.0500	0.71	1.5833	1.37
0.0666	0.54	1.6667	1.35
0.0833	0.96	1.7500	1.35
0.1000	0.69	1.8333	1.34
0.1166	0.77	1.9167	1.34
0.1333	1.80	2.0000	1.34
0.1500	2.50	2.5000	1.31
0.1666	4.25	3.0000	1.29
0.1833	4.08	3.5000	1.28
0.2000	3.90	4.0000	1.26
0.2166	3.76	4.5000	1.26
0.2333	3.62	5.0000	1.24
0.2500	3.48		
0.2666	3.34		
0.2833	3.21		
0.3000	3.09		
0.3166	2.96		
0.3333	2.85		
0.4167	2.33		
0.5000	1.92		
0.5833	1.65		

Malcolm Pirnie		Client: NYSDEC	
Project No.: 0266314		Location: East Aurora, NY	
ESI-6			
		DATA SET: ESI-6 04/13/94	
AQUIFER TYPE: Unconfined		SOLUTION METHOD: Bouwer-Rice	
TEST DATE: 3/29/94		OBS. WELL: ESI-6	
ESTIMATED PARAMETERS: $K = 0.04954 \text{ ft/min}$ $y_0 = 0.9345 \text{ ft}$		2.2 E-2	
TEST DATA: $H_0 = 0.99 \text{ ft}$ $r_c = 0.18 \text{ ft}$ $r_w = 0.417 \text{ ft}$ $L = 11. \text{ ft}$ $b = 19.42 \text{ ft}$ $H = 7.11 \text{ ft}$		$V_S = 2.13$ $V_S = 7.1$	

Malcolm Pirnie		Client: NYSDEC
Project No.: 0266314		Location: East Aurora, NY
ESI-6		
DATA SET: ESI-6-2 06/06/94 AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 9/29/94 OBS. WELL: ESI-6 ESTIMATED PARAMETERS: K = 0.3847 ft/min y0 = 0.8544 ft TEST DATA: H0 = 0.99 ft rc = 0.2 ft rw = 0.344 ft L = 7.07 ft b = 17.42 ft H = 7.07 ft		
		

SLUG TEST FIELD DATA FOR
WELL # ESI-6

SE1000B
Environmental Logger
03/29 12:53

Unit# 00554 Test# 0

INPUT 1: Level (F) TOC

Reference 9.58
Scale factor 49.82
Offset 0.02

Step# 0 03/29 09:19

Elapsed Time	Value		
-----	-----	0.7500	9.48
		0.8333	9.48
0.0000	9.42	0.9167	9.48
0.0033	9.43	1.0000	9.48
0.0066	9.43		
0.0099	9.43		
0.0133	9.43		
0.0166	9.43		
0.0200	9.43		
0.0233	9.43		
0.0266	9.43		
0.0300	9.43		
0.0333	9.43		
0.0500	10.22		
0.0666	10.41		
0.0833	10.42		
0.1000	9.87		
0.1166	9.64		
0.1333	9.56		
0.1500	9.56		
0.1666	9.53		
0.1833	9.51		
0.2000	9.51		
0.2166	9.50		
0.2333	9.50		
0.2500	9.50		
0.2666	9.50		
0.2833	9.50		
0.3000	9.50		
0.3166	9.50		
0.3333	9.48		
0.4167	9.48		
0.5000	9.48		
0.5833	9.48		
0.6667	9.48		

Malcolm Pirnie

Client: NYSDEC

Project No.: 0266314

Location: East Aurora, NY

AG-1

DATA SET:

AG-1

06/02/94

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

TEST DATE:

3/29/94

OBS. WELL:

AG-1

ESTIMATED PARAMETERS:

K = 0.003458 ft/min

y0 = 0.3337 ft

1.77 E-2

TEST DATA:

H0 = 0.31 ft

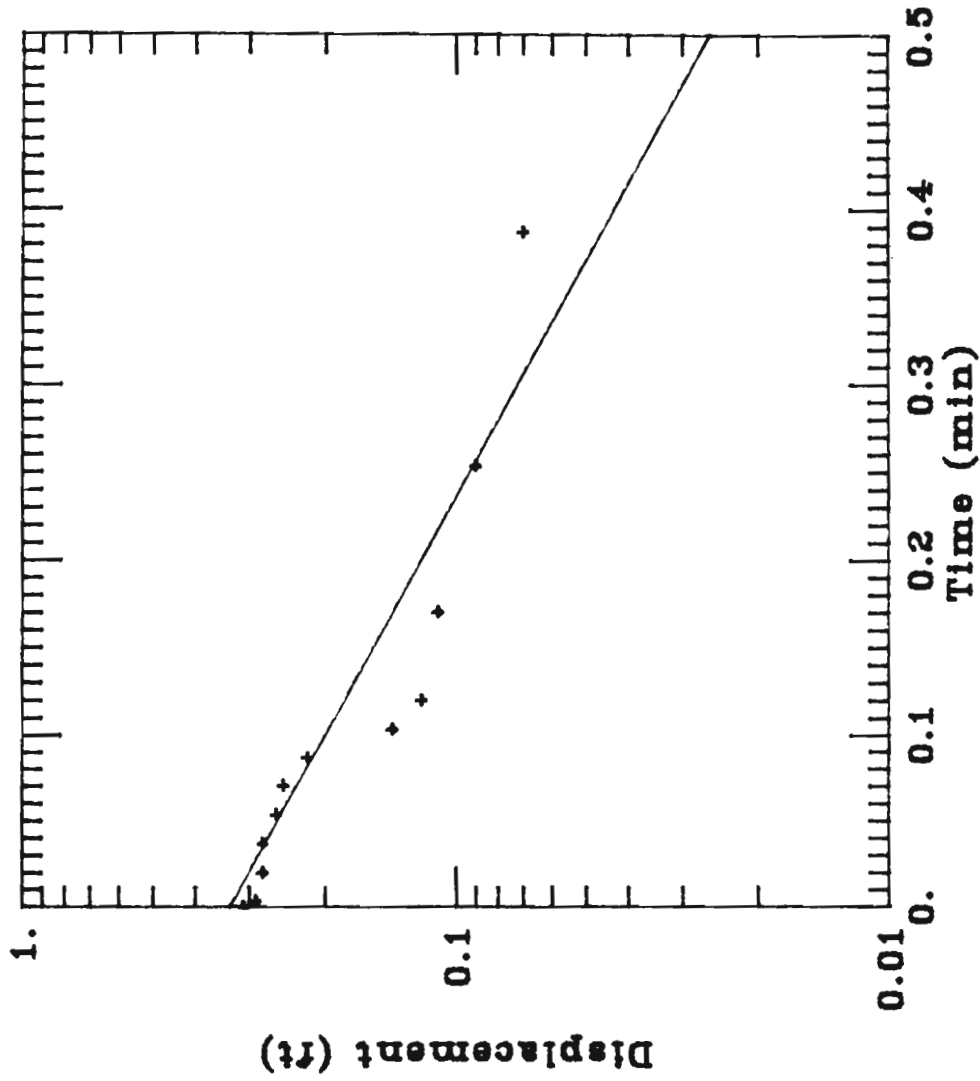
rc = 0.083 ft

rw = 0.438 ft

L = 11.4 ft

b = 17.94 ft

H = 13.14 ft



SLUG TEST DATA FOR AG-1

SE1000B
Environmental Logger
03/30 10:03

Unit# 00554 Test# 3

INPUT 1: Level (F) TOC

Reference 9.06
Scale factor 49.82
Offset 0.02

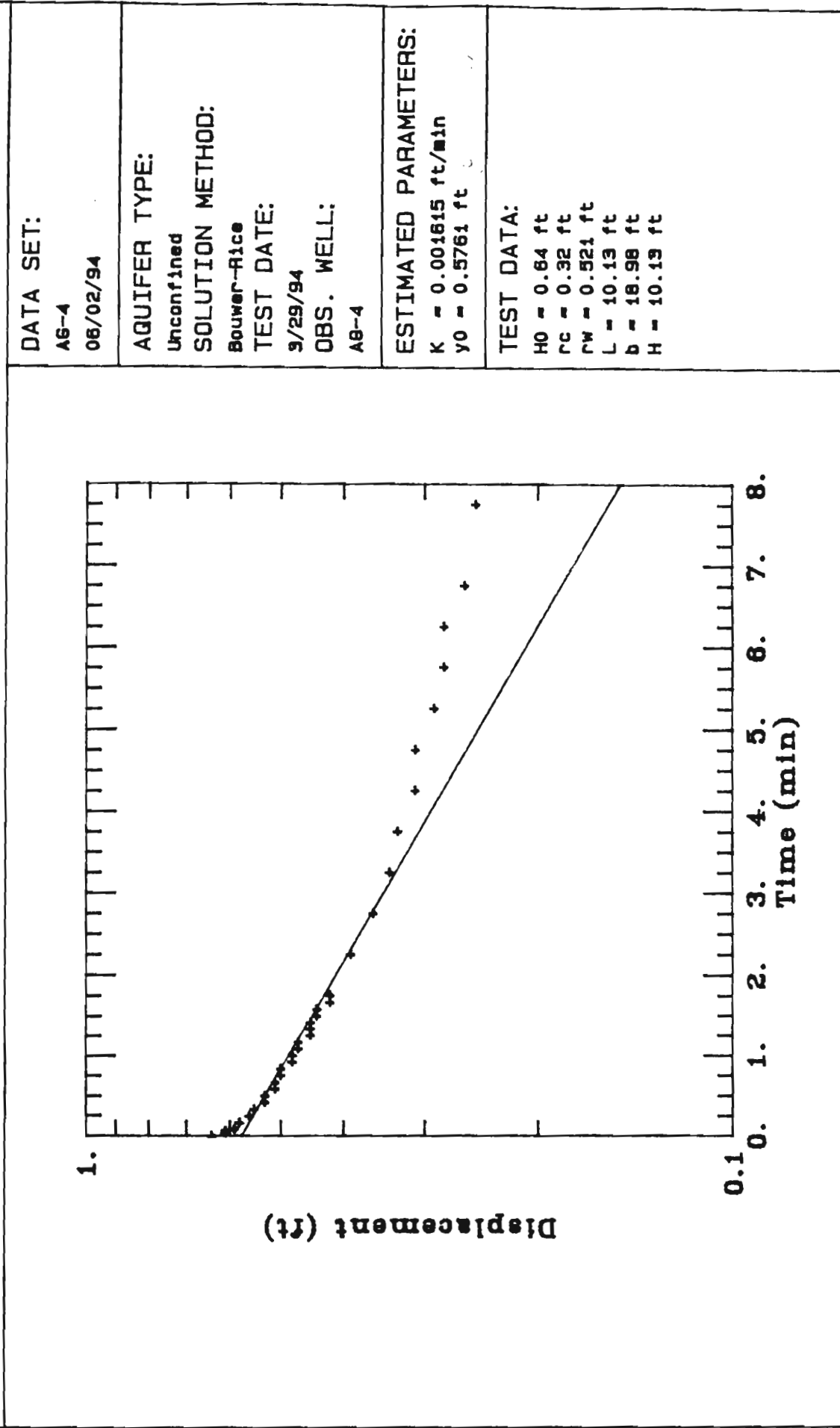
Step# 0 03/29 15:09

Elapsed Time Value

0.0000	9.31	0.6667	9.13
0.0033	9.31	0.7500	9.13
0.0066	9.31	0.8333	9.13
0.0099	9.31	0.9167	9.13
0.0133	9.31	1.0000	9.13
0.0166	9.31	1.0833	9.13
0.0200	9.29	1.1667	9.13
0.0233	9.35	1.2500	9.13
0.0266	9.34	1.3333	9.13
0.0300	9.37	1.4166	9.13
0.0333	9.35	1.5000	9.13
0.0500	9.34	1.5833	9.13
0.0666	9.34	1.6667	9.13
0.0833	9.32	1.7500	9.13
0.1000	9.31	1.8333	9.13
0.1166	9.28	1.9167	9.13
0.1333	9.20	2.0000	9.13
0.1500	9.18	2.5000	9.13
0.1666	9.18		
0.1833	9.18		
0.2000	9.17		
0.2166	9.17		
0.2333	9.17		
0.2500	9.17		
0.2666	9.17		
0.2833	9.15		
0.3000	9.15		
0.3166	9.15		
0.3333	9.15		
0.4167	9.15		
0.5000	9.13		
0.5833	9.13		

Malcolm Pirnie	Client: NYSDEC
Project No.: 0266314	Location: East Aurora, NY

AG-4



SLUG TEST DATA FOR AG-4

SE1000B
Environmental Logger
03/30 10:11

Unit# 00554 Test# 8

INPUT 1: Level (F) TOC

Reference 8.02
Scale factor 49.82
Offset 0.02

Step# 0	03/29 16:50	0.5833	8.57
		0.6667	8.55
		0.7500	8.55
Elapsed Time	Value	0.8333	8.53
-----	-----	0.9167	8.53
0.0000	8.02	1.0000	8.52
0.0033	8.03	1.0833	8.52
0.0066	8.03	1.1667	8.50
0.0099	8.03	1.2500	8.50
0.0133	8.03	1.3333	8.49
0.0166	8.03	1.4166	8.49
0.0200	7.92	1.5000	8.47
0.0233	7.92	1.5833	8.47
0.0266	7.87	1.6667	8.47
0.0300	7.79	1.7500	8.46
0.0333	7.95	1.8333	8.46
0.0500	7.84	1.9167	8.44
0.0666	7.68	2.0000	8.44
0.0833	7.68	2.5000	8.41
0.1000	7.70	3.0000	8.38
0.1166	7.72	3.5000	8.36
0.1333	7.72	4.0000	8.35
0.1500	7.90	4.5000	8.33
0.1666	8.17	5.0000	8.33
0.1833	8.28	5.5000	8.31
0.2000	8.49	6.0000	8.30
0.2166	8.64	6.5000	8.30
0.2333	8.64	7.0000	8.28
0.2500	8.66	7.5000	8.28
0.2666	8.63	8.0000	8.27
0.2833	8.63	8.5000	8.28
0.3000	8.63	9.0000	8.27
0.3166	8.63	9.5000	8.27
0.3333	8.61	10.0000	8.27
0.4167	8.60		
0.5000	8.58		

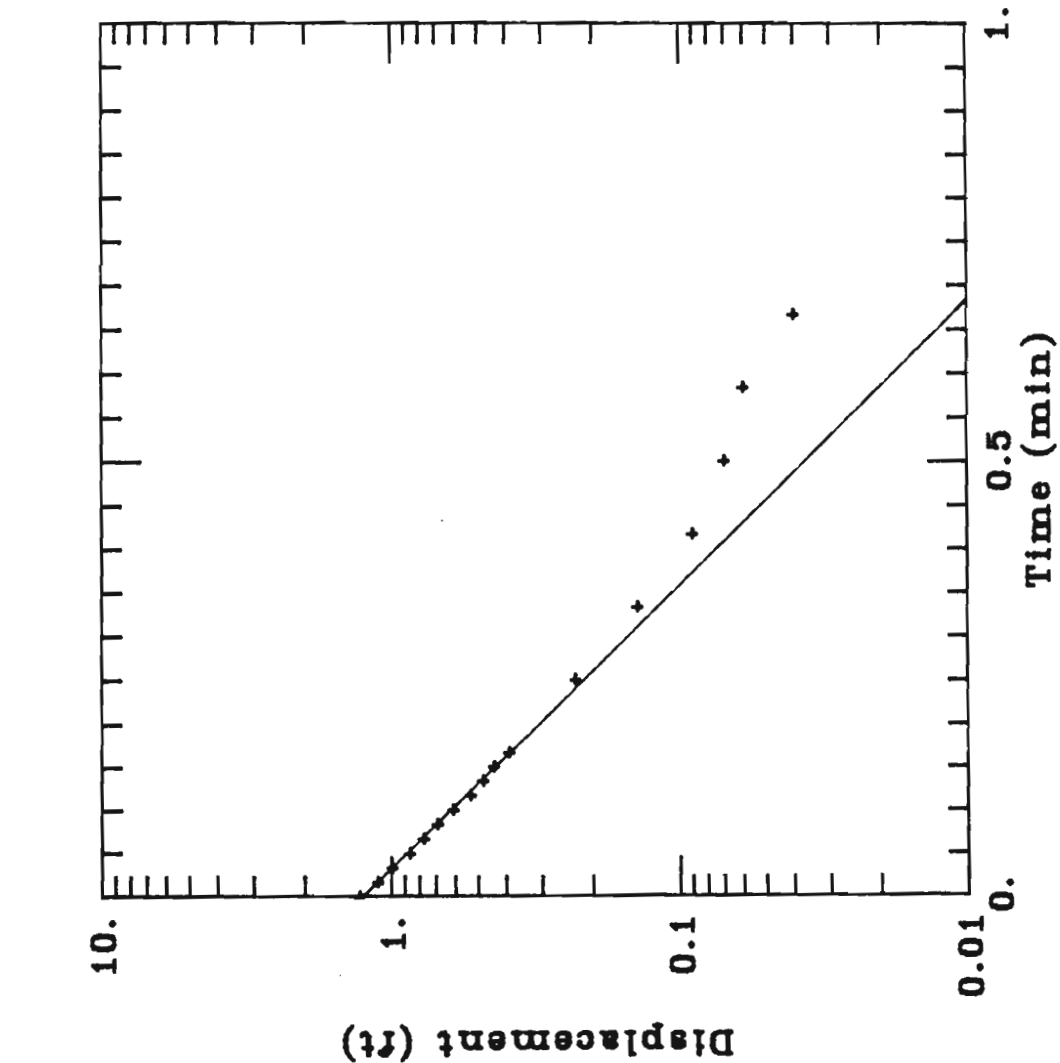
Malcolm Pirnie

Client: NYSDEC

Project No.: 0266314

Location: East Aurora, NY

AG-5



DATA SET:

AG-5

06/02/94

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

TEST DATE:

3/29/94

OBS. WELL:

AG-5

ESTIMATED PARAMETERS:

K = 0.05871 ft/min

y0 = 1.256 ft

3, 6-2

TEST DATA:

H0 = 1.29 ft

rc = 0.25 ft

rW = 0.438 ft

L = 5.82 ft

b = 18.52 ft

H = 5.82 ft

SLUG TEST DATA FOR AG-5

SE1000B
Environmental Logger
03/30 10:13

Unit# 00554 Test# 9

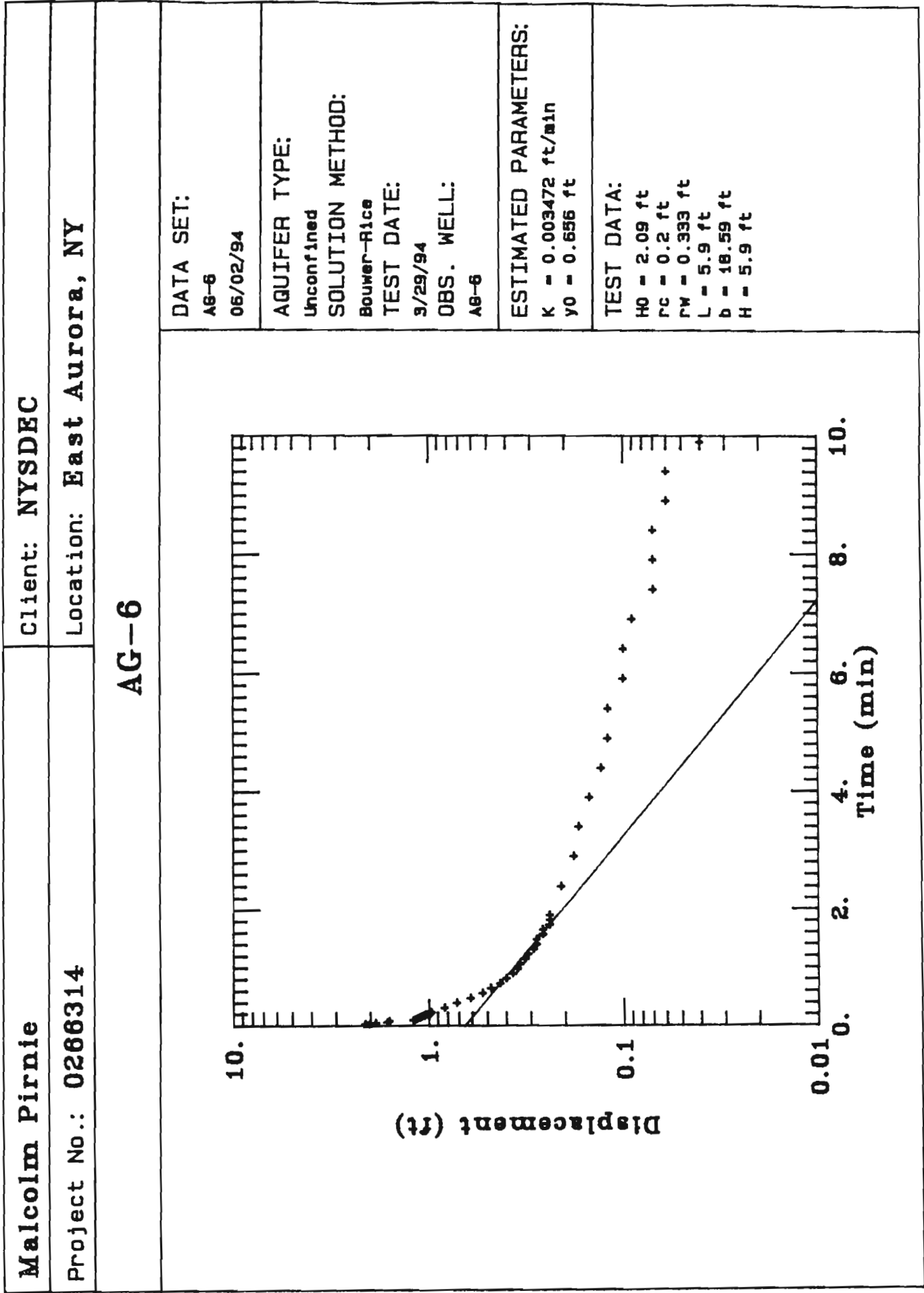
INPUT 1: Level (F) TOC

Reference 8.48
Scale factor 49.82
Offset 0.02

Step# 0 03/29 17:07

Elapsed Time Value

0.0000	8.48	0.6667	8.55
0.0033	8.48	0.7500	8.54
0.0066	8.48	0.8333	8.52
0.0099	8.48	0.9167	8.52
0.0133	8.48	1.0000	8.52
0.0166	8.48	1.0833	8.52
0.0200	8.48	1.1667	8.52
0.0233	8.48	1.2500	8.51
0.0266	8.46	1.3333	8.51
0.0300	8.44	1.4166	8.51
0.0333	7.83	1.5000	8.51
0.0500	8.35	1.5833	8.51
0.0666	7.96	1.6667	8.51
0.0833	8.07	1.7500	8.51
0.1000	8.08	1.8333	8.51
0.1166	8.14	1.9167	8.51
0.1333	8.66	2.0000	8.51
0.1500	9.51	2.5000	8.49
0.1666	9.77	3.0000	8.49
0.1833	9.59	3.5000	8.49
0.2000	9.47	4.0000	8.49
0.2166	9.34	4.5000	8.48
0.2333	9.25	5.0000	8.48
0.2500	9.17	5.5000	8.48
0.2666	9.09	6.0000	8.48
0.2833	9.01	6.5000	8.48
0.3000	8.96	7.0000	8.48
0.3166	8.92	7.5000	8.48
0.3333	8.87	8.0000	8.48
0.4167	8.71	8.5000	8.48
0.5000	8.62		
0.5833	8.57		



SLUG TEST DATA FOR AG-6

SE1000B
Environmental Logger
03/30 10:09

Unit# 00554 Test# 7

INPUT 1: Level (F) TOC

Reference 8.41
Scale factor 49.82
Offset 0.02

Step# 0 03/29 16:33

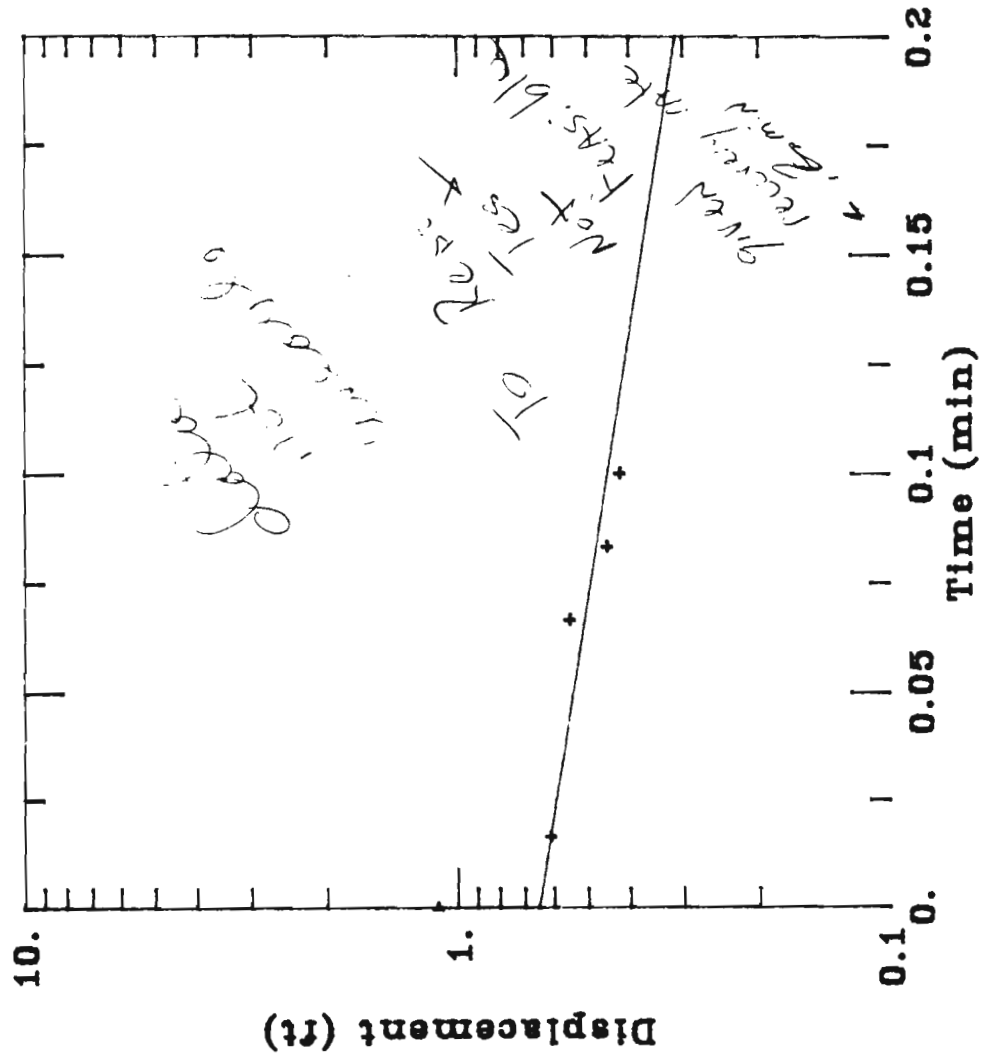
Elapsed Time Value

0.0000	8.37	0.6667	9.21
0.0033	8.56	0.7500	9.16
0.0066	8.66	0.8333	9.11
0.0099	8.55	0.9167	9.08
0.0133	8.91	1.0000	9.05
0.0166	9.24	1.0833	9.03
0.0200	9.57	1.1667	9.02
0.0233	9.63	1.2500	9.00
0.0266	9.96	1.3333	8.99
0.0300	10.12	1.4166	8.97
0.0333	10.10	1.5000	8.96
0.0500	10.14	1.5833	8.96
0.0666	10.59	1.6667	8.94
0.0833	10.72	1.7500	8.94
0.1000	10.77	1.8333	8.92
0.1166	10.70	1.9167	8.92
0.1333	10.81	2.0000	8.92
0.1500	10.56	2.5000	8.89
0.1666	10.32	3.0000	8.86
0.1833	10.28	3.5000	8.85
0.2000	9.88	4.0000	8.83
0.2166	9.85	4.5000	8.81
0.2333	9.82	5.0000	8.80
0.2500	9.79	5.5000	8.80
0.2666	9.76	6.0000	8.78
0.2833	9.73	6.5000	8.78
0.3000	9.71	7.0000	8.77
0.3166	9.66	7.5000	8.75
0.3333	9.65	8.0000	8.75
0.4167	9.51	8.5000	8.75
0.5000	9.40	9.0000	8.74
0.5833	9.29	9.5000	8.74
		10.0000	8.72

Client: NYSDEC

Location: East Aurora, NY

AG-7



DATA SET:

AG-7

04/14/94

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bower-Rice

TEST DATE:

9/29/94

OBS. WELL:

AG-7

ESTIMATED PARAMETERS:

K = 0.009323 ft/min

 $y_0 = 0.651 \text{ ft}$ 476

TEST DATA:

HQ - 1.11 ft

$$r_c = 0.16 \text{ ft}$$

rw = 0.333 ft

$L = 10. \text{ ft}$

6 - 18.88 ft

H - 6.11 - H

SLUG TEST DATA FOR AG-7

SE1000B
Environmental Logger
03/30 10:07

Unit# 00554 Test# 5

INPUT 1: Level (F) TOC

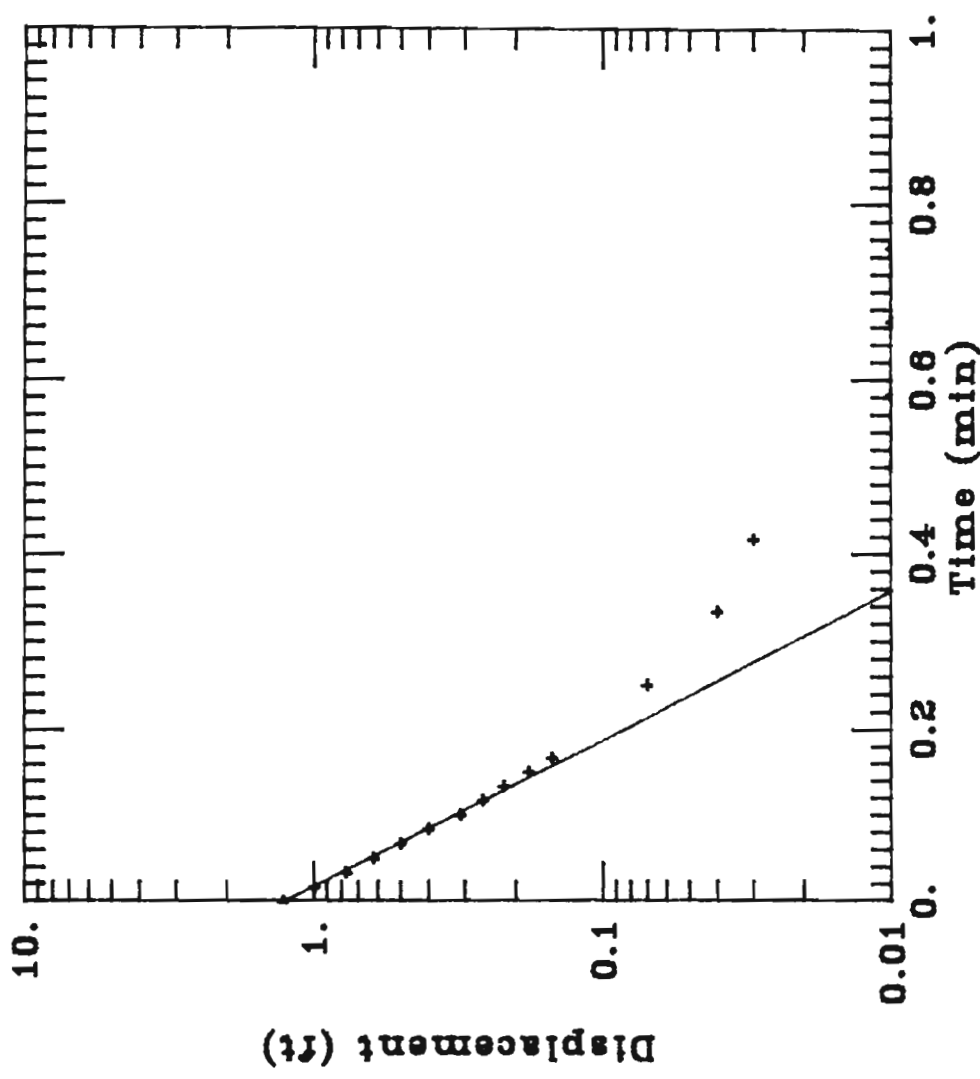
Reference 8.34
Scale factor 49.82
Offset 0.02

Step# 0 03/29 15:39

Elapsed Time Value

0.0000	8.38	0.6667	8.35
0.0033	8.74	0.7500	8.35
0.0066	8.76	0.8333	8.35
0.0099	8.85	0.9167	8.35
0.0133	9.39	1.0000	8.35
0.0166	9.61	1.0833	8.35
0.0200	9.09	1.1667	8.35
0.0233	9.31	1.2500	8.35
0.0266	9.66	1.3333	8.35
0.0300	9.34	1.4166	8.35
0.0333	9.28	1.5000	8.35
0.0500	9.45	1.5833	8.35
0.0666	8.95	1.6667	8.35
0.0833	8.73	1.7500	8.35
0.1000	8.68	1.8333	8.35
0.1166	8.89	1.9167	8.35
0.1333	8.79	2.0000	8.35
0.1500	8.76	2.5000	8.35
0.1666	8.35	3.0000	8.35
0.1833	8.35	3.5000	8.35
0.2000	8.35		
0.2166	8.35		
0.2333	8.35		
0.2500	8.35		
0.2666	8.35		
0.2833	8.35		
0.3000	8.37		
0.3166	8.35		
0.3333	8.35		
0.4167	8.35		
0.5000	8.35		
0.5833	8.35		

Malcolm Pirnie		Client: NYSDEC
Project No.: 0266314		Location: East Aurora, NY
AG-8		
DATA SET: AG-8 06/02/94 AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 3/29/94 OBS. WELL: AG-8		
ESTIMATED PARAMETERS: $K = 0.08569 \text{ ft/min}$ $y_0 = 1.249 \text{ ft}$ TEST DATA: $H_0 = 1.27 \text{ ft}$ $r_c = 0.2 \text{ ft}$ $r_w = 0.393 \text{ ft}$ $L = 5.92 \text{ ft}$ $b = 17.26 \text{ ft}$ $H = 5.32 \text{ ft}$		



SLUG TEST DATA FOR AG-8

SE1000B
Environmental Logger
03/30 10:05

Unit# 00554 Test# 4

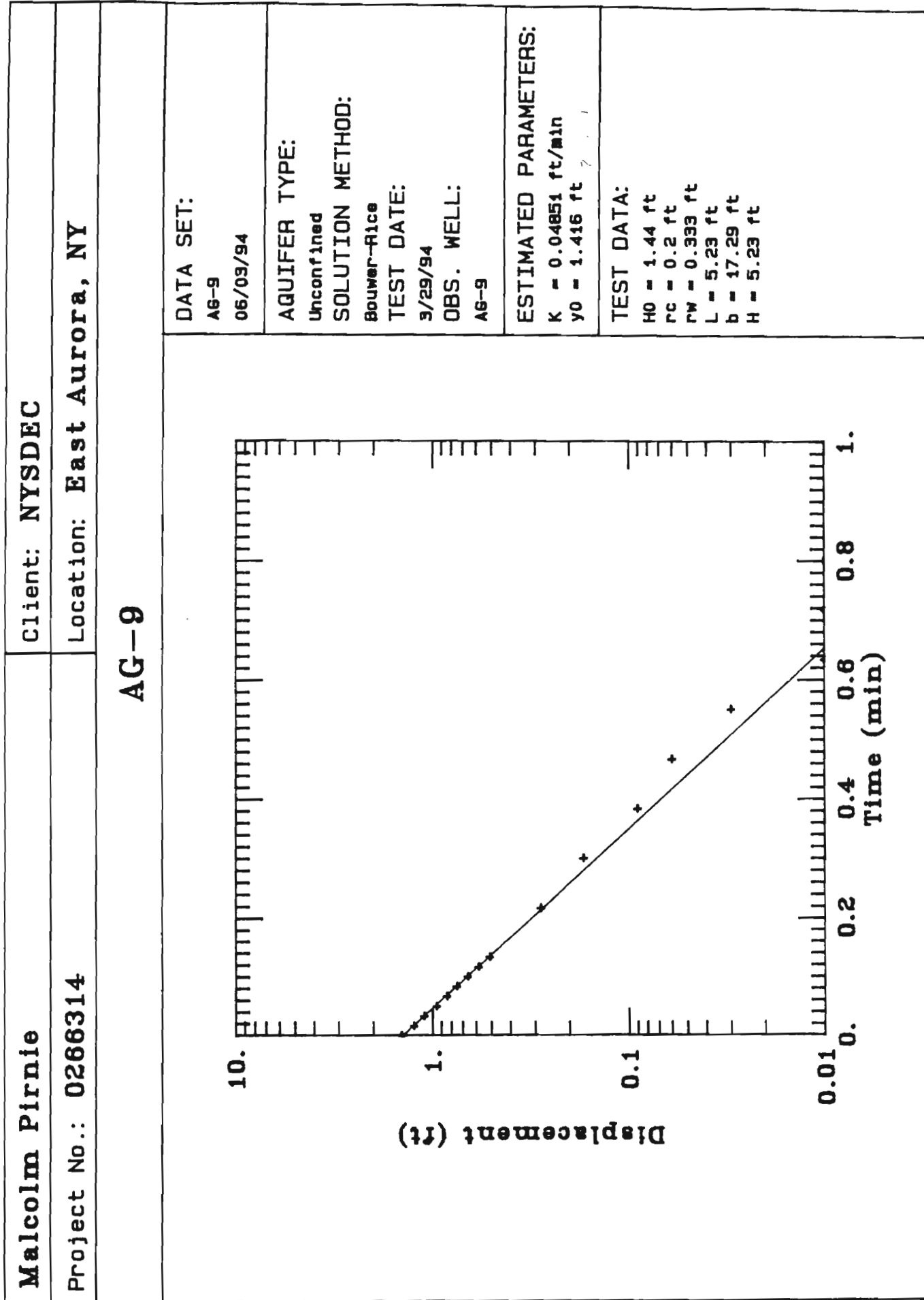
INPUT 1: Level (F) TOC

Reference 9.72
Scale factor 49.82
Offset 0.02

Step# 0 03/29 15:19

Elapsed Time Value

		0.5833	9.75
0.0000	9.72	0.6667	9.73
0.0033	9.72	0.7500	9.73
0.0066	9.72	0.8333	9.73
0.0099	9.72	0.9167	9.73
0.0133	9.72	1.0000	9.72
0.0166	9.72	1.0833	9.72
0.0200	9.73	1.1667	9.72
0.0233	9.72	1.2500	9.72
0.0266	9.70	1.3333	9.72
0.0300	8.79	1.4166	9.72
0.0333	10.00	1.5000	9.72
0.0500	9.68	1.5833	9.72
0.0666	9.43	1.6667	9.72
0.0833	9.54	1.7500	9.72
0.1000	9.40	1.8333	9.72
0.1166	9.54	1.9167	9.72
0.1333	9.72	2.0000	9.72
0.1500	10.77	2.5000	9.72
0.1666	10.99		
0.1833	10.71		
0.2000	10.49		
0.2166	10.34		
0.2333	10.22		
0.2500	10.12		
0.2666	10.03		
0.2833	9.98		
0.3000	9.94		
0.3166	9.90		
0.3333	9.87		
0.4167	9.79		
0.5000	9.76		



SLUG TEST DATA FOR AG-9

SE1000B
Environmental Logger
03/30 09:59

Unit# 00554 Test# 1

INPUT 1: Level (F) TOC

Reference 9.71
Scale factor 49.82
Offset 0.02

Step# 0 03/29 14:27

Elapsed Time Value

		0.5833	9.80
0.0000	9.71	0.6667	9.77
0.0033	9.72	0.7500	9.74
0.0066	9.72	0.8333	9.72
0.0099	9.72	0.9167	9.72
0.0133	9.71	1.0000	9.72
0.0166	9.72	1.0833	9.71
0.0200	9.71	1.1667	9.71
0.0233	9.71	1.2500	9.71
0.0266	9.71	1.3333	9.71
0.0300	9.72	1.4166	9.71
0.0333	9.71	1.5000	9.69
0.0500	9.71	1.5833	9.71
0.0666	9.36	1.6667	9.71
0.0833	9.41	1.7500	9.69
0.1000	9.39	1.8333	9.69
0.1166	9.36	1.9167	9.71
0.1333	9.04	2.0000	9.69
0.1500	9.30	2.5000	9.69
0.1666	10.24		
0.1833	10.95		
0.2000	11.15		
0.2166	10.95		
0.2333	10.81		
0.2500	10.66		
0.2666	10.55		
0.2833	10.46		
0.3000	10.37		
0.3166	10.29		
0.3333	10.22		
0.4167	9.99		
0.5000	9.88		

Malcolm Pirnie		Client: NYSDEC
Project No.: 0266314		Location: East Aurora, NY
AG-10		
DATA SET: AG-10 08/03/94 AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: 3/29/94 OBS. WELL: AG-10 ESTIMATED PARAMETERS: $K = 0.003616 \text{ ft/min}$ $\gamma_0 = 0.9656 \text{ ft}$ TEST DATA: $H_0 = 1.52 \text{ ft}$ $r_c = 0.2 \text{ ft}$ $r_w = 0.333 \text{ ft}$ $L = 4.6 \text{ ft}$ $b = 16.71 \text{ ft}$ $H = 4.6 \text{ ft}$		

SLUG TEST DATA FOR AG-10

SE1000B
Environmental Logger
03/30 09:56

Unit# 00554 Test# 0

INPUT 1: Level (F) TOC

Reference 10.29
Scale factor 49.82
Offset 0.02

St

ep# 0 03/29 14:03

Elapsed Time Value

-----	-----	0.6667	11.02
		0.7500	10.98
		0.8333	10.95
		0.9167	10.93
0.0000	10.30	1.0000	10.90
0.0033	10.30	1.0833	10.87
0.0066	10.30	1.1667	10.85
0.0099	10.30	1.2500	10.84
0.0133	10.30	1.3333	10.82
0.0166	10.30	1.4166	10.80
0.0200	10.30	1.5000	10.79
0.0233	10.30	1.5833	10.77
0.0266	10.30	1.6667	10.77
0.0300	10.29	1.7500	10.76
0.0333	10.30	1.8333	10.74
0.0500	10.29	1.9167	10.73
0.0666	9.69	2.0000	10.73
0.0833	9.83	2.5000	10.65
0.1000	10.30	3.0000	10.60
0.1166	10.51	3.5000	10.57
0.1333	11.20	4.0000	10.55
0.1500	11.62	4.5000	10.52
0.1666	11.81	5.0000	10.51
0.1833	11.78	5.5000	10.49
0.2000	11.72	6.0000	10.47
0.2166	11.64	6.5000	10.46
0.2333	11.58	7.0000	10.46
0.2500	11.54	7.5000	10.44
0.2666	11.51	8.0000	10.44
0.2833	11.47	8.5000	10.43
0.3000	11.42	9.0000	10.43
0.3166	11.39	9.5000	10.43
0.3333	11.37	10.0000	10.41
0.4167	11.24		
0.5000	11.13		
0.5833	11.06		

APPENDIX H

- Phase I Data Validation Report
- Phase II Data Validation Report
- Phase I Field Sampling Logs
- Phase I Memos (including Phase I Air Sampling Results)
- Phase II Air Sampling Results
- Environmental Isotope-Tritium Testing Laboratory Report

**MR. C CLEANERS SUPERFUND SITE
DATA VALIDATION REPORT**

**NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**

JULY 1994

MALCOLM PIRNIE, INC.

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1.0 INTRODUCTION

The following discussion details Malcolm Pirnie's analytical data assessment and validation of results reported by NYTEST Environmental, Inc. for a total of 31 samples (25 groundwater and 6 wastewater samples) collected at the Mr. C Cleaners Site. Each sample was analyzed for Target Compound List (TCL) volatile organic compounds. Three of the 31 samples were additionally analyzed for TCL semi-volatile compounds, TCL pesticides/PCBs, Target Analyte List (TAL) inorganic elements, and soluble iron and manganese. The assessment of analytical data included a review of data consistency and data completeness, and adherence to accuracy and precision criteria.

The validation is based on laboratory compliance with Methods 91-1, 91-2, 91-3, and the 200-CLP series methods as contained in the 1991 NYSDEC Analytical Services Protocol (ASP). Data were evaluated as indicated in the following table:

Data Type	Criteria
All Data	Holding times Calibrations Blanks Matrix spike/matrix spike duplicate (MS/MSD) recoveries Field duplicate precision Data completeness
Organic Data	Surrogate recoveries Gas chromatograph/mass spectrometer (GC/MS) tuning Matrix spike blank (MSB) recoveries Internal standard performance.
Inorganic Data	Contract-required detection limit (CRDL) standards for ICP and AA Laboratory control sample (LCS) ICP interference check sample (ICS) ICP serial dilution analysis Furnace AA QC analysis

The Functional Guidelines (herein called the "guidelines" for evaluating organic and inorganic data (1991 and 1988 respectively) have been applied.

Data are valid and acceptable; however, those analytes which have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U"

(non-detects), or "JN" (presumptive evidence for the presence of the material at an estimated value) are estimated values. The analytical results and appropriate data qualifiers are presented in Tables 1a through 1c, attached. All action is detailed in the discussion which follows.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon. Second, no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves only to increase confidence in data.

2.0 ORGANIC DATA ASSESSMENT

2.1 Holding Time

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified method holding time is exceeded the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "UJ", or unusable, "R", if the holding times are grossly exceeded. A review of the analytical data indicated that each sample was extracted and/or analyzed within holding time criteria.

2.2 Blank Contamination

Quality assurance (QA) blanks; i.e., method, trip, field, or rinse blanks, are prepared to identify any contamination which may have originated during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of volatile organic compounds during shipment. Field (rinse) blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for the common contaminants), the analytes are qualified as non-detects "U". The following analytes in the samples shown were qualified with "U" for these reasons:

TABLE 1A
NYSDEC SUPERFUND - MR. C CLEANER RI
APRIL 1994 GROUNDWATER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	MPI 1S	MPI 1I	MPI 2	MPI 3	MPI 4S	MPI 4I	MPI 5S	MPI 5I	MPI 6	MPI 7I	MPI 8	MPI 8 ⁽³⁾	MPI 9	GWQ Sids
vinyl chloride							9J							2
methylene chloride	10UJ		10UJ	10UJ	10UJ	10UJ			20UJ	10UJ	10UJ	10UJ	10UJ	5
acetone		11				91		41		39				50**
1,1-dichloroethene									19J					5
1,2-dichloroethene (T)	20				2J		39		24J		16J	15J	24	5
chloroform					3J					2J				7
1,1,1 trichloroethane			14											5
trichloroethene	10J					10J	12		110		22J	23J	22	5
benzene					12									0.7
tetrachloroethene	290	3J			59	350	56	1J	1600	140	500	530	350	5
toluene														5
ethylbenzene														5
xylene (T)														5

Notes:

- (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit.
- (2) Analyzed by ASP Method 91-1.
- (3) Duplicate Sample.
- ** Guidance Value
- J Estimated value due to limitations identified during quality control review.
- UJ Estimated detection limit.

TABLE 1A (Continued)
NYSDEC SUPERFUND - MR. C CLEANER RI
APRIL 1994 GROUNDWATER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	ESI-1	ESI-3	ESI-4	ESI-5	ESI-6	AG-1	AG-1 ⁽³⁾	AG-4	AG-5	AG-6	AG-7	AG-8	AG-9	AG-10	GWQ Sids
vinyl chloride									240					8J	2
methylene chloride	10UJ				10UJ	61J	120J	10UJ	54J	27UJ	10UJ	10UJ	11J	10UJ	5
acetone											46				50**
1,1-dichloroethene															5
1,2-dichloroethene (T)			2J		62			24	45J	1J			6J	27	5
chloroform															7
1,1,1 trichloroethane			4J												5
trichloroethene	3J		1J		16J	37J	64J	46					26J	2J	5
benzene								55	3200	28J	3J			110	0.7
tetrachloroethene		8,200	32	2J	390	3100	4400	220		36J		120	390		5
toluene								3J	740	10J	2J			6J	5
ethylbenzene								30	430	230	3J			47	5
xylene (T)								41	1900	410	6J			37	5

Notes:

(1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit.

(2) Analyzed by ASP Method 91-1.

(3) Duplicate sample

** Guidance Value

J Estimated value due to limitations identified during quality control review.

UJ Estimated detection limit.

**TABLE 1B
NYSDEC SUPERFUND - MR. C CLEANER RI**

**MAY 1994 GROUNDWATER SAMPLING RESULTS
ADDITIONAL PARAMETERS**

Parameter (ug/l)	ESI-3	MPI-7I	MPI-5S	MPI-7I ⁽¹⁾
Target Compound List - Semi-Volatile Organics:				
bis(2-ethylhexyl)phthalate	10J	3J		12
Butylbenzylphthalate	8J			6J
Diethylphthalate	75			2J
Di-n-butylphthalate	2J			
Target Compound List - Inorganics:				
Aluminum	6200	200UJ	792	200UJ
Barium	220	117J	214	114J
Calcium	189,000	175,000	126,000	169,000
Cobalt	16.1J			
Copper	44.1		25UJ	
Iron	21,200		4,480J	
Lead	11.9		7.4J	
Magnesium	35,800	37,800	20,700	35,200
Manganese	792	814	944	784
Mercury	0.21			
Nickel	40UJ			
Potassium	7,230	5,530	7,380	5,220
Silver			10UJ	
Sodium	205,000	157,000	192,000	152,000
Vanadium	50UJ		50UJ	
Zinc	104	20UJ	20UJ	
Soluble Iron			1,090	
Soluble Manganese	130	782J	734	130J
Remediation Assessment Parameters: (mg/l)				
Alkalinity, Total	276	299	356	
Hardness	503	578	377	
Total Cyanide			0.02	
Total Dissolved Solids	1,180	1,100	930	
Total Suspended Solids	1,090	1	70	
Notes:				
(1) Duplicate Sample				
J Estimated value due to limitations identified during quality control review				
UJ Estimated detection limit				

TABLE 1C
NYSDEC SUPERFUND - MR. C CLEANER RI
APRIL 1994 SEWER SAMPLING RESULTS⁽¹⁾

Parameter ⁽²⁾ (ug/l)	MH-11	MH-61	MH-62E	MH-62E ⁽³⁾	MH-62W	MH-64	MH-65	GWQ Stds
vinyl chloride								2
methylene chloride	10UJ	10UJ	10UJ	10UJ	10UJ	10UJ	10UJ	5
acetone	10	21J	19J	17J	84J	20J	38J	50**
1,2-dichloroethene (T)		3J						5
chloroform	6J	5J	6J	6J	9J	5J	16	7
2-butanone					15J			
bromodichloromethane		2J	2J	2J	1J	2J	3J	50**
tetrachloroethene		4J	1J					5
toluene					10			5
ethylbenzene					2J			5
xylene (T)					21			5

Notes:

- (1) Only compounds detected above the Analytical Detection Limit in one or more samples are shown here. Blank space means the compound was not detected above the Analytical Detection Limit.
- (2) Analyzed by ASP Method 91-1.
- (3) Duplicate Sample.
- ** Guidance Value
- J Estimated value due to limitations identified during quality control review.
- UJ Estimated detection limit.

a) Method Blank Contamination:

Login #	Blank ID	Parameter	Concentration	Sample
20266	VBLK51	Methylene Chloride	23 ug/l	MPI-1S, -2, -3, -4I, -4IMS, -4IMSD, -6, -8, -9, ESI-6, BDUP.
20266 and 20282	VBLK52	Methylene Chloride	3J ug/l	MPI-4S, ESI-1, AG-1, 4, 5, 6, 7, 8, 9, BDUP
20266 and 20282	VBLK 53	Methylene Chloride	1J ug/l	MPI-8DL, AG-5MS, 5MSO, 5DL, -6DL, -10
20349	VBLK65	Methylene Chloride	2J ug/l	MH-61, 62E, 62W, 64, 64MS, 64MSD, -65
20364	VBLK9	Methylene Chloride	3J ug/l	MH11

There were no analytes detected in the semi-volatiles method blank or the pesticide/PCBs method blanks.

b) Trip Blank Contamination:

Login #	Sample	Analyte	Concentration
20266	Trip Blank 4/7	Methylene Chloride	4 BJ ug/l
20282	Trip Blank 4/7	Methylene Chloride	3 BJ ug/l
20318	Trip Blank 4/9	Methylene Chloride	1J ug/l
20309	Trip Blank 4/9	Methylene Chloride	2J ug/l
20349	Trip Blank 4/15	Methylene Chloride	5 BJ ug/l

2.3 Mass Spectrometer Tuning

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, or missing, all associated data are to be classified as unusable, "R"; however, no samples were qualified due to improper tuning.

2.4 Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

a) Response Factor:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the VOA/BNA Target Compound List (TCL) must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean RRF of the initial calibration or the continuing calibration has a response factor < 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated "J". All nondetects for those compounds will be rejected ("R"). A review of the analytical data indicated that no samples should be qualified due to response factor requirements.

b) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent difference compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent difference is a measure of the instrument's daily performance. Percent RSD must be $< 30\%$ and % difference must be $< 25\%$. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are to be flagged as estimated, "J", and nondetects are to be flagged "UJ". If %RSD and % difference grossly exceed QC criteria, nondetect data may be qualified "R".

The following analytes in the samples shown were qualified for %RSD and %D.

Login #	Parameter	Samples Affected
20266	Methylene Chloride 2-Hexanone	MPI-1S, 2, 3, 4I, 4IMS, 4IMSD, 6, 8, 9, ESI-6, BDUP
20266 and 20282	Acetone 2-Butanone 2-Hexanone	MPI-4S, AG-1, 4, 5, 6, 7, 8, 9, ESI-1, BDUP
20266 and 20282	Acetone 2-Butanone 2-Hexanone	MPI-8DL, AG-5DL, 5MS, 5MSD, -6DL, -10
20303 and 20318	4-Methyl-2-pentanone	MPI-5S, 5I, 1I, ESI-4, -5, -3, MPI-7I
20349	Acetone 2-Butanone 2-Hexanone	MH61, 62E, 62W, 64, 64MS, 64MSD, 65
20303 and 20318	Carbazole Butylbenzylphthalate Pyrene 3,3'-Dichlorobenzidine bis(2-Ethylhexyl)phthalate di-n-Octylphthalate Dibenz(a,h)anthracene Benzo(g,h,i)perylene	MPI-5S, -7I, 7IMS, 7IMSD, ESI-3, BDUP

2.5 Surrogates/System Monitoring Compounds (SMC)

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the affected samples. However, a review of the analytical data indicated that qualification due to surrogate/SMC recovery was not necessary.

2.6 Internal Standards Performance

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that internal standard are qualified as estimated "J", and all

nondetects as "UJ" only if internal standard area is <50%. Non-detects are qualified as "R" if there is a severe loss of sensitivity (<25% of associated IS area counts).

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction. Qualification of the data due to poor internal standards performance was not necessary.

2.7 Compound Identification

a) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. For tentatively identified compounds (TIC), the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. A review of the analytical data indicated that no samples should be qualified due to compound identification.

b) Pesticide/PCB Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns utilized for pesticide/PCB analysis. The percent difference (%D) of the positive results obtained on the two GC columns should be $\leq 25\%$. If the %D is $> 25\%$, then identification of the pesticide and/or PCB is questionable.

A review of the analytical data indicated that no samples should be qualified due to Pesticide/PCB compound identification.

2.8 Matrix Spike/Spike Duplicate, MS/MSD

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of data. Review of the MS/MSD results indicated that qualification of the data was not necessary.

3.0 INORGANIC DATA ASSESSMENT

3.1 Holding Time

According to the ASP, CLP Methodology, the following maximum holding times for aqueous samples are recommended for the specified analyses:

Analyses	Recommended Holding Time
Mercury	Prepare and analyze within 26 days of VTSR
Cyanide	Prepare and analyze within 14 days of VTSR
Metals	Prepare and analyze within 180 days of VTSR

Comparison of the dates of sample receipt (from the laboratory chain-of-custody forms) to the dates of sample preparation and analysis (from the laboratory preparation logs and Form XIVs) indicated that all samples were prepared/analyzed prior to expiration of the recommended holding time.

3.2 Instrument Calibration

Initial calibrations of the atomic absorption (AA), inductively coupled plasma (ICP), and mercury cold vapor (CV) systems are accomplished via the analysis of standards at concentrations which define the working range of the particular instrument. To verify the accuracy of the initial calibration for each analyte, an EPA initial calibration verification (ICV) solution must be analyzed at each wavelength that is used for sample analyses. Recoveries of each analyte contained in the ICV solution should be within the control limits established by the EPA. In addition, the correlation coefficient for the initial calibration curve must be >0.995 for AA analyses. To ensure calibration accuracy during each analytical run, a continuing calibration verification (CCV) solution must be analyzed at each wavelength that is used for sample analyses. The CCV solution must be analyzed at a frequency of 10% or every two (2) hours (whichever is more frequent) during an analytical run. The CCV solution must also be analyzed at the beginning of the analytical run and after the last analytical sample. In addition, recoveries of each analyte in the CCV solution should be within the control limits established by the EPA. If the criteria above are not met, calibration cannot be verified; therefore, positive results are to be estimated and qualified with a "J" and nondetects are to be qualified with a "UJ".

As assessment of the calibration data for all inorganic analyses indicated that the proper number of calibration standards were analyzed at the beginning of each analytical run and at the appropriate frequency throughout the analytical run. In addition, the recoveries of each analyte contained in the ICV and CCV solutions were within criteria, and the correlation coefficients for AA data were greater than 0.995.

3.3 Contract-Required Detection Limit (CRDL) Standards for ICP and AA

To verify the linearity near the CRDL for ICP analysis, an ICP standard must be analyzed at a concentration of two (2) times the CRDL [or at the CRDL for AA], or two (2) times the instrument detection limit (IDL), whichever is greater. The standard must be analyzed at the beginning and end of each sample analysis run, or a minimum of twice per eight (8) hour shift, whichever is more frequent (but not before the ICV). To verify linearity near the CRDL for AA analysis, an AA standard must be analyzed at the CRDL or the IDL, whichever is greater. The standard must be analyzed at the beginning of each sample analysis run, but not before the ICV. If the criteria above is not met, linearity cannot be verified and results are qualified with either a "J" or "UJ" (nondetects). A review of the analysis run logs (Form XIV) and the raw data indicated that the CRDL standards for both ICP and AA met these criteria.

3.4 Blank Contamination

For inorganic analyses, initial calibration blanks, (ICBs), continuing calibration blanks (CCBs), and preparation blanks (PBs), are analyzed to determine the existence and magnitude of any inorganic contamination. Ideally, no contaminants should be detected in any of the blanks and no contaminants should be detected in the preparation blanks or ICBs at concentrations greater than the CRDL. In addition, when more than one blank is associated with a given sample, qualification is based on a comparison with the associated blank having the highest concentration of a contaminant. An assessment of all blank analytical data indicated that no contaminants were detected at concentrations greater than the CRDL. However, the following table summarizes contaminants which were detected in blanks at concentrations greater than the IDL:

Blank	Element	Conc.	Action Level (ug/l)	CRDL (ug/l)
Login #20303 and 20318				
CCB1	Aluminum	42	210	200
CCB2	Antimony	43.5	217.5	60
CCB1 and CCB2	Beryllium	2	10	5
CCB2	Copper	17	85	25
CCB2	Iron	97	485	100
CCB3	Potassium	2,184	10,920	5,000
CCB1	Silver	7.3	36.5	10
CCB3	Zinc	13.4	67	20
CCB3	Nickel	23.2	116	40
ICB	Vanadium	11.6	58	50

The action levels listed for each analyte are equal to five (5) times the highest concentration of the analyte detected in any blank. According to the guidelines, any positive results for these analytes detected in the sample at a concentration which is greater than the IDL but less than the action level must be qualified as not detected (ND), and the method detection limit (MDL) set equal to the value detected in the sample. The estimated value is then qualified with a "U". Qualification to the appropriate samples has been made and is presented in Table 1b.

3.5 ICP Interference Check Sample (ICS):

To verify inter-element and background correction factors, an ICS is analyzed at the beginning and end of each analytical run (or a minimum of twice per eight-hour work shift). The ICS consists of two solutions, A and AB. Solution A contains the interferents and solution AB contains the analytes mixed with the interferents. The solutions are analyzed consecutively. If the solutions are not analyzed, potential interferences cannot be assessed and the data would be rejected. A review of the ICS analyses results indicated that copper and silver were detected in the ICSA solution at concentrations greater than two times (2x) the IDL. However, no substantial effect on the ICP analyses from these interferents was exhibited. In addition, the ICS solutions were analyzed at the proper frequency.

3.6 Matrix Spike (MS Analysis)

The analysis of an inorganic matrix spike sample provides the data user with information regarding sample matrix effects on the digestion procedure and analytical

methodology. Matrix spike recoveries for inorganic elements must be within the 75% to 125% recovery "window" unless the sample concentration exceeds the spike concentration by a factor of four (4) or more. If the recovery of an analyte does not fall within this "window", a post-digestion spike must be analyzed for each element (except silver) which did not meet criteria. The following analytes, for the samples shown, have been qualified with a "J" (estimated) because of MS/MSD:

Analyte	MS/MSD	Sample Affected
Thallium Silver	MPI-5S	All samples in Login #20303.

It was noted that post-digestion spikes were not necessary.

3.7 Duplicate Analyses

Laboratory duplicate analysis is an indicator of the precision of sample results and a measure of laboratory performance. A control limit of 20% RPD is used for aqueous and 30% for soil sample results which are greater than five (5) times the CRDL, and a control limit of +/- the CRDL is used for soil sample results which are less than five (5) times the CRDL. If the criteria are not met, poor precision is indicated and any positive results are to be estimated and qualified with a "J"; any "nondetects" are to be qualified with a "UJ".

A review of the laboratory duplicate results indicated that qualification of the data due to duplicate analyses criteria was not necessary.

3.8 Laboratory Control Sample (LCS) Analysis

As an additional measure of accuracy, the ASP requires that an aqueous LCS be prepared and analyzed for every group of aqueous and soil samples in a sample delivery group (SDG), or for each batch of samples digested, whichever is more frequent. The percent recovery for analytes contained in the LCS must fall within the control limits established by the EPA. If the % recovery does not meet criteria, the laboratory must take corrective action such as analyzing another LCS after instrumentation adjustment. Review of the LCS data indicated that all criteria were met.

3.9 Furnace Atomic Absorption (AA) QC Analyses

All furnace AA analyses (As, Se, Tl and Pb) require duplicate injections. For concentrations greater than the CRDL, the duplicate injection results must agree within 20% RSD. If the results do not agree to within 20% RSD, the sample must be rerun. In addition, analysis of a post-digestion spike is required for each sample. The recovery of the analyte in each post-digestion spike must be within the control limit, (i.e., 85-115%). If the recovery of the analyte is outside of this criteria, the analyte may be quantitated using the Method of Standard Addition (MSA), depending on sample absorbance. If the sample absorbance is >50% of the post-digestion spike absorbance and the spike recovery is outside the 85-115% control limit, the sample result is calculated using MSA. A review of the raw furnace atomic absorption data indicated the following elements/samples did not meet the 85 - 115% criteria, but did not require the MSA for quantitation because the sample absorbance was <50% of the post digestion spike absorbance:

Selenium	BDUP, ESI-3
Thallium	MPI-5S

3.10 Inductively Coupled Plasma (ICP) Serial Dilution Analysis

If the concentration of an analyte in a sample is sufficiently high (a minimum of 50 times the IDL), a five-fold dilution of the sample is analyzed to determine whether significant physical or chemical interferences exist. The results of the dilution must agree to within 10% difference (%D) of the original results.

A review of the ICP serial dilution results indicated that ICP serial dilution analyses requirements were met.

3.11 Summary and Conclusion

Overall, the analyses were compliant with the 1991 NYSDEC ASP. Although compliant, the following login numbers contained duplicate Form 1s due to the reasons given:

Login #	Sample	Reason
20266	MPI-8	Dilution runs due to target compound concentration range exceedances.
20282	AG-1, AG-4, AG-5, AG-6, AG-9	Dilution runs due to target compound concentration range exceedances.

Based on the evaluation herein, the analytical data generated for the Mr. C Cleaners Site remedial investigation are valid (with the qualifications noted herein) and useful for the purposes of completing the remedial investigation.

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S3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219-0138

Re: Mr. C. Cleaners
Laboratory: Nytest Environmental Inc.
Case No: 22994
SDG No: MRC1

Volatiles:	FIELD	MW10B	MW12B	MW13B
(Method 91-1)	MW14B	MW2S	MW6S	MW7I
	MWESI3	TRIP BL		

Dear Mr. O'Laskey:

Validation was performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - system monitoring compound recovery
- matrix spike/matrix spike duplicate/matrix spike blank
- blanks
- * - GC/MS tuning
- calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- tentatively identified compounds
- * - system performance

- compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

Table I summarizes the validation actions, which were in accordance with USEPA Region II CLP Organics Data Review and Preliminary Review, March 1990, SOP No. HW-6, Revision #7 (SOP), and the NYSDEC Analytical Services Protocol, September 1989, 12/91 revisions (ASP), as detailed below.

Also attached are the:

- o Data packages, as received,
- o Form 1 results, with validation actions added in red ink,
- o data validation log,
- o telephone log,
- o completeness log and
- o sample preparation and analysis summaries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE/MATRIX SPIKE BLANK:

Samples with MS/MSD relative percent difference (RPD) not within the criteria specified in the ASP (Vol. 8, E - 59) are tabulated below:

<u>SAMPLE</u>	<u>RPD (%)</u>				
	<u>DCE</u>	<u>TCE</u>	<u>BENZ</u>	<u>TOL</u>	<u>CHLB</u>
MW7I	26	23	23	22	23

Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels calculated in accordance with the USEPA Region II SOP are tabulated below:

<u>BLANK ID.</u>	<u>COMPOUND</u>	<u>CONCENTRATION</u>	<u>ACTION LEVEL</u>
VBLKN51	methylene chloride	1	10
VBLKN52	methylene chloride	1	10
TRIP BL	methylene chloride	3	30

*Method blank levels above the upper limits established by the ASP (Vol. 8, E - 52).

Associated samples with positive values reported below the action level are:

<u>METHOD BLANK ID.</u>	<u>ASSOCIATED SAMPLES</u>	
VBLKN51	FIELDD	MWESI3
	MW10B	MW12B
	MW13B	MW14B
	✓MW6S	MW7I
VBLKN52	MW10BDL	MW6SDL
	MWESI3DL	

<u>TRIP BLANK ID.</u>	<u>ASSOCIATED SAMPLES</u>	
TRIP BL	MW10B	MW12B
	MW13B	MW14B
	✓MW6S	MW7I
	MWESI3	MW10BDL
	✓MW6SDL	MWESI3DL
	FIELDD	

Action:

- o associated sample results <CRQL (flagged J) are changed to CRQL (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

CALIBRATION:

Compounds exceeding the calibration linearity, sensitivity and stability criteria specified in the ASP (Vol. 8, E - 47-50), or the SOP maxima for all compounds for initial calibration of 30% RSD, 0.05 Avg. RRF and continuing calibration of 25% D, 0.05 RRF are tabulated below.

INITIAL CALIBRATION

<u>INSTRUMENT</u>	<u>DATE</u>	<u>COMPOUND</u>	<u>%RSD</u>	<u>AVG. RRF</u>
HPN	11-30-94	chloromethane	35	
		methylene chloride	41	
		acetone	44	

Associated samples:

<u>INSTRUMENT</u>	<u>DATE</u>	<u>SAMPLE NO.</u>
HPN	11-30-94	ALL SAMPLES

Action:

- o results $\geq$ CRQL for the compound are flagged as estimated (J)

CONTINUING CALIBRATION

<u>INSTRUMENT</u>	<u>DATE/TIME</u>	<u>COMPOUND</u>	<u>%D</u>	<u>RRF</u>
HPN	01-27-95/15:28	methylene chloride	30	
		2-hexanone	26	
		1,1,2,2-tetrachloroethane	29	
	01-28-95/09:40	methylene chloride	30	

Associated samples:

<u>INSTRUMENT</u>	<u>DATE/TIME</u>	<u>SAMPLE NO.</u>	
HPN	01-27-95/15:28	VBLKN51	TRIP BL
		FIELD	MW14B
		MW13B	MW2S
		MW12B	MW10B
		MWESI3	MW7I
		MW6S	
	01-28-95/09:40	VBLKN52	MW10BDL
		MWESI3DL	MW6SDL

Action:

- o results $\geq$ CRQL for the compound are flagged as estimated (J)

TENTATIVELY IDENTIFIED COMPOUNDS:

TICs identified as "unknown siloxanes" are most likely a laboratory artifact (column degradation). The TICs "unknown naphthalene isomer" was identified in the Trip Blank associated with this SDG. These have been deleted from Form IE by the reviewer to indicate they are not sample constituents.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

Compounds which exceeded the calibration range were flagged "E" by the laboratory, and the samples were diluted. The diluted results for these compounds were inserted onto the original analysis Form 1, and the remainder of the diluted sample was deleted.

Sincerely,
ECCI

A handwritten signature in cursive script, appearing to read "Stephen A. Turner".

Stephen A. Turner
Director of Environmental
Science and Policy

enclosures

Table I. Validation Action Summary

<u>Sample No.</u>	<u>VOA</u>
FIELDD	A1,J5
MW10B	A1,J5,R7
MW12B	A1,J5
MW13B	A1,J5,R7
MW14B	A1,J5,R7
MW2S	
MW6S	A1,J5
MW7I	A1,J5,R7
MWESI3	A1,J5
TRIP BL	J5
VBLKN51	J5
VBLKN52	J5

If the field is blank, no qualifiers were necessary.

- A1 - change positive values for methylene chloride to revised detection limit due to blank contamination
- J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations
- JJ2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries
- J3 - estimate positive values (J) for () due to non-compliant matrix spike recoveries
- J4 - estimate positive values (J) for () due to calibration not meeting minimum RF criteria
- J5 - estimate positive values (J) for methylene chloride due to non-compliant calibration stability
- J6 - estimate positive values (J) for compounds assigned for quantitation with () due to non-compliant internal standard stability
- J7 - estimate positive values (J) due to non-compliant field duplicate precision
- R1 - reject detection limit values (UR) due to holding time exceedences

- R2 - reject detection limit values (UR) due to low surrogate recoveries
- R3 - reject detection limit values (UR) for () due to low matrix spike recoveries
- R4 - reject detection limit values (UR) for () due to calibration not meeting minimum RF criteria
- R5 - reject detection limit values (UR) for compounds assigned for quantitation with () due to extreme variations in the internal standard stability
- R7 - TIC's identified in associated method blank or as a laboratory artifact results flagged as unusable (R)

CLIENT: Malcolm Pirnie
CASE NO. 22994

SDG NO. MRC1

SITE: Me. C Cleaners
ANALYTICAL FRACTION: Volat

[illegible]

COMMENTS:

$$\text{-HOLD TIME COLLECT} = \text{DATE COLLECTED MINUS DATE ANALYZED}$$

HOLD TIME RECEIPT = DATE RECEIVED MINUS DATE ANALYZED

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.
ORGANICS
COMPLETENESS LOG

SITE: MRC CLEANERS
CASE # 22994

CLIENT: Malcolm Pirnie
SDG # MRCI

S A M P L E #	FIELD												1A	1E	2A	2B	3A	3B	4A	5A	6A	7A	8A
	FIELD	MW10B	MW12B	MW13B	MW14B	MW25	MW65	MW71	MWESI.3	TRIP BL	MW65DL	MW08DL	MWESI2DL										
1A	X	X	X	X	X	X	X	X	X	X	X	X	X										
1E	X	X	X	X	X	X	X	X	X	X	X	X	X										
2A	X	X	X	X	X	X	X	X	X	X	X	X	X										
2B																							
3A	X	X	X	X	X	X	X	X	X	X	X	X	X										
3B																							
4A	X	X	X	X	X	X	X	X	X	X	X	X	X										
5A	X	X	X	X	X	X	X	X	X	X	X	X	X										
6A	X	X	X	X	X	X	X	X	X	X	X	X	X										
7A	X	X	X	X	X	X	X	X	X	X	X	X	X										
8A	X	X	X	X	X	X	X	X	X	X	X	X	X										

1B																							
1C																							
1F																							
2C																							
2D																							
3C																							
3D																							
4B																							
5B																							
6B																							
6C																							
7B																							
7C																							
8B																							
8C																							

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6G																							
7D																							
7E																							
8D																							
8E																							
9A																							
9B																							
10A																							
10B																							

- ☒ Quant Report
- ☒ MASS SPECS
- ☒ TIC Compounds
- ☒ Laboratory Blank (Form 1's)
- ☒ MS/MSD (Forms 1's)
- ☒ N.A. Total Solids Log (if applicable)
- ☒ Injection
- ☒ Chain of Custody
- ☒ Case Narrative

TELEPHONE LOG

CLIENT: Malcolm Pirnie DATE: 3-13-95 TIME: 12:45 A.M.
PROJECT: MRC Cleaners TELEPHONE NO: 828-1300 (716)
CLIENT CONTACT: Robert O'Laskey PACKAGE RECEIVED DATE: 3-7-95
ECCI CONTACT: P. Wallin

SAMPLE ID's IDENTIFIED BY CLIENT FOR LETTER FOR DATA MANAGEMENT:

FIELD DUPLICATES: Need to verify which sample FIELD is associated with. SDG# MRC1 CASE: 22994

FIELD ⇒ MWTF SAG 03/5/95
per R. O'Laskey

FIELD BLANKS AND ASSOCIATED SAMPLES:

ADDITIONAL COMMENTS: Also need the sampling date for FIELD not shown on CEC.

Use date shipped SAG 03/5/95
per R. O'Laskey

ECCI

LETTER OF TRANSMITTAL

To: Echem Inc
#32 Route 35
Sebago Common
Windham, ME 04062
Attention: Georgia Wallin

Date: 3-6-95

Re: Mr C Cleaners

We are sending you ☒ Enclosed ☐ Under separate cover via ☐ Mail ☐ Messenger, the following items:

☐ shop drawings ☐ prints ☐ data sheets ☐ _____

☐ specifications ☐ sketches ☐ brochures ☐ _____

Our action relative to items submitted for approval has been noted on the drawings.

COPIES	PREPARED BY	REFERENCE NO.	DESCRIPTION
			Nytest analytical data reports for the Mr C. Cleaners NYS Superfund Site - Data Validation requested.



THESE ARE TRANSMITTED AS CHECKED BELOW:

☐ As requested	☐ Approved	☐ Resubmit _____ copies for approval
☐ For your use	☐ Approved as Corrected	☐ Submit _____ copies for distribution
☐ For review & comment	☐ Revise and Resubmit	☐ Return _____ corrected Prints
☐ For your information	☐ Not Approved	☐ _____

Remarks: I left one-half of the data out of the boxed shipment, which you should receive by UPS with this package. This is the remainder of the Nytest data.

Very truly yours
MALCOLM PIRNIE, INC.

by

Copies to: _____



March 6, 1995

Ms. Georgia L. Wallin
Echem, Inc.
P.O. Box 1510
Windham, Maine 04062

Re: New York State Superfund Stand-by Contract, Work Assignment No. D002852-7.1
Mr. C Cleaners RI, Data Validation Services

Dear Ms. Wallin:

This letter is to inform you that you are authorized to proceed with the validation of attached analytical data packages from NYTEST Environmental for the above referenced project.

Should there be any questions regarding laboratory activities during the validation process, I encourage you to contact Mr. Joe Dockery at Nytest. However, please keep me informed of any significant issues related to data quality as they arise.

Once you have had the opportunity to review the scope of the data packages, I would appreciate an estimate of your completion date.

If you have any questions, please call me.

Very truly yours,

MALCOLM PIRNIE, INC.

A handwritten signature in cursive script that reads "Robert O'Laskey".

Robert O'Laskey
Senior Project Hydrogeologist

cc: Anne Marie McManus

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

Home office:

#32 Suite 7, Route 35
Sebago Commons
P.O. Box 1510
Windham, Maine 04062
Tel: (207) 892-0002
FAX (207) 892-7499



Branch Office:

1074 Sulfur Springs Road
Owego, New York 13827
Tel: (607) 687-3998
FAX (607) 687-4085

16 March 1995

Mr. Robert O'Laskey
Malcolm Pirnie
S3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219-0138

Re: Mr. C. Cleaners
Laboratory: Nytest Environmental Inc.
Case No: 23010/23028
SDG No: MRC2

Volatiles:	FLD DUP	MW11B	MW11	MW1S
(Method 91-1)	MW3S	MW4D	MW4I	MW4S
	MW5I	MW5S	MW8S	MW9S
	MWESI4	MWESI5	MWESI6	TRIP BL
	TRIP BLK			

Dear Mr. O'Laskey:

Validation was performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - system monitoring compound recovery
- matrix spike/matrix spike duplicate/matrix spike blank
- blanks
- * - GC/MS tuning
- calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- tentatively identified compounds

- * - system performance
- compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

Table I summarizes the validation actions, which were in accordance with USEPA Region II CLP Organics Data Review and Preliminary Review, March 1990, SOP No. HW-6, Revision #7 (SOP), and the NYSDEC Analytical Services Protocol, September 1989, 12/91 revisions (ASP), as detailed below.

Also attached are the:

- o Data packages, as received,
- o Form 1 results, with validation actions added in red ink,
- o data validation log,
- o telephone log,
- o completeness log and
- o sample preparation and analysis summaries.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE/MATRIX SPIKE BLANK:

Matrix spike recoveries which did not meet the criteria specified in the ASP (Vol. 8, E - 59) are summarized below:

<u>SAMPLE</u>	RECOVERY (%)				
	<u>DCE</u>	<u>TCE</u>	<u>BENZ</u>	<u>TOL</u>	<u>CHLB</u>
MW5I		138	142	140	138

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent difference (RPD) not within the criteria specified in the ASP (Vol. 8, E - 59) are tabulated below:

<u>SAMPLE</u>	RPD (%)				
	<u>DCE</u>	<u>TCE</u>	<u>BENZ</u>	<u>TOL</u>	<u>CHLB</u>
MW5I	28	28	29	28	28

Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels calculated in accordance with the USEPA Region II SOP are tabulated below:

<u>BLANK ID.</u>	<u>COMPOUND</u>	<u>CONCENTRATION</u>	<u>ACTION LEVEL</u>
VBLKM54	methylene chloride	5	50
VBLKP61	methylene chloride	17	170
	acetone	19	190
TRIP BL	methylene chloride	5	50
TRIP BLK	methylene chloride	1	10

*Method blank levels above the upper limits established by the ASP (Vol. 8, E - 52).

Associated samples with positive values reported below the action level are:

<u>METHOD BLANK ID.</u>	<u>ASSOCIATED SAMPLES</u>	
VBLKM54	MWESI4	MWESI5
	MW5I	MW8SDL
	MW4I	MW4D
	MW3S	MW1S
	MW1I	FLD DUP
	MWESI6	

<u>TRIP BLANK ID.</u>	<u>ASSOCIATED SAMPLES</u>	
TRIP BL	MW5I	MW8SDL
TRIP BLK	FLD DUP	MW1I
	MW1S	MW3S
	MW4D	MWESI4
	MWESI5	

Action:

- o associated sample results <CRQL (flagged J) are changed to CRQL (U)
- o associated sample results $\geq$ CRQL and <action level (flagged B) are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

CALIBRATION:

Compounds exceeding the calibration linearity, sensitivity and stability criteria specified in the ASP (Vol. 8, E - 47-50), or the SOP maxima for all compounds for initial calibration of 30% RSD, 0.05 Avg. RRF and continuing calibration of 25% D, 0.05 RRF are tabulated below.

INITIAL CALIBRATION

<u>INSTRUMENT</u>	<u>DATE</u>	<u>COMPOUND</u>	<u>%RSD</u>	<u>AVG. RRF</u>
HPP	12-29-94	chloroethane	31	
		acetone	34	

Associated samples:

<u>INSTRUMENT</u>	<u>DATE</u>	<u>SAMPLE NO.</u>	
HPP	12-29-94	VLKPK61	TRIP BLK
		MW11B	MW9S
		MW8S	MW5S

Action:

- o results $\geq$ CRQL for the compound are flagged as estimated (J)

CONTINUING CALIBRATION

<u>INSTRUMENT</u>	<u>DATE/TIME</u>	<u>COMPOUND</u>	<u>%D</u>	<u>RRF</u>
HPM	02-03-95/08:45	chloromethane	70	
HPP	02-01-95/08:20	acetone	49	
		2-butanone	58	

Associated samples:

<u>INSTRUMENT</u>	<u>DATE/TIME</u>	<u>SAMPLE NO.</u>	
HPM	02-03-95/08:45	VLKPM54	MW5I
		MW8SDL	TRIP BL
		MWESI4	MW1I
		MW1S	MW4D
		MW4I	FLD DUP
		MW3S	MWESI6
		MWESI5	MW4S
HPP	02-01-95/08:20	VLKPK61	TRIP BLK
		MW11B	MW9S
		MW8S	MW5S

Action:

- o results $\geq$ CRQL for the compound are flagged as estimated (J)
- o for %D >50 and $\leq$ 90; detection limit values for the compound (CRQL U) are flagged as estimated (J)

TENTATIVELY IDENTIFIED COMPOUNDS:

TICs identified as "unknown siloxanes" are most likely a laboratory artifact (column degradation). These have been deleted from Form 1E by the reviewer to indicate they are not sample constituents.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

Compounds which exceeded the calibration range were flagged "E" by the laboratory, and the samples were diluted. The diluted results for these compounds were inserted onto the original analysis Form 1, and the remainder of the diluted sample was deleted.

Sincerely,
ECCI



Stephen A. Turner
Director of Environmental
Science and Policy

enclosures

Mr. C. Cleaners
Case No. 23010/23028
SDG No. MRC2

Table I. Validation Action Summary

<u>Sample No.</u>	<u>VOA</u>
FLD DUP	A1,J5B,R7
MW11B	J5A,R7
MW1I	A1,J5B,R7
MW1S	A1,J5B
MW3S	A1,J5B,R7
MW4D	A1,J5B,R7
MW4I	A1,J5B
MW4S	J5B,R7
MW5I	A1,J5B
MW5S	J5A,R7
MW8S	J5A,R7
MW9S	J5A,R7
MWESI4	A1,J5B
MWESI5	A1,J5B
MWESI6	A1,J5B
TRIP BL	J5B
TRIP BLK	J5A
VLKMP61	J5,J5A
VLKMM54	J5B

If the field is blank, no qualifiers were necessary.

- A1 - change positive values for methylene chloride to revised detection limit due to blank contamination
- J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations
- J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries
- J3 - estimate positive values (J) for () due to non-compliant matrix spike recoveries
- J4 - estimate positive values (J) for () due to calibration not meeting minimum RF criteria
- J5 - estimate positive values (J) for acetone due to non-compliant calibration stability

- J5A - estimate positive values (J) and detection limit value (UJ) for 2-butanone due to non-compliant calibration stability
- J5B - estimate positive values (J) and detection limit value (UJ) for chloromethane due to non-compliant calibration stability
- J6 - estimate positive values (J) for compounds assigned for quantitation with due to non-compliant internal standard stability
- J7 - estimate positive values (J) due to non-compliant field duplicate precision
- R1 - reject detection limit values (UR) due to holding time exceedences
- R2 - reject detection limit values (UR) due to low surrogate recoveries
- R3 - reject detection limit values (UR) for () due to low matrix spike recoveries
- R4 - reject detection limit values (UR) for () due to calibration not meeting minimum RF criteria
- R5 - reject detection limit values (UR) for compounds assigned for quantitation with due to extreme variations in the internal standard stability
- R7 - TIC's identified in associated method blank or as a laboratory results flagged as unusable (R)

TELEPHONE LOG

CLIENT: Malcolm Pirnie
PROJECT: MRC Cleaners
CLIENT CONTACT: Robert O'Laskey
ECCI CONTACT: P. Wallin

DATE: 3-13-95
TELEPHONE NO: 828-1300 (716)
PACKAGE RECEIVED DATE: 3-7-95

TIME: 2:45 p.m.

SAMPLE ID's IDENTIFIED BY CLIENT FOR LETTER FOR DATA MANAGEMENT:

FIELD DUPLICATES: Need to verify which sample FLDDUP is associated with. SDG# MRC2 CASE: 23010

FLDDUP $\Rightarrow$ MW4D

per R. O'Laskey

Scr 03/595

FIELD BLANKS AND ASSOCIATED SAMPLES:

ADDITIONAL COMMENTS: Also need the sampling date for FLDDUP - Not shown on COC.

Use shipped date

Scr 03/595

per R. O'Laskey

ECCI

CLIENT: Malcolm Pirnie
CASE NO. 23010/23028

SDG NO. MRC 2

ANALYTICAL FRACTION: Volatiles

COMMENTS:

$$- \text{FOLD TIME COLLECT} = \text{DATE COLLECTED MINUS DATE ANALYZED}$$
$$\text{FOLD TIME RECEIPT} = \text{DATE RECEIVED MINUS DATE ANALYZED}$$

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.
ORGANICS
COMPLETENESS LOG

SITE: MR C CLEANERS
CASE # 23010/23028

CLIENT: Malcolm Jirnic
SDG # MRC2

SAMPLE #	FLDDUP	MW11B	MW11I	MW15	MW35	MW4D	MW4I	MW4S	MW5I	MW5S	MW8S	MW9S	MWEST4	MWEST5	MWEST6	TRIPBL	TRIPBLK	MW8SDL
1A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1E	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2B																		
3A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3B																		
4A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1B																		
1C																		
1F																		
2C																		
2D																		
3C																		
3D																		
4B																		
5B																		
6B																		
6C																		
7B																		
7C																		
8B																		
8C																		

1D																		
2E																		
2F																		
3E																		
3F																		
4C																		
6D																		
6E																		
6F																		
6G																		
7D																		
7E																		
8D																		
8E																		
9A																		
9B																		
10A																		
10B																		

- ☒ Quant Report
- ☒ MASS SPECS
- ☒ TIC Compounds
- ☒ Laboratory Blank (Form 1's)
- ☒ MS/MSD (Forms 1's)
- ☒ Total Solids Log (if applicable)
- ☒ Injection
- ☒ Chain of Custody
- ☒ Case Narrative

CLIENT: Malcolm Perie

SITE: Mr. C. Cleaners

[illegible]

COMMENTS: SAS for this project include:

standard = 30 days
fast = 14 days

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. R I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-15
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (Inches): 2
 Screened Interval (ft BGS): _____
 Static Water Level Below TOR (ft.): 9.45
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 13:42
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 19.20
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILEY
 Well Volumes Purged (xR²/231): 23
 Standing Volume (GAL.): 1.7
 Volume Purged (GAL.): 15
 Is purging equipment dedicated to sample location?
 Yes _____ No _____
 Field Personnel: J. PATRICKSON / J. HILTON

TIME: Start: 14:14 Finish: 14:29
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILEY
 Present Water Level (ft.): 9.46
 Depth of Sample (ft.): 9.46
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 15:03 Finish: 15:07
 Sampler: J.P. / J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SUNNY
 No _____

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 9.2 pH: 7.45
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 2220
 Other: EH: +82

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I

PROJECT NO.: 0266 - 314 - CO2

STAFF: JTP / J. HILTON

DATE: 4/4/94

WELL NO.: MPI-1S

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>19.26</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.45</u>
4	VOLUME OF WATER IN CASING (gal.)	

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.7} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	5.0	10.0	15.0						
PH	7.58	7.35	7.40	7.36						
CONDUCTIVITY	1422	2330	1973	2210						
TEMPERATURE	8.2	8.9	9.7	9.3						
APPEARANCE	~~clear~~	~~milky~~	~~clot~~	~~clot~~						
TURBIDITY	>900	>100	>100	7100						
COMMENTS:	En	+94	+92	+100	+105					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I.
 CLIENT: NYSDOC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI - I
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4-6-94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 7.64
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 0405
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 41.00
 Datum Ground Surface: _____

PURGING DATA: DATE: 4-6-94
 Method: Dynapac Bailer
 Well Volumes Purged (ft³ H₂O): 23
 Standing Volume (GAL.): 5.7
 Volume Purged (GAL.): 18.3
 Is purging equipment dedicated to sample location?
 Yes _____ No X
 Field Personnel: RLJ/JP

TIME: Start: 7:17 Finish: 8:17
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ✓
 Was well purged below sand pack? Yes _____ No ✓

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/6/94
 Method: 1" DSDS Bailer
 Present Water Level (ft.): 11.65
 Depth of Sample (ft.): 11.65
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:36 Finish: 10:39
 Sampler: STD/RSD
 Air Temperature (F°): 40°
 Weather Conditions: RAIN
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.8 pH: 7.35
 Turbidity (NTU): 9

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1531
 Other: EH: +151

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C" CLEANERS R.I

PROJECT NO.: 0266 - 314 - CO2

STAFF: JR RLD

DATE: 4/6/94

WELL NO.: MPI - 1I

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>41.00</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>7.64</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.7} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	6.0	12.0	18.0						
PH	7.02	7.14	7.24	7.30						
CONDUCTIVITY	1402	1422	1508	1488						
TEMPERATURE	7.1	10.0	9.2	10.0						
APPEARANCE TURBIDITY	~~CLEAR~~ 17	~~CLEAR~~ 48	~~CLEAR~~ 28	~~CLEAR~~ 11						
COMMENTS:	Eh +138 +142 +145 +147									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-2
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.91
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 15:12
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.) 17.75
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (xR²H/231): >3
 Standing Volume (GAL.) 1.2
 Volume Purged (GAL.) 6.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 15:18 Finish: 15:28
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was Well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 10.92
 Depth of Sample (ft.): 10.92
 Is sampling equipment dedicated to sample locations: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 15:33 Finish: 15:36
 Sampler: JTP / J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SYNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 10.2 pH 7.38
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1522
 Other: EH: +101

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: C266-314-CO2

STAFF: JTP J. HILTON

DATE: 4/4/94

WELL NO.: MP1-2

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.75
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.91
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.0						
PH	7.44	7.44	7.38	7.32						
CONDUCTIVITY	1571	1560	1543	1546						
TEMPERATURE	9.7	10.0	10.2	10.1						
APPEARANCE TURBIDITY	CLEAR 51	CLEAR 99	CLEAR >100	CLEAR >100						
COMMENTS:	EH +91 +88 +90 +94									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS, R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-3
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.61
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 13:08
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 18.06
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (rr²H/231): 3
 Standing Volume (GAL.): 1.4
 Volume Purged (GAL.): 7.5
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP J. HILTON

TIME: Start: 13:15 Finish: 13:24
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ✓
 Was Well purged below sand pack? Yes _____ No ✓

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 9.61
 Depth of Sample (ft.): 9.61
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 14:48 Finish: 14:51
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55
 Weather Conditions: SUNNY
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.4 pH 7.29
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (umhos/cm): 1657
 Other: EH: +55

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS RI

PROJECT NO.: 0266-314-002

STAFF: JTP / J. HILTON

DATE: 4/4/99

WELL NO.: MPI-3

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 18.06
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.61
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.4} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.5	5.0	7.5						
pH	7.42	7.25	7.28	7.23						
CONDUCTIVITY	1626	1643	1668	1651						
TEMPERATURE	8.6	9.2	9.8	9.6						
APPEARANCE	~~CLO~~	~~CLO~~	~~CLO~~	~~CLO~~						
TURBIDITY	7100	5100	5100	5100						
COMMENTS:	EX	+52	+58	+57	+56					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS, R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-45
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.12
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:20
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 20.83
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (xR²H/ZS1): =3
 Standing Volume (GAL.): 2.0
 Volume Purged (GAL.): 5.5
 Is purging equipment dedicated to sample location?
 Yes _____ No _____
 Field Personnel: JTP, SHILTON

TIME: Start: 11:30 Finish: 11:37
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 9.13
 Depth of Sample (ft.): 9.13
 Is sampling equipment dedicated to sample location: Yes _____ No ☒
 Source and type of water used in field for QC purposes: _____

TIME: Start: 12:28 Finish: 12:32
 Sampler: JTP, SHILTON
 Air Temperature (F°): 54°
 Weather Conditions: SUNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.2 pH: 7.46
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1933
 Other: EH: +82

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: 0266 - 314 - CC2

STAFF: JTP J HILTON

DATE: 4/4/94

WELL NO.: MP I - 45

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 20.83
- 2 CASING INTERNAL DIAMETER (in.) 2'
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.12
- 4 VOLUME OF WATER IN CASING (gal.)

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{2.0} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.5	4.0	5.5						
pH	7.36	7.45	7.45	7.46						
CONDUCTIVITY	2210	2260	2150	1937						
TEMPERATURE	8.0	8.7	9.3	9.8						
APPEARANCE TURBIDITY	~~MILKY~~ >100	~~CLOY~~ >100	~~CLOY~~ >100	~~MILKY~~ >100						

COMMENTS:

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-4I
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (Inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.11
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:21
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 42.11
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (rr²H/231): 3
 Standing Volume (GAL.) 5.4
 Volume Purged (GAL.) 17
 Is purging equipment dedicated to sample location?
 Yes _____ No _____
 Field Personnel: JTP, J HILTON

TIME: Start: 11:38 Finish: 12:10
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was Well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 10.38
 Depth of Sample (ft.): 10.38
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 12:15 Finish: 12:21
 Sampler: JTP, J HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SUNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 11.0 pH 7.45
 Turbidity (NTU): 16

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1619
 Other: EH: +81

REMARKS: *MS/MSD TAKEN

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R.I

PROJECT NO.: C266-314-CC2

STAFF: JTP / J. HILTON

DATE: 4/4/94

WELL NO.: MP1-4I

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 42.11
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.11
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.4} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	5.5	11	17						
pH	7.62	7.45	7.47	7.46						
CONDUCTIVITY	1642	1694	1698	1639						
TEMPERATURE	9.2	11.1	11.3	11.0						
APPEARANCE	~~CLEAR~~	~~MILKY~~	~~CLEAR~~	~~CLEAR~~						
TURBIDITY	6	5.00	60	21						
COMMENTS:	EH NOT OBTAINED FOR THESE MEASUREMENTS +111 +106									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-55
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/6/99
 Casing Diameter (inches): 2
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.55
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:17
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 18.10
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/6/99
 Method: POLY DISPOS BAILER
 Well Volumes Purged (xR²H/231): >3
 Standing Volume (GAL.): 1.3
 Volume Purged (GAL.): 6.1
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: J-D R. Dubisz

TIME: Start: 11:28 Finish: 11:50
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No _____
 Was well purged below sand pack? Yes _____ No _____

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/6/99
 Method: DISPOS BAILER
 Present Water Level (ft.): 10.55
 Depth of Sample (ft.): 10.55
 Is sampling equipment dedicated to sample location: Yes _____ No ✓
 Source and type of water used in field for QC purposes: _____

TIME: Start: 12:18 Finish: 12:43
 Sampler: J-1 RLD
 Air Temperature (F°): 40°
 Weather Conditions: RAIN
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 48/1.6 pH: 7.58/7.37
 Turbidity (NTU): 35/45

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1654/16
 Other: Eh: +5/+5

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I

PROJECT NO.: 0266-314-002

STAFF: JTP R. DuBis

DATE: 4/6/94

WELL NO.: MPI-55

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 18.10
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.55
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{13} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2.0	4.0	6.0						
pH	7.26	7.17	7.12	7.21						
CONDUCTIVITY	1606	1591	1586	1632						
TEMPERATURE	8.0	7.9	8.0	7.7						
APPEARANCE TURBIDITY	CLEAR 34	CLEAR 52	CLEAR 56	CLEAR 90						
COMMENTS:	En	+71	+36	+37	+6					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. R I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-5E
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/6/94
 Casing Diameter (inches): 2
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.65
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:10
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 40.75
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/6/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (RTM/Z31): 3
 Standing Volume (GAL.): 5
 Volume Purged (GAL.): 15
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP R DUBISZ

TIME: Start: 1115 Finish: 1200
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes ☒ No _____
 Was well purged below sand pack? Yes ☒ No _____

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/6/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 10.69
 Depth of Sample (ft.): 10.69
 Is sampling equipment dedicated to sample locations: Yes _____ No ☒
 Source and type of water used in field for QC purposes: _____

TIME: Start: 1238 Finish: 1210
 Sampler: JTP RLD
 Air Temperature (F°): 40°
 Weather Conditions: RAIN
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 9.6 pH: 7.44
 Turbidity (NTU): 6

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1598
 Other: EH: +49

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: C266-314-CC2

STAFF: JTP RLD

DATE: 4/6/94

WELL NO.: MPI-5I

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>40.75</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>10.65</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	5.0	10.0	15.0						
PH	7.38	7.34	7.29	7.28						
CONDUCTIVITY	1422	1407	1550	1517						
TEMPERATURE	7.8	9.7	9.7	9.7						
APPEARANCE TURBIDITY	6 CLEAR	11 CLEAR	17 CLEAR	7 CLEAR						
COMMENTS:	<u>Eh</u> <u>+46</u> <u>+80</u> <u>+39</u> <u>+20</u>									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-6
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.06
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 12:42
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 22.25
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILEN
 Well Volumes Purged (xR²H/231): 3
 Standing Volume (GAL.): 21
 Volume Purged (GAL.): 7.5
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP / J HILTON

TIME: Start: 12:46 Finish: 12:57
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ✓
 Was well purged below sand pack? Yes _____ No ✓

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILEN
 Present Water Level (ft.): 10.05
 Depth of Sample (ft.): 10.05
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 14:40 Finish: 14:43
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SUNNY
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.5 pH 7.21
 Turbidity (NTU): 98

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1691
 Other: Eh: +53

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I

PROJECT NO.: 0266-314-CC2

STAFF: STP / J HILTON

DATE: 4/4/94

WELL NO.: MPI-6

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>22.35</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>10.06</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{2.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.5	5.0	7.5						
pH	7.26	7.16	7.15	7.18						
CONDUCTIVITY	1687	1698	1689	1682						
TEMPERATURE	8.4	8.3	8.6	8.7						
APPEARANCE	CLEAR	MILKY	MILKY	MILKY						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	Eh	+25	+21	+16	+18					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: MPI-7E
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/7/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.90
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 8:58
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 39.50
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/7/94
 Method: Poly Dispos. Bailer
 Well Volumes Purged ($\text{ft}^3/\text{min}/231$): 30
 Standing Volume (GAL.) 5.0
 Volume Purged (GAL.) 150
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP RLD

TIME: Start: 9:05 Finish: 9:58
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/7/94
 Method: Poly Dispos. Bailer
 Present Water Level (ft.): 9.95
 Depth of Sample (ft.): 9.95
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 1010 Finish: 1042
 Sampler: JTP RLD
 Air Temperature (F°): 3-
 Weather Conditions: pc cloudy
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H_2SO_4 _____ HNO_3 _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 7.8/9.5 pH 7.93/8.08
 Turbidity (NTU): 6/4

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity ($\mu\text{mhos/cm}$): 1805/1834
 Other: EH: +78/+58

REMARKS: BLIND DUPLICATE + MS/MSD TAKEN

For BVA's, Pest, Metals

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: C266 - 314 - CC2

STAFF: JTB RLD

DATE: 4/1/94

WELL NO.: MPI - 7I

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 39.50
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.90
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{5.0} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	5.0	10.0	15.0						
PH	7.64	7.58	7.57	7.76						
CONDUCTIVITY	1867	1887	1833	1838						
TEMPERATURE	6.7	8.4	3.4	9.3						
APPEARANCE TURBIDITY	~~CLEAR~~ 9	~~CLEAR~~ 24	~~CLEAR~~ 8	~~CLEAR~~ 7						
COMMENTS:	Eh +103/+97/+92/+90									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-8
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (Inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.03
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 10:13
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.) 17.76
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (ft³/231): 3
 Standing Volume (GAL.) 1.5
 Volume Purged (GAL.) 5.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP, JH

TIME: Start: 10:20 Finish: 10:31
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOSABLE BAILER
 Present Water Level (ft.): 9.46
 Depth of Sample (ft.): 9.46
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:58 Finish: 11:04
 Sampler: JTP, JH, L. RAN
 Air Temperature (F°): 50°
 Weather Conditions: SYNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment _____
 Temperature (°C): 7.9 pH 7.27
 Turbidity (NTU): 12

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1915
 Other: EH: +148

REMARKS: * BLIND DUP TAKEN

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R.I

PROJECT NO.: C266 - 314 - CC2

STAFF: JTP, SHILTON

DATE: 4/4/99

WELL NO.: MPI - 8

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>17.76</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.03</u>
4	VOLUME OF WATER IN CASING (gal.)	

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.5} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	1.5	3	4.5						
PH	7.11	7.00	7.01	6.98						
CONDUCTIVITY	1911	1743	1762	1784						
TEMPERATURE	7.7	7.8	7.9	8.1						
APPEARANCE TURBIDITY	~~CLEAR~~ 9	~~CLEAR~~ 98	~~CLEAR~~ 76	~~CLEAR~~ 99						

COMMENTS:

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: MPI-9
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.28
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 10:33
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.) 17.84
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILER
 Well Volumes Purged (xR²H/231): 3
 Standing Volume (GAL.) 1.5
 Volume Purged (GAL.) 5
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP, HILTON

TIME: Start: 10:37 Finish: 10:48
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 9.28
 Depth of Sample (ft.): 9.28
 Is sampling equipment dedicated to sample location: Yes _____ No ☒
 Source and type of water used in field for QC purposes: _____

TIME: Start: 11:08 Finish: 11:13
 Sampler: JTP, J. HILTON
 Air Temperature (F°): 51°
 Weather Conditions: SUNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: _____ Turbid: ☒
 Contains Sediment: _____
 Temperature (°C): 10.2 pH: 7.01
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (umhos/cm): 240
 Other: EH +141

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: 0266-314-C02

STAFF: JTP, J HILTON

DATE: 4/4/94

WELL NO.: MPI-9

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.84
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.28
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.5} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	25	40	55						
PH	7.00	6.91	6.95	7.02						
CONDUCTIVITY	2120	2110	2100	2100						
TEMPERATURE	9.4	10.5	10.6	10.6						
APPEARANCE TURBIDITY	~~CLEAR~~ 4	~~CLOU~~ >100	~~CLOU~~ >100	~~CLOU~~ >100						

COMMENTS:

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. C. CLEANERS R.I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: ESI-1
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.53
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 14:59
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 17.72
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (xR²H/Z31): 3
 Standing Volume (GAL.): 1.2
 Volume Purged (GAL.): 6.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 15:08 Finish: 15:16
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 10.53
 Depth of Sample (ft.): 10.53
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 15:27 Finish: 15:28
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SUN / CLOS.
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: _____ Turbid: ☒
 Contains Sediment: _____
 Temperature (°C): 7.8 pH: 7.52
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1080
 Other: Eh: +78

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I.

PROJECT NO.: 0266-314-002

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: ESI-1

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 17.72
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 10.53
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)							
	INITIAL	2.0	4.0	6.0				
PH	7.47	7.50	7.54	7.45				
CONDUCTIVITY	1022	1060	1083	1047				
TEMPERATURE	10.0	9.6	10.0	10.5				
APPEARANCE TURBIDITY	CLOY >100	CLOY >100	CLOY >100	CLOY >100				
COMMENTS:	Eh	+30	+35	+52	+59			

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. RT.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: ESI-3
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/7/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.65
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 8:59
 Casing Material: PVC
 Screen Material: _____
 Bottom Depth (ft.): 16.70
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/7/94
 Method: Poly Dispos. Bailer
 Well Volumes Purged (xR²N/231): >3
 Standing Volume (GAL.): 1.1
 Volume Purged (GAL.): 5
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP RLD

TIME: Start: 9:08 Finish: 9:50
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was Well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/7/94
 Method: Poly Dispos. Bailer
 Present Water Level (ft.): 9.65
 Depth of Sample (ft.): 9.65
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:50 Finish: 11:05
 Sampler: JTP RLD
 Air Temperature (F°): 35°
 Weather Conditions: PT CLOUDY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: _____ Turbid: ☒
 Contains Sediment: ☒
 Temperature (°C): 9.2/10.0 pH 7.74/7.79
 Turbidity (NTU): >100 / >100

Color: LT BRN
 Odor: None Other: _____
 Specific Conductivity (µmhos/cm): 1884 / 1984
 Other: EH: +51 / +59

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I.

PROJECT NO.: 0266-314-002

STAFF: JTP RLD

DATE: 4/1/94

WELL NO.: ESI-3

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 16.70
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.65
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{11} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	1.5	3	5						
PH	7.31	7.23	7.35	7.29						
CONDUCTIVITY	878	1999	1920	1875						
TEMPERATURE	5.8	6.3	5.9	6.5						
APPEARANCE	CLAR	CLAR	CLAR	CLAR						
TURBIDITY	2.9	>100	>100	>100						
COMMENTS:	Eh	+108	+110	+107	+101					

WATER SAMPLING FIELD DATA SHEETS

26
35
61

PROJECT: MR. "C" CLEANERS. R.I.
CLIENT: NYS DEC
JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
LOCATION NO.: ESI-4
LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/6/94
Casing Diameter (inches): 2"
Screened Interval (ft BGS): _____
Static Water Level Below TDR (ft.): 7.49
Elevation Top of Well Risers: _____
Elevation Top of Screen: _____

TIME: 8:52
Casing Material: _____
Screen Material: _____
Bottom Depth (ft.) 14.61
Datum Ground Surface: _____

PURGING DATA: DATE: 4/6/94
Method: POLY DISPOS. BAILER
Well Volumes Purged (rr²H/231): _____
Standing Volume (GAL.) 1.2
Volume Purged (GAL.) 0
Is purging equipment dedicated to sample location?
Yes _____ No ☒
Field Personnel: STP / R. DUBISZ

TIME: Start: 9:08 Finish: 9:44
Pumping Rate (gal/min): _____
Was well purged dry? Yes _____ No ☒
Was Well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/6/94
Method: POLY DISPOS. BAILER
Present Water Level (ft.): 7.48
Depth of Sample (ft.): 7.48
Is sampling equipment dedicated to sample location: Yes _____
Source and type of water used in field for QC purposes: _____

TIME: Start: 10:43 Finish: 10:45
Sampler: STP R. DUBISZ
Air Temperature (F°): 40°
Weather Conditions: RAIN
No ☒

PRESERVATION DATA: DATE: _____
Filtered: Yes _____ No _____
Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
Appearance: Clear: ☒ Turbid: _____
Contains Sediment: _____
Temperature (°C): 5.9 pH 7.44
Turbidity (NTU): 61

Color: _____
Odor: NONE Other: _____
Specific Conductivity (umhos/cm): 3360
Other: EH: +139

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I.

PROJECT NO.: 0266-314-002

STAFF: JTP RLD

DATE: 4/6/94

WELL NO.: ESI-4

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 14.61
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 7.49
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.0						
PH	~~6.78~~	7.16	7.27	7.29						
CONDUCTIVITY	3140	3410	3210	3430						
TEMPERATURE	5.3	5.7	5.8	5.5						
APPEARANCE	~~CL07~~	~~CL07~~	~~CL07~~	~~CL07~~						
TURBIDITY	2.120	2.120	2.120	2.120						
COMMENTS:										
Eh	+128	+130	+133	+135						

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: ESI-5
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/6/94
 Casing Diameter (inches): _____
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 7.41
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 7:56
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 14.15
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/6/94
 Method: Poly Discs. Bailers
 Well Volumes Purged (xR²H/231): 22
 Standing Volume (GAL.): 1.2
 Volume Purged (GAL.): 6.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JP R. Davis

TIME: Start: 10:06 Finish: 10:21
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/6/94
 Method: Poly Discs. Bailers
 Present Water Level (ft.): 7.41
 Depth of Sample (ft.): 7.41
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:50 Finish: 10:53
 Sampler: JP R. Davis
 Air Temperature (F°): _____
 Weather Conditions: RAIN
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 6.3 pH 7.68
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 481
 Other: EH: +147

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I.

PROJECT NO.: 0266-314-002

STAFF: JTP / RLD

DATE: 4/6/99

WELL NO.: ESI-5

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>14.15</u>	1"	0.04
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>	2"	0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>7.41</u>	3"	0.38
4	VOLUME OF WATER IN CASING (gal.)		4"	0.66
			5"	1.04
			6"	1.50
			8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.0						
PH	7.86	7.75	7.76	7.73						
CONDUCTIVITY	534	503	486	497						
TEMPERATURE	6.2	5.3	5.2	5.8						
APPEARANCE TURBIDITY	~~100~~	~~100~~	~~100~~	~~100~~						
COMMENTS:	EH	+144	+143	+144						

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: ESI-6
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/4/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.78
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 13:30
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 16.65
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/4/94
 Method: PVC BAILEY
 Well Volumes Purged (xR²H/231): 23
 Standing Volume (GAL.): 1.2
 Volume Purged (GAL.): 15
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 13:36 Finish: 14:04
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/4/94
 Method: POLY DISPOS. BAILEY
 Present Water Level (ft.): 9.78
 Depth of Sample (ft.): 9.78
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 14:56 Finish: 14:58
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SYNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: ☒
 Contains Sediment: _____
 Temperature (°C): 10.7 pH: 7.60
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 2920
 Other: EH: +70

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I

PROJECT NO.: 0266-314-002

STAFF: JTP J. HILTON

DATE: 4/4/94

WELL NO.: ESI-6

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>16.65</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.78</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	5.0	10.0	15						
PH	7.34	7.26	7.31	7.27						
CONDUCTIVITY	3150	2970	2900	2830						
TEMPERATURE	11.6	11.4	11.2	11.3						
APPEARANCE	~~CLOY~~	~~CLOY~~	~~CLOY~~	~~CLOY~~						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	En	+76	+79	+82	+82					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I
 CLIENT: NYS DEC
 JOB NO.: 0206-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: AG-1
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.30
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 8:46
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.) 22.20
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (RT²/ZSI): 3
 Standing Volume (GAL.) 2.2
 Volume Purged (GAL.) 6.5
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP / J. HILTON

TIME: Start: 8:50 Finish: 9:07
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ✓
 Was well purged below sand pack? Yes _____ No ✓

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 9.30
 Depth of Sample (ft.): 9.30
 Is sampling equipment dedicated to sample location: Yes _____ No ✓
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:30 Finish: 10:39
 Sampler: JTP / J. HILTON
 Air Temperature (F°): 40°
 Weather Conditions: CLOUDY
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.3 pH 7.41
 Turbidity (NTU): 21

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 2130
 Other: Eh: +23

REMARKS: * BLIND DUPLICATE #2 TAKEN

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R I

PROJECT NO.: C266-314-C02

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: AG-1

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>22.20</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.30</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{2.2} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.5						
pH	7.42	7.14	7.17	7.13						
CONDUCTIVITY	2130	2140	2170	2180						
TEMPERATURE	7.6	8.7	8.8	9.0						
APPEARANCE	~~CLEAR~~	~~CLEAR~~	~~CLEAR~~	~~CLEAR~~						
TURBIDITY	52	42	28	19						
COMMENTS:	Eh +116 +118 +129 +131									

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I
 CLIENT: NYSDDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: AG-4
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 4"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 8.26
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:30
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 17.45
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: DISPOS. POLY BAILER
 Well Volumes Purged (xR²H/231): ~3
 Standing Volume (GAL.): 6.1
 Volume Purged (GAL.): 18.
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP J. HILTON

TIME: Start: 11:35 Finish: 12:33
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes ✓ No _____
 Was well purged below sand pack? Yes ✓ No _____

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 9.10
 Depth of Sample (ft.): 9.10
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 12:28 Finish: 13:30
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: PART SUNN
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 9.9 pH: 7.15
 Turbidity (NTU): 6

Color: _____
 Odor: PETROLEUM Other: _____
 Specific Conductivity (µmhos/cm): 3260
 Other: EH: -47

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R I

PROJECT NO.: C266-314-CC2

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: AG-4

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>17.45</u>
2	CASING INTERNAL DIAMETER (in.)	<u>4"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>8.26</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{6.1} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	6.0	12.0	18.0						
pH	7.13	7.10	7.24	7.14						
CONDUCTIVITY	5440	6620	4916	4170						
TEMPERATURE	8.0	9.1	9.9	10.0						
APPEARANCE	~~CLEAR~~	~~CLEAR~~	~~CLEAR~~	~~CLEAR~~						
TURBIDITY	14	12	21	29						
COMMENTS:										
	Eh	-46	-183	-126	-81					

• SLIGHT FUEL ODOOR

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: AG-5
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): _____
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 8.70
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:49
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 13.80
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (TR²H/231): 3
 Standing Volume (GAL.): 0.9
 Volume Purged (GAL.): 6.5
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 11:59 Finish: 12:19
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 8.71
 Depth of Sample (ft.): 8.71
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 12:45 Finish: 12:52
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: PART SUNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 8.2 pH: 7.06
 Turbidity (NTU): 45

Color: _____
 Odor: STRONG PETROLEUM Other: HEAVY SWEET
 Specific Conductivity (µmhos/cm): 1749
 Other: EH: -90

REMARKS: * MSA/MSD #2 TAKEN

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R I

PROJECT NO.: C266-314-CO2

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: AG-5

1 TOTAL CASING AND SCREEN LENGTH (ft.) 1380
 2 CASING INTERNAL DIAMETER (in.) 2"
 3 WATER LEVEL BELOW TOP OF CASING (ft.) 8.70
 4 VOLUME OF WATER IN CASING (gal.)

WELL I.D.

VOL.
GAL./FT.

1" 0.04
 2" 0.17
 3" 0.38
 4" 0.66
 5" 1.04
 6" 1.50
 8" 2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.9} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.5	6.5						
pH	7.06	7.09	7.02	7.10						
CONDUCTIVITY	1719	1791	1752	1770						
TEMPERATURE	8.6	7.7	7.9	7.8						
APPEARANCE TURBIDITY	CLEAR 24	CLEAR 58	CLEAR 64	CLEAR 61						
COMMENTS:	Eh <u>-116</u> <u>-104</u> <u>-108</u> <u>-102</u> • STRONG PETROLEUM ODOR • HEAVY SHEEN ON PURGE WATER									

WATER SAMPLING FIELD DATA SHEETS

45

PROJECT: MR. "C" CLEANERS R I
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: AG-6
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 8.57
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 11:36
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 13.81
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (RT²H/231): 3
 Standing Volume (GAL.): 0.9
 Volume Purged (GAL.): 3.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 12:35 Finish: 13:34
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes ☒ No _____
 Was well purged below sand pack? Yes ☒ No _____

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 8.93
 Depth of Sample (ft.): 8.93
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 2:36 Finish: 2:38
 Sampler: JTP J. HILTON
 Air Temperature (F°): 55°
 Weather Conditions: SUNNY
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: ☒
 Contains Sediment: _____
 Temperature (°C): 8.3 pH: 7.17
 Turbidity (NTU): 73

Color: _____
 Odor: STRONG FUEL Other: _____
 Specific Conductivity (µmhos/cm): 1293
 Other: EH: -36

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R.I

PROJECT NO.: C266-314-C02

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: AG-6

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 13.81
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 8.57
- 4 VOLUME OF WATER IN CASING (gal.)

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.9} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	1.0	2.0	3.0						
pH	7.14	7.13	7.19	7.28						
CONDUCTIVITY	1259	1235	1305	1327						
TEMPERATURE	8.6	8.6	8.8	7.8						
APPEARANCE	MILKY	CLEAR	MILKY	MILKY						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	Eh	-55	-63	-57	-71					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYSDDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: AG-7
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): _____
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 8.66
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 8:18
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 14.45
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Well Volumes Purged (xR²H/231): 3
 Standing Volume (GAL.): 1.0
 Volume Purged (GAL.): 4
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP / J. HILTON

TIME: Start: 8:21 Finish: 8:44
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILER
 Present Water Level (ft.): 8.68
 Depth of Sample (ft.): 8.68
 Is sampling equipment dedicated to sample location: Yes _____ No ☒
 Source and type of water used in field for QC purposes: _____

TIME: Start: 10:54 Finish: 10:57
 Sampler: JTP / J. Hilton
 Air Temperature (F°): 40°
 Weather Conditions: CL07
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 6.3 pH 12.61
 Turbidity (NTU): >100

Color: _____
 Odor: SLIGHT Other: _____
 Specific Conductivity (µmhos/cm): 2120
 Other: Eh: -122

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS RI

PROJECT NO.: C266-314-CC2

STAFF: JTP / J. HILTON

DATE: 4/5/94

WELL NO.: AG-7

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>14.45</u>	1"	0.04
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>	2"	0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>8.66</u>	3"	0.38
4	VOLUME OF WATER IN CASING (gal.)		4"	0.66
			5"	1.04
			6"	1.50
			8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{1.0} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	1.0	2.0	4.0						
pH	12.20	12.37	12.11	12.12						
CONDUCTIVITY	4430	4320	4280	4070						
TEMPERATURE	6.7	6.2	5.7	5.5						
APPEARANCE	CLOY	CLOY	CLOY	CLOY						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	Eh	-70	-81	-72	-64					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS. R.I.
 CLIENT: NYSDEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUND WATER GRAB
 LOCATION NO.: AG-8
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TOR (ft.): 9.95
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 9:09
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.) 14.54
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOSE. BAICER
 Well Volumes Purged (xR²H/ZSI): >3
 Standing Volume (GAL.) 0.8
 Volume Purged (GAL.) 6.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP J. HILTON

TIME: Start: 9:12 Finish: 9:30
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ✓
 Was well purged below sand pack? Yes _____ No ✓

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAICER
 Present Water Level (ft.): 9.96
 Depth of Sample (ft.): 9.96
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 11:05 Finish: 11:07
 Sampler: JTP / J. HILTON
 Air Temperature (F°): 45°
 Weather Conditions: CLOUDY
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment _____
 Temperature (°C): 7.9 pH: 7.66
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1126
 Other: Eh: +20

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. C CLEANERS R I

PROJECT NO.: C266 - 314 - C02

STAFF: JTP J. HILTON

DATE: 4/5/94

WELL NO.: AG-8

WELL I.D.

VOL.
GAL./FT.

- 1 TOTAL CASING AND SCREEN LENGTH (ft.) 14.54
- 2 CASING INTERNAL DIAMETER (in.) 2"
- 3 WATER LEVEL BELOW TOP OF CASING (ft.) 9.95
- 4 VOLUME OF WATER IN CASING (gal.)

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.8} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.0						
pH	7.43	7.34	7.44	7.40						
CONDUCTIVITY	1252	1131	1163	1150						
TEMPERATURE	7.1	7.2	7.3	7.4						
APPEARANCE	CLEAR	CLOY	CLOY	CLOY						
TURBIDITY	52	>100	>100	>100						
COMMENTS:	Eh	+129	+126	+128	+129					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R.I.
 CLIENT: NYS DEC
 JOB NO.: 0266-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: AG-9
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (Inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 9.97
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 9:38
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 14.44
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILEY
 Well Volumes Purged (xR²H/231): 3
 Standing Volume (GAL.) 0.8
 Volume Purged (GAL.) 6.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ☒
 Field Personnel: JTP J. HILTON

TIME: Start: 9:42 Finish: 10:00
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes _____ No ☒
 Was well purged below sand pack? Yes _____ No ☒

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILEY
 Present Water Level (ft.): 9.98
 Depth of Sample (ft.): 9.98
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 11:15 Finish: 11:17
 Sampler: JTP J. HILTON
 Air Temperature (F°): 50°
 Weather Conditions: PART SUNN
 No ☒

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ _____ HNO₃ _____ NaOH _____ Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ☒ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 7.7 pH 7.44
 Turbidity (NTU): >100

Color: _____
 Odor: NONE Other: _____
 Specific Conductivity (µmhos/cm): 1280
 Other: EH: +60

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: C266 - 314 - CC2

STAFF: STP J. HILTON

DATE: 4/5/94

WELL NO.: AG-9

WELL I.D.

VOL.
GAL./FT.

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>14.44</u>	1"	0.04
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>	2"	0.17
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>9.97</u>	3"	0.38
4	VOLUME OF WATER IN CASING (gal.)		4"	0.66
			5"	1.04
			6"	1.50
			8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.8} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	2.0	4.0	6.0						
pH	7.30	7.26	7.30	7.27						
CONDUCTIVITY	1351	1297	1287	1275						
TEMPERATURE	7.4	7.3	7.1	7.2						
APPEARANCE	MILKY	CLOY	CLOY	CLOY						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	Eh	+138	+135	+137	+138					

WATER SAMPLING FIELD DATA SHEETS

PROJECT: MR. "C" CLEANERS R I.
 CLIENT: NYS DEC
 JOB NO.: 0206-314-002

TYPE OF SAMPLE: GROUNDWATER GRAB
 LOCATION NO.: AG-10
 LAB SAMPLE NO.: _____

WELL DATA: DATE: 4/5/94
 Casing Diameter (inches): 2"
 Screened Interval (ft BGS): _____
 Static Water Level Below TDR (ft.): 10.53
 Elevation Top of Well Riser: _____
 Elevation Top of Screen: _____

TIME: 9:45
 Casing Material: _____
 Screen Material: _____
 Bottom Depth (ft.): 14.40
 Datum Ground Surface: _____

PURGING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILEY
 Well Volumes Purged (xR²H/ZSI): 3
 Standing Volume (GAL.): 0.7
 Volume Purged (GAL.): 4.0
 Is purging equipment dedicated to sample location?
 Yes _____ No ✓
 Field Personnel: JTP J. HILTON

TIME: Start: 10:08 Finish: 10:48
 Pumping Rate (gal/min): _____
 Was well purged dry? Yes ✓ No _____
 Was well purged below sand pack? Yes ✓ No _____

Well I.D. (inches)	Volume (gal/ft)
2	0.17
4	0.66
6	1.50

SAMPLING DATA: DATE: 4/5/94
 Method: POLY DISPOS. BAILEY
 Present Water Level (ft.): 10.53
 Depth of Sample (ft.): 10.53
 Is sampling equipment dedicated to sample location: Yes _____
 Source and type of water used in field for QC purposes: _____

TIME: Start: 13:05 Finish: 13:08
 Sampler: JTP J. HILTON
 Air Temperature (F°): 50°
 Weather Conditions: PART SUNN
 No ✓

PRESERVATION DATA: DATE: _____
 Filtered: Yes _____ No _____
 Preservative: H₂SO₄ HNO₃ NaOH Other _____

TIME: Start: _____ Finish: _____
 Cool to 4°C: _____

PHYSICAL AND CHEMICAL DATA:
 Appearance: Clear: ✓ Turbid: _____
 Contains Sediment: _____
 Temperature (°C): 11.0 pH 7.26
 Turbidity (NTU): 2100

Color: _____
 Odor: STRONG FUEL Other: HEAVY SHE
 Specific Conductivity (µmhos/cm): 1414
 Other: Eh: -70

REMARKS: _____

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: MR. "C" CLEANERS R I

PROJECT NO.: C266-314-CC2

STAFF: HP J. HILTON

DATE: 4/5/94

WELL NO.: AG-10

1	TOTAL CASING AND SCREEN LENGTH (ft.)	<u>1440</u>
2	CASING INTERNAL DIAMETER (in.)	<u>2"</u>
3	WATER LEVEL BELOW TOP OF CASING (ft.)	<u>10.53</u>
4	VOLUME OF WATER IN CASING (gal.)	

WELL I.D.

VOL.
GAL./FT.

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2^2 \times (1 - 3)) = \underline{0.7} \text{ gal.}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	INITIAL	1.0	2.0	4.0						
pH	7.04	7.13	7.11	7.13						
CONDUCTIVITY	1384	1276	1312	1359						
TEMPERATURE	8.8	8.8	9.2	9.4						
APPEARANCE	MILKY	CLOT	CLOT	CLOT						
TURBIDITY	>100	>100	>100	>100						
COMMENTS:	Eh	-58	-85	-82	-52					

- STRONG HYDROCARBON SMELL SIGNIFICANT!
 - OILY SHEEN ON H₂O

MALCOLM PIRNIE, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.: 0266-314-002		SITE NAME: MR. C. CLEAVER		NO. OF CON-TAINERS		REMARKS	
SAMPLERS (SIGNATURE)							
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION		
MPI-6	4/14/44	14:40		X	MPI-6 (LIBRARY)	2	
MPI-3	4/14/44	14:48		X	MPI-3 (DEANERSON)	2	
MPI-15	4/14/44	14:14		X	MPI-15 (HULCH)	2	
EST-6	4/14/44	14:56		X	EST-6 (HULCH)	2	
MPI-45	4/14/44	12:28		X	MPI-45 (LIBRARY)	2	
MPI-42	4/14/44	12:15		X	MPI-42 (LIBRARY)	2	
MPI-8	4/14/44	10:58		X	MPI-8 (WALL)	2	
MPI-4	4/14/44	11:08		X	MPI-4 (WALL)	2	
MPI-2	4/14/44	15:33		X	MPI-2 (TOWN HALL)	2	
BD	4/14/44			X	BLIND DUPLICATE	2	
MS	4/14/44			X	MATRIX SPIKE	2	
MSD	4/14/44			X	MATRIX SPIKE DUPLICATE	2	
TB	4/14/44				TRIP BLANK	1	
RELINQUISHED BY (SIGNATURE): John T. Parnie				DATE/TIME: 4/14/44 16:36		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):	

MALCOLM PIRNIE, INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.: 0266-54-002		SITE NAME: MR. C CLEANERS		NO. OF CON. TAINERS		REMARKS	
SAMPLERS (SIGNATURE): <i>[Signature]</i>							
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION		
AG-1	4/5/41	10:36		X	By Agway Storage Barn	2	
AG-4	4/5/41	13:28		X	By Side walk on main	2	
AG-5	4/5/41	12:45		X	By Agway Office	2	
AG-6	4/5/41	14:36		X	By Agway Office	2	
AG-7	4/5/41	10:54		X	By Agway Office	2	
AG-8	4/5/41	11:05		X	By Fence close to Ag Office	2	
AG-9	4/5/41	11:15		X	By Whalley St. Sidewalk	2	
AG-10	4/5/41	13:05		X	By Agway Showroom	2	
BD #2	4/5/41			X	Behind Duplicate #2	2	
MS #2	4/5/41			X	MATRIX SPIKE #2	2	
MSD #2	4/5/41			X	MATRIX SPIKE Dup. #2	2	
TB	4/5/41				TRIP Blank	1	
ESI-1	4/5/41	15:27		X	By Auto Parts Store	2	
RELINQUISHED BY (SIGNATURE): <i>[Signature]</i>				DATE/TIME: 4/5/41 16:15		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):	
RELINQUISHED BY (SIGNATURE):				DATE/TIME:		RECEIVED BY (SIGNATURE):	
REMARKS: Analysis As Per Malcolm Pirnie							

CHAIN OF CUSTODY RECORD

[illegible]

CHAIN OF CUSTODY RECORD

[illegible]

To: File, Mr. C Cleaners Site

Date: April 14, 1994

From: J.M. Asquith *JMA*

Re: Manhole Sampling

On April 11, 1994 at 11 pm, John Patterson (MPI) and Jeanne Asquith performed sampling in six manholes for the Mr. C Cleaners Site in East Aurora, New York. The samples were obtained with a dipper decontaminated after each sample was collected. The samples (7) were collected to be analyzed for volatiles. The following manholes were inspected:

Manhole 12, Whaley Ave near Library

Manhole 11, Intersection of Whaley and Fillmore Ave.

Manhole 65, In front of Delia's Car Dealership

Manhole 64, In sidewalk, in front of Mobil, at corner of Main and Elm St.

Manhole 62, Intersection of Paine and Main St. (An east and a west branch sample were collected)

Manhole 61, Paine Street, approximately half way between Oakwood and Main St.

Manhole 12 was inspected and a sample was not obtained as there was not visible pipe nor sewer/water flow. Asquith contacted Bob Bove of the Village of East Aurora and Mr. Bove indicated that Manhole 12 is a flush-out manhole. Mr. Bove explained that it can be filled with water via a water line installed in the manhole. A bell cap lifts and allows the water to flow into the sewer line.

Manhole 11 contained three sewer inflow pipes from the West, East, and South. The East and West lines contained high flow, and the pipe was approx 1/4 to 1/3 full. The South line (from Whaley) contained very little to no flow. A sample could not be obtained due to the low flow. A water line was installed above the Northern pipe (where flow exits) and according to Mr. Bove was used for the infiltration testing performed approx 10 years ago. John Patterson tried to sample this manhole a second time on April 13 during the day and obtained some sample. Patterson indicated that the flow was still very low.

Manhole 65 also contained very low flow, but a sample was obtained. Some sand and gravel was present in the pipe along the bottom and the pipe appeared to be separated about 2-4". Groundwater may have been seeping in at this location.

Manhole 64 contained high flow and the pipe was approx 1/2 full. Matrix Spike and Matrix Spike Duplicate were collected in addition to the sample.

Manhole 62 flow was relatively slow, and the pipe was 1/3 to 1/2 full. Some sediment was present in the pipes. Samples were taken from the flow coming from the East pipe and the West pipe. The blind duplicate was collected at 62E location.

Manhole 61 flow was at medium speed, and the pipe was approx 1/2 full. Sample was obtained.

ds

**MALCOLM
PIRNIE**

**INTEROFFICE
CORRESPONDENCE**

To: David Harty

Date: March 15, 1994

From: Gina Oliverio Senia

Re: Tetrachloroethylene in Air Sampling - Mr. C Cleaners Site

On Monday March 13, 1994 replicate (2) air samples were collected in support of the Remedial Investigation being conducted at the Mr C Cleaners Site located in East Aurora, New York. Samples were collected for tetrachloroethylene (PCE) analysis from the following locations:

SAMPLE IDENTIFICATION SAMPLE LOCATION *

BG-1	Boys/Girls Club 16 Paine Street
BG-2	Northeast section of basement
BA-1	Jackson's Bowling Alley 30 Whaley Avenue
BA-2	Southeast corner of basement
C-1	First Presbyterian Church 9 Paine Street
C-1	Westernmost classroom #114 - former day-care center, center of room
VH-1	Village Hall 571 Main Street
VH-2	Northeast corner of basement - records room
OB	Outdoor Background Southeast corner of First Presbyterian Church
TB	Trip Blank

NOTE: * Samples were collected at ground level

Mr. Cameron O'Connor from the NYSDOH was present throughout the duration of the sampling activities. Mr. Greg Sutton of the NYSDEC was present only during sample collection at Jackson's bowling alley.

Samples were collected in accordance with DOH Method #311-7, attached. A GAST pump was utilized to provide an air flow rate of 500 ml/min through a 10-inch sampling tube containing Porapak-N. Air was permitted to flow through the tube for 60 minutes. The initial flow rate was measured, adjusted as necessary, and recorded prior to sample collection using a Matheson #603 rotameter. The flow rate was again measured and

recorded prior to the end of sample collection. Initial and final flow rates were within the 10% difference criteria stated in Method 311-7 at each location. Field notes are attached.

The outdoor background sample was collected using a battery powered pump. Initial and final flow rates were measured as described above; no problems were encountered.

Two (2) replicate samples were collected from each location with the exception of the outdoor background (OB). Sample OB was collected as a single sample. In addition, the trip blank was "collected" as a single sample; the trip blank consisted of a sample tube containing Porapak-N which accompanied the investigatory samples to each location.

After sample collection, each tube was capped and placed in a cardboard storage container for subsequent transport to General Testing Laboratories.

General
Testing
Corporation



A Full Service Environmental Laboratory

MAR. 30 1994

Mr. Dave Harty
Malcolm Pirnie, Inc.
So. 3515 Abbott Road
Buffalo, NY 14219

Re: Mr. C's

Dear Mr. Dave Harty

Enclosed are the results of the analysis requested. The Analytical Data was provided to you on 03/22/94 per a Facsimile transmittal. All data has been reviewed prior to report submission.

Should you have any questions please contact me at 454-3760.

Thank you for letting us provide this service.

Sincerely,

GENERAL TESTING CORPORATION

A handwritten signature in cursive script, appearing to read 'Janice Jaeger'.

Janice Jaeger
Customer Service Representative

Enc.

Effective 10/1/91

GTC LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U - Indicates compound was analyzed for but was not detected.
The sample quantitation limit must be corrected for
dilution and for percent moisture.
- J - Indicates an estimated value. For further explanation see
case narrative / cover letter.
- B - This flag is used when the analyte is found in the
associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed
the calibration range and reanalysis could not be
performed.
- A - This flag indicates that a TIC is a suspected aldol-
condensation product.
- N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analytes only)
- * - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)
- Also used to qualify Organics QC data outside limits.
(Only used on the QC summary sheets)
- M - Duplication injection precision not met (GFA only).
- S - Reported value determined by Method of Standard
Additions. (MSA)
- X - As specified in the case narrative.

CASE NARRATIVE

Company: Malcolm Pirnie, Inc.
Mr. C's
Job#: R94/00844

Volatile Organics

MPI air sample tubes were analyzed for Tetrachloroethene by NYSDOH Method 311-7.

All Initial and Continuing Calibration criteria were compliant.

All surrogate compounds were within QC limits for recovery.

The Trip Blank (R94/0844-009) was free from contamination.

The Laboratory Blanks were free from contamination.

Traces of 1,1,1-Trichloroethane were detected in samples R94/0844-001 - 008 between 2.1 and 21 ug/M3. Traces of Trichloroethene were detected in samples R94/0844-003 and 004 between 1.7 and 3.5 ug/M3.

No other analytical or QC problems were encountered.

LABORATORY REPORT

Job No: R94/00844

Date: MAR. 30 1994

Client:

Mr. Dave Harty
Malcolm Pirnie, Inc.
So. 3515 Abbott Road
Buffalo, NY 14219

Sample(s) Reference

Mr. C's

Received

: 03/15/94

P.O. #:

NYSDOH METHOD 311-7

ANALYTICAL RESULTS - ug/m3

Sample:	-001	-002	-003	-004	-005	-006	-007	-008
Location:	BG1	BG2	BA1	BA2	C-1	C-2	VH-1	VH-2
Date Collected:	03/14/94	03/14/94	03/14/94	03/14/94	03/14/94	03/14/94	03/14/94	03/14/94
Time Collected:	09:20	09:20	10:50	10:50	12:15	12:15	13:35	13:35
Date Analyzed:	03/18/94	03/18/94	03/18/94	03/18/94	03/18/94	03/18/94	03/18/94	03/18/94
Dilution:	1	1	1	1	1	1	1	1
Tetrachloroethene	1.7 U <i>25x10⁻⁴ u</i>	1.8 <i>2.6x10⁻⁴</i>	220 <i>0.032</i>	130 <i>0.019</i>	16 <i>0.002</i>	9.4 <i>0.001</i>	1.7 <i>25x10⁻⁴</i>	1.7 U <i>2.5x10⁻⁴</i>
Surrogate Standard Recoveries								
Bromochloromethane (Acceptance limits: 60-138%)	103	103	107	107	108	104	102	106

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145

NJ ID# in Rochester: 73331

NJ ID# in Hackensack: 02317

NY ID# in Hackensack: 10801

Michael R. [Signature]
Laboratory Director

LABORATORY REPORT

Job No: R94/00844

Date: MAR. 30 1994

Client:

Mr. Dave Harty
Malcolm Pirnie, Inc.
So. 3515 Abbott Road
Buffalo, NY 14219

Sample(s) Reference

Mr. C's

Received

: 03/15/94

P.O. #:

NYSDOH METHOD 311-7

ANALYTICAL RESULTS - ug/m3

Sample:	-009	-010							
Location:	TRIP	OUTSIDE							
	BLANK	BACKGROUND							
Date Collected:	03/14/94	03/14/94							
Time Collected:	10:50	14:50							
=====									
Date Analyzed:	03/18/94	03/18/94							
Dilution:	1	1							
Tetrachloroethene	1.7 U	1.7 U							
	15.07	15.07							
Surrogate Standard Recoveries									

Bromochloromethane	103	94							
(Acceptance limits: 60-138%)									

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145

NJ ID# in Rochester: 73331

NJ ID# in Hackensack: 02317

NY ID# in Hackensack: 10801

Michael R. [Signature]
Laboratory Director

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. R94/844
Client Project No. _____

Sample Origination & Shipping Information

Collection Site Mr C's

Address _____

Collector Gina Oliverio Seria Gina Oliverio Seria
Street City State Zip
Print Signature

Bottles Prepared by Tubes
Bottles Shipped to Client via _____
Samples Shipped via _____

Rec'd by _____
Seal/Shipping # _____
Seal/Shipping # _____

Sample(s) Relinquished by:

1. Sign Gina Oliverio Seria
for MP
2. Sign MP
for GTC
3. Sign _____
for _____

Received by:

1. Sign L. Wagon Date/Time 3/14/94
for GTC 4:25
2. Sign Cliff G. Miller 3/14/94
for 5:00
3. Sign _____ 1 1
for _____

Sample(s) Received in Laboratory by Tom Hastings 3/15/94 @ 08:20

Client I.D.#	Sample Location Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep				Bottle Set(s) (see below)	Rec'd at GTC
				Preserved	Filtered				
BG-1	Boys/Girls Club		PCE						
	3/14/94 9:20								
BG-2									
	3/14/94 9:20								
BA-1	Bowling Alley								
	3/14/94 10:50								
BA-2	Bowling Alley								
	1 1 10:50								
C-1	Church								
	1 1 12:55								

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each											

Additional Analytes

4 tubes for GC start up
As per Gina volume = 30 l / tube 3/21

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____ (X), _____ (Y).

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street 85 Trinity Place
Rochester, NY 14608 Hackensack, NJ 07601

GTC Job No. R94/844
Client Project No. _____

Sample Origination & Shipping Information

Collection Site Mr C's
Address _____
Collector Gina Oliverio Serie Frank Oliverio Serie
Street _____ City _____ State _____ Zip _____
Print _____ Signature _____

Bottles Prepared by _____ Rec'd by _____
Bottles Shipped to Client via _____ Seal/Shipping # _____
Samples Shipped via _____ Seal/Shipping # _____

Sample(s) Relinquished by: Frank Oliverio Serie Received by: _____ Date/Time: _____
1. Sign Frank Oliverio Serie 1. Sign Kwagay 3/14/94
for MPI for GTC 4:25
2. Sign Kwagay 2. Sign Click County 3/14/94
for GTC for _____ 5:00
3. Sign _____ 3. Sign _____ 1:1
for _____ for _____

Sample(s) Received in Laboratory by Tom Hastings 3/15/94 @ 08:20

	Client I.D.#	Sample Location	★	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep				Bottle Set(s) (see below)	Re at
		Date/Time			Preserved	Filtered	Y	N		
1	C-2	Church		PCE						
		3/14/94 12:15								
2	VH-1	Village Hall								
		3/14/94 13:35								
3	VH-2	Village Hall								
		3/14/94 13:35								
4	TB	Tap Blank								
		3/14/94 10:50								
5	OB	Outside background								
		3/14/94 14:50								

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each											

Additional Analytes As per Gina, Volume = 300/tube 3/21

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

★ Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____ (X), _____



KHO
A FULL SERVICE ENVIRONMENTAL LABORATORY

May 18, 1995

Mr. Robert O'Laskey
Malcolm Pirnie, Inc.
S. 3515 Abbott Road
Buffalo, NY 14219

RE: PROJECT 0266-31-4 MR C. CLEANERS
Submission #:9504000307

Dear Mr. O'Laskey:

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at 454-3760.

Thank you for letting us provide this service.

Sincerely,

GENERAL TESTING CORPORATION

A handwritten signature in cursive script, reading 'Janice M. Jaeger'.

Janice Jaeger
Client Service Representative

Enc.

This package has been reviewed by General Testing Corporation's QA Department/Laboratory Director prior to report submittal. mmw/5/19/95

710 Exchange Street • Rochester, NY 14608 • Tele:(716)454-3760 • Fax:(716)454-1245
85 Trinity Place • Hackensack, NJ 07601 • Tele:(201)488-5242 • Fax:(201)488-6386
435 Lawrence Bell Drive • Amherst, NY 14421 • Tele:(716)634-0454 • Fax:(716)634-9019



A Full Service Environmental Laboratory

DATE 5/23

JOB NUMBER _____

TO Malcolm Pirnie

ATTENTION Jeanne Asquith

FAX NUMBER 828-0431

PAGES TO FOLLOW 16

FROM Janice Jaeger

INSTRUCTION/MESSAGE

The corrected pages for Mr. C's
Cleaners. I'll send the hard copy
out today

710 Exchange Street • Rochester, New York 14608 • (716) 454-3760 • Fax (716) 454-1245
85 Trinity Place • Hackensack, NJ 07601 • (201) 488-5242 • Fax (201) 488-6386
435 Lawrence Bell Drive • Amherst, NY 14221 • (716) 634-0454 • Fax (716) 634-9019

Effective 05/09/95

GTC LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J - Indicates an estimated value. For further explanation see case narrative / cover letter.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range.
- A - This flag indicates that a TIC is a suspected aldol-condensation product.
- N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)
- * - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)
- Also used to qualify Organics QC data outside limits.
- D - Spike diluted out.
- S - Reported value determined by Method of Standard Additions. (MSA)
- X - As specified in the case narrative.

GTC Lab ID # for State Certifications

NY ID # in Rochester: 10145
NY ID # in Hackensack: 10801
NY ID # in Massachusetts: M-NY032

NJ ID # in Rochester: 73331
NJ ID # in Hackensack: 02317



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: PROJECT 0266-31-4 MR C. CLEANERS

Client Sample ID : #1-BOWLING ALLEY

Date Sampled : 04/21/95 GTC Order # : 12790 Sample Matrix: AIR
Date Received: 04/24/95 Submission #: 9504000307 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.153	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: PROJECT 0266-31-4 MR C. CLEANERS

Client Sample ID : #2-BOWLING ALLEY

Date Sampled : 04/21/95 GTC Order # : 12791 Sample Matrix: AIR
Date Received: 04/24/95 Submission #: 9504000307 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.133	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: PROJECT 0266-31-4 MR C. CLEANERS

Client Sample ID : TRIP BLANK

Date Sampled : 04/21/95 GTC Order # : 12792 Sample Matrix: AIR
Date Received: 04/24/95 Submission #: 9504000307 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
Method 311-7
Reported: 05/22/95

LABORATORY METHOD BLANK SUMMARY

GTC Order #:	16342	Analytical Run #:	829
ANALYTE	PQL	RESULT	UNITS
Date Analyzed : 04/28/95			
Analytical Dilution: 1.0			
TRACHLOROETHENE	0.0025	0.0025 U	MG/M3

METHOD BLK-1

MALCOLM PIRNIE, INC.

[illegible]

Distribution Original accompanies shipment, copy to coordinator field files



A FULL SERVICE ENVIRONMENTAL LABORATORY

May 18, 1995

Mr. Robert O'Laskey
Malcolm Pirnie, Inc.
S. 3515 Abbott Road
Buffalo, NY 14219

RE: 0266-31-4 MR C CLEANERS
Submission #:9504000225

Dear Mr. O'Laskey:

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at 454-3760.

Thank you for letting us provide this service.

Sincerely,

GENERAL TESTING CORPORATION

A handwritten signature in cursive script, appearing to read "Janice Jaeger", is written over the printed name.

Janice Jaeger
Client Service Representative

Enc.

This package has been reviewed by General Testing Corporation's QA Department/Laboratory Director prior to report submittal. mmk 5/19/95

710 Exchange Street • Rochester, NY 14608 • Tele:(716)454-3760 • Fax:(716)454-1245
85 Trinity Place • Hackensack, NJ 07601 • Tele:(201)488-5242 • Fax:(201)488-6386
435 Lawrence Bell Drive • Amherst, NY 14421 • Tele:(716)634-0454 • Fax:(716)634-9019



Effective 05/09/95

GTC LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J - Indicates an estimated value. For further explanation see case narrative / cover letter.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range.
- A - This flag indicates that a TIC is a suspected aldol-condensation product.
- N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)
- * - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D - Spike diluted out.
- S - Reported value determined by Method of Standard Additions. (MSA)
- X - As specified in the case narrative.

GTC Lab ID # for State Certifications

NY ID # in Rochester: 10145
NY ID # in Hackensack: 10801
NY ID # in Massachusetts: M-NY032

NJ ID # in Rochester: 73331
NJ ID # in Hackensack: 02317



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : #1-531 FILLMORE

Date Sampled : 04/13/95 GTC Order # : 11969 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/27/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client sample ID : #2-531 FILLMORE

Date Sampled : 04/13/95 GTC Order # : 11970 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/27/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3

General
Testing
Corporation

VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: 0266-31-4 MR C CLEANERS

Client Sample ID : #1-34 WHALEY

Date Sampled : 04/13/95 GTC Order # : 11971 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS

DATE ANALYZED : 04/28/95
ANALYTICAL DILUTION: 1.0

TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : #2-34 WHALEY

Date Sampled : 04/13/95 GTC Order # : 11972 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : #1-31 WHALEY

Date Sampled : 04/13/95 GTC Order # : 11973 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : #2-31 WHALEY

Date Sampled : 04/13/95 GTC Order # : 11974 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0433	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: 0266-31-4 MR C CLEANERS

Client Sample ID : #1-1st PRES. CHURCH

Date Sampled : 04/13/95 GTC Order # : 11975 Sample Matrix: AIR

Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0280	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : #2-1st PRES. CHURCH

Date Sampled : 04/13/95 GTC Order # : 11976 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.00930	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: 0266-31-4 MR C CLEANERS

Client sample ID : #1-517 FILMORE

Date Sampled : 04/13/95 GTC Order # : 11977 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.00530	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.

Project Reference: 0266-31-4 MR C CLEANERS

Client Sample ID : #2-517 FILMORE

Date Sampled : 04/13/95 GTC Order # : 11978 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/28/95			
ANALYTICAL DILUTION: 1.0			
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
METHOD 311-7
Reported: 05/22/95

Malcolm Pirnie, Inc.
Project Reference: 0266-31-4 MR C CLEANERS
Client Sample ID : TRIP BLANK

Date Sampled : 04/13/95 GTC Order # : 11979 Sample Matrix: AIR
Date Received: 04/18/95 Submission #: 9504000225 Analytical Run: 829

ANALYTE	PQL	RESULT	UNITS

DATE ANALYZED : 04/28/95
ANALYTICAL DILUTION: 1.0

TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3



VOLATILE ORGANICS
Method 311-7
Reported: 05/22/95

LABORATORY METHOD BLANK SUMMARY

GTC Order #:	16342	Analytical Run #:	829
ANALYTE	PQL	RESULT	UNITS
Date Analyzed	: 04/28/95		
Analytical Dilution:	1.0		
TETRACHLOROETHENE	0.0025	0.0025 U	MG/M3

METHOD BLK-1

CHAIN OF CUSTODY RECORD

Distribution	Original accompanies shipment. copy to coordinator field files

University of Waterloo



Waterloo, Ontario, Canada
N2L 3G1

Faculty of Science
Department of Earth Sciences
519/885-1211

Telex: 069-55259
Fax: 519/746-7484

Environmental Isotope Lab.
Earth Sciences Department
April 24, 1995

Mr. R. O'Laskey
Malcolm Pirnie Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York
USA 14219

Dear Mr. O'Laskey:

Enclosed please find complete results from the sample you submitted to our lab recently. I hope you are happy with them. As storage space here is scarce I would appreciate some direction from you as to disposal of this sample. If I do not hear from you within two months (i.e. by June 24, 1995), I will throw it out.

A bill for these services will be arriving shortly.

Yours truly

A handwritten signature in cursive script that reads "Mary Ellen Patton".

Mary Ellen Patton



Condensed Data output for File ISO#- 950056 O'Laskey/Malcolm-P. 02/08/95 LOCATION 1 - A

LAB#	Sample	180smow	2H	3H	EH3	13C	180pdb	34S	180so4

51879	MW-40								

2.5 +/- 0.4

2.9 +/- 0.5

APPENDIX I

- Phase II Development Data/Sampling Data/Slug Test Data
by Lu Engineers

TRIP REPORT

To: Robert O'Laskey, Malcolm Pirnie, Inc.

From: Lu Engineers

Date: March 18, 1995

Site Name: Mr. C Cleaners

Site Location: Main Street, East Aurora, New York

NYSDEC Site Number: 9-15-157

Trip Purposes: Well monitoring, Development, Sampling, and Aquifer Testing

Trip Dates: January 18 through February 3, 1995

Personnel On Site: Greg Andrus and Jim MacKecknie, Lu Engineers

Introduction

Between January 18, and February 3, 1995, Lu Engineers conducted well sampling and aquifer testing activities at the Mr. C Cleaners Inactive Hazardous Waste Site in East Aurora, New York. This work included monitoring and sampling of wells associated with the site, as well as development and slug testing of several recently installed wells.

Well Monitoring

A total of 35 wells were monitored on January 18 and 19, 1995. Eight of the wells were monitored by Matrix Environmental Technologies, Inc., including MW-1 through MW-10. The remaining 27 wells, including three private wells, were monitored by Lu Engineers. Matrix Environmental Technologies used a Marine Moisture Control (MMC) Flexidip interface probe, which reads water levels comparably to the Solonist water level indicator used by Lu Engineers.

All wells monitored by Lu Engineers were initially screened with an Photo-ionization Detector (PID). The water level indicator used was decontaminated by removing any gross contamination, scrubbing with a trisodium phosphate (TSP) solution followed by a rinse with a 10% methanol solution, and a final rinse with deionized water. All water level and PID readings are included as Attachment 1.

Well Development

A total of six monitoring wells were developed between January 19 and 24, 1995. Five of the wells were completely developed using a Waterra System equipped with a Hydrolift unit. Initial well development on the sixth well (MPI-4D) was also conducted with the Waterra system. However, slow recovery of the well prompted changing the development method hand bailing with a predecontaminated PVC bailer. Wells were developed until field measurements of turbidity, conductivity, temperature, and pH stabilized. Development records for each developed well are included as Attachment 2. A total of 639.2 gallons of water from development and purging activities were drained into the Village of East Aurora Waste Water Treatment Plant.

Groundwater Sampling

Groundwater samples were obtained from 22 monitoring wells at this site between January 25 and 31, 1995. Each well was purged of three to six well volumes until field measurements of conductivity, pH, redox potential, temperature, and turbidity had stabilized. Disposable polypropylene bailers and new polypropylene line were used at each sampled well. The purging record for each well is included as Attachment 3.

Upon completion of purging, the wells were sampled for TCL volatiles. Water samples were containerized in 40 milliliter glass vials prepreserved with two drops of HCl. Each sample vial was completely filled (zero headspace) and immediately placed on ice. Two matrix spike/matrix spike duplicate (MS/MSD) samples were obtained, one from MPI-7I and the other from MPI-5I. In addition, two field duplicates were also obtained, field duplicate FIELDD from MPI-7I and FLDDUP from MPI-4D. All samples were packed in coolers and shipped to NEI, NYTEST Environmental by Federal Express. Each shipment of samples included one trip blank. Chain of custody seals placed on each cooler prior to shipment. Chain of custody copies for each shipment are included in Attachment 4.

Aquifer Testing

All slug testing was conducted on February 1, 2, and 3, 1995. The rising head slug test method was employed for these tests which involved the use of a solid PVC slug in conjunction with an In-Situ, Inc. Hermit 1000 datalogger equipped with 10 psi pressure transducers. A total of six wells were tested including MPI-4D, 10B, 11B, 12B, 13B, and 14B. Wells which had initially indicated elevated organic vapor levels were again checked with a PID. No significant PID readings were indicated. The water level indicator, solid PVC slug, and pressure transducers were decontaminated before each use by removing any gross contamination, scrubbing with a TSP solution followed by a rinse with a 10% methanol solution, and a final rinse with deionized water. New polypropylene twine was used on the PVC slug at each well location.

Upon completion of field measurement, raw data was reduced and used to calculate hydraulic conductivity and transmissivity following the Bouwer and Rice method. The Envirotools, Inc. computer program Aquix-S was used for data reduction, calculations, and to create graphical representations of the test results. The results of the aquifer testing are presented in Attachment 5.

Attachments:

1 Well Monitoring Data
2 Well Development Records
3 Well Purging Records

4 Chain of Custody Records
5 Hydraulic Conductivity Data and Graphs

**ATTACHMENT 1
WELL MONITORING DATA**

WELL MONITORING RECORD
MR. C CLEANERS
NYSDEC SITE 9-15-157

Well Number	Depth to Water ¹	Date	Time	PID Reading ²	Comments
MW-1	9.73	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-4	8.50	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-5	9.11	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-6	9.08	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-7	10.40	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-8	10.31	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-9	11.31	1/18/95	-	-	Obtained water levels from Matrix Environmental
MW-10	9.08	1/18/95	-	-	Obtained water levels from Matrix Environmental
517 Fillmore Ave.	9.86	1/18/95	13:03	N/D ²	
524 Fillmore Ave.	12.20	1/18/95	12:50	0.2 ppm	
531 Fillmore Ave.	9.34	1/18/95	13:10	0.6 ppm	
MPI-1S	10.75	1/19/95	12:35	N/D	Bailer in well
MPI-1I	7.93	1/18/95	14:18	N/D	Bailer in well, no lock on well
MPI-2S	11.07	1/18/95	15:33	N/D	Bailer in well
MPI-3S	9.79	1/18/95	15:22	2.0 ppm	Bailer in well
MPI-4S	9.51	1/18/95	16:37	N/D	Bailer in well
MPI-4I	10.42	1/18/95	16:40	0.2 ppm	Bailer in well
MPI-4D	9.82	1/19/95	08:35	N/D	
MPI-5S	10.99	1/18/95	16:22	0.8 ppm	Bailer in well
MPI-5I	11.13	1/18/95	16:14	N/D	Bailer in well
MPI-6S	10.41	1/19/95	09:12	0.2 ppm	Bailer in well
MPI-7I	10.46	1/19/95	09:34	N/D	Bailer in well
MPI-8S	9.43	1/19/95	08:50	3.5 ppm	Bailer in well
MPI-9S	9.70	1/19/95	09:05	2.0 ppm	Bailer in well, no lock on well
MPI-10B	10.13	1/19/95	09:42	3.0 ppm	
MPI-11B	8.59	1/18/95	13:53	N/D	
MPI-12B	6.78	1/18/95	15:06	3.2 ppm	
MPI-13B	8.63	1/18/95	13:27	N/D	No lock on "J" plug

Well Number	Depth to Water ¹	Date	Time	PID Reading ²	Comments
MPI-14B	8.525	1/18/95	13:40	N/D	
ESI-1	11.02	1/18/95	16:00	N/D	Bailer in well
ESI-2	12.14	1/18/95	15:42	2.0 ppm	Bailer in well
ESI-3	10.17	1/19/95	09:17	60 ppm	Bailer in well
ESI-4	7.83	1/18/95	14:20	0.4 ppm	Bailer in well
ESI-5	7.75	1/18/95	14:52	N/D	Bailer in well
ESI-6	9.93	1/18/95	14:43	N/D	Bailer in well

1 Depth to water measurements are in feet from top of casing (TOC)

2 PID = Photo-ionization Detector, all readings are in parts per million (ppm) above background

3 N/D = reading at background (0.3 ppm)

***Note: the time of day and PID reading at the well head was not obtained for those wells monitored by Matrix Environmental. ***

ATTACHMENT 2
WELL DEVELOPMENT RECORDS

WELL DEVELOPMENT RECORD
MRC-MW-MPI-4D
January 20 and 24, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. (°C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
JANUARY 20, 1995 (developed using the Waterra system, equipped with a hydrolift)							
14:34	2.5	0.23	9.4	354	10.8	> > 200	very opaque
14:44	10.0	0.93	9.7	360	11.1	> > 200	same
15:05	20.0	1.87	9.8	334	10.3	> > 200	same
15:26	25.0	2.34	10.1	480	10.8	> > 200	same
16:14	30.0	2.80	9.8	395	11.0	> > 200	same
16:47	37.5	3.50	9.85	322	10.6	> > 200	same (developed to dryness)
JANUARY 24, 1995 (developed by hand bailing)							
09:45	40.0	3.74	7.19	390	9.0	> 200	slight clearing
10:09	45.0	4.21	7.66	350	9.1	> 200	same
10:39	50.0	4.67	7.02	343	9.6	> 200	same
10:55	55.0	5.14	7.64	356	9.8	> 200	same
11:14	60.0	5.61	7.62	304	9.6	> 200	same
11:39	67.5	6.31	7.61	305	9.7	> 200	same developed to dryness

PID Reading: Background (0.3 ppm)
Depth to water: 9.82 feet (below TOC)
Initial Total Depth: 75.46 feet (below TOC)
Well Volume: 10.70 gallons
Final Total Depth: 75.47 feet (below TOC)
Development method: described above
Developed by: Jim MacKecknie and Greg Andrus, Lu Engineers

WELL DEVELOPMENT RECORD
MRC-MW-MPI-10B
January 20, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. ($^{\circ}$ C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
09:55	<1	0.00	8.46	1080	11.5	> 200	Opaque, very silty
09:57	10.0	2.89	8.25	1100	11.5	> 200	same
10:05	20.0	5.78	7.68	1095	11.1	> 200	clearing up, slightly
10:12	30.0	8.67	7.75	1095	10.8	> 200	same
10:19	40.0	11.56	7.95	1109	10.8	> 200	continuing to clear up
10:23	45.0	13.01	7.87	1183	11.1	> 200	same
10:27	50.0	14.45	7.74	1083	10.9	> 200	same

PID Reading:

Depth to water:

Initial Total Depth:

Well Volume:

Final Total Depth:

Development method:

Developed by:

1.0 ppm (above background)

10.13 feet (below TOC)

31.35 feet (below TOC)

3.46 gallons

31.37 feet (below TOC)

Water system, equipped with a hydrolift

Jim MacKecknie and Greg Andrus, Lu Engineers

WELL DEVELOPMENT RECORD
MRC-MW-MPI-11B
January 20, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. ($^{\circ}$ C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
12:30	< 1	0.00	7.51	561	10.5	> > 200	Opaque very silty with fine sand
12:36	10.0	3.14	8.73	551	10.3	> > 200	same
12:45	20.0	6.29	8.52	715	10.2	> > 200	same
12:50	30.0	9.43	8.39	791	10.2	> > 200	same
12:58	40.0	12.58	8.32	922	10.3	> > 200	same
13:04	50.0	15.7	8.48	903	10.3	> > 200	same
13:08	55.0	17.30	8.43	957	10.2	> > 200	some clearing
13:15	60	18.87	8.42	995	10.3	> > 200	same

PID Reading: Background (0.3 ppm)
 Depth to water: 8.59 feet (below TOC)
 Initial Total Depth: 28.03 feet (below TOC)
 Well Volume: 3.18 gallons
 Final Total Depth: 29.40 feet (below TOC)
 Development method: Waterra system, equipped with a hydrolift
 Developed by: Jim MacKecknie and Greg Andrus, Lu Engineers

WELL DEVELOPMENT RECORD
MRC-MW-MPI-12B
January 23, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. ($^{\circ}$ C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
14:49	1.0	0.23	10.4	846	7.2	> > 200	very viscous and silty
14:53	10.0	2.26	10.0	1715	7.8	> 200	Clearing slightly
15:00	20.0	4.51	9.7	1905	8.1	> 200	same
15:07	30.0	6.77	9.5	1911	7.8	> 200	same
15:13	40.0	9.03	9.2	1985	8.2	> 200	same
15:17	50.0	11.29	9.3	1994	7.8	> 200	same
15:24	60.0	13.54	9.2	1990	7.4	> 200	clearing
15:27	65.0	14.67	9.0	2090	8.1	> 200	same
15:31	70.0	15.80	9.1	2110	9.60	> 200	same

PID Reading:

Depth to water:

Initial Total Depth:

Well Volume:

Final Total Depth:

Development method:

Developed by:

2.7 ppm (above background)

6.78 feet (below TOC)

33.96 feet (below TOC)

4.43 gallons

35.05 feet (below TOC)

Waterra system, equipped with a hydrolift

Jim MacKecknie and Greg Andrus, Lu Engineers

WELL DEVELOPMENT RECORD
MRC-MW-MPI-13B
January 19, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. (°C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
14:00	0.25	0.06	6.89	1275	13.3	> 200	very opaque
14:07	5.0	1.37	7.62	1357	12.3	> 200	same
14:13	10.0	2.73	7.55	1277	12.2	> 200	clearing slightly
14:20	15.0	4.10	7.69	1306	11.9	> 200	same
14:25	20.0	5.46	7.50	1307	11.4	> 200	same
14:29	25.0	6.83	7.35	1347	11.3	> 200	still clearing
14:36	30.0	8.20	7.38	1361	11.3	> 200	same
14:43	40.0	10.93	7.59	1325	10.9	> 200	same
15:01	60.0	16.39	7.45	1387	10.5	> 200	20 gallon, interval after realigning pump
15:11	75.0	20.49	7.32	1350	10.3	> 200	some clearing
15:15	80.0	24.86	7.49	1340	10.4	> 200	no change in appearance

PID Reading: Background (0.3 ppm)
 Depth to water: 8.63 feet (below TOC)
 Initial Total Depth: 31.08 feet (below TOC)
 Well Volume: 3.66 gallons
 Final Total Depth: 31.85 feet (below TOC)
 Development method: Waterra system, equipped with a hydrolift
 Developed by: Jim MacKecknie and Greg Andrus, Lu Engineers

WELL DEVELOPMENT RECORD
MRC-MW-MPI-14B
January 23, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Temp. (°C)	Turb. (NTU)	Comments
	Gallons	Well Volume					
11:45	1.0	0.29	8.45	485	10.0	> 200	very silty
11:52	10.0	2.95	8.60	492	6.7	> 200	same
11:59	20.0	5.90	8.59	561	7.4	> 200	clearing up
12:07	30.0	8.85	8.53	753	7.1	> 200	adjusted water to bottom of well
12:14	40.0	11.80	8.44	808	6.6	> 200	clearing
12:23	50.0	14.75	8.34	870	6.4	> 200	same
12:29	55.0	16.22	8.36	903	6.5	191	surface water getting into well
12:34	60.0	17.70	8.31	960	7.4	184	same

PID Reading:

Depth to water:

Initial Total Depth:

Well Volume:

Final Total Depth:

Development method:

Developed by:

Note:

Background (0.3 ppm)

8.53 feet (below TOC)

29.35 feet (below TOC)

3.39 gallons

29.93 feet (below TOC)

Water system, equipped with a hydrolift

Jim MacKecknie and Greg Andrus, Lu Engineers

Due to weather conditions and the design of the well head a small quantity of surface water entered the well during development.

ATTACHMENT 3
WELL PURGING RECORDS

WELL PURGING RECORD
MRC-MW-ESI-3
January 26, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
09:13	< 1	0.00	7.09	688	115	9.1	0.08	clear
09:18	1.0	1.0	6*	700	110	8.4	113	slightly silty
09:25	2.0	2.0	6*	688	113	7.7	120	same
09:30	3.0	3.0	6*	704	80	8.7	158	same
09:35	4.0	4.0	6*	678	78	8.6	158	same, obtained sample

PID reading: 38 ppm (above background)

Depth to water: 9.91 feet (below TOC)

Total Depth: 18.80 feet (below TOC)

Well Volume: Approximately 1 gallon

Purging method: Hand bailed, by Lu Engineers

Sampling information: Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

* pH probe malfunctioned, therefore pH paper was used

WELL PURGING RECORD
MRC-MW-ESI-4
January 31, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
09:09	<1	0.00	8.50	3000	-27	7.2	7.5	clear
09:15	1.0	1.0	9.00	2980	0	7.9	>200	orange/brown silt
09:19	2.0	2.0	8.90	3050	0	8.3	>200	same
09:22	3.0	3.0	8.30	3050	0	8.3	>200	same
09:26	4.0	4.0	8.10	3040	-14	8.3	>200	clearing
09:26	5.0	5.0	7.80	3050	0	8.4	>200	same
09:34	6.8	6.0	7.83	3040	0	8.4	>200	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

7.86 feet (below TOC)

14.18 feet (below TOC)

1 gallon

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-ESI-5
January 30, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
14:50	< 1	0.00	8.12	699	64	5.9	13.4	clear
14:54	1.0	1.0	8.03	725	62	6.9	> 200	silty
14:57	2.0	2.0	7.97	770	55	7.2	> 200	same
14:59	3.0	3.0	8.01	765	52	7.2	189	gradual clear-up appears to have stabilized, obtained a sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based previous reading at well head)

7.65 feet (below TOC)

13.77 feet (below TOC)

1 gallon

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice. Samples were shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-ESI-6
January 30, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
13:33	<1	0.00	7.72	5210	1	7.4	30.8	clear
13:38	2.0	2.0	7.64	5600	-5	9.7	>200	silty
13:41	3.0	3.0	7.56	5600	-3	10.3	>200	same
13:44	3.75	3.75	7.57	5750	-2	10.9	>200	same
13:49	4.5	4.5	7.47	5110	-2	10.8	>200	same
13:52	5.5	5.5	7.52	4320	-1	11.4	>200	same
13:55	6.5	6.5	7.51	4310	-1	11.0	>200	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

10.00 feet (below TOC)

16.19 feet (below TOC)

1 gallon

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-1S
January 31, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
11:32	<1	0.00	8.00	1530	-14	8.7	20.8	clear
11:35	1.5	1.0	7.81	1980	-1	8.9	41.5	same
11:38	3.0	2.0	7.74	2020	-8	9.2	35.0	same
11:43	4.5	3.0	7.79	1980	-1	9.3	29.1	same, obtained a sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

9.73 feet (below TOC)

18.95 feet (below TOC)

1.5 gallon

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice. Samples were shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-11
January 31, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
10:06	<1	0.00	8.15	1430	-25	8.1	37.6	clear
10:16	5.3	1.0	7.90	1430	-40	10.6	20.8	same
10:27	10.6	2.0	7.71	1480	-37	10.7	16.4	same
10:36	15.9	3.0	7.58	1550	-48	11.3	9.4	same
10:47	21.2	4.0	7.80	1580	-48	11.2	3.3	same, obtained sample

PID reading: N/A (based on previous well head reading)
 Depth to water: 7.96 feet (below TOC)
 Total Depth: 40.68 feet (below TOC)
 Well Volume: 5.3 gallons
 Purging method: Hand bailed, by Lu Engineers
 Sampling information: Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.
 Sample was shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-2S
January 25, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
15:15	< 1	0.00	7.65	1338	141	8.0	75.6	clear
15:17	1.0	1.0	7.57	1365	137	9.4	67.1	same
15:20	2.0	2.0	7.67	1376	134	8.9	30.0	same
15:28	3.0	3.0	7.69	1390	130	9.1	57.0	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

10.91 feet (below TOC)

16.95 feet (below TOC)

approximately 1 gallon

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

WELL PURGING RECORD
MRC-MW-MPI-3S
January 30, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
11:25	<1	0.00	7.08	3580	29	7.3	73.5	slightly silty
11:30	1.3	1.0	7.31	3630	-12	8.4	>200	orange colored silt/organics
11:34	3.5	2.7	7.36	3650	-47	8.9	>200	same
11:38	4.5	3.5	7.40	3630	-31	9.1	>200	same
11:44	5.2	4.0	7.49	3570	-40	8.6	>200	same
11:49	7.0	5.4	7.43	3560	-38	8.1	>200	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

At background (0.2 ppm)

9.85 feet (below TOC)

17.72 feet (below TOC)

1.3 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-4S
January 30, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
15:47	<1	0.00	7.47	5380	3	5.2	7.8	clear
15:54	1.8	1.0	7.35	6020	-19	7.3	> 200	silty
15:57	3.6	2.0	7.38	5920	-14	7.8	> 200	same
16:06	5.4	3.0	7.38	5690	-19	7.8	> 200	same
16:12	7.2	4.0	7.38	5630	-20	7.0	> 200	same
16:16	9.0	5.0	7.40	5690	-22	7.9	> 200	same
16:20	10.8	6.0	7.40	5600	-22	7.9	> 200	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

9.52 feet (below TOC)

20.50 feet (below TOC)

1.8 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-4I
January 31, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
15:54	< 1	0.00	8.00	270	3	8.9	8.1	clear
16:04	5.1	1.0	7.30	150	-58	9.6	25	same
16:13	10.2	2.0	7.35	150	-50	9.5	55	same
16:21	15.3	3.0	7.35	152	-41	9.4	60	same, obtained a sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

10.49 feet (below TOC)

41.75 feet (below TOC)

5.1 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles. Sample was preserved with HCl and placed on ice. Samples were shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-4D
January 31, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
13:37	< 1	0.00	8.90	280	46	8.1	100	slightly silty
14:08	10.7	1.0	8.50	240	35	8.9	190	same
14:43	21.4	2.0	8.42	230	6	8.6	> 200	silty
15:26	32.1	3.0	8.21	210	1	8.8	> 200	same, obtained a sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

11.50 feet (below TOC)

75.47 feet (below TOC)

10.7 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles and a field duplicate (labeled "Field Duplicate-2"). Samples were preserved with HCl and placed on ice. Samples were shipped to NYTEST Environmental on January 31, 1995.

WELL PURGING RECORD
MRC-MW-MPI-5S
January 27, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
13:44	<1	0.00	7.6	2700	36	7.9	55	bacterial growth suspended in the water
13:53	1.1	1.0	6.91	2800	52	8.4	48	less bacteria
13:57	2.2	2.0	7.63	2800	58	9.0	58	same
14:01	3.3	3.0	7.40	2850	50	9.1	50	same
14:06	4.4	4.0	7.28	2850	51	9.2	72	same
14:08	5.5	5.0	7.61	2830	50	9.2	71	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

10.84 feet (below TOC)

17.61 feet (below TOC)

1.1 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 27, 1995.

WELL PURGING RECORD
MRC-MW-MPI-5I
January 27, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
14:40	< 1	0.00	7.63	3370	-2	8.1	2.2	clear
14:49	5.0	1.0	7.55	3480	-30	8.6	4.4	same
14:56	10.0	2.0	7.58	3620	-26	9.1	2.4	same
15:06	15.0	3.0	7.30	3610	-40	9.4	1.7	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

10.92 feet (below TOC)

41.60 feet (below TOC)

5 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles and MS/MSD samples. All samples were preserved with HCl and placed on ice. Samples were shipped to NYTEST Environmental on January 27, 1995.

WELL PURGING RECORD
MRC-MW-MPI-6S
January 26, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
14:26	<1	0.00	8.03	1658	1116	10.8	6.5	clear
14:32	1.9	1.0	8.13	1568	1141	9.7	17.7	same
14:35	3.8	2.0	8.10	1569	1150	8.6	17.4	same
14:43	5.7	3.0	7.98	1518	1147	7.3	23.1	same
14:49	7.6	4.0	7.78	1515	1147	7.4	28.1	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

10.23 feet (below TOC)

21.90 feet (below TOC)

1.9 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

WELL PURGING RECORD
MRC-MW-MPI-71
January 26, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
10:07	<1	0.00	6*	1133	74	7.5	0.09	clear
10:19	4.7	1.0	6*	1292	-36	7.6	0.09	same
10:35	9.4	2.0	6*	1217	23	6.7	2.48	same
10:49	14.1	3.0	6*	1224	5	6.9	1.93	same
11:26	18.8	4.0	6*	1222	9	7.2	1.55	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

0.5 ppm

10.20 feet (below TOC)

39.19 feet (below TOC)

4.7 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, the MS/MSD samples, and the field duplicate sample (labeled "field duplicate"). All samples were preserved with HCl and placed on ice and shipped to NYTEST Environmental on January 26, 1995.

* pH probe malfunctioned, therefore pH paper was used

WELL PURGING RECORD
MRC-MW-MPI-8S
January 27, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
10:49	< 1	0.00	7.78	4800	20	8.9	1.01	clear
10:53	1.3	1.0	7.80	4700	18	8.5	4.2	same
10:58	2.6	2.0	7.82	4810	20	8.4	5.3	same
11:02	3.9	3.0	7.38	4400	18	8.8	4.5	same
11:08	5.2	4.0	7.59	4500	8	9.2	5.5	Eh dropped by $\pm$ 60%
11:13	6.5	5.0	7.39	4800	13	8.3	5.8	
11:20	7.8	6.0	7.60	4720	12	9.3	9.6	obtained sample

PID reading: 3 ppm
 Depth to water: 9.27 feet (below TOC)
 Total Depth: 17.41 feet (below TOC)
 Well Volume: 1.3 gallons
 Purging method: Hand bailed, by Lu Engineers
 Sampling information: Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.
 Sample was shipped to NYTEST Environmental on January 27, 1995.

WELL PURGING RECORD
MRC-MW-MPI-9S
January 27, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
09:24	<1	0.00	9.03	2330	58	10.0	22.6	well possibly compromised wioth road runoff causing high conductivity (lock cap would not seal properly)
09:31	1.3	1.0	8.74	2240	65	9.9	96.0	slightly silty
09:37	2.6	2.0	8.40	2130	50	9.8	110.0	same
09:41	3.9	3.0	8.50	2180	54	10.0	73.0	same
09:47	5.2	4.0	8.30	2854	46	10.9	93.0	same
09:54	6.5	5.0	8.0	2890	46	10.0	92.0	same
09:59	7.8	6.0	7.99	2930	51	10.0	93.0	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

at background (0.3 ppm)

9.54 feet (below TOC)

17.50 feet (below TOC)

1.3 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 27, 1995.

WELL PURGING RECORD
MRC-MW-MPI-10B
January 25, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
16:18	< 1	0.00	8.38	813	130	6.3	18.2	clear
16:23	3.5	1.0	8.32	992	125	7.0	43.5	same
16:29	7.0	2.0	7.29	1027	120	8.3	54.9	same
16:35	10.5	3.0	7.93	1009	120	5.8	104.0	becoming silty
16:41	14.0	4.0	7.54	1008	112	8.8	170.0	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

9.86 feet (below TOC)

31.50 feet (below TOC)

3.5 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

WELL PURGING RECORD
MRC-MW-MPI-11B
January 26, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
15:39	< 1	0.00	8.31	1079	1188	5.7	2.65	clear
15:47	3.4	1.0	8.17	1102	1181	7.0	76.2	same
15:53	6.8	2.0	8.05	1102	1178	6.7	68.8	same
16:01	10.2	3.0	8.08	1112	1176	6.7	32.0	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous reading at well head)

8.40 feet (below TOC)

29.40 feet (below TOC)

3.4 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 27, 1995.

WELL PURGING RECORD
MRC-MW-MPI-12B
January 25, 1995

Time	Total Volume Withdrawn		pH	Cond. (μmhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
13:54	<1	0.00	8.27	1356	170	11.0	31.5	clear
14:04	4.6	1.0	7.90	1592	158	10.3	> 200	silty, opaque
14:15	9.2	2.0	6.10	1555	134	5.6	> 200	same
14:23	14.0	3.04	6.03	1621	126	6.2	> 200	same
14:30	18.6	4.04	6.15	1611	128	6.4	> 200	same, obtained sample

PID reading: At background (0.3 ppm)
 Depth to water: 6.58 feet (below TOC)
 Total Depth: 35.05 feet (below TOC)
 Well Volume: 4.6 gallons
 Purging method: Hand bailed, by Lu Engineers
 Sampling information: Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.
 Sample was shipped to NYTEST Environmental on January 26, 1995.

WELL PURGING RECORD
MRC-MW-MPI-13B
January 25, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
10:39	<1	0.00	6.15	1575	191	5.4	36.2	clear
10:49	3.8	1.0	5.89	1346	176	5.9	>200	opaque (silty)
10:55	7.6	2.0	5.50	1434	164	5.5	>200	clearing, slightly
11:04	11.4	3.0	5.25	1504	176	6.6	>200	same
11:08	15.2	4.0	5.66	1380	167	6.6	>200	same
11:19	19.0	5.0	5.69	1331	150	6.7	>200	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

8.44 feet (below TOC)

31.85 feet (below TOC)

3.8 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

WELL PURGING RECORD
MRC-MW-MPI-14B
January 25, 1995

Time	Total Volume Withdrawn		pH	Cond. (μ mhos/cm)	Eh (millivolts)	Temp. (°C)	Turb. (NTU)	Comments
	gallons	well volumes						
09:11	<1	0.00	6.89	2260	100	8.8	4.39	clear
09:18	3.5	1.0	6.10	1840	101	7.0	23.5	same
09:25	7.0	2.0	5.74	2060	104	7.1	25.8	same
09:36	10.5	3.0	5.51	1380	114	6.9	8.5	same
09:45	14.0	4.0	5.87	1130	113	7.8	6.3	same, obtained sample

PID reading:

Depth to water:

Total Depth:

Well Volume:

Purging method:

Sampling information:

N/A (based on previous well head reading)

8.24 feet (below TOC on 1/25/95)

29.93 feet (below TOC)

3.5 gallons

Hand bailed, by Lu Engineers

Obtained a sample for TCL volatiles, sample was preserved with HCl and placed on ice.

Sample was shipped to NYTEST Environmental on January 26, 1995.

ATTACHMENT 4
CHAIN OF CUSTODY FORMS

Chain of Custody Record

Client Name				Address				Project Manager				Phone				Project Name				Project Number				P.O. #				Analytical Protocol				Sampled By				Deliverables			
Malcolm Pirnie				S. 3515 Abbott Road, Box 1938				Robert O'Leary				(716) 828-1300				McC Cleaners, E. Aurora, NY				0266-314-003				ASP-CLP				Greg Andrews & Tim MacKeechie											
Buffalo, New York				14219-0138																																			
Relinquished by:				Print Name:				Relinquished by:				Print Name:				Relinquished by:				Print Name:				Relinquished by:				Print Name:											
Gregory L. Andrews																																							
Date / Time				Date / Time				Date / Time				Date / Time				Date / Time				Date / Time				Date / Time															
11/30/95				11/30/95				11/30/95				11/30/95				11/30/95				11/30/95				11/30/95															
17:40																																							
Sample ID (Maximum of 6 Characters)				Sample Location				Time Sampled				Date Sampled				Sample ID (Maximum of 6 Characters)				Sample Location				Time Sampled				Date Sampled											
M W E S I 4				MRC MW EST-1				09:11				1/31/95				M W E S I 4				MRC MW EST-1				09:11				1/31/95											
M W I I I				MRC MW MPI-1T				10:50				1/31/95				M W I I I				MRC MW MPI-1T				10:50				1/31/95											
M W 1 S				MRC MW MPI-1S				11:50				1/31/95				M W 1 S				MRC MW MPI-1S				11:50				1/31/95											
M W 4 D				MRC MW MPI-4D				15:33				1/31/95				M W 4 D				MRC MW MPI-4D				15:33				1/31/95											
M W 4 I				MRC MW MPI-4I				16:35				1/31/95				M W 4 I				MRC MW MPI-4I				16:35				1/31/95											
T R I P B L				Trip Blank				N/A				1/18				T R I P B L				Trip Blank				N/A				1/18											
F L D D U P				Field Duplicate				N/A				N/A				F L D D U P				Field Duplicate				N/A				N/A											
M W 3 S				MRC MW MPI-3S				11:57				1/30/95				M W 3 S				MRC MW MPI-3S				11:57				1/30/95											
M W E S I 6				MRC MW EST-6				11:01				1/30/95				M W E S I 6				MRC MW EST-6				11:01				1/30/95											
M W E S I 5				MRC MW EST-5				15:02				1/30/95				M W E S I 5				MRC MW EST-5				15:02				1/30/95											
Relinquished by:				Print Name:				Relinquished by:				Print Name:				Relinquished by:				Print Name:				Relinquished by:				Print Name:											
Gregory L. Andrews																Gregory L. Andrews																							
Date / Time				Date / Time				Date / Time				Date / Time				Date / Time				Date / Time				Date / Time															
11/30/95				11/30/95				11/30/95				11/30/95				11/30/95				11/30/95				11/30/95															
17:40																																							
Sample ID (Maximum of 6 Characters)				Sample Location				Time Sampled				Date Sampled				Sample ID (Maximum of 6 Characters)				Sample Location				Time Sampled				Date Sampled											
M W E S I 4				MRC MW EST-1				09:11				1/31/95				M W E S I 4				MRC MW EST-1				09:11				1/31/95											
M W I I I				MRC MW MPI-1T				10:50				1/31/95				M W I I I				MRC MW MPI-1T				10:50				1/31/95											
M W 1 S				MRC MW MPI-1S				11:50				1/31/95				M W 1 S				MRC MW MPI-1S				11:50				1/31/95											
M W 4 D				MRC MW MPI-4D				15:33				1/31/95				M W 4 D				MRC MW MPI-4D				15:33				1/31/95											
M W 4 I				MRC MW MPI-4I				16:35				1/31/95				M W 4 I				MRC MW MPI-4I				16:35				1/31/95											
T R I P B L				Trip Blank				N/A				1/18				T R I P B L				Trip Blank				N/A				1/18											
F L D D U P				Field Duplicate				N/A				N/A				F L D D U P				Field Duplicate				N/A				N/A											
M W 3 S				MRC MW MPI-3S				11:57				1/30/95				M W 3 S				MRC MW MPI-3S				11:57				1/30/95											
M W E S I 6				MRC MW EST-6				11:01				1/30/95				M W E S I 6				MRC MW EST-6				11:01				1/30/95											
M W E S I 5				MRC MW EST-5				15:02				1/30/95				M W E S I 5				MRC MW EST-5				15:02				1/30/95											
Relinquished by:				Print Name:				Relinquished by:				Print Name:																											

Special Instructions :

CLIENT RETAINS YELLOW COPY ONLY



TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental.

(516) 625-5500 FAX: (516) 625-1274

Attn: Ron Johnson

page #: 2 of 2

Chain of Custody Record

Client Name Malcolm Piccirilli
Address 5, 3515 Abbott Road, Box 1938
Buffalo, New York 14219-0138

Project Manager Robert O'Leary
Phone (716) 828-1300 FAX (716) 828-0431

Project Name M.C. Cleary, E. Avenue, New York
Project Number 0266-314-003
P.O. # 2160

Analytical Protocol ASP-C.L.P. Deliverables

Sampled By Gregory Andrews & Tim MackKerlin

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)	Date Sampled	Time Sampled	Sample Location

	MW45	1/25/15	16:26	MRC MW MPI-45

Relinquished by:	Date / Time	Received by:	Date / Time
<u>Gregory L. Andrews</u>	1/25/15 17:40	Print Name	
Relinquished by:	Date / Time	Received by:	Date / Time
Print Name:		Print Name:	
Relinquished by:	Date / Time	Received by Laboratory:	Date / Time
Print Name:		Print Name:	

Analysis Requested

No. of Containers

Bin #'s In / Out (For Lab Use Only)

Comments

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)	Date Sampled	Time Sampled	Sample Location
	MW45	1/25/15	16:26	MRC MW MPI-45

Lab Use Only

Custody Seals: Intact Broken Absent

Sample Rec'd in Good Condition?: Y N

Sample Temperature: Degrees Celsius

INSPECTED BY:

COMMENTS:

Special Instructions:

Chain of Custody Record

Client Name: Malcolm Pierce
 Address: S. 3515 Alhambra Road, Box 1938
Buffalo, New York 14219-0138

Project Manager: Robert Olasky
 Phone: 828-1200 (716) FAX: 828-0131 (716)
 Project Name: MCC Cleaners, E. Nassau, NY
 Project Number: 0266-314 003
 P.O. #

Analytical Protocol: ASP-CLP Deliverables: GC/MS Analysis & JMS Mackintosh
 Sampled By: GC/MS Analysis & JMS Mackintosh

Analysis Requested

No. of Containers

Bin #'s In/Out (For Lab Use Only)

Comments

Log in #:

Ship to:

Nytest Environmental Inc.
 60 Seaview Blvd
 Port Washington N.Y. 11050
 Attn: Sample Control

Date Shipped:

Carrier:

Air Bill #:

Cooler #:

C of C #:

SDG #:

NEIQT #:

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)			Date Sampled	Time Sampled	Sample Location
	MW	1	B	1/24/95	16:05	MRC MW MPI-11B
	MW	9	S	1/21/95	12:05	MRC MW MPI-9S
	MW	8	S	1/21/95	11:25	MRC MW MPI-8S
	MW	5	S	1/23/95	14:15	MRC MW MPI-5S
	MW	5	I	1/27/95	15:17	MRC MW MPI-5I
	TR	1	PB	1/18/95	-	Temp Blank

Relinquished by: [Signature]

Print Name: Robert Olasky

Relinquished by: Robert Olasky

Print Name: Robert Olasky

Relinquished by:

Print Name:

Relinquished by:

Print Name:

Received by:

Print Name:

Received by:

Print Name:

Received by:

Print Name:

Lab Use Only

Custody Seals: Intact Broken

Sample Rec'd in Good Condition? Y N

Sample Temperature: Degrees Celsius

INSPECTED BY:

COMMENTS:

Special Instructions:



TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental.

(516) 625-5500 FAX: (516) 625-1274

Client Name Malabar Village
Address S. 3515 Alcott Road, Box 1938
Buffalo New York 14217-0128
Project Manager Robert O'Leary
Phone 328-1300 (716) FAX 328-0431 (716)
Project Name MRC Cleaness E. Aurora, NY
Project Number 0266-314 003
P.O. #
Analytical Protocol ASPC-CLP Deliverables
Sampled By Gregory L. Anderson

Chain of Custody Record

page #: 1 of 1

Client Name		Address		Project Manager		Phone		Project Name		Project Number		P.O. #		Analytical Protocol		Sampled By	
Malabar Village		S. 3515 Alcott Road, Box 1938		Robert O'Leary		328-1300 (716) FAX 328-0431 (716)		MRC Cleaness E. Aurora, NY		0266-314 003				ASPC-CLP		Gregory L. Anderson	
Client Name		Address		Project Manager		Phone		Project Name		Project Number		P.O. #		Analytical Protocol		Sampled By	
Malabar Village		S. 3515 Alcott Road, Box 1938		Robert O'Leary		328-1300 (716) FAX 328-0431 (716)		MRC Cleaness E. Aurora, NY		0266-314 003				ASPC-CLP		Gregory L. Anderson	
Project Manager		Phone		Project Name		Project Number		P.O. #		Analytical Protocol		Sampled By		Date Sampled		Time Sampled	
Robert O'Leary		328-1300 (716) FAX 328-0431 (716)		MRC Cleaness E. Aurora, NY		0266-314 003				ASPC-CLP		Gregory L. Anderson		1/25/95		09:55	
Date Sampled		Time Sampled		Sample Location		No. of Containers		Analysis Requested		Bin #'s In / Out (For Lab Use Only)		SDG #		NEI QI #		Comments	
1/25/95		09:55		MRC MVD MPT-14B		2		TCL 100% (91-1)									
1/25/95		11:27		MRC MVD MPT-13B		2											
1/25/95		15:36		MRC MVD MPT-25		2											
1/25/95		14:40		MRC MVD MPT-12B		2											
1/25/95		16:54		MRC MVD MPT-10B		2											
1/26/95		07:45		MRC MVD TEST 3		2											
1/26/95		11:38		MRC MVD MPT-7T		6										(incl. MVD, MSD)	
1/26/95		--		Trip Blanks		2											
1/26/95		--		Field Duplicate		2											
1/26/95		14:52		MRC MVD MPT 6S		2											
Relinquished by:		Date / Time		Received by:		Date / Time		Lab Use Only		Custody Seals:		Intact		Broken		Absent	
Gregory L. Anderson		1/26/95 17:30		Print Name		1/26/95				Sample Rec'd in Good Condition?:		Y		N		Degrees Celsius	
Relinquished by:		Date / Time		Received by:		Date / Time		INSPECTED BY:		Sample Temperature:		COMMENTS:					
Gregory L. Anderson		1/26/95		Print Name		1/26/95				Sample Temperature:		COMMENTS:					
Relinquished by:		Date / Time		Received by:		Date / Time											
Gregory L. Anderson		1/26/95		Print Name		1/26/95											
Relinquished by:		Date / Time		Received by:		Date / Time											
Gregory L. Anderson		1/26/95		Print Name		1/26/95											

Special Instructions :

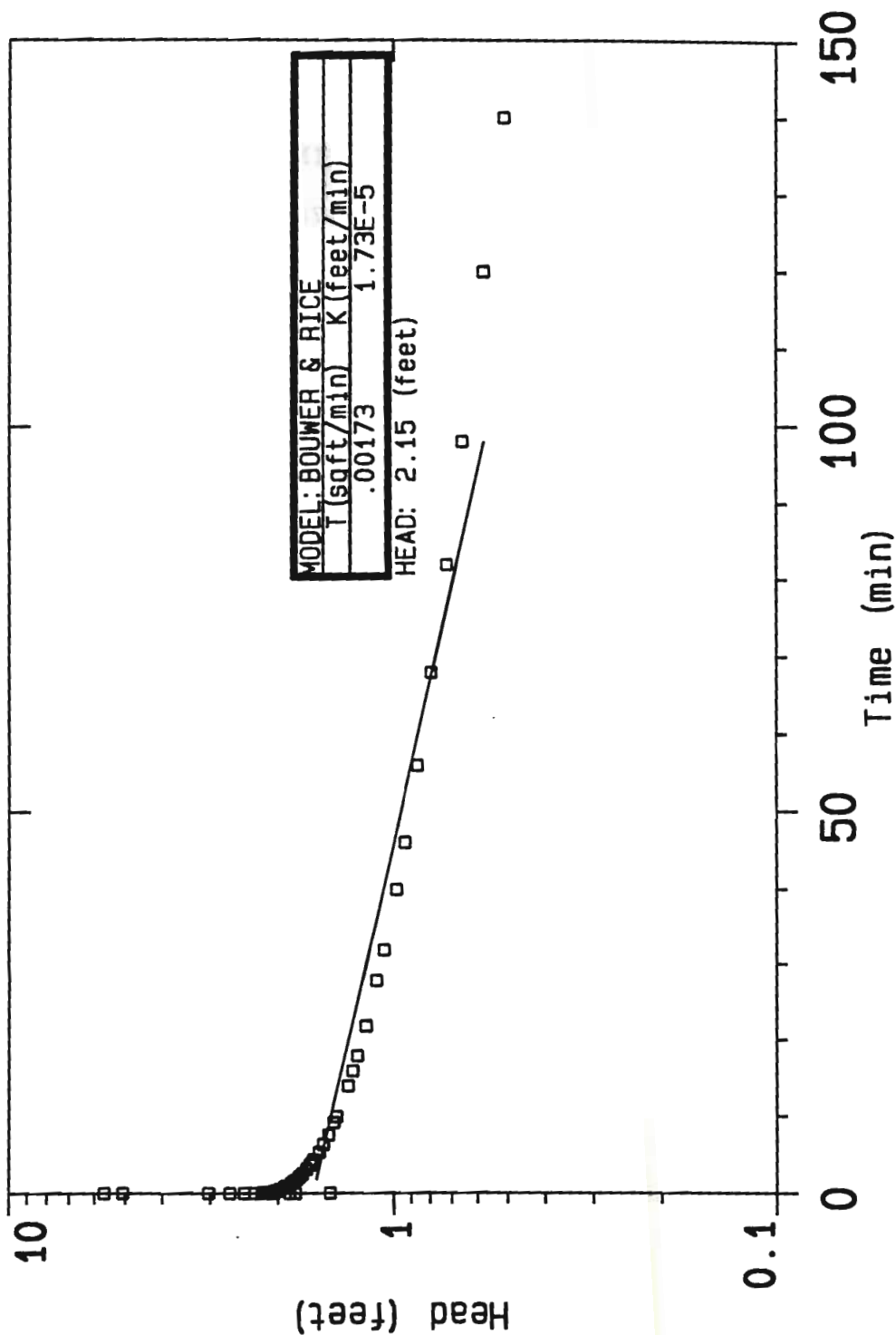
ATTACHMENT 5
HYDRAULIC CONDUCTIVITY DATA AND GRAPHS

MR. C CLEANERS AQUIFER TESTING
EAST AURORA, NEW YORK
HYDRAULIC CONDUCTIVITY DATA

WELL NUMBER	HYDRAULIC CONDUCTIVITY
MPI-4D	8.79×10^{-6} cm/sec *
MPI-10B	4.22×10^{-3} cm/sec
MPI-11B	5.64×10^{-4} cm/sec
MPI-12B	6.70×10^{-2} cm/sec
MPI-13B	1.19×10^{-2} cm/sec
MPI-14B	5.49×10^{-4} cm/sec

* cm/sec = centimeters per second

Note: converted from feet per minute data obtained from slope of "best fit" lines presented in AQUIX graphs.



MR. C SLUG TEST DATA

EAST AURORA, NY
ERIE

Date: 3-FEB-95 Well No.: 4D

for: MALCOM PIRNIE

by: LU ENGINEERS

Aquifer: Endless

Thickness: 100. Depth: 76.0 feet

Screen: Top: 66.0 Base: 76.0 feet

Effective Diameter: 280 feet

DATA SET: MPI-4D

CLIENT: MALCOM PIRNIE	DATE: 3-FEB-95
LOCATION: EAST AURORA, NY	WELL NO.: 4D
COUNTY: ERIE	INIT. HEAD: 2.15 feet
PROJECT: MR. C SLUG TEST DATA	WELL DEPTH: 76.00 feet
AQUIFER: Endless	THICKNESS: 100.00 feet
DEPTH TO WATER IN WELL: 13.32 feet	DURATION OF TEST : 140.00 min
BOREHOLE DIA.: 0.500 feet	CASING DIAMETER: 0.167 feet
SCREEN DIAMETER: 0.167 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 13.320 feet	PACKING POROSITY: 22.788 %

WELL SCREENED FROM 66.00 TO 76.00 feet

FITTING ERROR: 7.049 PERCENT

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 1.73E-03 sqft/min	COND: 1.73E-05 feet/min
FREE	FREE

No.	TIME (min)	Head, H (feet)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
1	0.0030	5.07		
2	0.0060	5.66		
3	0.0100	3.02		
4	0.0130	1.80		
5	0.0160	1.46		
6	0.0200	1.86		
7	0.0230	2.44		
8	0.0260	2.66		
9	0.0330	2.13		
10	0.0400	2.13		
11	0.0460	2.29		
12	0.0560	2.06		
13	0.0660	2.19		
14	0.0800	2.15		
15	0.0960	2.13		
16	0.116	2.08		
17	0.136	2.10		

*

LU ENGINEERS

*

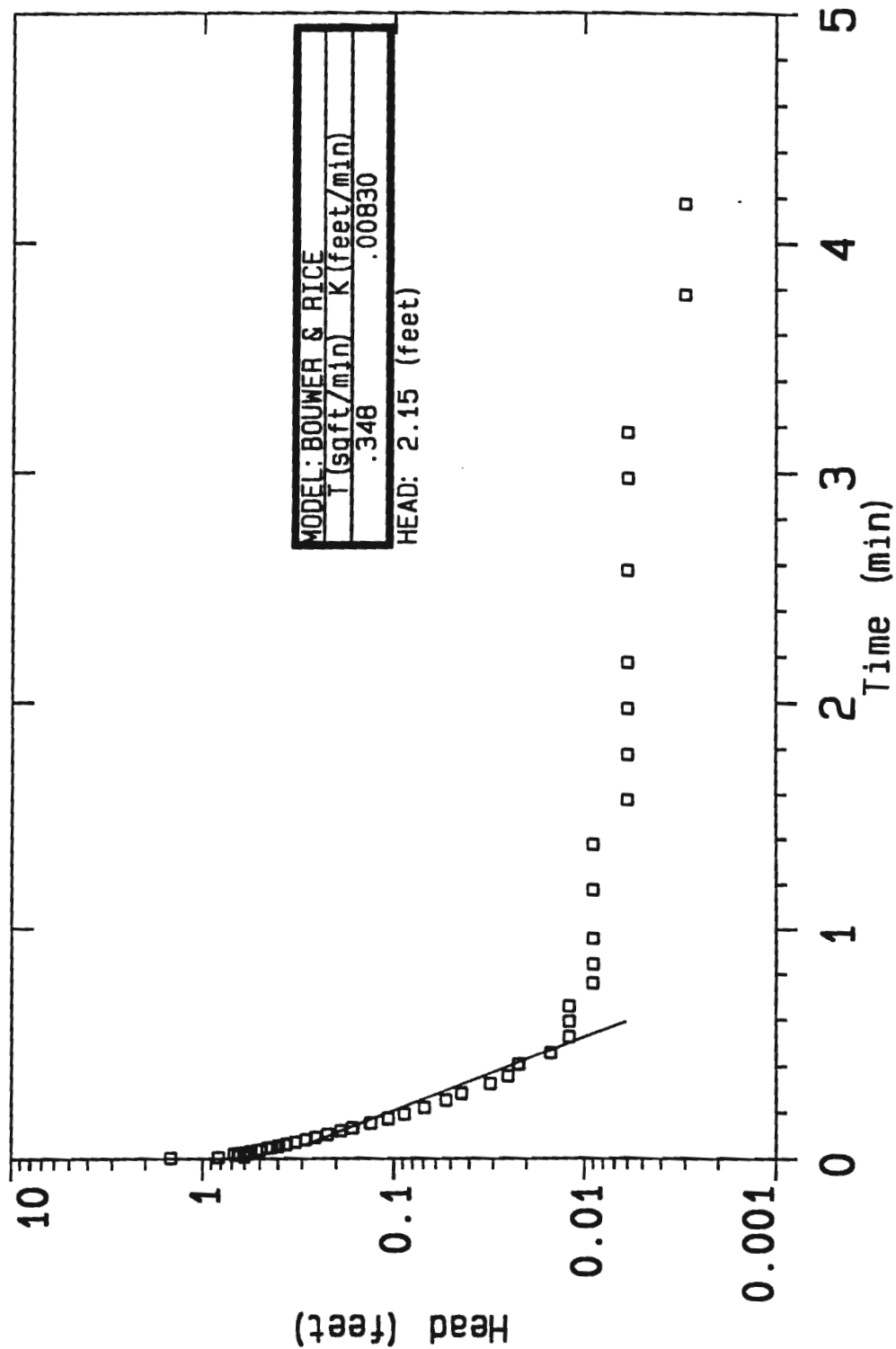
No.	TIME (min)	Head, H (feet) DATA	SYNTHETIC	DIFFERENCE (percent)
18	0.166	2.08		
19	0.200	2.07		
20	0.236	2.05		
21	0.290	2.03		
22	0.340	2.02		
23	0.406	2.00		
24	0.490	1.98		
25	0.590	1.96		
26	0.706	1.94		
27	0.856	1.91		
28	0.923	1.90		
29	1.32	1.84		
30	1.52	1.82		
31	1.72	1.80	1.59	11.65
32	2.12	1.76	1.58	10.12
33	2.52	1.73	1.57	8.84
34	3.12	1.68	1.56	7.05
35	3.72	1.64	1.55	5.51
36	4.32	1.61	1.54	4.25
37	5.32	1.56	1.53	2.17
38	6.32	1.52	1.51	0.592
39	7.52	1.47	1.49	-1.14
40	9.12	1.43	1.47	-2.71
41	9.92	1.40	1.45	-3.51
42	13.92	1.31	1.39	-6.41
43	15.92	1.27	1.36	-7.04
44	17.92	1.24	1.34	-7.75
45	21.92	1.18	1.28	-8.81
46	27.92	1.10	1.20	-8.87
47	31.92	1.06	1.15	-9.10
48	39.92	0.984	1.06	-8.01
49	45.92	0.933	0.997	-6.93
50	55.92	0.863	0.897	-4.03
51	67.92	0.794	0.791	0.365
52	81.92	0.724	0.682	5.73
53	97.92	0.657	0.576	12.25
54	119.9	0.578		
55	139.9	0.511		

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

*

LU ENGINEERS

*



for:	MALCOM PIRNIE		MR C SLUG TEST DATA	
by:	LU ENGINEERS		E. AURORA, NY ERIE	
Aquifer: Endless Thickness: 42.0 Depth: 31.5 feet Screen: Top: 16.5 Base: 31.5 feet Effective Diameter: 28 feet			Date: 2-FEB-95	Well No.: 10B

DATA SET: MPI-10B

CLIENT: MALCOM PIRNIE	DATE: 2-FEB-95
LOCATION: E. AURORA, NY	WELL NO.: 10B
COUNTY: ERIE	INIT. HEAD: 2.15 feet
PROJECT: MR C SLUG TEST DATA	WELL DEPTH: 31.50 feet
AQUIFER: Endless	THICKNESS: 42.00 feet
DEPTH TO WATER IN WELL: 10.17 feet	DURATION OF TEST : 10.00 min
BOREHOLE DIA.: 1.000 feet	CASING DIAMETER: 0.170 feet
SCREEN DIAMETER: 0.170 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 10.170 feet	PACKING POROSITY: 5.097 %

WELL SCREENED FROM 16.50 TO 31.50 feet

FITTING ERROR: 24.570 PERCENT

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 3.49E-01 sqft/min	COND: 8.30E-03 feet/min
FREE	FREE

No.	TIME (min)	Head, H (feet) DATA	SYNTHETIC	DIFFERENCE (percent)
1	0.0030	1.47		
2	0.0060	0.825		
3	0.0100	0.604		
4	0.0130	0.601		
5	0.0160	0.651		
6	0.0200	0.683		
7	0.0230	0.642		
8	0.0260	0.598		
9	0.0300	0.563		
10	0.0360	0.515		
11	0.0400	0.493		
12	0.0460	0.455		
13	0.0500	0.433	0.315	27.24
14	0.0560	0.398	0.301	24.23
15	0.0630	0.363	0.286	21.07
16	0.0730	0.325	0.266	18.06
17	0.0830	0.287	0.247	13.75

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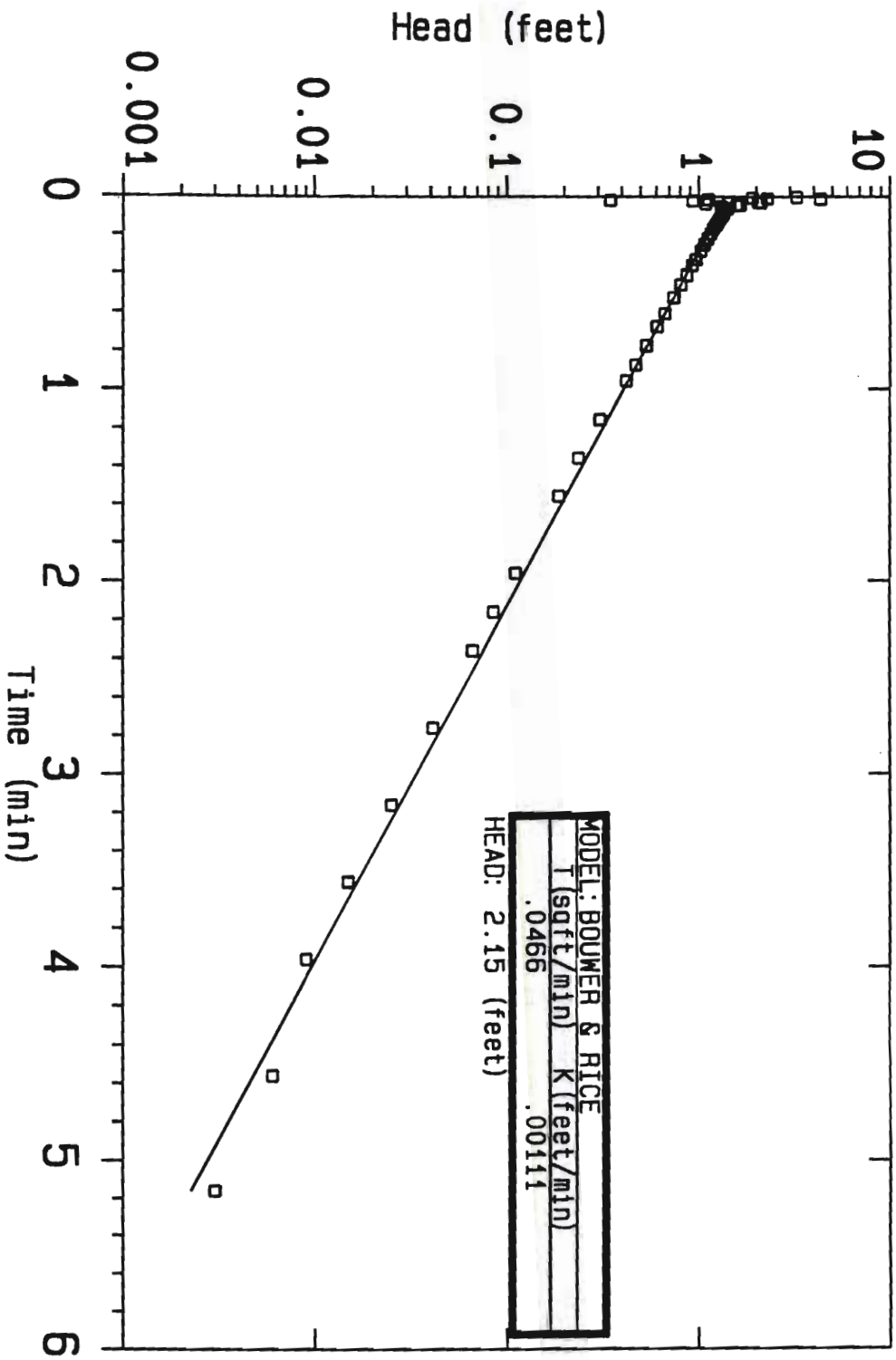
No.	TIME (min)	Head, H (feet)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
18	0.0930	0.256	0.230	10.13
19	0.106	0.221	0.209	5.33
20	0.120	0.189	0.188	0.0775
21	0.133	0.164	0.171	-4.71
22	0.153	0.132	0.148	-12.40
23	0.173	0.107	0.128	-19.80
24	0.193	0.0880	0.110	-25.85
25	0.220	0.0690	0.0909	-31.75
26	0.250	0.0530	0.0730	-37.75
27	0.280	0.0440	0.0586	-33.25
28	0.323	0.0310	0.0428	-38.11
29	0.356	0.0250	0.0336	-34.55
30	0.406	0.0220	0.0233	-6.08
31	0.456	0.0150	0.0161	-7.95
32	0.523	0.0120	0.00992	17.31
33	0.590	0.0120	0.00608	49.33
34	0.656	0.0120		
35	0.756	0.00900		
36	0.840	0.00900		
37	0.956	0.00900		
38	1.17	0.00900		
39	1.37	0.00900		
40	1.57	0.00600		
41	1.77	0.00600		
42	1.97	0.00600		
43	2.17	0.00600		
44	2.57	0.00600		
45	2.97	0.00600		
46	3.17	0.00600		
47	3.77	0.00300		
48	4.17	0.00300		

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

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LU ENGINEERS

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MODEL: BOUMER & RICE
 I (sqft/min) K (feet/min)
 .0466 .00111
 HEAD: 2.15 (feet)

for: MALCOM PIRNIE		MR C SLUG TEST DATA	
by: LU ENGINEERS		E. AURORA, NY	
Aquifer: Endless		ERIE	
Thickness: 42.0	Depth: 30.0 feet		
Screen: Top: 15.0	Base: 30.0 feet		
Effective Diameter: 280 feet		Date: 2-FEB-95	

DATA SET: MPI-11B

CLIENT: MALCOM PIRNIE	DATE: 2-FEB-95
LOCATION: E. AURORA, NY	WELL NO.: 11B
COUNTY: ERIE	INIT. HEAD: 2.15 feet
PROJECT: MR C SLUG TEST DATA	WELL DEPTH: 30.00 feet
AQUIFER: Endless	THICKNESS: 42.00 feet
DEPTH TO WATER IN WELL: 8.66 feet	DURATION OF TEST : 10.00 min
BOREHOLE DIA.: 1.000 feet	CASING DIAMETER: 0.170 feet
SCREEN DIAMETER: 0.170 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 8.660 feet	PACKING POROSITY: 5.097 %

WELL SCREENED FROM 15.00 TO 30.00 feet

FITTING ERROR: 8.489 PERCENT

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 4.66E-02 sqft/min	COND: 1.11E-03 feet/min
FREE	FREE

No.	TIME (min)	Head, H (feet) DATA	SYNTHETIC	DIFFERENCE (percent)
1	0.0030	3.24		
2	0.0070	1.90		
3	0.0100	2.28		
4	0.0130	4.34		
5	0.0170	1.12		
6	0.0200	0.349		
7	0.0230	0.930		
8	0.0270	2.03		
9	0.0300	2.12		
10	0.0330	1.42		
11	0.0370	1.08		
12	0.0430	1.65		
13	0.0470	1.58	1.35	14.51
14	0.0530	1.30	1.34	-2.81
15	0.0630	1.41	1.32	5.80
16	0.0700	1.35	1.31	3.12
17	0.0800	1.35	1.30	3.69

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LU ENGINEERS

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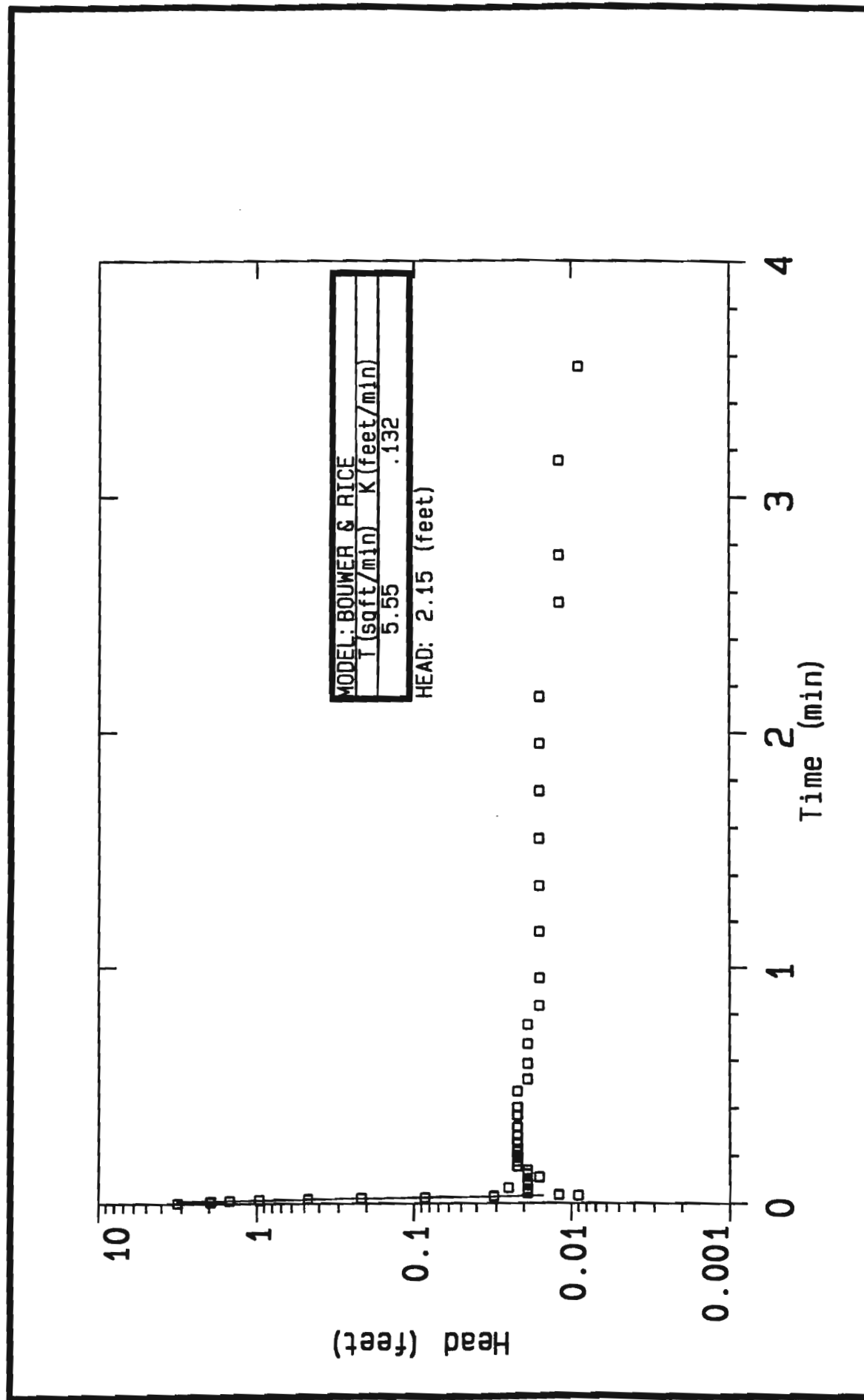
No.	TIME (min)	Head, H (feet)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
18	0.0900	1.34	1.28	4.61
19	0.103	1.31	1.26	3.93
20	0.117	1.28	1.24	3.47
21	0.133	1.25	1.21	2.97
22	0.150	1.22	1.19	2.85
23	0.170	1.19	1.16	2.46
24	0.193	1.15	1.12	2.36
25	0.220	1.11	1.09	2.14
26	0.250	1.07	1.05	2.06
27	0.283	1.02	1.00	2.00
28	0.327	0.969	0.954	1.51
29	0.360	0.927	0.915	1.22
30	0.410	0.867	0.860	0.792
31	0.460	0.810	0.807	0.254
32	0.527	0.743	0.742	0.00860
33	0.610	0.667	0.669	-0.391
34	0.677	0.609	0.615	-1.10
35	0.777	0.537	0.543	-1.17
36	0.877	0.473	0.479	-1.34
37	0.960	0.422	0.432	-2.38
38	1.16	0.308	0.336	-9.20
39	1.36	0.238	0.261	-10.02
40	1.56	0.187	0.203	-9.01
41	1.96	0.111	0.123	-11.30
42	2.16	0.0850	0.0961	-13.15
43	2.36	0.0660	0.0748	-13.45
44	2.76	0.0410	0.0453	-10.68
45	3.16	0.0250	0.0275	-10.01
46	3.56	0.0150	0.0166	-11.13
47	3.96	0.00900	0.0101	-12.25
48	4.56	0.00600	0.00477	20.55
49	5.16	0.00300	0.00225	25.02

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

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LU ENGINEERS

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MR C SLUG TEST DATA	
for:	MALCOM PIRNIE
by:	LU ENGINEERS
Aquifer: Endless Thickness: 42.0 Depth: 35.0 feet Screen: Top: 20.0 Base: 35.0 feet Effective Diameter: 280	
E. AURORA, NY ERIE	
Date: 2-FEB-95	Well No.: B

DATA SET: MPI-12B

CLIENT: MALCOM PIRNIE	DATE: 2-FEB-95
LOCATION: E. AURORA, NY	WELL NO.: 12B
COUNTY: ERIE	INIT. HEAD: 2.15 feet
PROJECT: MR C SLUG TEST DATA	WELL DEPTH: 35.00 feet
AQUIFER: Endless	THICKNESS: 42.00 feet
DEPTH TO WATER IN WELL: 6.88 feet	DURATION OF TEST : 10.00 min
BOREHOLE DIA.: 1.000 feet	CASING DIAMETER: 0.170 feet
SCREEN DIAMETER: 0.170 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 6.880 feet	PACKING POROSITY: 5.097 %

WELL SCREENED FROM 20.00 TO 35.00 feet

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 5.52E-02 sqft/min	COND: 1.31E-03 feet/min
FREE	FREE

No.	TIME (min)	Head, H (feet) DATA	DIFFERENCE SYNTHETIC (percent)
1	0.0030	3.17	
2	0.0060	1.96	
3	0.0100	1.95	
4	0.0130	1.48	
5	0.0160	0.967	
6	0.0200	0.472	
7	0.0230	0.215	
8	0.0260	0.0850	
9	0.0300	0.0310	
10	0.0330	0.00900	
11	0.0360	0.0120	
12	0.0430	0.0190	
13	0.0460	0.0190	
14	0.0530	0.0190	
15	0.0600	0.0190	
16	0.0660	0.0250	
17	0.0760	0.0190	
18	0.0860	0.0190	
19	0.0960	0.0190	

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LU ENGINEERS

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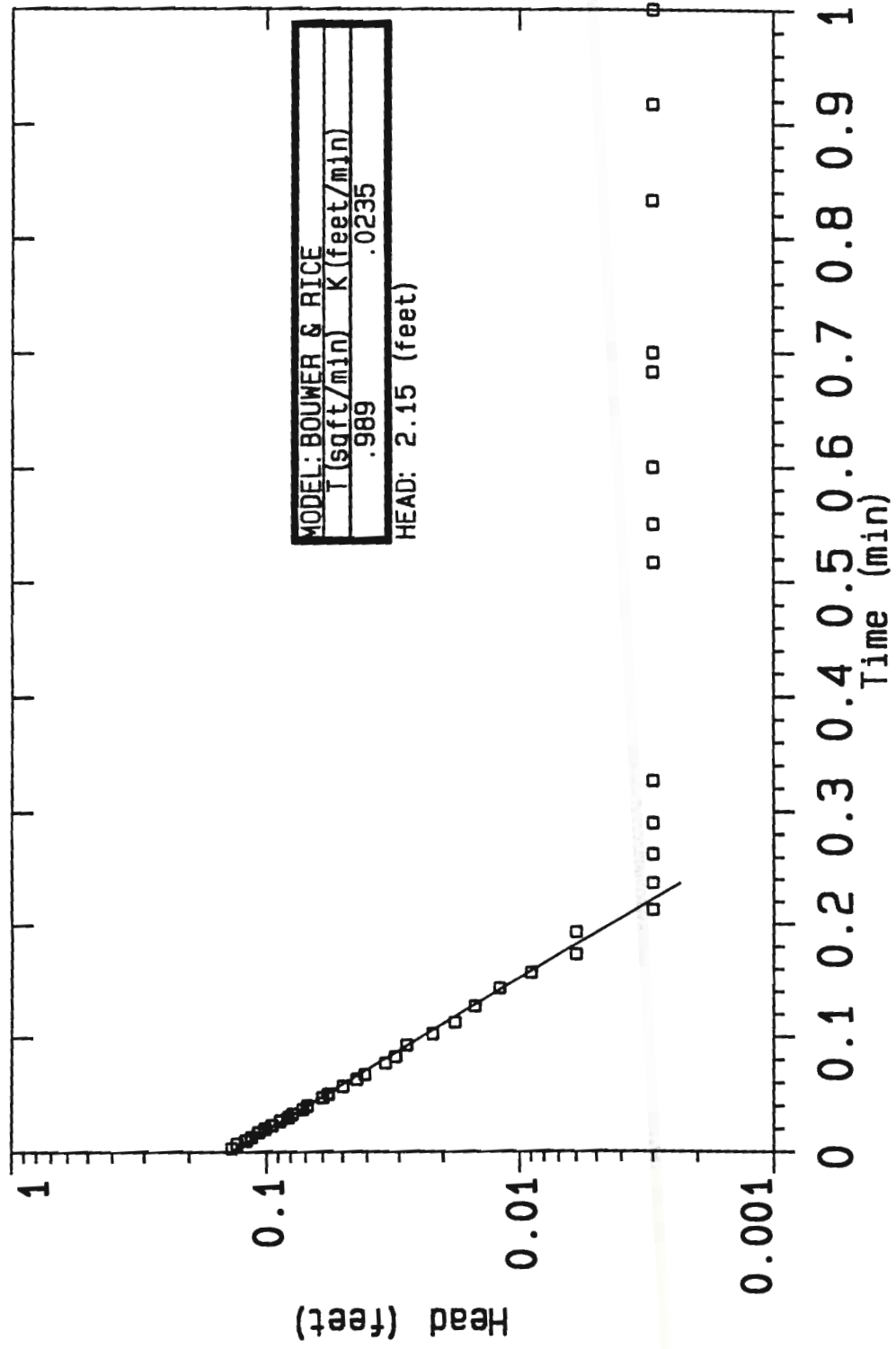
No.	TIME (min)	Head, H (feet) DATA SYNTHETIC	DIFFERENCE (percent)
20	0.110	0.0160	
21	0.123	0.0190	
22	0.140	0.0190	
23	0.156	0.0220	
24	0.176	0.0220	
25	0.200	0.0220	
26	0.226	0.0220	
27	0.253	0.0220	
28	0.286	0.0220	
29	0.320	0.0220	
30	0.370	0.0220	
31	0.403	0.0220	
32	0.470	0.0220	
33	0.520	0.0190	
34	0.586	0.0190	
35	0.670	0.0190	
36	0.753	0.0190	
37	0.836	0.0160	
38	0.953	0.0160	
39	1.15	0.0160	
40	1.35	0.0160	
41	1.55	0.0160	
42	1.75	0.0160	
43	1.95	0.0160	
44	2.15	0.0160	
45	2.55	0.0120	
46	2.75	0.0120	
47	3.15	0.0120	
48	3.55	0.00900	

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

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LU ENGINEERS

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for:	Malcom Pirnie		Well Slug Data, Mr.C	
by:	LU ENGINEERS		East Aurora, NY	
Aquifer: Endless Thickness: 42.0 Depth: 32.0 feet Screen: Top: 17.0 Base: 32.0 feet Effective Diameter: 280 feet			Erie	
			Date: 1-FEB-95	Well No.: 13B

DATA SET: MPI-13B

CLIENT: Malcom Pirnie	DATE: 1-FEB-95
LOCATION: East Aurora, NY	WELL NO.: 13B
COUNTY: Erie	INIT. HEAD: 2.15 feet
PROJECT: Well Slug Data, Mr.C	WELL DEPTH: 32.00 feet
AQUIFER: Endless	THICKNESS: 42.00 feet
DEPTH TO WATER IN WELL: 8.74 feet	DURATION OF TEST : 2.00 min
BOREHOLE DIA.: 1.000 feet	CASING DIAMETER: 0.167 feet
SCREEN DIAMETER: 0.167 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 8.740 feet	PACKING POROSITY: 5.209 %

WELL SCREENED FROM 17.00 TO 32.00 feet

FITTING ERROR: 125.422 PERCENT

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 4.06E-031/cm/sec
FREE

COND: ~~3.17E-03~~ cmc/sec
FREE 2.35×10^{-2} ft/min

No.	TIME (min)	Head, H (feet) DATA	SYNTHETIC	DIFFERENCE (percent)
1	0.0030	0.136		
2	0.0070	0.130		
3	0.0100	0.120		
4	0.0130	0.114		
5	0.0170	0.107		
6	0.0200	0.101		
7	0.0230	0.0950		
8	0.0270	0.0880		
9	0.0300	0.0820		
10	0.0330	0.0790		
11	0.0370	0.0720	0.0231	67.81
12	0.0400	0.0690	0.0229	66.74
13	0.0470	0.0600	0.0224	62.60
14	0.0500	0.0570	0.0222	61.01
15	0.0570	0.0500	0.0217	56.55
16	0.0630	0.0440	0.0213	51.57
17	0.0670	0.0410	0.0210	48.70

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LU ENGINEERS

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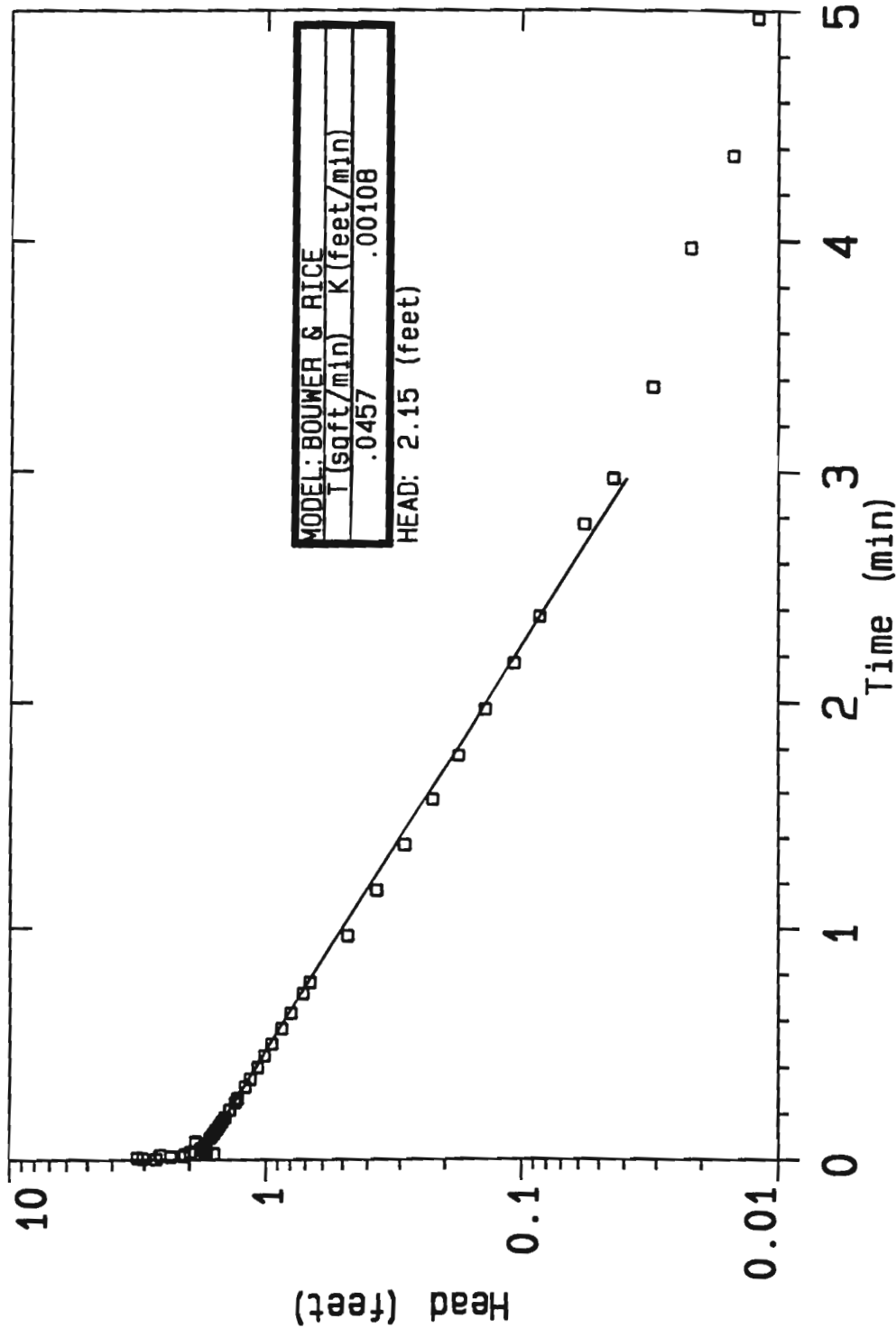
No.	TIME (min)	Head, H (feet)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
18	0.0770	0.0340	0.0203	40.11
19	0.0830	0.0310	0.0199	35.57
20	0.0930	0.0280	0.0193	30.94
21	0.103	0.0220	0.0187	14.90
22	0.113	0.0180	0.0181	-0.699
23	0.127	0.0150	0.0173	-15.49
24	0.143	0.0120	0.0164	-37.09
25	0.157	0.00900	0.0157	-74.70
26	0.173	0.00600	0.0149	-148.8
27	0.193	0.00600	0.0140	-133.2
28	0.213	0.00300	0.0131	-337.3
29	0.237	0.00300	0.0121	-304.6
30	0.263	0.00300	0.0111	-272.0
31	0.290	0.00300	0.0102	-240.9
32	0.327	0.00300	0.00908	-202.5
33	0.517	0.00300	0.00491	-63.72
34	0.550	0.00300	0.00441	-47.16
35	0.600	0.00300	0.00376	-25.20
36	0.683	0.00300	0.00287	4.25
37	0.700	0.00300	0.00272	9.37
38	0.833	0.00300	0.00177	41.03
39	0.917	0.00300	0.00135	55.05
40	1.00	0.00300	0.00103	65.62

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

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LU ENGINEERS

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for:	MALCOM PIRNIE	MR C SLUG TEST DATA
by:	LU ENGINEERS	E. AURORA, NY
Aquifer: Endless		ERIE
Thickness: 42.0	Depth: 30.0 feet	
Screen: Top: 15.0	Base: 30.0 feet	
Effective Diameter: 280		
	Date: 2-FEB-95	Well No.:

DATA SET: MPI-14B

CLIENT: MALCOM PIRNIE	DATE: 2-FEB-95
LOCATION: E. AURORA, NY	WELL NO.: 14B
COUNTY: ERIE	INIT. HEAD: 2.15 feet
PROJECT: MR C SLUG TEST DATA	WELL DEPTH: 30.00 feet
AQUIFER: Endless	THICKNESS: 42.00 feet
DEPTH TO WATER IN WELL: 8.62 feet	DURATION OF TEST : 12.00 min
BOREHOLE DIA.: 1.000 feet	CASING DIAMETER: 0.167 feet
SCREEN DIAMETER: 0.170 feet	EFFECTIVE DIAMETER: 0.280 feet
DEPTH TO AQUIFER: 8.620 feet	PACKING POROSITY: 5.097 %

WELL SCREENED FROM 15.00 TO 30.00 feet

FITTING ERROR: 5.266 PERCENT

UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

MODEL PARAMETERS:

TRANSM: 4.57E-02 sqft/min	COND: 1.09E-03 feet/min
FREE	FREE

No.	TIME (min)	Head, H (feet) DATA	SYNTHETIC	DIFFERENCE (percent)
1	0.0040	2.70		
2	0.0070	3.03		
3	0.0100	3.20		
4	0.0140	2.36		
5	0.0170	2.09		
6	0.0200	2.60		
7	0.0240	2.08		
8	0.0270	1.60		
9	0.0300	1.73		
10	0.0340	1.98		
11	0.0400	1.71		
12	0.0440	1.78		
13	0.0500	1.80	1.73	4.22
14	0.0570	1.73	1.71	1.09
15	0.0640	1.74	1.70	2.32
16	0.0740	1.89	1.67	11.19
17	0.0800	1.89	1.66	12.02

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LU ENGINEERS

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No.	TIME (min)	Head, H (feet)		DIFFERENCE (percent)
		DATA	SYNTHETIC	
18	0.0940	1.66	1.63	1.60
19	0.100	1.64	1.62	1.41
20	0.117	1.60	1.58	1.10
21	0.134	1.56	1.55	0.735
22	0.150	1.52	1.52	0.358
23	0.167	1.48	1.48	0.0478
24	0.184	1.45	1.45	-0.121
25	0.217	1.38	1.39	-0.480
26	0.250	1.32	1.33	-0.915
27	0.267	1.29	1.30	-0.843
28	0.317	1.20	1.22	-1.21
29	0.350	1.15	1.17	-1.41
30	0.400	1.08	1.09	-1.71
31	0.450	1.01	1.02	-1.61
32	0.500	0.947	0.964	-1.85
33	0.567	0.867	0.884	-1.96
34	0.634	0.798	0.810	-1.54
35	0.717	0.715	0.727	-1.73
36	0.767	0.671	0.681	-1.58
37	0.967	0.478	0.525	-9.93
38	1.16	0.370	0.405	-9.50
39	1.36	0.288	0.312	-8.46
40	1.56	0.224	0.240	-7.51
41	1.76	0.177	0.185	-4.90
42	1.96	0.139	0.143	-2.99
43	2.16	0.107	0.110	-3.15
44	2.36	0.0850	0.0851	-0.113
45	2.76	0.0570	0.0505	11.25
46	2.96	0.0440	0.0390	11.36
47	3.36	0.0310		
48	3.96	0.0220		
49	4.36	0.0150		
50	4.96	0.0120		

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

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LU ENGINEERS

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APPENDIX J

- Commonwealth Analytical Data including Quality Control Results
- Commonwealth Analytical Base Laboratory/Mobile Laboratory Confirmation Testing
- Duplicate Samples Analyzed by Nytest Environmental for H-9, 26-28' and H-13, 13-15'



Commonwealth**Analytical**

23 December 1994
E-354

Mr. Robert O'Laskey
Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219

RE: Mobile Lab Report
Mr. C Cleaners Site
East Aurora, NY
December 12-15, 1994

Dear Mr. O'Laskey,

Enclosed please find the final results and report for the field analytical project conducted at Mr. C Cleaners Site in East Aurora, New York on December 12-15, 1994. This four-section report provides a narrative, final data results, quality control results, and copies of the chromatograms.

Please note that we have recently consolidated our services under the Commonwealth Analytical name. This division of Tighe & Bond continues to provide both the mobile and base laboratory services we have in the past.

As always, it was a pleasure working with Malcolm Pirnie on this project and we look forward to working with you again.

If you have any questions on this report, please do not hesitate to contact me.

Very truly yours,
COMMONWEALTH ANALYTICAL

Stephen L. Knollmeyer
Mobile Lab/Field Services Supervisor

j:\ltr\slk\mrc#3.fin

Drinking Water • Wastewater • Hazardous Waste • Toxicity Testing • Mobile Laboratory

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<u>Section</u>	<u>Title</u>
1.0	Narrative
2.0	Data Results
3.0	Quality Control Results
4.0	Chromatograms

Section 1.0

Narrative

1.0 Narrative

A field analytical survey was conducted at the Mr. C Cleaners site in East Aurora, New York on December 12-15, 1994. A total of thirty-nine (39) soil and water samples were collected and analyzed during this field investigation. The samples were collected using a Hydropunch in conjunction with Malcolm Pirnie personnel. The investigation took place near Fillmore Ave., The First Presbyterian Church and the Mr. C's/Agway block. The 39 samples were submitted to the mobile laboratory for VOC analysis using modified EPA Methods 8010/8020. The primary target compounds were:

EPA Method 8020

Benzene
Toluene
Ethylbenzene
Chlorobenzene
o-xylene
p-xylene
m-xylene

EPA Method 8010

Vinyl chloride
1,1-Dichloroethene (1,1-DCE)
Methylene chloride (MeCl₂)
t-1,2-Dichloroethene (t-1,2-DCE)
1,1-Dichloroethane (1,1-DCA)
c-1,2-Dichloroethene (c-1,2-DCE)
1,1,1-Trichloroethane (1,1,1-TCA)
Carbon tetrachloride
1,2-Dichloroethane
Trichloroethene (TCE)
Tetrachloroethene (PCE)

In general, varying concentrations of Tetrachloroethene (PCE) and it's degradation products (TCE, 1,2-DCE and Vinyl chloride) were found in many of the soil and water samples while some of the samples also contained detectable levels of BTEX compounds.

Sample Analysis

All samples delivered to the mobile laboratory were analyzed for VOC's using a Hewlett-Packard Model 5890 II Gas Chromatograph (GC) with electrolytic conductivity (ELCD) and Photoionization detectors (PID). An OI Analytical Model 4560 Purge & Trap sample concentrator was used to purge the VOC's from the sample matrix, concentrate them onto a sorbent trap and desorb them onto the GC system. An OI Analytical MPM-16 multi-sampler was used to allow continuous sample analyses. The analytical system and parameters utilized are similar to those required in EPA Methods 8010/8020. Data was processed on a Dell 486 DX/50 Personal Computer using HP Chemstation Software. Reports were generated with a customized Microsoft Excel reporting program. Copies of each day's sample results were delivered to the on-site Malcolm Pirnie personnel as they were made available. Section 2.0 contains the reviewed field reports and Section 3.0 contains the results of the quality control analyses.

Volatile Organics Quality Control

Listed below is a description of the QC analysis and the acceptance criteria for this analysis:

1. Initial Calibration - A 3-point initial calibration was conducted on the analytical system prior to project initiation. The instrument was calibrated and the correlation coefficient (r) checked for each analyte. For all analytes detected the (r) value is required to be greater than 0.990 or recalibration was performed.
2. Calibration Check Standards - At the beginning of each day, after every 10 samples and at the end of each day a mid-point calibration check standard was analyzed to verify that the analytical sensitivity did not change from the initial calibration. After running this standard the analyst calculated the % Recovery (%R) value for each analyte and compared it to the 75-125% criteria. If the %R value was outside the control limits the analyst noted this on the QC form. If significant variances were observed, the system was recalibrated.
3. QC Standards - A QC standard was analyzed on a daily basis and used to verify the accuracy of the calibration standards. The QC standard was a standard from a second source, other than the calibration standards. %R values were calculated and compared to the 75-125% criteria.
4. Method Blanks - A sample of analyte-free water was processed at the beginning of the day and after every 10 sample analyses to verify that the analytical system was contaminant-free. Concentrations of detected analytes must be less than $\frac{1}{2}$ the method detection limit. Low concentrations of contaminants may have been noted as detected in the blank and labelled with a "B". Significant contaminant levels necessitate corrective action, i.e. cleaning of the instrument. Methylene chloride and Freon 113 were detected in lab blanks and any quantitation of methylene chloride and Freon 113 would have been labelled with a "B". However, neither of these analytes was detected.
5. Surrogate Standards - Surrogate standards were added to all samples, standards and blanks to measure the potential for matrix interferences. %R values were calculated (appear in comments section of the data pages) and were compared to the 80-120% criteria. Small deviations were marked as outside control limits while large deviations necessitate reanalysis.
6. Duplicates - Ten percent (10%) of all samples were analyzed in duplicate on a daily basis to determine the precision of the analyses. Relative Percent Difference (RPD) values were calculated and compared to the 30% acceptance limit. Values over this level require corrective action if significant, otherwise they were highlighted as outside QC limits.

7. Matrix Spike Analyses - Ten percent (10%) of the samples analyzed on each day were spiked with a standard and %R values were calculated. The %R values were compared against the 75-125% criteria.
8. Base Laboratory Confirmation - Ten percent (10%) of the samples analyzed in the field were returned to the Commonwealth Analytical base laboratory for confirmation analysis following EPA Methods 8010/8020. The field data and base lab data will be compared and should not differ by more than an order of magnitude. A total of three samples were submitted for base laboratory confirmation using EPA Method 8010/8020, and the results for these samples are contained in Section 3.0.

Section 2.0

Data Results
12/12/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pimie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 007F0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 12:18
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-3 (1)
GC Sample ID: H-3 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	BQL
TETRACHLOROETHENE	1.0	33.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 108 %

Signed TJS 12.12.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 057R0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 12:18
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-3 (1)
GC Sample ID: H-3 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 108 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 010F0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 13:45
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-2 (1)
GC Sample ID: H-2 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.12.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 060R0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 13:45
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-2 (1)
GC Sample ID: H-2 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.12.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 011F0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 14:14
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-2 (2)
GC Sample ID: H-2 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 106 %

Signed TJS 12-12-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 061R0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 14:12
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-2 (2)
GC Sample ID: H-2 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 106 %

Signed JS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pimie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 012F0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 14:40
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-1 (1)
GC Sample ID: H-1 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed TJS 12-12-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 062R0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 14:38
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-1 (1)
GC Sample ID: H-1 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 112 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 013F0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 15:09
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-1 (2)
GC Sample ID: H-1 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 109 %

Signed TJS 12/20/94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 063R0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 15:05
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-1 (2)
GC Sample ID: H-1 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 109 %

Signed TJS 12-12-94

Reviewed TOP 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pimie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 014F0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 15:31
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-3 (2)
GC Sample ID: H-3 (2) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	3.7

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 112 %

Signed TJS 12.12.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 064R0101.D
Instr. #: GC #6
Date Coll: 12/8/94
Date Analyzed: 12/12/94 15:31
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-3 (2)
GC Sample ID: H-3 (2) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND BQL TDC 12/20/94
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 102 %

Signed TJS 12-12-94

Reviewed TDC 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 015F0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 16:09
Dilution Factor: 100
Method: 8010WA.MTH

Sample ID: H-5 (1)
GC Sample ID: H-5 (1) 50 ul
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
t-1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
c-1,2-DICHLOROETHENE	100.0	ND
111TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	ND
TETRACHLOROETHENE	100.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 115 %

Signed TJS 12.12.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 065R0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 16:14
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: H-5 (1)
GC Sample ID: H-5 (1) 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	ND
TOLUENE	100.0	BQL
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	1400.0
M&P-XYLENE	100.0	4300.0
O-XYLENE	100.0	440.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 127 %

* Co-eluting peaks ✓
TJS 12/20/94

Signed TJS 12-12-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 016F0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 17:27
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-5 (2)
GC Sample ID: H-5 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	BQL
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 066R0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 17:31
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-5 (2)
GC Sample ID: H-5 (2) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	1.6
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	11.0
M&P-XYLENE	1.0	42.0
O-XYLENE	1.0	4.4

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 118 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 017F0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 17:34
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: Blind dupe
GC Sample ID: Blind Dup 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	BQL
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 067R0101.D
Instr. #: GC #6
Date Coll: 12/9/94
Date Analyzed: 12/12/94 17:36
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: Blind dupe
GC Sample ID: Blind Dup 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	1.8
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	11.0
M&P-XYLENE	1.0	42.0
O-XYLENE	1.0	4.4

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 115 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Data Results

12/13/94



Preliminary Field Report

PROJECT :	Mr. C Cleaners East Aurora, New York	Matrix:	WATER
CLIENT:	Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217	Analyst:	TJS
		File #:	005F0101.D
		Instr. #:	GC #6
		Date Coll:	12/12/94
		Date Analyzed:	12/13/94 11:54
		Dilution Factor:	1
		Method:	8010WA.MTH
Sample ID:	H-4 (1)		
GC Sample ID:	H-4 (1) 5.0 mL		
W.O. #:	0		

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
1,1,1-TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 118 %

Signed TJS 12-13-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413) 572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 055R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 11:53
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-4 (1)
GC Sample ID: H-4 (1) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 115 %

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 006F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 12:18
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-4 (2)
GC Sample ID: H-4 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
1,1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
1,1,1-TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 97 %

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 056R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 12:18
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-4 (2)
GC Sample ID: H-4 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed TJS 12.13.94

Reviewed TOK 12/20/94

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(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 009F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 14:28
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-7 (1)
GC Sample ID: H-7 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	BQL
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	BQL
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 115 %
Only the 8010 portion of this sample is reported from this run. See file 064R for 8020 report.

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 064R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 17:22
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: H-7 (1)
GC Sample ID: H-7 (1) 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	390.0
TOLUENE	100.0	210.0
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	880.0
M&P-XYLENE	100.0	3400.0
O-XYLENE	100.0	920.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 112 %
Only the 8020 portion of this sample is reported for this run. The 8010 portion was reported in file 009F.

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 010F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 15:05
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-7 (2)
GC Sample ID: H-7 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	13.0
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	BQL
1,1-DICHLOROETHANE	1.0	BQL
c-1,2-DICHLOROETHENE	1.0	62.0
111TRICHLOROETHANE	1.0	BQL
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	7.1
TETRACHLOROETHENE	1.0	7.9

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 119 %

Signed TJS 12/13/94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 060R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 15:01
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-7 (2)
GC Sample ID: H-7 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	19.0
TOLUENE	1.0	1.1
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	1.9
M&P-XYLENE	1.0	5.9
O-XYLENE	1.0	1.7

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

Signed TJS 12-13-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 015F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 17:53
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-8 (2)
GC Sample ID: H-8 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 119 %

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 065R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 17:53
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-8 (2)
GC Sample ID: H-8 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 111 %

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 018F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 19:31
Dilution Factor: 10
Method: 8010WA.MTH

Sample ID: Fillmore RW-531
GC Sample ID: Fill. RW-531 10X
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	10.0	ND
1,1-DICHLOROETHENE	10.0	ND
METHYLENE CHLORIDE	10.0	ND
t-1,2-DICHLOROETHENE	10.0	ND
1,1-DICHLOROETHANE	10.0	ND
c-1,2-DICHLOROETHENE	10.0	BQL
111TRICHLOROETHANE	10.0	ND
CARBON TET.	10.0	ND
1,2-DICHLOROETHANE	10.0	ND
TRICHLOROETHENE	10.0	17.0
TETRACHLOROETHENE	10.0	210.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 111 %

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 068R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 19:17
Dilution Factor: 10
Method: 8020WA.MTH

Sample ID: Fillmore RW-531
GC Sample ID: Fill. RW-531 10X
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	10.0	ND
TOLUENE	10.0	ND
CHLOROBENZENE	10.0	ND
ETHYLBENZENE	10.0	ND
M&P-XYLENE	10.0	ND
O-XYLENE	10.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 111 %

Signed TJS 12.13.94

Reviewed TAK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners East Aurora, New York	Matrix:	WATER
CLIENT:	Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217	Analyst:	TJS
		File #:	019F0101.D
		Instr. #:	GC #6
		Date Coll:	12/13/94
		Date Analyzed:	12/13/94 19:45
		Dilution Factor:	10
Sample ID:	Fillmore RW-517	Method:	8010WA.MTH
GC Sample ID:	Fill. RW-517 10X		
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	10.0	ND
1,1-DICHLOROETHENE	10.0	ND
METHYLENE CHLORIDE	10.0	ND
t-1,2-DICHLOROETHENE	10.0	ND
1,1-DICHLOROETHANE	10.0	ND
c-1,2-DICHLOROETHENE	10.0	ND
111TRICHLOROETHANE	10.0	ND
CARBON TET.	10.0	ND
1,2-DICHLOROETHANE	10.0	ND
TRICHLOROETHENE	10.0	BQL
TETRACHLOROETHENE	10.0	100.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 113 %

Signed TJS 12-13-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 069R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 19:43
Dilution Factor: 10
Method: 8020WA.MTH

Sample ID: Fillmore RW-517
GC Sample ID: Fill. RW-517 10X
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	10.0	ND
TOLUENE	10.0	ND
CHLOROBENZENE	10.0	ND
ETHYLBENZENE	10.0	ND
M&P-XYLENE	10.0	ND
O-XYLENE	10.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 115 %

Signed TJS 12/13/94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 022F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 21:04
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-8 (1)
GC Sample ID: H-8 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 072R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 21:03
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-8 (1)
GC Sample ID: H-8 (1) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	BQL
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 116 %

Signed JS 12.13.94

Reviewed TPK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 023F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 21:28
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: MPI- 3S
GC Sample ID: MPI-3S 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12-13-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217
Sample ID: MPI- 3S
GC Sample ID: MPI-3S 5.0 mL
W.O. #: 0

Matrix: WATER
Analyst: TJS
File #: 073R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 21:28
Dilution Factor: 1
Method: 8020WA.MTH

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed TJS 12.13.94

Reviewed TJK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	024F0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	12/12/94
	Buffalo, New York 14217	Date Analyzed:	12/13/94 21:56
		Dilution Factor:	100
Sample ID:	MPI- 6S	Method:	8010WA.MTH
GC Sample ID:	MPI-6S 50 uL		
W.O. #:	0		

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
t-1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
c-1,2-DICHLOROETHENE	100.0	ND
111TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	260.0
TETRACHLOROETHENE	100.0	2000.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 074R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 21:56
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: MPI- 6S
GC Sample ID: MPI-6S 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	ND
TOLUENE	100.0	ND
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	ND
M&P-XYLENE	100.0	ND
O-XYLENE	100.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 112 %

Signed TJS 12-13-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Data Results

12/14/94

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	007F0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	12/12/94
	Buffalo, New York 14217	Date Analyzed:	12/13/94 13:02
		Dilution Factor:	1
Sample ID:	H-6 (1)	Method:	8010WA.MTH
GC Sample ID:	H-6 (1) 5.0 mL		
W.O. #:	0		

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	3.9
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	1.9
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 101 %
Only the 8010 portion of this sample is reported from this run. See file 064R for 8020 report.

Signed TJS 12.13.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	064R0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	12/12/94
	Buffalo, New York 14217	Date Analyzed:	12/14/94 14:19
Sample ID:	H-6 (1)	Dilution Factor:	10
GC Sample ID:	H-6 (1) 0.5 mL	Method:	8020WA.MTH
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	10.0	93.0
TOLUENE	10.0	37.0
CHLOROBENZENE	10.0	ND
ETHYLBENZENE	10.0	410.0
M&P-XYLENE	10.0	70.0
O-XYLENE	10.0	17.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
 Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
 NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
 B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 108 %
 Only the 8020 portion of this sample is reported for this run. See file 007f 12/13/94 for 8010 report.

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners East Aurora, New York CLIENT: Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217 Sample ID: H-6 (2) GC Sample ID: H-6 (2) 0.5 mL W.O. #: 0	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Matrix:</td> <td>WATER</td> </tr> <tr> <td>Analyst:</td> <td>TJS</td> </tr> <tr> <td>File #:</td> <td>015F0101.D</td> </tr> <tr> <td>Instr. #:</td> <td>GC #6</td> </tr> <tr> <td>Date Coll:</td> <td>12/12/94</td> </tr> <tr> <td>Date Analyzed:</td> <td>12/14/94 15:03</td> </tr> <tr> <td>Dilution Factor:</td> <td>10</td> </tr> <tr> <td>Method:</td> <td>8010WA.MTH</td> </tr> </table>	Matrix:	WATER	Analyst:	TJS	File #:	015F0101.D	Instr. #:	GC #6	Date Coll:	12/12/94	Date Analyzed:	12/14/94 15:03	Dilution Factor:	10	Method:	8010WA.MTH
Matrix:	WATER																
Analyst:	TJS																
File #:	015F0101.D																
Instr. #:	GC #6																
Date Coll:	12/12/94																
Date Analyzed:	12/14/94 15:03																
Dilution Factor:	10																
Method:	8010WA.MTH																

RESULTS: EPA Method 8010/8020
 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	10.0	ND
1,1-DICHLOROETHENE	10.0	ND
METHYLENE CHLORIDE	10.0	ND
t-1,2-DICHLOROETHENE	10.0	ND
1,1-DICHLOROETHANE	10.0	ND
c-1,2-DICHLOROETHENE	10.0	34.0
111TRICHLOROETHANE	10.0	ND
CARBON TET.	10.0	ND
1,2-DICHLOROETHANE	10.0	ND
TRICHLOROETHENE	10.0	ND
TETRACHLOROETHENE	10.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
 Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
 NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
 B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed *[Signature]* 12-14-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 065R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/14/94 15:04
Dilution Factor: 10
Method: 8020WA.MTH

Sample ID: H-6 (2)
GC Sample ID: H-6 (2) 0.5 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	10.0	15.0
TOLUENE	10.0	44.0
CHLOROBENZENE	10.0	ND
ETHYLBENZENE	10.0	120.0
M&P-XYLENE	10.0	500.0
O-XYLENE	10.0	170.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 127 % * *r*
newly peaks
TJS 12.14.94

Signed *TJS* 12.14.94

Reviewed *TDK 12/20/94*

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 010F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 12:19
Dilution Factor: 10
Method: 8010WA.MTH

Sample ID: H-9 (1)
GC Sample ID: H-9 (1) 0.5 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	10.0	ND
1,1-DICHLOROETHENE	10.0	ND
METHYLENE CHLORIDE	10.0	ND
t-1,2-DICHLOROETHENE	10.0	ND
1,1-DICHLOROETHANE	10.0	ND
c-1,2-DICHLOROETHENE	10.0	ND
111TRICHLOROETHANE	10.0	ND
CARBON TET.	10.0	ND
1,2-DICHLOROETHANE	10.0	ND
TRICHLOROETHENE	10.0	ND
TETRACHLOROETHENE	10.0	400.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 105 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 060R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 12:17
Dilution Factor: 10
Method: 8020WA.MTH

Sample ID: H-9 (1)
GC Sample ID: H-9 (1) 0.5 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	10.0	ND
TOLUENE	10.0	12.0
CHLOROBENZENE	10.0	ND
ETHYLBENZENE	10.0	ND
M&P-XYLENE	10.0	ND
O-XYLENE	10.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.14.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 008F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 11:26
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-10 (1)
GC Sample ID: H-10 (1) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 94 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 058R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 11:25
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-10 (1)
GC Sample ID: H-10 (1) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	BQL
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	BQL
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 104 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 006F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 10:38
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-10 (2)
GC Sample ID: H-10 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
1,1,1-TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 96 %

Signed TJS 12-14-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners East Aurora, New York CLIENT: Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217 Sample ID: <u>H-10 (2)</u> GC Sample ID: <u>H-10 (2) 5.0 mL</u> W.O. #: <u>0</u>	Matrix: <u>WATER</u> Analyst: <u>TJS</u> File #: <u>056R0101.D</u> Instr. #: <u>GC #6</u> Date Coll: <u>12/13/94</u> Date Analyzed: <u>12/14/94 11:29</u> Dilution Factor: <u>1</u> Method: <u>8020WA.MTH</u>

RESULTS: EPA Method 8010/8020
 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	BQL
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
 Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
 NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
 B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 007F0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 11:02
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-10 (3)
GC Sample ID: H-10 (3) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 82 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 057R0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 11:00
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-10 (3)
GC Sample ID: H-10 (3) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	1.5
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	1.2
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 103 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 019F0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 16:59
Dilution Factor: 1000
Method: 8010WA.MTH

Sample ID: H-11 (1)
GC Sample ID: H-11 (1) 5.0 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1000.0	ND
1,1-DICHLOROETHENE	1000.0	ND
METHYLENE CHLORIDE	1000.0	ND
t-1,2-DICHLOROETHENE	1000.0	ND
1,1-DICHLOROETHANE	1000.0	ND
c-1,2-DICHLOROETHENE	1000.0	ND
111TRICHLOROETHANE	1000.0	ND
CARBON TET.	1000.0	ND
1,2-DICHLOROETHANE	1000.0	ND
TRICHLOROETHENE	1000.0	ND
TETRACHLOROETHENE	1000.0	8700.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 120 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 069R0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 16:57
Dilution Factor: 1000
Method: 8020WA.MTH

Sample ID: H-11 (1)
GC Sample ID: H-11 (1) 5.0 uL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1000.0	ND
TOLUENE	1000.0	ND
CHLOROBENZENE	1000.0	ND
ETHYLBENZENE	1000.0	ND
M&P-XYLENE	1000.0	ND
O-XYLENE	1000.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 111 %

Signed JS 12.14.94

Reviewed TPK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 021F0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 17:49
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-11 (2)
GC Sample ID: H-11 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
.1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	11.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 071R0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 17:49
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-11 (2)
GC Sample ID: H-11 (2) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12.14.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 022F0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 18:19
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-12
GC Sample ID: H-12 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	BQL
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	2.2
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	1.6
TETRACHLOROETHENE	1.0	9.7

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 111 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 072R0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 18:16
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-12
GC Sample ID: H-12 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pimie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 012F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 13:13
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: Fillmore RW-524
GC Sample ID: Fillmore RW-524
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	2.6

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 115 %

Signed TJS 12-14-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 062R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 13:12
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: Fillmore RW-524
GC Sample ID: Fillmore RW-524
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 112 %

Signed

TJS 12-14-94

Reviewed

TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners CLIENT: East Aurora, New York Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217 Sample ID: MW-7 GC Sample ID: MW-7 50 uL W.O. #: 0	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Matrix:</td> <td>WATER</td> </tr> <tr> <td>Analyst:</td> <td>TJS</td> </tr> <tr> <td>File #:</td> <td>013F0101.D</td> </tr> <tr> <td>Instr. #:</td> <td>GC #6</td> </tr> <tr> <td>Date Coll:</td> <td>12/12/94</td> </tr> <tr> <td>Date Analyzed:</td> <td>12/14/94 13:40</td> </tr> <tr> <td>Dilution Factor:</td> <td>100</td> </tr> <tr> <td>Method:</td> <td>8010WA.MTH</td> </tr> </table>	Matrix:	WATER	Analyst:	TJS	File #:	013F0101.D	Instr. #:	GC #6	Date Coll:	12/12/94	Date Analyzed:	12/14/94 13:40	Dilution Factor:	100	Method:	8010WA.MTH
Matrix:	WATER																
Analyst:	TJS																
File #:	013F0101.D																
Instr. #:	GC #6																
Date Coll:	12/12/94																
Date Analyzed:	12/14/94 13:40																
Dilution Factor:	100																
Method:	8010WA.MTH																

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
t-1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
c-1,2-DICHLOROETHENE	100.0	ND
111TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	ND
TETRACHLOROETHENE	100.0	1800.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
 Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
 NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
 B = Detected in the laboratory blank

Comments: Surrogate Recovery = 101 %

Signed TJS 12-14-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 063R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/14/94 13:40
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: MW-7
GC Sample ID: MW-7 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	ND
TOLUENE	100.0	ND
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	ND
M&P-XYLENE	100.0	ND
O-XYLENE	100.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 025F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 19:36
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: Blind dupe 12/13
GC Sample ID: Blind dupe 12/13
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 106 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 075R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/14/94 19:35
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: Blind dupe 12/13
GC Sample ID: Blind dupe 12/13
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed TJS 12-14-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Data Results

12/15/94



Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 004F0101.D
Instr. #: GC #6
Date Coll: ~~12/15/94~~ 12/13/94 JTS
Date Analyzed: 12/15/94 10:08
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: Equipment blank
GC Sample ID: Equip blank 5 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 84 %

Signed JTS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	054R0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	~~12/15/94~~ 12/13/94 TJS
	Buffalo, New York 14217	Date Analyzed:	12/15/94 10:03 12-15-94
		Dilution Factor:	1
Sample ID:	Equipment blank	Method:	8020WA.MTH
GC Sample ID:	Equip blank 5 mL		
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
 Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
 NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
 B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 101 %

Signed TJS 12/15/94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 009F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 12:24
Dilution Factor: 1000
Method: 8010WA.MTH

Sample ID: H-13
GC Sample ID: H-13 5.0 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1000.0	ND
1,1-DICHLOROETHENE	1000.0	ND
METHYLENE CHLORIDE	1000.0	ND
t-1,2-DICHLOROETHENE	1000.0	ND
1,1-DICHLOROETHANE	1000.0	ND
c-1,2-DICHLOROETHENE	1000.0	ND
111TRICHLOROETHANE	1000.0	ND
CARBON TET.	1000.0	ND
1,2-DICHLOROETHANE	1000.0	ND
TRICHLOROETHENE	1000.0	ND
TETRACHLOROETHENE	1000.0	4700.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 109 %

Signed TJS 12-15-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 059R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 12:22
Dilution Factor: 1000
Method: 8020WA.MTH

Sample ID: H-13
GC Sample ID: H-13 5.0 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1000.0	ND
TOLUENE	1000.0	ND
CHLOROBENZENE	1000.0	ND
ETHYLBENZENE	1000.0	ND
M&P-XYLENE	1000.0	ND
O-XYLENE	1000.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 014F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 15:07
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-15 (1)
GC Sample ID: H-15 (1) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	BQL
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	2.2

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 95 %

Signed SJS 12-15-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 064R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 15:08
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-15 (1)
GC Sample ID: H-15 (1) 5.0 mL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	20.0
TOLUENE	1.0	1.5
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	10.0
M&P-XYLENE	1.0	11.0
O-XYLENE	1.0	1.8

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 101 %

Signed TJS 12-15-94

Reviewed TDK 12/20/94

Commonwealth Analytical

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(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 013F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 14:29
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-15 (2)
GC Sample ID: H-15 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	BQL
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	5.0
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	5.0
TETRACHLOROETHENE	1.0	22.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 96 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 063R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 14:29
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-15 (2)
GC Sample ID: H-15 (2) 5.0 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 105 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 011F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 13:19
Dilution Factor: 100
Method: 8010WA.MTH

Sample ID: H-14 (1)
GC Sample ID: H-14 (1) 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
1,1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
1,2-DICHLOROETHENE	100.0	ND
1,1,1-TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	ND
TETRACHLOROETHENE	100.0	880.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 109 %

Signed JFS 12-15-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 061R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 13:17
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: H-14 (1)
GC Sample ID: H-14 (1) 50 uL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	ND
TOLUENE	100.0	ND
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	ND
M&P-XYLENE	100.0	ND
O-XYLENE	100.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	010F0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	12/15/94
	Buffalo, New York 14217	Date Analyzed:	12/15/94 12:50
		Dilution Factor:	100
Sample ID:	H-14 (2)	Method:	8010WA.MTH
GC Sample ID:	H-14 (2) 50 uL		
W.O. #:	0		

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
c-1,2-DICHLOROETHENE	100.0	ND
1,1,1-TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	ND
TETRACHLOROETHENE	100.0	920.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 114 %

Signed TJS 12-15-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 060R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 12:49
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: H-14 (2)
GC Sample ID: H-14 (2) 50 uL
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	100.0	ND
TOLUENE	100.0	ND
CHLOROBENZENE	100.0	ND
ETHYLBENZENE	100.0	ND
M&P-XYLENE	100.0	ND
O-XYLENE	100.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 112 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: 015F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 15:36
Dilution Factor: 1000
Method: 8010WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-1, 6-8
GC Sample ID: SB-1,6-8 1000x
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
VINYL CHLORIDE	1000.0	ND
1,1-DICHLOROETHENE	1000.0	ND
METHYLENE CHLORIDE	1000.0	ND
t-1,2-DICHLOROETHENE	1000.0	ND
1,1-DICHLOROETHANE	1000.0	ND
c-1,2-DICHLOROETHENE	1000.0	ND
1,1,1-TRICHLOROETHANE	1000.0	ND
CARBON TET.	1000.0	ND
1,2-DICHLOROETHANE	1000.0	ND
TRICHLOROETHENE	1000.0	ND
TETRACHLOROETHENE	1000.0	6400.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 106 %

Signed TJS 12-15-94

Reviewed TPK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: 065R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 15:36
Dilution Factor: 1000
Method: 8020WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-1, 6-8
GC Sample ID: SB-1,6-8 1000x
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
BENZENE	1000.0	ND
TOLUENE	1000.0	ND
CHLOROBENZENE	1000.0	ND
ETHYLBENZENE	1000.0	ND
M&P-XYLENE	1000.0	ND
O-XYLENE	1000.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 109 %

Signed  12-15-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pimie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: ~~015F0101.D~~ 016F0101.D
Instr. #: GC #6 TJS 12.15.94
Date Coll: 12/15/94
Date Analyzed: 12/15/94 16:04
Dilution Factor: 1000
Method: 8010WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-1, 8-10
GC Sample ID: SB-1,8-10 1000x
W.O. #: 0

RESULTS: EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
VINYL CHLORIDE	1000.0	ND
1,1-DICHLOROETHENE	1000.0	ND
METHYLENE CHLORIDE	1000.0	ND
t-1,2-DICHLOROETHENE	1000.0	ND
1,1-DICHLOROETHANE	1000.0	ND
c-1,2-DICHLOROETHENE	1000.0	ND
1,1,1-TRICHLOROETHANE	1000.0	ND
CARBON TET.	1000.0	ND
1,2-DICHLOROETHANE	1000.0	ND
TRICHLOROETHENE	1000.0	ND
TETRACHLOROETHENE	1000.0	48000.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 100 %

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: ~~065R0101-D~~ 06620101.D
Instr. #: GC #6 JS 12.15.94
Date Coll: 12/15/94
Date Analyzed: 12/15/94 16:04
Dilution Factor: 1000
Method: 8020WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-1, 8-10
GC Sample ID: SB-1,8-10 1000x
W.O. #: 0

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
BENZENE	1000.0	ND
TOLUENE	1000.0	ND
CHLOROBENZENE	1000.0	ND
ETHYLBENZENE	1000.0	ND
M&P-XYLENE	1000.0	ND
O-XYLENE	1000.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 102 %

Signed JS 12.15.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: 017F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 16:33
Dilution Factor: 1000
Method: 8010WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-2, 8-10
GC Sample ID: SB-2,8-10 1000x
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
VINYL CHLORIDE	1000.0	ND
1,1-DICHLOROETHENE	1000.0	ND
METHYLENE CHLORIDE	1000.0	ND
t-1,2-DICHLOROETHENE	1000.0	ND
1,1-DICHLOROETHANE	1000.0	ND
c-1,2-DICHLOROETHENE	1000.0	ND
111TRICHLOROETHANE	1000.0	ND
CARBON TET.	1000.0	ND
1,2-DICHLOROETHANE	1000.0	ND
TRICHLOROETHENE	1000.0	ND
TETRACHLOROETHENE	1000.0	12000.0

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed TJS 12.15.94

Reviewed TJS 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT: Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: SOIL
Analyst: TJS
File #: 067R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 16:33
Dilution Factor: 1000
Method: 8020WA.MTH
MeOH Extract: Yes
MeOH Vol. (ml): 5
Extract Vol. (ml): 0.005

Sample ID: SB-2, 8-10
GC Sample ID: SB-2,8-10 1000x
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/kg	RESULT ug/kg
BENZENE	1000.0	ND
TOLUENE	1000.0	ND
CHLOROBENZENE	1000.0	ND
ETHYLBENZENE	1000.0	ND
M&P-XYLENE	1000.0	ND
O-XYLENE	1000.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed TJS 12-15-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Section 3.0

**Quality Control Results
12/12/94**

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121294-6\002F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: 50 NG STD

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	53	50	106	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	52	50	104	75	125
1,1-DICHLOROETHENE	66	50	132 *	75	125
METHYLENE CHLORIDE	59	50	117	75	125
t-1,2-DICHLOROETHENE	55	50	109	75	125
1,1-DICHLOROETHANE	52	50	105	75	125
c-1,2-DICHLOROETHENE	54	50	107	75	125
1,1,1-TRICHLOROETHANE	55	50	109	75	125
CARBON TET.	53	50	106	75	125
1,2-DICHLOROETHANE	55	50	110	75	125
TRICHLOROETHENE	55	50	110	75	125
TETRACHLOROETHENE	55	50	110	75	125

TJS 12.12.94

TJP 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121294-6\052R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: 50 NG STD

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	52	50	103	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	54	50	108	75	125
TOLUENE	54	50	109	75	125
CHLOROBENZENE	54	50	109	75	125
ETHYLBENZENE	54	50	109	75	125
M&P-XYLENE	109	100	109	75	125
O-XYLENE	54	50	109	75	125

TJS
12.12.94

TDK 12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217
Sample ID: Method Blank
GC Sample ID: method blank
W.O. #: 0

Matrix: WATER
Analyst: TJS
File #: 005F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/12/94 11:12
Dilution Factor: 1
Method: 8010WA.MTH

RESULTS: EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	8.0 *
METHYLENE CHLORIDE	1.0	1.3 *
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 117 %

* Lab water contaminants, (Freon 113, and Methylene chloride).

Signed TJS 12-12-94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York

CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Sample ID: Method Blank

GC Sample ID: method blank

W.O. #: 0

Matrix: WATER

Analyst: TJS

File #: 055R0101.D

Instr. #: GC #6

Date Coll: 12/12/94

Date Analyzed: 12/12/94 11:10

Dilution Factor: 1

Method: 8020WA.MTH

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 105 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121294-6\006F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	55	50	110	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
METHYLENE CHLORIDE	56	40	139	75	125
1,1-DICHLOROETHANE	47	40	117	75	125
CARBON TET.	46	40	116	75	125
TRICHLOROETHENE	43	40	109	75	125
TETRACHLOROETHENE	49	40	122	75	125

JS
12.12.94

TOK 12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121294-6\056R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	52	50	103	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
CHLOROBENZENE	41	40	102	75	125

9/8
12.12.94

TOK 12/20/94

Preliminary Field Report

PROJECT :	Mr. C Cleaners	Matrix:	WATER
	East Aurora, New York	Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc.	File #:	009F0101.D
	S. 3515 Abbott Road	Instr. #:	GC #6
	P.O. Box 1938	Date Coll:	12/8/94
	Buffalo, New York 14217	Date Analyzed:	12/12/94 13:19
Sample ID:	H-3 (1) Dup	Dilution Factor:	10
GC Sample ID:	H-3 (1) 0.5 mL Dup	Method:	8010WA.MTH
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L	Sample Result ug/L	RPD
VINYL CHLORIDE	10.0	ND		
1,1-DICHLOROETHENE	10.0	ND		
METHYLENE CHLORIDE	10.0	ND		
1,2-DICHLOROETHENE	10.0	ND		
1,1-DICHLOROETHANE	10.0	ND		
c-1,2-DICHLOROETHENE	10.0	ND		
1,1,1-TRICHLOROETHANE	10.0	ND		
CARBON TET.	10.0	ND		
1,2-DICHLOROETHANE	10.0	ND		
TRICHLOROETHENE	10.0	ND	— BQL	— NA
TETRACHLOROETHENE	10.0	35.0	— 33.0	— 5.9%

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 113 %

Signed TJS 12-12-94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York

CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Sample ID: H-3 (1) Dup

GC Sample ID: H-3 (1) 0.5 mL *D.P.*

W.O. #: 0 *TJS 12-12-94*

Matrix: WATER

Analyst: TJS

File #: 059R0101.D

Instr. #: GC #6

Date Coll: 12/8/94

Date Analyzed: 12/12/94 13:17

Dilution Factor: 10

Method: 8020WA.MTH

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L	Sample Result ug/L	% RPD
BENZENE	10.0	ND	ND	NA
TOLUENE	10.0	ND		
CHLOROBENZENE	10.0	ND		
ETHYLBENZENE	10.0	ND		
M&P-XYLENE	10.0	ND		
O-XYLENE	10.0	ND		

Arrows pointing down from 'Sample Result' and '% RPD' columns for Benzene, Toluene, Chlorobenzene, Ethylbenzene, M&P-Xylene, and O-Xylene.

TOK 12/30/94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 107 %

Signed *TJS 12-12-94*

Reviewed *TOK 12/30/94*

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121294-6\018F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: ~~12/12/94~~ 12/8/94 TJS 12.12.94

Date Analyzed: 12/12/94

Sample Name: H-2 (2) MS 5 mL

W.O. #: H-2 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	54	50	108	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	53	50	107	75	125
METHYLENE CHLORIDE	46	50	91	75	125
t-1,2-DICHLOROETHENE	56	50	112	75	125
1,1-DICHLOROETHANE	57	50	114	75	125
c-1,2-DICHLOROETHENE	64	50	129 *	75	125
111TRICHLOROETHANE	58	50	116	75	125
CARBON TET.	60	50	121	75	125
1,2-DICHLOROETHANE	58	50	115	75	125
TRICHLOROETHENE	58	50	116	75	125
TETRACHLOROETHENE	58	50	117	75	125

TJS
12.12.94

TOK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121294-6\068R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: ~~12/12/94~~ 12/8/94 YS 12.12.94

Date Analyzed: 12/12/94

Sample Name: H-2 (2) MS 5 mL

W.O. #: H-2 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	52	50	104	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	56	50	112	75	125
TOLUENE	56	50	112	75	125
CHLOROBENZENE	56	50	112	75	125
ETHYLBENZENE	56	50	112	75	125
M&P-XYLENE	111	100	111	75	125
O-XYLENE	56	50	111	75	125

YS
12.12.94

TDK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121294-6\019F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	58	50	116	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	59	50	118	75	125
METHYLENE CHLORIDE	46	50	92	75	125
t-1,2-DICHLOROETHENE	52	50	104	75	125
1,1-DICHLOROETHANE	53	50	106	75	125
c-1,2-DICHLOROETHENE	60	50	120	75	125
111TRICHLOROETHANE	56	50	113	75	125
CARBON TET.	58	50	116	75	125
1,2-DICHLOROETHANE	61	50	122	75	125
TRICHLOROETHENE	57	50	114	75	125
TETRACHLOROETHENE	56	50	111	75	125

JS
12.12.94

TOK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121294-6\069R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/12/94

Date Analyzed: 12/12/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	53	50	106	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	56	50	111	75	125
TOLUENE	56	50	113	75	125
CHLOROBENZENE	57	50	113	75	125
ETHYLBENZENE	56	50	112	75	125
M&P-XYLENE	111	100	111	75	125
O-XYLENE	57	50	113	75	125

TJS
12.12.94
TOK 12/20/94

Quality Control Results

12/13/94



Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\002F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: 50 NG STD

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	53	50	106	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	47	50	94	75	125
1,1-DICHLOROETHENE	50	50	100	75	125
METHYLENE CHLORIDE	47	50	94	75	125
t-1,2-DICHLOROETHENE	50	50	99	75	125
1,1-DICHLOROETHANE	51	50	103	75	125
c-1,2-DICHLOROETHENE	58	50	117	75	125
1,1,1-TRICHLOROETHANE	53	50	106	75	125
CARBON TET.	53	50	106	75	125
1,2-DICHLOROETHANE	53	50	106	75	125
TRICHLOROETHENE	53	50	105	75	125
TETRACHLOROETHENE	52	50	105	75	125

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12.13.94

TOK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121394-6\052R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: 50 NG STD

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	52	50	104	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	54	50	109	75	125
TOLUENE	55	50	110	75	125
CHLOROBENZENE	56	50	111	75	125
ETHYLBENZENE	56	50	111	75	125
M&P-XYLENE	110	100	110	75	125
O-XYLENE	55	50	111	75	125

TJS
12.13.94

TDK 12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\003F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	57	50	114	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,1-DICHLOROETHENE	53	40	133 *	75	125
METHYLENE CHLORIDE	40	40	100	75	125
1,1-DICHLOROETHANE	44	40	111	75	125
CARBON TET.	43	40	107	75	125
TRICHLOROETHENE	43	40	106	75	125
TETRACHLOROETHENE	48	40	119	75	125

TJS
12.13.94

TOK
12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\053R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	53	50	106	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
CHLOROBENZENE	44	40	110	75	125



12.13.94

TDK 12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 004F0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 11:23
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: method blank
GC Sample ID: method blank
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 97 %

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 054R0101.D
Instr. #: GC #6
Date Coll: 12/13/94
Date Analyzed: 12/13/94 11:23
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: method blank
GC Sample ID: method blank
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 103 %

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS
File #: C:\HPCHEM\2\DATA\121394-6\020F0101.D
Instr. #: GC #6
Method: 8010WA.MTH
Date Collected: 12/13/94
Date Analyzed: 12/13/94
Sample Name: 50 ng Std
W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	60	50	120	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	56	50	111	75	125
1,1-DICHLOROETHENE	58	50	116	75	125
METHYLENE CHLORIDE	52	50	103	75	125
t-1,2-DICHLOROETHENE	55	50	110	75	125
1,1-DICHLOROETHANE	55	50	110	75	125
c-1,2-DICHLOROETHENE	58	50	116	75	125
1,1,1-TRICHLOROETHANE	57	50	113	75	125
CARBON TET.	55	50	111	75	125
1,2-DICHLOROETHANE	60	50	120	75	125
TRICHLOROETHENE	58	50	115	75	125
TETRACHLOROETHENE	57	50	115	75	125

TJS
12.13.94

TDK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\070R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	55	50	109	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	58	50	116	75	125
TOLUENE	58	50	116	75	125
CHLOROBENZENE	59	50	118	75	125
ETHYLBENZENE	58	50	117	75	125
M&P-XYLENE	116	100	116	75	125
O-XYLENE	59	50	118	75	125

JS
12.13.94

TDK
12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 021F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 20:38
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: H-7 (2) Dup
GC Sample ID: H-7 (2) Dup 5 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	11.0
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	BQL
c-1,2-DICHLOROETHENE	1.0	51.0
1,1,1-TRICHLOROETHANE	1.0	1.5
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	6.7
TETRACHLOROETHENE	1.0	7.3

Sample Result ug/L

13.0 - 17%
BQL - NA
BQL - NA
6.2 - 19%
BQL - NA
7.1 - 5.8%
7.9 - 7.9%

TJS 12.13.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 110 %
Duplicate analysis

Signed *TJS* 12.13.94

Reviewed *TDK* 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 071R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/13/94 20:35
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-7 (2) Dup
GC Sample ID: H-7 (2) Dup 5 mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L	Sample Result ug/L	RPD
BENZENE	1.0	17.0	19.0	11%
TOLUENE	1.0	BQL	1.1	NA
CHLOROBENZENE	1.0	ND		
ETHYLBENZENE	1.0	1.9	1.9	0%
M&P-XYLENE	1.0	3.4	5.9	54% ✓
O-XYLENE	1.0	1.0	1.7	52% ✓

TJS
12.13.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 110 %
Duplicate analysis

Signed TJS 12.13.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413) 572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\025F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: H-8 (2) MS 5 mL

W.O. #: H-8 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	58	50	116	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	56	50	112	75	125
1,1-DICHLOROETHENE	58	50	115	75	125
METHYLENE CHLORIDE	49	50	97	75	125
t-1,2-DICHLOROETHENE	58	50	115	75	125
1,1-DICHLOROETHANE	55	50	109	75	125
c-1,2-DICHLOROETHENE	55	50	110	75	125
1,1,1-TRICHLOROETHANE	56	50	112	75	125
CARBON TET.	55	50	110	75	125
1,2-DICHLOROETHANE	60	50	121	75	125
TRICHLOROETHENE	56	50	112	75	125
TETRACHLOROETHENE	55	50	110	75	125

CS
12.13.94

TOK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\075R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: H-8 (2) MS 5 mL

W.O. #: H-8 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	55	50	110	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	57	50	114	75	125
TOLUENE	57	50	114	75	125
CHLOROBENZENE	57	50	113	75	125
ETHYLBENZENE	56	50	113	75	125
M&P-XYLENE	111	100	111	75	125
O-XYLENE	56	50	113	75	125

12.13.94

TDK

12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121394-6\026F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	57	50	114	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	58	50	116	75	125
1,1-DICHLOROETHENE	61	50	121	75	125
METHYLENE CHLORIDE	54	50	107	75	125
1,2-DICHLOROETHENE	60	50	120	75	125
1,1-DICHLOROETHANE	58	50	116	75	125
c-1,2-DICHLOROETHENE	59	50	117	75	125
1,1,1-TRICHLOROETHANE	59	50	118	75	125
CARBON TET.	58	50	115	75	125
1,2-DICHLOROETHANE	60	50	119	75	125
TRICHLOROETHENE	59	50	118	75	125
TETRACHLOROETHENE	60	50	119	75	125

CF
12-13-94

TOK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121394-6\076R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/13/94

Date Analyzed: 12/13/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	58	50	116	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	59	50	119	75	125
TOLUENE	60	50	120	75	125
CHLOROBENZENE	60	50	119	75	125
ETHYLBENZENE	60	50	120	75	125
M&P-XYLENE	117	100	117	75	125
O-XYLENE	60	50	119	75	125

TJS
12.13.94

TOK
12/20/94

Quality Control Results

12/14/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\002F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	53	50	105	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,1-DICHLOROETHENE	49	40	121	75	125
METHYLENE CHLORIDE	40	40	99	75	125
1,1-DICHLOROETHANE	44	40	111	75	125
CARBON TET.	40	40	100	75	125
TRICHLOROETHENE	41	40	104	75	125
TETRACHLOROETHENE	50	40	125	75	125

TJS
12.14.94

TOK
12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\052R0101.D

Instr. #: GC #6

Method: 8020VA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	53	50	107	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
CHLOROBENZENE	43	40	108	75	125

9/15
12.14.94

TOK
12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 003F0101.D
Instr. #: GC #6
Date Coll: 12/14/94
Date Analyzed: 12/14/94 9:21
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: method blank
GC Sample ID: method blank
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 99 %

Signed TJS 12/14/94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners East Aurora, New York	Matrix:	WATER
		Analyst:	TJS
CLIENT:	Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217	File #:	053R0101.D
		Instr. #:	GC #6
		Date Coll:	12/14/94
		Date Analyzed:	12/14/94 9:22
		Dilution Factor:	1
Sample ID:	method blank	Method:	8020WA.MTH
GC Sample ID:	method blank		
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 108 %

Signed TJS 12.14.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121494-6\004F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	46	50	92	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	53	50	107	75	125
1,1-DICHLOROETHENE	53	50	107	75	125
METHYLENE CHLORIDE	46	50	92	75	125
t-1,2-DICHLOROETHENE	50	50	100	75	125
1,1-DICHLOROETHANE	51	50	103	75	125
c-1,2-DICHLOROETHENE	49	50	98	75	125
1,1,1-TRICHLOROETHANE	53	50	105	75	125
CARBON TET.	51	50	101	75	125
1,2-DICHLOROETHANE	50	50	100	75	125
TRICHLOROETHENE	52	50	105	75	125
TETRACHLOROETHENE	52	50	104	75	125

TJS
12.14.94

TDK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\054R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	54	50	109	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	56	50	111	75	125
TOLUENE	56	50	113	75	125
CHLOROBENZENE	57	50	114	75	125
ETHYLBENZENE	57	50	114	75	125
M&P-XYLENE	112	100	112	75	125
O-XYLENE	57	50	114	75	125

TJS
12.14.94

TOK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\018F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	56	50	113	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	50	50	100	75	125
1,1-DICHLOROETHENE	52	50	104	75	125
METHYLENE CHLORIDE	46	50	92	75	125
t-1,2-DICHLOROETHENE	50	50	100	75	125
1,1-DICHLOROETHANE	49	50	99	75	125
c-1,2-DICHLOROETHENE	59	50	118	75	125
1,1,1-TRICHLOROETHANE	54	50	108	75	125
CARBON TET.	56	50	112	75	125
1,2-DICHLOROETHANE	56	50	112	75	125
TRICHLOROETHENE	54	50	108	75	125
TETRACHLOROETHENE	54	50	109	75	125

TJS
12.14.94

TDK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\068R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	59	50	118	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	58	50	116	75	125
TOLUENE	62	50	124	75	125
CHLOROBENZENE	59	50	118	75	125
ETHYLBENZENE	59	50	118	75	125
M&P-XYLENE	117	100	117	75	125
O-XYLENE	62	50	123	75	125

TJS
12.14.94

TDK
12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 023F0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/14/94 18:42
Dilution Factor: 100
Method: 8010WA.MTH

Sample ID: MW-7 Dup
GC Sample ID: MW-7 Dup 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	100.0	ND
1,1-DICHLOROETHENE	100.0	ND
METHYLENE CHLORIDE	100.0	ND
t-1,2-DICHLOROETHENE	100.0	ND
1,1-DICHLOROETHANE	100.0	ND
c-1,2-DICHLOROETHENE	100.0	ND
111TRICHLOROETHANE	100.0	ND
CARBON TET.	100.0	ND
1,2-DICHLOROETHANE	100.0	ND
TRICHLOROETHENE	100.0	ND
TETRACHLOROETHENE	100.0	1800.0

Sample Result ug/L

RPD

- 1800

0%

TJS 12.14.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 112 %
Duplicate analysis

Signed *TJS* 12.14.94

Reviewed *TOK* 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 073R0101.D
Instr. #: GC #6
Date Coll: 12/12/94
Date Analyzed: 12/14/94 18:42
Dilution Factor: 100
Method: 8020WA.MTH

Sample ID: MW-7 Dup
GC Sample ID: MW-7 Dup 50 uL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L	Sample Result ug/L	RPD
BENZENE	100.0	ND	ND	NA
TOLUENE	100.0	ND		
CHLOROBENZENE	100.0	ND		
ETHYLBENZENE	100.0	ND		
M&P-XYLENE	100.0	ND		
O-XYLENE	100.0	ND		

TJS 12.14.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 115 %
Duplicate analysis

Signed TJS 12.14.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\024F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: Fill. RW-524 MS

W.O. #: Fillmore RW-524 MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	58	50	116	80	120

Matrix Spike

Compound	Sample ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	52	50	104	75	125
1,1-DICHLOROETHENE	51	50	101	75	125
METHYLENE CHLORIDE	44	50	87	75	125
t-1,2-DICHLOROETHENE	50	50	99	75	125
1,1-DICHLOROETHANE	51	50	101	75	125
c-1,2-DICHLOROETHENE	55	50	109	75	125
1,1,1-TRICHLOROETHANE	56	50	113	75	125
CARBON TET.	56	50	112	75	125
1,2-DICHLOROETHANE	57	50	115	75	125
TRICHLOROETHENE	55	50	110	75	125
TETRACHLOROETHENE	13 58	50	142 116	75	125

TJS
12-14-94

TJS
12-14-94

TDK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\074R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: Fill. RW-524 MS

W.O. #: Fillmore RW-524 MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	53	50	107	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	57	50	115	75	125
TOLUENE	59	50	117	75	125
CHLOROBENZENE	59	50	118	75	125
ETHYLBENZENE	58	50	117	75	125
M&P-XYLENE	115	100	115	75	125
O-XYLENE	59	50	117	75	125

TJS
12.14.94

TOK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121494-6\026F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/14/94

Date Analyzed: 12/14/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	59	50	119	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	52	50	103	75	125
1,1-DICHLOROETHENE	52	50	104	75	125
METHYLENE CHLORIDE	48	50	95	75	125
t-1,2-DICHLOROETHENE	52	50	104	75	125
1,1-DICHLOROETHANE	52	50	105	75	125
c-1,2-DICHLOROETHENE	55	50	109	75	125
111TRICHLOROETHANE	55	50	111	75	125
CARBON TET.	56	50	112	75	125
1,2-DICHLOROETHANE	56	50	112	75	125
TRICHLOROETHENE	55	50	110	75	125
TETRACHLOROETHENE	55	50	111	75	125

TJS
12.14.94

TOK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS
File #: C:\HPCHEM\2\DATA\121494-6\076R0101.D
Instr. #: GC #6
Method: 8020WA.MTH
Date Collected: 12/14/94
Date Analyzed: 12/14/94
Sample Name: 50 ng Std
W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	58	50	115	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	58	50	117	75	125
TOLUENE	61	50	121	75	125
CHLOROBENZENE	60	50	120	75	125
ETHYLBENZENE	60	50	120	75	125
M&P-XYLENE	119	100	119	75	125
O-XYLENE	61	50	121	75	125

JS
12.14.94

TOK 12/20/94

Quality Control Results

12/15/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121594-6\001F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	44	50	89	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	43	50	85	75	125
1,1-DICHLOROETHENE	43	50	86	75	125
METHYLENE CHLORIDE	39	50	77	75	125
t-1,2-DICHLOROETHENE	48	50	97	75	125
1,1-DICHLOROETHANE	50	50	100	75	125
c-1,2-DICHLOROETHENE	46	50	91	75	125
1,1,1-TRICHLOROETHANE	47	50	95	75	125
CARBON TET.	43	50	85	75	125
1,2-DICHLOROETHANE	51	50	102	75	125
TRICHLOROETHENE	50	50	100	75	125
TETRACHLOROETHENE	50	50	99	75	125

TJS
12.15.94

TDK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121594-6\051R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	54	50	107	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	56	50	111	75	125
TOLUENE	59	50	118	75	125
CHLOROBENZENE	57	50	113	75	125
ETHYLBENZENE	57	50	115	75	125
M&P-XYLENE	114	100	114	75	125
O-XYLENE	57	50	115	75	125

CJS
12.15.94

TDK
12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121594-6\002F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	47	50	93	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,1-DICHLOROETHENE	48	40	119	75	125
METHYLENE CHLORIDE	39	40	99	75	125
1,1-DICHLOROETHANE	43	40	109	75	125
CARBON TET.	38	40	95	75	125
TRICHLOROETHENE	37	40	93	75	125
TETRACHLOROETHENE	47	40	118	75	125

TJS
12.15.94

TOK 12/20/94

Matrix Spike/PE Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121594-6\052R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: QC Purge.A 40 ng

W.O. #: QC Purge.A 40 ng

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	54	50	107	80	120

PE Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
CHLOROBENZENE	44	40	110	75	125

9/8
12/15/94

TDK 12/20/94

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 003F0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 9:37
Dilution Factor: 1
Method: 8010WA.MTH

Sample ID: method blank
GC Sample ID: method blank
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
VINYL CHLORIDE	1.0	ND
1,1-DICHLOROETHENE	1.0	ND
METHYLENE CHLORIDE	1.0	ND
t-1,2-DICHLOROETHENE	1.0	ND
1,1-DICHLOROETHANE	1.0	ND
c-1,2-DICHLOROETHENE	1.0	ND
111TRICHLOROETHANE	1.0	ND
CARBON TET.	1.0	ND
1,2-DICHLOROETHANE	1.0	ND
TRICHLOROETHENE	1.0	ND
TETRACHLOROETHENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 98 %

Signed TJS 12.15.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 053R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 9:37
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: method blank
GC Sample ID: method blank
W.O. #: 0

RESULTS:

EPA Method 8010/8020
Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments: Surrogate Recovery = 106 %

Signed TJS 12.15.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT :	Mr. C Cleaners East Aurora, New York	Matrix:	WATER
CLIENT:	Malcolm Pirnie, Inc. S. 3515 Abbott Road P.O. Box 1938 Buffalo, New York 14217	Analyst:	TJS
		File #:	018F0101.D
		Instr. #:	GC #6
		Date Coll:	12/15/94
		Date Analyzed:	12/15/94 17:01
		Dilution Factor:	1
		Method:	8010WA.MTH
Sample ID:	H-15 (2) Dup		
GC Sample ID:	H-15 (2) Dup 5mL		
W.O. #:	0		

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L	Sample Result ug/L	RPD
VINYL CHLORIDE	1.0	ND		
1,1-DICHLOROETHENE	1.0	ND		
METHYLENE CHLORIDE	1.0	ND		
t-1,2-DICHLOROETHENE	1.0	BQL	BQL	NA
1,1-DICHLOROETHANE	1.0	ND		
c-1,2-DICHLOROETHENE	1.0	4.5	5.0	11%
111TRICHLOROETHANE	1.0	ND		
CARBON TET.	1.0	ND		
1,2-DICHLOROETHANE	1.0	ND		
TRICHLOROETHENE	1.0	4.5	5.0	11%
TETRACHLOROETHENE	1.0	21.0	22.0	4.7%

JFS
12.15.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020 from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A. Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 97 %
Duplicate analysis

Signed JFS 12.15.94

Reviewed TOK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Preliminary Field Report

PROJECT : Mr. C Cleaners
East Aurora, New York
CLIENT: Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, New York 14217

Matrix: WATER
Analyst: TJS
File #: 068R0101.D
Instr. #: GC #6
Date Coll: 12/15/94
Date Analyzed: 12/15/94 17:01
Dilution Factor: 1
Method: 8020WA.MTH

Sample ID: H-15 (2) Dup
GC Sample ID: H-15 (2) Dup 5mL
W.O. #: 0

RESULTS:

EPA Method 8010/8020 Gas Chromatography for Volatile Organics

COMPOUND	DET. LIMIT ug/L	RESULT ug/L
BENZENE	1.0	ND
TOLUENE	1.0	ND
CHLOROBENZENE	1.0	ND
ETHYLBENZENE	1.0	ND
M&P-XYLENE	1.0	ND
O-XYLENE	1.0	ND

Sample Result ug/L
ND

R.O.D
NA

TJS
12.15.94

Notes:

Volatile Organic Compounds analyzed using EPA methods 8010/8020
from Test Methods for Evaluating Solid Waste, SW 846, U.S. E.P.A.
Office of Solid Waste and Emergency Response, Washington, D.C., November 1986.

ND = Not Detected
NA = Not Analyzed

BQL = Detected below the minimum quantitation limit
B = Detected in the laboratory blank

Comments:

Surrogate Recovery = 109 %
Duplicate analysis

Signed TJS 12.15.94

Reviewed TDK 12/20/94

Commonwealth Analytical

Westfield, MA

(413)572-3200

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121594-6\019F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: H-15 (2) MS 5 mL

W.O. #: H-15 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	51	50	102	80	120

Matrix Spike

Compound	Sample ng	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE		51	50	101	75	125
1,1-DICHLOROETHENE		52	50	104	75	125
METHYLENE CHLORIDE		46	50	92	75	125
t-1,2-DICHLOROETHENE	5	~~58~~ 54	50	~~118~~ 108	75	125
1,1-DICHLOROETHANE		54	50	108	75	125
c-1,2-DICHLOROETHENE	25	~~78~~ 51	50	~~162~~ 102	75	125
1,1,1-TRICHLOROETHANE		55	50	111	75	125
CARBON TET.		54	50	107	75	125
1,2-DICHLOROETHANE		63	50	125	75	125
TRICHLOROETHENE	25	~~77~~ 52	50	~~155~~ 104	75	125
TETRACHLOROETHENE	110	~~284~~ 154	50	~~527~~ 308*	75	125

TJS
12.15.94

TDK
12/20/94

TJS
12.15.94

* Due to contamination of
Station 6 on mPM-16 caused
by sample run earlier in the
day.

TJS
12.15.94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121594-6\069R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: H-15 (2) MS 5 mL

W.O. #: H-15 (2) MS

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	56	50	113	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	56	50	111	75	125
TOLUENE	56	50	112	75	125
CHLOROBENZENE	57	50	114	75	125
ETHYLBENZENE	56	50	113	75	125
M&P-XYLENE	111	100	111	75	125
O-XYLENE	57	50	115	75	125

YS
12.15.94

TOK
12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM\2\DATA\121594-6\020F0101.D

Instr. #: GC #6

Method: 8010WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
1,4-DICHLOROBUTANE	56	50	112	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
VINYL CHLORIDE	49	50	99	75	125
1,1-DICHLOROETHENE	51	50	101	75	125
METHYLENE CHLORIDE	46	50	91	75	125
t-1,2-DICHLOROETHENE	53	50	106	75	125
1,1-DICHLOROETHANE	57	50	115	75	125
c-1,2-DICHLOROETHENE	49	50	98	75	125
111TRICHLOROETHANE	52	50	104	75	125
CARBON TET.	51	50	102	75	125
1,2-DICHLOROETHANE	61	50	121	75	125
TRICHLOROETHENE	54	50	107	75	125
TETRACHLOROETHENE	55	50	110	75	125

TJS
12.15.94

TDK 12/20/94

Matrix Spike/Surrogate Recovery Field Report

Analyst: TJS

File #: C:\HPCHEM2\DATA\121594-6\070R0101.D

Instr. #: GC #6

Method: 8020WA.MTH

Date Collected: 12/15/94

Date Analyzed: 12/15/94

Sample Name: 50 ng Std

W.O. #: 50 ng Std

Surrogate Recovery

Compound	ng	ng spiked	% Recovery	Low CL	High CL
TRIFLOROTOLUENE	53	50	105	80	120

Matrix Spike

Compound	ng	ng spiked	% Recovery	Low CL	High CL
BENZENE	55	50	110	75	125
TOLUENE	55	50	111	75	125
CHLOROBENZENE	57	50	115	75	125
ETHYLBENZENE	58	50	116	75	125
M&P-XYLENE	110	100	110	75	125
O-XYLENE	57	50	113	75	125

TJS
12.15.94

TDK 12/20/94

Section 4.0 (Chromatograms) from Commonwealth Analytical's Report is available upon request.



Commonwealth**Analytical**

9 January 1995
E-354

Mr. Robert O'Laskey
Malcolm Pirnie, Inc.
S. 3515 Abbott Road
P.O. Box 1938
Buffalo, NY 14219

RE: Base Lab/Mobile Lab Confirmation
East Aurora, NY

Dear Mr. O'Laskey,

Enclosed please find a copy of the results for the confirmation samples submitted to the base laboratory for the Mr. C Cleaners Site in East Aurora, New York on December 16, 1994. Attached is a Confirmation Summary Table showing base lab and mobile lab results with Relative Percent Difference (RPD) values calculated. As you can see all values for the confirmation samples were within acceptable limits.

If you have any questions, please do not hesitate to contact me.

Very truly yours,
COMMONWEALTH ANALYTICAL

Stephen L. Knollmeyer
Mobile Lab/Field Services Supervisor

Table 1
Confirmation Results
Volatile Organic Compounds
EPA Method 8010

Mr. C Cleaners #3 - E. Aurora, NY
December 12, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-7 (2)	Vinyl chloride	13	1	7.8	1	50%
	1,1-Dichloroethene	ND	1	ND	1	NA
	Methylene chloride	ND	1	ND	5	NA
	trans-1,2-Dichloroethene	BQL	1	ND	1	NA
	1,1-Dichloroethane	BQL	1	ND	1	NA
	cis-1,2-Dichloroethene	62	1	**		NA
	1,1,1-Trichloroethane	BQL	1	BQL	1	NA
	Carbon tetrachloride	ND	1	ND	1	NA
	1,2-Dichloroethane	ND	1	ND	1	NA
	Trichloroethene	7.1	1	7.9	1	11%
	Tetrachloroethene	7.9	1	7.9	1	0%

*ug/L.

**The base lab does not analyze for this compound on EPA Method 8010.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable

Table 1 con't
Confirmation Results
Volatile Organic Compounds
EPA Method 8020

Mr. C Cleaners #3 - E. Aurora, NY
December 12, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-7 (2)	Benzene	19	1	12	1	45%
	Toluene	1.1	1	ND	1	NA
	Chlorobenzene	ND	1	ND	1	NA
	Ethylbenzene	1.9	1	ND	1	NA
	M & P-Xylene	5.9	1	ND	1	NA
	O-Xylene	1.7	1	ND	1	NA

*ug/L.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable.

Table 1
Confirmation Results
Volatile Organic Compounds
EPA Method 8010

Mr. C Cleaners #3 - E. Aurora, NY
December 14, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-11 (1)	Vinyl chloride	ND	1000	ND	1000	NA
	1,1-Dichloroethene	ND	1000	ND	1000	NA
	Methylene chloride	ND	1000	ND	5000	NA
	trans-1,2-Dichloroethene	ND	1000	ND	1000	NA
	1,1-Dichloroethane	ND	1000	ND	1000	NA
	cis-1,2-Dichloroethene	ND	1000	**		NA
	1,1,1-Trichloroethane	ND	1000	ND	1000	NA
	Carbon tetrachloride	ND	1000	ND	1000	NA
	1,2-Dichloroethane	ND	1000	ND	1000	NA
	Trichloroethene	ND	1000	ND	1000	NA
	Tetrachloroethene	8700	1000	7700	1000	12%

*ug/L.

**The base lab does not analyze for this compound on EPA Method 8010.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable

Table 1 con't
Confirmation Results
Volatile Organic Compounds
EPA Method 8020

Mr. C Cleaners - E. Aurora, NY
December 14, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-11 (1)	Benzene	ND	1000	ND	1000	NA
	Toluene	ND	1000	ND	1000	NA
	Chlorobenzene	ND	1000	ND	1000	NA
	Ethylbenzene	ND	1000	ND	1000	NA
	M & P-Xylene	ND	1000	ND	1000	NA
	O-Xylene	ND	1000	ND	1000	NA

*ug/L.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable.

Table 1
Confirmation Results
Volatile Organic Compounds
EPA Method 8010

Mr. C Cleaners #3 - E. Aurora, NY
December 14, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-11 (2)	Vinyl chloride	ND	1	ND	1	NA
	1,1-Dichloroethene	ND	1	ND	1	NA
	Methylene chloride	ND	1	ND	5	NA
	trans-1,2-Dichloroethene	ND	1	ND	1	NA
	1,1-Dichloroethane	ND	1	ND	1	NA
	cis-1,2-Dichloroethene	ND	1	**		NA
	1,1,1-Trichloroethane	ND	1	ND	1	NA
	Carbon tetrachloride	ND	1	ND	1	NA
	1,2-Dichloroethane	ND	1	ND	1	NA
	Trichloroethene	ND	1	ND	1	NA
	Tetrachloroethene	11	1	9.6	1	14%

*ug/L.

**The base lab does not analyze for this compound on EPA Method 8010.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable

Table 1 con't
Confirmation Results
Volatile Organic Compounds
EPA Method 8020

Mr. C Cleaners #3 - E. Aurora, NY
December 14, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-11 (2)	Benzene	ND	1	ND	1	NA
	Toluene	ND	1	ND	1	NA
	Chlorobenzene	ND	1	ND	1	NA
	Ethylbenzene	ND	1	ND	1	NA
	M & P-Xylene	ND	1	ND	1	NA
	O-Xylene	ND	1	ND	1	NA

*ug/L.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable.

Table 1
Confirmation Results
Volatile Organic Compounds
EPA Method 8010

Mr. C Cleaners #3 - E. Aurora, NY
December 15, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-14 (1)	Vinyl chloride	ND	100	ND	100	NA
	1,1-Dichloroethene	ND	100	ND	100	NA
	Methylene chloride	ND	100	ND	500	NA
	trans-1,2-Dichloroethene	ND	100	ND	100	NA
	1,1-Dichloroethane	ND	100	ND	100	NA
	cis-1,2-Dichloroethene	ND	100	**		NA
	1,1,1-Trichloroethane	ND	100	ND	100	NA
	Carbon tetrachloride	ND	100	ND	100	NA
	1,2-Dichloroethane	ND	100	ND	100	NA
	Trichloroethene	ND	100	ND	100	NA
	Tetrachloroethene	880	100	1300	100	39%

*ug/L.

**The base lab does not analyze for this compound on EPA Method 8010.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable

Table 1 con't
Confirmation Results
Volatile Organic Compounds
EPA Method 8020

Mr. C Cleaners #3 - E. Aurora, NY
December 15, 1994

Sample ID	Compound	Field Result*	Field Detection Limit*	Base Lab Result*	Base Lab Detection Limit*	RPD
H-14 (1)	Benzene	ND	100	ND	100	NA
	Toluene	ND	100	ND	100	NA
	Chlorobenzene	ND	100	ND	100	NA
	Ethylbenzene	ND	100	ND	100	NA
	M & P-Xylene	ND	100	ND	100	NA
	O-Xylene	ND	100	ND	100	NA

*ug/L.

BQL = The compound was detected below the minimum quantitation limit.

NA = Not Applicable.



Commonwealth**Analytical**

COMMONWEALTH ANALYTICAL
53 SOUTHAMPTON ROAD
WESTFIELD, MA 01085

Attention: STEPHEN KNOLLMEYER

Work ID: MR C CLEANERS #3 CONFIRMATION
Project # 495004_4_50

Workorder # 9412348

Authorized Signature

Peter A. Law
Laboratory Manager

Massachusetts Certificate MA014
Connecticut Certificate PH-0494
New Hampshire DES 253993 - A + C
New Jersey DEP Certificate 59845
New York Department of Health 10843
Rhode Island Department of Health 57
North Carolina Certificate 408
US Army Corps of Engineers

Drinking Water • Wastewater • Hazardous Waste • Toxicity Testing • Mobile Laboratory

Westfield Executive Park • 53 Southampton Road • Westfield, MA 01085-5308 • Tel 413-572-3200 • Fax 413-572-3215

12020 Sunrise Valley Drive • Suite 100 • Reston, VA 22091-3429 • Tel 703-391-2770 • Fax 703-391-2766

A division of Tighe & Bond, Inc.

Laboratory Results Prepared For :

COMMONWEALTH ANALYTICAL
53 SOUTHAMPTON ROAD
WESTFIELD, MA 01085

Attention : STEPHEN KNOLLMEYER

Company : COMMONWEALTH ANALYTICAL
WESTFIELD, MA 01085

Facility :

Contact : SLK

Laboratory Results Prepared By :

Commonwealth Analytical
53 Southampton Rd.
Westfield, MA 01085

Attention : Peter A. Law
(413) 572-3200

Work ID : MR C CLEANERS #3 CONFIRMATION

Taken : 12/12/94-12/15/94

Transported : TJS-CA

Type : GROUNDWATER

PO # :

GSB 1-6-95
Certified by

Results for H-7 (2)

Method 8010 - Halogenated Volatile Organics

Matrix:GROUNDWATER

Collected on 12/12/94
Analyzed on 12/21/94 by RM

01A\8010	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	108-86-1	Bromobenzene	ND	1
	75-27-4	Bromodichloromethane	ND	1
	75-25-2	Bromoform	ND	1
	74-83-9	Bromomethane	ND	1
	56-23-5	Carbon tetrachloride	ND	1
	108-90-7	Chlorobenzene	ND	1
	75-00-3	Chloroethane	ND	1
	67-66-3	Chloroform	ND	1
	110-75-8	2-Chloroethyl vinyl ether	ND	1
	74-87-3	Chloromethane	ND	1
	124-48-1	Dibromochloromethane	ND	1
	74-95-3	Dibromomethane	ND	1
	95-50-1	1,2-Dichlorobenzene	ND	1
	541-73-1	1,3-Dichlorobenzene	ND	1
	106-46-7	1,4-Dichlorobenzene	ND	1
	75-71-8	Dichlorodifluoromethane	ND	1
	75-34-3	1,1-Dichloroethane	ND	1
	107-06-2	1,2-Dichloroethane	ND	1
	75-35-4	1,1-Dichloroethene	ND	1
	156-60-5	trans-1,2-Dichloroethene	ND	1
	75-09-2	Methylene Chloride	ND	5
	78-87-5	1,2-Dichloropropane	ND	1
	10061-02-6	trans-1,3-Dichloropropene	ND	1
	79-34-5	1,1,2,2-Tetrachloroethane	ND	1
	630-20-6	1,1,1,2-Tetrachloroethane	ND	1
	127-18-4	Tetrachloroethene	7.9	1
	71-55-6	1,1,1-Trichloroethane	BQL	1
	79-00-5	1,1,2-Trichloroethane	ND	1
	79-01-6	Trichloroethene	7.9	1
	75-69-4	Trichlorofluoromethane	ND	1
	96-18-4	1,2,3-Trichloropropane	ND	1
	75-01-4	Vinyl chloride	7.8	1

Verified by GJB

Notes and Definitions for This Test

ND = The compound was analyzed for but was not detected.
 NA = The compound was not analyzed.
 BQL = The compound was detected below the minimum quantitation limit.
 B = The compound was also detected in the blank.

Results for H-7 (2)

Matrix:GROUNDWATER

Method 8020 - Aromatic Volatile Organics

Collected on 12/12/94
Analyzed on 12/21/94 by RMT

01A\8020	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	71-43-2	Benzene	12	1
	108-90-7	Chlorobenzene	ND	1
	95-50-1	1,2-Dichlorobenzene	ND	1
	541-73-1	1,3-Dichlorobenzene	ND	1
	106-46-7	1,4-Dichlorobenzene	ND	1
	100-41-4	Ethylbenzene	ND	1
	108-88-3	Toluene	ND	1
	1330-20-7	Total Xylenes	ND	1

Notes and Definitions for This Test

Verified by GJB

ND = The compound was analyzed for but was not detected.
NA = The compound was not analyzed.
BQL = The compound was detected below the minimum quantitation limit.
B = The compound was also detected in the blank.

Results for H-11 (1)

Method 8010 - Halogenated Volatile Organics

Matrix:GROUNDWATER

Collected on 12/14/94
Analyzed on 12/23/94 by RM

02A\8010	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	108-86-1	Bromobenzene	ND	1000
	75-27-4	Bromodichloromethane	ND	1000
	75-25-2	Bromoform	ND	1000
	74-83-9	Bromomethane	ND	1000
	56-23-5	Carbon tetrachloride	ND	1000
	108-90-7	Chlorobenzene	ND	1000
	75-00-3	Chloroethane	ND	1000
	67-66-3	Chloroform	ND	1000
	110-75-8	2-Chloroethyl vinyl ether	ND	1000
	74-87-3	Chloromethane	ND	1000
	124-48-1	Dibromochloromethane	ND	1000
	74-95-3	Dibromomethane	ND	1000
	95-50-1	1,2-Dichlorobenzene	ND	1000
	541-73-1	1,3-Dichlorobenzene	ND	1000
	106-46-7	1,4-Dichlorobenzene	ND	1000
	75-71-8	Dichlorodifluoromethane	ND	1000
	75-34-3	1,1-Dichloroethane	ND	1000
	107-06-2	1,2-Dichloroethane	ND	1000
	75-35-4	1,1-Dichloroethene	ND	1000
	156-60-5	trans-1,2-Dichloroethene	ND	1000
	75-09-2	Methylene Chloride	ND	5000
	78-87-5	1,2-Dichloropropane	ND	1000
	10061-02-6	trans-1,3-Dichloropropene	ND	1000
	79-34-5	1,1,2,2-Tetrachloroethane	ND	1000
	630-20-6	1,1,1,2-Tetrachloroethane	ND	1000
	127-18-4	Tetrachloroethene	7700	1000
	71-55-6	1,1,1-Trichloroethane	ND	1000
	79-00-5	1,1,2-Trichloroethane	ND	1000
	79-01-6	Trichloroethene	ND	1000
	75-69-4	Trichlorofluoromethane	ND	1000
	96-18-4	1,2,3-Trichloropropane	ND	1000
	75-01-4	Vinyl chloride	ND	1000

Verified by GJB

Notes and Definitions for This Test

- ND = The compound was analyzed for but was not detected.
 NA = The compound was not analyzed.
 BQL = The compound was detected below the minimum quantitation limit.
 B = The compound was also detected in the blank.

Results for H-11 (1)

Method 8020 - Aromatic Volatile Organics

Matrix:GROUNDWATER

Collected on 12/14/94
Analyzed on 12/23/94 by RMT

02A\8020	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	71-43-2	Benzene	ND	1000
	108-90-7	Chlorobenzene	ND	1000
	95-50-1	1,2-Dichlorobenzene	ND	1000
	541-73-1	1,3-Dichlorobenzene	ND	1000
	106-46-7	1,4-Dichlorobenzene	ND	1000
	100-41-4	Ethylbenzene	ND	1000
	108-88-3	Toluene	ND	1000
	1330-20-7	Total Xylenes	ND	1000

Verified by GJB

Notes and Definitions for This Test

ND = The compound was analyzed for but was not detected.
NA = The compound was not analyzed.
BQL = The compound was detected below the minimum quantitation limit.
B = The compound was also detected in the blank.

Results for H-11 (2)

Matrix:GROUNDWATER

Method 8010 - Halogenated Volatile Organics

Collected on 12/14/94
Analyzed on 12/23/94 by RM

03A/8010	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	108-86-1	Bromobenzene	ND	1
	75-27-4	Bromodichloromethane	ND	1
	75-25-2	Bromoform	ND	1
	74-83-9	Bromomethane	ND	1
	56-23-5	Carbon tetrachloride	ND	1
	108-90-7	Chlorobenzene	ND	1
	75-00-3	Chloroethane	ND	1
	67-66-3	Chloroform	ND	1
	110-75-8	2-Chloroethyl vinyl ether	ND	1
	74-87-3	Chloromethane	ND	1
	124-48-1	Dibromochloromethane	ND	1
	74-95-3	Dibromomethane	ND	1
	95-50-1	1,2-Dichlorobenzene	ND	1
	541-73-1	1,3-Dichlorobenzene	ND	1
	106-46-7	1,4-Dichlorobenzene	ND	1
	75-71-8	Dichlorodifluoromethane	ND	1
	75-34-3	1,1-Dichloroethane	ND	1
	107-06-2	1,2-Dichloroethane	ND	1
	75-35-4	1,1-Dichloroethene	ND	1
	156-60-5	trans-1,2-Dichloroethene	ND	1
	75-09-2	Methylene Chloride	ND	5
	78-87-5	1,2-Dichloropropane	ND	1
	10061-02-6	trans-1,3-Dichloropropene	ND	1
	79-34-5	1,1,2,2-Tetrachloroethane	ND	1
	630-20-6	1,1,1,2-Tetrachloroethane	ND	1
	127-18-4	Tetrachloroethene	9.6	1
	71-55-6	1,1,1-Trichloroethane	ND	1
	79-00-5	1,1,2-Trichloroethane	ND	1
	79-01-6	Trichloroethene	ND	1
	75-69-4	Trichlorofluoromethane	ND	1
	96-18-4	1,2,3-Trichloropropane	ND	1
	75-01-4	Vinyl chloride	ND	1

Notes and Definitions for This Test

Verified by GJB

- ND = The compound was analyzed for but was not detected.
 NA = The compound was not analyzed.
 BQL = The compound was detected below the minimum quantitation limit.
 B = The compound was also detected in the blank.

Results for H-11 (2)

Method 8020 - Aromatic Volatile Organics

Matrix:GROUNDWATER

Collected on 12/14/94
Analyzed on 12/23/94 by RMT

03A\8020	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	71-43-2	Benzene	ND	1
	108-90-7	Chlorobenzene	ND	1
	95-50-1	1,2-Dichlorobenzene	ND	1
	541-73-1	1,3-Dichlorobenzene	ND	1
	106-46-7	1,4-Dichlorobenzene	ND	1
	100-41-4	Ethylbenzene	ND	1
	108-88-3	Toluene	ND	1
	1330-20-7	Total Xylenes	ND	1

Verified by GJB

Notes and Definitions for This Test

ND = The compound was analyzed for but was not detected.
NA = The compound was not analyzed.
BQL = The compound was detected below the minimum quantitation limit.
B = The compound was also detected in the blank.

Results for H-14 (1)

Matrix:GROUNDWATER

Method 8010 - Halogenated Volatile Organics

Collected on 12/15/94
Analyzed on 12/23/94 by RM.

04A\8010	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	108-86-1	Bromobenzene	ND	100
	75-27-4	Bromodichloromethane	ND	100
	75-25-2	Bromoform	ND	100
	74-83-9	Bromomethane	ND	100
	56-23-5	Carbon tetrachloride	ND	100
	108-90-7	Chlorobenzene	ND	100
	75-00-3	Chloroethane	ND	100
	67-66-3	Chloroform	ND	100
	110-75-8	2-Chloroethyl vinyl ether	ND	100
	74-87-3	Chloromethane	ND	100
	124-48-1	Dibromochloromethane	ND	100
	74-95-3	Dibromomethane	ND	100
	95-50-1	1,2-Dichlorobenzene	ND	100
	541-73-1	1,3-Dichlorobenzene	ND	100
	106-46-7	1,4-Dichlorobenzene	ND	100
	75-71-8	Dichlorodifluoromethane	ND	100
	75-34-3	1,1-Dichloroethane	ND	100
	107-06-2	1,2-Dichloroethane	ND	100
	75-35-4	1,1-Dichloroethene	ND	100
	156-60-5	trans-1,2-Dichloroethene	ND	100
	75-09-2	Methylene Chloride	ND	500
	78-87-5	1,2-Dichloropropane	ND	100
	10061-02-6	trans-1,3-Dichloropropene	ND	100
	79-34-5	1,1,2,2-Tetrachloroethane	ND	100
	630-20-6	1,1,1,2-Tetrachloroethane	ND	100
	127-18-4	Tetrachloroethene	1300	100
	71-55-6	1,1,1-Trichloroethane	ND	100
	79-00-5	1,1,2-Trichloroethane	ND	100
	79-01-6	Trichloroethene	ND	100
	75-69-4	Trichlorofluoromethane	ND	100
	96-18-4	1,2,3-Trichloropropane	ND	100
	75-01-4	Vinyl chloride	ND	100

Verified by GJB

Notes and Definitions for This Test

- ND = The compound was analyzed for but was not detected.
 NA = The compound was not analyzed.
 BQL = The compound was detected below the minimum quantitation limit.
 B = The compound was also detected in the blank.

Results for H-14 (1)

Method 8020 - Aromatic Volatile Organics

Matrix:GROUNDWATER

Collected on 12/15/94
Analyzed on 12/23/94 by RMT

04A\8020	CAS #	Compound	Result (ug/L)	Quantitation Limit (ug/L)
	71-43-2	Benzene	ND	100
	108-90-7	Chlorobenzene	ND	100
	95-50-1	1,2-Dichlorobenzene	ND	100
	541-73-1	1,3-Dichlorobenzene	ND	100
	106-46-7	1,4-Dichlorobenzene	ND	100
	100-41-4	Ethylbenzene	ND	100
	108-88-3	Toluene	ND	100
	1330-20-7	Total Xylenes	ND	100

Verified by GJB

Notes and Definitions for This Test

ND = The compound was analyzed for but was not detected.
NA = The compound was not analyzed.
BQL = The compound was detected below the minimum quantitation limit.
B = The compound was also detected in the blank.

Test Methodologies

Test: **AROMATIC VOLATILE ORGANICS**

Method 8020, Test Methods for Evaluating Solid Waste, EPA-SW846, 1986 Edition.

Test: **HALOGENATED VOLATILE ORG**

Method 8010, Test Methods for Evaluating Solid Waste, EPA-SW846, 1986 Edition.



TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental ⁱⁿ

January 9, 1995

Malcolm Pirnie Inc.
S. 3515 Abbott Road
Orchard Park, NY 14127

Attn: Robert O'Laskey

Nyttest is pleased to submit our Project No. 9420953
Login No. 22792 on your sample(s) received: 12/21

Test sample(s) associated with this project will be retained for a period of thirty (30) days, unless otherwise instructed.

My staff is available to answer any questions concerning our report and we look forward to serving your future analytical needs.

Very truly yours,
Nyttest Environmental Inc.


Remo Gigante
Executive Vice President

Encl:
Shipped Via: Fedex

box 1518 ☐ 60 seaview blvd., port washington, ny 11050 ☐ (516) 625-5500
fax (516) 625-1274



TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc

Project No.: 9420953
Log in No. : 22792
P.O. No. : Pending
Date : Jan. 9, 1995

SUMMARY DATA REPORT
PACKAGE FOR

Malcolm Pirnie Inc.

S. 3515 Abbott Road

Orchard Park, NY 14127

ATTN: Robert O'Laskey
REF: Mr. C Cleaners, Proj.#0266-314-002

LABORATORY
NUMBER

SAMPLE
IDENTIFICATION

TYPE OF
SAMPLE

S E E N E X T P A G E

WE CERTIFY THAT THIS REPORT IS A
TRUE REPORT OF RESULTS OBTAINED
FROM OUR TESTS OF THIS MATERIAL.

NYS Lab ID. #10195
NJ Cert. #73469
ep

RESPECTFULLY SUBMITTED,
NYTEST ENVIRONMENTAL INC.

REMO GIGANTE
EXEC. VICE PRESIDENT

Report on sample(s) furnished by client applies to sample(s). Report on sample(s) obtained by us applies only to lot sampled. Information contained herein is not to be used for reproduction except by special permission. Sample(s) will be retained for thirty days maximum after date of report unless specifically requested otherwise by client. In the event that there are portions or parts of sample(s) remaining after Nytest has completed the required tests, Nytest shall have the option of returning such sample(s) to the client at the client's expense.

NYTEST ENVIRONMENTAL Inc.

LABORATORY
NUMBER

SAMPLE
IDENTIFICATION

TYPE OF
SAMPLE

2279201
2279202

H-9(1)
H-13

Water
Water

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

H-13

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279202

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P2408.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Date Analyzed: 12/21/94

GC Column:CAP ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

74-87-3-----	Chloromethane	10	U
74-83-9-----	Bromomethane	10	U
75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	10	U
75-09-2-----	Methylene Chloride	3	JB
67-64-1-----	Acetone	10	U
75-15-0-----	Carbon Disulfide	10	U
75-35-4-----	1,1-Dichloroethene	10	U
75-34-3-----	1,1-Dichloroethane	10	U
540-59-0-----	1,2-Dichloroethene (total)	11	
67-66-3-----	Chloroform	10	U
107-06-2-----	1,2-Dichloroethane	10	U
78-93-3-----	2-Butanone	10	U
71-55-6-----	1,1,1-Trichloroethane	2	J
56-23-5-----	Carbon Tetrachloride	10	U
75-27-4-----	Bromodichloromethane	10	U
78-87-5-----	1,2-Dichloropropane	10	U
10061-01-5-----	cis-1,3-Dichloropropene	10	U
79-01-6-----	Trichloroethene	6	J
124-48-1-----	Dibromochloromethane	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	10	U
10061-02-6-----	trans-1,3-Dichloropropene	10	U
75-25-2-----	Bromoform	10	U
108-10-1-----	4-Methyl-2-Pentanone	10	U
591-78-6-----	2-Hexanone	10	U
127-18-4-----	Tetrachloroethene	1300	E
79-34-5-----	1,1,2,2-Tetrachloroethane	10	U
108-88-3-----	Toluene	10	U
108-90-7-----	Chlorobenzene	10	U
100-41-4-----	Ethylbenzene	10	U
100-42-5-----	Styrene	10	U
1330-20-7-----	Xylene (total)	10	U

00008

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NYSDEC SAMPLE NO.

H-13

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279202

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P2408.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Data Analyzed: 12/21/94

GC Column:CAP ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.587	65	J
2.	UNKNOWN	6.136	800	J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

00009

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

H-13DL

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279202

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P2410.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Date Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 25.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

74-87-3-----	Chloromethane	250	U
74-83-9-----	Bromomethane	250	U
75-01-4-----	Vinyl Chloride	250	U
75-00-3-----	Chloroethane	250	U
75-09-2-----	Methylene Chloride	51	JBD
67-64-1-----	Acetone	250	U
75-15-0-----	Carbon Disulfide	250	U
75-35-4-----	1,1-Dichloroethene	250	U
75-34-3-----	1,1-Dichloroethane	250	U
540-59-0-----	1,2-Dichloroethene (total)	250	U
67-66-3-----	Chloroform	250	U
107-06-2-----	1,2-Dichloroethane	250	U
78-93-3-----	2-Butanone	250	U
71-55-6-----	1,1,1-Trichloroethane	250	U
56-23-5-----	Carbon Tetrachloride	250	U
75-27-4-----	Bromodichloromethane	250	U
78-87-5-----	1,2-Dichloropropane	250	U
10061-01-5-----	cis-1,3-Dichloropropene	250	U
79-01-6-----	Trichloroethene	250	U
124-48-1-----	Dibromochloromethane	250	U
79-00-5-----	1,1,2-Trichloroethane	250	U
71-43-2-----	Benzene	250	U
10061-02-6-----	trans-1,3-Dichloropropene	250	U
75-25-2-----	Bromoform	250	U
108-10-1-----	4-Methyl-2-Pentanone	250	U
591-78-6-----	2-Hexanone	250	U
127-18-4-----	Tetrachloroethene	4100	D
79-34-5-----	1,1,2,2-Tetrachloroethane	250	U
108-88-3-----	Toluene	250	U
108-90-7-----	Chlorobenzene	250	U
100-41-4-----	Ethylbenzene	250	U
100-42-5-----	Styrene	250	U
1330-20-7-----	Xylene (total)	250	U

00010

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NYSDEC SAMPLE NO.

H-13DL

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279202

Sample wt/vol: 5.0

(g/mL) ML

Lab File ID: P2410.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Data Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 25.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	6.302	550	JD
2.	UNKNOWN	11.801	200	JD
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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

H-9-1

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279201

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P2407.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Date Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

74-87-3-----	Chloromethane	10	U
74-83-9-----	Bromomethane	10	U
75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	10	U
75-09-2-----	Methylene Chloride	2	JB
67-64-1-----	Acetone	10	U
75-15-0-----	Carbon Disulfide	10	U
75-35-4-----	1,1-Dichloroethene	10	U
75-34-3-----	1,1-Dichloroethane	10	U
540-59-0-----	1,2-Dichloroethene (total)	3	J
67-66-3-----	Chloroform	10	U
107-06-2-----	1,2-Dichloroethane	10	U
78-93-3-----	2-Butanone	10	U
71-55-6-----	1,1,1-Trichloroethane	1	J
56-23-5-----	Carbon Tetrachloride	10	U
75-27-4-----	Bromodichloromethane	10	U
78-87-5-----	1,2-Dichloropropane	10	U
10061-01-5-----	cis-1,3-Dichloropropene	10	U
79-01-6-----	Trichloroethene	3	J
124-48-1-----	Dibromochloromethane	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	10	U
10061-02-6-----	trans-1,3-Dichloropropene	10	U
75-25-2-----	Bromoform	10	U
108-10-1-----	4-Methyl-2-Pentanone	10	U
591-78-6-----	2-Hexanone	10	U
127-18-4-----	Tetrachloroethene	310	E
79-34-5-----	1,1,2,2-Tetrachloroethane	10	U
108-88-3-----	Toluene	10	U
108-90-7-----	Chlorobenzene	10	U
100-41-4-----	Ethylbenzene	10	U
100-42-5-----	Styrene	10	U
1330-20-7-----	Xylene (total)	10	U

00012

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NYSDEC SAMPLE NO.

H-9-1

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279201

Sample wt/vol: 5.0

(g/mL) ML

Lab File ID: P2407.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Data Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	3.548	64	J
2.	UNKNOWN	6.138	710	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

NYSDEC SAMPLE NO.

H-9-1DL

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279201

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: P2409.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Date Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 5.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

74-87-3-----	Chloromethane	50	U
74-83-9-----	Bromomethane	50	U
75-01-4-----	Vinyl Chloride	50	U
75-00-3-----	Chloroethane	50	U
75-09-2-----	Methylene Chloride	11	JBD
67-64-1-----	Acetone	50	U
75-15-0-----	Carbon Disulfide	50	U
75-35-4-----	1,1-Dichloroethene	50	U
75-34-3-----	1,1-Dichloroethane	50	U
540-59-0-----	1,2-Dichloroethene (total)	50	U
67-66-3-----	Chloroform	50	U
107-06-2-----	1,2-Dichloroethane	50	U
78-93-3-----	2-Butanone	50	U
71-55-6-----	1,1,1-Trichloroethane	50	U
56-23-5-----	Carbon Tetrachloride	50	U
75-27-4-----	Bromodichloromethane	50	U
78-87-5-----	1,2-Dichloropropane	50	U
10061-01-5-----	cis-1,3-Dichloropropene	50	U
79-01-6-----	Trichloroethene	50	U
124-48-1-----	Dibromochloromethane	50	U
79-00-5-----	1,1,2-Trichloroethane	50	U
71-43-2-----	Benzene	50	U
10061-02-6-----	trans-1,3-Dichloropropene	50	U
75-25-2-----	Bromoform	50	U
108-10-1-----	4-Methyl-2-Pentanone	50	U
591-78-6-----	2-Hexanone	50	U
127-18-4-----	Tetrachloroethene	340	D
79-34-5-----	1,1,2,2-Tetrachloroethane	50	U
108-88-3-----	Toluene	50	U
108-90-7-----	Chlorobenzene	50	U
100-41-4-----	Ethylbenzene	50	U
100-42-5-----	Styrene	50	U
1330-20-7-----	Xylene (total)	50	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NYSDEC SAMPLE NO.

H-9-1DL

Lab Name: NYTEST ENV INC

Contract: 9420953

Lab Code: NYTEST

Case No.: 22792

SAS No.:

SDG No.: 22792

Matrix: (soil/water) WATER

Lab Sample ID: 2279201

Sample wt/vol: 5.0

(g/mL) ML

Lab File ID: P2409.D

Level: (low/med) LOW

Date Received: 12/21/94

% Moisture: not dec. _____

Data Analyzed: 12/21/94

GC Column: CAP

ID: 0.53 (mm)

Dilution Factor: 5.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	3.588	72	JD
2.	UNKNOWN	6.136	800	JD
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**APPENDIX K
TOXICITY PROFILES**

Chloroform. Chloroform, also known as trichloromethane, is a colorless liquid with a pleasant, non-irritating odor and a slightly sweet taste. Chloroform is found in trace quantities in the solvent used for dry cleaning processes at Mr. C Cleaners. Chloroform is highly soluble in water, and it readily evaporates into air where it is ultimately degraded by indirect photochemical reactions. The most likely exposure to chloroform is through drinking water and/or breathing air containing chloroform contamination. It can also be absorbed by the skin. Inside the body, chloroform can be transported throughout the body, concentrating mainly in fat tissue, brain, liver, and kidney.

In humans, chloroform at sufficiently high concentrations, has been found to adversely affect the central nervous system (CNS), liver, kidneys, digestive system, heart, and circulatory system after exposure through inhalation or ingestion. CNS effects associated with human exposure to chloroform include dizziness, vertigo, headache, and in some cases death. When used as an anesthetic in the past, chloroform caused irregular heartbeat and low blood pressure. Anesthetic use was discontinued because of liver and kidney damage. Long-term exposure to low concentrations of chloroform also causes liver and kidney damage in humans. The formation of fatty cysts in the liver is the critical effect of chloroform in animals.

Although it is unknown whether long-term exposure contributes to the development of cancer in humans, liver and kidney tumors have been associated with oral exposure in mice and rats. Chloroform is classified as a Group B2 (probable human) carcinogen by the USEPA based on animal studies.

1,1-Dichloroethene. 1,1-Dichloroethene is a man-made chemical that does not occur naturally in the environment. This chemical is a breakdown product from PCE dehalogenation reactions. It is a clear, colorless liquid that has a mild, sweet, chloroform-like odor.

1,1-Dichloroethene usually enters the body via inhalation and/or ingestion. It may also enter the body through the skin. The human health effects resulting from exposure to 1,1-dichloroethene are unknown. In animal studies, brief exposures to high concentrations of 1,1-dichloroethene have caused liver, kidney, heart, and lung damage, nervous system disturbances, and death. Prolonged exposure to lower concentrations of 1,1-dichloroethene has also produced liver damage.

An increase risk of cancer was observed in animals exposed to 1,1-dichloroethene, as were birth defects in the offspring of exposed pregnant animals. Based upon animal studies, 1,1-dichloroethene is classified by the USEPA as a Group C possible human carcinogen.

1,2-Dichloroethene. 1,2-Dichloroethene is a manmade flammable liquid with a sharp, harsh odor. There are two forms of 1,2-dichloroethene: cis-1,2-dichloroethene and trans-1,2-dichloroethene, which may occur separately or as a mixture. 1,2-Dichloroethene is present in trace amounts in the dry cleaning solvent used by Mr. C Cleaners. Also, this chemical can be formed from the breakdown of PCE in the environment.

In the environment, 1,2-dichloroethene evaporates rapidly. When 1,2-dichloroethene is released to either surface soil or surface water, almost all of the chemical evaporates into air. When 1,2-dichloroethene occurs underground, it dissolves in water and migrates to groundwater.

1,2-Dichloroethene can enter the body by drinking water, eating food or breathing air that contains 1,2-dichloroethene. Because 1,2-dichloroethene evaporates readily, inhalation is the most likely route of human exposure. Inhalation of high levels of 1,2-dichloroethene can cause nausea, drowsiness, dizziness, and may result in death. Liver, heart, and lung damage were observed in laboratory animals after short- or long-term exposure to 1,2-dichloroethene in air.

The long-term health effects resulting from exposure to 1,2-dichloroethene are unknown. The USEPA has placed 1,2-dichloroethene in Group D, not classifiable for carcinogenicity, because of limited laboratory and human data.

1,1,1-Trichloroethane (TCA). 1,1,1-TCA is a man-made chemical that has many industrial and household uses. Inhalation is the major route of exposure in humans, but humans can also be exposed by consuming contaminated water, and by dermal contact.

1,1,1-TCA is readily absorbed into the body following exposure and it also readily leaves the body with exhaled air. Inhalation of high levels of 1,1,1-TCA for a short time by humans has resulted in CNS effects such as dizziness, light-headedness, and loss of balance and coordination. These health effects are readily reversible when exposure stops. Studies in animals and humans have shown mild liver effects from long-term exposure. Kidney damage has also been reported in animals.

No consistent pattern of increased incidence of cancer was found in an animal study, but the study was of limited value because of the death of many of the animals. It is not known whether 1,1,1-TCA causes cancer in humans. The USEPA has placed 1,1,1-TCA in Group D, not classifiable for carcinogenicity, because of limited laboratory and human data.

Trichloroethene (TCE). TCE is a man-made chemical widely used as a cleaning agent and solvent for degreasing operations. TCE is also formed from the breakdown of PCE in the environment. Most TCE released into surface water or surface soil will rapidly evaporate into the air. In the subsurface, TCE is moderately to highly mobile and can migrate to groundwater.

Humans are most likely to be exposed to TCE in air. TCE may cause adverse health effects following exposure via inhalation, ingestion, or skin or eye contact. Exposure to high levels of TCE can cause CNS effects including drowsiness, dizziness, headache, blurred vision, lack of coordination, and mental confusion. In the past, TCE was used as an anesthetic, but that use was discontinued when it was found to cause irregular heartbeats. Chronic exposure to TCE can cause liver damage and skin reactions, as well as CNS effects.

Exposure of laboratory animals to TCE has been associated with an increased incidence of a variety of tumors, including liver, kidney and lung cancers. However, it is uncertain whether humans exposed to TCE have a higher risk of cancer. In the past TCE was considered a Group B2 (probable human) carcinogen. However, this classification has been withdrawn by the USEPA and the status is pending following further review.

Vinyl Chloride. Vinyl chloride is a gas or pressurized liquid at ambient temperature. Vinyl chloride is a known degradation product of many chlorinated solvents including tetra-, tri- and dichloro-ethene. In surface water and soil, vinyl chloride evaporates readily. Vinyl chloride can dissolve in water and migrate to groundwater.

People are most likely to be exposed to vinyl chloride in the air, although it is also possible to be exposed to vinyl chloride in drinking water. Inhalation of vinyl chloride can cause dizziness or sleepiness. Breathing very high levels of vinyl chloride can cause unconsciousness and in some cases death. Noncarcinogenic effects associated with long-term occupational vinyl chloride exposure include hepatitis-like changes in the liver, immune reactions and nerve damage.

Vinyl chloride has been shown to cause liver and lung cancer in rats and liver cancer in workers occupationally exposed to air concentrations in the range of 25 ppm to greater

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than 200 ppm. Based on this evidence, the USEPA has classified vinyl chloride as Group
A human carcinogen.

APPENDIX L
FEASIBILITY STUDY WORK PLAN

FEASIBILITY STUDY WORK PLAN**1.0 FEASIBILITY STUDY SCOPE**

A focused Feasibility Study (FS) will be conducted to select remedial alternatives for the media impacted by contamination from the Mr. C Cleaners site. The focused feasibility study will reduce the number of remedial alternatives evaluated as compared to a standard feasibility study. Remedial alternatives will be developed based on previous experience with chlorinated solvent remediation. The FS will include limited bench-scale treatability studies of potential treatment technologies. The major elements of the FS scope include:

- Treatability Study
- FS Report
- Public Meetings

2.0 FEASIBILITY STUDY GUIDANCE

The FS will be conducted in accordance with New York State guidance provided in NYSDEC Technical and Administrative Guideline (TAGM) #4025, "Guidelines for Remedial Investigations/Feasibility Studies", and TAGM #4030, "Selection of Remedial Actions at Inactive Hazardous Waste Sites". TAGM #4025 lists various Federal and New York State guidances on conducting feasibility studies, including "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (USEPA, 1988).

3.0 TREATABILITY STUDY

Treatability studies of one groundwater treatment technology will be conducted under the FS scope. Air stripping and activated carbon are well-established groundwater treatment technologies and extensive data is available in the industry to model treatment of PCE and its degradation products by these two technologies. AOP is also a well-established technology for PCE treatment, however, reactor sizing and operating condition optimization typically requires bench-scale testing. Thus, only AOP bench-scale testing will be conducted during the FS to provide data for full scale AOP system sizing and reagent addition rates. Groundwater for the AOP treatability test will be collected during the pump

test, since groundwater obtained under dynamic pumping conditions is typically more representative of contaminant concentrations that will be observed during full-scale pumping as compared to groundwater collected from monitoring wells under static conditions.

4.0 FEASIBILITY STUDY

The FS for the Mr. C Cleaners site will be conducted using standard evaluation criteria for a limited number of alternatives for each impacted media. The FS report will include:

- **Executive Summary** - The Executive Summary summarizes the FS.
- **Introduction** - The Introduction presents the purpose and objectives of the FS, and includes a summary of site history, nature and extent of contamination, contaminant fate and transport, and public health and environmental risk. New York State and Federal Standards, Criteria and Guidelines (SCGs) are identified.
- **Identification of Remedial Action Objectives** - Remedial Action Objectives, General Response Actions and the volume and extent of media requiring remediation are defined in this section.
- **Development and Screening of Alternatives** - A limited number of alternatives will be developed for each impacted media which will be screened with respect to effectiveness (viz. the ability to protect human health and the environment) and implementability (viz. the technical and administrative feasibility of constructing, operating, and maintaining the remedial alternative, as well as the availability of the technology). Although soils surrounding the sanitary sewer lateral were identified in the Remedial Investigation as being impacted by tetrachloroethene (PCE), soil remediation will not be considered in the FS, since any soil remedial action (e.g., excavation or soil vapor extraction) faces serious implementation constraints posed by the commercial/suburban setting of the site (viz., underground utilities, concrete sidewalks, structure basements, etc.). Additionally, soil remediation is not expected to significantly reduce the duration or scope of the groundwater remediation. Thus, the impacted media which will be addressed in the FS include groundwater and indoor air.

The following alternatives are proposed for evaluation:

Groundwater Collection

- Vertical Wells
- Horizontal Wells

Groundwater Treatment

- Air Stripping (with air emissions controls if necessary)
- Advanced Oxidation Process (AOP)
- Air Stripping + AOP
- Activated Carbon

Treated Groundwater Discharge

- Sanitary Sewer
- Storm Sewer

Indoor Air

- Ventilation
- Sealing

In addition to the remedial alternatives identified above, the No Action alternative will be considered for each impacted medium. The No Action alternative will serve as a baseline against which the other response measures can be compared.

The Development and Screening of Alternatives will consider the number and location of pumping wells for groundwater collection. Both vertical and horizontal pumping wells will be evaluated with limited aquifer modeling. Collection trench technology will not be considered since the depth of groundwater contamination (viz., up to 28 feet below ground surface) makes collection trench installation impractical. In addition to evaluating various technologies for groundwater treatment, the location of the groundwater treatment system will be considered. The options of placing individual groundwater treatment systems at each well head or constructing a single centralized treatment system will be evaluated. The discharge of treated groundwater to either the sanitary or storm sewer systems will also be evaluated. Modeling of the hydraulic capacity of the sewer systems is not anticipated to be necessary. This information will be obtained from the Village of East Aurora Department of Public Works.

Air sparging (AS), a groundwater remedial technology typically effective for volatile organic compound remediation in high and medium permeability aquifers, will not be considered for the site due to the large areal extent of the PCE plume, the difficulty of implementing AS in a commercial/suburban setting, and the potential for sparged vapors to migrate and enter building basements.

- Detailed Analysis of Alternatives - Alternatives which pass the initial screening will be subject to detailed analysis with respect to seven criteria including:

- Overall Protection of Human Health and the Environment
- Compliance With SCGs
- Short-Term Effectiveness
- Long-Term Effectiveness
- Reduction of Toxicity, Mobility and Volume
- Implementability
- Cost

Results of AOP bench-scale testing and aquifer modeling will be considered in the Detailed Analysis of Alternatives section. Following the individual analysis of each alternative a comparative analysis will be performed for the alternatives for each media.

- **Recommended Remedial Alternative** - Based on the individual and comparative analyses, and after review of the detailed analysis by NYSDEC, a remedial alternative will be recommended for each media. This section of the FS report presents the conceptual design and budgetary costs for the recommended alternative.

5.0 PUBLIC MEETINGS

Malcolm Pirnie will present and discuss the results of the draft FS report at up to two public information meetings. Malcolm Pirnie will also assist NYSDEC in preparing a Responsiveness Summary which answers and discusses public comments and concerns associated with the FS and recommended remedial alternative.

APPENDIX M
AQUIFER TESTING WORK PLAN

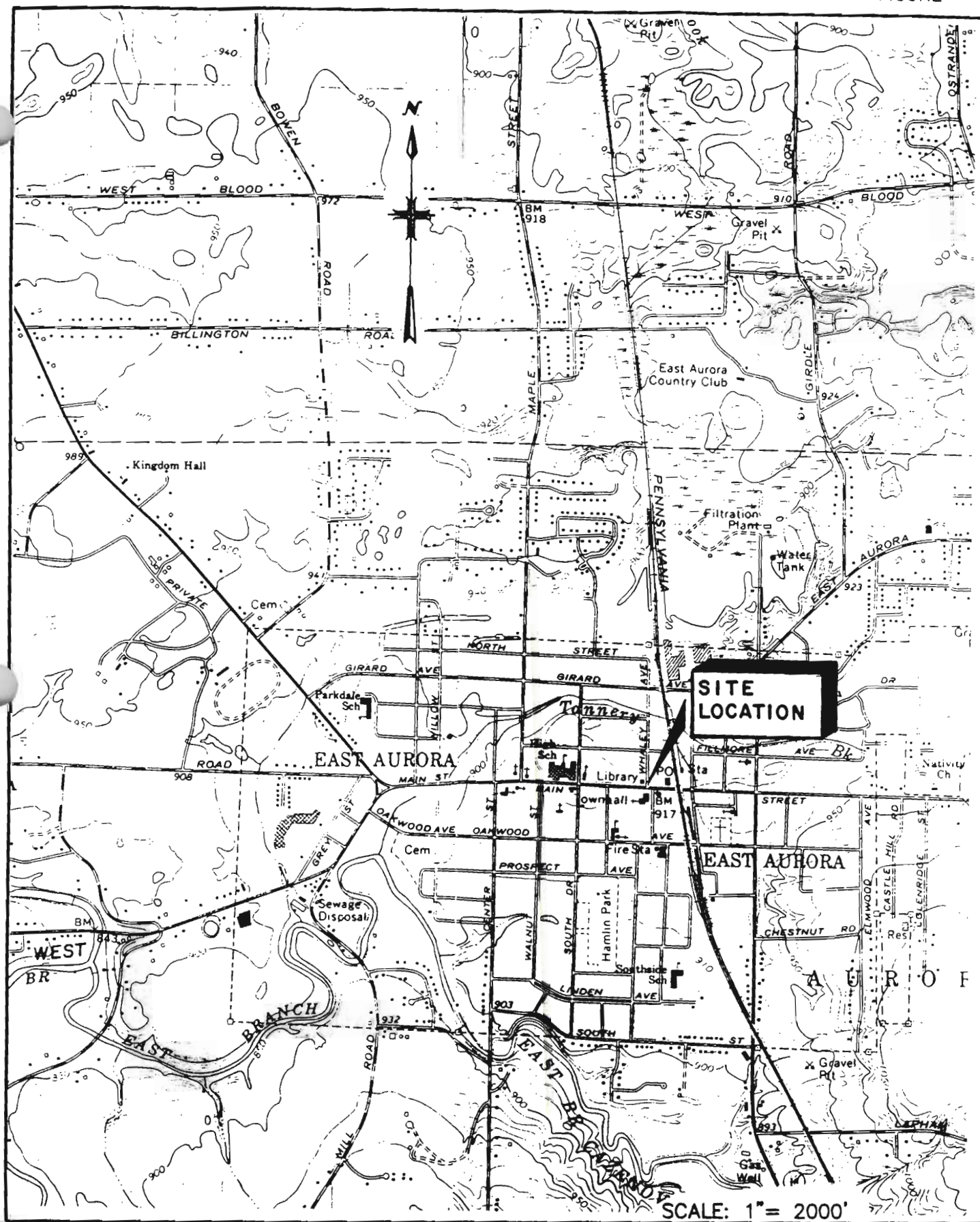
1.0 INTRODUCTION

1.1 BACKGROUND

The Mr. C Cleaners site is a commercial dry cleaners located in a mixed commercial/residential area of the Village of East Aurora, New York. Site location and site vicinity maps are presented as Figures 1 and 2, respectively. The site is currently listed on the New York State Registry of Inactive Hazardous Waste Sites as Site No. 9-15-157. A Remedial Investigation Report (Malcolm Pirnie, June 1995) describing the results of the Phase I and Phase II RI has been completed.

Based on water table sampling results from the Phase I and Phase II RIs, the distribution of PCE and PCE breakdown products at concentrations greater than the drinking water standard (5 ug/l) includes a broad area extending from the Presbyterian Church to Fillmore Avenue (see Figure 2). However, concentrations greater than 1000 ug/l total chlorinated VOCs occur in a smaller area, which includes the area of Mr. C Cleaners, the Agway property, and the Library area. Concentrations of chlorinated VOCs greater than 100 ug/l were detected in an even more narrow zone at the base of the outwash aquifer as illustrated on Figure 3. Concentrations of VOCs decrease below the outwash aquifer. The conceptual aquifer testing program described below is designed to evaluate the feasibility of remediating a localized area of the contaminant plume that contains maximum concentrations of PCE and PCE breakdown products which, at this time, is considered to pose the highest risk of exposure. Data from the proposed aquifer testing program can also be applied to the evaluation of remedial technologies beyond the limits of the maximum PCE concentrations if required by the Remedial Action Objectives. The localized plume of maximum PCE concentrations includes the area extending downgradient of the suspected source at Mr. C Cleaners (located near well ESI-3) to the area of well MPI-6S located behind the Library.

A preliminary conceptual remedial approach has been developed, because the pumping wells, which will be installed for the aquifer testing program, are intended to be used as recovery wells during implementation of a pump and treat remedial program. The preliminary remedial concept is based upon the available information. However, aquifer testing results may show that the remedial concept should be modified. The preliminary remedial concept is described below.



SCALE: 1" = 2000'

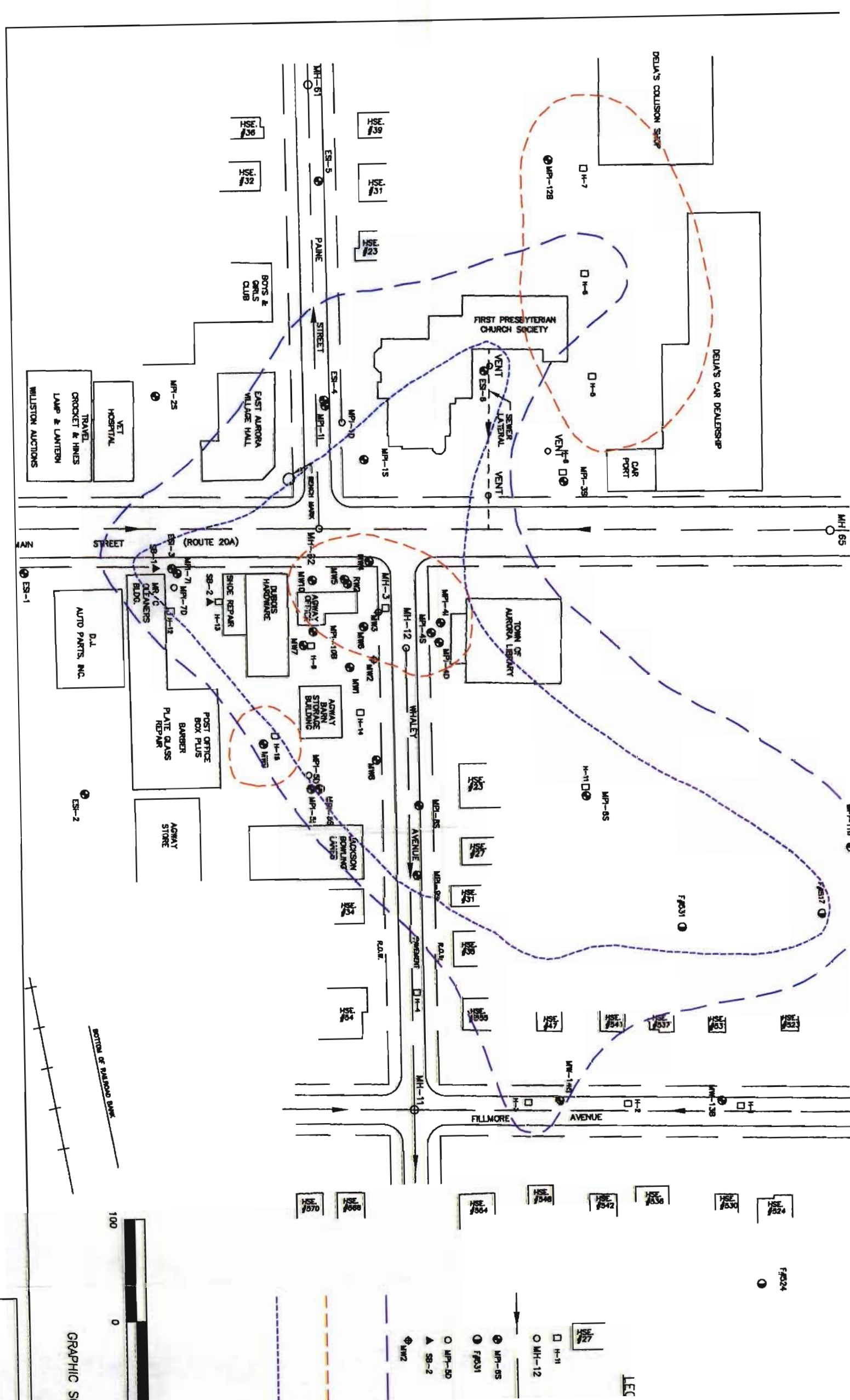
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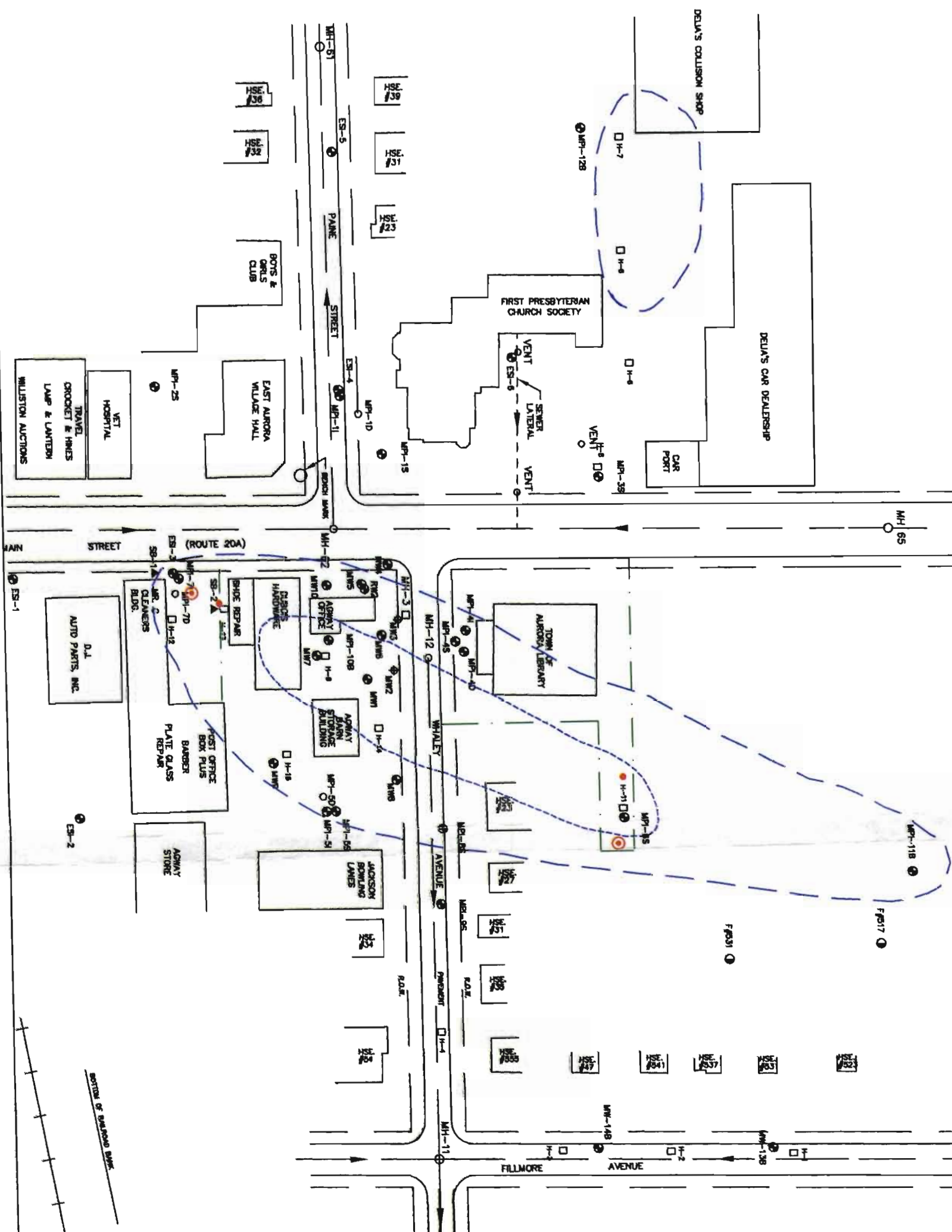
DEC-31-MAP

MR. C DRY CLEANER
NYSDEC STANDBY CONTRACT
SITE LOCATION MAP

NYSDEC

JUNE 1994





SECTION OF BOUNDARY MAP

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GRAPHIC S

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1.1.1 Remedial Concept

Chlorinated VOC-contaminated groundwater will be removed from the aquifer by pumping. The groundwater will be treated on-site, and discharged to the storm sewers or to surface water. The number of recovery wells, and the type and location of groundwater treatment facilities will be addressed in the Feasibility Study. Groundwater elevation and groundwater analytical data from the Phase I and Phase II RI have been used to determine the appropriate location for the downgradient test/recovery wells. Two groundwater recovery zones are planned.

Groundwater recovery zone A will be located at Mr. C Cleaners near the suspected source. The preliminary proposed location of the recovery well (RW-1) is on the west side of the site parking lot, approximately 50 feet downgradient from the suspected source and adjacent to the commercial buildings that overlie the plume west of the site. Recovery well RW-1 is designed to capture contaminated groundwater underlying the adjacent commercial buildings and the site parking lot, and to prevent the release of contaminated groundwater into the Main Street sanitary sewer.

Groundwater recovery zone B will be located approximately 450 feet downgradient from the suspected source near monitoring well MPI-6S. Zone B is believed to be near the leading edge of the contaminated groundwater plume, but has levels of PCE (up to 8700 ppb) similar to groundwater concentrations at the suspected source area. Proposed recovery well locations are depicted on Figure 3. The location of RW-1 is constrained by the presence of the commercial buildings; and the location of RW-2 is constrained by the Village property boundary (see Figure 3).

1.2 OBJECTIVES

The objectives of the aquifer testing program are to:

- Estimate the hydraulic characteristics of the aquifer in the two proposed groundwater recovery zones. Boring data indicate that there is stratigraphic variability between the two areas.
- Predict the areas of influence of the two recovery wells. Evaluate the need for a third recovery well on the Agway property, should the two areas of influence not intersect.

2.0 SUMMARY OF PROPOSED WORK

The aquifer test program will include the following tasks:

- Pre-pump test activities
- Preliminary low rate pumping test
- Preparation of an interim report
- Installation of test/recovery wells
- Performance of two constant rate pumping tests
- Preparation of an aquifer testing report

2.1 PRELIMINARY ACTIVITIES

2.1.1 Grain Size Analysis

Selected soil samples previously collected from below the water table, at MPI-7D (adjacent to ESI-3) and MPI-6S, were analyzed for grain-size distribution. Three samples, representative of uniform soil intervals, were selected from each boring. The results were used to select screen slot size for the recovery wells (see Attachment A).

2.1.2 Pumping Test Discharge Limits

Prior to initiation of the pump tests, Malcolm Pirnie will prepare information and complete the calculations necessary to enable the NYSDEC to review the proposed water treatment processes for the pump tests. Included will be calculations to determine the amount of granular activated carbon which will be necessary to treat the pump test discharges. We project that we will be pumping at a maximum rate of less than 40 gallons per minute. The discharge of recovered water to either the sanitary sewer or the storm sewers was considered. Discharge to the sanitary sewer was dismissed because exfiltration occurs from the sanitary sewers and sewer invert elevations are at or slightly above the water table. Therefore, the discharge of recovery water to the sanitary sewer may influence groundwater levels during the pumping test. Therefore for the discharge of recovered water, the NYSDEC selected the local storm sewer, which discharges into Tannery Brook. It is also assumed that the granular activated carbon which is proposed for use in treating the groundwater during the pump tests will be sufficient to attain compliance with the NYSDEC-established standards for discharge. It is our understanding that a permit will not be required, however, the data required to prepare a permit will need to be submitted to the NYSDEC. We will prepare and submit the information and calculations, in a SPDES

permit format, to the NYSDEC Project Manager, who will coordinate the review and approval process within the NYSDEC. If requested by the NYSDEC, daily samples of the discharge water from the pump tests following carbon treatment will be collected and submitted for analysis. At the conclusion of the tests we will coordinate the removal of the used carbon from the site.

2.2 LOW-RATE PUMPING TEST

In order to facilitate a conceptual design of the groundwater collection system, and prior to the installation of the test/recovery wells, the aquifer characteristics of the unconsolidated aquifer near MPI-6S will be estimated by means of a low-rate pumping test (less than 10 gallons per minute).

The unconsolidated aquifer will be tested by pumping the existing on-site well MPI-6S. An observation well (OW-1) will be installed to the base of the outwash aquifer approximately 25 feet from MPI-6S prior to performing the preliminary test. The observation well will be constructed of two inch diameter PVC screen and riser, with a five foot screen, sandpack from the base of the well to the top of the saturated zone, two feet of bentonite pellets and cement-bentonite grout to the surface. A similar observation well (OW-2) will be installed near ESI-3 for use during a long-term pumping test at Mr. C Cleaners. Each observation well will be completed with a road box at the surface. Also, pilot borings will be completed at the locations of the proposed test/recovery wells to verify stratigraphic data and perform grain size analysis.

Electric submersible pumps will be used to produce drawdown. Portable generator(s) will be used to supply power. The discharge line will be fitted with a flow meter capable of accurately measuring the flow rate to the nearest 0.1 gpm. The flow rate will be regulated by the submersible pump controllers. Discharged water will be treated by granular activated carbon prior to final discharge to the local storm sewer. An estimate of break-through time will be calculated for the activated carbon based on historical, groundwater analytical data. Anticipated break through time will be estimated prior to conducting field activities in order to determine the quantity of carbon required for the test period.

The pump will run for a period of 8 hours. Based on well development data, it is estimated that the combined flow from MPI-6S will be less than 5 gpm. Pressure

transducers will be installed in the pumping well and the observation well. Water level data recorded by the transducers will be stored on an electronic data logger. Water level changes at all other observation wells will be recorded manually during the pumping test using an electronic water level indicator. Following the completion of the pumping test, recovery data will be collected for a period of 2 hours or until each well has substantially recovered.

The data generated from the preliminary pumping tests will be evaluated using the Jacob straight-line analysis method. Time-drawdown plots will be developed for the pumped well and the observation well. The analysis will be used to verify the slug test results and estimate pumping rates to be employed during the step-rate and constant-rate pumping tests at the test/recovery wells.

2.3 INTERIM REPORT

Following the completion of the preliminary low-rate pumping tests an interim report will be produced to summarize the findings. This document will also present the proposed final locations of the test/recovery wells, test/recovery well construction details including screen length, slot size and other design features associated with the construction of the test/recovery wells.

The geologic formation in groundwater recovery zone A is a gravel with silt and sand and will likely sustain a high pumping rate. In recovery zone B, the formation is a silty fine sand. Therefore, the zone B formation will likely be pumped at a relatively low rate. Should the low-rate pumping test results indicate that the formation in zone B does not yield significant amounts of water, the recovery well will not be installed. An alternative remedial technology (i.e., trench or horizontal well) would be proposed instead of the recovery well and only the pump test near Mr. C Cleaners will be performed. The interim report will be submitted to the NYSDEC for approval prior to the installation of the test/recovery wells.

2.4 TEST/RECOVERY WELL INSTALLATION

Upon finalization of the test/recovery well locations, Malcolm Pirnie will authorize the drilling subcontractor to remobilize to the site to install two test/recovery wells. The wells will be installed by the drilling subcontractor based on well construction design details prepared by Malcolm Pirnie. Malcolm Pirnie personnel will observe all drilling and

installation activities. For the purposes of this document and the budget, the following has been assumed to be the design for each test/recovery well.

Both boreholes will be advanced using 10.25-inch hollow-stem augers or 12-inch flush-joint spin/drive casing (method to be determined by the subcontractor), to the base of the outwash sand and gravel aquifer - approximately 28 feet below grade. Each well will be constructed of 6-inch diameter, appropriately sized, wire-wrapped screen. The well screen slot size has been estimated based on the results of grain size analyses from previous borings completed in the vicinity of the proposed test/recovery wells. A 0.020-inch slot size has been assumed for budgeting purposes. Soil samples collected from pilot borings will be tested to finalize the well design. The well screen will be Schedule 5, 304 stainless steel attached to a mild steel riser. Both test/recovery wells are expected to have a screen length of 10 feet. The annulus surrounding the well screen will be filled with an appropriately sized filter pack extending to the top of the saturated outwash unit at each site. A bentonite seal (minimum thickness of two feet) will then be placed above the sand/gravel pack. The remaining annular space will be tremie grouted with cement/bentonite grout to land surface. During sand pack installation a 1-inch diameter, 10-foot long slotted PVC well screen attached to an appropriate length of riser will be installed in the borehole annulus. The riser will extend into the flush mount surface enclosure to allow water level monitoring during pumping. The water level data will be used in conjunction with other water level data to estimate recovery well efficiency. Both test/recovery wells will be completed with a water-tight flush-mount enclosure.

Following the installation of the test/recovery wells, each well will be developed by the drilling subcontractor by means of surging and pumping to increase the hydraulic connection between the wells and surrounding formation. In order to monitor the effectiveness of development, the pumping rate and drawdown will be periodically monitored throughout development to estimate changes in well yield (stabilization of specific capacity). Periodic turbidity measurements will also be made to monitor development.

All drill cuttings generated during the drilling and installation of the test/recovery wells will be contained in NYSDOT-approved drums for future disposal. Drilling water will be recirculated during the drilling process and then discharged through carbon prior to disposal to the storm sewer. The drilling subcontractor will be responsible for staging all cuttings and any collected water within the secure area at the Village of East Aurora DPW.

Malcolm Pirnie will arrange for proper disposal. Water generated during well development will also be discharged through carbon prior to disposal to the storm sewer. All drilling equipment and tools will be decontaminated between borehole locations by means of a pressure washer or steam cleaner, and all decontamination water will be contained.

2.5 AQUIFER TESTING

Upon installation and development of the test/recovery wells, Malcolm Pirnie will conduct two pumping tests. Each pumping test will consist of a step-rate test at each test/recovery well, lasting approximately six hours followed by a recovery period lasting approximately six hours; a 72-hour constant-rate pumping test; and a final recovery period lasting 12 hours.

2.5.1 Mobilization

Malcolm Pirnie will provide all necessary equipment (i.e. submersible pumps, flow meters, discharge piping, and generator, and an operator) to set-up and maintain equipment/operations for the step-rate and constant-rate pumping tests. Electric submersible pumps will be used to produce drawdown in the pumping wells. The discharge line will be fitted with a flow meter capable of accurately measuring the flow rate to the nearest 0.1 gpm. The flow rate will be regulated by a butterfly valve in the discharge line of each pump.

2.5.2 Step-Rate Tests

Step-rate testing will be conducted initially to determine the optimum flow rates for the long-term constant-rate pumping tests. Prior to beginning the step-rate tests, a data logger will be installed in a well to monitor water level trends for one week prior to testing. One complete round of water levels will be recorded at all wells to be monitored during the pumping tests before pumping test equipment (i.e., pumps, discharge lines, control apparatus, carbon treatment units, transducers, etc.) is installed and set-up.

The step-rate test at each test/recovery well will involve pumping the well at successively higher pumping rates while recording drawdown in the pumping well at each discharge rate. The step-rate tests will consist of a series of three steps, each lasting

approximately two hours, or until water levels in the pumping wells have stabilized at each flow rate.

Step-rate tests will be conducted at each test/recovery well. The aquifer will be allowed a minimum recovery period of six hours following the step-rate tests. After the six-hour recovery period, a complete round of water level data will be collected before initiating the long-term pumping test on the unconsolidated aquifer.

2.5.3 Constant-Rate Tests

Pumping in both of the test/recovery wells will be performed sequentially, beginning with RW-1. Pumping at RW-2 will begin after the recovery period for RW-1. This will avoid interference between the aquifer response of each test and will avoid the duplication of equipment that would be required for two tests performed simultaneously.

During the first six to eight hours of the pumping test, a three-person crew will monitor and record water levels at the pumping wells, observation wells and selected monitoring wells. Pressure transducers will be installed in the pumping wells and the two nearest observation wells to record water level changes via an electronic data logger. Monitoring well MPI-12S, which is expected to be outside the potential influence of the pumping well(s), will be monitored to identify background (natural) fluctuations to the water table surface. This well will be monitored throughout the pumping test period. We assume that the NYSDEC will supply up to 10 pressure transducers and 10 Telog™ data loggers for installation in observation wells.

Water level measurements will be recorded at one minute intervals during the first two hours of the constant-rate test in the pumping wells and at observation wells located closest to the pumping wells (see Table 1). Periodic measurements will be recorded during the first two hours at selected observation wells more distant from the test/recovery wells (see Table 1). Electronic water level probes used in observation wells will be rinsed with distilled water between each well in order to prevent any cross-contamination from observation wells. During the next four hours of the pumping test (120 minutes to 360 minutes from the test start time), water level data will be recorded once per 60 to 90 minutes at the wells closest to the pumping wells (identified above) and periodically at the remainder of the observation wells.

TABLE 1			
MR C CLEANERS SUPERFUND SITE REMEDIAL INVESTIGATION REPORT			
<i>AQUIFER TEST OBSERVATION WELLS</i>			
PUMPING WELL RW-1		PUMPING WELL RW-2	
Continuously Monitored Observation Wells	Estimated Distance from RW-1	Continuously Monitored Observation Wells	Estimated Distance from RW-2
OW-1 ESI-3 MW-7 MPI-10B MW-10	25 50 100 110 105	MPI-6S OW-2	25 50
Periodically Monitored Observation Wells	Estimated Distance from RW-1	Periodically Monitored Observation Wells	Estimated Distance from RW-2
MW-8 MW-1 MW-4 MPI-7I	150 155 165 50	#531 MPI-8S MPI-4S	180 165 200

Field plots of time versus drawdown will be made from the data being collected in order to increase measuring frequencies should changing conditions be indicated. After the first six to eight hours of the constant-rate pumping test, field personnel will be decreased to one, plus the drilling subcontractor equipment operator. Unless changing conditions warrant increased monitoring, water levels will be monitored at a decreasing frequency (e.g., once every two hours during day two of the pumping test; once every four hours during day three of the pumping test) for the remainder of the pumping test. However, measurements will be recorded more frequently at wells closest to the pumping wells (identified above) than at the outlying wells. Discharge rates at the pumping wells will be monitored and recorded frequently (at least hourly) during the tests to verify flow.

Following the 72-hour constant-rate test, the aquifer will be allowed to recover for a period of 12 hours. For the first six hours of the recovery period, water level changes in the pumping wells, in the observation wells will be monitored according to the schedule utilized during the initial six hours of the pumping test.

All groundwater generated during the step-rate and constant-rate pumping tests will be treated by granular activated carbon prior to discharge to a local storm water catch basin.

2.5.4 Groundwater Sampling

During the 72-hour pumping tests, influent samples will be collected at the beginning of the test and once every 24 hours from each pumping well, for a total of eight samples. QA/QC samples will be collected as described in the RI Work Plan. Samples will be analyzed for the following parameters:

- ASP 91-1.
- Total and dissolved iron.
- Total and dissolved manganese.
- Total magnesium.
- Total calcium.
- Total hardness.
- Sulfate.
- Total dissolved solids.
- Alkalinity.

Field measurements of temperature, pH and conductivity will also be taken.

No samples will be collected from the effluent of the activated carbon treatment system during the pumping tests. Prior to conducting the pumping tests, the quantity of activated carbon required will be estimated based on calculated break through time estimates using groundwater analytical data.

Following the completion of the field activities Malcolm Pirnie will arrange to dispose of all investigation-derived wastes.

2.6 REPORT

2.6.1 Data Analysis

The data generated from the pumping tests will be evaluated by standard analytical techniques such as distance-drawdown plots, time-drawdown plots (Jacob straight-line analysis) and Theis drawdown plots. During the data evaluation process, potentiometric contour maps will be generated for pre-pumping conditions and for stabilized or nearly-stabilized (after 72 hours) pumping conditions.

2.6.2 Summary of Aquifer Testing

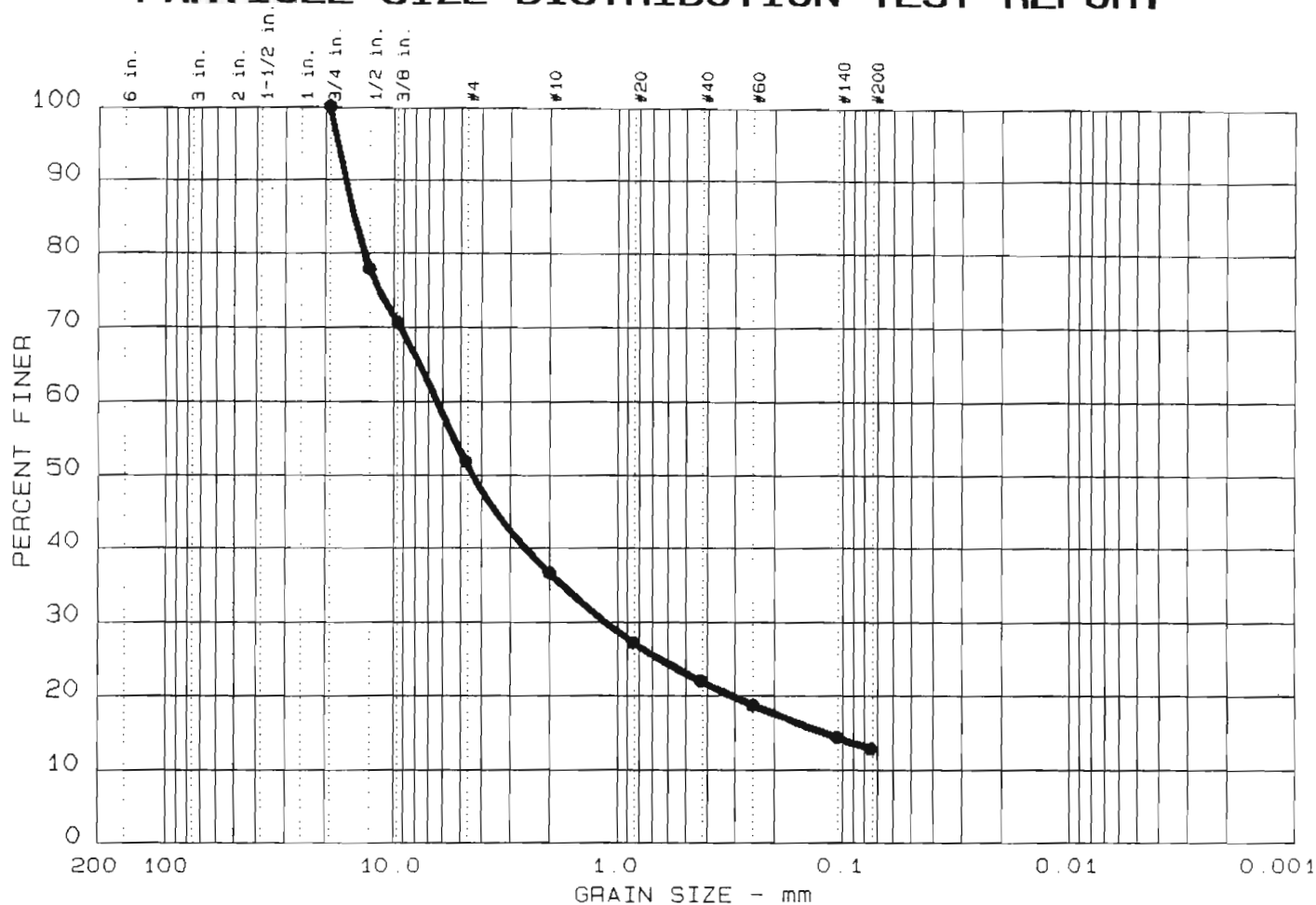
Following completion of the data analysis a summary of the aquifer testing activities will be prepared. The summary will include:

- A narrative of field activities.
- Boring logs and well construction diagrams.
- Appropriate maps, figures, drawdown and recovery curves generated during the data analysis process.
- A discussion of the test results, including aquifer characteristics.
- Raw data which support the summary conclusions.

ATTACHMENT A
GRAIN SIZE ANALYSIS

- 1. From Boring MPI-7D Near Proposed RW-1**
 - 12-20'
 - 20-26'
 - 26-28'
- 2. From Boring MPI-6S Near Proposed RW-2**
 - 12-18'
 - 18-24'

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	48.2	38.9	12.9				

SIEVE inches size	PERCENT FINER		
0.75	100.0		
0.5	77.8		
0.375	70.6		
GRAIN SIZE			
D ₆₀	6.38		
D ₃₀	1.15		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
4	51.8		
10	36.4		
20	27.1		
40	22.0		
60	18.7		
140	14.4		
200	12.9		

Sample information:

● MPI-7D, 12-20'

Remarks:

LAB ID NO.: 95-338

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4

Project: Mr. C Dry Cleaner

Date: 5-23-95

Data Sheet No. _____

Grain Size (mm)	Percent Finer (%)
200	100
150	100
100	100
75	100
60	100
40	100
30	100
25	100
20	100
15	100
12.5	100
10	100
7.5	100
6	100
4.75	100
3.75	100
3.0	100
2.5	100
2.0	100
1.5	100
1.18	100
0.85	100
0.75	100
0.6	100
0.425	50
0.3	42
0.25	35
0.2	28
0.15	22
0.1	15
0.075	12
0.06	10
0.05	10
0.04	10
0.03	10
0.025	10
0.02	10
0.015	10
0.01	10
0.0075	10
0.006	10
0.005	10
0.004	10
0.003	10
0.0025	10
0.002	10
0.0015	10
0.001	10

SIEVE inches size	PERCENT FINER		
1.5	100.0		
1	89.3		
0.75	74.5		
0.5	65.6		
0.375	61.9		
	GRAIN SIZE		
D ₆₀	8.27		
D ₃₀	0.46		
D ₁₀			
	COEFFICIENTS		
C _c			
C _u			

Sample information:

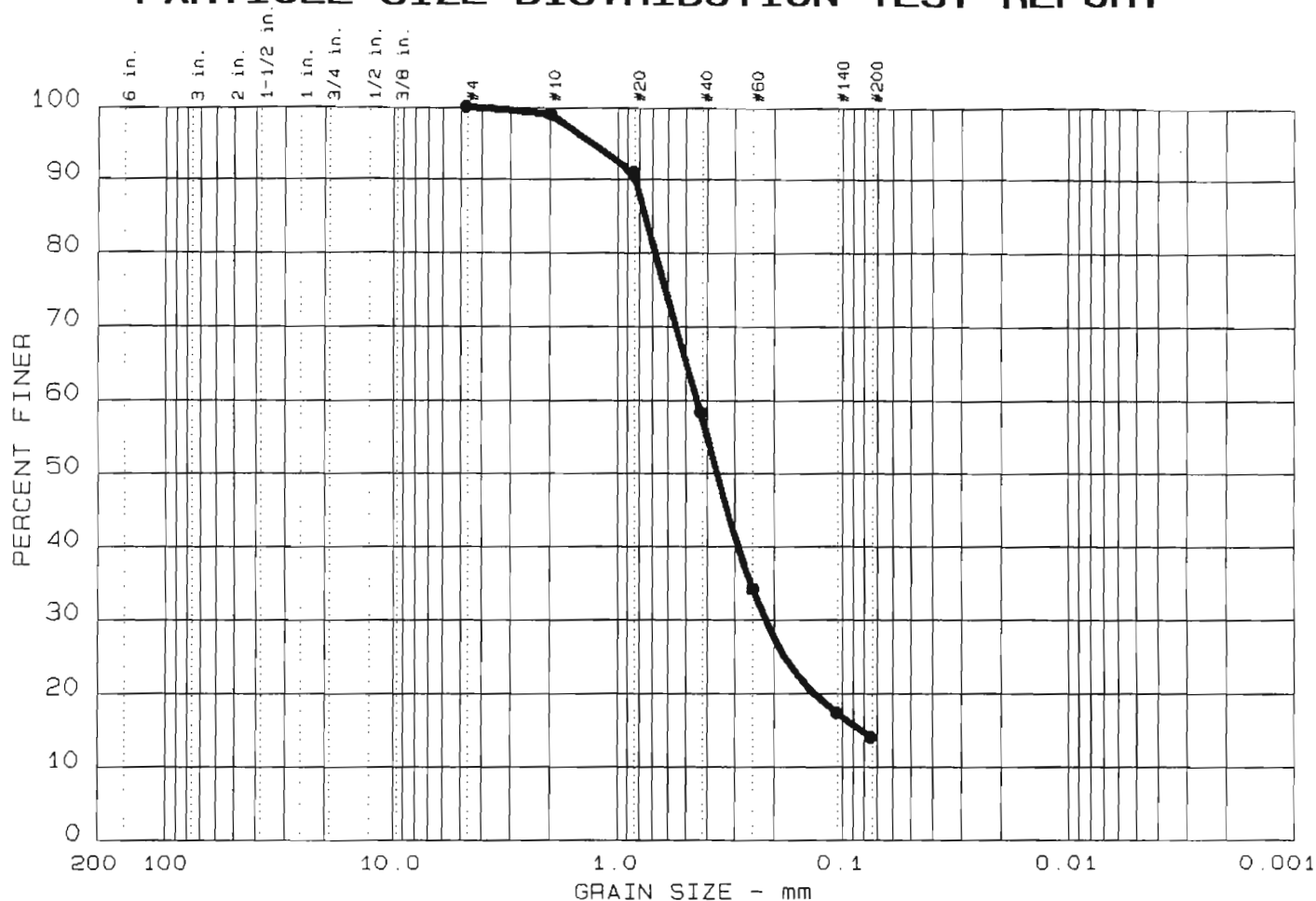
- MPI-7D, 20-26'

Remarks:

LAB ID NO.: 95-339

Data Sheet No. _____

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	0.0	85.9	14.1				

SIEVE inches size	PERCENT FINER		
●			
GRAIN SIZE			
D ₆₀	0.44		
D ₃₀	0.22		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
●			
4	100.0		
10	99.0		
20	91.0		
40	58.4		
60	34.1		
140	17.4		
200	14.1		

Sample information:
● MPI-7D, 26-28'

Remarks:

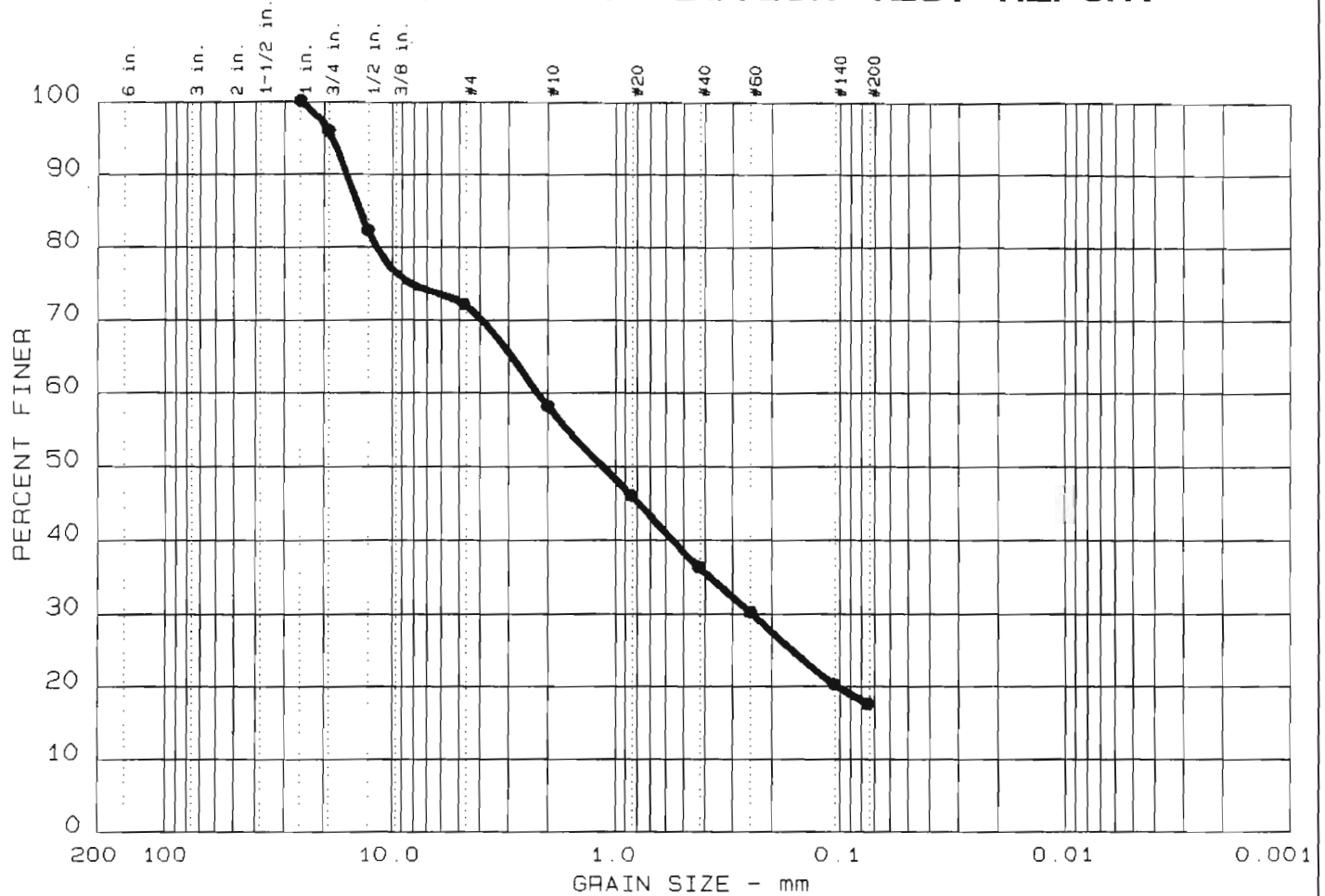
LAB ID NO.: 95-336

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4
Project: Mr. C Dry Cleaner
Date: 5-23-95

Data Sheet No. _____

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
0.0	27.8	54.6	17.6				

SIEVE inches size	PERCENT FINER		
1	100.0		
0.75	95.9		
0.5	82.3		
GRAIN SIZE			
D ₆₀	2.21		
D ₃₀	0.24		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
4	72.2		
10	58.1		
20	46.0		
40	36.2		
60	30.1		
140	20.3		
200	17.6		

Sample information:
 ● MPI-6S, 12-18'

Remarks:

LAB ID NO.: 95-335

**MALCOLM
PIRNIE, INC.**

Project No.: 0266-31-4
 Project: Mr. C Dry Cleaner

Date: 5-23-95

Data Sheet No. _____

PARTICLE SIZE DISTRIBUTION TEST REPORT

