SUPPLEMENTAL GROUNDWATER REMEDIAL INVESTIGATION TECHNICAL MEMORANDUM CLARK FACILITY

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1.0 INTRODUCTION

GeoTrans, Inc. (GeoTrans) of Annandale, New Jersey was retained by AT&T of Bedminster, New Jersey, to conduct supplemental groundwater investigation activities at the former Clark Facility (the site) located at 100 Terminal Road in Clark, Union County, New Jersey (Figure 1-1). These groundwater investigation activities were conducted pursuant to requirements outlined by the New Jersey Department of Environmental Protection (NJDEP) in a site meeting on February 25, 2004. The supplemental groundwater investigation activities discussed in this Technical Memorandum (TM) were also conducted in accordance with requirements of the Industrial Site Recovery Act (ISRA) and the NJDEP Technical Requirements for Site Remediation.

1.1 BACKGROUND AND OBJECTIVES

Based on closure of site operations by Tyco and subsequent sale of the property by Tyco to Garden Commercial Properties, areas beneath the building that could not previously be characterized in accordance with ISRA requirements are now accessible for subsurface investigation. Phase II sampling conducted by EcolSciences, Inc. on behalf of Garden Commercial Properties confirmed that no existing source of volatile or semivolatile compounds are present beneath the building in the shallow subsurface. With respect to groundwater, isoconcentration gradients were previously extrapolated between groundwater monitoring points along the building perimeter. Given evidence of potential dense non-aqueous phase liquid (DNAPL) compounds at the site in an area that was subsequently covered by a building following remedial excavation activities, NJDEP required that additional groundwater investigation be conducted in the area beneath the building to further evaluate plume characteristics and possible contaminant migration pathways. A sub-building groundwater investigation was subsequently conducted.

In addition to the sub-building groundwater investigation required by NJDEP, groundwater samples were also collected from the existing monitoring well network. Six of the total 24 groundwater monitoring wells are bedrock monitoring wells (MW-19A, MW-19D, MW-20D, MW-21S, MW-

21D, and MW-22D) that were installed at the site in 1999 and 2000 but were not sampled as monitoring wells.

The above supplemental groundwater investigation activities were conducted to meet the following objectives:

- Evaluate the effectiveness of the IRM conducted in 1999.
- Evaluate groundwater sampling results beneath the building to assess contaminant migration pathways and whether a monitoring well network outside the building footprint will be sufficient to provide isoconcentration data. Groundwater grab samples were also collected in areas north of the former drywell to provide additional delineation data requested by NJDEP.
- Provide current, representative characterization data from the existing monitoring wells.
- Evaluate whether natural attenuation mechanisms are active at the site.
- Provide a basis for developing a site closure strategy for the site for presentation to NJDEP.

The purpose of this TM is to communicate the results and findings from the recent investigation and to identify future data collection needs to support an overall site closure strategy. In addition, the scope and results of groundwater investigation activities that were performed in 1999 and 2000 have been summarized and incorporated into this TM. This includes rock coring, packer testing, monitoring well installation and aquifer testing results not previously compiled. Data generated during these activities, as well as the 2004 groundwater investigation results, have been summarized, as applicable, to support a response to NJDEP's October 19, 1999 comment letter.

1.2 SCOPE OF WORK

To accomplish the groundwater investigation objectives established above, the following field activities were conducted as part of the 2004 supplemental groundwater investigation:

- Groundwater grab samples were collected from discrete intervals at 9 locations in areas beneath the building and in the area of the former drywell (total of 11 samples) and submitted

for laboratory analysis of volatile organic compounds (VOCs).

- Soil samples were collected from the shallow soil beneath the building at 3 locations and screened in the field for total VOC concentrations. Based on screening results, 2 soil samples were submitted for laboratory analysis of VOCs.
- Synoptic groundwater level measurements were collected from monitoring wells at the site.
- Groundwater samples were collected from most of the existing monitoring wells (21 on-site wells and 3 off-site wells) and submitted for laboratory analysis of VOCs. Samples collected from the on-site overburden wells were also analyzed for natural attenuation parameters (specifically, methane/ethene/ethane, total and dissolved iron and manganese, total and dissolved organic carbon, chemical and biological oxygen demand, total dissolved solids, alkalinity, chloride, sulfate, orthophosphate, ammonia as nitrogen, and nitrate).
- The existing on-site and off-site monitoring wells were re-surveyed to establish horizontal and vertical elevations because five of the bedrock monitoring wells were not previously surveyed, and several of the older monitoring wells may have been altered by Tyco to flush-mount construction.

1.3 MEMORANDUM ORGANIZATION

This TM is organized as follows:

- Introduction, a description of the background and objectives, and TM organization are presented in Section 1.
- The site history, previous investigations, and regulatory background for the supplemental groundwater investigation are summarized in Section 2.
- Field investigation methods used during the 2004 supplemental groundwater investigation and investigation activities performed during 1999 and 2000 are provided in Section 3.
- An assessment of investigation results, including a discussion of key findings and proposed recommendations, are provided in Section 4.

Nine appendices are included with this TM. Available monitoring well records, well logs, soil boring logs, and NJDEP Forms B are provided in Appendix A. Borehole geophysical logs and video log notes are provided in Appendix B. Packer sampling results are provided in Appendix C. Well abandonment forms are provided in Appendix D. Groundwater level drawdown data recorded during the step test of well MW-2A are provided in Appendix E. Records of water quality parameters measured during the May 2004 groundwater sampling event are provided in Appendix F. Analytical data summary sheets for the groundwater and soil grab samples and the groundwater monitoring well samples collected in May 2004 are provided in Appendix G. Chains of custody from the May 2004 sampling events are provided in Appendix H. Groundwater investigation data from activities performed in 1999 are included in Appendix I. This includes tabulated water levels measurements, purge water quality data, and analytical data, as well as sample location figures, groundwater elevation contour maps, and TCE isoconcentration maps.

2.0 GENERAL BACKGROUND

Historical operations at the former AT&T Clark facility and previous environmental investigations at the site are summarized in this section.

2.1 SITE HISTORY AND OPERATIONS

Prior to the development of the site by Villa Construction in 1959, the land was undeveloped. In 1959 the site was purchased by AT&T for the manufacturing, testing and repair of undersea communication repeaters. The facility was constructed for AT&T in 1959 and first occupied in 1960. In June 1997, AT&T Submarine Systems Inc. was sold to Tyco. A more detailed account of ownership history is included in the Preliminary Assessment Report (dated 27 October 1997 and submitted to NJDEP on 22 December 1997).

Operations at the former Clark Shop consisted of the production of electro-optic repeaters and electro-optic terminal shelves to regenerate lightwave signals for use in undersea cable telecommunications systems. Production included mechanical assembly and electro-optic and mechanical testing. The assembly operations included soldering, welding, arc-fusion splicing, and minimal parts cleaning and packaging.

Raw materials such as beryllium repeater housings end caps and fiber optic components were received at the facility. The beryllium housings and caps were machined if needed and the resultant metallic wastes were recycled. The fiber optic components were assembled on a circuit board. During assembly, amp-pairs were manufactured and affixed to the board. The amp-pairs consisted of soldered components (flux was used during soldering) that were cleaned with isopropanol and d-limonene. After manufacturing, the amp-pairs were spliced into the repeater housing. Splicing consisted of dipping the ends of the fiber optic wiring into sulfuric acid to strip away a protective coating. The exposed ends were cleaned with methanol and acetone, spliced together and coated with a methacrylate for protection. The assembled repeater was tested and sealed with an electron beam welder. The finished product was then shipped from the facility for distribution.

2.2 SUMMARY OF PREVIOUS INVESTIGATIONS AND REGULATORY BACKGROUND

A summary of previous investigative and remedial activities is provided in Table 2-1. As shown in the table, the requirements of ISRA were triggered due to AT&T's sale of its Submarine Systems, Inc. business unit including the Clark Shop facility to Tyco, Inc. AT&T is responsible for completing ISRA requirements in accordance with a Remediation Agreement dated July 1, 1997 (ISRA Case No. 97187). Investigative and remedial activities performed subsequent to the ISRA Remediation Agreement are briefly summarized below.

2.2.1 Soils

Following the ISRA Remediation Agreement, McLaren/Hart conducted a Preliminary Assessment (PA) of the site and identified 34 Areas of Concern (AOCs). McLaren/Hart concluded that 14 of the identified soils AOCs required further investigation. McLaren/Hart subsequently conducted Site Investigation/Remedial Investigation (SI/RI) activities to assess potential impacts to soil from site operations at the 14 AOCs. Soil investigation activities were performed from July 1997 to September 1997. Sampling was conducted to evaluate the presence of chemical constituents at concentrations exceeding applicable remediation guidelines. Results indicated that target constituents were detected in concentrations exceeding applicable NJDEP criteria in soil or sediment at 5 AOCs. These constituents were primarily base neutral compounds (BNs) in soil and BNs and metals in catch basin sediment. AT&T submitted a combined PA/SI/RI report (McLaren/Hart 1997) to NJDEP on 22 December 1997.

McLaren/Hart developed a Remedial Action Work Plan (RAWP) for Soils (McLaren/Hart 1998a) to address concentrations of BNs and metals exceeding applicable NJDEP criteria at the 5 soils AOCs and submitted the RAWP to NJDEP in March 1998. The RAWP was implemented in July 1998 when impacted soil and sediment were excavated from the 5 AOCs and removed for proper disposal. McLaren/Hart subsequently submitted a Remedial Action Report for Soils (McLaren/Hart 1998b) to

NJDEP in December 1998.

Based on a review of the previous investigation results, a residual mass of TCE was thought to be present beneath the previously excavated area surrounding the former dry well. A focused field effort using the Expedited Site Characterization (ESC) approach was conducted to aid in defining the limits of remediation, and to complete site characterization activities near the former dry well. In June and July 1999, the ESC sampling program was conducted "at peril" to minimize impact on Tyco's pending building expansion in the area of the former dry well. Depth-discrete groundwater grab samples were collected to delineate impacted groundwater and soil samples were collected for analysis of engineering parameters to evaluate remedial options.

Based on these delineation efforts, a 24 ft x 20 ft area of soil beneath the former dry well location was excavated to approximately 20-23 ft bgs to top of bedrock to remove and remediate soil containing residual product. This remedial action was performed from May to July 2000 by McLaren/Hart and an Interim Remedial Action Report was prepared and submitted to AT&T in August 2000 for review.

2.2.2 Groundwater

Initial investigation into potential groundwater impacts from a spill collection tank and operation of the dry well began in 1988. Dunn Geosciences performed several phases of groundwater investigations between 1989 and 1992 (Dunn Geosciences 1990, 1991, and 1992). RUST Environmental installed a test recovery well and performed a feasibility study supplemental investigation, including packer and pump tests in 1993 and conducted an offsite groundwater investigation in 1994 (RUST 1994, 1995). McLaren/Hart collected groundwater samples from a number of the AOCs identified in the PA/SI/RI in 1997. Most of the PA/SI/RI activities, however, dealt with potential impacts of facility operations on soil. Roy F. Weston, Inc. conducted a separate groundwater remedial investigation in 1996 and 1997 to address potential impacts to groundwater at the site. Results of this groundwater investigation were included in a Final Remedial Investigation Report (Weston 1997). More recently, EcolSciences, Inc. conducted a Phase II site investigation for

Garden Commercial Properties that included groundwater sampling of existing monitoring wells and the installation and sampling of temporary well points inside the facility building (EcolSciences 2003).

3.0 FIELD INVESTIGATION METHODS

Field investigation methods used during supplemental groundwater investigation activities conducted in 1999, 2000, and May 2004 are described in this section. This includes monitoring well installation and development, rock coring, borehole geophysical logging, groundwater and soil grab sampling, packer sampling of selected rock borehole intervals, monitoring well sampling, step aquifer testing of monitoring well MW-2A, and well abandonment activities.

Field activities were performed in accordance with New Jersey Administrative Code 7:26E Technical Requirements for Site Remediation (TRSR), the NJDEP Field Sampling Procedures Manual (NJDEP 1992) and the NJDEP Alternative Ground Water Sampling Techniques Guide (NJDEP 1994).

3.1 MONITORING WELL INSTALLATIONS

In 1999 and 2000, a total of six bedrock monitoring wells were installed to assess potential impacts to groundwater in the bedrock aquifer beneath the site. Monitoring well MW-19A was installed in July 1999, and monitoring wells MW-19D, MW-20D, MW-21S, MW-21D, and MW-22D were installed from May to July 2000 (Figure 3-1). The bedrock wells were installed by Summit Drilling Company, Inc. (Summit) of Bound Brook, NJ, a New Jersey-licensed driller.

Monitoring well construction details for the existing onsite and offsite wells are summarized in Table 3-1. Monitoring well locations are shown on Figure 3-1. Monitoring well logs, well construction diagrams, and monitoring well records that could be located for the bedrock monitoring wells installed in 1999 and 2000 are included in Appendix A. Bedrock monitoring well installation procedures are described below.

3.1.1 MW-19A

In July 1999, bedrock monitoring well MW-19A was installed approximately 55 ft south of and downgradient from the former dry well location. A 10-inch diameter borehole was advanced using air-rotary drilling methods. Weathered bedrock was encountered at approximately 37 feet bgs, and competent bedrock rock was encountered at approximately 40 ft bgs. The boring was advanced 5 ft into competent rock (45 ft bgs) and 10-inch diameter steel casing was driven to 44 ft bgs to prevent collapse of the overburden. The casing was then filled with bentonite grout using a tremie pipe. A wooden plug was fitted into the lower end of a length of 6-inch steel casing and the casing was then set into the grout column to the total depth of 45 ft bgs.

Following overnight curing of the grout, the borehole was advanced via NX rock coring from 45 to 80 ft bgs. A qualified field geologist inspected and described the recovered rock cores and logged pertinent hydrogeologic information. Rock core logging procedures are discussed in Section 3.1.3.

Following completion of rock coring, the borehole was reamed to 6-inch diameter and the well was installed. MW-19A was screened from 70-80 ft bgs with 10 ft of 2-inch diameter 20-slot Schedule 40 polyvinyl chloride (PVC) screen, followed by 2-inch diameter Schedule 40 PVC riser from 70 ft bgs to approximately 1.75 ft above grade. The screen was gravel packed with #2 Morie gravel from the bottom to 2 ft above top of screen. A 1 ft thick bentonite slurry seal was installed above the gravel pack, followed by cement-bentonite grout that was tremie-piped from the top of the bentonite seal to approximately 1 ft above grade. The well was completed with a 6-inch protective steel casing stick-up extending 2 ft above grade and a padlocked steel hood; the inner PVC casing was secured with a gripper plug.

3.1.2 Remaining Bedrock Monitoring Wells

Bedrock monitoring wells MW-19D, MW-20D, MW-21S, MW-21D, and MW-22D were installed from May to July 2000. Drilling and well installation procedures for these wells were generally the

same as those used to install well MW-19A, with the exception of rock coring, which was not performed at these well locations.

Drilling and construction of the 3 deepest bedrock monitoring wells (MW-19D, MW-20D, and MW-21D) proceeded in stages. Following installation of steel casing through the overburden into the top of competent bedrock, these wells were drilled to approximately 150 ft bgs and then geophysically logged to identify fractures and partings that might conduct water. Following evaluation of the borehole geophysical logs, selected intervals were isolated using inflatable packers and sampled to assess TCE concentrations in the groundwater. Borehole geophysical logging and packer sampling procedures are summarized below in Sections 3.1.4 and 3.3.3, respectively. Based on the packer sampling analytical results, the boreholes of these 3 bedrock wells were advanced to approximately 200 ft bgs and groundwater samples were collected via packer sampling from the bottom of the boreholes. The wells were then constructed with appropriate screen intervals. Details regarding construction of these bedrock monitoring wells and wells MW-21S and MW-22D are summarized below.

3.1.2.1 MW-19D

MW-19D was installed approximately 90 ft south of and downgradient from the former dry well location using rotary drilling methods. Weathered bedrock was encountered at approximately 24 feet bgs, and competent bedrock rock was encountered at approximately 33 ft bgs. A length of 10-inch diameter steel casing was driven to 40 ft bgs into bedrock, after which drilling continued to approximately 55 ft bgs. A length of 6-inch steel casing was then set at 58 ft bgs and grouted in place.

Following curing of the grout, a 6-inch diameter borehole was drilled to 150 ft bgs and the well was geophysically logged. Based on an evaluation of the borehole geophysical logs, selected intervals were packer sampled to assess TCE concentrations in the groundwater. The 6-inch diameter borehole was then drilled to 208 ft bgs and the 195-205 ft interval was packer sampled, after which the well was installed. MW-19D was screened from 186-206 ft bgs with 20 ft of 2-inch diameter 10-

slot Schedule 40 PVC screen, followed by 2-inch diameter Schedule 40 PVC riser from top of screen to the surface. The screen was gravel packed with #1 Morie gravel from the bottom to 2 ft above top of screen. A 1 ft thick bentonite slurry seal was installed above the gravel pack, followed by cement-bentonite grout that was tremie-piped from the top of the bentonite seal to near surface. The well was completed with a flush mount protective steel casing and the inner PVC casing was secured with a gripper plug and lock.

3.1.2.2 MW-20D

MW-20D was installed approximately 145 ft east of the former dry well location using mud rotary drilling methods. Weathered bedrock was encountered at approximately 38 feet bgs, and competent bedrock rock was encountered at approximately 48 ft bgs. A length of 10-inch diameter steel casing was driven to 18 ft bgs, after which drilling continued to approximately 58 ft bgs. A length of 6-inch steel casing was then set at 58 ft bgs and grouted in place.

Following curing of the grout, a 6-inch diameter borehole was drilled to 151 ft bgs and the well was geophysically logged. Excessive drilling mud in the borehole made logging difficult; therefore, logging was halted and the well was developed via air displacement to reduce mud in the borehole. Geophysical logging was resumed after the borehole was developed. The well was further developed after geophysical logging to remove more mud from the borehole. Based on an evaluation of the borehole geophysical logs, selected intervals were packer sampled to assess TCE concentrations in the groundwater. The 6-inch diameter borehole was then drilled to approximately 200 ft bgs and the 177-197 ft interval was packer sampled, after which the well was installed. MW-20D was screened from 178-198 ft bgs with 20 ft of 2-inch diameter 10-slot Schedule 40 PVC screen, followed by 2-inch diameter Schedule 40 PVC riser from top of screen to the surface. The screen was gravel packed and the well sealed and completed as a flush mount using the same procedures and construction described above for well MW-19D.

3.1.2.3 MW-21S

MW-21S was installed approximately 520 ft south of and downgradient from the former dry well location using mud rotary drilling methods. Highly fractured weathered bedrock was encountered at approximately 38 feet bgs, and competent bedrock rock was encountered at approximately 59 ft bgs. A length of 10-inch diameter steel casing was driven to 16 ft bgs, after which drilling continued to approximately 69 ft bgs. A length of 6-inch steel casing was then set at 69 ft bgs and grouted in place; additional grout volume was required, most likely to fill voids in the bedrock.

Following curing of the grout, a 6-inch diameter borehole was drilled to 115 ft bgs and the well was installed. MW-21S was screened from 104-114 ft bgs with 10 ft of 2-inch diameter 10-slot Schedule 40 PVC screen, followed by 2-inch diameter Schedule 40 PVC riser from top of screen to the surface. The screen was gravel packed and the well sealed and completed as a flush mount using the same procedures and construction described above for well MW-19D.

3.1.2.4 MW-21D

MW-21D was installed approximately 520 ft south of the former dry well location using mud rotary drilling methods. Weathered bedrock was encountered at approximately 38 feet bgs, and competent bedrock rock was encountered at approximately 60 ft bgs. A length of 10-inch diameter steel casing was driven to 18 ft bgs, after which drilling continued to approximately 70 ft bgs. A length of 6-inch steel casing was then set at 70 ft bgs and grouted in place.

Following curing of the grout, a 6-inch diameter borehole was drilled to 150 ft bgs and the well was geophysically logged. Excessive drilling mud in the borehole made logging difficult; therefore, logging was halted and the well was developed via air displacement to reduce mud in the borehole. Geophysical logging was resumed after the borehole was developed. The well was further developed after geophysical logging to remove more mud from the borehole. Based on an evaluation of the borehole geophysical logs, selected intervals were packer sampled to assess TCE concentrations in the groundwater. The 6-inch diameter borehole was then drilled to approximately 200 ft bgs and the

189-199 ft interval was packer sampled, after which the well was installed. MW-20D was screened from 178-198 ft bgs with 20 ft of 2-inch diameter 10-slot Schedule 40 PVC screen, followed by 2-inch diameter Schedule 40 PVC riser from top of screen to the surface. The screen was gravel packed and the well sealed and completed as a flush mount using the same procedures described above for well MW-19D.

3.1.2.5 MW-22D

MW-22D was installed approximately 300 ft northeast of and upgradient from the former dry well location initially using air rotary drilling methods. Upon encountering groundwater at 30 ft bgs, the drilling method was changed to mud rotary. Weathered bedrock was encountered at approximately 30 feet bgs, and competent bedrock rock was encountered at approximately 45 ft bgs. A length of 12-inch diameter steel casing was driven to 20 ft bgs. A 10-inch borehole was then advanced 60 ft bgs, and a length of 6-inch steel casing was set at 60 ft bgs and grouted in place.

Following curing of the grout, a 6-inch diameter borehole was drilled to 116.5 ft bgs and the well was installed. MW-21S was screened from 105-115 ft bgs with 10 ft of 2-inch diameter 10-slot Schedule 40 PVC screen, followed by 2-inch diameter Schedule 40 PVC riser from top of screen to the surface. The screen was gravel packed and the well sealed and completed as a flush mount using the same procedures and construction described above for well MW-19D.

3.1.3 Bedrock Coring

For well MW-19A, rock coring was performed from 45 to 80 ft bgs. Coring was performed with NX (2-inch diameter) core barrels to collect continuous rock core for assessment of bedrock geology and the distribution of fractures, partings, and other separations in the rock that might conduct groundwater. The rock core log for MW-19A is provided in Appendix I. The structural integrity of the bedrock was evaluated by calculating the Rock Quality Designation (RQD) of the recovered core runs. The RQD is calculated by adding the total lengths of all core pieces exceeding four inches in a coring run and dividing by the total length of the coring run to obtain a percentage. Only natural

breaks in the cores are counted toward the RQD; drilling-induced breaks are disregarded. Highly fractured bedrock core runs have low RQD values; conversely, competent bedrock core runs have high RQD values. The depth intervals for subsequent packer sampling of MW-19A were selected based upon RQD values and observed fractures (as discussed in Section 3.3.3).

3.1.4 Borehole Geophysical Logging

Borehole geophysical logging was conducted in the deepest bedrock wells (MW-19D, MW-20D, and MW-21D) to assess bedrock geology and hydrogeology beneath the site. Geophysical logs were used to identify and select appropriate fracture intervals for packer sampling and to obtain in-well flow data. Geophysical logging was conducted on 31 May 2004 by Appalachian Geophysical Surveys of Apollo, Pennsylvania. The wells were logged to the full depth of the boreholes as of that date (approximately 150 ft bgs). The wells were also video logged to provide direct observation of borehole conditions such as fracture spacing, orientation, and dip. Copies of the geophysical logs and a transcription of the logging operator's observations during video logging are provided in Appendix B.

The geophysical logging tools were lowered down hole on a wire cable following video logging of a borehole. Final results were provided on strip charts which display up to three logging read outs side by side with respect to borehole depth. Field copies of individual logs were immediately available for use in selecting packer sampling depth intervals.

The types of geophysical logging performed on the above bedrock monitoring wells included, conventional geophysical logs, such as caliper, natural gamma ray, resistivity, density, temperature, and spontaneous potential, as well as acoustic borehole logs and heat pulse flowmeter logs. The caliper and density logs are generally the primary logs used to identify apparent fracture zones and select packer sampling depth intervals and packer seating locations in the boreholes. The remaining logs in the suite serve to better qualify apparent fracture zones indicated on the caliper and density logs. Brief descriptions of the acoustic borehole and heat pulse flowmeter logging methods are provided below.

The acoustic borehole logging tool uses a rotating transducer to transmit and receive high-frequency acoustic pulses. This tool generates a 360-decree scan of the borehole wall and provides high-resolution images of fractures and solution openings. A built-in magnetometer mounted on the tool is used to provide a compass orientation of the features identified on the log. This log is used to characterize fractures and solution openings and provide strike and dip of fractures and bedding planes.

The heat pulse flowmeter tool provides direct measurements of both the vertical direction and rate of flow in an open borehole. When situated at the selected depth, the tool generates a pulse or slug of heat by discharging a capacitor. As the heat moves with the flow of water in the borehole, the time required for the heat to reach the tool's sensors is recorded and converted to units of gallons per minute in the appropriate direction. Heat pulse flowmeter test depths were chosen based upon geophysical logging results for a given borehole. Test depth intervals were selected to bracket apparent fracture locations identified on the caliper and density logs. The resulting composite profile of vertical flow in a given borehole is used to assess intervals where water flows into or out of the borehole.

3.1.5 Well Development

Following installation of the bedrock wells, the wells were developed to remove drilling mud and other fine particulate material from well screen and establish good hydraulic communication with the bedrock formation near the well intake. The wells were developed by pumping until the discharged water was visibly clear of fines. As noted above, monitoring wells MW-20D and MW-21D were also developed (via air lift methods) prior to well completion to remove drilling mud and facilitate geophysical logging of the wells.

3.2 GROUNDWATER ELEVATION SURVEYING

Following completion of the bedrock monitoring wells, the wells were surveyed to establish horizontal locations and vertical elevations and the existing onsite and offsite monitoring wells were re-surveyed. The survey was performed by DeMuro Associates, Inc., a New Jersey-licensed surveyor located in Somerville, New Jersey (NJ license number 21866). Horizontal coordinates (Northing and Easting) and vertical elevations of the inner and outer casings (relative to mean sea level) were measured and are provided in Table 3-1. NJDEP Monitoring Well Certification Forms B are presented in Appendix A.

3.3 SAMPLING ACTIVITIES AND METHODS

Sampling activities performed in 1999 included the collection of discrete groundwater samples during packer sampling of bedrock monitoring well MW-19A, the collection of groundwater and soil grab samples during the ESC performed near the former dry well location, and the collection of groundwater samples from site monitoring wells. Figures depicting the ESC grab sampling locations are included in Appendix I.

Sampling activities performed in 2000 and 2004 include the collection of discrete groundwater samples during packer sampling of bedrock monitoring wells MW-19D, MW-20D, and MW-21D in June and July 2000, the collection of groundwater and soil grab samples from beneath the facility building in May 2004, and the collection of groundwater samples from existing onsite and offsite monitoring wells in May 2004. The locations of monitoring wells sampled during May 2004 are shown on Figure 3-1. Sampling locations for the groundwater and soil grab samples collected in May 2004 are presented on Figures 3-2 and 3-3.

Sampling activities and methods used during the above field activities are described below. Groundwater and soil grab sampling activities and methods are describe first, followed by packer sampling and monitoring well sampling activities and methods.

3.3.1 Groundwater Grab Sampling

In June and July 1999, an ESC sampling program was conducted to investigate the extent of potential impacts by TCE resulting from the former dry well near monitoring well MW-2A. A total of twelve groundwater grab borings were advanced via direct push methods to collect groundwater grab samples from two to three discrete depth intervals at each boring. The samples were analyzed for trichloroethylene (TCE) and the breakdown products cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dicloroethylene (trans-1,2-DCE), and vinyl chloride. Sample analyses were performed by a mobile laboratory operating in fixed-base mode in Warren, New Jersey to facilitate real-time evaluation of results. The locations of these delineation borings and the groundwater grab sample analytical results are provided in Appendix I.

In May 2004, groundwater grab samples were collected near the former dry well location for analysis of VOCs to provide additional delineation data requested by NJDEP. Groundwater grab samples were also collected from beneath the facility building and analyzed for VOCs to assess whether a monitoring well network located outside the building footprint will be sufficient to provide isoconcentration data. Groundwater grab sampling locations are shown on Figures 3-2 and 3-3.

3.3.1.1 Sampling Method

Depth-discrete groundwater grab samples were collected using a direct-push sampling unit with screened rods and expendable points. Sampling was performed using a Geoprobe direct-push rig operated by S_2C_2,, Inc., a New Jersey licensed test borer.

Groundwater samples were collected using a peristaltic pump with dedicated polyethylene tubing that was inserted through the hollow stem direct-push rods to a discrete sample depth. When the rods and expendable point were advanced to the desired sample depth, the Geoprobe operator raised the Geoprobe rod by a total of the sample interval length. Raising the rods abandons the expendable point at the maximum depth and exposes the screened rods to groundwater. Polyethylene tubing was then inserted through the rods and groundwater was pumped using the peristaltic pump until clear of fines, if practicable, prior to sample collection. Following purging, a sample was bailed from the

well using dedicated polyethylene tubing. To advance to a deeper sampling interval, the rods were withdrawn from the boring to decontaminate the screen and install a new expendable point. Sampling with successive expendable points simply pushed previously deployed points aside.

3.3.2 Soil Grab Sampling

In 1999, soil grab samples were collected during the ESC performed near the former dry well location. Direct-push soil samples were collected for analysis of engineering parameters (i.e., grain size analysis) for use in evaluating remedial options. Soil sampling locations, soil analytical results, and grain-size results are provided in Appendix I.

In May 2004, soil grab samples were collected from beneath the facility building to assess the potential for residual source areas beneath the building. Sub-building soil sampling locations are shown on Figure 3-3. Soil boring logs are included in Appendix A.

3.3.2.1 Sampling Method

Soil sampling was performed using a Geoprobe direct-push rig operated by S_2C_2, Inc., a New Jersey licensed test borer. Soil samples collected for VOC analysis were collected in accordance with the NJDEP Methodology for the Field Extraction/Preservation of Soil Samples with Methanol for Volatile Organic Compounds (February 1997).

During the ESC performed in 1999, two direct-push soil borings (GT-1 and GT-2) were advanced to evaluate physical conditions in the overburden for evaluation of remedial alternatives. Samples were collected for grain-size analysis at every depth interval greater than one foot in which soil grain-size/texture appeared to change. Soil cores were collected from soil borings by advancing either a two-foot long Macrocore barrel or a four-foot long dual-tube core barrel system, each fitted with an acetate liner. The core collected in the liner was opened, inspected, and field-screened for total VOCs with a PID. The soil cores were described and logged and recovery percentages were noted.

For soil boring GT-2, soil samples for VOC analysis were collected from discrete 6-inch intervals, biased toward the depth interval corresponding either with the highest PID readings or with depth intervals in adjacent borings which demonstrated elevated VOC detections in groundwater grab samples. Soil borings GT-1 and GT-2 were advanced to apparent bedrock refusal. Upon completion of sampling within the boreholes, the borings were sealed using bentonite slurry placed by a tremie pipe.

During the sub-building investigation in May 2004, soil samples were collected from 3 grab sample locations (GW-9, GW-10, and GW-11) to assess the potential for residual source areas beneath the building. Location GW-9 was selected to assess potential residual soil impacts near the former solvent storage room; the other 2 locations were selected randomly from areas not previously sampled by EcolSciences in 2003.

Soil sampling was performed via direct-push methods similar to those described above. Soil borings were advanced approximately 4 feet at the three locations, and the recovered soil was screened with a PID in the field to assess total VOCs. Following PID screening, samples were collected for VOC analysis from the discrete 6-inch interval that corresponded to the highest PID measurement. Based on PID screening results, soil samples were collected from locations GW-10 (sample SOIL-1) and GW-11 (sample SOIL-2) and submitted for VOC analysis. A soil sample was not collected from location GW-9 because no VOCs were detected during field PID screening.

3.3.3 Packer Sampling

In July 1999, groundwater samples were collected from selected intervals in the open borehole of bedrock monitoring well MW-19A. Fracture zones were identified for sampling based on rock core descriptions and the selected intervals were isolated using inflatable packers, then purged and sampled. Groundwater samples collected from the intervals were analyzed for TCE. Packer sampling intervals are summarized in Table 3-2.

In June and July 2000, groundwater samples were collected from selected intervals in the open boreholes of monitoring wells MW-19D, MW-20D, and MW-21D. Fracture zones were identified for sampling based on geophysical logging results and drilling observations and the selected intervals were isolated using inflatable packers, then purged and sampled. Groundwater samples collected from the intervals were analyzed for TCE. Packer sampling intervals are summarized in Table 3-2.

3.3.3.1 Sampling Method

Packer sampling was conducted using a sampling system consisting of upper and lower pneumatic packers, separated by a submersible pump. The pump's discharge tube was a 1-inch diameter steel riser pipe which extended from the top of the upper packer to above the well casing, and served as a means of suspending the packer assembly within the well. The submersible pump allowed evacuation of water from the borehole for hydraulic and chemical testing purposes. During purging, the submersible pump drew water into the wells through bedrock fractures in the depth interval isolated between the packers and pumped it to the surface. The submersible pump was not fitted with a check valve so that head equilibration in the isolated zone could be monitored through the riser pipe with an electronic water level meter.

The packer assembly was lowered into place at the test intervals and the packers inflated with nitrogen. Water level measurements were measured in both the isolated borehole interval and above the upper packer to verify stabilization prior to pumping. The isolated interval was purged until water quality measurements (i.e., pH, conductivity, temperature, turbidity, and dissolved oxygen) stabilized. Upon stabilization, a groundwater sample was collected.

3.3.4 Monitoring Well Groundwater Sampling

In June 1999, groundwater samples were collected from onsite and offsite monitoring wells and submitted for analysis of VOCs and natural attenuation parameters. This includes bedrock monitoring well MW-19A; the remaining bedrock monitoring wells were not included, as these were installed after the 1999 sampling event. Water quality parameters measured during well purging and

sampling (i.e., pH, temperature, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential [ORP]) are tabulated and provided in Appendix I.

In May 2004, groundwater samples were collected from most of the existing onsite and offsite monitoring wells (21 on-site wells and 3 off-site wells) and submitted for laboratory analysis of VOCs. Samples collected from the on-site overburden wells were also analyzed for natural attenuation parameters (specifically, methane/ethene/ethane, total and dissolved iron and manganese, total and dissolved organic carbon, chemical and biological oxygen demand, total dissolved solids, alkalinity, chloride, sulfate, orthophosphate, ammonia as nitrogen, and nitrate). Monitoring well locations are shown on Figure 3-1. Records of water quality parameters measured during well purging and sampling are provided in Appendix F. The groundwater analyses performed are listed in Table 3-3.

Four wells sampled in 1999 were not sampled in 2004. Following the 1999 sampling event, 2 monitoring wells (MW-1 and MW-2) and 1 recovery well (RW-1) were abandoned. The fourth well, well MW-17A, was not sampled because it could not be located. This well was located offsite on the adjacent property occupied by J. Manheimer, Inc. and was apparently buried and/or destroyed.

In addition, as noted during previous investigations, the well identification tags for 2 of the wells located on the adjacent Manheimer property do not correspond with the well identification shown on historic and current site maps. Mapped wells MW-15A and MW-16A are labeled as MW-16A and MW-17A, respectively, in the field. In accordance with past reports, the monitoring well designations used in this TM correspond to the designations used in past reports (i.e., for discussion purposes, these wells are considered to be MW-15A and MW-16A).

3.3.4.1 Sampling Method

Prior to groundwater sampling, synoptic groundwater level measurements were collected from the offsite and onsite monitoring wells to provide data for calculating groundwater elevations.

During the 1999 groundwater sampling event, shallow wells (less than 25 feet deep) were purged using a peristaltic pump fitted with dedicated, disposable, polyethylene tubing. In these shallow wells, samples were collected with a dedicated, disposable, polyethylene bailer. Deep wells (deeper than 25 feet) were purged using a 2-inch diameter Grundfos submersible pump. In these deeper wells, samples were collected through the polyethylene tubing discharging from the pump.

During the May 2004 groundwater sampling event, the wells were purged and sampled using Well Wizard low-flow bladder pumps.

Groundwater samples were collected during both sampling events using low -flow groundwater sampling methods in accordance with the US EPA low-flow sampling protocol. The wells were purged at approximately 500 milliliters per minute or less. A flow-through cell was used to monitor equilibration of water quality parameters (i.e., pH, temperature, conductivity, dissolved oxygen, turbidity, and ORP). The depth to groundwater and pumping rate were checked and recorded at regular intervals during purging. Samples were collected upon stabilization of the water quality parameters and submitted for laboratory analysis. Samples collected in 1999 were analyzed by STL-Envirotech (STL) located in Edison, NJ (NJ Certification # 12028). Samples collected in May 2004 were analyzed by Intergrated Analytical Laboratories (IAL) located in Randolph, NJ (NJ Certification # 14751).

3.3.5 Equipment Decontamination and Investigation Derived Waste

Dedicated disposable equipment was used whenever possible during groundwater and soil sampling. Decontamination of non-disposable equipment that contacted groundwater or soil (e.g., Geoprobe sampling tubes and rod and submersible pumps) was performed in accordance with the NJDEP Field Sampling Procedures Manual (May 1992).

Investigation derived waste included soil generated during soil sampling and purge water generated during groundwater sampling, and decontamination fluids. Soil was typically returned to the soil boring where it was generated before the boring location was sealed. Groundwater generated during

sampling and decontamination fluids were contained in 55-gallon drums and staged onsite for subsequent characterization and disposal by AT&T.

3.4 MW-2A STEP TEST

In June 1999, a step test was conducted on well MW-2A as a prelude to a planned constant-rate aquifer test. The step test was conducted to assess well yield, so that a sustainable pumping rate could be selected for the constant-rate aquifer test. During a step test, the pumping well is pumped at successively higher rates over set intervals of time (e.g., 2 hour periods) and depth to water measurements are collected during pumping. A graph of water level drawdown with time can be used to calculate a pump rate that can be sustained over the selected time period for a constant-rate test.

Two nearby monitoring wells (MW-2 and MW-3) were selected as observation wells and were monitored during the step test. Water levels in MW-2A (the pumping well) and the observation wells were monitored during the test using pressure transducers placed in the wells and a computerized data logger to record the data.

The step test was started on 29 June 1999 at a pump rate of 1 gallon per minute (gpm) for the first step. The first step lasted 2 hours; at the conclusion of the first step, the pump rate was increased to 1.5 gpm for the second step. The second step could not be completed, however, because the increased pumping rate resulted in dewatering of the well. A subsequent attempt to repeat the step test at a lower pumping rate also failed. The failed step test indicated that there was insufficient water yield in well MW-2A to perform a constant-rate test.

3.5 MONITORING WELL ABANDONMENT

Two onsite wells (RW-1 and MW-1) were abandoned in 1999. Well RW-1 was abandoned on 1 July 1999 because the screen interval in this well (10-40 ft bgs) extended from the overburden across the bedrock interface. Well MW-1 was abandoned on 30 September 1999 because it was located within

the footprint of a planned addition to the facility building. Both wells were abandoned in accordance with NJDEP procedures. The wells were tremie-grouted from the bottom up by NJ-certified well sealers.

4.0 INVESTIGATION FINDINGS

4.1 PHYSICAL SETTING

The site is located on Terminal Avenue in Clark, Union County, New Jersey. The site location map is provided in Figure 3-1. Surrounding land use is primarily industrial. Conrail Railroad borders the property to the north and northwest, Terminal Avenue borders the southeast and two commercial properties border the southwest and northeast sides. The site encompasses approximately 10 acres of land and consists of a Main Building (98,500 sq. feet) and several ancillary buildings.

Historical site plans indicate that site topography slopes gradually to the south. The ground surface elevation is generally flat across the site, varying from approximately 56 feet to 60 feet above mean sea level across the site. No surface water bodies are currently present onsite; however, an ancestral stream channel was described in the Groundwater Remedial Investigation Report (Weston 1997). The channel was observed on historical figures and interpreted from aerial photographs. The ancestral stream channel trends approximately southeast- northwest along Terminal Avenue, before bending northward across the site through the present parking area (McLaren/Hart 1997).

4.1.1 Geology

Details regarding site geology are provided in the Groundwater Remedial Investigation Report (Weston, 1997) and the PA/SI/RI Report (McLaren/Hart 1997). A summary of site geology is provided below, with additional information generated during the supplemental groundwater investigation.

Geology beneath the site consists of a layer of unconsolidated glacial fluvial sediments underlain by shale bedrock of the Passaic Formation (formerly the Brunswick formation). The glacial fluvial sediments are composed of primarily reddish-brown clayey silt, with some sand and little amounts of gravel. The thickness of the sediments ranges from approximately 22-50 feet. The glacial fluvial

sediments are underlain by the Passaic formation which consists mainly of reddish brown siltstone and shale (Weston 1997).

The depth to the top of bedrock generally increases to the south and southwest (Weston 1997). The top of bedrock is weathered and was encountered during the drilling of bedrock monitoring wells at approximately 30-40 ft bgs. Weathered bedrock thickness ranges from approximately 10 to 20 feet, increasing in thickness to the south and west. The top of competent bedrock was encountered from approximately 33-60 ft bgs. Based on the Bedrock Geologic Map of Northern New Jersey (U.S. Geological Survey Map I-2540-A), regional bedding strike near the site is approximately N45°E and bedding dip is approximately 11-13° NW.

The zone of weathered bedrock is illustrated on a geologic cross section prepared from site monitoring well data. The cross section location is shown on Figure 4-1 and the cross section is provided on Figure 4-2. The depths to top of weathered and competent bedrock are based on the driller's observations during drilling of the boreholes and are approximate. The change in depth to top of bedrock near wells MW-19A and MW-19D (Figure 4-2) could be attributable to variability in field interpretation during drilling and further accentuated by projection of well MW-19A to the cross section line.

Due to the fine-grained nature of the shale bedrock beneath the site, it is likely that groundwater flow in bedrock occurs predominantly in secondary partings and fractures within the rock. Geophysical and video logging of monitoring wells MW-19D, MW-20D, and MW-21D prior to their completion identified a number of vertical, angled, and horizontal fractures, fracture zones, and bedding-plane partings that are potential pathways for groundwater flow. Some of the fractures are partially or completely filled with calcite and other materials and are likely to have low hydraulic conductivity. Other partings and fractures were observed to be open and are likely to conduct groundwater. Major zones of vertical and/or high-angle fractures were identified in MW-19D (approximately 108-112 ft bgs) and MW-20D (approximately 105-107 ft bgs). A large fracture zone was also identified in MW-21D from approximately 105-115 ft bgs. Heat pulse flowmeter logging of MW-19D indicates some groundwater flow into the well is occurring at the fracture zone from 108-112 ft bgs and some

groundwater flow out of the well is occurring through a large fracture or parting at approximately 127 ft bgs (Figure 4-2).

4.1.2 Groundwater Flow

Groundwater level measurements collected in June 1999 and calculated groundwater elevations are provided in Appendix I. Groundwater level measurements collected in May 2004 and calculated groundwater elevations presented in Table 4-1. Historically, groundwater in the unconsolidated overburden soils beneath the site has been encountered at depths ranging from between 4 to 10 feet below ground surface (Weston 1997). Groundwater levels measured in June 1999 are consistent with historic data. Groundwater level measurements collected in May 2004 from the existing onsite and offsite monitoring wells indicate that depth to groundwater in the overburden monitoring wells ranges from approximately 2.4 to 13.9 ft bgs.

Historic groundwater elevation data indicate that a pieziometric head difference exists between monitoring wells screened in the shallow unconsolidated overburden and monitoring wells screened in the deep unconsolidated overburden. Following a resurvey of the existing onsite and offsite monitoring wells in June 2004, groundwater elevations were calculated for May 2004 (Table 4-1) and used to create groundwater elevation contour maps for the shallow and deep overburden (Figures 4-3 and 4-4, respectively).

The May 2004 groundwater elevation data indicates that flow in the shallow overburden is generally to the south-southeast near the former dry well location, with a potential southeasterly component of flow from the northwestern corner of the site. Flow in the shallow overburden may to some extent follow the ancestral stream channel observed on historic site figures. This flow pattern is generally consistent with flow directions observed in the shallow overburden in June 1999 (Appendix I).

May 2004 groundwater elevation data indicate that flow in the deep overburden is generally to the south-southwest, which is generally consistent with groundwater flow patterns observed in the deep overburden in June 1999 (Appendix I). A potential component of flow to the west near the former

dry well location that was observed in June 1999 was not identified in the contoured May 2004 groundwater elevation data.

Groundwater elevation data in shallow and deep overburden well pairs or at proximal well locations (MW-5/MW-5A, US-1/MW-13A, MW-3/MW-19A) indicate a downward vertical gradient, which is consistent with historical data. Based on the May 2004 groundwater elevation data, the horizontal hydraulic gradient in the deep overburden aquifer is approximately 0.0133 ft/ft beneath the site, but appears to be steeper near the southern portion of the site.

Groundwater elevations in the bedrock monitoring wells are presented on Figure 4-5. Groundwater elevations are typically constructed using elevation data from a single aquifer system. Groundwater flow in the bedrock most likely occurs in open fractures and partings, and there may be multiple fracture systems that conduct water, but they may be poorly interconnected or not connected at all. Due to the limited number of bedrock wells, it is unclear at this time whether the fractures and partings intersected by the various bedrock monitoring wells communicate hydraulically across the site. For this reason, groundwater elevations in the bedrock were not contoured. Groundwater elevations in the bedrock wells are generally lower than elevations in nearby overburden wells, suggesting a potential downward vertical gradient between the overburden and bedrock.

Regional groundwater flow in the Passaic formation is reported to be to the south-southwest. The measured elevations in the bedrock wells were generally consistent with regional groundwater flow. Groundwater in both the overburden and in the Passaic formation presumably discharge to surface water of the Robinson Branch and associated Middlesex Reservoir, located approximately one-half mile south of the site (Weston 1997).

4.2 ANALYTICAL RESULTS

Sampling activities performed in 1999 included the collection discrete groundwater samples during packer sampling of bedrock monitoring well MW-19D, the collection of groundwater grab samples near the former dry well location for analysis of VOCs and the collection of groundwater samples

from site monitoring wells for analysis of VOCs and natural attenuation parameters. Analytical results for sampling performed in 1999 are summarized and provided in Appendix I. Figures depicting the grab sampling locations and VOC concentrations are also included in Appendix I.

Analytical results from sampling activities performed in 2000 and 2004 are presented and discussed briefly below. These include the results for discrete groundwater samples collected during packer sampling of bedrock monitoring wells MW-19D, MW-20D, and MW-21D in June and July 2000, the results for groundwater and soil grab samples collected from beneath the facility building in May 2004, and the results for groundwater samples collected from existing onsite and offsite monitoring wells in May 2004.

4.2.1 Volatile Organic Compounds in Groundwater

VOCs were detected in groundwater and soil grab samples beneath the facility building, in groundwater samples collected during packer sampling of deep bedrock monitoring wells, and in groundwater samples collected from existing onsite and offsite monitoring wells.

4.2.1.1 Grab Sampling / Sub-Building Sampling

1999 Sampling

In June and July 1999, an ESC sampling program was conducted to investigate the extent of potential impacts by TCE resulting from the former dry well near monitoring well MW-2A. A total of twelve groundwater grab borings were advanced via direct push methods to collect groundwater grab samples from two to three discrete depth intervals at each boring. The samples were analyzed for trichloroethylene (TCE) and the breakdown products cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dicloroethylene (trans-1,2-DCE), and vinyl chloride. The locations of these delineation borings and the groundwater grab sample analytical results are provided in Appendix I.

Direct-push soil samples were also collected for analysis of engineering parameters to be used in evaluating remedial options. Two borings were advanced to bedrock refusal and samples were collected for grain-size analyses when the grain size/texture of the overburden exhibited a change of greater than one foot in thickness. Grain-size analytical data is provided in Appendix I.

Based on these delineation efforts, a 24 ft x 20 ft area of soil beneath the former dry well location was excavated to approximately 20-23 ft bgs to top of bedrock to remove and remediate soil containing residual product. Concentrations of TCE in groundwater within this area ranged up to 130,000 ug/L. A cross-section through the former dry well area showing the vertical distribution of TCE concentrations detected in groundwater grab samples collected during the 1999 ESC is shown on a figure in Appendix I.

2004 Sampling

In May 2004, groundwater grab samples were collected near the former dry well location for analysis of VOCs to provide additional delineation data requested by NJDEP. Analytical results are summarized in Table 4-2 and detected TCE concentrations are shown on Figure 4-6. Figure 4-6 also shows the 1999 TCE concentrations for comparison purposes.

Results indicate that TCE concentrations in groundwater near the former dry well location are low, ranging from non-detect to 2.86 ug/L (sample location GW-2). These TCE concentrations are several orders of magnitude lower than concentrations in the 1999 groundwater grab samples. This suggests that there is no remaining source material impacting groundwater in this area.

Groundwater grab samples were also collected from beneath the facility building and analyzed for VOCs to assess whether a monitoring well network located outside the building footprint will be sufficient to provide isoconcentration data. Groundwater analytical results are summarized in Table 4-2 and detected TCE concentrations are shown on Figure 4-7.

TCE concentrations in groundwater beneath the facility building are relatively low beneath the

building, ranging from 0.34 ug/L at location GW-8A (from 9-12 ft bgs) to 18.2 ug/L at location GW-11A (from 13-16 ft bgs). These low TCE concentrations are generally consistent (i.e., same order of magnitude) with TCE concentrations reported in groundwater grab samples collected beneath the building by EcolSciences, Inc. (EcolSciences 2003). Results do not indicate additional VOC source areas beneath the building. Concentrations of TCE are also relatively consistent beneath the building footprint. These observations suggest that additional monitoring wells within the building footprint are not required to monitor VOC concentrations at the site.

Soil samples were collected from 3 grab sample locations (GW-9, GW-10, and GW-11) to assess the potential for residual source areas beneath the building. Location GW-9 was selected to assess potential residual soil impacts near the former solvent storage room; the other 2 locations were selected randomly from areas not previously sampled by EcolSciences in 2003. Soil borings were advanced approximately 4 feet using direct push methods at the three locations, and the recovered soil was screened with a PID in the field to assess total VOCs and described. Soil boring logs are included in Appendix A.

Based on PID screening results, soil samples were collected from locations GW-10 (sample SOIL-1) and GW-11 (sample SOIL-2) and submitted for VOC analysis. A soil sample was not collected from location GW-9 because no VOCs were detected during field PID screening. Soil analytical results are summarized in Table 4-3 and detected TCE concentrations are shown on Figure 4-7. Analytical results indicate that VOCs were not detected in sample SOIL-2 and TCE concentrations in sample SOIL-1 were below applicable NJDEP soil cleanup criteria.

4.2.1.2 Packer Sampling

In July 1999, groundwater samples were collected from selected intervals in the open borehole of bedrock monitoring well MW-19A. Fracture zones were identified for sampling based on rock core descriptions and the selected intervals were isolated using inflatable packers, then purged and sampled. Groundwater samples collected from the intervals were analyzed for TCE. Analytical results are summarized in Table 3-2 and included in Appendix I.

In June and July 2000, groundwater samples were collected from selected intervals in the open boreholes of monitoring wells MW-19D, MW-20D, and MW-21D. Fracture zones were identified for sampling based on geophysical logging results and drilling observations and the selected intervals were isolated using inflatable packers, then purged and sampled. Groundwater samples collected from the intervals were analyzed for TCE. Analytical results are summarized in Table 3-2. Analytical data summary sheets and schematics showing the packer sampling intervals and associated analytical results are provided in Appendix C.

Analytical results indicate that TCE was detected at concentrations exceeding the NJDEP Groundwater Quality Standard (GQS) in the sampled intervals. The highest concentrations were detected in sampling intervals associated with well-developed fracture zones. In well MW-20D, a large vertical fracture zone was observed on the video log from 105-107 ft bgs; samples collected from the 105-110 ft interval in this well contained TCE concentrations of 530 ug/L. In well MW-19D, multiple fractures were observed between 125-130 ft bgs, and a large fracture was identified from geophysical and video logs at approximately 127 ft bgs; samples collected from the 120-130 ft interval in this well contained TCE concentrations of 4300 ug/L.

4.2.1.3 Monitoring Well Sampling

1999 Sampling

In June 1999, groundwater samples were collected from onsite and offsite monitoring wells and submitted for analysis of VOCs and natural attenuation parameters. This includes bedrock monitoring well MW-19A; the remaining bedrock monitoring wells were not included, as these were installed after the 1999 sampling event. Water quality parameters measured during well purging and sampling are tabulated and provided in Appendix I. A summary of the analytical results and TCE isoconcentration maps for the shallow and deep overburden are also provided in Appendix I.

2004 Sampling

In May 2004, groundwater samples were collected from the existing onsite and offsite monitoring wells and analyzed for VOCs and selected natural attenuation parameters, the latter to assess the potential for TCE natural attenuation. Analytical results for VOCs are summarized in Table 4-4 and results for natural attenuation parameters are summarized in Table 4-5. Records of water quality parameters measured during well purging and sampling (i.e., pH, temperature, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential [ORP]) are provided in Appendix F. Analytical data summary sheets and chains of custody are provided in Appendix G and Appendix H, respectively.

Concentrations of TCE in groundwater samples collected from the shallow and deep overburden wells were plotted and TCE isoconcentrations were contoured to assess the distribution of dissolved TCE concentrations at the site. TCE isoconcentration maps for the shallow and deep overburden are shown on Figures 4-8 and 4-9, respectively. Concentrations of TCE in samples collected from the bedrock monitoring wells at the site are shown on Figure 4-10. Concentrations of TCE in the bedrock groundwater were not contoured because, as stated earlier, there is limited information to assess which wells are completed in the same fractured rock aquifer system. Trend graphs showing the change in historical TCE concentrations in the groundwater monitoring wells are shown on Figure 4-11.

For the shallow overburden wells, analytical results indicate that no VOCs were detected at concentrations above GQS and TCE concentrations were not reported above the detection limit (0.25 ug/L). These results are consistent with VOC concentrations reported in the shallow overburden groundwater samples collected in 1999. The results indicate that there is no remaining source material impacting groundwater in the shallow overburden soil.

Analytical results indicate that TCE concentrations exceed GQS in groundwater samples collected

from most of the deep overburden monitoring wells (Table 4-4). The highest TCE concentrations were reported near the former dry well location in well MW-2A (2,690 ug/L). Elevated TCE concentrations were also reported in groundwater samples collected from wells MW-5A (253 ug/L) and MW-7A (106 ug/L).

Near the former dry well area, however, concentrations of TCE have decreased substantially since the last sampling event in 1999 (Figure 4-11). In well MW-2A, TCE concentrations have dropped from 18,000 ug/L in 1999 to 2,690 ug/L in 2004. Results for samples collected from the other deep overburden wells indicate that TCE concentrations are similar or lower than concentrations reported for the same wells in 1999. Historically elevated TCE concentrations in well MW-5A may be due to a secondary source area near this well. The horizontal extent of impacted groundwater in the deep overburden is generally the same as depicted in 1999.

Analytical results indicate that TCE concentrations exceed GQS in groundwater samples collected from the 6 bedrock monitoring wells (Table 4-4). The highest TCE concentrations were reported in wells MW-19A (3,170 ug/L) and MW-21S (2,680 ug/L), which are screened at intermediate depths in the bedrock (70-80 ft bgs and 104-114 ft bgs, respectively). Well MW-19A is located near the former dry well area, and well MW-21S is located in the apparent downgradient direction from this former source area (Table 4-4 and Figure 4-2).

Horizontal and vertical delineation of impacted groundwater in the bedrock is not complete; however, TCE concentrations generally decrease with depth. In the shallow and deep bedrock well sets (MW-21S / MW-21D and MW-19A / MW-19D), TCE concentrations in the deep wells are lower by one order of magnitude than TCE concentrations in the shallow wells.

4.2.2 Natural Attenuation Parameters

As discussed in Section 4.2.1.3, groundwater samples collected from the existing onsite and offsite monitoring wells in June 1999 and May 2004 were also analyzed for selected natural attenuation parameters to assess the potential for TCE natural attenuation. Analytical results for natural

attenuation parameters analyzed in 1999 and records of water quality parameters measured during well purging and sampling are provided in Appendix I. Analytical results for natural attenuation parameters analyzed in May 2004 are summarized in Table 4-5 and are discussed below. Records of water quality parameters measured during well purging and sampling in May 2004 are provided in Appendix F.

The primary indication that some natural attenuation of TCE is occurring in groundwater at the site is the reported presence of daughter products in a number of the samples, specifically cis-1,2-DCE, and 1,1-DCE. The highest concentration of daughter products were reported in groundwater samples collected from deep overburden and bedrock wells that also had elevated TCE concentrations, such as MW-19A (3,170 ug/L TCE and 32.9 ug/L cis-1,2-DCE). Vinyl chloride was not detected in groundwater samples collected at the site. This may be due to inadequate conditions for continued natural attenuation of TCE daughter products, slow degradation rates, or other factors.

Assessment of other natural attenuation parameters, however, provides limited evidence that conditions are genuinely conducive for natural attenuation of TCE to occur in groundwater beneath the site. Highly chlorinated solvents such as TCE are typically biodegraded under natural conditions via reductive dechlorination, which occurs more readily in a reducing environment. Dissolved oxygen concentrations and ORP measurements recorded during well purging and sampling in May 2004, however, are generally elevated, indicating a more aerobic environment. Total and dissolved organic carbon concentrations are generally low (i.e., less than 10 mg/L), which may indicate that the available electron donor supply that supports microbial growth for biodegradation is limited.

4.3 SUMMARY OF KEY FINDINGS

4.3.1 Soil

- Analysis of groundwater grab samples collected near the former dry well location detected very low TCE concentrations, indicating that there is no remaining source material in the soil in this area impacting groundwater. Similarly, TCE concentrations in groundwater beneath

the facility building were relatively low and detected concentrations were generally consistent with TCE concentrations reported in groundwater grab samples collected beneath the building by EcolSciences, Inc. (EcolSciences 2003). Analysis of soil samples collected beneath the building indicated that TCE concentrations did not exceed applicable NJDEP soil cleanup criteria and remaining VOCs were not detected. Results indicate that there are no additional VOC source areas beneath the building and suggest that additional monitoring wells within the building footprint are not required to monitor VOC concentrations at the site.

4.3.2 Groundwater

4.3.2.1 Shallow and Deep Overburden

- The overburden soils generally have a low permeability, as demonstrated by the low groundwater yield encountered during the MW-2A step test, the low flow rates needed to reduce drawdown during purging of the monitoring wells prior to sampling, and the predominance of fines in the grain size analyses performed on overburden soil samples collected during the ESC in 1999.
- Impacted soil near the former dry well location was removed for proper treatment and disposal during the IRM performed in 1999. This remedial effort effectively removed the remaining source material responsible for impacts to groundwater at the site.
- VOC concentrations in groundwater collected from the shallow overburden wells were either not detected or did not exceed GQS. These results support the finding that there is no remaining source material impacting groundwater in the shallow overburden soil.
- TCE concentrations in groundwater collected from the deep overburden wells generally exceed GQS; however, TCE concentrations in deep overburden groundwater near the former dry well have decreased substantially (i.e., one order of magnitude) since the last sampling event in 1999.
- The horizontal extent of impacted groundwater in the deep overburden is generally the same as depicted in 1999 and is nearly delineated.

- The presence of TCE daughter products (e.g., cis-1,2-DCE and 1,1-DCE) in groundwater samples in deep overburden and bedrock groundwater samples indicate that some natural attenuation of TCE is occurring at the site. The highest concentration of daughter products were generally associated with groundwater samples that contained elevated TCE concentrations. Assessment of natural attenuation parameters (e.g., dissolved oxygen, ORP, and organic carbon), however, provide limited evidence that conditions are genuinely conducive for natural attenuation of TCE to occur in groundwater beneath the site.

4.3.2.2 Bedrock

- Concentrations of TCE are generally higher in the bedrock groundwater samples than in the deep overburden groundwater samples. The highest TCE concentrations were reported in wells MW-19A and MW-21S, which are screened at intermediate depths in the bedrock (70-80 ft bgs and 104-114 ft bgs, respectively).
- Packer sampling results from the bedrock wells indicate that TCE concentrations exceed GQS in the sampled intervals (Table 3-2). Analytical results from the completed bedrock monitoring wells, however, indicate that TCE concentrations generally decrease with depth.
- Based on the May 2004 groundwater sampling data, the horizontal and vertical extent of impacted groundwater in the bedrock has not been completely delineated.
- Geophysical and video logging of the bedrock wells identified vertical, angled, and horizontal fractures, fracture zones, and bedding-plane partings that are potential pathways for groundwater flow. Prominent zones of vertical and/or high-angle fractures were identified in MW-19D (approximately 108-112 ft bgs) and in MW-20D (approximately 105-107 ft bgs). A large fracture zone was also identified in MW-21D from approximately 105-115 ft bgs. Packer sampling confirmed that TCE concentrations exceed GQS in groundwater at these intervals. The highest concentrations were detected in sampling intervals associated with well-developed fracture zones.

4.4 SUMMARY OF PROPOSED SITE CLOSURE REQUIREMENTS

In summary, previous phases of sample collection and remediation have provided data to develop an understanding of the conceptual model of the site, i.e. hydrogeologic conditions; nature and extent of impacts; sources of impacts; and contaminant migration pathways, to allow for a preliminary evaluation of site closure requirements and short-term objectives, as follows:

- Complete delineation efforts to map the boundaries of the Classification Exception Area (CEA)in overburden and bedrock.
- Demonstrate no impacts to receptors;
- Assess background groundwater quality and any regional impacts to groundwater;
- Given previous source removal, evaluate groundwater treatment options that will enhance the degradation of TCE in the deep overburden and bedrock, assuming that a "passive" treatment system will be appropriate based on the absence of receptors. Groundwater extraction is not a viable or technically practicable alternative for groundwater remediation at the site.

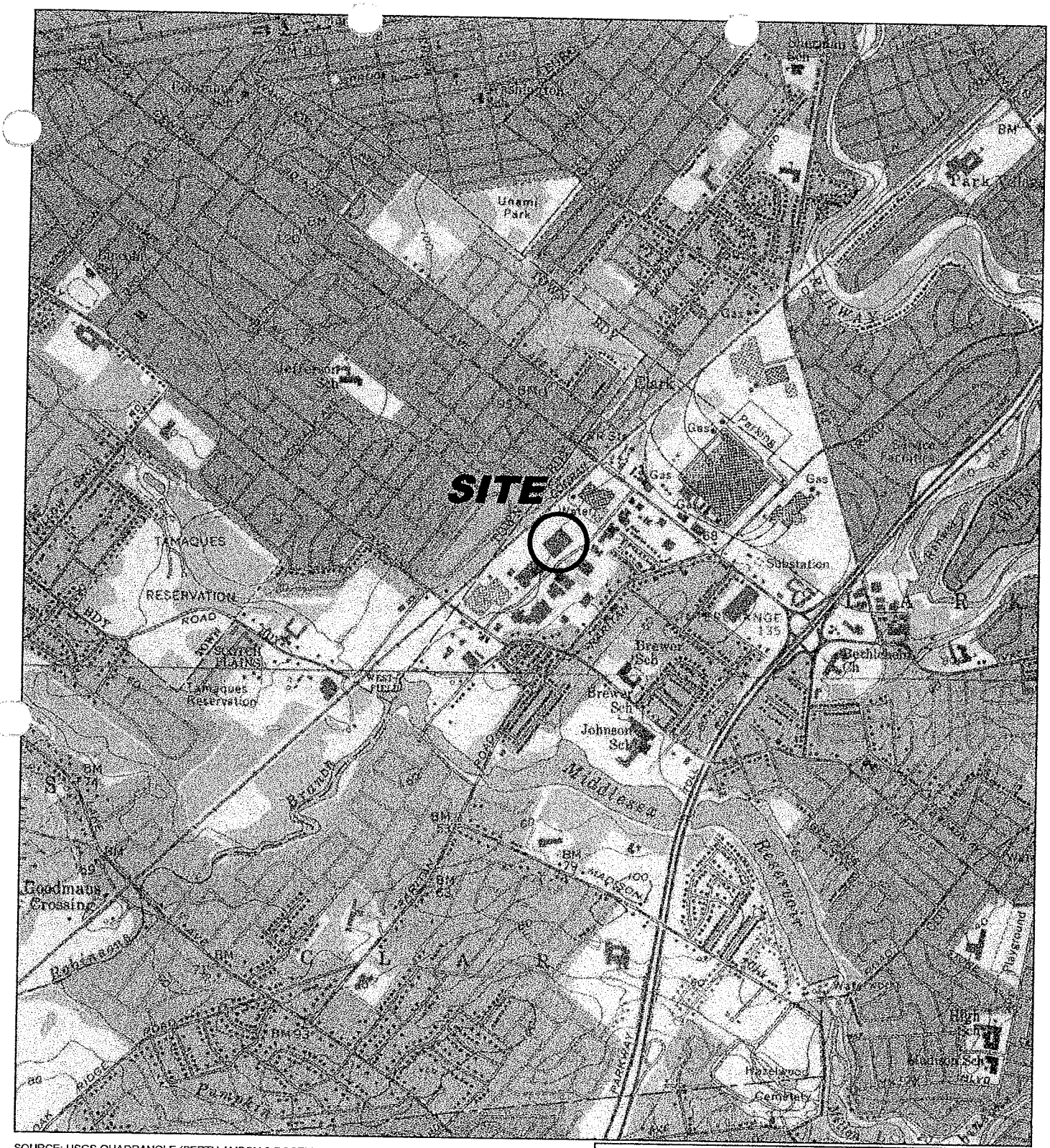
To meet the above objectives, the following scope of work will be conducted during the next phase remedial investigation/remedial planning activities at the site.

- Given that TCE concentrations in the bedrock exceed GQS and that horizontal and vertical delineation of the extent of impacted groundwater in the bedrock is ongoing, an updated receptor search will be performed in conjunction with a review of known contaminated sites in the area to identify other potential sources of regional impacts to groundwater.
- Given the historic TCE concentrations in deep overburden groundwater near the former dry well, it is possible that TCE free product has impacted the groundwater. TCE free product is a dense non-aqueous phase liquid (DNAPL) that has a density greater than water; consequently, DNAPL will migrate downward along available pathways with gravity. For this reason, an additional bedrock well will be installed onsite and down-dip (i.e., northwest) of well MW-19A and the former dry well. The purpose of this well would be to investigate the presence or absence of DNAPL that might have migrated down-dip in partings parallel to bedding. This well will be completed in the same bedding unit as MW-19A. Bedrock will be continuously cored at this location to assess the degree and location of fracture zones

encountered, together with geophysical logging and packer sampling of selected intervals to supplement the investigation.

- A deep bedrock well will be installed along the downgradient extent of the property boundary in the vicinity of MW- 21D to provide vertical delineation data to support the observed decreasing concentrations of VOCs with depth.
- A deep overburden near well MW-4 will be installed to complete horizontal delineation of impacted groundwater west of elevated TCE concentrations reported in wells MW-5A and MW-11.
- Offsite monitoring well MW-17A was not located during the May 2004 sampling event and may have been buried and/or destroyed. Additional efforts will be made to find this well, assess the well condition, and properly abandon the well, if necessary.
- Following installation and development of the installed wells, the existing and new onsite and offsite monitoring wells will be sampled for VOC analysis. Select wells will also be sampled for additional parameters identified by NJDEP in comment response letters.

Figures



SOURCE: USGS QUADRANGLE (PERTH AMBOY & ROSELLE, NJ)

NEW JERSEY

QUADRANGLE LOCATION

SCALE: 1" = 2000'

N

W E

S

DWG: figure 1-1 G...4

FIGURE 1-1

SITE LOCATION MAP

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.

1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

Table 2-1 Investigative and Remedial Activities Summary
SSI Clark Shop, Clark, New Jersey

May 1996	ESE conducted groundwater sampling at all 21 on-site and off-site monitoring wells. TCE, TCA, and TCFM detections were found to have decreased in concentration since the sampling events conducted in June 1991 and April 1992.		ESE, Inc.
November 1996 through March 1997	Roy F. Weston, Inc. conducted Site Investigation (SI) activities. Tasks included monitoring well sampling, water level monitoring in wells, soil borings with geotechnical and VOC analytical sampling. Based on SI, Weston prepared the November 1997 Final Remedial Investigation (RI) Report. The RI report indicated that TCE concentrations in MW-17A were found to have increased to 2,100 ppb from the 600 ppb that was reported during the December 1993 to January 1994 sampling event. Compared with results from sampling events in June 1991 and April 1992, a general decrease in concentrations of TCE, TCA, and TCFM was observed in wells on the Clark SSI property. Investigation indicates a second potential source area, unrelated to the former dry well on the Clark SSI property.	FINAL - Remedial Investigation Report for the AT&T SSI Clark Shop, New Jersey Facility. November 1997.	Roy F. Weston, Inc.
July 1997	AT&T entered into Remediation Agreement to complete ISRA requirements as result of sale of Site to Tyco, Inc. McLaren/Hart began SI/RI.		McLaren/Hart, Inc.
December 1997	PA Report submitted to NJDEP along with SI/RI Report. Fourteen Areas of Concern (AOCs) were identified and investigated.	Preliminary Assessment / Site Investigation / Remedial Investigation (PA/SI/RI) Report. October 27, 1997.	McLaren/Hart, Inc.
March 1998	Remedial Action Work Plan (RAWP) for Soils submitted to NJDEP to address marginal exceedences of SVOCs at three AOCs and concentrations of SVOCs, metals and TPH found in several storm drains and manholes.	Remedial Action Work Plan (RAWP) for Soils. March 18, 1998	McLaren/Hart, Inc.
July 1998	The five AOCs identified on the RAWP were remediated through soil excavation/sediment removal and disposal.		McLaren/Hart, Inc.
December 1998	Remedial Action Report for Soils submitted to NJDEP.	Remedial Action Report for Soils. December 1998	McLaren/Hart, Inc.

Table 2-1 Investigative and Remedial Activities Summary
SSI Clark Shop, Clark, New Jersey

June to July 1999	Extent of TCE source area was delineated around former dry well using Expedited Site Characterization. One bedrock monitoring well was installed to address vertical delineation in bedrock. Sampling of existing monitoring wells confirmed findings in Weston's November 1997 Final RI Report which indicated a second source area of TCE in the vicinity of the western portion of the site.		McLaren/Hart, Inc.
August 1999	Excavation of residual contaminant source area was completed at vicinity of former dry well to depth of bedrock (28 ft. b.g.s.).	Interim Remedial Action Report, August 2000 - **Not Submitted to NJDEP**	McLaren/Hart, Inc.
May - July 2000	Intallation of Additional Deep Groundwater Monitoring Wells (MW-19, MW-20, MW-21)		McLaren/Hart, Inc.

TABLE 3-1
Monitoring Well Construction Details
Former AT&T Clark Facility
Clark, Jersey

Well	Date Installed	Northing	Easting	Overburden Zone	Completion	Elevation of TIC AMSL (feet)	Well Diameter (inches)	Total Well Depth (feet)	Screen Length (feet)	Depth Top of Screen (feet)	Depth Bottom of Screen (feet)
MW-3	June 1990	654812.0350	542693.4190	Shallow	Flush	57.67	2	23	15	8	23
MW-4	June 1991	654659.4806	542354.1024	Shallow	Flush	55.91	4	24.5	15	9.5	24.5
MW-5	June 1991	654614.7140	542440.2688	Shallow	Flush	55.14	4	19	15	4	19
MW-6	June 1991	654518.3675	542480.6187	Shallow	Flush	55.48	4	20	15	5	20
MW-7	June 1991	654719.7347	542581.3655	Shallow	Flush	57.13	4	24	15	9	24
MW-8	June 1991	654657.2628	542483.0402	Shallow	Stick-up	58.41	4	20	15	5	20
MW-2A	June 1991	654832.3802	542668.7571	Deep	Flush	57.34	4	30	5	25	30
MW-5A	June 1991	654607.9388	542445.5656	Deep	Flush	55.25	4	33	5	28	33
MW-7A	March 1992	654712.6206	542586.0613	Deep	Flush	57.28	4	34	6.5	29	34
MW-9A	March 1992	654885.7991	542777.0921	Deep	Flush	57.07	4	20	6	15	20
MW-10A	March 1992	654816.0623	542583.8877	Deep	Flush	57.93	4	24	5	19	24
MW-11A	March 1992	654577.8675	542416.9972	Deep	Flush	55.27	4	32	5	27	32
MW-12A	March 1992	654392.1334	542606.2337	Deep	Flush	55.06	4	40	5	35	40
MW-13A	March 1992	654360.5244	542739.1182	Deep	Flush	55.46	4	34	5	29	34
MW-14A	March 1992	654633.3182	543010.2847	Deep	Flush	57.18	4	32	5	27	32
MW-15A	December 1993	654239.4069	542626.1430	Deep	Flush	54.60	4	58	5	53	58
MW-16A	December 1993	654078.9235	542473.3702	Deep	Flush	54.25	4	57	10	47	57
MW-17A*	December 1993	654451.80948	542329.00836	Deep	Flush	59.05	4	37.5	5	32.5	37.5
MW-18A	December 1993	653973.4798	542042.5010	Deep	Flush	52.73	4	51	5	46	51
MW-19A	July 1999	654806.3649	542675.9253	Bedrock	Flush	57.17	2	80	10	70	80
MW-19D	June 2000	654778.8688	542645.6780	Bedrock	Flush	57.76	2	206	20	186	206
MW-20D	June 2000	654904.2598	542817.2533	Bedrock	Flush	57.22	2	198	20	178	198
MW-21S	June 2000	654352.4515	542741.8635	Bedrock	Flush	55.42	2	114	10	104	114
MW-21D	June 2000	654353.5253	542732.8614	Bedrock	Flush	55.50	2	198	20	178	198
MW-22D	June 2000	655150.6470	542761.8072	Bedrock	Flush	59.81	2	115	10	105	115

TIC: Top of Inner Casing.

AMSL: Above Mean Sea Level.

* Could not be located and was not surveyed. Survey data is not current.

Table 3-2
Summary of Rock Coring Depths and Packer Testing Intervals
Former AT&T Clark Facility
Clark, New Jersey

Monitoring Well	Depths Rock Core (ft.)	Packer Sampling Intervals (ft.)	Intervals Sampled	Water Yield (gpm)	TCE Concentration (ug/l)
MW-19A	45-80	45-52	Sampled	5	5900
		51.5-62	Sampled	5	8600
		61.5-72	Sampled	6	8700
		71-80	Sampled	5	9400
MW-19D	Not Cored	81-91	Sampled	*	3200
		105-115	Sampled	4	970
		120-130	Sampled	4	4300
		140-150	Sampled	6	4400
		195-205	Sampled	5	2800
MW-20D	Not Cored	55-65	Sampled	5	760
		105-115	Sampled	3	530
		120-130	Sampled	3	230
		135-145	Sampled	3	410
		177-197	Sampled	4	550
		187-197	-	-	-
MW-21D	Not Cored	67-79	Sampled	3 to 5	120
		90-100	Sampled	3	280
		105-115	Sampled	3.5	520
		125-135	Sampled	2.75	150
		189-199	Sampled	6	260

- Insufficient water for flow rate and sample collection.

* Flow rate not recorded

gpm: Gallons Per Minute

Table 3-3
Summary of Analyses Performed during Groundwater Investigation Activities
Former AT&T Clark Facility
Clark, New Jersey

Sample ID	Sample Date	Lab ID	Sample Matrix	Laboratory Analyses														
				TCL VOC+15	Total Iron and Manganese	Dissolved Iron and Manganese	Methane, Ethane, Ethene	Nitrogen, Ammonia	Alkalinity	Chloride	Nitrate	Ortho Phos-phate	Sulfate	TDS	TOC	DOC	BOD	COD
Groundwater Samples																		
MW-3	5/11/2004	04237-002	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-4	5/10/2004	04237-001	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-5	5/12/2004	04307-001	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-6	5/11/2004	04237-008	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-7	5/12/2004	04307-002	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-8	5/11/2004	04237-007	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-2A	5/14/2004	04401-003	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-2A-DUP	5/14/2004	04401-006	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-5A	5/14/2004	04401-001	Aqueous	X														
MW-7A	5/12/2004	04307-003	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-9A	5/12/2004	04307-007	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-10A	5/11/2004	04237-003	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-10A-DUP	5/11/2004	04237-005	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-11A	5/14/2004	04401-002	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-12A	5/13/2004	04352-005	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-13A	5/12/2004	04307-006	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-14A	5/13/2004	04352-002	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-15A*	5/13/2004	04352-006	Aqueous	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-16A*	5/13/2004	04352-007	Aqueous	X														
MW-18A	5/13/2004	04352-001	Aqueous	X														
MW-19	5/14/2004	04401-008	Aqueous	X														
MW-19D	5/14/2004	04401-007	Aqueous	X														
MW-20D	5/13/2004	04352-004	Aqueous	X														
MW-21	5/14/2004	04401-009	Aqueous	X														
MW-21D	5/14/2004	04401-010	Aqueous	X														
MW-22D	5/12/2004	04307-004	Aqueous	X														

Table 3-3
Summary of Analyses Performed during Groundwater Investigation Activities
Former AT&T Clark Facility
Clark, New Jersey

Sample ID	Sample Date	Lab ID	Sample Matrix	Laboratory Analyses														
				TCL VOC+15	Total Iron and Manganese	Dissolved Iron and Manganese	Methane, Ethane, Ethene	Nitrogen, Ammonia	Alkalinity	Chloride	Nitrate	Ortho Phos-phate	Sulfate	TDS	TOC	DOC	BOD	COD
Field and Trip Blanks																		
FB51004	5/10/2004	04237-004	Aqueous	X														
FB51104	5/11/2004	04237-009	Aqueous	X														
FB51204	5/12/2004	04307-008	Aqueous	X														
FB51304	5/13/2004	04352-003	Aqueous	X														
FB51404	5/14/2004	04401-005	Aqueous	X														
TB-1	5/11/2004	04237-006	Aqueous	X														
TB-2	5/11/2004	04237-010	Aqueous	X														
TB-3	5/12/2004	04307-005	Aqueous	X														
TB-4	5/12/2004	04307-009	Aqueous	X														
TB-5	5/13/2004	04352-008	Aqueous	X														
TB-6	5/14/2004	04401-004	Aqueous	X														

TCL VOC + 15: Target Compound list Volatile Organic Compounds +15 Peaks Library Search
TDS: Total Dissolved Solids
TOC: Total Organic Carbon
DOC: Dissolved Organic Carbon
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
* MW-15A and MW-16A are labeled MW-16A and MW-17A, respectively, in the field and in the laboratory analytical reports

Table 4-1
Water Levels in Monitoring Wells on May 10, 2004
Former AT&T Clark Facility
Clark, New Jersey

Well ID	TIC Elevation (ft AMSL)	Depth to Water from TIC (ft)	Groundwater Elevation (ft AMSL)
MW-3	57.67	3.94	53.73
MW-4	55.91	2.41	53.50
MW-5	55.14	2.45	52.69
MW-6	55.48	2.84	52.64
MW-7	57.13	4.85	52.28
MW-8	58.41	5.67	52.74
MW-2A	57.34	4.76	52.58
MW-5A	55.25	3.23	52.02
MW-7A	57.28	4.97	52.31
MW-9A	57.07	3.19	53.88
MW-10A	57.93	5.12	52.81
MW-11A	55.27	3.36	51.91
MW-12A	55.06	7.27	47.79
MW-13A	55.46	7.76	47.70
MW-14A	57.18	8.33	48.85
MW-15A	54.60	14.30	40.30
MW-16A	54.25	13.90	40.35
MW-18A	52.73	12.86	39.87
MW-19A	57.17	12.26	44.91
MW-19D	57.76	15.44	42.32
MW-20D	57.22	13.51	43.71
MW-21S	55.42	14.26	41.16
MW21D	55.50	11.14	44.36
MW-22D	59.81	14.83	44.98
US-1	55.53	6.96	48.57
US-2	56.83	7.25	49.58

AMSL: Above Mean Sea Level
TIC: Top of Inner Casing
Elevations are from a survey performed in June 2004

Table 4-2
Volatile Organic Compounds Analytical Results for Sub-Building Groundwater Samples - May 2004
Former AT & T Clark Facility
Clark, New Jersey

Sample ID	Higher Value of NJDEP GQS and PQL	GW-1A	GW-2A	GW-3A	GW-4A	GW-5A	GW-5A-DUP	GW-7A	GW-7B	GW-8A
Lab Sample Number		04073-001	04073-002	04073-003	04073-005	04073-006	04073-007	04073-013	04073-014	04073-008
Sampling Date		5/4/04	5/4/04	5/4/04	5/4/04	5/4/04	5/4/04	5/5/04	5/5/04	5/5/04
Sample Depth (ft. bgs)		21-24	17-21	21-24	13-16	16-19	16-19	13-16	20-23	9-12
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Dilution Factor		1	1	1	1	1	1	1	1	1
VOLATILE ORGANIC COMPOUNDS (ug/L)										
Trichloroethene	1	0.25 U	**2.86**	**1.32**	0.25 U	0.31	0.25 U	**1.33**	**2.11**	0.34
1,1 Dichloroethene	2	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
1,1 Dichloroethane	50*	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U
cis-1,2-Dichloroethene	70*	0.25 U	0.25 U	0.25 U	0.25 U	0.81	0.76	0.25 U	0.438	0.29
Acetone	700	1.59 U	1.59 U	2.63	2.49	3.60	4.43	1.59 U	3.61	3.70
Vinyl Chloride	5	0.78 U	0.78 U	0.78 U	0.78 U	1.30	1.25	0.78 U	0.78 U	0.965
Chloroform	6	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2-Trichloro-1,1,2-trifluoroethane	-	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U

Sample ID	Higher Value of NJDEP GQS and PQL	GW-8B	GW-10A	GW-11A	FB-1	FB-2	TB
Lab Sample Number		04073-017	04073-010	04073-012	04073-004	04073-015	04073-016
Sampling Date		5/5/04	5/5/04	5/5/04	5/4/04	5/5/04	5/5/2004
Sample Depth (ft. bgs)		20-23	17-20	13-16			
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Dilution Factor		1	1	1	1	1	1
VOLATILE ORGANIC COMPOUNDS (ug/L)							
Trichloroethene	1	**14.70**	**10.70**	**18.20**	0.25 U	0.25 U	0.25 U
1,1 Dichloroethene	2	0.58 U	0.99	0.58 U	0.58 U	0.58 U	0.58 U
1,1 Dichloroethane	50*	1.27 U	4.65	1.27 U	1.27 U	1.27 U	1.27 U
cis-1,2-Dichloroethene	70*	1.67	**77.60**	1.35	0.25 U	0.25 U	0.25 U
Acetone	700	3.87	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U
Vinyl Chloride	5	0.78 U	3.42	0.78 U	0.78 U	0.78 U	0.78 U
Chloroform	6	0.25 U	0.25 U	0.98	0.25 U	0.25 U	0.25 U
1,1,2-Trichloro-1,1,2-trifluoroethane	-	0.59 U	1.40	0.59 U	0.59 U	0.59 U	0.59 U

Concentrations exceeding the higher of Practical Quantitation Level (PQL) and Groundwater Quality Criteria (GWQC) are highlighted in bold.
*: stated value is higher of the PQL and the Interim Groundwater Criterion established by NJDEP.
U: Compound was analyzed for but Not Dectected at the indicated Method Detection Limit.
- No criteria specified
bgs: Below ground surface

Table 4-3
Volatile Organic Compounds Analytical Results for Sub-Building Soil Samples - May 2004
Former AT&T Clark Facility
Clark, New Jersey

Sample ID Lab Sample Number Sample Depth (ft. bgs) Sampling Date Matrix Dilution Factor	NJDEP Residential Direct Contact Soil Cleanup Criteria	NJDEP Non-Residential Direct Contact Soil Cleanup Criteria	NJDEP Impact to Groundwater Soil Cleanup Criteria	SOIL-1 04073-009 1.5 - 2 5/4/04 Solid 1	SOIL-2 04073-011 1 - 1.5 5/5/04 Solid 1
VOLATILE ORGANIC COMPOUNDS					
Trichloroethene	23	54	1	0.16 J	0.25 U

U: Compound was analyzed for but Not Dectected at the indicated Method Detection Limit.
J: Indicates an estimated value. The compound was detected at a value below the method detection limit but greater than zero. For GC/MS procedures, the mass spectral data meets the criteria required to identify the target compound.

Table 4-4
Volatile Organic Compounds Analytical Results for Monitoring Well Groundwater Samples - May 2004
Former AT&T Clark Facility
Clark, New Jersey

Sample ID	Higher Value of NJDEP GWQL and PQL	MW-3	MW-4	MW-6	MW-8	MW-10A	MW-10A-DUP	FB51004	FB51104	TB-1	TB-2
Lab Sample Number		04237-002	04237-001	04237-008	04237-007	04237-003	04237-005	04237-004	04237-009	04237-006	04237-010
Sampling Date		5/11/04	5/10/04	5/11/04	5/11/04	5/11/04	5/11/04	5/10/04	5/11/04	5/11/04	5/11/04
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Dilution Factor		1	1	1	1	1	1	1	1	1	1
VOLATILE ORGANIC COMPOUNDS (ug/L)											
Trichloroethene	1	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Acetone	700	3.26	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U	3.94	1.59 U	1.59 U
Toluene	1000	0.26	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Sample ID	Higher Value of NJDEP GWQL and PQL	MW-5	MW-7	MW-7A	MW-9A	MW-13A	MW-22D	FB51204	TB-3	TB-4
Lab Sample Number		04307-001	04307-002	04307-003	04307-007	04307-006	04307-004	04307-008	04307-005	04307-009
Sampling Date		5/12/04	5/12/04	5/12/04	5/12/2004	5/12/04	5/12/04	5/12/04	5/12/04	5/12/04
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Dilution Factor		1	1	1 (2)	1	1	1	1	1	1
VOLATILE ORGANIC COMPOUNDS (ug/L)										
Trichloroethene	1	0.25 U	0.25 U	**106** D	0.25 U	**2.48**	**6.02**	0.25 U	0.25 U	0.25 U
1,1 Dichloroethene	2	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
1,1 Dichloroethane	50*	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U	1.27 U
cis-1,2-Dichloroethene	70*	0.25 U	0.25 U	3.36	0.25 U	0.37	0.25 U	0.25 U	0.25 U	0.25 U
Acetone	700	1.59 U	1.59 U	1.59 U	3.63	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U
Vinyl Chloride	5	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
Chloroform	6	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Toluene	1000	0.25 U	0.25 U	0.25 U	0.25 U	0.31	1.12	0.25 U	0.25 U	0.25 U
Trichlorofluoromethane	2000	0.41 U	3.53	0.41 U	0.41 U	1.81	0.41 U	0.41 U	0.41 U	0.41 U
1,1,2-Trichloro-1,1,2-trifluoroethane	-	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U

Table 4-4
Volatile Organic Compounds Analytical Results for Monitoring Well Groundwater Samples - May 2004
Former AT&T Clark Facility
Clark, New Jersey

Lab Sample Number Sampling Date Matrix Dilution Factor	Higher Value of NJDEP GWQL and PQL	MW-12A 04352-005 5/13/04 Aqueous 1	MW-14A 04352-002 5/13/04 Aqueous 1	MW-15A 04352-006 5/13/04 Aqueous 1	MW-16A 04352-007 5/13/04 Aqueous 1	MW-18A 04352-001 5/13/04 Aqueous 1	MW-20D 04352-004 5/13/04 Aqueous 1	FB51304 04352-003 5/13/04 Aqueous 1	TB-5 04352-008 5/13/04 Aqueous 1
VOLATILE ORGANIC COMPOUNDS (ug/L)									
Trichloroethene	1	**12.00**	**6.03**	**30.30**	**6.58**	**10.20**	**66.00**	0.25 U	0.25 U
Tetrachloroethene	1	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	**1.29**	0.47 U	0.47 U
1,1 Dichloroethene	2	0.58 U	0.58 U	0.82	1.33	0.58 U	**7.28**	0.58 U	0.58 U
1,1 Dichloroethane	50*	1.27 U	1.27 U	1.27 U	1.27 U	1.40	3.04	1.27 U	1.27 U
cis-1,2-Dichloroethene	70*	4.93	0.69	1.11	1.08	1.44	3.42	0.25 U	0.25 U
Methyl-t-Butyl-Ether (MTBE)	70*	1.04 U	1.04 U	1.04 U	1.04 U	1.30	1.04 U	1.04 U	1.04 U
Benzene	1	0.88	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Acetone	700	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U	1.59 U
Vinyl Chloride	5	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
Chloroform	6	0.25 U	0.25 U	0.74	0.25 U	0.25 U	2.81	0.25 U	0.25 U
Toluene	1000	0.34	0.25 U	0.47	0.25 U	0.54	0.95	0.25 U	0.25 U
Trichlorofluoromethane	2000	78.70	0.41 U	3.18	0.85	4.76	13.90	0.41 U	0.41 U
1,1,2-Trichloro-1,1,2-trifluoroethane	-	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U

Table 4-4
Volatile Organic Compounds Analytical Results for Monitoring Well Groundwater Samples - May 2004
Former AT&T Clark Facility
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor	Higher Value of NJDEP GWQL and PQL	MW-2A 04401-003 5/14/04 Aqueous 50	MW-2A-DUP 04401-006 5/14/04 Aqueous 50	MW-5A 04401-001 5/14/04 Aqueous 5 (50)	MW-11A 04401-002 5/14/04 Aqueous 1 (2)	MW-19 04401-008 5/14/04 Aqueous 50	MW-19D 04401-007 5/14/04 Aqueous 10	MW-21 04401-009 5/14/04 Aqueous 50	MW-21D 04401-010 5/14/04 Aqueous 1 (2)	FB51404 04401-005 5/14/04 Aqueous 1	TB-6 04401-004 5/14/04 Aqueous 1
VOLATILE ORGANIC COMPOUNDS (ug/L)											
Trichloroethene	1	**2690**	**2740**	**253**	**91.40**	**3170**	**724**	**2680**	**125 D**	0.25 U	0.25 U
Tetrachloroethene	1	23.50 U	23.50 U	2.35 U	0.47 U	23.50 U	4.70 U	**115**	**4.31**	0.47 U	0.47 U
1,1,1-Trichloroethane	30	12.50 U	12.50 U	1.25 U	2.04	12.50 U	2.50 U	12.50 U	0.25 U	0.25 U	0.25 U
1,1 Dichloroethene	2	29.00 U	29.00 U	**10.90**	**4.50**	29.00 U	5.80 U	29.00 U	**5.50**	0.58 U	0.58 U
1,1 Dichloroethane	50*	63.50 U	63.50 U	6.35 U	1.27 U	63.50 U	12.70 U	63.50 U	2.39	1.27 U	1.27 U
cis-1,2-Dichloroethene	70*	13.60	12.50 U	2.94	0.99	32.90	11.60	43.50	6.36	0.25 U	0.25 U
Methyl-t-Butyl-Ether (MTBE)	70*	52.00 U	52.00 U	5.20 U	1.04 U	52.00 U	10.40 U	52.00 U	1.04 U	1.04 U	1.04 U
Benzene	1	12.50 U	12.50 U	1.25 U	0.25 U	12.50 U	2.50 U	12.50 U	0.25 U	0.25 U	0.25 U
Acetone	700	79.50 U	79.50 U	7.59 U	1.59 U	79.50 U	15.90 U	79.50 U	1.59 U	1.59 U	1.59 U
Vinyl Chloride	5	39.00 U	0.39 U	3.90 U	0.78 U	39.00 U	7.80 U	39.00 U	0.78 U	0.78 U	0.78 U
Chloroform	6	12.50 U	12.50 U	1.25 U	0.25 U	12.50 U	2.50 U	12.50 U	1.04	0.25 U	0.25 U
Toluene	1000	12.50 U	12.50 U	1.25 U	0.31	12.50 U	2.50 U	12.50 U	0.83	0.25 U	0.25 U
Trichlorofluoromethane	2000	20.50 U	29.50 U	1870 D	168 D	43.00	27.20	20.50 U	30.90	0.59 U	0.59 U
1,1,2-Trichloro-1,1,2-trifluoroethane	-	29.50 U	20.50 U	76.30	30.90	29.50 U	5.90 U	29.50 U	0.94	0.41 U	0.41 U

Notes: Results organized by sample delivery group

Concentrations exceeding the higher of Practical Quantitation Level (PQL) and Groundwater Quality Criteria (GWQC) are highlighted in bold.

MW-15A and MW-16A are labeled MW-16A and MW-17A, respectively, in the field and in the laboratory analytical reports.

*: stated value is higher of the PQL and the Interim Groundwater Criterion established by NJDEP.

U: Compound was analyzed for but Not Dectected at the indicated Method Detection Limit.

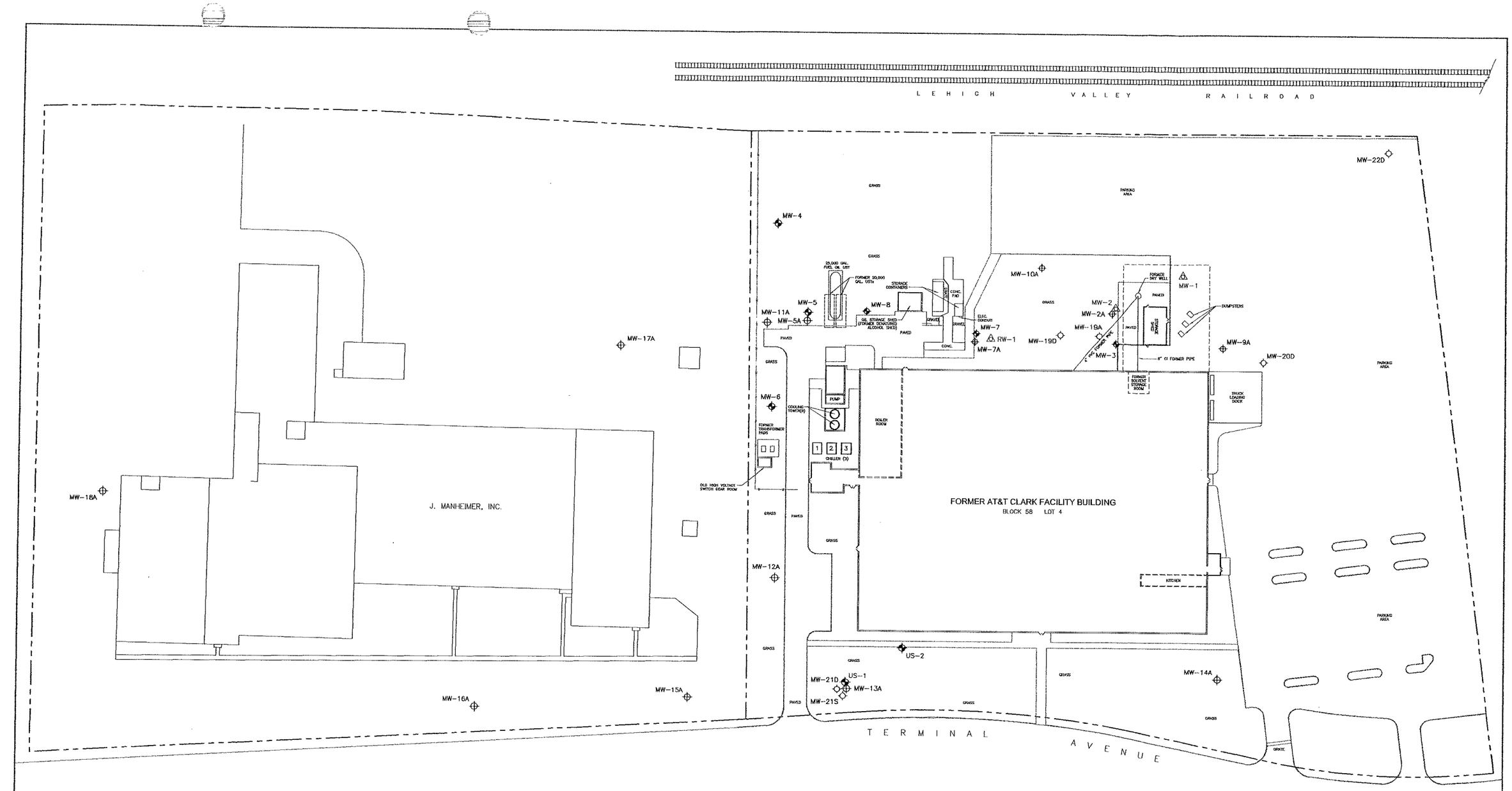
- No criteria specified

D: Compound was reported from the diluted analysis. Secondary dilution factor is indicated in parentheses, where applicable.

DUP: Duplicate sample

Table 4-5
Summary of Natural Attenuation Parameters in Groundwater
Former AT&T Clark Facility
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix	Higher Value of NJDEP GWQC and PQL	MW-2A 04401-003 5/14/04 Aqueous	MW-2A-DUP 04401-006 5/14/04 Aqueous	MW-2A-FILT 04401-013 5/14/04 Aqueous	MW-3 04237-002 5/11/04 Aqueous	MW-3-FILT 04237-012 5/11/04 Aqueous	MW-4 04237-001 5/10/04 Aqueous	MW-4-FILT 04237-011 5/10/04 Aqueous	MW-5 04307-001 5/12/04 Aqueous	MW-5-FILT 04307-010 5/12/04 Aqueous	MW-5A 04401-001 5/14/04 Aqueous	MW-5A-FILT 04401-11 5/14/2004 Aqueous
GASES (ug/L)												
Methane	-	60 U	~	~	60 U	~	4170	~	60 U	~	66.7	~
Ethylene	-	60 U	~	~	60 U	~	120 U	~	60 U	~	60 U	~
Ethane	100*	60 U	~	~	60 U	~	120 U	~	60 U	~	60 U	~
METALS (ug/L)												
Iron	300	100 U	~	100 U	152	100 U	**23000**	**23000**	270	100 U	100 U	100 U
Manganese	50	**1090**	~	**1040**	11.3	4.00 U	**2290**	**2060**	**66.6**	4.00 U	14.7	4.00 U
GENERAL ANALYTICAL PARAMETERS (ug/L)												
Alkalinity	-	246000	~	~	70500	~	324000	~	89000	~	82000	~
Biochemical Oxygen Demand	-	2000 U	~	~	2000 U	~	22000	~	2000 U	~	2000 U	~
Chemical Oxygen Demand	-	7000	~	~	21000	~	26000	~	9000	~	5000 U	~
Chloride	250000	19900	~	~	8580	~	4860	~	2010	~	14400	~
Ammonia	3000*	200 U	~	~	553	~	2120	~	200 U	~	574	~
Nitrate	10000	3600	~	~	3090	~	500 U	~	1800	~	2020	~
Orthophosphate	-	87.0	~	~	50 U	~	50 U	~	75.0	~	50 U	~
Sulfate	250000	86800	~	~	43200	~	1000 U	~	12800	~	21700	~
Total Organic Carbons	-	1890	~	~	5010	~	6960	~	2390	~	1770	~
Total Dissolved Solids	500000	**578000**	~	~	258000	~	**567000**	~	232000	~	267000	~
Dissolved Organic Carbon	-	~	~	1500	~	4960	~	5210	~	2220	~	1300



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL

SCALE

100 50 0 100 FEET

FIGURE 3-1

SITE PLAN AND MONITORING WELL LOCATIONS

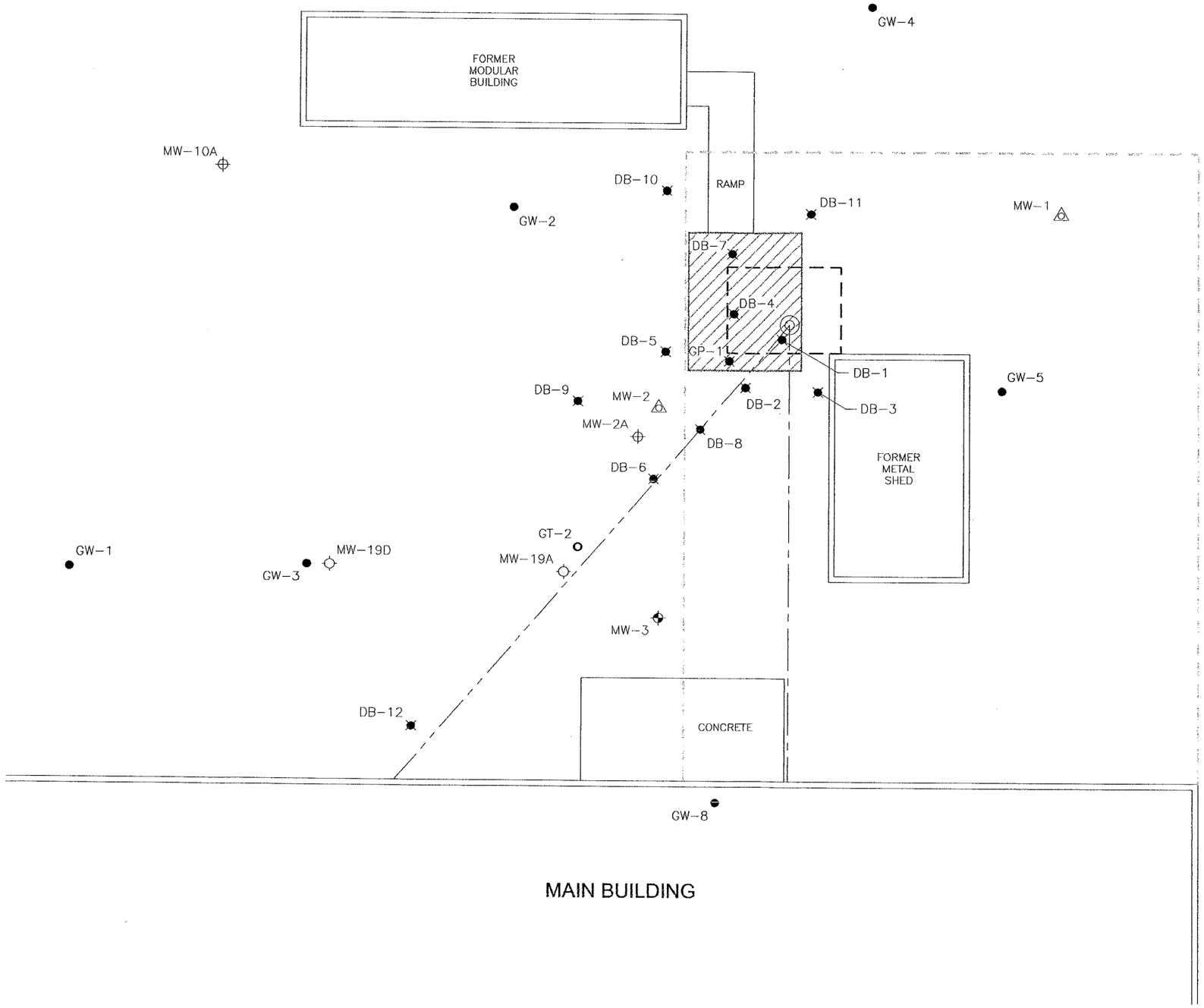
FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.

1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

DWG: figure 3-1 07/02/04



LEGEND

- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- APPROXIMATE LOCATION OF GEOPROBE GROUNDWATER GRAB SAMPLE (2004)
- GEOPROBE GROUNDWATER GRAB SAMPLE (1999)
- GEOPROBE SOIL SAMPLE (1999)
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- AREA OF EXCAVATION - AUGUST 1999 (Depth = 29' bgs)
- APPROXIMATE LOCATION OF FORMER DRY WELL EXCAVATION (Reported Depth = 15' bgs)
- APPROXIMATE LOCATION OF FORMER DRY WELL
- APPROXIMATE LOCATION OF FORMER CI PIPE
- APPROXIMATE LOCATION OF FORMER PVC PIPE

SCALE

20 10 0 20 FEET

FIGURE 3-2

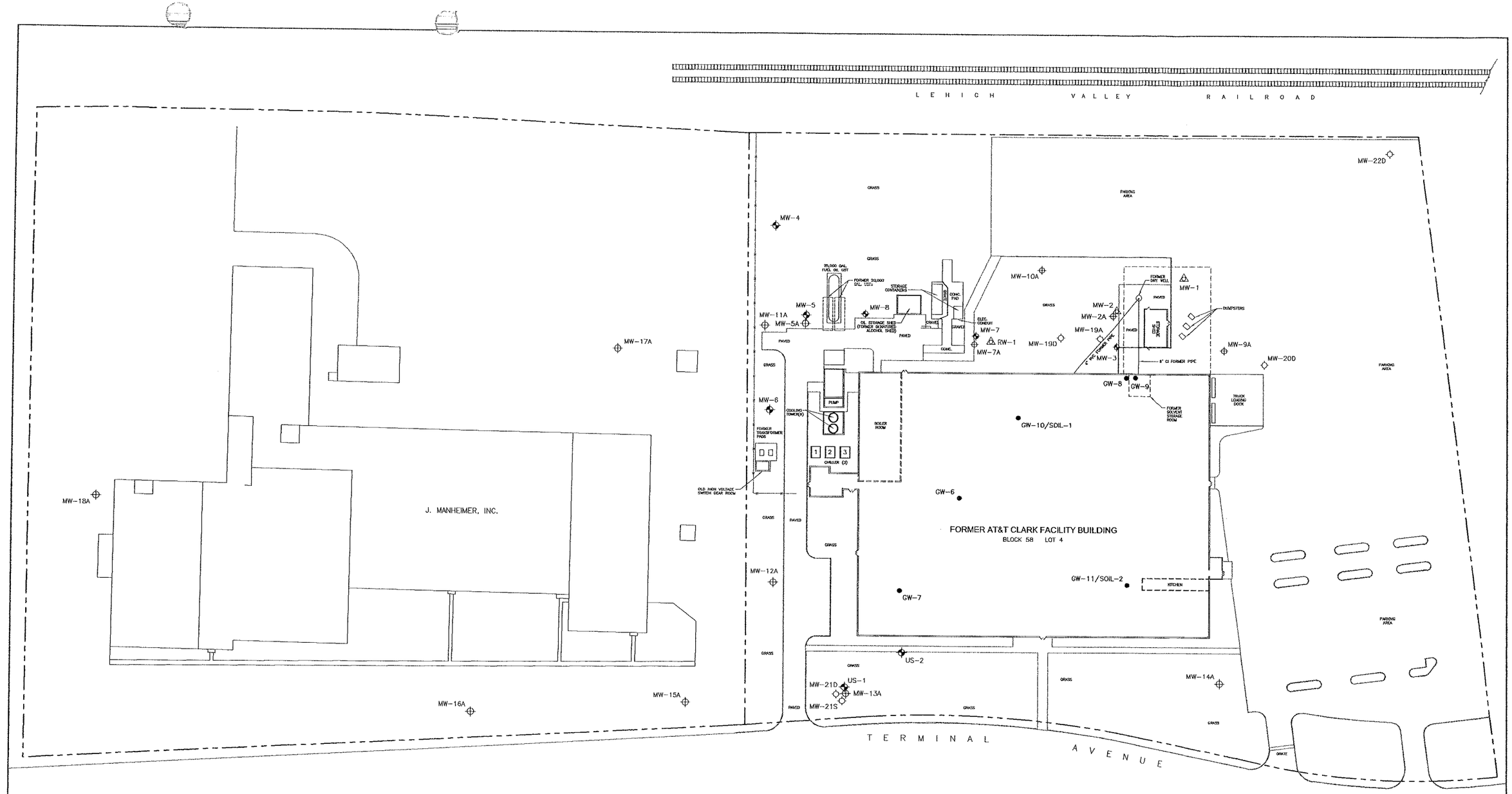
GROUNDWATER GRAB SAMPLING LOCATIONS (2004)
(FORMER DRY WELL AREA)

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 09/15/04

DWG: figure 3-2 09/15/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- APPROXIMATE LOCATION OF GEOPROBE GROUNDWATER GRAB SAMPLE (2004)

SCALE

100 50 0 100 FEET

N NE E SE S SW W NW

FIGURE 3-3

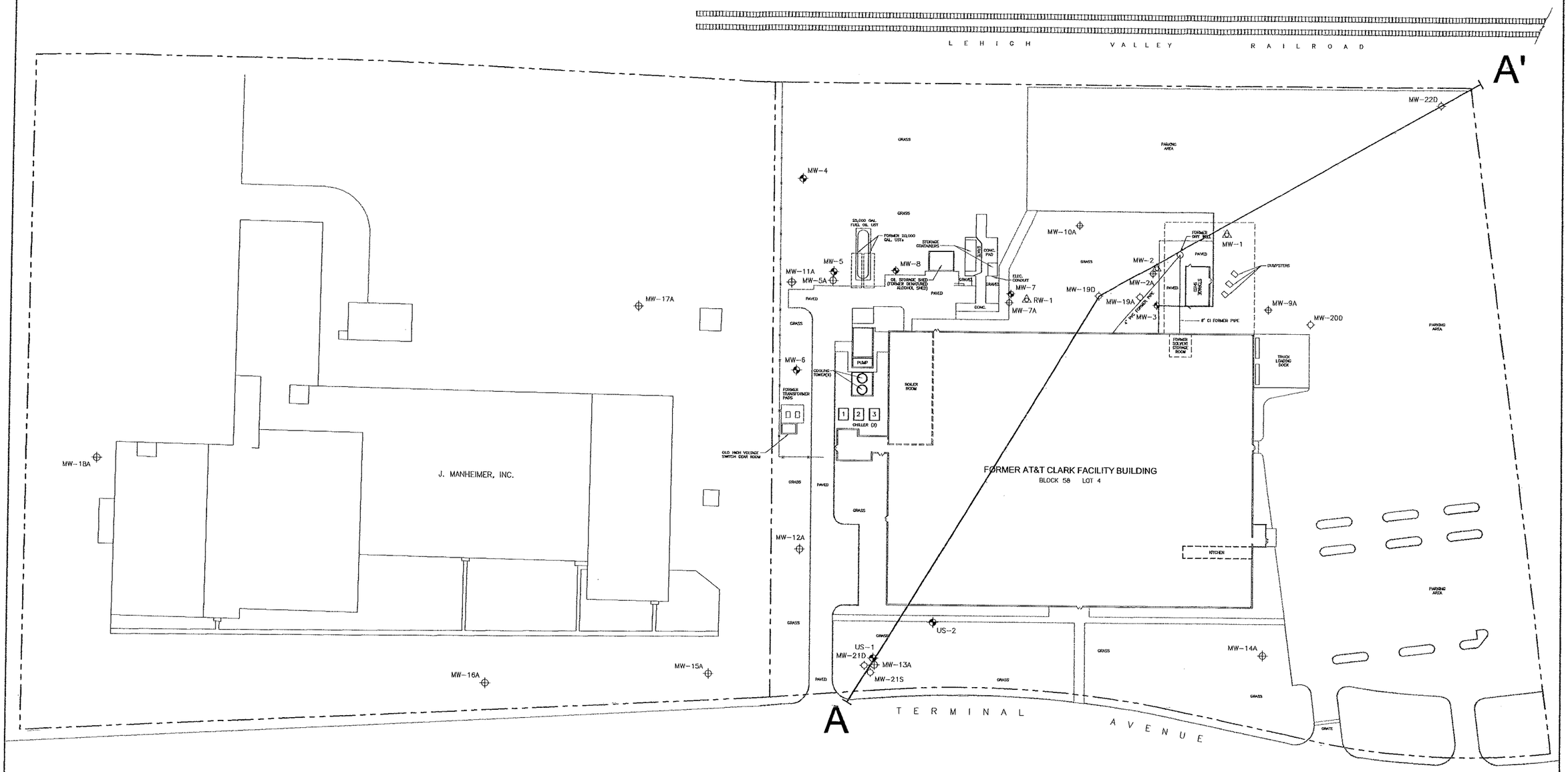
GROUNDWATER AND SOIL GRAB SAMPLE LOCATIONS (SUB-BUILDING)

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

DWG. figure 3-1 07/02/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- GEOLOGIC CROSS-SECTION LOCATION

SCALE

100 50 0 100 FEET

DWG: figure 3-1 07/02/04

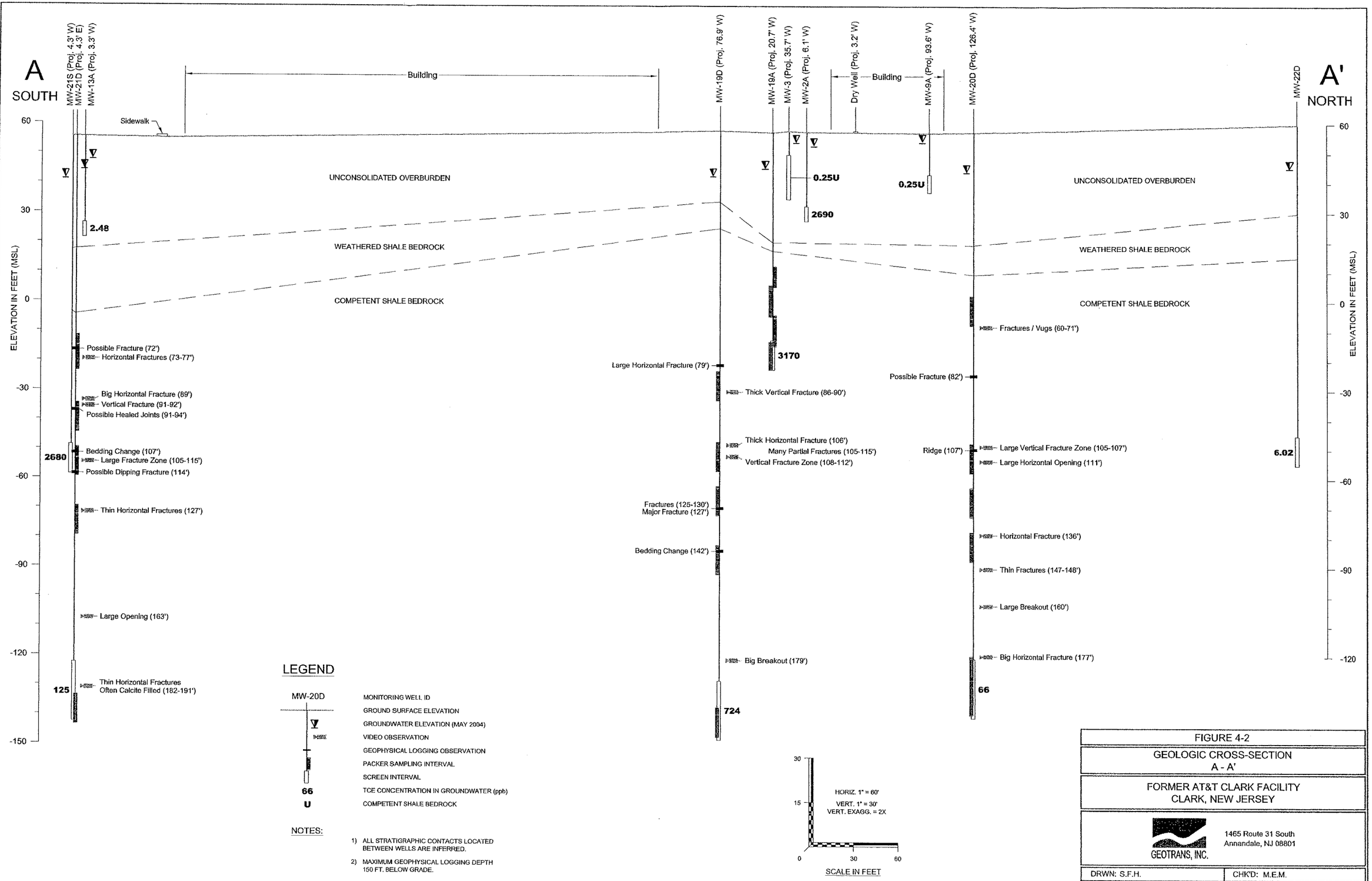
FIGURE 4-1

GEOLOGIC CROSS-SECTION LOCATION MAP

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04



LEGEND

MW-20D	MONITORING WELL ID
	GROUND SURFACE ELEVATION
▽	GROUNDWATER ELEVATION (MAY 2004)
	VIDEO OBSERVATION
	GEOPHYSICAL LOGGING OBSERVATION
	PACKER SAMPLING INTERVAL
	SCREEN INTERVAL
66	TCE CONCENTRATION IN GROUNDWATER (ppb)
U	COMPETENT SHALE BEDROCK

NOTES:

1) ALL STRATIGRAPHIC CONTACTS LOCATED BETWEEN WELLS ARE INFERRED.
2) MAXIMUM GEOPHYSICAL LOGGING DEPTH 150 FT. BELOW GRADE.

FIGURE 4-2

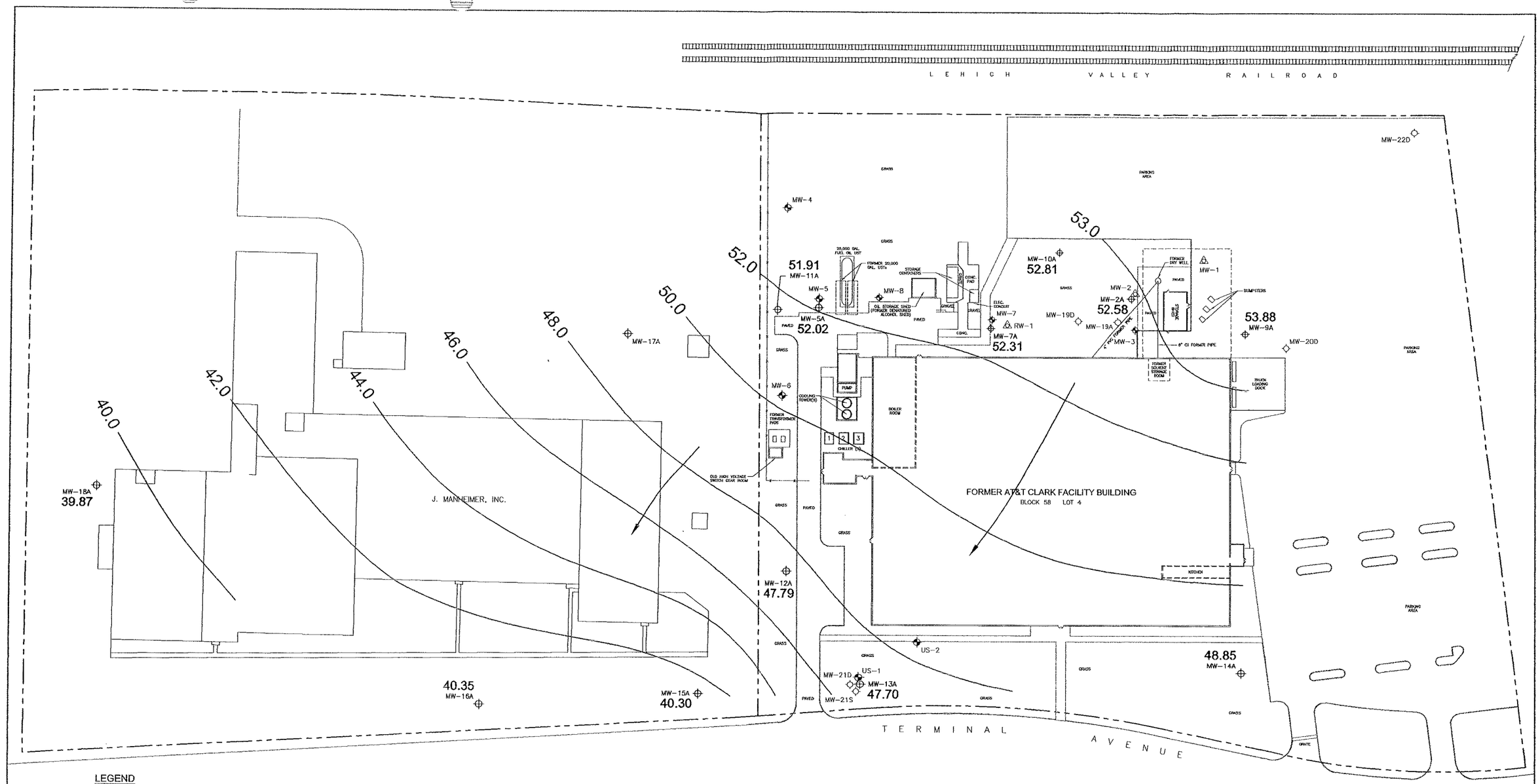
GEOLOGIC CROSS-SECTION
A - A'

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: M.E.M.
SCALE: AS SHOWN	DATE: 04/07/04

DWG: Figure 4-2 06/28/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- 47.70 GROUNDWATER ELEVATION (ft.)
- GROUNDWATER CONTOUR
- GROUNDWATER CONTOUR (INFERRED)
- GROUNDWATER FLOW DIRECTION

SCALE

100 50 0 100 FEET

DWG: figure 4-4 07/02/04

FIGURE 4-4

GROUNDWATER ELEVATION CONTOUR MAP
(DEEP OVERBURDEN MONITORING WELLS)
MAY 2004

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

LEHIGH VALLEY RAILROAD

MW-22D
44.98
(115)

MW-4

MW-17A

MW-18A

J. MANHEIMER, INC.

MW-12A

MW-16A

MW-15A

MW-5
MW-11A
MW-5A

MW-8

MW-10A

MW-2
MW-2A
44.91
MW-19A
(80)

MW-1

MW-19D
42.32
(206)

MW-3

MW-7
RW-1
MW-7A

MW-9A

MW-20D
43.71
(198)

MW-6

FORMER AT&T CLARK FACILITY BUILDING
BLOCK 58 LOT 4

(198)
44.36
MW-21D
MW-21S

US-1
MW-13A
41.16
(114)

US-2

MW-14A

TERMINAL AVENUE

LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- 41.16 GROUNDWATER ELEVATION (ft.)
- (114) WELL DEPTH (ft.)

11-13
APPROXIMATE BEDDING DIP AND STRIKE

SCALE
100 50 0 100 FEET

N W E S

DWG: figure 4-5 07/02/04

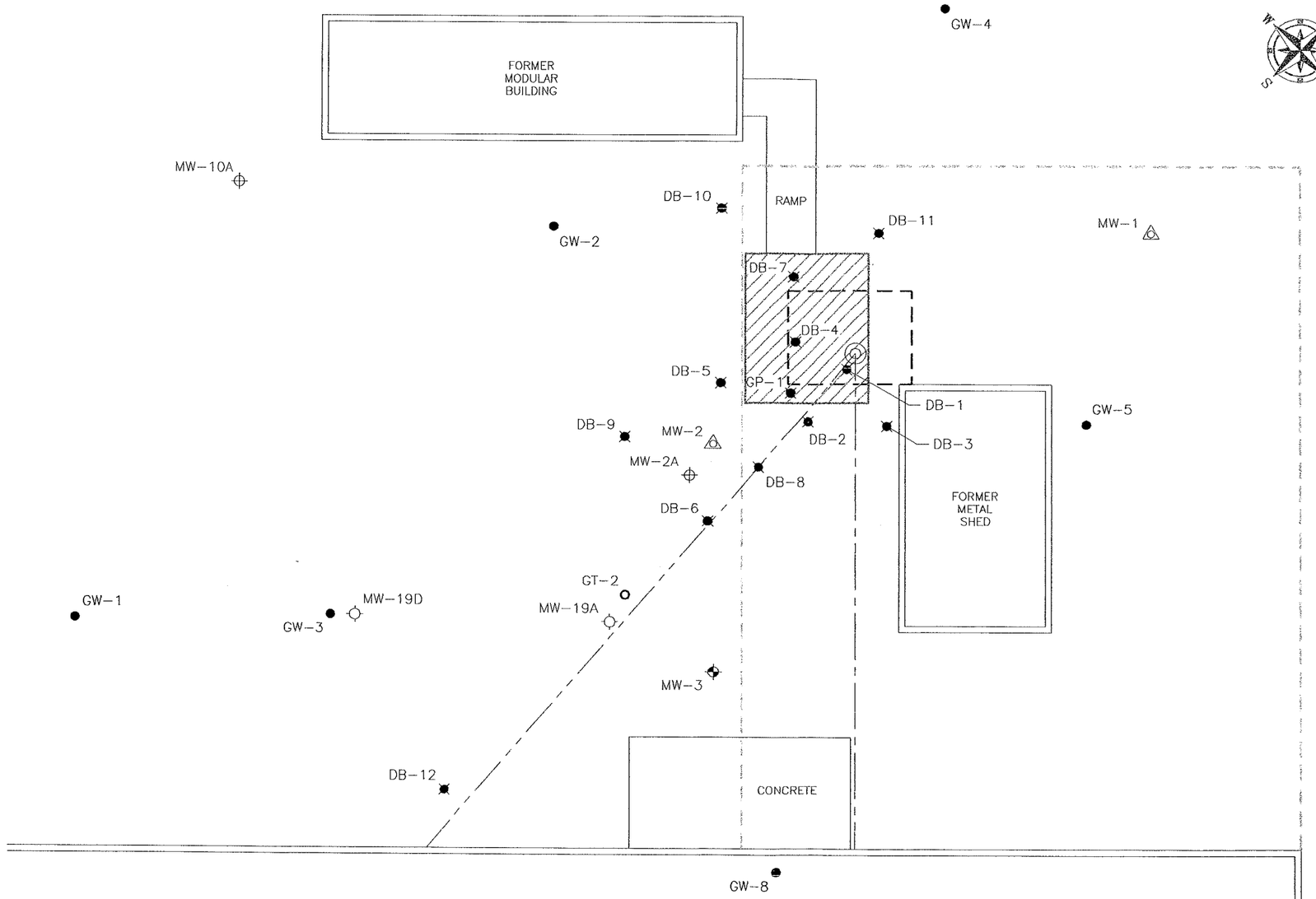
FIGURE 4-5

GROUNDWATER ELEVATION MAP
(BEDROCK MONITORING WELLS)
MAY 2004

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04



LEGEND

- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- APPROXIMATE LOCATION OF GEOPROBE GROUNDWATER GRAB SAMPLE (2004)
- GEOPROBE GROUNDWATER GRAB SAMPLE (1999)
- GEOPROBE SOIL SAMPLE (1999)
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- AREA OF EXCAVATION - AUGUST 1999 (Depth = 29' bgs)
- APPROXIMATE LOCATION OF FORMER DRY WELL EXCAVATION (Reported Depth = 15' bgs)
- APPROXIMATE LOCATION OF FORMER DRY WELL
- APPROXIMATE LOCATION OF FORMER CI PIPE
- APPROXIMATE LOCATION OF FORMER PVC PIPE

SCALE

20 10 0 20 FEET

1999 GROUNDWATER GRAB SAMPLING RESULTS (Prior to Soil Remediation)		
Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
DB-1	20-23	12,000
	25-28	15,000
DB-2	20-23	14,000
	25-28	16,000
DB-3	20-23	11,000
	25-28	8,900
DB-4	20-23	110,000
	25-28	12,000
DB-5	20-23	31,000
	25-28	7,400
DB-6	20-23	1,400
	25-28	62,000
DB-7	20-23	130,000
	23.5-27.5	72,000
DB-8	20-23	5,300
	25-28	34,000
DB-9	20-23	870
	25-28	2,300
	30-32	12,000
DB-10	17-20	9,600
	25-26.5	2,400
DB-11	20-23	220
	25-28.5	7,700
DB-12	20-23	180
	25-28	470
GP-1 *	23-25	60,000
* Sampled by Weston on 12/16/96.		

1999 SOIL SAMPLING RESULTS (Prior to Soil Remediation)		
Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
GT-2	21-21.5	ND
	25-26	2,100
	27-27.5	1,200
	29-29.5	ND
	30.5-31	ND

2004 GROUNDWATER GRAB SAMPLING RESULTS (After August 1999 Soil Remediation)		
Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
GW-1	21-24	0.25 U
GW-2	17-21	2.86
GW-3	21-24	1.32
GW-4	13-16	0.25 U
GW-5	16-19	0.305
GW-8	9-12	0.335
	20-23	1.67
U: Undetected		

FIGURE 4-6

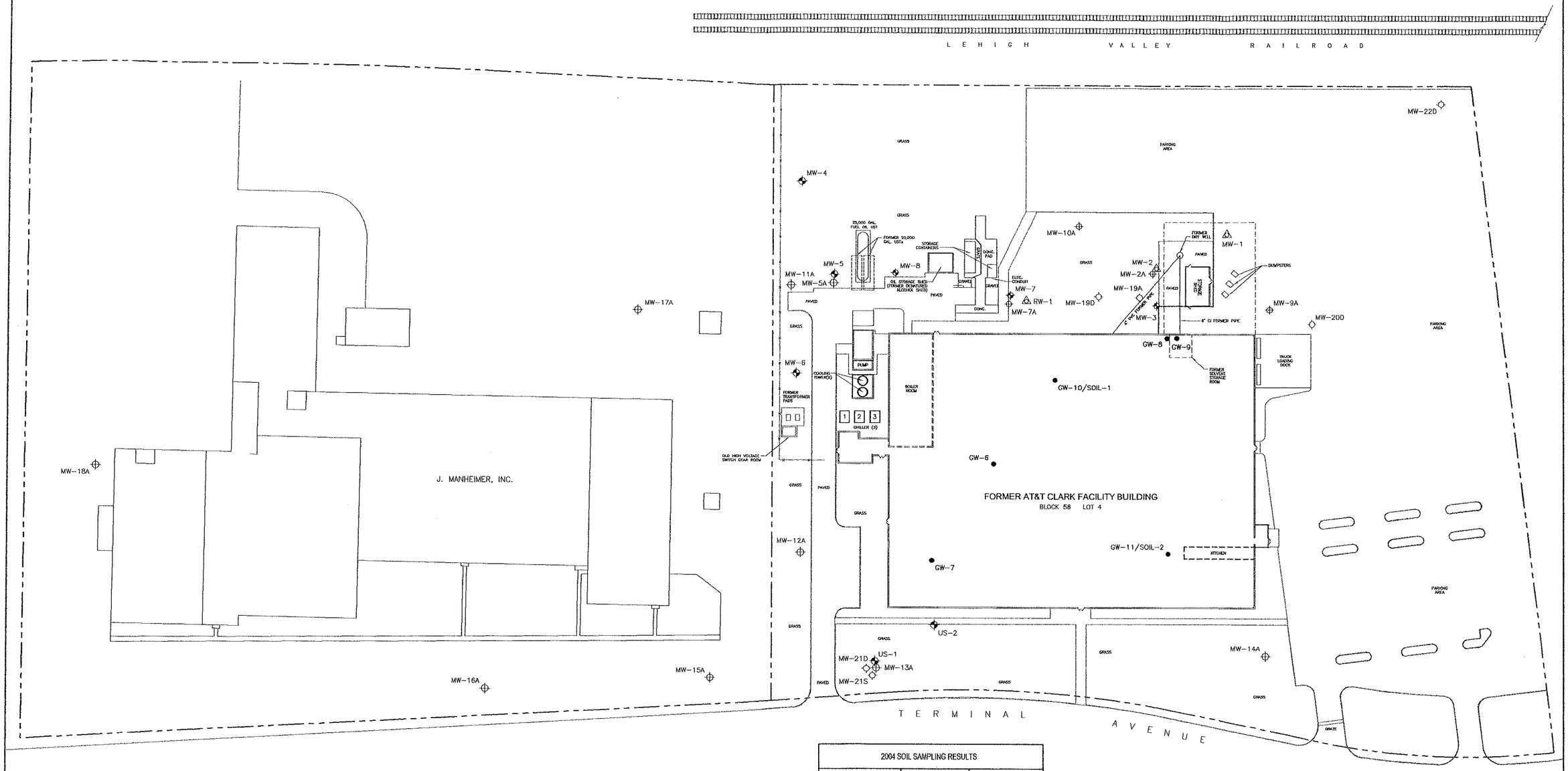
DETECTED TCE CONCENTRATIONS IN GROUNDWATER GRAB SAMPLING LOCATIONS (2004) (FORMER DRY WELL AREA)

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 09/15/04

DWG: figure 4-6 09/15/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- APPROXIMATE LOCATION OF GEOPROBE GROUNDWATER GRAB SAMPLE (2004)

SCALE

100 50 0 100 FEET

2004 SOIL SAMPLING RESULTS		
Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
SOIL-1	1.5-2.0	0.16 J
SOIL-2	1.0-1.5	0.25 U
U: Undetected J: Estimated Value		

2004 GROUNDWATER GRAB SAMPLING RESULTS		
Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
GW-7A	13-16	1.33
GW-7B	20-23	2.11
GW-8A	9-12	0.34
GW-8B	20-23	14.7
GW-10	17-20	10.7
GW-11	13-16	18.2

FIGURE 4-7

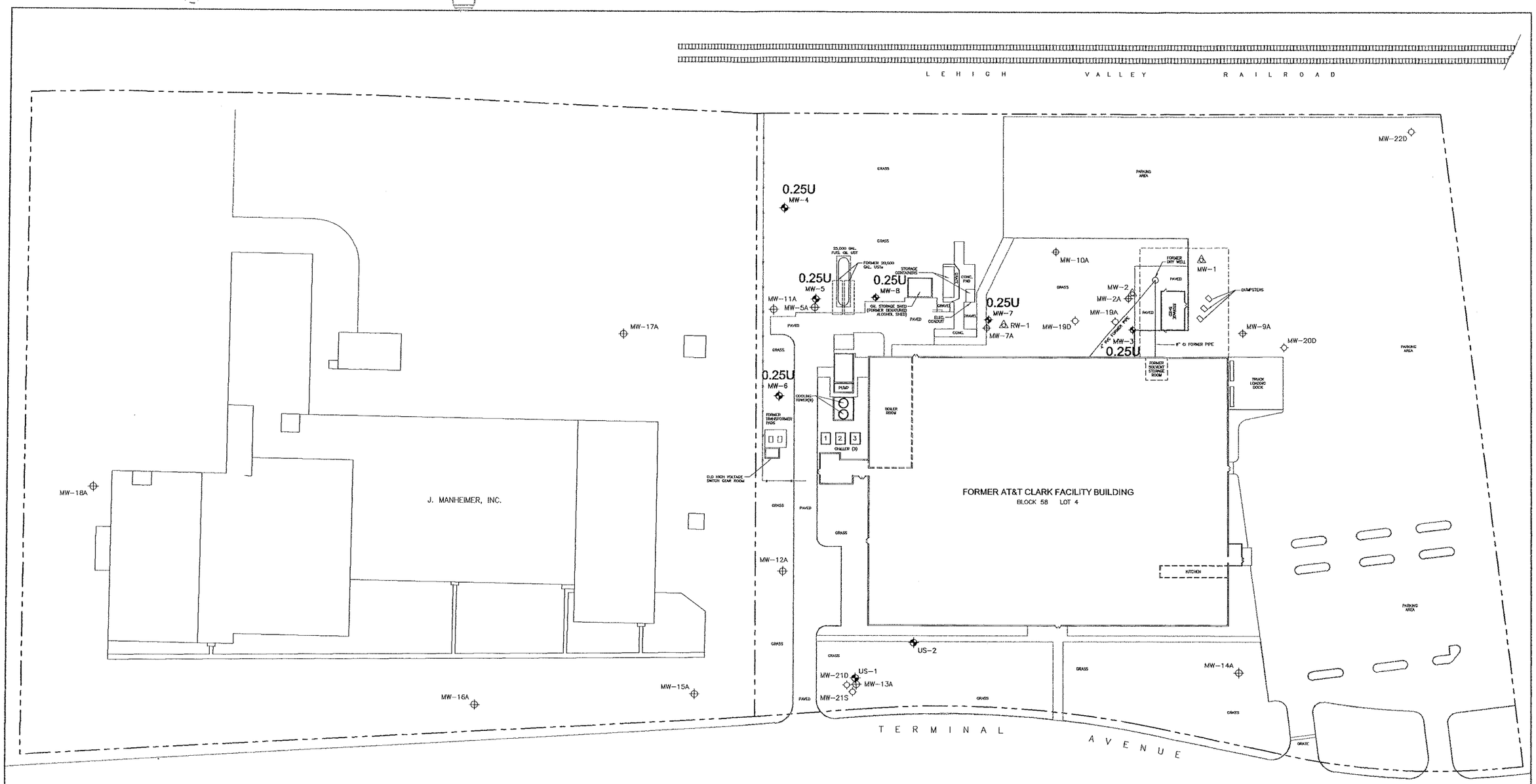
DETECTED TCE CONCENTRATIONS IN GROUNDWATER AND SOIL GRAB SAMPLING LOCATIONS (2004) (SUB-BUILDING)

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

DWG: figure 4-7 07/02/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- 0.25 TCE CONCENTRATION (ppb)
- U UNDETECTED

SCALE

100 50 0 100 FEET

FIGURE 4-8

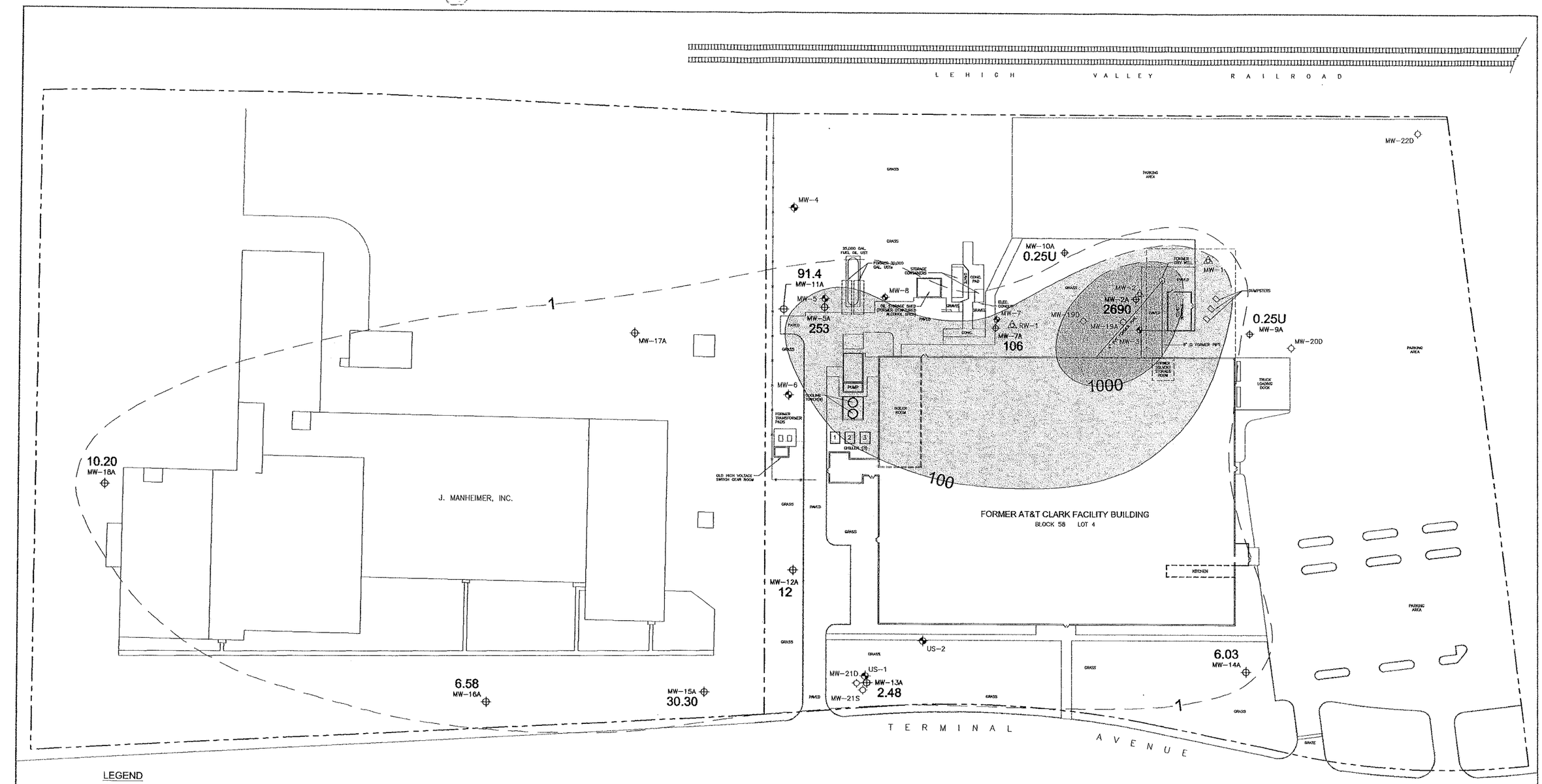
TCE CONCENTRATION MAP
(SHALLOW OVERBURDEN MONITORING WELLS)
MAY 2004

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

DWG: figure 4-8 07/02/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- 253 TCE ISOCONCENTRATION (ppb)
- U UNDETECTED
- TCE ISOCONCENTRATION CONTOUR
- TCE ISOCONCENTRATION CONTOUR (INFERRED)

SCALE

100 50 0 100 FEET

DWG: figure 4-9 07/02/04

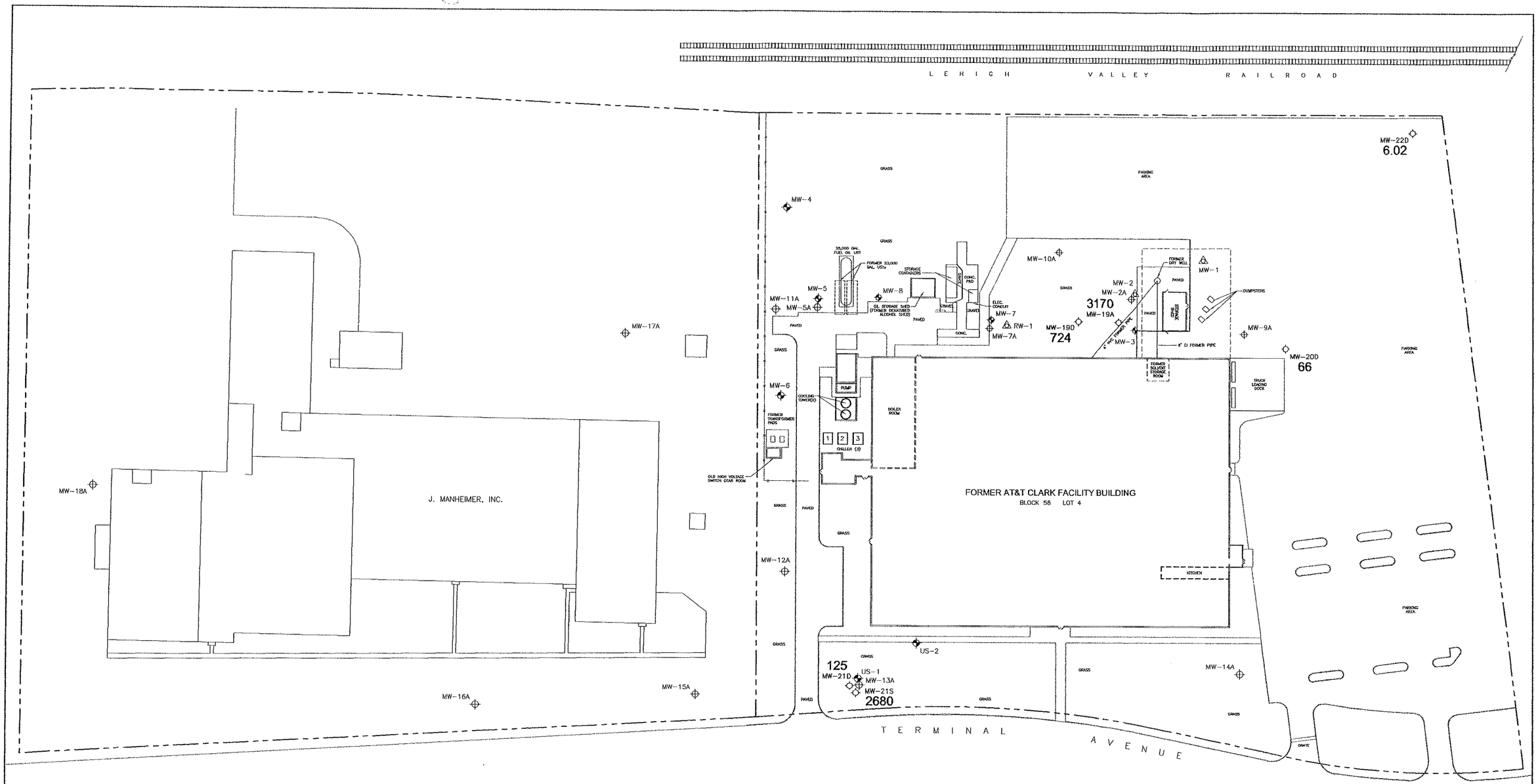
FIGURE 4-9

TCE ISOCONCENTRATION MAP
(DEEP OVERBURDEN MONITORING WELLS)
MAY 2004

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04



LEGEND

- PROPERTY LINE
- FENCELINE
- APPROXIMATE FOOTPRINT OF BUILDING ADDITION
- SHALLOW OVERBURDEN MONITORING WELL
- DEEP OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELL
- 125 TCE CONCENTRATION (ppb)

11-13
APPROXIMATE BEDDING DIP AND STRIKE

SCALE
100 50 0 100 FEET

DWG: figure 4-10 07/02/04

FIGURE 4-10

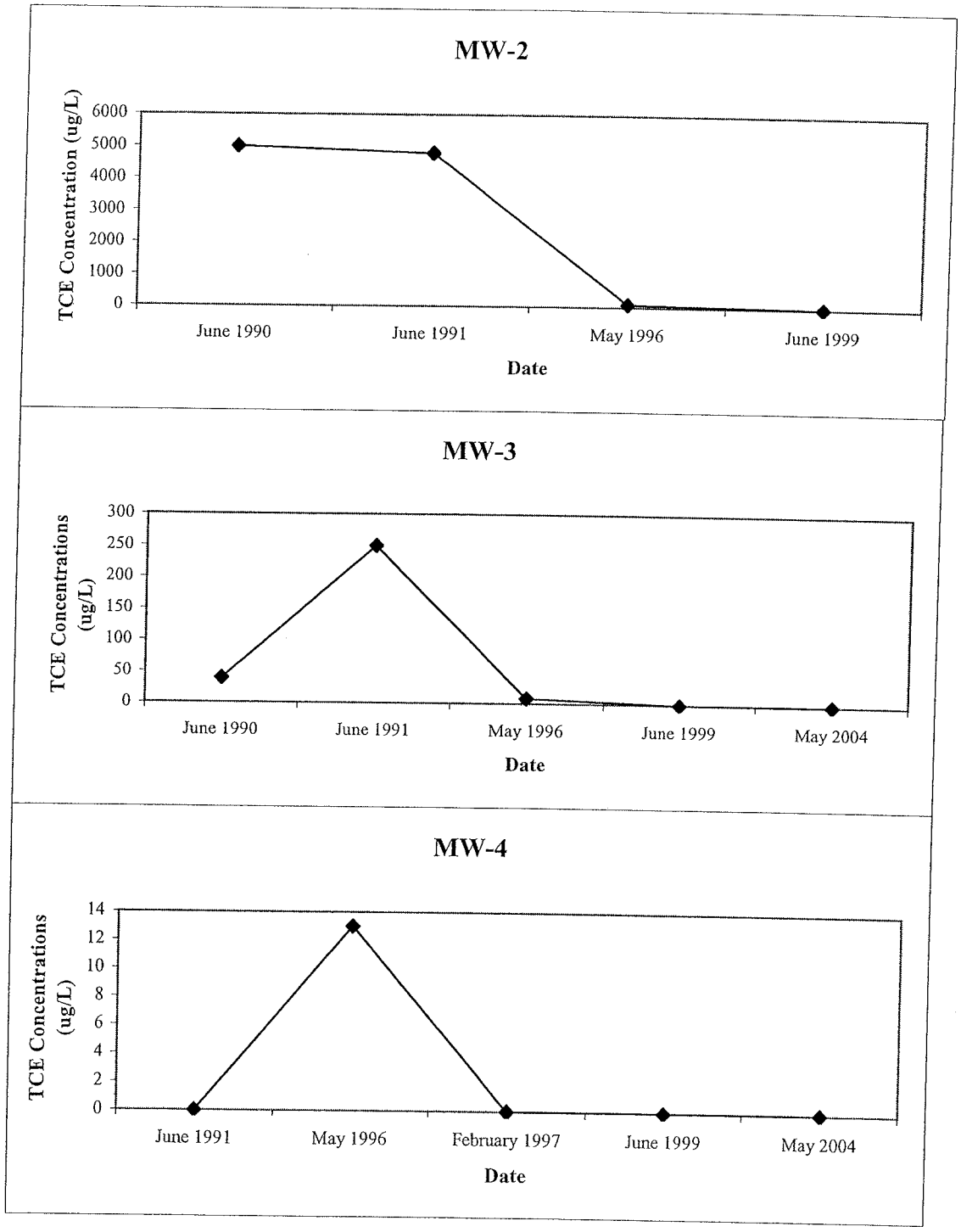
TCE CONCENTRATION MAP
(BEDROCK MONITORING WELLS)
MAY 2004

FORMER AT&T CLARK FACILITY
CLARK, NEW JERSEY

GEOTRANS, INC.
1465 Route 31 South
Annandale, NJ 08801

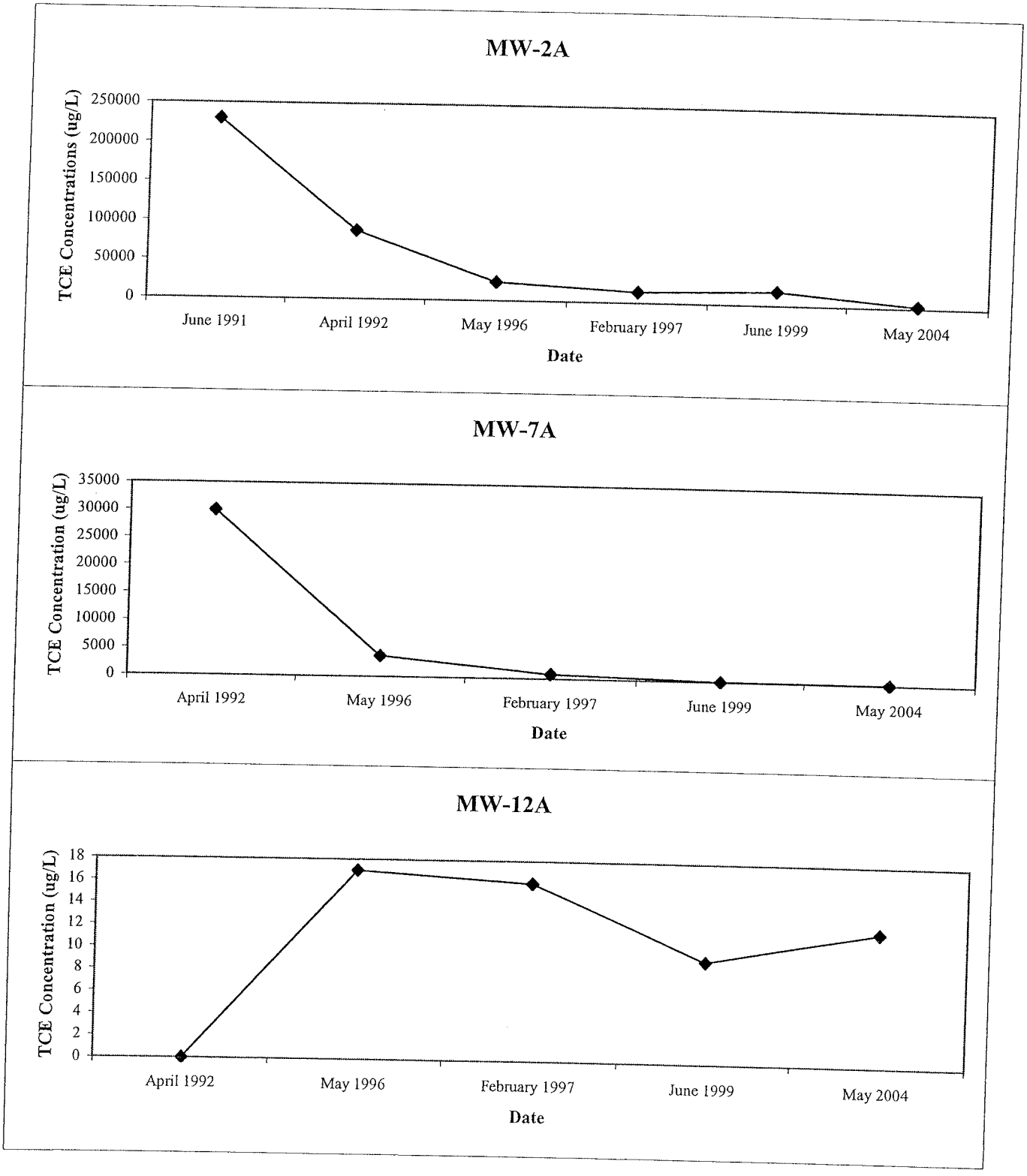
DRWN: S.F.H.	CHK'D: S.F.
SCALE: AS SHOWN	DATE: 07/02/04

FIGURE 4-11
Historical TCE Concentrations
AT&T Clark
Clark, New Jersey



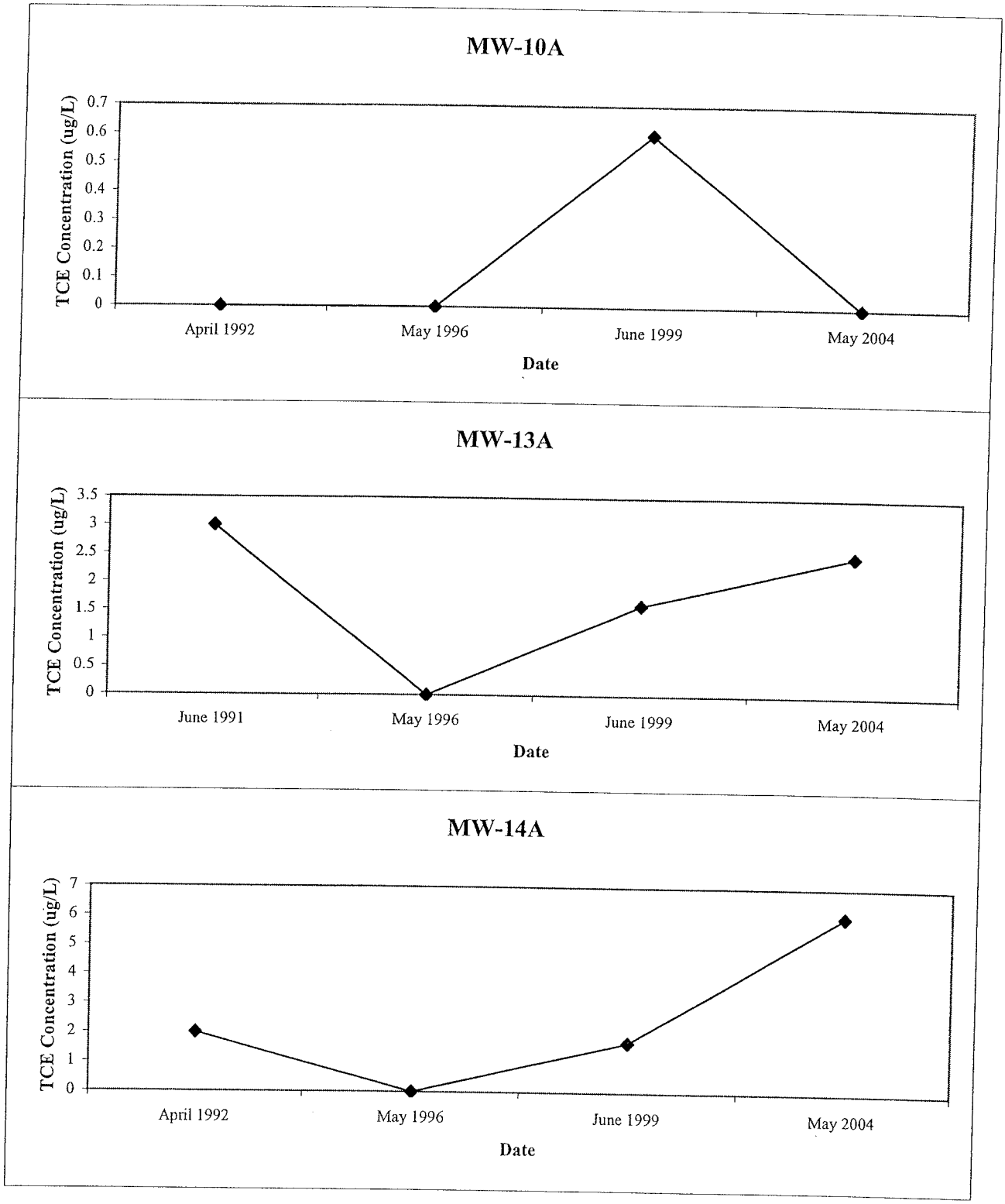
Note: Non-detects are plotted as 0 ug/L.

FIGURE 4-11
Historical TCE Concentrations
AT&T Clark
Clark, New Jersey



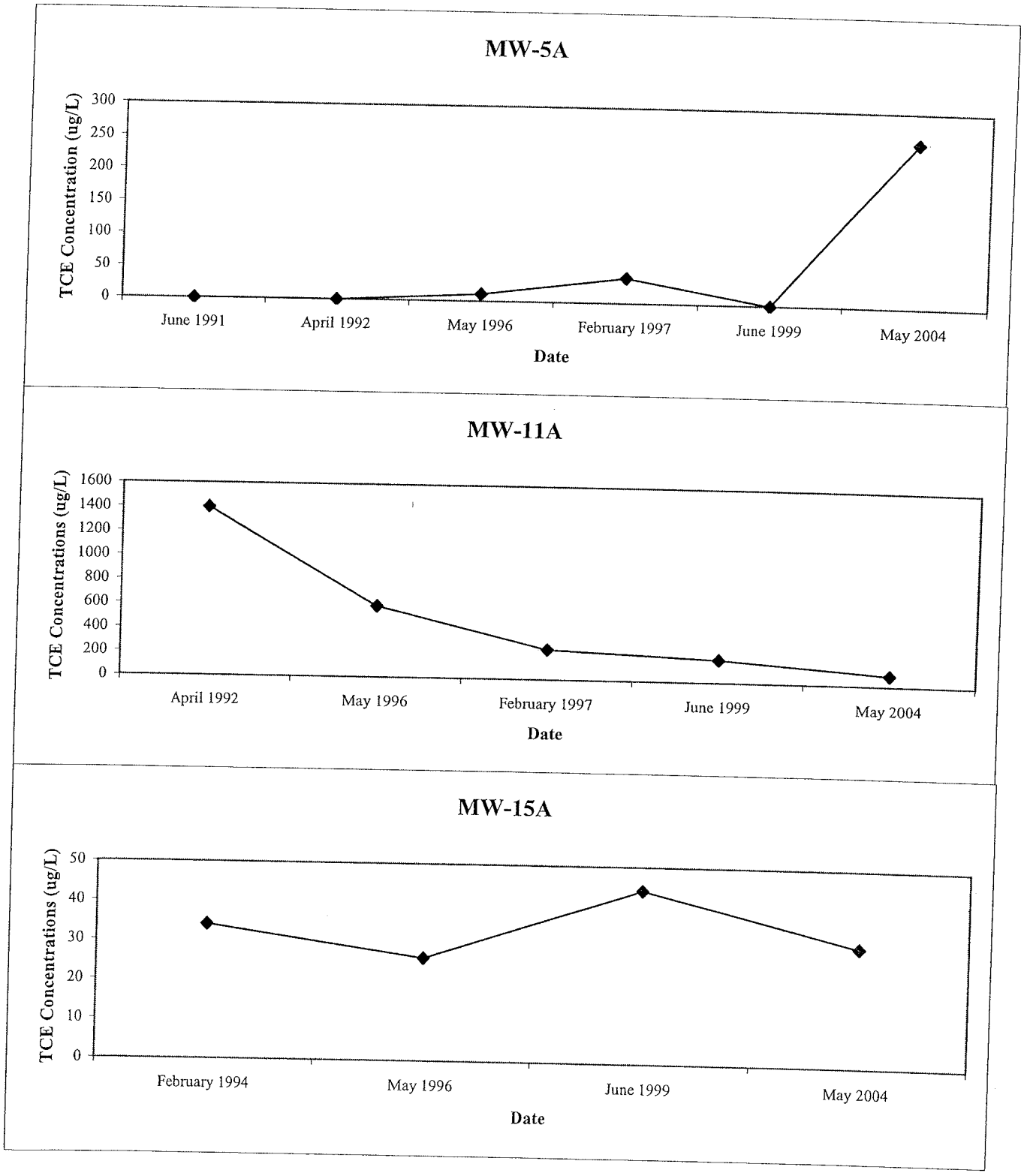
Note: Non-detects are plotted as 0 ug/L.

FIGURE 4-11
Historical TCE Concentrations
AT&T Clark
Clark, New Jersey



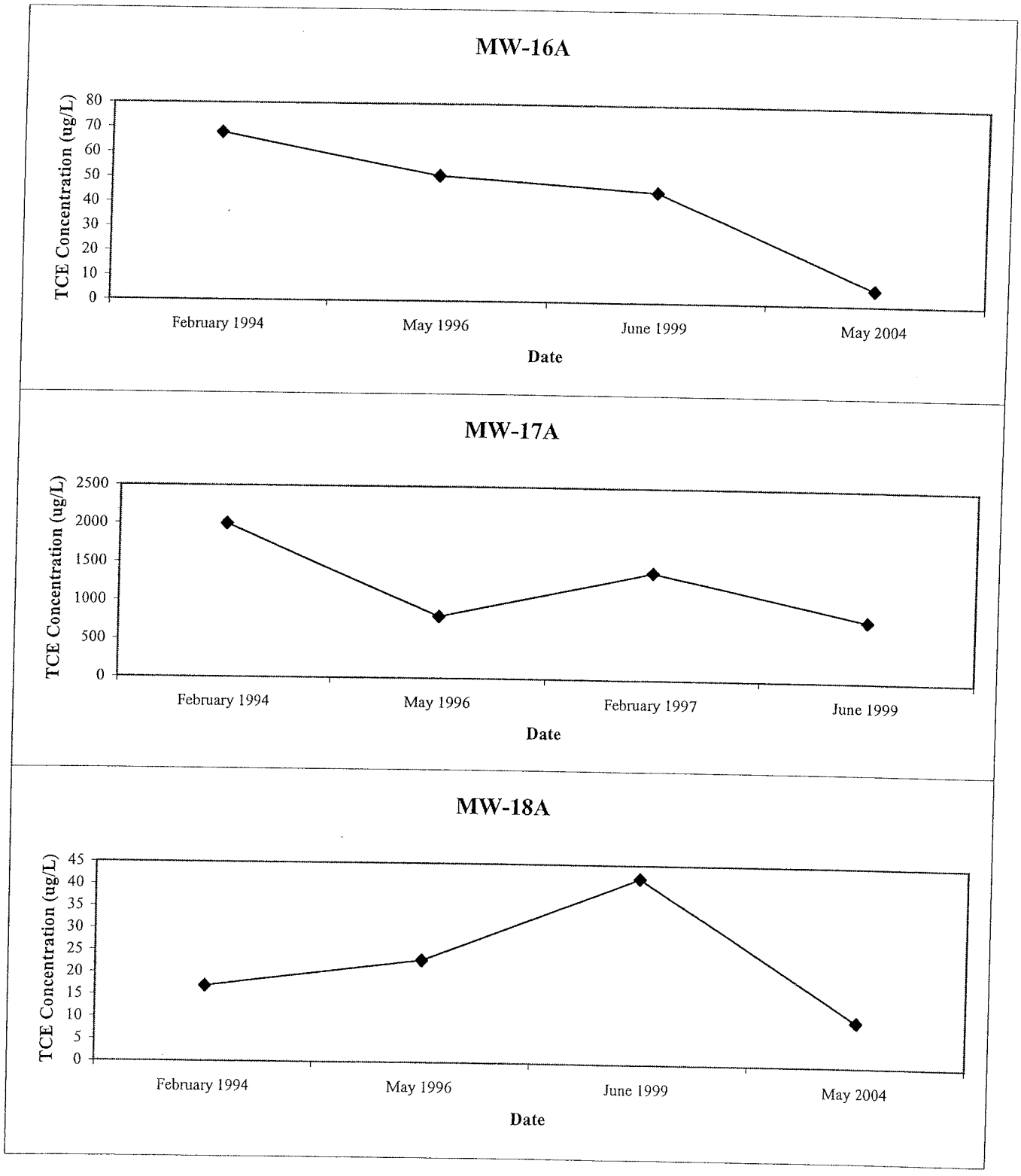
Note: Non-detects are plotted as 0 ug/L.

FIGURE 4-11
Historical TCE Concentrations
AT&T Clark
Clark, New Jersey



Note: Non-detects are plotted as 0 ug/L.

FIGURE 4-11
Historical TCE Concentrations
AT&T Clark
Clark, New Jersey



Note: Non-detects are plotted as 0 ug/L.

Appendix A

Monitoring Well Records, NJDEP Forms B, and Monitoring Well Logs/Construction Details

DWR-138 M
11/98

New Jersey Department of Environmental Protection
Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 26 - 54348

Atlas Sheet Coordinates 26 : 31 124

OWNER IDENTIFICATION - Owner TYCO INC.
Address 100 TERMINAL AVE.
City CLARK State N.J Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW19A
County UNION Municipality CLARK TWP. Lot No. 4 Block No. 58
Address 100 TERMINAL AVE.

DATE WELL STARTED 7/ 8/ 00
DATE WELL COMPLETED 7/ 8/ 00

TYPE OF WELL (as per Well Permit Categories) MONITORING
Regulatory Program Requiring Well ISRA SITE Case I.D.# 97107

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) McLaren Hart Environmental Engineering Tele. #

WELL CONSTRUCTION

Total depth drilled 80' ft.
Well finished to 80' ft.

Borehole diameter:
Top 10" in.
Bottom 6" in.

Well was finished: ☒ above grade ☐ flush mounted

If finished above grade, casing height (stick up) above land surface 2' ft.

steel protective casing installed?
☐ Yes ☐ No

Static water level after drilling 75' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours
at 1/2 gpm

Method of development Pump

Was permanent pumping equipment installed? ☐ Yes ☒ No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig B-80

Health and Safety Plan submitted? ☒ Yes ☐ No

Level of Protection used on site (circle one) None (D) C B A

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	+2'	70'	2"	PVC	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)	0	47'	6"	Steel	Sch. 40
Open Hole or Screen (No. Used)	70'	80'	2"	PVC	Sch. 40 .020
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	68'	80'		Morie #2	
Grout	0' 0	68' 45'		Neat Cement Bentonite	940 lbs. 60 lbs.

Grouting Method Tremie
Drilling Method Air Rotary

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC
Well Driller (Print) Todd Naugle
Driller's Signature Todd Naugle
Registration No. 518892 Date 7 / 27 / 00

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

SUMMIT DRILLING CO., INC.
ENVIRONMENTAL SPECIALISTS

Chimney Rock Road, Bldg. 9W
Bound Brook, NJ 08805
Telephone: (908) 722-4266
Toll Free: (800) 242-6648
FAX: (732) 356-1009
http://www.summitdrilling.com
email: info@summitdrilling.com

WELL LOG

WELL: MW19A DATE DRILLED: 07/08/1999 COORD #1: 26.31.124 PERMIT #1: 26-54348
COORD #2: PERMIT #2:
SITE: At&T Ocean Cable Reporter/Tyco, 100 Terminal Avenue, , Clark, NJ 07066 COUNTY: Union
OWNER: AT&T Ocean Cable Reporter, 100 Terminal Avenue, , Clark, NJ 07066 XSTREET: Central Ave
USE: Monitor

INNER CASING: PVC
DIAMETER: 2"
LENGTH: 72'

OUTER CASING: Steel
DIAMETER: 6"
LENGTH: 47'

SCREEN TYPE 1: PVC
SCREEN TYPE 2:
DIAMETER: 2"
LENGTH 1: 10'
LENGTH 2:
SLOT SIZE: .020

DRILLING METHOD: Air Rotary
SAMPLING METHOD:
HOLE DIA: 10", 6"
TOTAL DEPTH: 80'

SET WELL: 80'
GRAVEL PK SZ: Morie #2
DRILLER: Todd Naugle
SURFACE COMPLETION: S

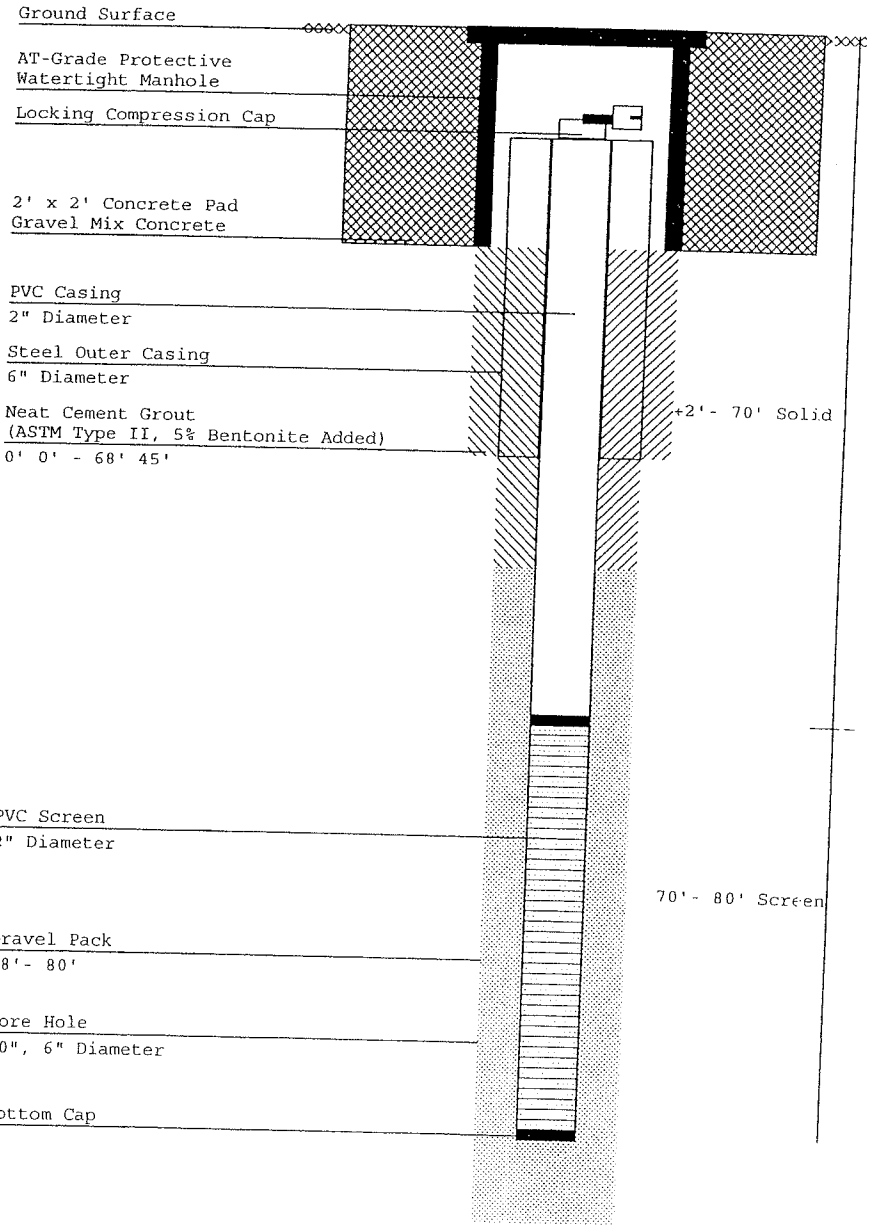
GAL PER MIN: 1/2
STAT H2O LVL: 75'
DEVELOPMENT METHOD: Pump
DEVELOPMENT TIME: 1/2 Hour

CASING SEAL: Portland
OPEN HOLE:

DEPTH BELOW SURFACE FROM - TO	BLOWS PER 6" ON SAMPLER
-	

REMARKS / SOILS IDENTIFICATION

0'- 10' Fill.
10'- 24' Multi-colored medium sand & gravel trace clay trace silt.
24'- 37' Red-brown till.
37'- 40' Weathered rock.
80' Hard rock, red shale.



MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-25039-0

Owners Well Number (As shown on application or plans): 2A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-04.39" Latitude: North 40°-37'-51.70"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,832.3802 East 542,668.7571

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.34'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

6-29-04
DATE

James V. DeMuro, P.E., L.S. #21866
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-20542-4

Owners Well Number (As shown on application or plans): 3

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-04.07" Latitude: North 40°-37'-51.50"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,812.0350 East 542,693.4190

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.67'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

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PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: 26-25040-3
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): 4

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-08.47" Latitude: North 40°-37'-50.00"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,659.4806 East 542,354.1024

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.91'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

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6-29-04
DATE

James V. DeMuro, P.E., L.S. #21866
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-250411-1

Owners Well Number (As shown on application or plans): 5

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-07.35" Latitude: North 40°-37'-49.55"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,614.7140 East 542,440.2688

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.14'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

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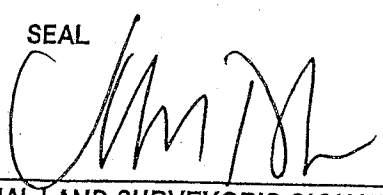
SEAL



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6-29-04
DATE

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PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: 26-25042-0
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): 5A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-07.29" Latitude: North 40°-37'-49.49"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,607.9388 East 542,445.5656

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.25'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

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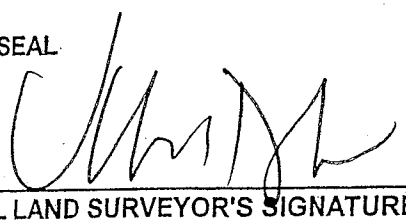

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(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-25043-8

Owners Well Number (As shown on application or plans): 6

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-06.83" Latitude: North 40°-37'-48.60"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,518.3675 East 542,480.6187

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.48'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

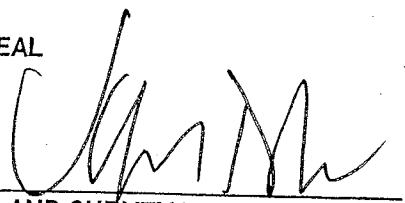
NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL



PROFESSIONAL LAND SURVEYOR'S SIGNATURE

6-29-04
DATE

James V. DeMuro, P.E., L.S. #21866
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-253267

Owners Well Number (As shown on application or plans): 7

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-05.52" Latitude: North 40°-37'-50.59"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,719.7347 East 542,581.3655

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.13'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: 26-29067-
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): 7A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-05.46" Latitude: North 40°-37'-50.52"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,712.6206 East 542,586.0613

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.28'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-29068-

Owners Well Number (As shown on application or plans): 8

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-06.80" Latitude: North 40°-37'-49.97"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,657.2628 East 542,483.0402

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 58.41'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-95-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-29069-

Owners Well Number (As shown on application or plans): 9A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-02.98" Latitude: North 40°-37'-52.23"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,885.7991 East 542,777.0921

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.07'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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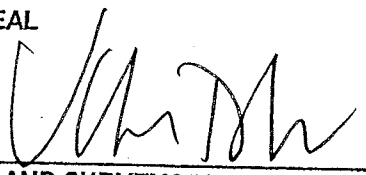

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-29070-

Owners Well Number (As shown on application or plans): 10A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-05.49" Latitude: North 40°-37'-51.54"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,816.0623 East 542,583.8877

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.93'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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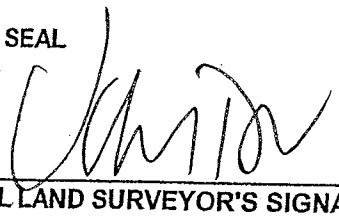

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-29071-

Owners Well Number (As shown on application or plans): 11A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-07.66" Latitude: North 40°-37'-49.19"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,577.8675 East 542,416.9972

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.27'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-290720-

Owners Well Number (As shown on application or plans): 12A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-05.21" Latitude: North 40°-37'-47.35"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,392.1334 East 542,606.2337

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.06'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-290073-

Owners Well Number (As shown on application or plans): 13A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-03.49" Latitude: North 40°-37'-47.04"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,360.5244 East 542,739.1182

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.46'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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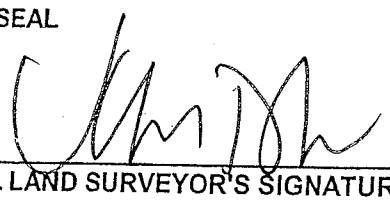

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-290781-

Owners Well Number (As shown on application or plans): 14A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-18'-59.96" Latitude: North 40°-37'-49.73"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,633.3182 East 543,010.2847

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.18'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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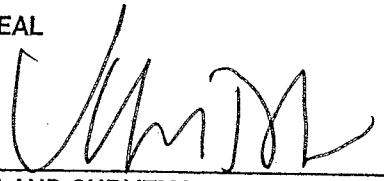

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-353781-

Owners Well Number (As shown on application or plans): 15A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-04.95" Latitude: North 40°-37'-45.84"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,239.4069 East 542,626.1430

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 54.60'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: 26-353795
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): 16A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-06.93" Latitude: North 40°-37'-44.26"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,078.9235 East 542,473.9702

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 54.25'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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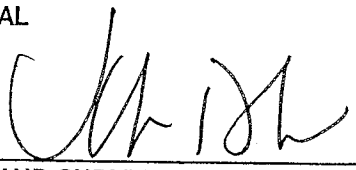

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 94-05-03-SP02 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: 26-353811-
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): 18A

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-12.53" Latitude: North 40°-37'-43.23

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 653,973.4798 East 542,042.5010

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 52.73'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-54348.

Owners Well Number (As shown on application or plans): 19

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-04.29" Latitude: North 40°-37'-51.44"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,806.3649 East 542,675.9253

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.17'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

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24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-57263-

Owners Well Number (As shown on application or plans): 19D

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-04.69" Latitude: North 40°-37'-51.17"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,778.8688 East 542,645.6780

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.76'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

6-29-04
DATE

James V. DeMuro, P.E., L.S. #21866
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-57262-

Owners Well Number (As shown on application or plans): 20D

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-02.46" Latitude: North 40°-37'-52.41"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,904.2598 East 542,817.2533

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 57.22'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

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MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-57261-

Owners Well Number (As shown on application or plans): 21D

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-03.57" Latitude: North 40°-37'-46.97"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,353.5253 East 542,732.8614

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.50'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

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PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-572260-

Owners Well Number (As shown on application or plans): 21S

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-03.45" Latitude: North 40°-37'-46.96"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 654,352.4515 East 542,741.8635

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 55.42'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

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6-29-04
DATE

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PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: AT&T

Name of Facility: Former AT&T - Clark

Location: Clark Township, Union County

Case Number(s): 97187 (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) 26-572591-

Owners Well Number (As shown on application or plans): 22D

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74°-19'-03.17" Latitude: North 40°-37'-54.84"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 655,150.6470 East 542,761.8072

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 59.81'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

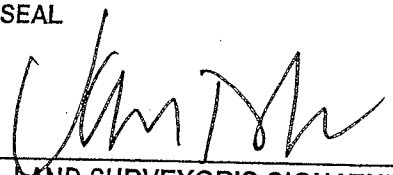
NJVD Monument #6730 Elevation 93.49 (1988)

Significant observations and notes:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL



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James V. DeMuro, P.E., L.S. #21866
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(Please print or type)

24 W. Cliff Street, Somerville, NJ 08876 PH# 908-725-1990
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

WELL CONSTRUCTION LOG

GeoTrans, Inc.

	PROJECT NO.: 4185.002.04	WELL ID: MW-19D
	PROJECT NAME: AT&T Clark	LOCATION SKETCH

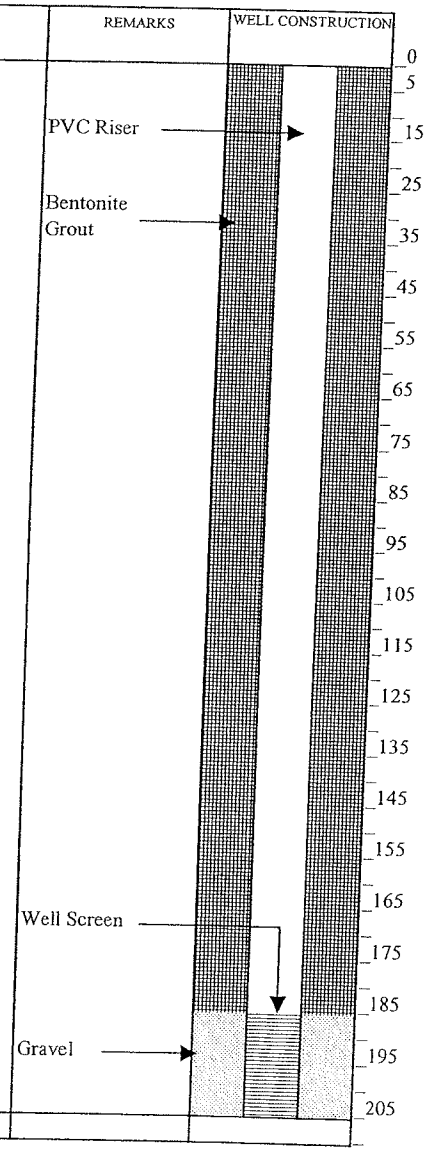
COMPLETION DATE:	TOTAL DEPTH OF BOREHOLE:	MONITORING DEVICE:	GEOLOGIST:
5/19/2000	206 ft.	PID	Martha Mackie

DRILLING CONTRACTOR / DRILLER:	DRILLING EQUIPMENT:	DRILLING METHOD / BIT:
Summit	Gus Pech.	Air Rotary

SAMPLING METHOD:	DEPTH TO GROUNDWATER	TOC ELEVATION[1]:	PERMIT NO.
	15.44 ft.	58.01 ft. AMSL	26-57263

MEMO: Well construction log was assembled from historic records supplied by Summit Drilling Company. The original driller's logs were not available.

DEPTH (feet)	RECOVERY (feet)	BLOW COUNTS	PID (ppm)	SOIL DESCRIPTION Color, Texture, Moisture, Etc.	REMARKS	WELL CONSTRUCTION
5			0.2	Asphalt & stone		
				Red-brown medium SAND and gravel with a trace of silt.		
15					PVC Riser	
25						
35				Bedrock, red SHALE.	Bentonite Grout	
			1.2	Wet.		
45						
55			4.0			
65						
75						
85						
95						
105						
115						
125						
135						
145						
155						
165						
175					Well Screen	
185						
195					Gravel	
205						
				End of boring 208 ft. b.g.s.		



[1]TOC - Top of Outer Casing (all bedrock wells are flush mounts).

WELL CONSTRUCTION LOG

GeoTrans, Inc.

	PROJECT NO.: 4185.002.04	WELL ID: MW-20D
	PROJECT NAME: AT&T Clark	LOCATION SKETCH

COMPLETION DATE:	TOTAL DEPTH OF BOREHOLE:	MONITORING DEVICE:	GEOLOGIST:
5/23/2000	198 ft.	PID	Martha Mackie

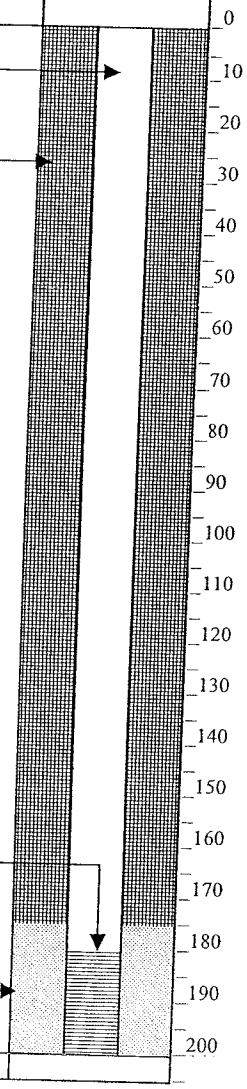
DRILLING CONTRACTOR / DRILLER:	DRILLING EQUIPMENT:	DRILLING METHOD / BIT:
Summit	Gus Pech.	Air Rotary

SAMPLING METHOD:	DEPTH TO GROUNDWATER	TOC ELEVATION[1]:	PERMIT NO.
	13.51 ft.	57.47 ft. AMSL	26-57262

MEMO: Well construction log was assembled from historic records supplied by Summit Drilling Company. The original driller's logs were not available.

DEPTH (feet)	RECOVERY (feet)	BLOW COUNTS	PID (ppm)	SOIL DESCRIPTION Color, Texture, Moisture, Etc.	REMARKS
10				Asphalt & stone. Red, brown medium SAND and gravel with traces of silt and cobbles.	PVC Riser
20					
30				Bedrock, red SHALE.	Bentonite Grout
40					
50					
60				Red SHALE.	
70					
80					
90					
100					
110					
120					
130					
140					
150					
160					
170					Well Screen
180					
190					Moire #1 Gravel
200					
				End of boring 198 ft. b.g.s.	

WELL CONSTRUCTION

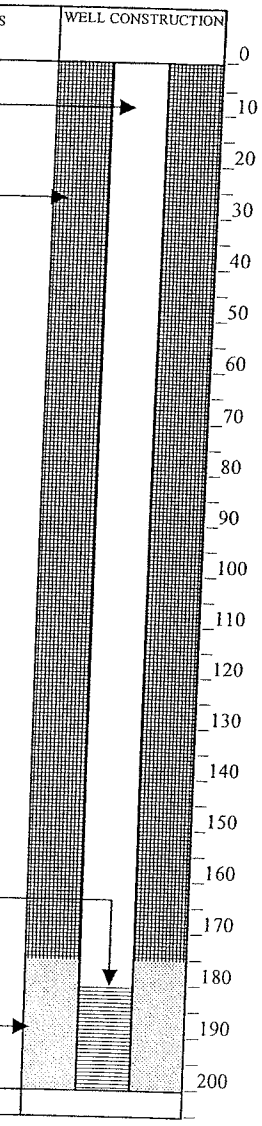


WELL CONSTRUCTION LOG

GeoTrans, Inc.

	PROJECT NO.: 4185.002.04		WELL ID: MW-21D
	PROJECT NAME: AT&T Clark		LOCATION SKETCH
COMPLETION DATE: 5/25/2000	TOTAL DEPTH OF BOREHOLE: 198 ft.	MONITORING DEVICE: PID	GEOLOGIST: Martha Mackie
DRILLING CONTRACTOR / DRILLER: Summit	DRILLING EQUIPMENT: Gus Pech.	DRILLING METHOD / BIT: Air Rotary	
SAMPLING METHOD:	DEPTH TO GROUNDWATER: 11.14 ft.	TOC ELEVATION: 55.75 ft. AMSL	PERMIT NO. 26-57261
MEMO: Well construction log was assembled from historic records supplied by Summit Drilling Company. The original driller's logs were not available.			

DEPTH (feet)	RECOVERY (feet)	BLOW COUNTS	PID (ppm)	SOIL DESCRIPTION Color, Texture, Moisture, Etc.	REMARKS
10				Asphalt & stone.	
				Red, brown medium SAND and gravel with traces of silt and cobbles.	PVC Riser
20					
30				Bedrock, red SHALE.	Bentonite Grout
40					
50					
60				Red SHALE.	
70					
80			0.2		
90					
100					
110					
120					
130					
140					
150					
160					
170					Well Screen
180					
190					Moire #1 Gravel
200					
				End of boring 198 ft. b.g.s.	

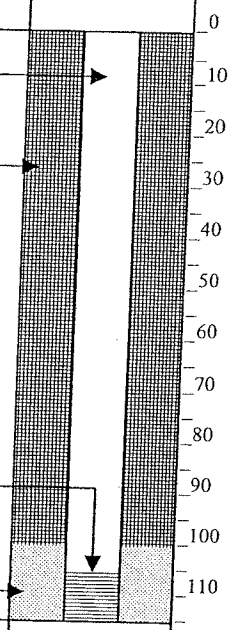


WELL CONSTRUCTION LOG

GeoTrans, Inc.

	PROJECT NO.: 4185.002.04		WELL ID: MW-21S
	PROJECT NAME: AT&T Clark		LOCATION SKETCH
COMPLETION DATE: 5/26/2000	TOTAL DEPTH OF BOREHOLE: 114 ft.	MONITORING DEVICE: PID	GEOLOGIST: Martha Mackie
DRILLING CONTRACTOR / DRILLER: Summit	DRILLING EQUIPMENT: Gus Pech.	DRILLING METHOD / BIT: Air Rotary	
SAMPLING METHOD:	DEPTH TO GROUNDWATER 14.26 ft.	TOC ELEVATION: 55.75 ft. AMSL	PERMIT NO. 26-57260
MEMO: Well construction log was assembled from historic records supplied by Summit Drilling Company. The original driller's logs were not available.			

DEPTH (feet)	RECOVERY (feet)	BLOW COUNTS	PID (ppm)	SOIL DESCRIPTION Color, Texture, Moisture, Etc.	REMARKS	WELL CONSTRUCTION
10				Asphalt & stone. Red, brown medium SAND and gravel with traces of silt and cobbles.	PVC Riser	
30				Bedrock, red SHALE.	Bentonite Grout	
90				Red SHALE.	Well Screen	
110					Moire #1 Gravel	
120				End of boring 114 ft. b.g.s.		

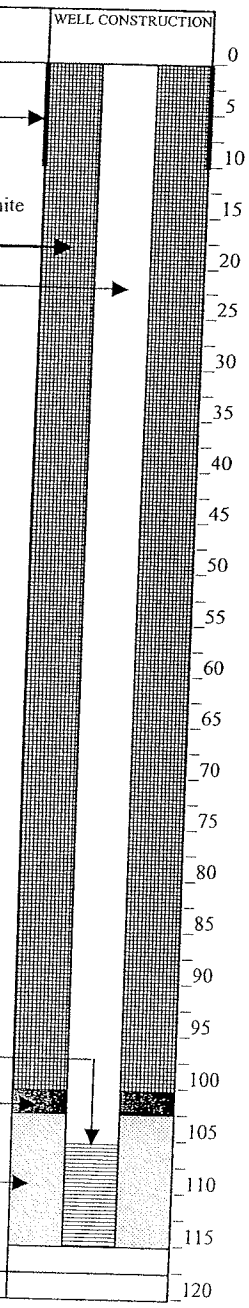


WELL CONSTRUCTION LOG

GeoTrans, Inc.

PROJECT NO.: 4185.002.04		WELL ID: MW-22D
PROJECT NAME: AT&T Clark		LOCATION SKETCH
COMPLETION DATE: 7/14/2002	TOTAL DEPTH OF BOREHOLE: 165 ft.	MONITORING DEVICE: PID / GEOLOGIST: Chris Fredrickson
DRILLING CONTRACTOR / DRILLER: Summit	DRILLING EQUIPMENT: Gus Pech.	DRILLING METHOD / BIT: Air Rotary
SAMPLING METHOD:	DEPTH TO GROUNDWATER: 14.83 ft. AMSL	TOC ELEVATION: 60.11 feet AMSL / PERMIT NO.: 26-57259
MEMO: Well construction log was assembled from historic records supplied by Summit Drilling Company. The original driller's logs were not available.		

DEPTH (feet)	RECOVERY (feet)	BLOW COUNTS	PID (ppm)	SOIL DESCRIPTION Color, Texture, Moisture, Etc.	REMARKS
5				Yellow, brown SILT, some fine-grained sand, little gravel. Moist.	
10				Red/brown fine-grained SAND, some silt, trace gravel, slightly moist.	10" steel casing.
15				Dark red/brown fine-grained SAND, some silt, trace find-grained gravel. Moist.	
20					Cement/ Bentonite Grout
25				Red/brown SILT, some fine-medium grained gravel, little fine sand, moist.	PVC Riser
30				Red/brown SILT, little, red, shale fragments, moist.	
35				Bedrock. Wet.	
40					
45					
50				Red/brown shale fragments.	
55					
60					
65					
70					
75					
160					
170					
180					
190					
200					Well Screen
210					Bentonite Chips
220					#1 Moire Sand
230					
240				End of boring 116.5 ft. b.g.s.	



SOIL BORING LOG

GeoTrans, Inc.

PROJECT NO.: 4185.002.02			Boring No: GW-9 Location
PROJECT NAME: AT&T Clark			LOCATION SKETCH
COMPLETION DATE: 5/5/2004	TOTAL DEPTH OF BOREHOLE: 4 Feet	MONITORING DEVICE: PID MiniRae 2000	GEOLOGIST / OFFICE: S. Feldmann / Annandale
DRILLING CONTRACTOR / DRILLER: S2C2 / Matthew Ruf	DRILLING EQUIPMENT: Geoprobe	DRILLING METHOD / BIT:	
SAMPLING METHOD: Direct Push MacroCore	DEPTH TO GROUNDWATER: NA	GROUND SURFACE ELEVATION: NA	WELL INSTALLED? No
MEMO:			

DEPTH (Feet)	RECOVERY (feet)	BLOW COUNTS	OVM (PPM)	BURMEISTER SYSTEM SOIL DESCRIPTION	FIELD NOTES & SAMPLE SUMMARY
0			0.0	0 - 0.5 ft Concrete	
1	2.5 / 4		0.0	0.5 - 1 ft Concrete and gravel bedding, dry	
			0.0	1 - 1.3 ft Brown-yellowbrown fine-medium SAND, some-little silt, loose, dry	
2			0.0	1.3 - 1.7 ft Brown SILT and SAND, trace fine gravel, medium dense, dry	Analytical soil sample not collected based on PID screening
3			0.0	1.7 - 2.5 ft Brown - browngrey SILT, little-some fine sand, trace clay, trace fine-medium gravel, increasing silt with depth, moist	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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16					
17					
18					
19					
20					
21					
22					
23					
24					

SOIL BORING LOG

GeoTrans, Inc.

PROJECT NO.: 4185.002.02		Boring No: GW-10 Location
PROJECT NAME: AT&T Clark		LOCATION SKETCH
COMPLETION DATE: 5/5/2004	TOTAL DEPTH OF BOREHOLE: 4 Feet	MONITORING DEVICE: PID MiniRae 2000
GEOLOGIST / OFFICE: S. Feldmann / Annandale		
DRILLING CONTRACTOR / DRILLER: S2C2 / Matthew Ruf	DRILLING EQUIPMENT: Geoprobe	DRILLING METHOD / BIT:
SAMPLING METHOD: Direct Push MacroCore	DEPTH TO GROUNDWATER: NA	GROUND SURFACE ELEVATION: NA
WELL INSTALLED? No		
MEMO:		

DEPTH (Feet)	RECOVERY (feet)	BLOW COUNTS	OVM (PPM)	BURMEISTER SYSTEM SOIL DESCRIPTION	FIELD NOTES & SAMPLE SUMMARY
0				0 - 0.75 ft Concrete (not recovered)	
1	2.5 / 4			0.75 - 2 ft Brown-grey fine-coarse SAND, little-trace fine-medium gravel, trace silt, loose, dry, no odor	
2			220	2 - 2.4 ft Brown SILT, some fine-med SAND, trace clay, trace fine-med gravel	Collected soil sample SOIL-1 from 1.5 - 2 ft for laboratory analysis
			158	2.4 -2.7 ft Brown SILT and CLAY, medium dense	
3			80	2.7 -2.9 ft Brown fine-medium SAND, some silt, dry	
4			73	3 - 4 ft Brown-darkbrown fine-medium SAND, some silt, trace fine gravel, loose, dry	
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
22					
23					
24					

SOIL BORING LOG

GeoTrans, Inc.

PROJECT NO.: 4185.002.02			Boring No: GW-11 location
PROJECT NAME: AT&T Clark			LOCATION SKETCH
COMPLETION DATE: 5/5/2004	TOTAL DEPTH OF BOREHOLE: 4 Feet	MONITORING DEVICE: PID MiniRae 2000	GEOLOGIST / OFFICE: S. Feldmann / Annandale
DRILLING CONTRACTOR / DRILLER: S2C2 / Matthew Ruf	DRILLING EQUIPMENT: Geoprobe	DRILLING METHOD / BIT:	
SAMPLING METHOD: Direct Push MacroCore	DEPTH TO GROUNDWATER: NA	GROUND SURFACE ELEVATION: NA	WELL INSTALLED? No
MEMO:			

DEPTH (Feet)	RECOVERY (feet)	BLOW COUNTS	OVM (PPM)	BURMEISTER SYSTEM SOIL DESCRIPTION	FIELD NOTES & SAMPLE SUMMARY
0				0 - 0.5 ft Concrete floor and fine gravel, loose	
1	3.5 / 4		102	0 - 1.5 ft Brown-yellowbrn fine-med SAND, little silt, tr. fine gravel, loose, dry	
			150		
2			57	1.5 - 2.5 ft Redbrown-brown SILT, some-and fine sand, trace fine gravel, loose, dry	Collected soil sample SOIL-2 from 1 - 1.5 ft for laboratory analysis
			14		
3			24	2.5 - 3.3 ft Yellowbrown SILT, trace very fine sand, loose, dry	
			18	3.3 - 4 ft Brown-redbrown SILT and very fine-fine SAND, trace-little fine-medium gravel, loose, dry	
4			14		
5					
6					
7					
8					
9					
10					
11					
12					
13					
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19					
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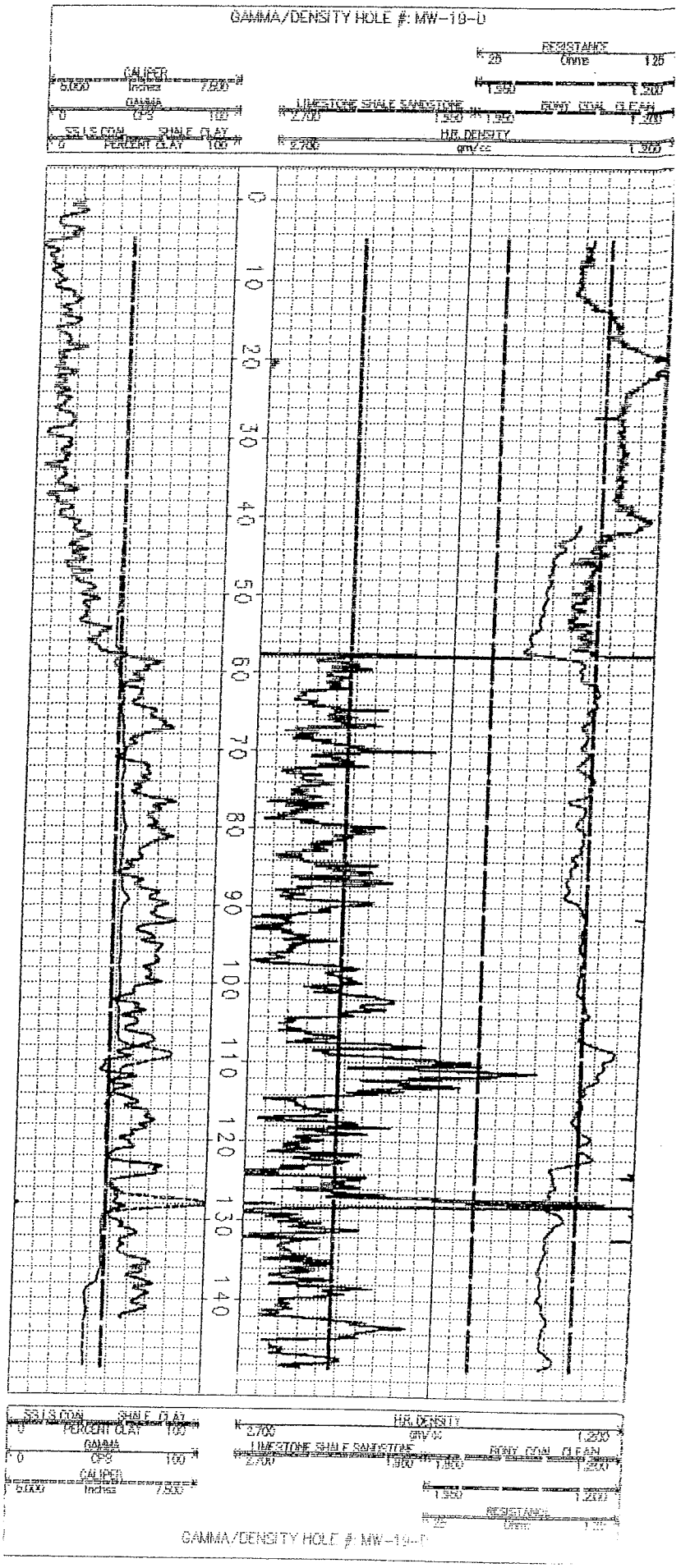
22					
23					
24					

Appendix B

Borehole Geophysical and Video Log Notes

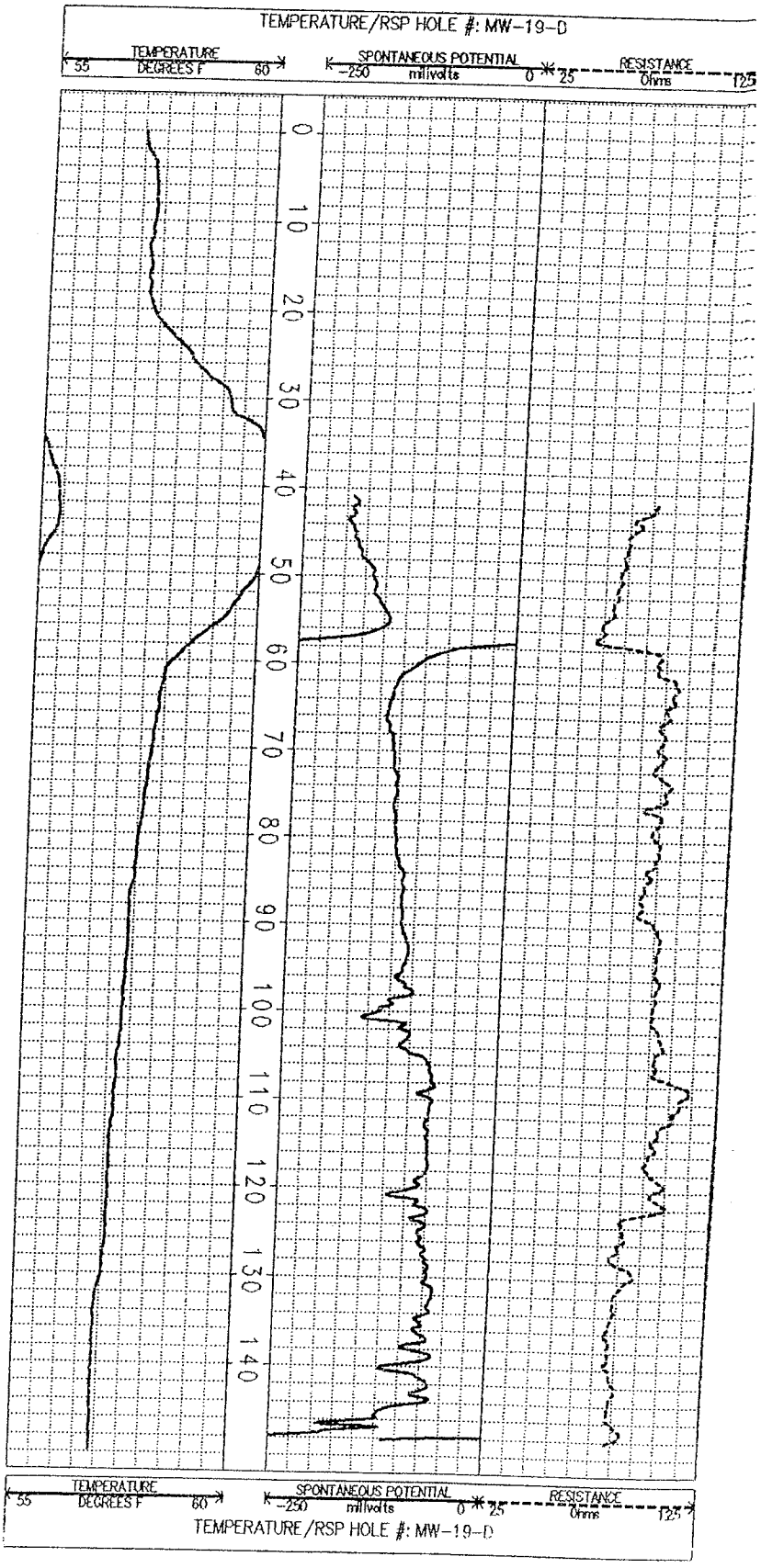
APPALACHIAN GEOPHYSICAL SURVEYS

LITHOLOGY SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-19-D



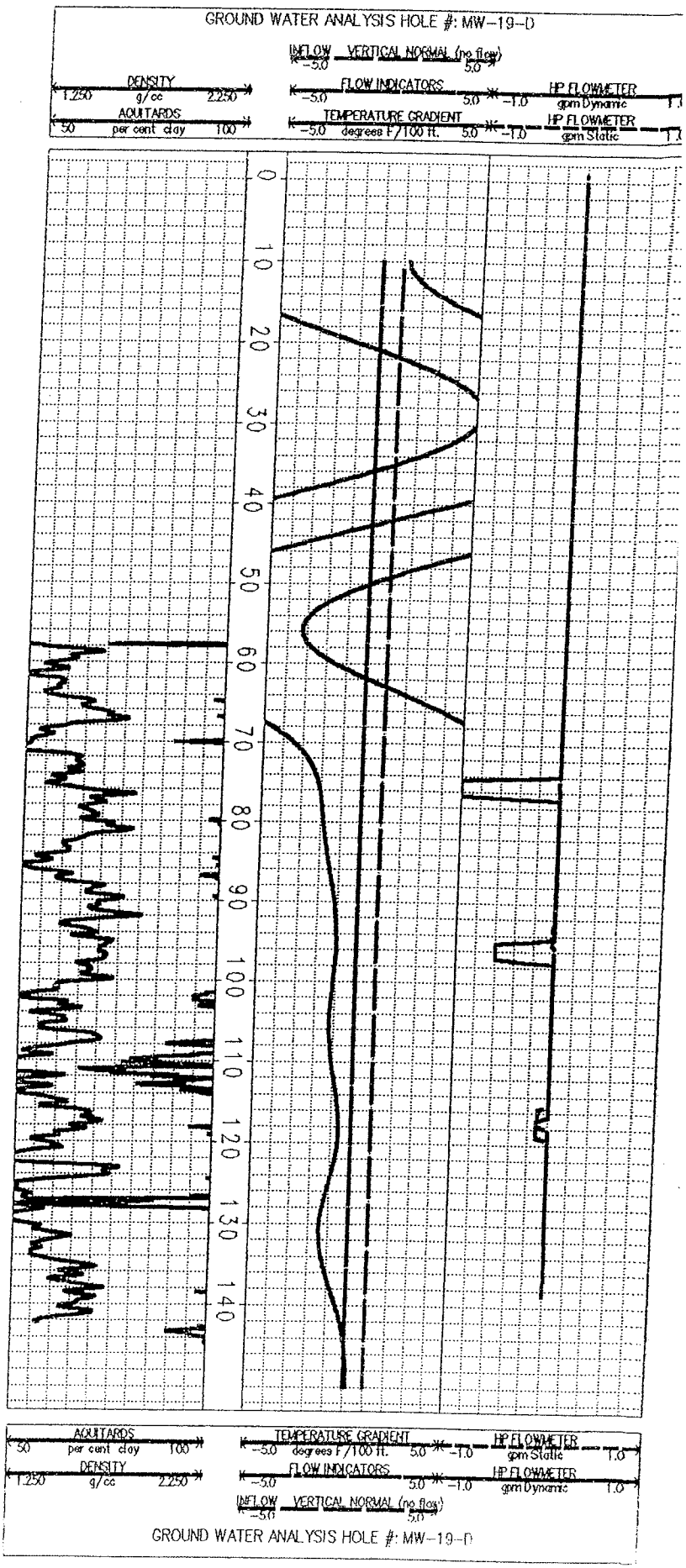
APPALACHIAN GEOPHYSICAL SURVEYS

GROUNDWATER SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-19-D



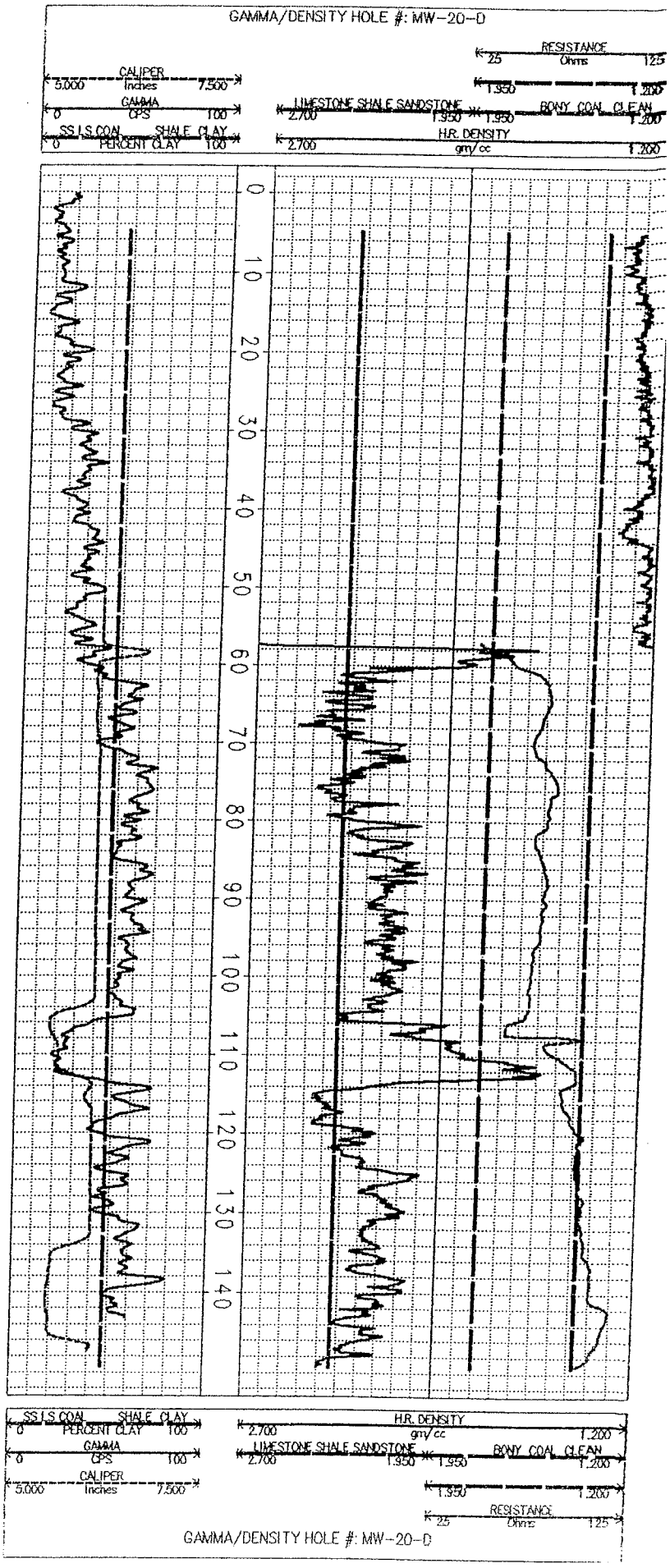
APPALACHIAN GEOPHYSICAL SURVEYS

GROUNDWATER ANALYSIS
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-19-D



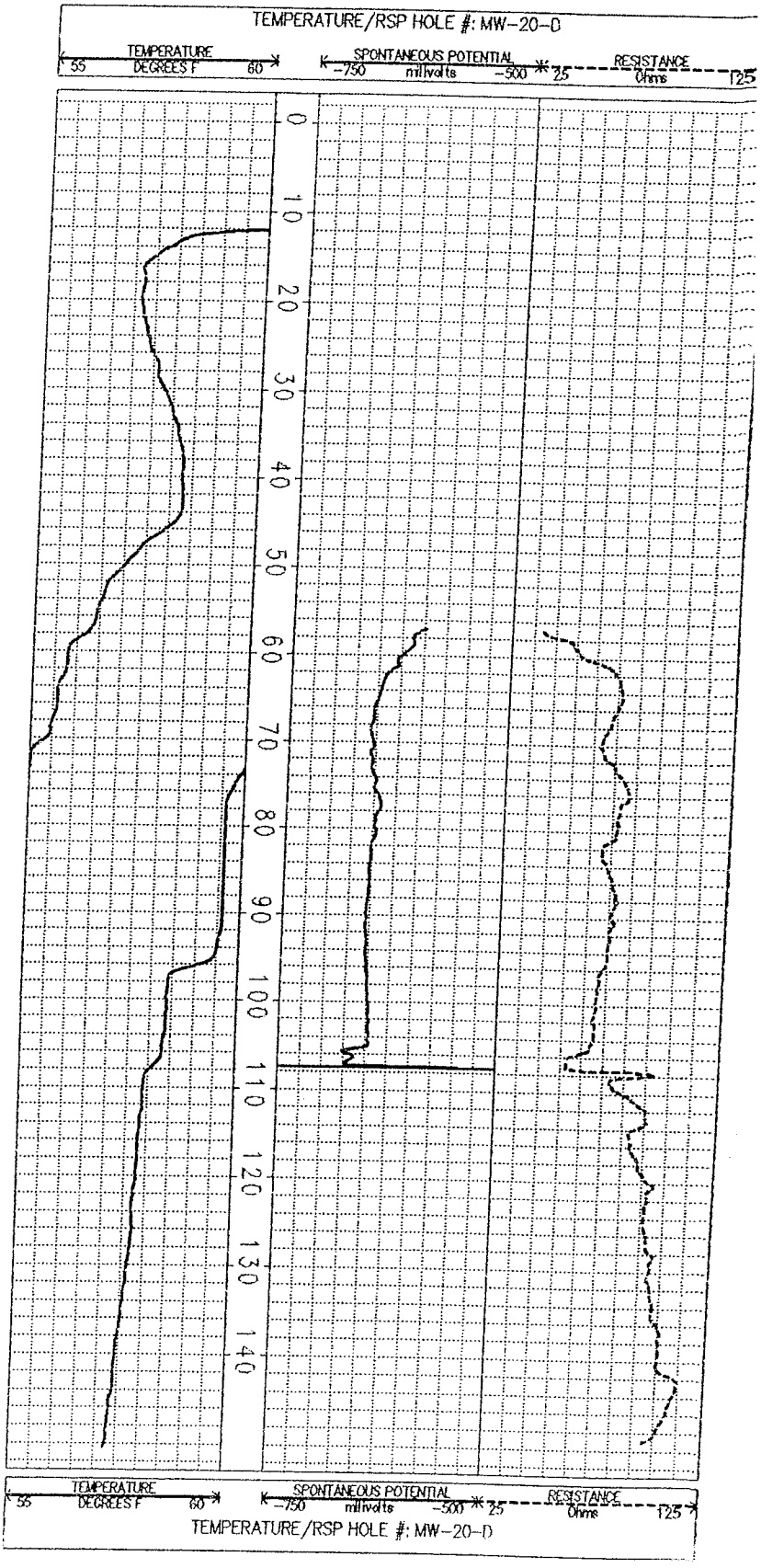
APPALACHIAN GEOPHYSICAL SURVEYS

LITHOLOGY SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-20D



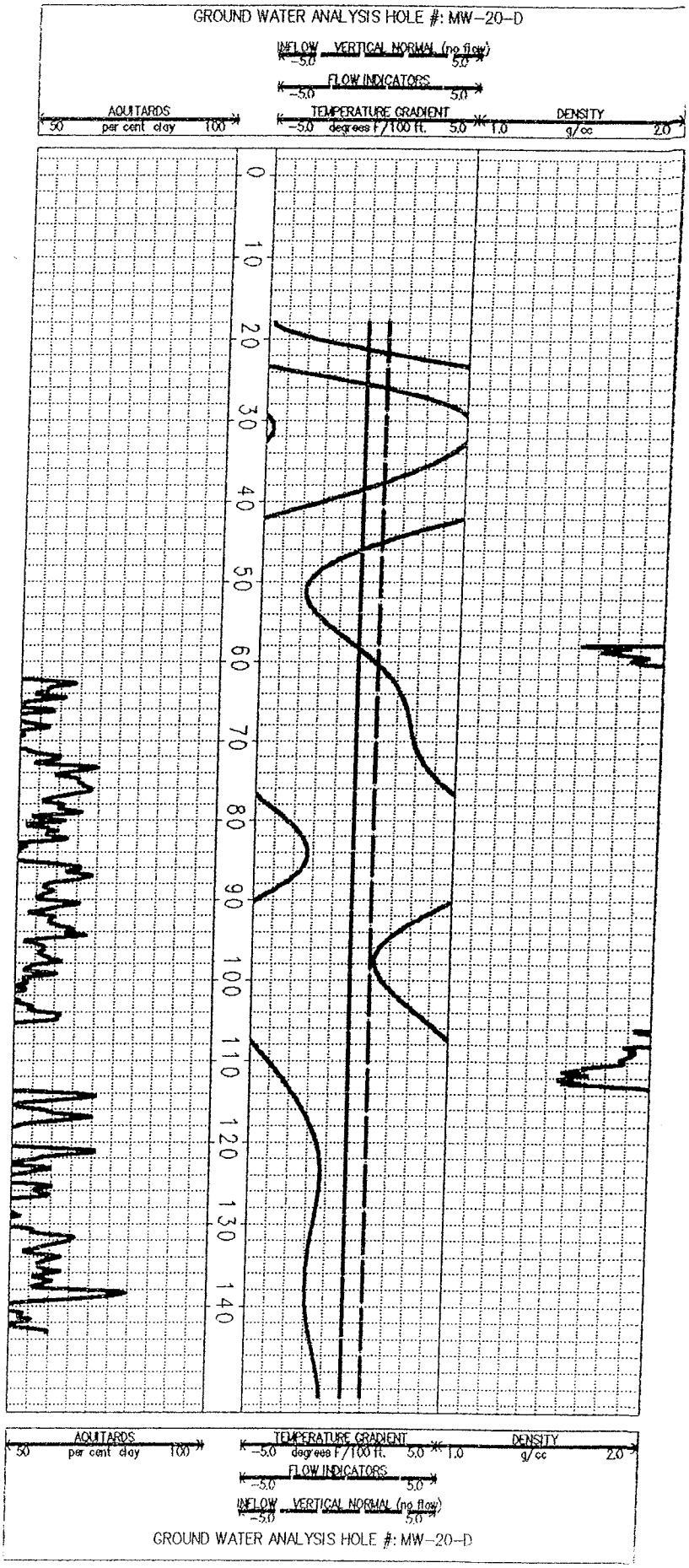
APPALACHIAN GEOPHYSICAL SURVEYS

GROUNDWATER SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-20D



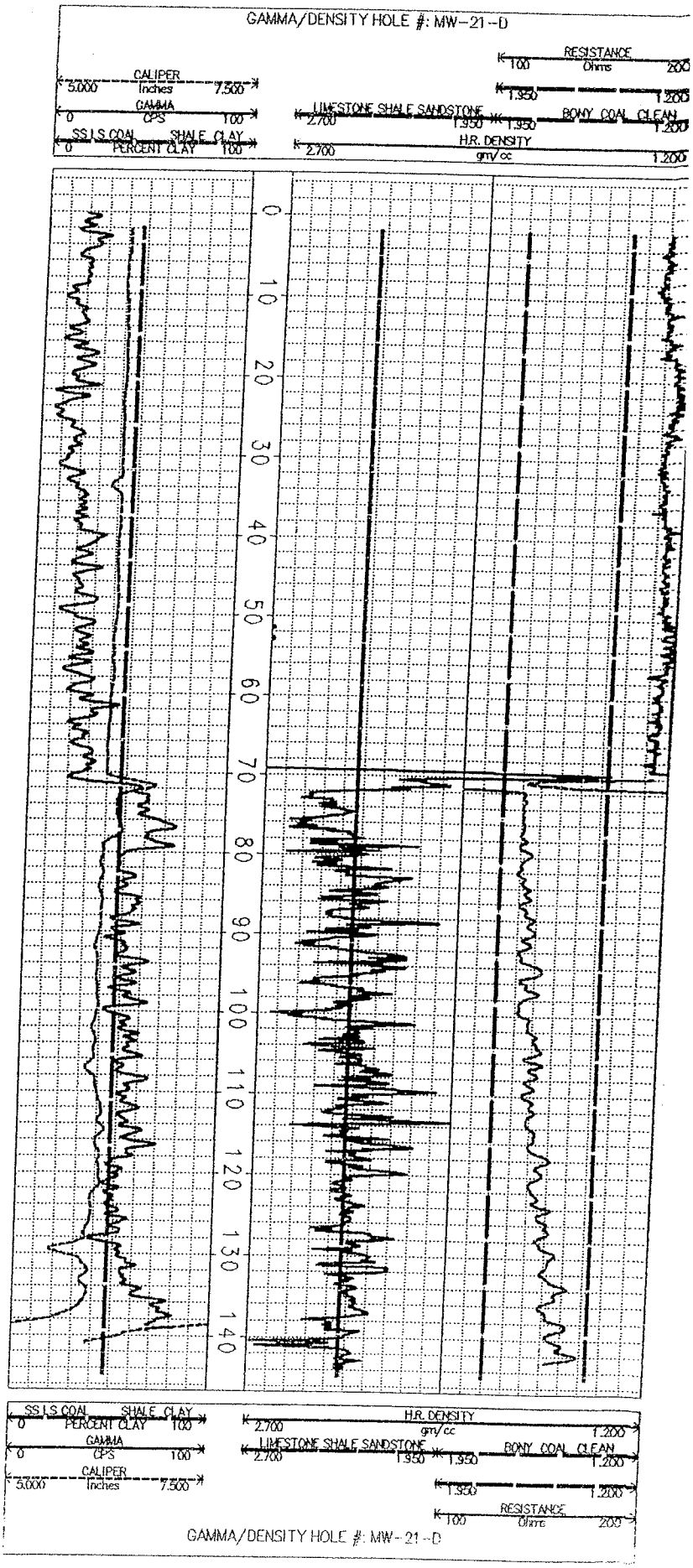
APPALACHIAN GEOPHYSICAL SURVEYS

GROUNDWATER ANALYSIS
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-20D



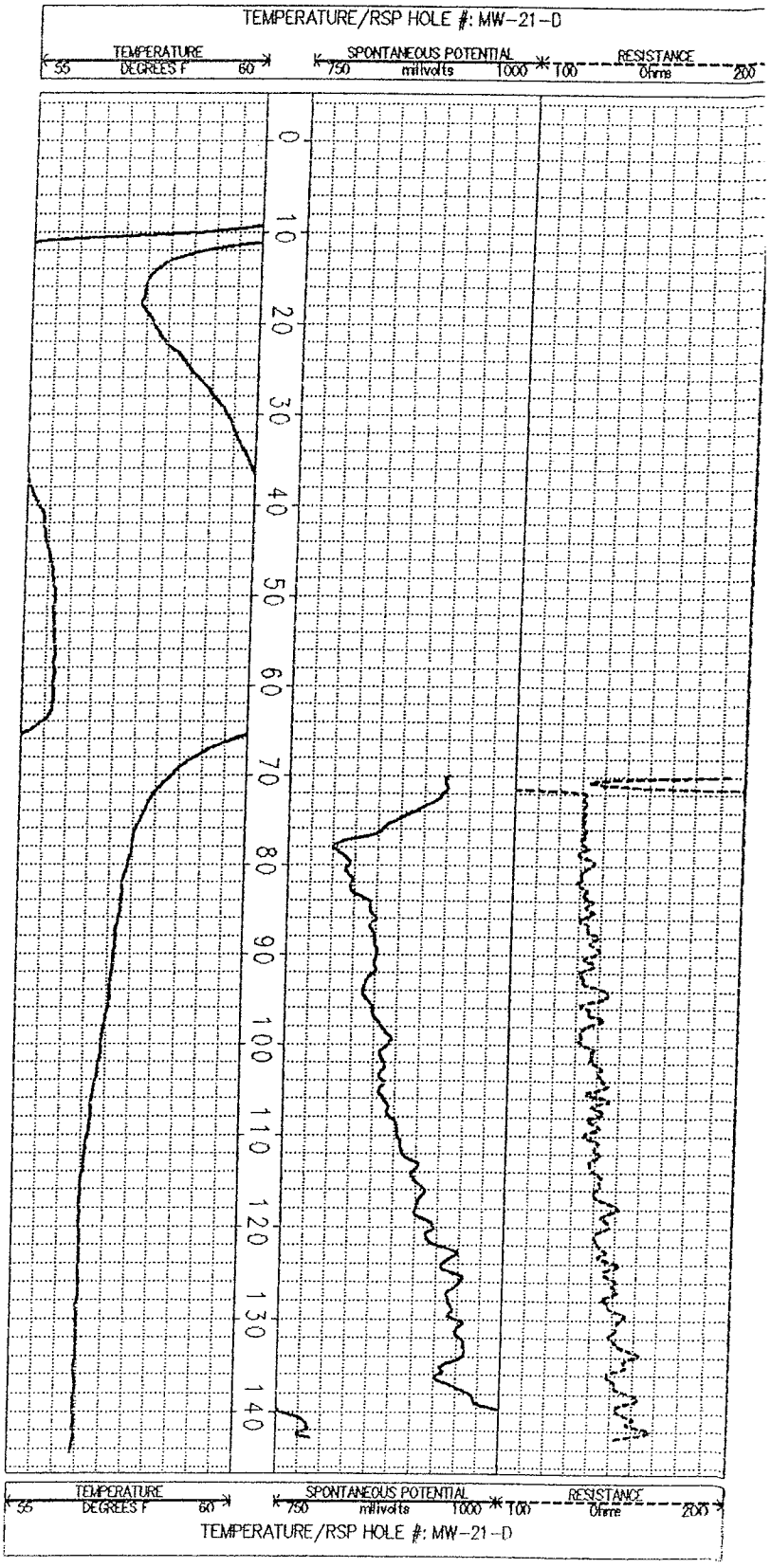
APPALACHIAN GEOPHYSICAL SURVEYS

LITHOLOGY SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-21-D



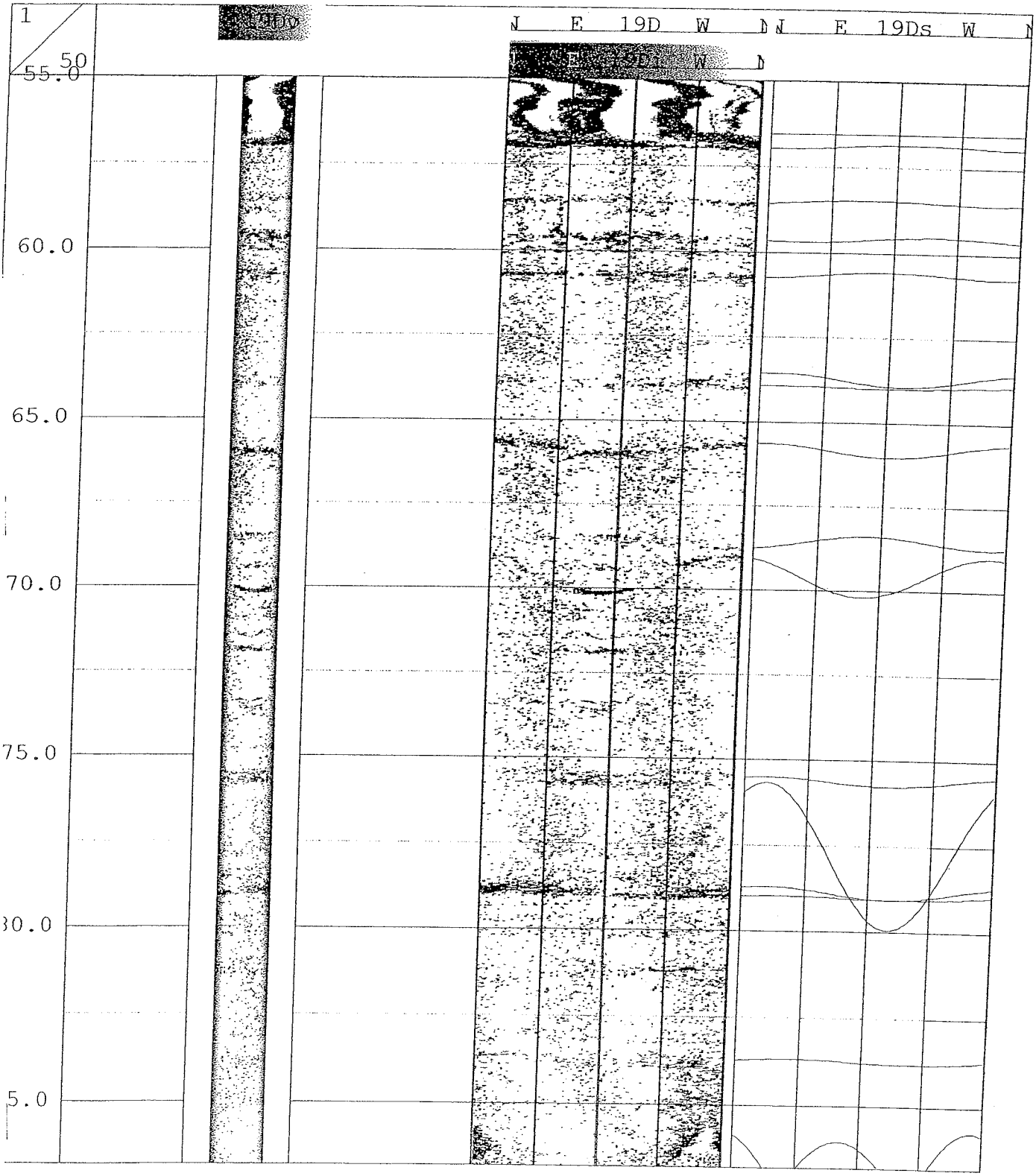
APPALACHIAN GEOPHYSICAL SURVEYS

GROUNDWATER SUITE
CLIENT: McLAREN/HART
SITE: TYCO SUBMARINE
HOLE #: MW-21-D



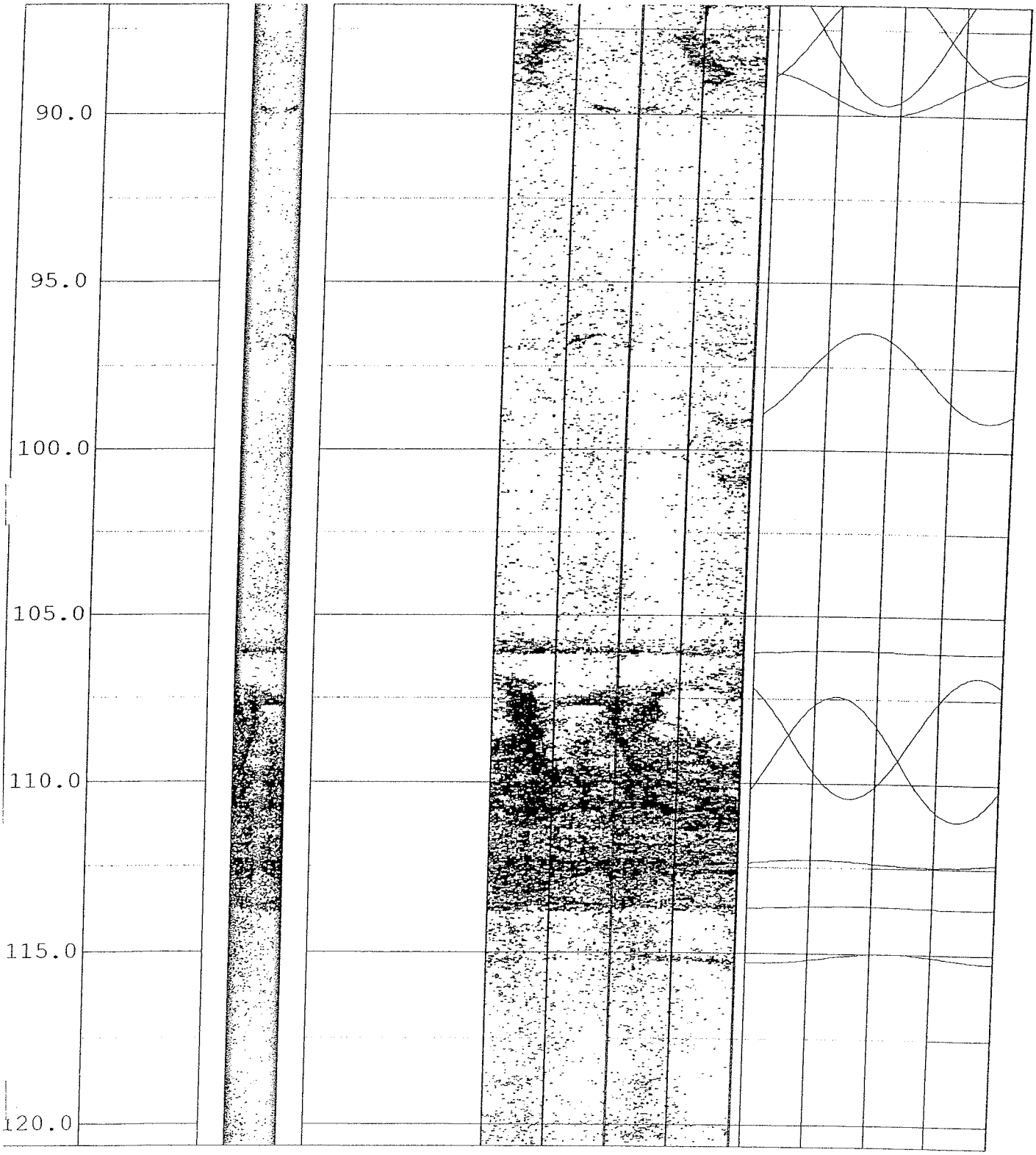
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-19D



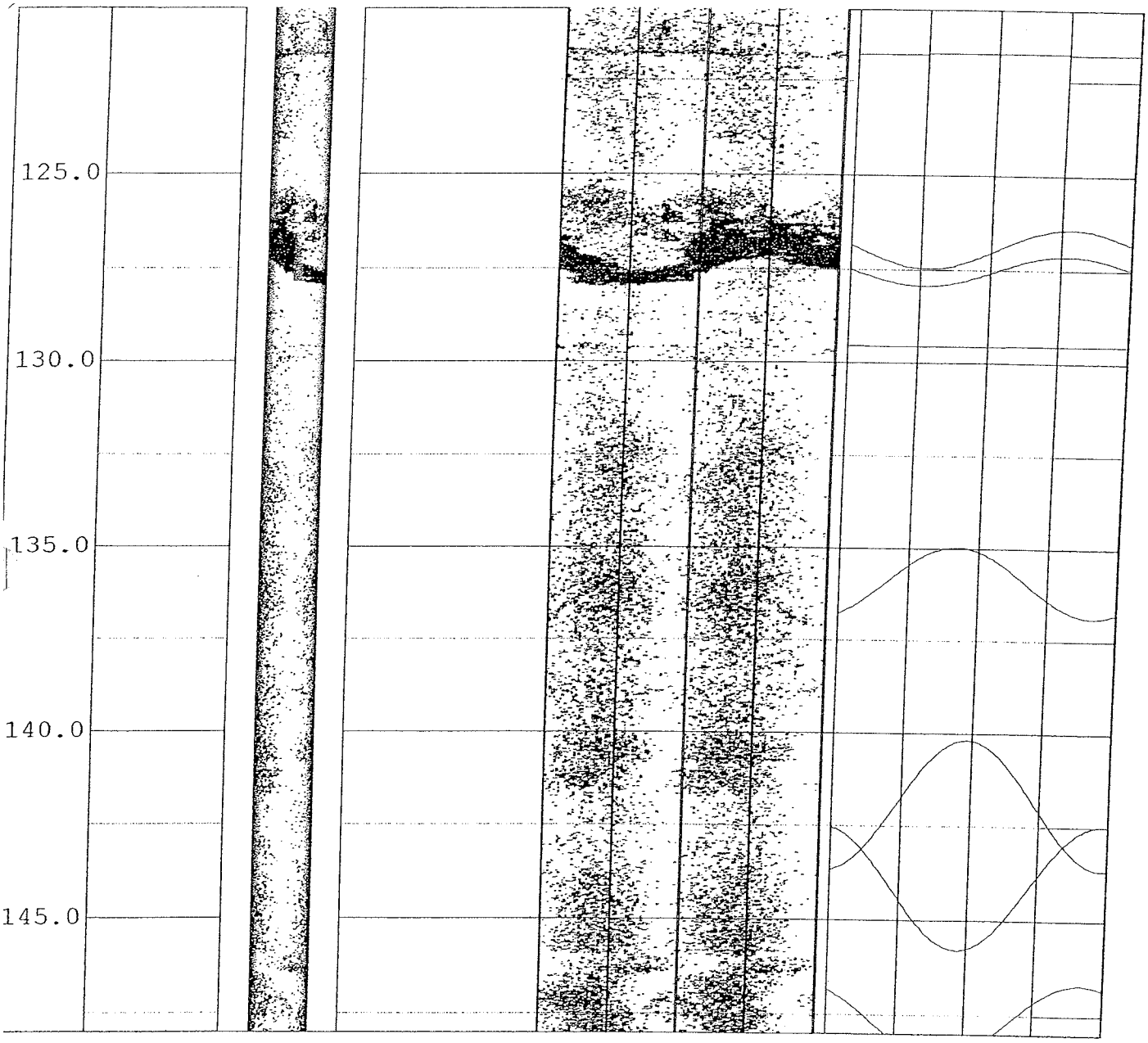
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-19D



APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-19D



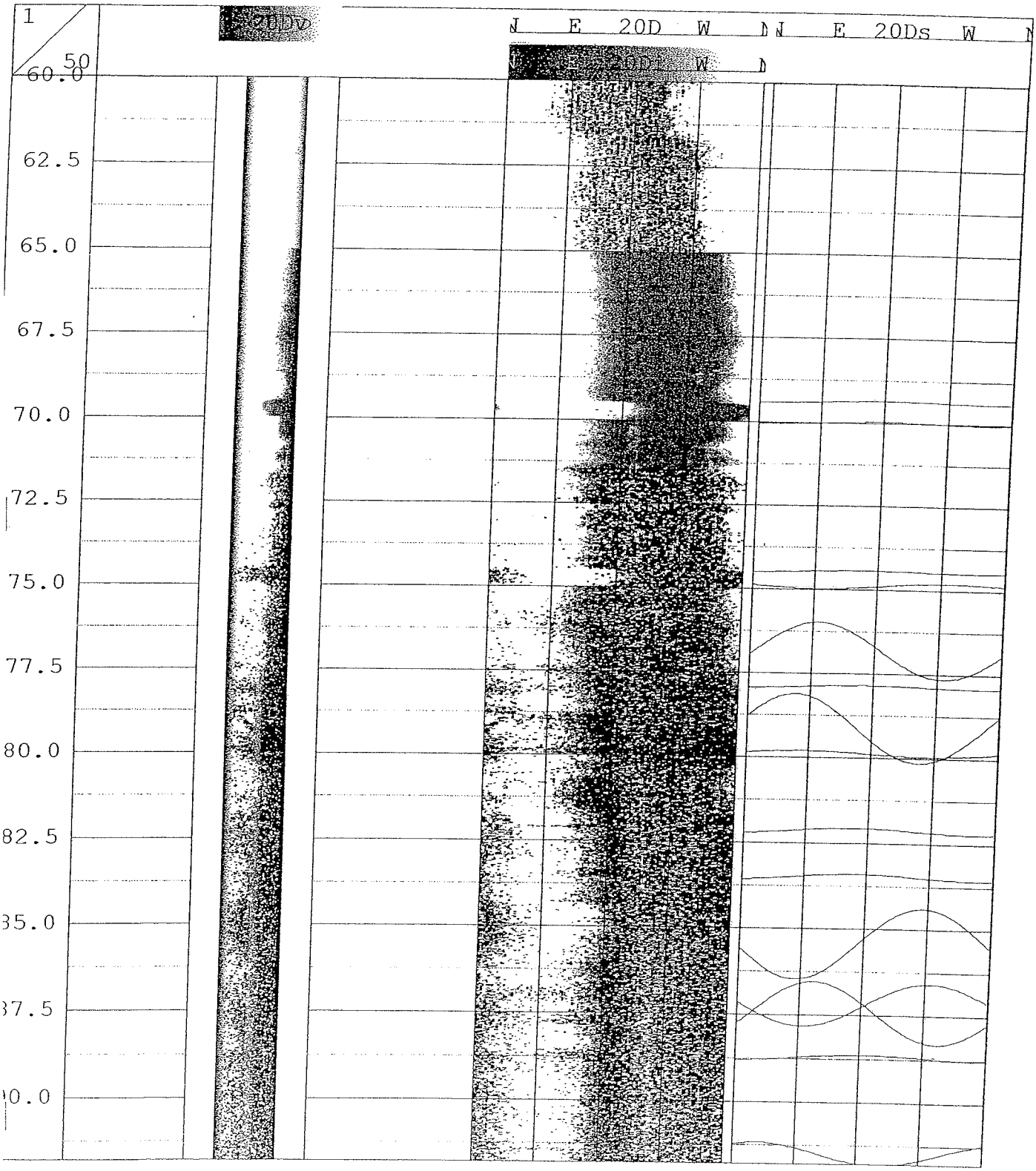
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-19D

DEPTH	AZIMUTH	DIP	PRELIMINARY REMARKS
56.55	0	0	BOTTOM OF CASING
56.89	19.6	12.66	OVER DRILL
58.52	318.56	11.92	BEDDING
59.61	56.96	17.12	BEDDING
60.65	348.98	18.08	BEDDING
63.74	202.17	36.71	JOINT
63.95	189.39	6.43	BEDDING
65.84	189.99	37.77	JOINT
68.57	339.89	35.98	HEALED JOINT
69.6	156.62	66.87	JOINT
75.64	207.03	27.09	BEDDING
77.8	210.86	83.31	HEALED JOINT
78.88	213.49	36.3	CROSS BEDDING ?
79.02	226.52	9.94	BEDDING
83.74	251.84	14.59	BEDDING
87.54	330.39	80.64	JOINT
87.73	162.18	82.77	JOINT
89.37	165.7	68.27	JOINT
97.79	325.72	79.38	HEALED JOINT
106.06	310.25	7.29	BEDDING
108.63	144.61	82.14	JOINT POSSIBLE BCF
109.25	301.07	82.27	JOINT - POSSIBLE BCF
112.34	270.3	18.41	BEDDING
113.65	331.59	6.28	BEDDING
115.13	21.38	28.98	(CROSS) BEDDING ?
121.78	0	0	BEDDING
126.95	100.88	64.43	TOP PARTIAL VOID
127.54	97.08	57.94	BOTTOM PARTIAL VOID
129.54	112.62	0	BEDDING
135.93	331.09	75.4	HEALED JOINT
141.93	353.37	81.78	HEALED JOINT
144.14	168.95	81.35	HEALED JOINT
147.66	149.03	75.42	PARTIAL JOINT

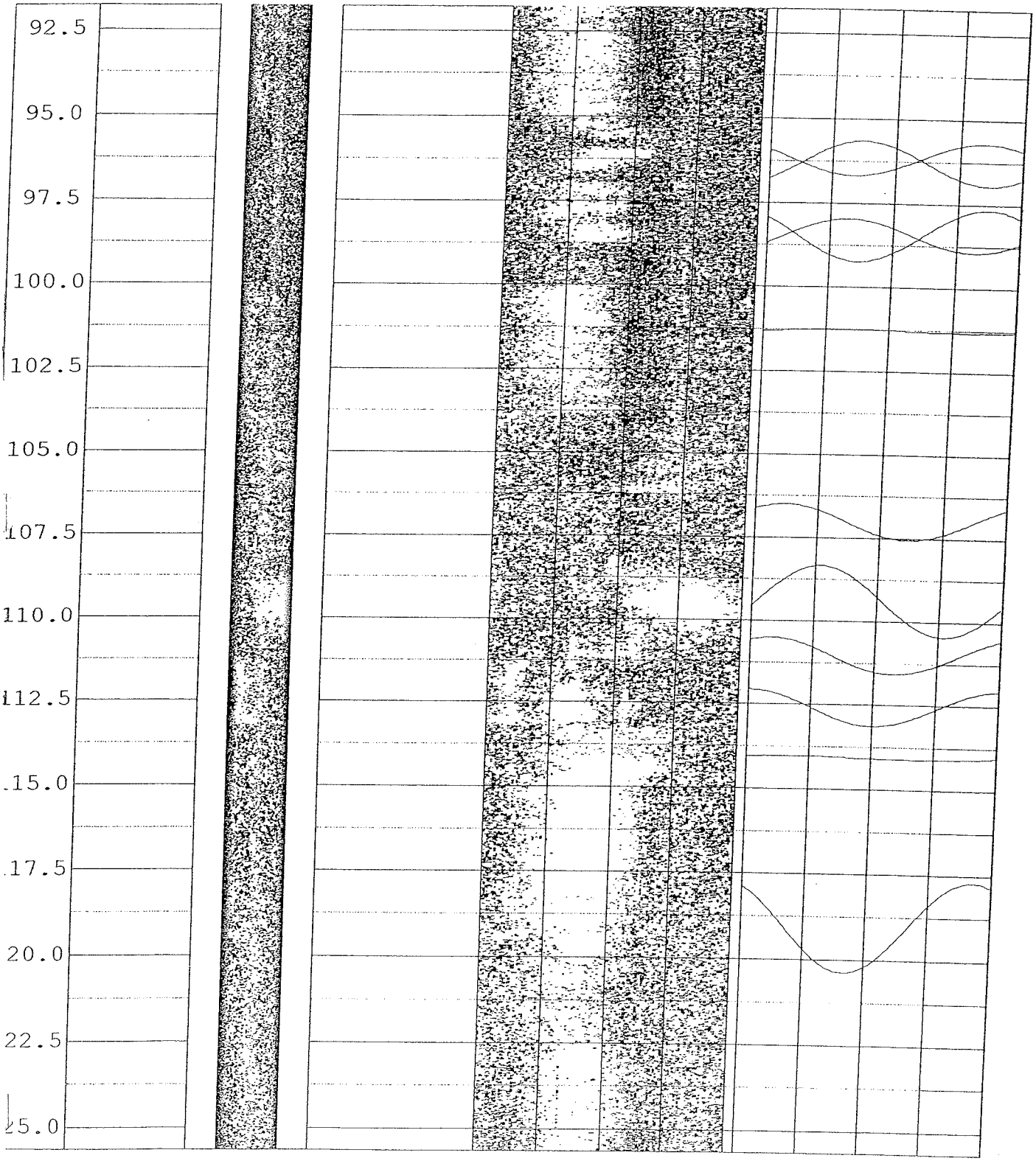
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-20D



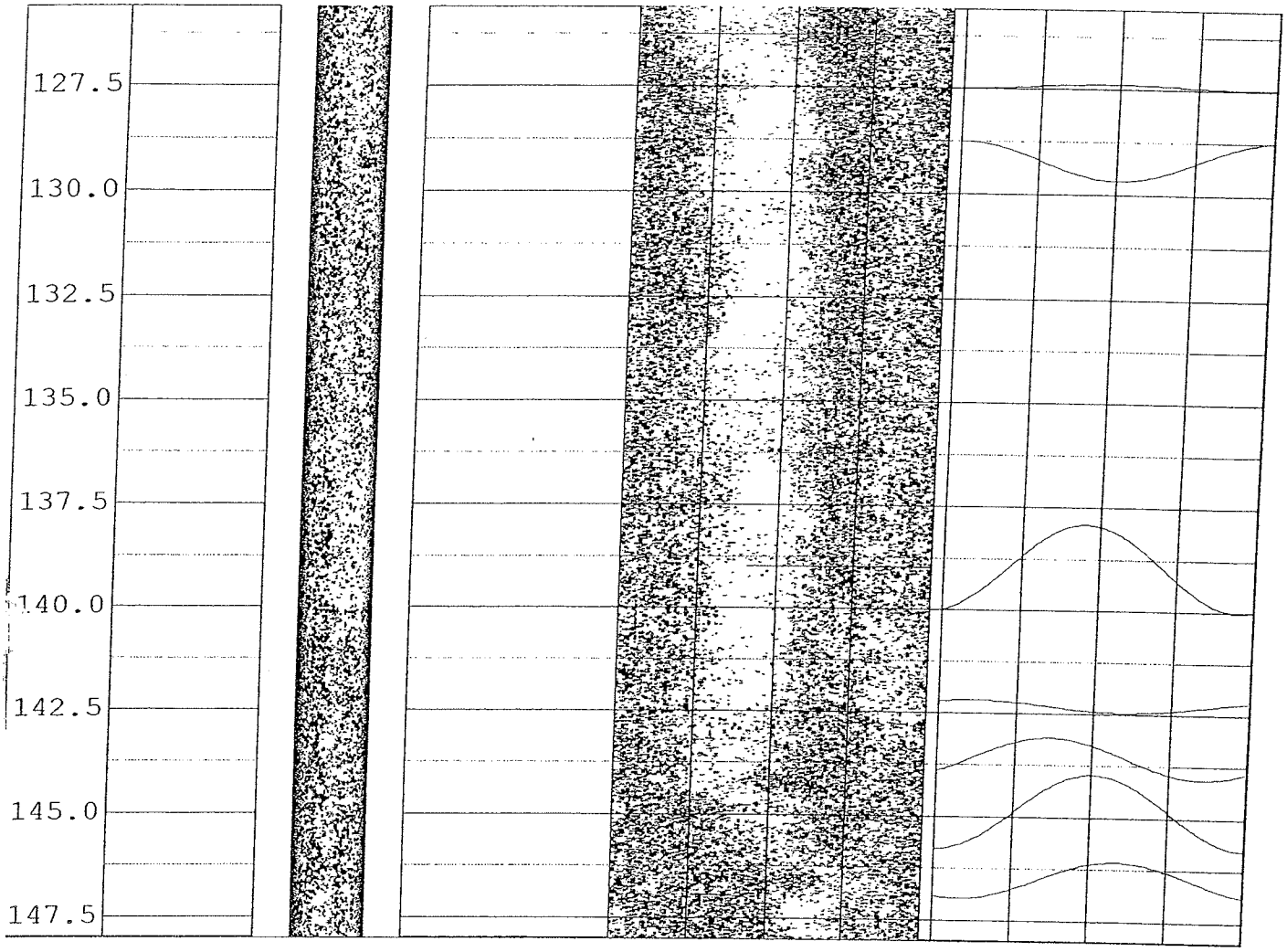
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-20D



APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-20D



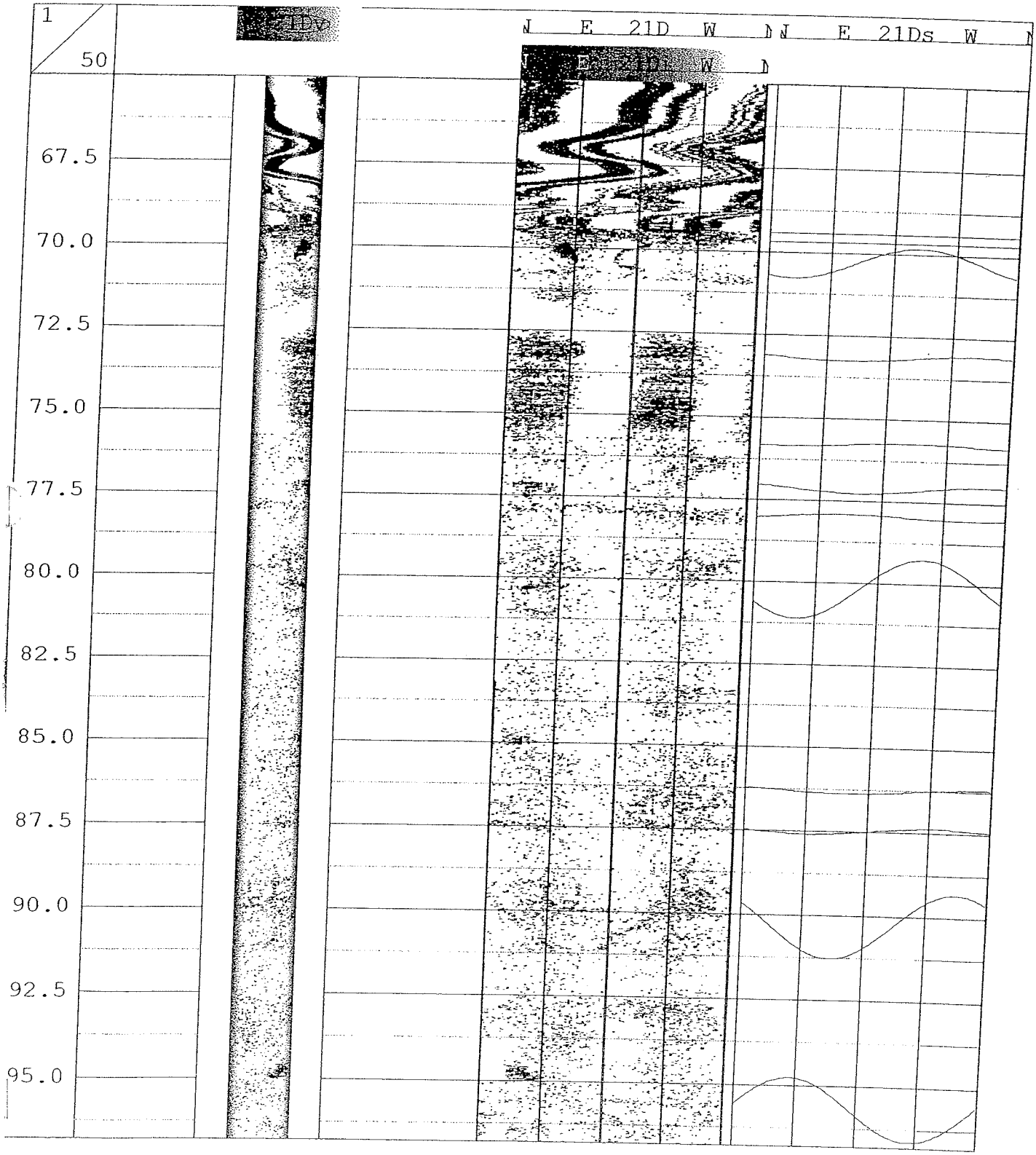
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-20D

DEPTH	AZIMUTH	DIP	PRELIMINARY REMARKS
69.39	0	7.03	BEDDING
70.01	0	6.33	BEDDING
74.46	337.36	6.73	BEDDING
74.88	99.47	18.65	BEDDING
76.81	278.52	73.29	HEALED JOINT
77.9	346.18	9.35	BEDDING
79.12	248.9	75.99	JOINT
79.87	258.22	16.73	BEDDING
82.14	335.71	15.7	BEDDING
83.49	341.58	17.51	BEDDING
85.42	82.56	76.35	PARTIAL JOINT
87.2	96.01	67.88	PARTIAL JOINT
87.42	289.36	74.31	PARTIAL JOINT
88.71	359.52	15.9	BEDDING
91.47	212.31	51.57	HEALED JOINT
96.18	123.8	62.59	HEALED JOINT
96.3	314.08	69.04	HEALED JOINT
98.45	296.3	62.68	HEALED JOINT
98.46	132.66	72.14	HEALED JOINT
101.27	295.69	7.72	BEDDING ?
107.01	221.9	64.49	JOINT
109.4	277.43	76.63	HEALED JOINT
111.04	208.87	64.75	HEALED JOINT
112.58	181.75	64.89	HEALED JOINT
114.07	248.15	7.65	BEDDING
119.05	151.37	79.34	HEALED JOINT
127.44	348.25	10.53	BEDDING
129.21	183.8	61.37	HEALED JOINT
138.97	343.86	76.6	HEALED JOINT
142.31	217.2	28.26	(CROSS) BEDDING
143.58	309.91	62.87	HEALED JOINT
144.88	1.07	74.42	n/a
146.52	30.63	60.46	HEALED JOINT

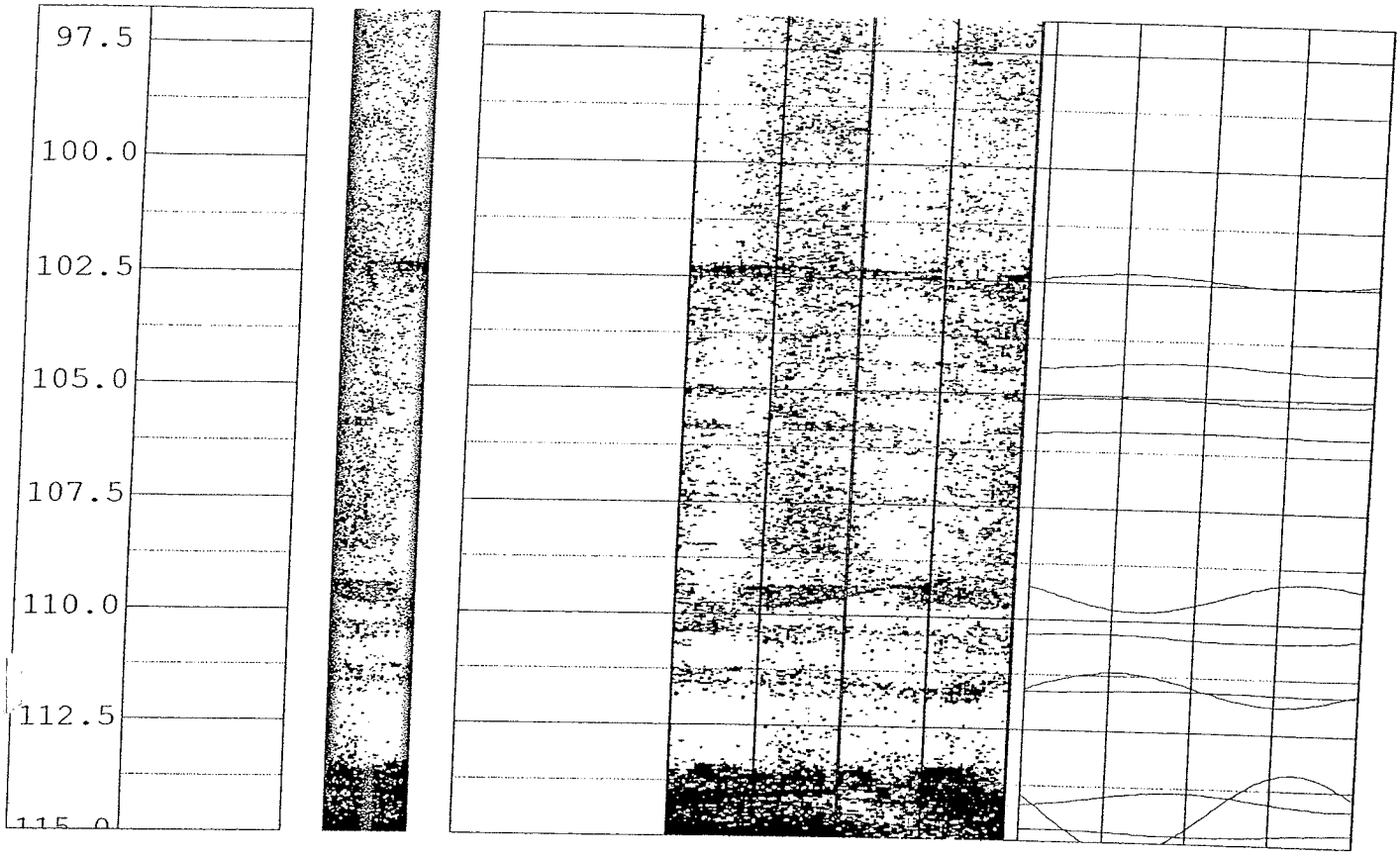
APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-21D



APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-21D



APPALACHIAN GEOPHYSICAL SURVEYS

ABHTV
HOLE #: MW-21D

DEPTH	AZIMUTH	DIP	PRELIMINARY REMARKS
69.44	0	0	BOTTOM OF CASING
69.69	0	0	OVER DRILL
70.3	37.34	61.83	JOINT
73.16	122.84	20.37	BEDDING ?
75.77	39.44	11.37	BEDDING ?
77.14	147.69	25.37	BEDDING ?
77.98	307.28	13.79	BEDDING ?
80.18	63.73	74.69	HEALED JOINT
86.28	150.92	17.87	BEDDING ?
87.47	97.51	21.64	BEDDING ?
90.31	132.93	75.48	PARTIAL JOINT
95.7	260.55	74.77	HEALED JOINT
102.41	275.01	24.61	BEDDING
104.33	330.88	16.71	BEDDING
105.07	283.98	9.82	BEDDING
105.8	331.24	5.23	BEDDING
109.44	120.98	54.45	JOINT
110.38	249.38	14.71	BEDDING
111.5	276.46	54.27	JOINT
111.59	350.78	6.8	BEDDING
114.03	344.87	31.6	(CROSS) BEDDING
114.32	112.83	74.66	PARTIAL JOINT
114.77	193.58	12.15	TOP OF MUD CAKE

Well MW-19D
7/10/1999

Depth Interval (feet below ground)	Description
12	Depth to groundwater
57	bottom of casing
77	2 horizontal calcite veins (thin)
79	large horizontal fracture
84-86	grungy
86-90	thick vertical fracture
94-95	horizontal calcite veins (thin)
97-100	vertical to angled calcite veins opening into fracture
101	thin horizontal fracture with calcite
106	thick horizontal fracture
108-112	huge vertical fracture system
112-114	grungy
122-124	thick vertical and horizontal calcite vein system, thinning toward 124 ft.
126	thin calcite filled fracture
126.5-128	huge fractures
135-137	angled fracture filled with calcite
140-143	thin near vertical calcite vein ending in horizontal calcite vein
151	thin horizontal fracture
153-182	grungy, lots of calcite filled vugs, calcite veins filling f fractures
174	thin horizontal fracture
179	big breakout
190-192	grungy
199-200	numerous horizontal calcite veins
	bottom

Well MW-20D
7/10/1999

Depth Interval (feet below ground)	Description
11.5	Depth to groundwater
57	bottom of casing
59	vug
60	fracture
61	thin horizontal fracture
63	thin fracture
71	large vug
74	grungy layer
76	grungy layer
78	vertical fractures
78-81	grungy
86	grungy layer
87-88	think grungy zone with calcite
90	grungy layer
94	possible angled fracture on one wall
95	thick grungy layer
98	numerous calcite inclusions, pockmarked
101-102	vertical-calcite veins
105-107	huge vertical fracture zone
108-112	grungy
111	huge opening in rock (horizontal)
118	grungy zone
127	possible opening along vertical vein
136	possible horizontal fracture
139-143	vertical calcite veins
147	angled fracture, thin
148	thin horizontal fracture
150-156	pockmarked
160	breakout (large opening)
165-173	grungy
177	big horizontal fracture
192	too turbid to see bottom

Well MW-21D
7/10/1999

Depth Interval (feet below ground)	Description
10	Depth to groundwater
	Casing Depth
69	grungy zone
73	horizontal fracture
76	horizontal fracture
77	angled fracture
78	grungy zone
80-81	grungy
86-89	grungy
89	big horizontal fracture
90-92	grungy, vertical fracture
94'-95'	grungy zone
96'-98'	pockmarked, cut infillings
104'	horizontal fracture
105'-108'	big fracture zone, mostly horizontal
108'-115'	grungy, grooves, some large fractures
116'-119'	grungy rock, very chewed up, several horizontal fractures
127'	thin horizontal fracture
137'-139'	grungy zone
148'	large calcite filled vug
148'-149'	grungy, lots of calcite
154'	grungy, lots of calcite
161'-163'	grungy, lots of calcite
163'	large opening
165'-166'	grungy, lots of calcite
168'-171'	grungy, lots of calcite
176'-179'	grungy, lots of calcite
182'	thin horizontal fractures
185'	thin, calcite-filled horizontal fracture
188'	thin, calcite-filled horizontal fracture
191'	thin, calcite-filled horizontal fracture
193'	grungy calcite-filled layer
197'	bottom

Appendix C

Packer Sampling Results

McLAREN/HART
ENVIRONMENTAL ENGINEERING CORP.

SUBJECT: MW-19D
AT&T CLARK FACILITY

PREPARED BY: TI CHECKED BY:

SHEET ___ of ___

JOB NO.: ___

DATE: ___

CASING : 58'
DEPTH : 150'

60
65
70
75 — STATIC TEST - 0.014 gpm
80
85
90
95 — STATIC TEST - 0.02 gpm
100
105 — 105' PARTIAL FRACTURES
110 — BEDDING CHANGE @ 110'.
115 — 115'
— STATIC TEST - 0.11 gpm
120
125 — 125'
SIGNIFICANT FRACTURES LARGEST 126' - 128'
130 — 130'
135 — STATIC TEST + 0.01 gpm
140
— BEDDING PLANE - POSSIBLY OPEN @ 142'
145
150
155
160

McLAREN/HART
ENVIRONMENTAL ENGINEERING CORP.

SUBJECT: MW-21D

PREPARED BY: TI CHECKED BY: _____

SHEET ___ of ___

JOB NO.: _____

DATE: _____

CASING : 70'
DEPTH : 143'

MUD AT 115'.

60
65
70 — DEFINITIVE FRACTURE — POSSIBLE BEDDING PLANE SOFT BED.
75
80
85
90] 2 FRACTURES 92-94' POSSIBLY HEALING JOINTS.
95
100
105 — BEDDING PLANE @ 107'
110
115 — FRACTURE @ 114' (DIPPING)
120] - TOO MUCH MUD BELOW 115 FOR ACCOUSTIC SIGNATURE
125
130
135
140
145 — NOT ABLE TO PENETRATE BELOW 143'
150
155

McLAREN/HART
ENVIRONMENTAL ENGINEERING CORP.

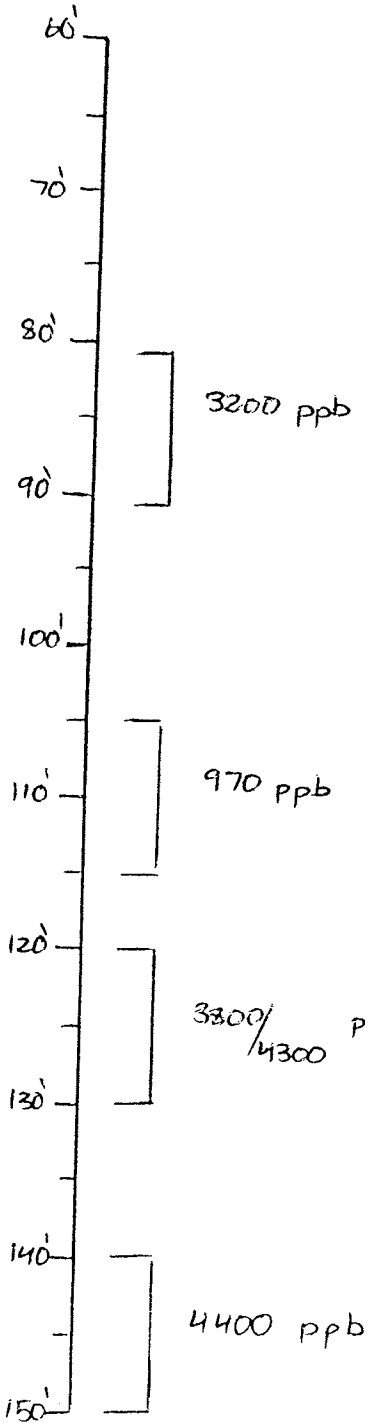
SUBJECT: MW-19D: CLARK
PACKER TESTING.

PREPARED BY: _____ CHECKED BY: _____

SHEET ____ of ____

JOB NO.: _____

DATE: _____



195-205 2900 ppb

McLAREN/HART
ENVIRONMENTAL ENGINEERING CORP.

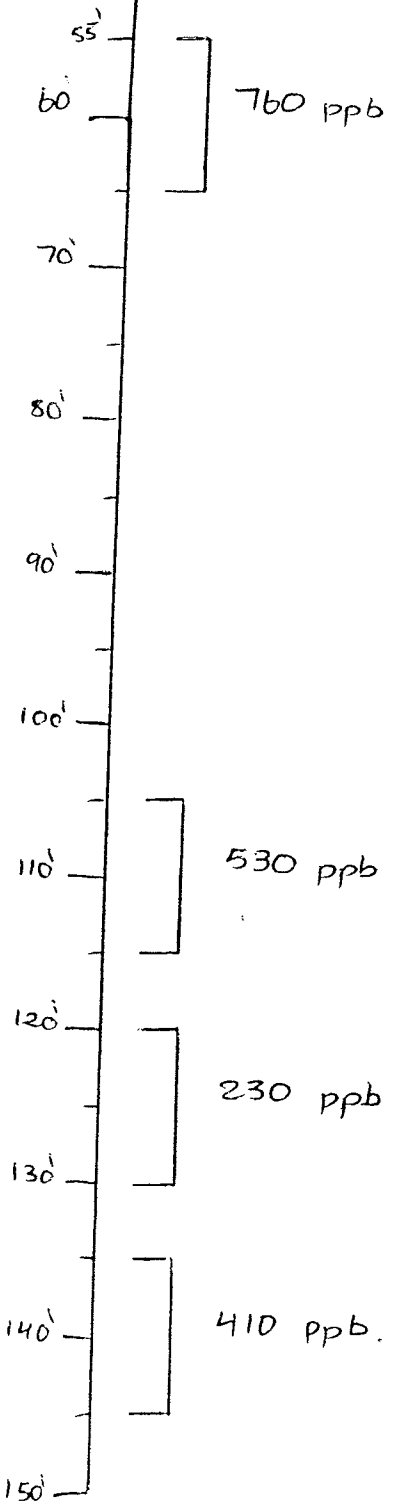
SUBJECT: MW-20D Clark
PACKER TESTING.

PREPARED BY: _____ CHECKED BY: _____

SHEET ___ of ___

JOB NO.: _____

DATE: _____



177-197 550 ppb

McLAREN/HART
ENVIRONMENTAL ENGINEERING CORP.

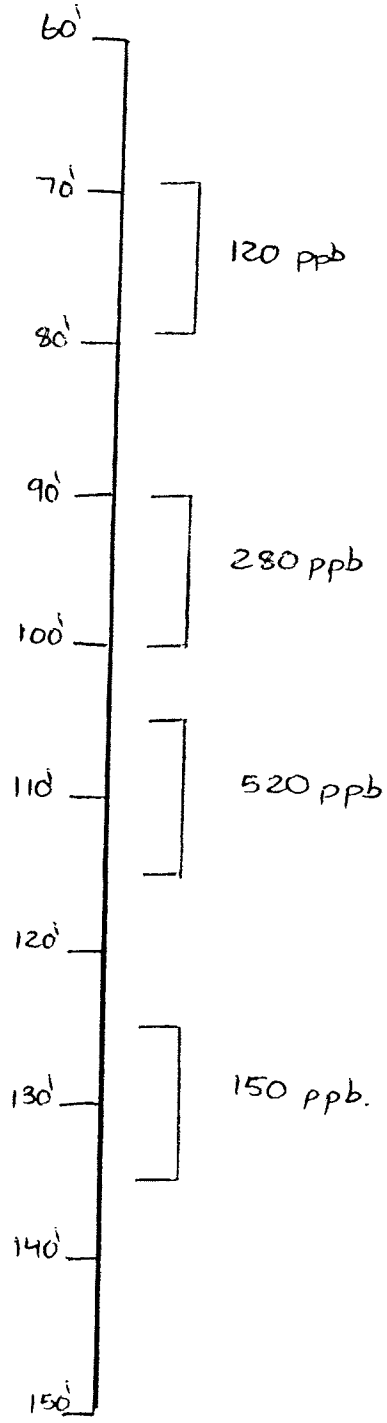
SUBJECT: MW-21D Clark
Packer Testing.

PREPARED BY: _____ CHECKED BY: _____

SHEET ___ of ___

JOB NO.: _____

DATE: _____



189 - 199 260 ppb

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17726.d Page 1
Report Date 06/22/2000 09:27

Client ID : MW-19D_81-91
Lab ID : 212019
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 20:33 Dil Factor : 20
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	3200	8.2

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17735.d Page 1
Report Date 06/22/2000 09:26

Client ID : MW-19D_105-115
Lab ID : 212018
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 20:04 Dil Factor : 5
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	970	2.0

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17749.d
Report Date 06/22/2000 09:28

Client ID : MW-19D_120-130
Lab ID : 212016
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 22-JUN-2000 07:31 Dil Factor : 50
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	3800	20

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17750.d Page 1
Report Date 06/22/2000 09:36

Client ID : MW-19D_120D
Lab ID : 212017
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 22-JUN-2000 07:59 Dil Factor : 50
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	4300	20

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17722.d Page 1
Report Date 06/22/2000 09:26

Client ID : MW-19D_140-150
Lab ID : 211957
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 18:38 Dil Factor : 50
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	4400	20

Data File: /chem/VOAMS6.i/624/06-19-00/20jun00.b/f13965.d Page 1
Report Date 06/22/2000 10:08

Client ID : MW-20D_55-65
Lab ID : 211946
Method : /chem/VOAMS6.i/624/06-19-00/20jun00.b/624_00.m
Inst ID : VOAMS6.i
Inj Date : 21-JUN-2000 07:43 Dil Factor : (5)
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	760	2.0

Dilution factor was incorrect.

This result is final.

Data File: /chem/VOAMS6.i/624/06-19-00/20jun00.b/f13966.d Page 1
Report Date 06/22/2000 10:08

Client ID : MW-20D_105-115
Lab ID : 211947
Method : /chem/VOAMS6.i/624/06-19-00/20jun00.b/624_00.m
Inst ID : VOAMS6.i
Inj Date : 21-JUN-2000 08:15 Dil Factor : 5
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	530	2.0

Dilution factor was incorrect.

This result is final.

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17713.d
Report Date 06/21/2000 14:51

Client ID : MW-20D_120-130
Lab ID : 211948
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 14:22
Sample Matrix : WATER
Sample Weight : 0.0 g

Dil Factor : 2
Purge Volume : 5.0 ml

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	230	0.8

Client ID : MW-20D_135-145
Lab ID : 211949
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 22-JUN-2000 06:43 Dil Factor : 5
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	410	2.0

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17715.d
Report Date 06/21/2000 15:43

Client ID : FB061900
Lab ID : 211950
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 15:19 Dil Factor : 1
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	ND	0.4

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17716.d
Report Date 06/21/2000 16:28

Client ID : MW-21D_69-79
Lab ID : 211951
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 15:47
Sample Matrix : WATER
Sample Weight : 0.0 g

Dil Factor : 1
Purge Volume : 5.0 ml

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	120	0.4

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17717.d
Report Date 06/21/2000 16:46

Client ID : MW-21D_90-100
Lab ID : 211952
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 16:16
Sample Matrix : WATER
Sample Weight : 0.0 g

Dil Factor : 5
Purge Volume : 5.0 ml

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	280	2.0

Report Date 06/22/2000 09:26

Client ID : MW-21D_105-115
Lab ID : 211953
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 16:44 Dil Factor : 5
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	520	2.0

Data File: /chem/VOAMS7.i/624/06-20-00/21jun00.b/v17719.d
Report Date 06/22/2000 09:26

Client ID : MW-21D_125-135
Lab ID : 211954
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 17:12 Dil Factor : 2
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	150	0.8

Client ID : TB062000
Lab ID : 211955
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 17:41 Dil Factor : 1
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	ND	0.4

Client ID : FB062000
Lab ID : 211956
Method : /chem/VOAMS7.i/624/06-20-00/21jun00.b/624_00.m
Inst ID : VOAMS7.i
Inj Date : 21-JUN-2000 18:10 Dil Factor : 1
Sample Matrix : WATER Purge Volume : 5.0 ml
Sample Weight : 0.0 g

RUSH DATA RESULTS
VOLATILE ORGANICS - GC/MS

Parameter	Result Units: ug/L	MDL Units: ug/L
Trichloroethene	16	0.4

Appendix D

RW-1 and MW-1 Well Abandonment Form

DWR-020
8/97

New Jersey Department of Environmental Protection
Water Supply Element - Bureau of Water Allocation

WELL ABANDONMENT REPORT

MAIL TO: **Bureau of Water Allocation**
PO Box 426
Trenton, NJ 08625-0426

WELL PERMIT # UNKNOWN
of well sealed

DATE WELL SEALED 7-1-99

PROPERTY OWNER TYCO INC.

ADDRESS 100 TERMINAL AVE, CLARK NJ 07066

WELL LOCATION - SAME - UNION COUNTY
Street & No., Township, County

RW-1 (Well No.) 4 (Lot No.) 58 (Block No.)

USE OF WELL PRIOR TO ABANDONMENT: RECOVERY

REASON FOR ABANDONMENT: NOT NEEDED

WAS A NEW WELL DRILLED? ☐ YES ☒ NO PERMIT # OF NEW WELL —

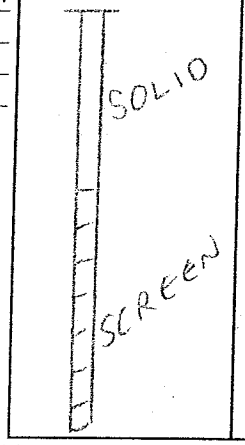
TOTAL DEPTH OF WELL 45'
DIAMETER 8 IN.
CASING LENGTH 20
SCREEN LENGTH 25
NUMBER OF CASINGS 1

MATERIAL USED TO DECOMMISSION WELL:

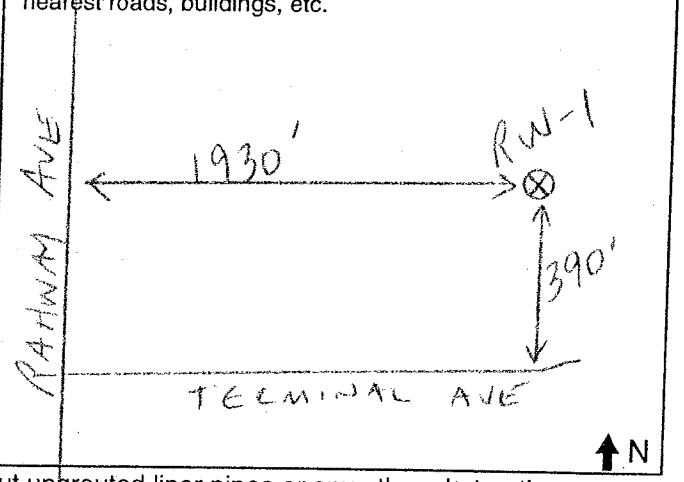
105 Gallons of Water
14/10 75 Lbs. of Cement
— Lbs. of Bentonite
— Lbs. of Sand/Gravel
(none if well is contaminated)

FORMATION: ☐ Consolidated ☒ Unconsolidated

Cross-section of sealed well



Draw a sketch showing distance and relations of well site to nearest roads, buildings, etc.



To permit adequate grouting, the casing should remain in place, but ungrouted liner pipes or any other obstructions must be removed. Pressure grouting is the only accepted method.

WAS CASING LEFT IN PLACE? ☒ YES ☐ NO CASING MATERIAL: PVC

WERE OTHER OBSTRUCTIONS LEFT IN WELL? ☐ YES ☒ NO WHAT WERE THE OBSTRUCTIONS: —

IF "YES", AUTHORIZATION GRANTED BY _____ (NJDEP Official) ON _____ (Date)

Was an alternative decommissioning method used? ☐ YES ☒ NO

IF "YES", authorization granted by _____ (NJDEP Official) ON _____ (Date)

I certify that this well was sealed in accordance with N.J.A.C. 7:9-9.1 et seq.

ALBERT BAMBACE (Performing Work (Print or Type) Name of NJ Certified Well Sealer)
BOUNDBROOK NJ (Address)
8-6-99 (Mailing Date)
Albert Bambace (Signature of NJ Certified Well Sealer Performing Work)
13757 (Registration #)

COPIES: *White - Water Allocation* *Yellow - Owner* *Pink - Health Dept.* *Goldenrod - Driller*

DWR-020
8/97

New Jersey Department of Environmental Protection
Water Supply Element - Bureau of Water Allocation

WELL ABANDONMENT REPORT

MAIL TO: **Bureau of Water Allocation**
PO Box 426
Trenton, NJ 08625-0426

WELL PERMIT # 26-20540 - S of well sealed

DATE WELL SEALED 9-30-99

PROPERTY OWNER ATT CORPORATION

ADDRESS 20 INDEPENDENCE BLVD, ROOM 4B-33, WARREN NJ 07059

WELL LOCATION 100 TERMINAL AVE, CLARK, UNION COUNTY
Street & No., Township, County

MW1	4	58
Well No.	Lot No.	Block No.

USE OF WELL PRIOR TO ABANDONMENT: MONITORING

REASON FOR ABANDONMENT: NO LONGER IN USE

WAS A NEW WELL DRILLED? ☐ YES ☒ NO PERMIT # OF NEW WELL —

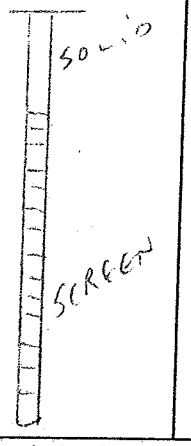
TOTAL DEPTH OF WELL	22'
DIAMETER	2IN
CASING LENGTH	7
SCREEN LENGTH	15
NUMBER OF CASINGS	1

MATERIAL USED TO DECOMMISSION WELL:

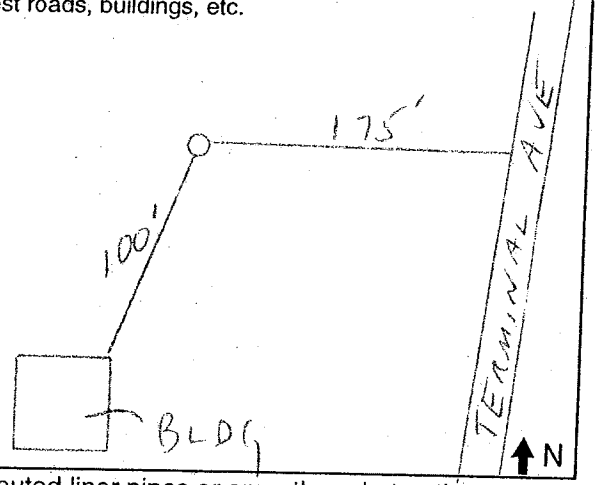
14	Gallons of Water
10 188	Lbs. of Cement
10	Lbs. of Bentonite
—	Lbs. of Sand/Gravel (none if well is contaminated)

FORMATION:
___ Consolidated
X Unconsolidated

Cross-section of sealed well



Draw a sketch showing distance and relations of well site to nearest roads, buildings, etc.



To permit adequate grouting, the casing should remain in place, but ungrouted liner pipes or any other obstructions must be removed. Pressure grouting is the only accepted method.

WAS CASING LEFT IN PLACE? ☒ YES ☐ NO CASING MATERIAL: PVC

WERE OTHER OBSTRUCTIONS LEFT IN WELL? ☐ YES ☒ NO WHAT WERE THE OBSTRUCTIONS: —

IF "YES", AUTHORIZATION GRANTED BY _____ (NJDEP Official) ON _____ (Date)

Was an alternative decommissioning method used? ☐ YES ☒ NO

IF "YES", authorization granted by _____ (NJDEP Official) ON _____ (Date)

I certify that this well was sealed in accordance with N.J.A.C. 7:9-9.1 et seq.

JEFF MARCHESI	BOUND BROOK NJ	10-26-99
Performing Work (Print or Type) Name of NJ Certified Well Sealer	Address	Mailing Date
Jeffrey Marchesi		MLS12
Signature of NJ Certified Well Sealer Performing Work		Registration #

COPIES: *White - Water Allocation* *Yellow - Owner* *Pink - Health Dept.* *Goldenrod - Driller*

Appendix E

MW-2A Step Test Data

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
Start Pumping	0	14:06:30	0	0	0	0
Test 0, Step 0	0.0083	14:06:30	0.0083	-0.015	0	0
6/29/1999	0.0166	14:06:31	0.0166	-0.015	0	0
14:06:00 PM	0.025	14:06:31	0.025	-0.031	0	0
1 gpm	0.0333	14:06:32	0.0333	-0.031	0	-0.002
	0.0416	14:06:32	0.0416	-0.031	0	-0.002
	0.05	14:06:33	0.05	-0.031	0	0
	0.0583	14:06:33	0.0583	-0.031	-0.006	-0.002
	0.0666	14:06:34	0.0666	-0.047	-0.006	-0.002
	0.075	14:06:34	0.075	-0.047	-0.006	-0.002
	0.0833	14:06:35	0.0833	-0.047	-0.006	-0.002
	0.0916	14:06:35	0.0916	-0.063	-0.006	0
	0.1	14:06:36	0.1	-0.063	-0.006	0
	0.1083	14:06:36	0.1083	-0.079	-0.006	0
	0.1166	14:06:37	0.1166	-0.079	-0.006	0
	0.125	14:06:37	0.125	-0.079	-0.006	-0.002
	0.1333	14:06:38	0.1333	-0.095	-0.012	-0.002
	0.1416	14:06:38	0.1416	-0.095	-0.019	0
	0.15	14:06:39	0.15	-0.095	-0.012	0
	0.1583	14:06:39	0.1583	-0.111	-0.012	0
	0.1666	14:06:40	0.1666	-0.095	-0.012	0
	0.175	14:06:40	0.175	-0.111	-0.012	-0.002
	0.1833	14:06:41	0.1833	-0.111	-0.012	0
	0.1916	14:06:41	0.1916	-0.111	-0.012	0.001
	0.2	14:06:42	0.2	-0.127	-0.019	0
	0.2083	14:06:42	0.2083	-0.127	-0.019	0
	0.2166	14:06:43	0.2166	-0.143	-0.019	-0.002
	0.225	14:06:43	0.225	-0.143	-0.019	-0.002
	0.2333	14:06:44	0.2333	-0.159	-0.019	0
	0.2416	14:06:44	0.2416	-0.159	-0.025	0
	0.25	14:06:45	0.25	-0.159	-0.019	0.001
	0.2583	14:06:45	0.2583	-0.159	-0.025	0.001
	0.2666	14:06:46	0.2666	-0.159	-0.025	0
	0.275	14:06:46	0.275	-0.159	-0.025	0.001
	0.2833	14:06:47	0.2833	-0.174	-0.025	-0.002
	0.2916	14:06:47	0.2916	-0.174	-0.025	0.001
	0.3	14:06:48	0.3	-0.174	-0.025	0.001
	0.3083	14:06:48	0.3083	-0.19	-0.025	0
	0.3166	14:06:49	0.3166	-0.19	-0.025	0.001
	0.325	14:06:49	0.325	-0.19	-0.025	0
	0.3333	14:06:50	0.3333	-0.19	-0.031	0.001
	0.35	14:06:51	0.35	-0.206	-0.031	0.001
	0.3666	14:06:52	0.3666	-0.222	-0.031	0
	0.3833	14:06:53	0.3833	-0.222	-0.038	0
	0.4	14:06:54	0.4	-0.238	-0.038	0.001
	0.4166	14:06:55	0.4166	-0.254	-0.038	0

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.4333	14:06:56	0.4333	-0.254	-0.038	0
	0.45	14:06:57	0.45	-0.27	-0.038	0
	0.4666	14:06:58	0.4666	-0.27	-0.038	0
	0.4833	14:06:59	0.4833	-0.286	-0.044	0
	0.5	14:07:00	0.5	-0.302	-0.05	-0.002
	0.5166	14:07:01	0.5166	-0.302	-0.044	0
	0.5333	14:07:02	0.5333	-0.302	-0.05	-0.002
	0.55	14:07:03	0.55	-0.286	-0.056	0
	0.5666	14:07:04	0.5666	-0.317	-0.056	0.001
	0.5833	14:07:05	0.5833	-0.333	-0.063	0
	0.6	14:07:06	0.6	-0.349	-0.063	0
	0.6166	14:07:07	0.6166	-0.349	-0.063	0
	0.6333	14:07:08	0.6333	-0.365	-0.063	-0.002
	0.65	14:07:09	0.65	-0.365	-0.063	-0.002
	0.6666	14:07:10	0.6666	-0.381	-0.063	0
	0.6833	14:07:11	0.6833	-0.381	-0.063	-0.002
	0.7	14:07:12	0.7	-0.397	-0.069	0
	0.7166	14:07:13	0.7166	-0.397	-0.069	0
	0.7333	14:07:14	0.7333	-0.413	-0.069	-0.002
	0.75	14:07:15	0.75	-0.413	-0.069	-0.002
	0.7666	14:07:16	0.7666	-0.413	-0.069	-0.002
	0.7833	14:07:17	0.7833	-0.429	-0.075	-0.002
	0.8	14:07:18	0.8	-0.445	-0.075	-0.002
	0.8166	14:07:19	0.8166	-0.445	-0.082	-0.002
	0.8333	14:07:20	0.8333	-0.46	-0.075	-0.002
	0.85	14:07:21	0.85	-0.46	-0.075	-0.002
	0.8666	14:07:22	0.8666	-0.476	-0.075	0
	0.8833	14:07:23	0.8833	-0.476	-0.075	-0.002
	0.9	14:07:24	0.9	-0.492	-0.075	-0.002
	0.9166	14:07:25	0.9166	-0.492	-0.082	0
	0.9333	14:07:26	0.9333	-0.508	-0.082	-0.002
	0.95	14:07:27	0.95	-0.524	-0.082	0
	0.9666	14:07:28	0.9666	-0.524	-0.082	0
	0.9833	14:07:29	0.9833	-0.54	-0.082	-0.002
	1	14:07:30	1	-0.54	-0.082	-0.002
	1.2	14:07:42	1.2	-0.635	-0.088	0
	1.4	14:07:54	1.4	-0.731	-0.094	0
	1.6	14:08:06	1.6	-0.81	-0.094	0
	1.8	14:08:18	1.8	-0.89	-0.107	0
	2	14:08:30	2	-0.969	-0.107	0
	2.2	14:08:42	2.2	-1.048	-0.113	0
	2.4	14:08:54	2.4	-1.112	-0.119	0
	2.6	14:09:06	2.6	-1.176	-0.126	0.001
	2.8	14:09:18	2.8	-1.239	-0.132	0.001
	3	14:09:30	3	-1.303	-0.138	0.001
	3.2	14:09:42	3.2	-1.35	-0.138	0.001
	3.4	14:09:54	3.4	-1.398	-0.151	0.001

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	3.6	14:10:06	3.6	-1.446	-0.151	0.002
	3.8	14:10:18	3.8	-1.493	-0.164	0.001
	4	14:10:30	4	-1.525	-0.17	0.002
	4.2	14:10:42	4.2	-1.557	-0.17	0.001
	4.4	14:10:54	4.4	-1.605	-0.182	0.001
	4.6	14:11:06	4.6	-1.637	-0.189	0.001
	4.8	14:11:18	4.8	-1.668	-0.195	0.002
	5	14:11:30	5	-1.7	-0.201	0.002
	5.2	14:11:42	5.2	-1.732	-0.208	0.004
	5.4	14:11:54	5.4	-1.764	-0.214	0.004
	5.6	14:12:06	5.6	-1.811	-0.22	0.005
	5.8	14:12:18	5.8	-1.843	-0.227	0.004
	6	14:12:30	6	-1.859	-0.233	0.005
	6.2	14:12:42	6.2	-1.891	-0.239	0.004
	6.4	14:12:54	6.4	-1.923	-0.239	0.001
	6.6	14:13:06	6.6	-1.938	-0.233	-0.003
	6.8	14:13:18	6.8	-1.954	-0.239	-0.008
	7	14:13:30	7	-1.97	-0.227	-0.016
	7.2	14:13:42	7.2	-1.97	-0.22	-0.018
	7.4	14:13:54	7.4	-1.986	-0.22	-0.019
	7.6	14:14:06	7.6	-2.002	-0.22	-0.022
	7.8	14:14:18	7.8	-2.018	-0.227	-0.022
	8	14:14:30	8	-2.05	-0.239	-0.019
	8.2	14:14:42	8.2	-2.066	-0.239	-0.018
	8.4	14:14:54	8.4	-2.081	-0.258	-0.014
	8.6	14:15:06	8.6	-2.097	-0.264	-0.011
	8.8	14:15:18	8.8	-2.129	-0.271	-0.008
	9	14:15:30	9	-2.145	-0.277	-0.006
	9.2	14:15:42	9.2	-2.177	-0.29	-0.002
	9.4	14:15:54	9.4	-2.161	-0.302	0
	9.6	14:16:06	9.6	-2.161	-0.315	0.004
	9.8	14:16:18	9.8	-2.161	-0.327	0.007
	10	14:16:30	10	-2.193	-0.34	0.012
0.75 gpm	12	14:18:30	12	-2.463	-0.453	0.032
	14	14:20:30	14	-2.606	-0.523	0.028
	16	14:22:30	16	-2.685	-0.58	0.026
0.88 gpm	18	14:24:30	18	-2.971	-0.63	0.02
	20	14:26:30	20	-3.083	-0.68	0.026
	22	14:28:30	22	-3.242	-0.737	0.024
	24	14:30:30	24	-3.337	-0.788	0.028
	26	14:32:30	26	-3.401	-0.832	0.027
0.80 gpm	28	14:34:30	28	-3.401	-0.888	0.036
	30	14:36:30	30	-3.464	-0.926	0.032
	32	14:38:30	32	-4.227	-0.977	0.036
	34	14:40:30	34	-4.672	-1.027	0.04
	36	14:42:30	36	-4.99	-1.084	0.036
	38	14:44:30	38	-5.149	-1.115	0.032

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	40	14:46:30	40	-5.292	-1.166	0.043
0.94 gpm	42	14:48:30	42	-5.403	-1.21	0.045
	44	14:50:30	44	-5.435	-1.254	0.043
	46	14:52:30	46	-5.546	-1.298	0.051
	48	14:54:30	48	-5.578	-1.317	0.055
	50	14:56:30	50	-5.625	-1.348	0.049
	52	14:58:30	52	-5.689	-1.386	0.053
0.94 gpm	54	15:00:30	54	-5.673	-1.43	0.066
	56	15:02:30	56	-5.689	-1.456	0.062
	58	15:04:30	58	-5.689	-1.468	0.05
	60	15:06:30	60	-5.705	-1.481	0.05
	62	15:08:30	62	-5.752	-1.519	0.077
	64	15:10:30	64	-5.768	-1.525	0.054
	66	15:12:30	66	-5.784	-1.544	0.059
	68	15:14:30	68	-5.8	-1.563	0.061
	70	15:16:30	70	-5.816	-1.582	0.065
	72	15:18:30	72	-5.832	-1.607	0.074
	74	15:20:30	74	-5.911	-1.651	0.099
	76	15:22:30	76	-5.911	-1.657	0.085
	78	15:24:30	78	-5.88	-1.657	0.074
	80	15:26:30	80	-5.895	-1.664	0.076
	82	15:28:30	82	-5.927	-1.701	0.096
	84	15:30:30	84	-5.959	-1.727	0.097
	86	15:32:30	86	-5.943	-1.727	0.085
	88	15:34:30	88	-5.927	-1.72	0.084
	90	15:36:30	90	-5.943	-1.739	0.088
	92	15:38:30	92	-5.943	-1.746	0.091
	94	15:40:30	94	-5.975	-1.771	0.104
	96	15:42:30	96	-5.975	-1.777	0.099
	98	15:44:30	98	-5.991	-1.79	0.101
	100	15:46:30	100	-6.007	-1.802	0.106
0.97 gpm	110	15:56:30	110	-6.054	-1.897	0.126
Test 0, Step 1	0	16:08:30	122	-6.054	-1.897	0.126
6/29/1999	0.0083	16:08:30	122.0083	-6.086	-1.891	0.126
16:06:30 PM	0.0166	16:08:31	122.0166	-6.118	-1.897	0.126
1.5 gpm	0.025	16:08:31	122.025	-6.134	-1.891	0.126
	0.0333	16:08:32	122.0333	-6.181	-1.897	0.126
	0.0416	16:08:32	122.0416	-6.197	-1.897	0.126
	0.05	16:08:33	122.05	-6.229	-1.897	0.126
	0.0583	16:08:33	122.0583	-6.277	-1.897	0.126
	0.0666	16:08:34	122.0666	-6.293	-1.897	0.126
	0.075	16:08:35	122.075	-6.324	-1.897	0.126
	0.0833	16:08:35	122.0833	-6.356	-1.904	0.126
	0.0916	16:08:35	122.0916	-6.372	-1.904	0.126
	0.1	16:08:36	122.1	-6.388	-1.904	0.126
	0.1083	16:08:36	122.1083	-6.42	-1.904	0.126

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.1166	16:08:37	122.1166	-6.436	-1.904	0.125
	0.125	16:08:37	122.125	-6.452	-1.904	0.126
	0.1333	16:08:38	122.1333	-6.483	-1.904	0.126
	0.1416	16:08:38	122.1416	-6.499	-1.904	0.126
	0.15	16:08:39	122.15	-6.515	-1.904	0.126
	0.1583	16:08:39	122.1583	-6.531	-1.904	0.126
	0.1666	16:08:40	122.1666	-6.547	-1.904	0.126
	0.175	16:08:40	122.175	-6.563	-1.904	0.126
	0.1833	16:08:41	122.1833	-6.579	-1.91	0.126
	0.1916	16:08:41	122.1916	-6.611	-1.91	0.126
	0.2	16:08:42	122.2	-6.626	-1.91	0.126
	0.2083	16:08:42	122.2083	-6.642	-1.91	0.126
	0.2166	16:08:43	122.2166	-6.658	-1.91	0.126
	0.225	16:08:43	122.225	-6.674	-1.91	0.126
	0.2333	16:08:44	122.2333	-6.706	-1.91	0.126
	0.2416	16:08:44	122.2416	-6.722	-1.91	0.126
	0.25	16:08:45	122.25	-6.738	-1.91	0.125
	0.2583	16:08:45	122.2583	-6.754	-1.91	0.125
	0.2666	16:08:46	122.2666	-6.785	-1.91	0.126
	0.275	16:08:46	122.275	-6.801	-1.916	0.126
	0.2833	16:08:47	122.2833	-6.817	-1.91	0.126
	0.2916	16:08:47	122.2916	-6.833	-1.91	0.125
	0.3	16:08:48	122.3	-6.849	-1.916	0.125
	0.3083	16:08:48	122.3083	-6.865	-1.916	0.125
	0.3166	16:08:49	122.3166	-6.897	-1.916	0.125
	0.325	16:08:49	122.325	-6.912	-1.91	0.126
	0.3333	16:08:50	122.3333	-6.928	-1.916	0.125
	0.35	16:08:51	122.35	-6.96	-1.916	0.125
	0.3666	16:08:52	122.3666	-7.008	-1.916	0.125
	0.3833	16:08:53	122.3833	-7.04	-1.916	0.125
	0.4	16:08:54	122.4	-7.071	-1.916	0.125
	0.4166	16:08:55	122.4166	-7.119	-1.916	0.125
	0.4333	16:08:56	122.4333	-7.151	-1.916	0.125
	0.45	16:08:57	122.45	-7.183	-1.923	0.123
	0.4666	16:08:58	122.4666	-7.23	-1.923	0.125
	0.4833	16:08:59	122.4833	-7.262	-1.923	0.125
2.5 gpm	0.5	16:09:00	122.5	-7.31	-1.923	0.123
	0.5166	16:09:01	122.5166	-7.326	-1.923	0.123
	0.5333	16:09:02	122.5333	-7.373	-1.923	0.125
	0.55	16:09:03	122.55	-7.405	-1.923	0.123
	0.5666	16:09:04	122.5666	-7.437	-1.929	0.123
	0.5833	16:09:05	122.5833	-7.485	-1.929	0.123
	0.6	16:09:06	122.6	-7.5	-1.929	0.123
	0.6166	16:09:07	122.6166	-7.548	-1.929	0.123
	0.6333	16:09:08	122.6333	-7.58	-1.929	0.123
	0.65	16:09:09	122.65	-7.628	-1.929	0.122
	0.6666	16:09:10	122.6666	-7.659	-1.929	0.122

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.6833	16:09:11	122.6833	-7.691	-1.929	0.123
	0.7	16:09:12	122.7	-7.723	-1.935	0.122
	0.7166	16:09:13	122.7166	-7.755	-1.935	0.122
	0.7333	16:09:14	122.7333	-7.786	-1.935	0.122
	0.75	16:09:15	122.75	-7.818	-1.935	0.122
	0.7666	16:09:16	122.7666	-7.866	-1.935	0.122
	0.7833	16:09:17	122.7833	-7.882	-1.935	0.122
	0.8	16:09:18	122.8	-7.929	-1.942	0.122
	0.8166	16:09:19	122.8166	-7.961	-1.942	0.122
	0.8333	16:09:20	122.8333	-7.993	-1.942	0.122
	0.85	16:09:21	122.85	-8.041	-1.942	0.121
	0.8666	16:09:22	122.8666	-8.072	-1.942	0.121
	0.8833	16:09:23	122.8833	-8.104	-1.942	0.122
	0.9	16:09:24	122.9	-8.12	-1.942	0.121
	0.9166	16:09:25	122.9166	-8.168	-1.942	0.121
	0.9333	16:09:26	122.9333	-8.2	-1.942	0.121
	0.95	16:09:27	122.95	-8.215	-1.942	0.121
	0.9666	16:09:28	122.9666	-8.263	-1.942	0.122
	0.9833	16:09:29	122.9833	-8.279	-1.942	0.121
	1	16:09:30	123	-8.327	-1.948	0.121
	1.2	16:09:42	123.2	-8.565	-1.967	0.118
	1.4	16:09:54	123.4	-8.565	-1.967	0.121
	1.6	16:10:06	123.6	-8.565	-1.961	0.121
	1.8	16:10:18	123.8	-8.565	-1.961	0.121
	2	16:10:30	124	-8.565	-1.954	0.121
	2.2	16:10:42	124.2	-8.565	-1.954	0.119
	2.4	16:10:54	124.4	-8.549	-1.954	0.119
1.67 gpm	2.6	16:11:06	124.6	-8.565	-1.948	0.119
	2.8	16:11:18	124.8	-8.549	-1.948	0.121
	3	16:11:30	125	-8.549	-1.942	0.121
	3.2	16:11:42	125.2	-8.549	-1.929	0.122
	3.4	16:11:54	125.4	-8.549	-1.929	0.121
1.15 gpm	3.6	16:12:06	125.6	-8.565	-1.929	0.122
	3.8	16:12:18	125.8	-8.549	-1.923	0.122
	4	16:12:30	126	-8.565	-1.916	0.123
	4.2	16:12:42	126.2	-8.565	-1.916	0.123
	4.4	16:12:54	126.4	-8.549	-1.91	0.122
	4.6	16:13:06	126.6	-8.549	-1.904	0.122
	4.8	16:13:18	126.8	-8.549	-1.897	0.122
	5	16:13:30	127	-8.549	-1.891	0.122
	5.2	16:13:42	127.2	-8.565	-1.879	0.123
	5.4	16:13:54	127.4	-8.565	-1.872	0.123
	5.6	16:14:06	127.6	-8.549	-1.872	0.121
	5.8	16:14:18	127.8	-8.549	-1.872	0.119
	6	16:14:30	128	-8.549	-1.866	0.119
	6.2	16:14:42	128.2	-8.549	-1.866	0.119
	6.4	16:14:54	128.4	-8.549	-1.866	0.118

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
1.67 gpm	6.6	16:15:06	128.6	-8.533	-1.86	0.118
	6.8	16:15:18	128.8	-8.549	-1.853	0.121
	7	16:15:30	129	-8.549	-1.847	0.118
	7.2	16:15:42	129.2	-8.549	-1.841	0.118
	7.4	16:15:54	129.4	-8.549	-1.841	0.117
	7.6	16:16:06	129.6	-8.549	-1.834	0.118
	7.8	16:16:18	129.8	-8.549	-1.828	0.117
	8	16:16:30	130	-8.533	-1.828	0.117
	8.2	16:16:42	130.2	-8.533	-1.828	0.115
	8.4	16:16:54	130.4	-8.517	-1.822	0.117
	8.6	16:17:06	130.6	-8.533	-1.816	0.118
	8.8	16:17:18	130.8	-8.533	-1.809	0.121
	9	16:17:30	131	-8.533	-1.797	0.123
	9.2	16:17:42	131.2	-8.533	-1.79	0.126
	9.4	16:17:54	131.4	-8.533	-1.784	0.126
	9.6	16:18:06	131.6	-8.533	-1.79	0.123
	9.8	16:18:18	131.8	-8.517	-1.784	0.122
	10	16:18:30	132	-8.533	-1.778	0.122
Pump broke suction	12	16:20:30	134	-8.581	-1.721	0.127
Recovery (no pumping)	0	16:22:00	135.5	-8.581	-1.721	0.127
Test 0, Step 2	0.0083	16:22:00	135.5083	-8.549	-1.721	0.126
6/29/1999	0.0166	16:22:01	135.5166	-8.549	-1.721	0.126
16:22:00	0.025	16:22:01	135.525	-8.517	-1.721	0.126
	0.0333	16:22:02	135.5333	-8.485	-1.721	0.126
	0.0416	16:22:02	135.5416	-8.469	-1.721	0.126
	0.05	16:22:03	135.55	-8.453	-1.727	0.127
	0.0583	16:22:03	135.5583	-8.438	-1.721	0.126
	0.0666	16:22:04	135.5666	-8.422	-1.721	0.126
	0.075	16:22:04	135.575	-8.39	-1.721	0.126
	0.0833	16:22:05	135.5833	-8.39	-1.727	0.127
	0.0916	16:22:05	135.5916	-8.358	-1.727	0.127
	0.1	16:22:06	135.6	-8.358	-1.727	0.127
	0.1083	16:22:06	135.6083	-8.342	-1.727	0.127
	0.1166	16:22:07	135.6166	-8.342	-1.727	0.127
	0.125	16:22:08	135.625	-8.31	-1.727	0.127
	0.1333	16:22:08	135.6333	-8.31	-1.727	0.127
	0.1416	16:22:08	135.6416	-8.31	-1.727	0.127
	0.15	16:22:09	135.65	-8.31	-1.727	0.127
	0.1583	16:22:09	135.6583	-8.295	-1.727	0.127
	0.1666	16:22:10	135.6666	-8.279	-1.727	0.127
	0.175	16:22:11	135.675	-8.263	-1.727	0.127
	0.1833	16:22:11	135.6833	-8.247	-1.727	0.127
	0.1916	16:22:11	135.6916	-8.231	-1.727	0.127
	0.2	16:22:12	135.7	-8.215	-1.727	0.127
	0.2083	16:22:12	135.7083	-8.215	-1.727	0.127
	0.2166	16:22:13	135.7166	-8.199	-1.727	0.127

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.225	16:22:13	135.725	-8.183	-1.727	0.127
	0.2333	16:22:14	135.7333	-8.167	-1.727	0.127
	0.2416	16:22:14	135.7416	-8.167	-1.727	0.127
	0.25	16:22:15	135.75	-8.136	-1.727	0.127
	0.2583	16:22:15	135.7583	-8.136	-1.727	0.126
	0.2666	16:22:16	135.7666	-8.12	-1.727	0.126
	0.275	16:22:16	135.775	-8.104	-1.727	0.126
	0.2833	16:22:17	135.7833	-8.088	-1.727	0.126
	0.2916	16:22:17	135.7916	-8.072	-1.727	0.127
	0.3	16:22:18	135.8	-8.072	-1.727	0.126
	0.3083	16:22:18	135.8083	-8.04	-1.727	0.126
	0.3166	16:22:19	135.8166	-8.04	-1.727	0.126
	0.325	16:22:19	135.825	-8.024	-1.727	0.126
	0.3333	16:22:20	135.8333	-8.008	-1.727	0.126
	0.35	16:22:21	135.85	-7.977	-1.727	0.126
	0.3666	16:22:22	135.8666	-7.961	-1.727	0.126
	0.3833	16:22:23	135.8833	-7.929	-1.727	0.126
	0.4	16:22:24	135.9	-7.913	-1.727	0.126
	0.4166	16:22:25	135.9166	-7.881	-1.727	0.126
	0.4333	16:22:26	135.9333	-7.85	-1.727	0.125
	0.45	16:22:27	135.95	-7.834	-1.727	0.126
	0.4666	16:22:28	135.9666	-7.802	-1.727	0.126
	0.4833	16:22:29	135.9833	-7.786	-1.727	0.126
	0.5	16:22:30	136	-7.754	-1.727	0.126
	0.5166	16:22:31	136.0166	-7.738	-1.727	0.126
	0.5333	16:22:32	136.0333	-7.707	-1.727	0.126
	0.55	16:22:33	136.05	-7.691	-1.727	0.126
	0.5666	16:22:34	136.0666	-7.659	-1.727	0.126
	0.5833	16:22:35	136.0833	-7.627	-1.727	0.126
	0.6	16:22:36	136.1	-7.611	-1.727	0.126
	0.6166	16:22:37	136.1166	-7.595	-1.727	0.126
	0.6333	16:22:38	136.1333	-7.564	-1.727	0.126
	0.65	16:22:39	136.15	-7.532	-1.727	0.127
	0.6666	16:22:40	136.1666	-7.516	-1.727	0.126
	0.6833	16:22:41	136.1833	-7.484	-1.727	0.127
	0.7	16:22:42	136.2	-7.468	-1.727	0.127
	0.7166	16:22:43	136.2166	-7.436	-1.733	0.127
	0.7333	16:22:44	136.2333	-7.421	-1.733	0.127
	0.75	16:22:45	136.25	-7.389	-1.727	0.127
	0.7666	16:22:46	136.2666	-7.373	-1.727	0.127
	0.7833	16:22:47	136.2833	-7.341	-1.727	0.127
	0.8	16:22:48	136.3	-7.325	-1.733	0.127
	0.8166	16:22:49	136.3166	-7.293	-1.727	0.127
	0.8333	16:22:50	136.3333	-7.277	-1.727	0.127
	0.85	16:22:51	136.35	-7.246	-1.727	0.127
	0.8666	16:22:52	136.3666	-7.214	-1.733	0.127
	0.8833	16:22:53	136.3833	-7.198	-1.733	0.127

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.9	16:22:54	136.4	-7.166	-1.727	0.127
	0.9166	16:22:55	136.4166	-7.15	-1.727	0.127
	0.9333	16:22:56	136.4333	-7.134	-1.727	0.127
	0.95	16:22:57	136.45	-7.103	-1.727	0.127
	0.9666	16:22:58	136.4666	-7.087	-1.727	0.127
	0.9833	16:22:59	136.4833	-7.055	-1.727	0.127
	1	16:23:00	136.5	-7.023	-1.727	0.127
	1.2	16:23:12	136.7	-6.753	-1.727	0.129
	1.4	16:23:24	136.9	-6.499	-1.733	0.13
	1.6	16:23:36	137.1	-6.229	-1.727	0.13
	1.8	16:23:48	137.3	-5.974	-1.727	0.13
	2	16:24:00	137.5	-5.72	-1.727	0.13
	2.2	16:24:12	137.7	-5.482	-1.721	0.131
	2.4	16:24:24	137.9	-5.243	-1.721	0.131
	2.6	16:24:36	138.1	-5.021	-1.708	0.131
	2.8	16:24:48	138.3	-4.798	-1.708	0.133
	3	16:25:00	138.5	-4.576	-1.696	0.133
	3.2	16:25:12	138.7	-4.353	-1.689	0.133
	3.4	16:25:24	138.9	-4.147	-1.689	0.131
	3.6	16:25:36	139.1	-3.94	-1.683	0.131
	3.8	16:25:48	139.3	-3.75	-1.67	0.129
	4	16:26:00	139.5	-3.559	-1.664	0.127
	4.2	16:26:12	139.7	-3.368	-1.664	0.129
	4.4	16:26:24	139.9	-3.177	-1.652	0.127
	4.6	16:26:36	140.1	-3.003	-1.645	0.129
	4.8	16:26:48	140.3	-2.828	-1.645	0.13
	5	16:27:00	140.5	-2.669	-1.645	0.131
	5.2	16:27:12	140.7	-2.494	-1.639	0.134
	5.4	16:27:24	140.9	-2.335	-1.633	0.136
	5.6	16:27:36	141.1	-2.192	-1.633	0.136
	5.8	16:27:48	141.3	-2.033	-1.626	0.138
	6	16:28:00	141.5	-1.89	-1.62	0.138
	6.2	16:28:12	141.7	-1.731	-1.614	0.138
	6.4	16:28:24	141.9	-1.588	-1.607	0.137
	6.6	16:28:36	142.1	-1.461	-1.595	0.14
	6.8	16:28:48	142.3	-1.318	-1.582	0.14
	7	16:29:00	142.5	-1.191	-1.576	0.14
	7.2	16:29:12	142.7	-1.064	-1.576	0.141
	7.4	16:29:24	142.9	-0.953	-1.576	0.14
	7.6	16:29:36	143.1	-0.841	-1.57	0.141
	7.8	16:29:48	143.3	-0.73	-1.563	0.142
	8	16:30:00	143.5	-0.619	-1.557	0.142
	8.2	16:30:12	143.7	-0.508	-1.544	0.142
	8.4	16:30:24	143.9	-0.396	-1.532	0.138
	8.6	16:30:36	144.1	-0.285	-1.519	0.138
	8.8	16:30:48	144.3	-0.19	-1.513	0.138
	9	16:31:00	144.5	-0.094	-1.507	0.14

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/29/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	9.2	16:31:12	144.7	0.001	-1.494	0.138
	9.4	16:31:24	144.9	0.096	-1.488	0.136
	9.6	16:31:36	145.1	0.192	-1.475	0.134
	9.8	16:31:48	145.3	0.271	-1.475	0.133
	10	16:32:00	145.5	0.351	-1.469	0.137
	12	16:34:00	147.5	1.034	-1.387	0.137
	14	16:36:00	149.5	1.543	-1.292	0.14
	16	16:38:00	151.5	1.892	-1.21	0.14
	18	16:40:00	153.5	2.147	-1.135	0.146
	20	16:42:00	155.5	2.353	-1.047	0.142
	22	16:44:00	157.5	2.496	-0.952	0.134
	24	16:46:00	159.5	2.576	-0.876	0.14
	26	16:48:00	161.5	2.592	-0.813	0.144
	28	16:50:00	163.5	2.623	-0.744	0.145
	30	16:52:00	165.5	2.671	-0.675	0.141
	32	16:54:00	167.5	2.671	-0.618	0.145
	34	16:56:00	169.5	2.703	-0.549	0.141
	36	16:58:00	171.5	2.719	-0.498	0.142
	38	17:00:00	173.5	2.751	-0.435	0.131
	40	17:02:00	175.5	2.782	-0.378	0.131
	42	17:04:00	177.5	2.782	-0.347	0.134
	44	17:06:00	179.5	2.782	-0.309	0.134
	46	17:08:00	181.5	2.814	-0.271	0.136
	48	17:10:00	183.5	2.814	-0.259	0.136
	50	17:12:00	185.5	2.814	-0.227	0.136
	52	17:14:00	187.5	2.83	-0.196	0.131
	54	17:16:00	189.5	2.846	-0.183	0.13
	56	17:18:00	191.5	2.846	-0.164	0.133
	58	17:20:00	193.5	2.846	-0.145	0.134
	60	17:22:00	195.5	2.846	-0.133	0.13
Stopped Test 0, Step2	62	17:24:00	197.5	2.846	-0.12	0.131
End of Recovery Monitoring						

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
Start Pumping	0	12:25:00	0	0	0	0
Test 1, Step 0	0.0083	12:25:00	0.0083	-0.016	-0.006	0
6/30/1999	0.0166	12:25:01	0.0166	-0.032	-0.013	0
12:25:00	0.025	12:25:01	0.025	-0.032	-0.013	0
0.5 gpm	0.0333	12:25:02	0.0333	-0.032	-0.019	0
	0.0416	12:25:02	0.0416	-0.032	-0.025	0
	0.05	12:25:03	0.05	-0.032	-0.032	0
	0.0583	12:25:03	0.0583	-0.032	-0.038	0
	0.0666	12:25:04	0.0666	-0.032	-0.044	0
	0.075	12:25:04	0.075	-0.048	-0.057	0
	0.0833	12:25:05	0.0833	-0.048	-0.063	0
	0.0916	12:25:05	0.0916	-0.032	-0.076	0
	0.1	12:25:06	0.1	-0.048	-0.076	0.001
	0.1083	12:25:06	0.1083	-0.048	-0.088	0
	0.1166	12:25:07	0.1166	-0.048	-0.101	0
	0.125	12:25:07	0.125	-0.048	-0.107	0
	0.1333	12:25:08	0.1333	-0.048	-0.12	0
	0.1416	12:25:08	0.1416	-0.048	-0.126	0
	0.15	12:25:09	0.15	-0.048	-0.132	0.001
	0.1583	12:25:09	0.1583	-0.048	-0.139	0
	0.1666	12:25:10	0.1666	-0.048	-0.151	0
	0.175	12:25:10	0.175	-0.048	-0.158	0.001
	0.1833	12:25:11	0.1833	-0.032	-0.164	0
	0.1916	12:25:11	0.1916	-0.048	-0.177	0.001
	0.2	12:25:12	0.2	-0.048	-0.177	0.001
	0.2083	12:25:12	0.2083	-0.048	-0.189	0
	0.2166	12:25:13	0.2166	-0.048	-0.195	0
	0.225	12:25:13	0.225	-0.048	-0.202	0
	0.2333	12:25:14	0.2333	-0.048	-0.208	0.001
	0.2416	12:25:14	0.2416	-0.048	-0.214	0.001
	0.25	12:25:15	0.25	-0.048	-0.221	0.001
	0.2583	12:25:15	0.2583	-0.048	-0.233	0.001
	0.2666	12:25:16	0.2666	-0.048	-0.24	0.001
	0.275	12:25:16	0.275	-0.048	-0.246	0.001
	0.2833	12:25:17	0.2833	-0.048	-0.252	0.001
	0.2916	12:25:17	0.2916	-0.048	-0.259	0.001
	0.3	12:25:18	0.3	-0.048	-0.265	0.001
	0.3083	12:25:18	0.3083	-0.048	-0.271	0.001
	0.3166	12:25:19	0.3166	-0.048	-0.277	0.001
	0.325	12:25:19	0.325	-0.048	-0.284	0.001
	0.3333	12:25:20	0.3333	-0.048	-0.296	0.003
	0.35	12:25:21	0.35	-0.048	-0.303	0.001
	0.3666	12:25:22	0.3666	-0.048	-0.315	0.001
	0.3833	12:25:23	0.3833	-0.048	-0.322	0.003
	0.4	12:25:24	0.4	-0.048	-0.334	0.003
	0.4166	12:25:25	0.4166	-0.064	-0.347	0.003

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.4333	12:25:26	0.4333	-0.064	-0.353	0.001
	0.45	12:25:27	0.45	-0.064	-0.359	0.001
	0.4666	12:25:28	0.4666	-0.048	-0.372	0.003
	0.4833	12:25:29	0.4833	-0.064	-0.378	0.001
	0.5	12:25:30	0.5	-0.064	-0.385	0.003
	0.5166	12:25:31	0.5166	-0.064	-0.397	0.001
	0.5333	12:25:32	0.5333	-0.064	-0.403	0.003
	0.55	12:25:33	0.55	-0.064	-0.41	0.001
	0.5666	12:25:34	0.5666	-0.064	-0.416	0.001
	0.5833	12:25:35	0.5833	-0.064	-0.422	0
	0.6	12:25:36	0.6	-0.064	-0.422	0.001
	0.6166	12:25:37	0.6166	-0.064	-0.429	0.001
	0.6333	12:25:38	0.6333	-0.064	-0.435	0.001
	0.65	12:25:39	0.65	-0.08	-0.435	0.001
	0.6666	12:25:40	0.6666	-0.064	-0.441	0
	0.6833	12:25:41	0.6833	-0.064	-0.448	0.001
	0.7	12:25:42	0.7	-0.08	-0.454	0
	0.7166	12:25:43	0.7166	-0.08	-0.46	0.001
	0.7333	12:25:44	0.7333	-0.08	-0.466	0
	0.75	12:25:45	0.75	-0.08	-0.473	0.001
	0.7666	12:25:46	0.7666	-0.08	-0.479	0
	0.7833	12:25:47	0.7833	-0.08	-0.479	0.001
	0.8	12:25:48	0.8	-0.08	-0.492	0.001
	0.8166	12:25:49	0.8166	-0.08	-0.492	0
	0.8333	12:25:50	0.8333	-0.08	-0.498	0
	0.85	12:25:51	0.85	-0.08	-0.504	0.001
	0.8666	12:25:52	0.8666	-0.08	-0.504	0.001
	0.8833	12:25:53	0.8833	-0.08	-0.511	0.001
	0.9	12:25:54	0.9	-0.08	-0.511	0.001
	0.9166	12:25:55	0.9166	-0.08	-0.517	0.001
	0.9333	12:25:56	0.9333	-0.08	-0.517	0.003
	0.95	12:25:57	0.95	-0.08	-0.523	0.001
	0.9666	12:25:58	0.9666	-0.08	-0.529	0.001
	0.9833	12:25:59	0.9833	-0.08	-0.529	0.001
	1	12:26:00	1	-0.08	-0.529	0.001
	1.2	12:26:12	1.2	-0.096	-0.517	0.001
	1.4	12:26:24	1.4	-0.112	-0.498	0.001
	1.6	12:26:36	1.6	-0.128	-0.479	0.001
	1.8	12:26:48	1.8	-0.128	-0.466	0
.79 gpm	2	12:27:00	2	-0.143	-0.454	-0.001
	2.2	12:27:12	2.2	-0.159	-0.435	-0.003
	2.4	12:27:24	2.4	-0.175	-0.385	-0.003
	2.6	12:27:36	2.6	-0.207	-0.422	-0.003
	2.8	12:27:48	2.8	-0.223	-0.504	-0.001
0.38 gpm	3	12:28:00	3	-0.239	-0.548	-0.003
	3.2	12:28:12	3.2	-0.239	-0.605	-0.003
	3.4	12:28:24	3.4	-0.255	-0.637	-0.003

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	3.6	12:28:36	3.6	-0.271	-0.656	-0.003
	3.8	12:28:48	3.8	-0.287	-0.674	-0.001
	4	12:29:00	4	-0.302	-0.687	0
	4.2	12:29:12	4.2	-0.318	-0.719	0.001
	4.4	12:29:24	4.4	-0.334	-0.75	0
	4.6	12:29:36	4.6	-0.35	-0.775	-0.001
	4.8	12:29:48	4.8	-0.366	-0.8	0
	5	12:30:00	5	-0.382	-0.826	0
	5.2	12:30:12	5.2	-0.398	-0.864	0
	5.4	12:30:24	5.4	-0.414	-0.92	0.001
	5.6	12:30:36	5.6	-0.446	-0.977	0.001
	5.8	12:30:48	5.8	-0.446	-1.027	0.001
	6	12:31:00	6	-0.461	-1.071	-0.001
	6.2	12:31:12	6.2	-0.477	-1.116	0
	6.4	12:31:24	6.4	-0.509	-1.153	0.001
	6.6	12:31:36	6.6	-0.525	-1.191	0.001
	6.8	12:31:48	6.8	-0.541	-1.229	0.001
	7	12:32:00	7	-0.557	-1.261	0.001
	7.2	12:32:12	7.2	-0.573	-1.292	0.003
	7.4	12:32:24	7.4	-0.589	-1.317	0.003
	7.6	12:32:36	7.6	-0.62	-1.342	0.001
	7.8	12:32:48	7.8	-0.62	-1.368	0
	8	12:33:00	8	-0.652	-1.393	-0.001
	8.2	12:33:12	8.2	-0.668	-1.412	-0.003
	8.4	12:33:24	8.4	-0.7	-1.424	-0.001
	8.6	12:33:36	8.6	-0.716	-1.437	0
	8.8	12:33:48	8.8	-0.732	-1.443	-0.001
	9	12:34:00	9	-0.748	-1.443	-0.003
	9.2	12:34:12	9.2	-0.763	-1.443	-0.003
	9.4	12:34:24	9.4	-0.779	-1.456	-0.004
	9.6	12:34:36	9.6	-0.795	-1.475	-0.004
	9.8	12:34:48	9.8	-0.811	-1.487	-0.007
0.68 gpm	10	12:35:00	10	-0.827	-1.5	-0.008
	12	12:37:00	12	-1.018	-1.607	0
	14	12:39:00	14	-1.177	-1.658	0.001
	16	12:41:00	16	-1.304	-1.645	0
	18	12:43:00	18	-1.431	-1.582	0.005
	20	12:45:00	20	-1.511	-1.55	0.003
	22	12:47:00	22	-1.606	-1.532	0
	24	12:49:00	24	-1.622	-1.525	0.001
	26	12:51:00	26	-1.495	-1.519	0.005

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	28	12:53:00	28	-1.431	-1.513	0.005
	30	12:55:00	30	-1.352	-1.513	0.007
	32	12:57:00	32	-1.574	-1.506	0.004
	34	12:59:00	34	-1.749	-1.506	0.005
	36	13:01:00	36	-1.86	-1.513	0.008
	38	13:03:00	38	-1.924	-1.513	0.005
	40	13:05:00	40	-2.003	-1.519	0.01
	42	13:07:00	42	-2.051	-1.513	0.011
0.555 gpm	44	13:09:00	44	-2.131	-1.538	0.015
	46	13:11:00	46	-2.194	-1.538	0.015
	48	13:13:00	48	-2.242	-1.525	0.014
	50	13:15:00	50	-2.274	-1.557	0.014
	52	13:17:00	52	-2.337	-1.563	0.016
	54	13:19:00	54	-2.353	-1.563	0.01
	56	13:21:00	56	-2.385	-1.569	0.007
	58	13:23:00	58	-2.433	-1.569	0.011
	60	13:25:00	60	-2.464	-1.569	0.01
	62	13:27:00	62	-2.512	-1.576	0.005
	64	13:29:00	64	-2.528	-1.576	-0.008
	66	13:31:00	66	-2.56	-1.576	-0.007
	68	13:33:00	68	-2.608	-1.582	-0.004
	70	13:35:00	70	-2.655	-1.576	-0.007
	72	13:37:00	72	-2.687	-1.582	-0.007
	74	13:39:00	74	-2.719	-1.582	-0.011
	76	13:41:00	76	-2.703	-1.569	-0.015
	78	13:43:00	78	-2.767	-1.582	-0.009
	80	13:45:00	80	-2.798	-1.582	-0.007
	82	13:47:00	82	-2.767	-1.582	-0.009
	84	13:49:00	84	-2.782	-1.588	0.001
	86	13:51:00	86	-2.782	-1.582	-0.005
	88	13:53:00	88	-2.767	-1.588	0
	90	13:55:00	90	-2.798	-1.595	-0.003
	92	13:57:00	92	-2.814	-1.588	-0.004
	94	13:59:00	94	-2.878	-1.595	0.007
	96	14:01:00	96	-2.894	-1.601	0.004
	98	14:03:00	98	-2.894	-1.601	-0.007
	100	14:05:00	100	-2.941	-1.601	0.005
	115	14:20:00	115	-3.084	-1.613	0.016
	130	14:35:00	130	-3.275	-1.62	0.026
	145	14:50:00	145	-3.434	-1.632	0.043
	160	15:05:00	160	-3.53	-1.632	0.056
	175	15:20:00	175	-3.673	-1.639	0.064
	190	15:35:00	190	-3.8	-1.651	0.079
	205	15:50:00	205	-3.879	-1.664	0.086
	220	16:05:00	220	-3.975	-1.664	0.095
	235	16:20:00	235	-4.07	-1.676	0.106

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
Test 1, Step 1	0	16:25:00	240	-4.07	-1.676	0.106
6/30/1999	0.0083	16:25:00	240.0083	-4.07	-1.669	0.106
16:25:00	0.0166	16:25:01	240.0166	-4.054	-1.663	0.106
1.5 gpm	0.025	16:25:01	240.025	-4.054	-1.657	0.106
	0.0333	16:25:02	240.0333	-4.054	-1.65	0.107
	0.0416	16:25:02	240.0416	-4.07	-1.644	0.107
	0.05	16:25:03	240.05	-4.07	-1.638	0.107
	0.0583	16:25:03	240.0583	-4.054	-1.638	0.106
	0.0666	16:25:04	240.0666	-4.054	-1.631	0.107
	0.075	16:25:04	240.075	-4.07	-1.625	0.106
	0.0833	16:25:05	240.0833	-4.054	-1.619	0.106
	0.0916	16:25:05	240.0916	-4.054	-1.613	0.107
	0.1	16:25:06	240.1	-4.07	-1.606	0.106
	0.1083	16:25:06	240.1083	-4.07	-1.6	0.107
	0.1166	16:25:07	240.1166	-4.054	-1.6	0.107
	0.125	16:25:07	240.125	-4.054	-1.594	0.106
	0.1333	16:25:08	240.1333	-4.07	-1.587	0.106
	0.1416	16:25:08	240.1416	-4.07	-1.575	0.106
	0.15	16:25:09	240.15	-4.039	-1.575	0.106
	0.1583	16:25:09	240.1583	-4.054	-1.568	0.106
	0.1666	16:25:10	240.1666	-4.07	-1.562	0.106
	0.175	16:25:10	240.175	-4.07	-1.562	0.106
	0.1833	16:25:11	240.1833	-4.039	-1.556	0.106
	0.1916	16:25:11	240.1916	-4.054	-1.55	0.106
	0.2	16:25:12	240.2	-4.07	-1.543	0.106
	0.2083	16:25:12	240.2083	-4.054	-1.537	0.106
	0.2166	16:25:13	240.2166	-4.054	-1.531	0.106
	0.225	16:25:14	240.225	-4.054	-1.531	0.107
	0.2333	16:25:14	240.2333	-4.07	-1.524	0.106
	0.2416	16:25:14	240.2416	-4.054	-1.518	0.107
	0.25	16:25:15	240.25	-4.054	-1.512	0.106
	0.2583	16:25:15	240.2583	-4.07	-1.505	0.106
	0.2666	16:25:16	240.2666	-4.07	-1.499	0.106
	0.275	16:25:16	240.275	-4.054	-1.493	0.106
	0.2833	16:25:17	240.2833	-4.054	-1.486	0.106
	0.2916	16:25:17	240.2916	-4.054	-1.486	0.106
	0.3	16:25:18	240.3	-4.07	-1.48	0.106
	0.3083	16:25:18	240.3083	-4.054	-1.474	0.106
	0.3166	16:25:19	240.3166	-4.054	-1.468	0.107
	0.325	16:25:19	240.325	-4.07	-1.461	0.106
	0.3333	16:25:20	240.3333	-4.07	-1.455	0.106
	0.35	16:25:21	240.35	-4.054	-1.449	0.106
	0.3666	16:25:22	240.3666	-4.07	-1.436	0.106
	0.3833	16:25:23	240.3833	-4.07	-1.43	0.106
	0.4	16:25:24	240.4	-4.039	-1.417	0.106
	0.4166	16:25:25	240.4166	-4.054	-1.411	0.106
	0.4333	16:25:26	240.4333	-4.07	-1.398	0.106

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	0.45	16:25:27	240.45	-4.054	-1.386	0.106
	0.4666	16:25:28	240.4666	-4.07	-1.379	0.106
	0.4833	16:25:29	240.4833	-4.054	-1.367	0.106
	0.5	16:25:30	240.5	-4.07	-1.36	0.106
	0.5166	16:25:31	240.5166	-4.07	-1.348	0.106
	0.5333	16:25:32	240.5333	-4.054	-1.335	0.106
	0.55	16:25:33	240.55	-4.054	-1.329	0.106
	0.5666	16:25:34	240.5666	-4.054	-1.323	0.107
	0.5833	16:25:35	240.5833	-4.07	-1.31	0.106
	0.6	16:25:36	240.6	-4.039	-1.304	0.106
	0.6166	16:25:37	240.6166	-4.07	-1.291	0.106
	0.6333	16:25:38	240.6333	-4.07	-1.285	0.106
	0.65	16:25:39	240.65	-4.07	-1.279	0.106
	0.6666	16:25:40	240.6666	-4.054	-1.266	0.106
	0.6833	16:25:41	240.6833	-4.07	-1.26	0.106
	0.7	16:25:42	240.7	-4.054	-1.247	0.106
	0.7166	16:25:43	240.7166	-4.07	-1.241	0.106
	0.7333	16:25:44	240.7333	-4.07	-1.234	0.106
	0.75	16:25:45	240.75	-4.07	-1.222	0.106
	0.7666	16:25:46	240.7666	-4.07	-1.216	0.106
	0.7833	16:25:47	240.7833	-4.039	-1.209	0.106
	0.8	16:25:48	240.8	-4.07	-1.197	0.106
	0.8166	16:25:49	240.8166	-4.039	-1.19	0.106
	0.8333	16:25:50	240.8333	-4.07	-1.178	0.106
	0.85	16:25:51	240.85	-4.054	-1.178	0.106
	0.8666	16:25:52	240.8666	-4.07	-1.165	0.106
	0.8833	16:25:53	240.8833	-4.039	-1.152	0.106
	0.9	16:25:54	240.9	-4.07	-1.146	0.106
	0.9166	16:25:55	240.9166	-4.054	-1.14	0.106
	0.9333	16:25:56	240.9333	-4.07	-1.134	0.106
	0.95	16:25:57	240.95	-4.054	-1.121	0.106
	0.9666	16:25:58	240.9666	-4.07	-1.115	0.106
	0.9833	16:25:59	240.9833	-4.07	-1.108	0.106
	1	16:26:00	241	-4.07	-1.102	0.106
	1.2	16:26:12	241.2	-4.07	-1.008	0.106
	1.4	16:26:24	241.4	-4.054	-0.919	0.106
	1.6	16:26:36	241.6	-4.054	-0.825	0.106
	1.8	16:26:48	241.8	-4.07	-0.749	0.106
	2	16:27:00	242	-4.07	-0.667	0.107
	2.2	16:27:12	242.2	-4.054	-0.592	0.107
	2.4	16:27:24	242.4	-4.054	-0.51	0.106
	2.6	16:27:36	242.6	-4.054	-0.44	0.107
	2.8	16:27:48	242.8	-4.054	-0.371	0.108
	3	16:28:00	243	-4.039	-0.302	0.107
	3.2	16:28:12	243.2	-4.039	-0.232	0.107
	3.4	16:28:24	243.4	-4.039	-0.176	0.108
	3.6	16:28:36	243.6	-4.023	-0.113	0.108

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	3.8	16:28:48	243.8	-4.023	-0.056	0.108
	4	16:29:00	244	-4.023	0.013	0.108
	4.2	16:29:12	244.2	-4.007	0.057	0.108
	4.4	16:29:24	244.4	-4.007	0.108	0.108
	4.6	16:29:36	244.6	-3.991	0.158	0.108
	4.8	16:29:48	244.8	-3.991	0.209	0.108
	5	16:30:00	245	-3.975	0.253	0.108
	5.2	16:30:12	245.2	-3.975	0.297	0.108
	5.4	16:30:24	245.4	-3.943	0.341	0.108
	5.6	16:30:36	245.6	-3.959	0.379	0.108
	5.8	16:30:48	245.8	-3.927	0.417	0.11
	6	16:31:00	246	-3.927	0.461	0.11
	6.2	16:31:12	246.2	-3.927	0.499	0.108
	6.4	16:31:24	246.4	-3.911	0.53	0.108
	6.6	16:31:36	246.6	-3.911	0.568	0.108
	6.8	16:31:48	246.8	-3.88	0.606	0.108
	7	16:32:00	247	-3.864	0.631	0.107
	7.2	16:32:12	247.2	-3.848	0.669	0.107
	7.4	16:32:24	247.4	-3.848	0.7	0.106
	7.6	16:32:36	247.6	-3.832	0.725	0.107
	7.8	16:32:48	247.8	-3.816	0.757	0.107
	8	16:33:00	248	-3.8	0.776	0.107
	8.2	16:33:12	248.2	-3.784	0.807	0.107
	8.4	16:33:24	248.4	-3.8	0.833	0.108
	8.6	16:33:36	248.6	-3.784	0.864	0.108
	8.8	16:33:48	248.8	-3.752	0.889	0.107
	9	16:34:00	249	-3.736	0.908	0.107
	9.2	16:34:12	249.2	-3.721	0.933	0.107
	9.4	16:34:24	249.4	-3.705	0.959	0.107
	9.6	16:34:36	249.6	-3.689	0.984	0.106
	9.8	16:34:48	249.8	-3.689	1.003	0.106
	10	16:35:00	250	-3.657	1.028	0.104
	12	16:37:00	252	-3.482	1.223	0.104
	14	16:39:00	254	-3.307	1.362	0.103
	16	16:41:00	256	-3.132	1.463	0.102
	18	16:43:00	258	-2.942	1.557	0.099
	20	16:45:00	260	-2.783	1.633	0.096
	22	16:47:00	262	-2.624	1.671	0.095
	24	16:49:00	264	-2.497	1.715	0.095
	26	16:51:00	266	-2.385	1.746	0.092
	28	16:53:00	268	-2.29	1.771	0.095
	30	16:55:00	270	-2.163	1.797	0.091
	32	16:57:00	272	-2.051	1.816	0.089
1.25 gpm	34	16:59:00	274	-1.94	1.828	0.087
	36	17:01:00	276	-1.829	1.891	0.083
1.36 gpm	38	17:03:00	278	-1.781	2.03	0.083
1.50 gpm	40	17:05:00	280	-1.686	2.03	0.081

FORMER AT&T CLARK SHOP
PUMPING TEST - MW-2A
6/30/1999

Test Segment Test/Step # Pumping Rate	Elapsed Time (min.)	Actual Time	Cumulative Time (min.)	INPUT 1 MW-2A Drawdown (ft)	INPUT 2 MW-2 Drawdown (ft)	INPUT 3 MW-3 Drawdown (ft)
	42	17:07:00	282	-1.559	2.03	0.077
	44	17:09:00	284	-1.463	2.03	0.076
	46	17:11:00	286	-1.352	2.03	0.076
	48	17:13:00	288	-1.241	2.03	0.073
	50	17:15:00	290	-1.145	2.03	0.072
	52	17:17:00	292	-1.05	2.011	0.069
	54	17:19:00	294	-0.939	2.024	0.066
	56	17:21:00	296	-0.827	2.024	0.065
	58	17:23:00	298	-0.732	2.03	0.062
	60	17:25:00	300	-0.637	2.03	0.06
	62	17:27:00	302	-0.557	2.024	0.057
	64	17:29:00	304	-0.462	2.03	0.054
	66	17:31:00	306	-0.398	2.03	0.051
	68	17:33:00	308	-0.303	2.03	0.049
	70	17:35:00	310	-0.239	2.03	0.047
1.50 gpm	72	17:37:00	312	-0.176	2.03	0.045
	74	17:39:00	314	-0.112	2.03	0.043
	76	17:41:00	316	-0.033	2.03	0.041
	78	17:43:00	318	0.031	2.03	0.038
	80	17:45:00	320	0.063	2.024	0.035
	82	17:47:00	322	0.126	2.024	0.034
	84	17:49:00	324	0.19	2.03	0.031
	86	17:51:00	326	0.238	2.03	0.028
	88	17:53:00	328	0.269	2.024	0.026
	90	17:55:00	330	0.333	2.024	0.023
	92	17:57:00	332	0.381	2.03	0.02
	94	17:59:00	334	0.397	2.011	0.02
	96	18:01:00	336	0.444	2.011	0.016
	98	18:03:00	338	0.492	2.024	0.014
	100	18:05:00	340	0.54	2.024	0.011
	115	18:20:00	355	0.826	2.03	-0.008
Stopped pumping	130	18:35:00	370	1.064	2.03	-0.027

Appendix F

2004 Groundwater Sampling Field Parameter Records

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-3
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01

Sampling Date 5/11/04
Weather PARTLY CLOUDY, 80°F, WIND 5 MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Construction X PVC ____ Steel ____ Other ____
Well Diameter 2 Inches
Well Screened Interval 8 to 23 ~~feet below TIC~~ BGS
Well Depth (ft below TIC) 23 FT BGS / 21.26 FT (TIC) ON 5/10/04
Well Headspace Reading (PID/FID) 0 PPM
Water Level (ft below TIC) 3.82 @ 1007
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) LOCK RUSTED, NO ODOR, INACTIVE ANT NEST IN FLUSH MOUNT

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2}* 0.0408 = ____ gallons
Well Depth — Water Level — Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump ____ Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement X Other WELL WIZARD MICRO PURGE
Pump intake depth 2 FT OFF BOTTOM Purge water discharged to X Ground ____ Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / ____ New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	FID (PPM)		Notes
1015						3.82						
1018	16.5	10.22	4.81	0.357	212	4.00	210	74		0.0		Purge Start
1023	15.9	10.63	2.65	0.382	38	4.19		41		0		SLIGHTLY CLOUDY, LT. BRN
1028	16.0	10.56	2.47	0.388	-10	4.32	175	21		0	←	BATTERY REPLACED ON U-22
1040	16.2	10.60	2.44	0.388	-10	4.45	"	-7		0		
1051	17.96	10.75	2.16	0.389	-10	4.63	150	-50		0.0		SLIGHTLY CLOUDY, NO ODOR
1105	18.70	10.84	2.08	0.396	-10	4.70		-72			←	RECAL. WQ METER
1120	18.16	10.24	2.75	0.400	11.4	4.79		66				AND CHANGED PROBE BATT;
												FID DRIFTING
1210	19.5	10.66	3.05	0.389	1.9	4.86	100	9				Post-sampling Measurements

Total Volume Purged 2.5 GAL
Water Quality Meter(s) HORIBA U-22 # PROBE T/04/2004 METER # 03742

Sample Information

Groundwater Sample Field ID ~~2.5 GAL~~
Lab Analysis Requested ____
Sampling Time 1125 Sampling End Time 1210 DTW before Sampling 4.80
Sampling Method WW Bailer (type: ____) ____ Same as Above ____ Other: ____
Sampling Observations ____

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-4
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01
Sampling Date 5-10-04
Weather SUN/CLOUDS 80's slight Breeze
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) 24.5 FT BGS / 21.25 FT (TIC) o.n 5/10/04
Water Level (ft below TIC) 2.41
Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval 9.5 to 24.5 ~~feet below TIC~~ BGS
Well Headspace Reading (PID/FID) 0.0 ppm
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) SURFACE SEAL CRACKED, Lock Rusted, NO ODOR

Volume of Water in Casing (gallons)

( ) - ( ) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth — Water Level — Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic X Positive displacement ____ Other WELL WIZARD MICRO PURGE
Pump intake depth ____ Purge water discharged to X Ground ____ Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (S/cm)	Turb (NTU)	DTW (feet)	Rate (__/min)	ORP mV	—			Notes
1535						2.15						Purge Start
1540	16.5	6.81	3.43	.742	179.	2.60		-175				
1545	14.4	7.01	2.36	.749	62.5	3.21		-195				
1550	15.7	7.02	2.12	.746	61.7	3.55		-200				POOR RECHARGE (175 ML/MIN)
1555	16.3	7.04	2.09	.748	60.7	3.71		-202				
1600	16.0	7.05	2.05	.748	60.5	3.90		-202				
1605	15.9	7.08	1.97	.746	50.0	4.15		-204				(600 ML/5 MIN)
1610	16.1	7.14	1.90	.749	49.9	4.40		-207				
1615	15.9	7.16	1.89	.748	49.9	4.63		-208				
1620	16.0	7.17	1.84	.749	49.3	4.74		-209				LIGHT ORANGE TINT, NO ODOR.
												(* EMPTIED FLOW CELL)
1655	15.3	7.26	2.68	.750	91.5	5.70		-189				Post-sampling Measurements

Total Volume Purged 2.5 GALLONS Water Quality Meter(s) HORIBA U-22 #03742

Sample Information

Groundwater Sample Field ID MW-4 Lab Analysis Requested ____
Sampling Time 1623 Sampling End Time 1655 DTW before Sampling 4.78
Sampling Method WN Bailer (type: ____) ____ Same as Above ____ Other: ____
Sampling Observations started @ 1623, (PUMP WAS set 1' foot off Bottom of WELL.)

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-5
State Permit No.
Project Name Afit Clark
Project Number 4185.002.01

Sampling Date 5.12.04
Weather Sun 70°F Calm
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) 19.0' BGS / 17.11 FT (TIC) on 5/10/04
Water Level (ft below TIC) 2.36

Well Construction ____ PVC ____ Steel ____ Other ____
Well Screened Interval 4 to 19 feet below TIC
Well Headspace Reading (PID/FID) 6.0 / BG - 9.7
Product Level-if present (ft below TIC) ____

Well Notes (Odor, well condition, etc.) 17' soft bottom, No odor, (need magnet well plate fell into well)

Volume of Water in Casing (gallons)

(____) - (____) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other Micro purge
Pump intake depth 16' Purge water discharged to X Ground ____ Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	FID		Notes
0900						2.36				6.3		Purge Start BG 9.7 ppm
0900	15.3	6.80	9.30	.214	39.2	2.55	.	157				210 ML/MIN
0905	14.0	7.59	5.31	.190	186.0	2.57	.	141		4.2		BG 10.2 210 ML/MIN
0910	13.9	7.91	4.29	.185	112.0	2.69	-	122		5.4		BG 12.5 210 " "
0915	13.9	7.96	4.20	.184	110.0	2.71	-	117		9.5		BG 13.5 200 ML/MIN
0920	13.9	7.99	4.17	.183	111.0	2.74		111		7.9		BG 12.5 200 ML/MIN
0925	14.0	8.10	4.16	.182	110.0	2.74		104		7.6		BG 15.3 200 ML/MIN
0930	14.0	8.11	4.17	.181	110.0	2.75		99		9.5		BG 16.0 210 ML/MIN
0945	14.8	8.81	6.90	.183	53.2	2.75		87		9.8		Post-sampling Measurements

Total Volume Purged 3.0
Water Quality Meter(s) Horiba U-22 # 5112

Sample Information

Groundwater Sample Field ID MW-5
Lab Analysis Requested ____
Sampling Time 0935 Sampling End Time 0945 DTW before Sampling 2.75
Sampling Method WW Bailer (type: ____) ____ Same as Above X Other: ____
Sampling Observations Control box setting 19 psi, Dis. 2.5, Refill 12.5, CPM 4

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-6
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.11.04
Weather SUN 90's
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ___ Other ___
Well Diameter 4 Inches
Well Depth (ft below TIC) 20' Ft BGS / 18.23 Ft (TIC) ON 5/10/04
Water Level (ft below TIC) 2.67

Well Construction X PVC ___ Steel ___ Other ___
Well Screened Interval 5 to 15 ~~feet below TIC~~ BGS
Well Headspace Reading (PID/FID) 0.0 ppm
Product Level-if present (ft below TIC) 0

Well Notes (Odor, well condition, etc.) NO ODOR / SURFACE SEAL GOOD

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2} * 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump X Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement ___ Other ___
Pump intake depth ___ Purge water discharged to ___ Ground ___ Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (/)	Cond. (/)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—			Notes
1512						2.67						Purge Start
1515	16.7	6.05	4.45	.333	81.3	2.94	.5	139				
1520	15.5	5.78	1.66	.344	65.6	3.0	.25	148				250 ML per/min
1525	15.4	5.94	0.94	.344	66.6	3.0		142				"
1530	15.3	5.99	0.75	.343	70.5	3.0		140				"
1535	15.3	6.05	0.54	.342	70.2	3.0		137				"
1540	15.3	6.06	0.53	.342	70.7	3.0		137				"
1545	15.3	6.11	0.46	.341	79.9	3.0		135				"
1550	15.4	6.12	0.45	.341	80.9	3.0		135				"
1555	15.3	6.12	0.47	.341	80.4	3.0		135				"
1616	17.3	6.14	2.56	.359	37.0	3.0		129				Post-sampling Measurements

Total Volume Purged 3.0
Water Quality Meter(s) HORIBA U-22 #5112

Sample Information

Groundwater Sample Field ID MW-6
Lab Analysis Requested ___
Sampling Time 1557 Sampling End Time 1616 DTW before Sampling 3.0
Sampling Method ___ Bailer (type: ___) ___ Same as Above ___ Other: ___
Sampling Observations intake of pump set 1.5' off bottom of well.

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. — A TETRA TECH COMPANY

Well Number MW-7
State Permit No.
Project Name ~~4185.002.01~~ At&t
Project Number 4185.002.01
Sampling Date 5.12.04
Weather SUN H 70's
Sampled by: PJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) 24 ~~FT~~ BGS / 22.86 FT (TIC) on 5/10/04
Water Level (ft below TIC) 7.66
Well Notes (Odor, well condition, etc.)

Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval 9 to ~~24~~ 15 ~~feet below TIC~~ BGS
Well Headspace Reading (PID/FID) 0.0 BG 0.7
Product Level-if present (ft below TIC) 0

Volume of Water in Casing (gallons)

( ) - ( ) * ____ ²* 0.0408 = ____ gallons
Well Depth — Water Level — Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other Micro purge low
Pump intake depth ____ Purge water discharged to X Ground ____ Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (____)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	BG FID	WELL 4/5	Notes
1037						7.66				0.7		Purge Start
1040	12.8	7.39	5.27	0.697	55.3	8.90		125				100 mL/min Poor Recharge
1045	14.6	6.92	2.00	0.657	55.3	5.20		118		11.5	11.2	100 " "
1050	14.4	7.13	.75	0.655	54.0	5.36		92		12.1	10.8	100 " "
1055	14.5	7.20	.64	0.657	54.0	5.50		76		20.8	15.0	100 "
1100	14.6	7.24	.61	0.656	49.0	5.60		69		18.0	10.7	
1105	14.5	7.26	.59	0.653	47.7	5.63		66				
1113	16.7	7.60	3.36	0.96	12.0	5.88	100 mL/min	110		15.5	10.0	Post-sampling Measurements

Total Volume Purged 1.0 GAL (4 Hours) Water Quality Meter(s) Horiba U-22 ~~#~~ 5/12

Sample Information

Groundwater Sample Field ID MW-7 Lab Analysis Requested ____
Sampling Time 1107 Sampling End Time 1130 DTW before Sampling 5.63
Sampling Method X Bailer (type: ____) ____ Same as Above X Other: ____
Sampling Observations ____

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-8
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01
Sampling Date 5/11/04
Weather PARTLY CLOUDY 85-90°, WIND 5 MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ___ Other ___
Well Construction X PVC ___ Steel ___ Other ___
Well Diameter 4 Inches
Well Screened Interval 5 to 20 ~~feet below TIC~~ BGS
Well Depth (ft below TIC) 20 FT BGS / 20.8 FT TIC on 5/10/04
Well Headspace Reading (PID/FID) 0 PPM
Water Level (ft below TIC) 5.56 @ 1455
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) NO ODOR, FID = 0 PPM ABOVE BACKGROUND. STICKUP COMPLETION.

Volume of Water in Casing (gallons)

( ) - ( ) * ___ 2* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other WELL WIZARD MICRO PURGE
Pump intake depth 1.5 FT OFF BOTTOM Purge water discharged to X Ground ___ Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. ~~(mS/cm)~~ mg/L	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	FID (PPM)		Notes
~~ASF~~ 1455												Purge Start
1500	14.20	7.22	5.11	0.140	70	5.72	400	136		0		SLIGHTLY CLOUDY & TAN, NO ODOR
1510	13.84	6.85	4.43	0.140	47.3	5.76		148		0		
1515	13.83	6.56	4.05	0.140	44.1	5.78	450	158		0		TAN, VERY SLIGHTLY CLOUDY DISCHARGE
1520	14.0	6.23	3.73	0.140	42.9	5.79		165		0		
1525	13.98	6.03	3.61	0.139	41.4	5.79	450	169		0		
1530	13.87	5.89	3.46	0.139	41.1	5.80		172		0		

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number: MW-2A
State Permit No.:
Project Name: ATT CLARK
Project Number: 4185.002.01
Sampling Date: 5/14/04
Weather: PARTLY CLOUDY, 70-75°F, WIND 5-10 MPH
Sampled by: SGF (initials)

Well Information

Well Type: X Monitor ___ Other ___
Well Construction: X PVC ___ Steel ___ Other ___
Well Diameter: 4 Inches
Well Screened Interval: 25 to 30 feet below TIC
Well Depth (ft below TIC): 30 FT BGS / 28.13 (TIC) 5/14/04
Well Headspace Reading (PID/FID): 1.8 ppm ABOVE BG.
Water Level (ft below TIC): 4.27 @ 1517
Product Level-if present (ft below TIC): 0
Well Notes (Odor, well condition, etc.):

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2} * 0.0408 = ___ gallons
Well Depth - Water Level * Well Diameter (in)

Purging Information

Purge Method: X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement ___ X Other WELL WIZARD MICRO PURGE
Pump intake depth: 1.5 FT OFF BOTTOM Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing: X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	FID (PPM ABOVE BACKGROUND)		Notes BG. = 2.5 PPM
531						4.17						Purge Start (SGF 5/14)
1535	17.22	7.40	4.18	0.800	26.5	4.50	300	104		3.0		CLEAR, NO COLOR OR ODOR
1540	16.41	7.23	2.95	0.799	13.8	4.71		97		4.0		
1545	16.26	7.14	2.42	0.804	19.5	4.75		86		4.0		
1550	16.43	7.10	2.21	0.805	33.4	4.74	250	79		3.5		
~~1555~~	(SGF 5/14)									2.0		
1555	16.38	7.08	2.07	0.805	47.6	4.73		76		2.0		
1600	16.33	7.07	1.94	0.800	66.9	4.73		72		2.0		
1610	16.41	7.04	1.80	0.796	79.7	4.72		69		3.0		
1615	16.31	7.02	1.67	0.790	84.2	4.73		68		0		
1620	16.34	7.02	1.66	.790	81.7	4.73		68		0		
1648	16.74	7.19	3.37	0.806	17.2	4.73		117				Post-sampling Measurements

Total Volume Purged: ___ Water Quality Meter(s): ___

Sample Information

roundwater Sample Field ID: MW-2A
Lab Analysis Requested: VOC, NAT. ATTEN. PARAMETERS
Sampling Time: 1615 Sampling End Time: 1647 DTW before Sampling: 4.73
Sampling Method: WW Bailer (type: ___) ___ Same as Above ___ Other: ___
Sampling Observations: FID BACKGROUND FLUX - RANGING FROM 2.5 TO ___ PPM DURING PURGING

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-5A
State Permit No.
Project Name ATT CLARK
Project Number 41/85.002.01
Sampling Date 5/14/04
Weather CLOUDY/FOG, 60°F, WIND 5-10MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ____ Other ____ Well Construction X PVC ____ Steel ____ Other ____
Well Diameter ____ Inches Well Screened Interval 28 to 33 ~~feet below TIC~~ BGS
Well Depth (ft below TIC) 33 FT BGS / 29.40 TIC on 5/10/04 Well Headspace Reading (PID/FID) 0 ppm ABOVE BG. BACKGROUND = 0-3 ppm
Water Level (ft below TIC) 2.78 @ 0845 Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) NO ODOR, LOCK FROZEN

Volume of Water in Casing (gallons)

( ) - ( ) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump ____ Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement X Other WELL WIZARD MICRO PURGE
Pump intake depth 1.5 FT OFF BOTTOM Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	___	FID PPM ABOVE BACKGROUND	___	Notes FID BACKGROUND = 0 PPM
2858						2.50						Purge Start
0900	14.72	11.72	10.74	1.62	85.6	3.03	470	36		0		CLEAR, NO ODOR
0905	14.66	11.76	10.36	1.66	12.2	3.51		15		0		0903 - CUT RATE BACK
0910	14.78	11.70	10.10	1.60	5.9	3.96	280	-8		0		CLEAR TO LT. TAN, NO ODOR
0915	14.82	11.60	8.17	1.50	45.1	4.13		-13		0		
0920	14.84	11.52	7.37	1.33	52.0	4.31	270	-22		0		
0925	14.88	11.44	6.47	1.10	58.1	4.41		-30		0		0928 - CUT RATE BACK
0934	15.09	11.38	5.95	0.950	59.0	4.33	200	-37		0		
0940	15.02	11.34	5.46	0.818	60.7	4.33		-44		0		
						SGF 5/14						
1010	SGF 5/14 15.23	11.00	6.15	0.516	47.4	4.32		-2		0		Post-sampling Measurements

Total Volume Purged 3.5 GALLONS Water Quality Meter(s) HORIBA U-22 # 03742

Sample Information

roundwater Sample Field ID MW-5A Lab Analysis Requested VOC, NAT. ATTEN. PARAMETERS
Sampling Time 0943 Sampling End Time 1009 DTW before Sampling 4.33
Sampling Method WW Bailer (type: ____) ____ Same as Above ____ Other: ____
Sampling Observations ____

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-7A
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.12.04
Weather SUNL80S CALM
Sampled by: RJW (initials)

Well Information

Well Type ✓ Monitor ___ Other ___
Well Diameter ___ Inches
Well Depth (ft below TIC) 34 FT BGS / 31.98 FT (TIC) ON 5/10/04
Water Level (ft below TIC) 5.02

Well Construction ✓ PVC ___ Steel ___ Other ___
Well Screened Interval 27.5 to 34 feet ~~below TIC~~ BGS
Well Headspace Reading (PID/FID) 0.4 / BG 15.0
Product Level-if present (ft below TIC) 0

Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2} * 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method ✓ Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump ✓ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement ___ Other Micro Purge W.W.
Pump intake depth ___ Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing ✓ Polypropylene ___ Teflon-line ___ Other ___ / ✓ New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (S/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—			Notes
1210						5.02						Purge Start
1213	15.2	8.79	9.0	.350	19.2	5.13	.25/min	98				250 mL/min
1215	14.8	8.95	6.07	.350	22.1	5.13	"	103				
1220	14.1	7.05	4.02	.329	170.	5.15	"	122				
1225	14.9	6.70	2.84	.314	138	5.15	"	124				
1230	14.6	6.88	2.97	.321	68.5	5.15	"	124				
1240	14.6	7.04	3.30	.328	47.1	5.15	"	106				
1245	14.7	7.05	3.14	.324	46.6	5.16	"	102				
1258	14.7	6.95	2.66	.323	40.0	5.16	"	105				
1312	15.1	7.02	3.30	.319	752.0	5.16	.25/min	125				Post-sampling Measurements

Total Volume Purged 9.5 Liters
Water Quality Meter(s) HORIBA U22 #5112

Sample Information

Groundwater Sample Field ID MW-7A
Lab Analysis Requested ___
Sampling Time 1254 Sampling End Time 1310 DTW before Sampling 5.16
Sampling Method ___ Bailer (type: ___) Same as Above ___ Other: ___
Sampling Observations Water contained in 5 gal Bucket then emptied into drum.

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-9A
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01
Sampling Date 5/12/04
Weather SUNNY, 85°, WIND 5 MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ___ Other ___
Well Construction X PVC ___ Steel ___ Other ___
Well Diameter 4 Inches
Well Screened Interval 14 to 20 feet ~~below TIC~~ BGS
Well Depth (ft below TIC) 20 FT BGS / 14.87 FT TIC ON 5/10/04
Well Headspace Reading (PID/FID) 0 PPM
Water Level (ft below TIC) 3.22 @ 1300
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) NO ODOR, LOCK FROZEN

Volume of Water in Casing (gallons)

( ) - ( ) * ___ 2* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other WELL WIZARD MICRO PURGE
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other ___
Pump intake depth 1.5 FT OFF BOTTOM Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	PID ppm		Notes
1312						3.22						Purge Start
1320	15.88	7.43	7.49	0.682	26.3	4.00	450	94		0		SLIGHTLY CLOUDY, TRACE
~~1325~~	SGF 5/12/04								SGF 5/12			BRN RUST/SILT PARTICLES
1330	16.06	7.34	6.46	0.682	6.3	5.33	400	87	-18	0		NO ODOR
1335	16.15	7.29	5.68	0.681	5.0	5.90	230	~~-18.0~~		0		1325 - CUT RATE BACK
1340	17.31	7.16	4.58	0.682	3.0	6.17		-64		0		1335 - CUT RATE BACK
1345	17.56	7.00	3.27	0.690	-0.6	6.20		-89		0		CLEAR, NO ODOR
1350	17.60	6.90	2.75	0.693	-3.0	6.18	230	-96		0		
1400	17.55	6.93	2.30	0.699	-3.1	6.17		-106		0		
1407	17.77	6.91	1.96	0.704	-6.0	6.13		-114		0		
		~~6.95~~										
		SGF 5/12										
1434	15.83	6.98	5.78	0.713	2.2	6.56		-103		0		Post-sampling Measurements

Total Volume Purged 4 GALLONS
Water Quality Meter(s) HORIBA # 03742

Sample Information

Groundwater Sample Field ID MW-9A
Lab Analysis Requested ___
Sampling Time 1410
Sampling End Time 1432
DTW before Sampling 6.13
Sampling Method WW Bailer (type: ___) ___ Same as Above ___ Other: ___
Sampling Observations HORIBA - POSSIBLE AIR LEAK

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-10A
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.11.04
Weather Sun H 80s
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) 24 Ft BGS / 22.66 Ft (TIC) on 5/10/04
Water Level (ft below TIC) 5.07

Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval 19 to 24 feet below TIC
Well Headspace Reading (PID/FID) 0.0
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other Micro Purge WW
Pump intake depth ____ Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. mS/cm	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—			Notes
1057						5.07						Purge Start
1100	20.0	4.15	10.7	0.000	348.	5.65	.5	262		Omit		
1105	17.4	4.06	11.28	0.000	360.	6.05	.5	260		Omit		
1110	16.0	4.07	10.92	0.000	300	6.21	0.4	253		HAD sleve + plug		lowered flow
1125	13.9	6.64	2.73	.380	95.0	6.27	0.4	178				
1130	13.7	6.83	.85	.382	93.0	6.27	0.4	164				
1135	13.7	7.07	.56	.383	92.0	6.27	0.4	149				
1140	14.0	7.28	.58	.383	93.7	6.27	0.4	136				
1145	14.2	7.29	.53	.384	60.0	6.27	0.4	122				
1150	14.2	7.30	.53	.383	69.9	6.27	0.4	116				
1156	14.3	7.32	.51	.384	65.0	6.27	0.4	107				
				.398								
1210	14.6	7.49	1.32	.400	36.1	6.27	0.4	78				Post-sampling Measurements

Total Volume Purged 7.0 Gallons
Water Quality Meter(s) HORIBA U-22 # 5112

Sample Information

Groundwater Sample Field ID MW-10A
Lab Analysis Requested ____
Sampling Time 1157
Sampling End Time 1210
DTW before Sampling 6.27
Sampling Method WW
Bailer (type: ____)
Same as Above ____
Other: ____
Sampling Observations Sample DUP @ 1215

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-11A
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01
Sampling Date 5/14/04
Weather CLOUDY, 60-65°F, WIND 5-10 MPH
Sampled by: SGP (initials)

Well Information

Well Type X Monitor ___ Other ___ Well Construction X PVC ___ Steel ___ Other ___
Well Diameter 4 Inches Well Screened Interval 27 to 32 feet ~~below TIC~~ BGS
Well Depth (ft below TIC) 32 FT BGS / 31.12 FT TIC ON 5/10/04 Well Headspace Reading (PID/FID) 0 ppm
Water Level (ft below TIC) 2.95 @ 1110 HRS Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) NO ODOR, RAGGED INNER CSG.

Volume of Water in Casing (gallons)

( ) - ( ) * ___ 2* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other WELL WIZARD MICRO PURGE
Pump intake depth 1.5 FT ~~OFF BOTTOM~~ Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	PID (PPM ABOVE BG)	FID	BG = 0 PPM Notes
1134						2.57						Purge Start
1140	15.37	10.54	6.99	0.188	8.9	3.14	200	21		0		CLEAR, NO ODOR
1145	15.74	10.53	6.33	0.190	7.6	3.59	150	14		0		1142 - CUT RATE BACK
1150	15.95	10.54	5.97	0.190	5.8	3.84		7		0		
1155	~~10.55~~ 15.98	10.55	6.07	0.190 (SGP 5/14)	~~4.7~~ 7.1	4.03		2		0		CLEAR, NO ODOR
1200	16.15	10.54	5.78	0.190	9.0	4.23		-2		0		
1205	16.19	10.54	5.74	0.190	6.1	4.38		-5		0		
1210	16.28	10.52	5.73	0.190	4.7	4.59	120	-9		0		
										SGP 5/14		
1255	17.15	8.84	3.39	0.444	10.5	5.18		44		0 1.5		Post-sampling Measurements

Total Volume Purged 2 GALLONS Water Quality Meter(s) HORIBA # 03742

Sample Information

Groundwater Sample Field ID MW-11A Lab Analysis Requested VOC, NAT. ATTEN. PARAMETERS
Sampling Time 1215 Sampling End Time 1250 DTW before Sampling 4.62
Sampling Method WW Bailer (type:) Same as Above ___ Other: ___
Sampling Observations FREQUENT PERIODS OF FRAGRANCE ODOR NOTED DURING PURGING/SAMPLING (FROM AREA ADJACENT PROPERTY)
SGP 5/14

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-12A
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.13.04
Weather SUN 80 HIGH BREEZY
Sampled by: RJW (initials)

Well Information

Well Type ✓ Monitor ____ Other ____
Well Construction ✓ PVC ____ Steel ____ Other ____
Well Diameter 4 Inches
Well Screened Interval 35 to 40 feet ~~below TIC~~ BGS
Well Depth (ft below TIC) 37' ~~BGS~~ 40 FT BGS BELOW TIC ON 5/10/04
Well Headspace Reading (PID/FID) 0.0 ppm BG
Water Level (ft below TIC) 5.70
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method ✓ Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump ✓ Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other Microfurge WW
Pump intake depth ____ Purge water discharged to ____ Ground ____ Drum ____ Other ____
Tubing ✓ Polypropylene ____ Teflon-line ____ Other ____ / ✓ New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (µS/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	Well FID	BG FID	Notes
1323						5.70						Purge Start
1330	18.0	7.93	4.18	353.	74.6	6.10	0.15	111				150 mL/MN clear
1335	16.7	7.73	1.22	359.	42.7	6.55	0.15	103				" " "
1340	16.7	7.79	1.04	357.	42.4	6.76	0.15	96		28.8	23.	150 mL/MN "
1345	16.7	7.86	.84	368.	40.8	6.94	0.15	85		13.8	13.7	150 mL/MN
1350	16.4	7.90	.90	378.	42.4	7.05	0.15	78		5.4	9.0	150 mL/MN
1355	16.6	7.92	.84	395.	66.3	7.18	0.15	72				
1420	16.3	7.87	1.23	457.	32.0	8.10		44				~150 mL/MN Post-sampling Measurements

Total Volume Purged ____ Water Quality Meter(s) HORIBA U-22 #5112

Sample Information

Groundwater Sample Field ID MW-12A Lab Analysis Requested ____
Sampling Time 1355 Sampling End Time 1417 DTW before Sampling 7.18
Sampling Method ____ Bailer (type: ____) & Same as Above ____ Other: ____
Sampling Observations (FRESH CUT GLASS FOUND WELL)

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number: MW-13A
State Permit No.:
Project Name: ATT CLARA
Project Number: 4185.002.01
Sampling Date: 5/12/04
Weather: SUNNY-PARTLY CLOUDY, 80°F, WIND ~5 MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ___ Other ___ Well Construction X PVC ___ Steel ___ Other ___
Well Diameter 4 Inches Well Screened Interval 29 to 34 feet ~~below TIC~~ BGS
Well Depth (ft below TIC) 34 FT BGS / 32.70 FT TIC ON 5/10/04 Well Headspace Reading (PID/FID) 0 PPM
Water Level (ft below TIC) 7.62 FT @ 0902 Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.) LOCK FROZEN; WATER POOLED IN FLUSH MOUNT (~1 INCH DEEP)

Volume of Water in Casing (gallons)

( ) - ( ) * ___ 2* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ~~AMS~~ WELL WIZARD MICRO PURGE (SGF 5/12/04)
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement ___ X Other WELL WIZARD MICRO PURGE
Pump intake depth 1.5 FT OFF BOTTOM Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	FID BACKGROUND = 0 PPM (PPM)		Notes
1920						7.62						Purge Start
0925	14.08	9.71	10.60	0.598	226	8.15	500	117		0		CLOUDY, TAN, NO ODOR
0930	14.26	9.74	9.92	0.598	173	8.65	380	108		0		CUT RATE BACK 380 ML/MIN
0935	14.53	9.75	9.39	0.596	98.5	9.28	230	99		0		CUT PUMP RATE; SLIGHTLY
0940	14.76	9.74	9.04	0.596	76.5	9.62	200	91		0		CLOUDY, LT TAN, NO ODOR
0945	15.22	9.74	8.65	0.597	71.7	10.14	175	83		0		CUT RATE TO REDUCE DD
0950	15.61	9.66	6.47	0.594	28.9	10.42		79		0		
0955	15.65	9.69	6.06	0.600	24.0	10.76		77		0		
1000	15.54	9.73	6.05	0.597	15.9	11.07	80	74		0		
1010	15.48	9.81	5.96	0.597	18.4	11.63		64		0		TAN, SLIGHTLY CLOUDY, NO ODOR
						14.11 (SGF 5/12)						
1100	17.32	9.89	7.30	0.604	48.0	~~14.11~~		48		0		Post-sampling Measurements

Total Volume Purged 2.5 GALLONS Water Quality Meter(s) HORIBA U-22 # 03742

Sample Information

Groundwater Sample Field ID MW-13A Lab Analysis Requested ___
Sampling Time 1015 Sampling End Time 1100 DTW before Sampling 11.98
Sampling Method WW Bailer (type: ___) ___ Same as Above ___ Other: ___
Sampling Observations ___

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-14A
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01

Sampling Date 5/13/04
Weather SUNNY 80-85°F, WIND 5 MPH
Sampled by: SGF (initials)

Well Information

Well Type X Monitor ___ Other ___
Well Diameter 4 Inches
Well Depth (ft below TIC) 32 BGS / 30.15 @ 5/10/04
Water Level (ft below TIC) 7.31 @ 1230
Well Notes (Odor, well condition, etc.) ~~ANT~~ NEST IN FLUSHMOUNT

Well Construction X PVC ___ Steel ___ Other ___
Well Screened Interval 27 to 32 feet ~~below TIC~~ BGS
Well Headspace Reading (PID/FID) 0 PPM
Product Level-if present (ft below TIC) 0

Volume of Water in Casing (gallons) SGF 5/13/04

( ) - ( ) * ( ) ²* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ~~WELL WIZARD MICRO PURGE~~ (SGF 5/13/04)
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other WELLWIZARD MICRO PURGE
Pump intake depth ___ Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (mL/min)	ORP mV	—	PID (PPM) (ABOVE BACKGROUND)		Notes
1245						7.21						Purge Start ~~1146~~ 1147
1250	15.54	7.04	9.85	0.851	47.0	8.00	400	134		0		CLEAR - CLOUDY, NO ODOR
1255	15.18	7.09	6.08	0.853	27.8	8.63	450	131		0		CUT RATE BACK @ 1256
1300	15.23	~~6~~ 7.10	~~6~~ 5.14	0.852	20.2	8.98	380	127		0		CLEAR, NO ODOR
1310	14.93	7.08	4.45	0.853	12.1	9.33		124		0		
1315	15.12	7.09	4.14	0.852	18.0	9.47		121		0		
1320	15.35	7.08	3.84	0.853	12.0	9.53		119		0		
1325	15.27	7.07	3.68	0.856	10.5	9.61	380	117		0		
1352	15.46	7.26	5.68	0.867	40.0	9.84		128		0		Post-sampling Measurements

Total Volume Purged 5 GALLONS
Water Quality Meter(s) HORIBA # 03742

Sample Information

Groundwater Sample Field ID MW-14A
Lab Analysis Requested VOC, N.A. PARAMETERS
Sampling Time 1335 Sampling End Time 1350 DTW before Sampling 9.66
Sampling Method WW Bailer (type:) Same as Above ___ Other: ___
Sampling Observations CUTTING ~~GRASS~~ NEAR WELL DURING PURGE. PID BACKGROUND FLUX RANGING FROM APPROX 3-9 PPM - DUE TO ~~ACTIVE~~ HEAT, HUMIDITY & NEARBY GRASS MOWERS (SGF 5/13/04)

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-16A (AS LABELED ON WELL TAG)
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01
Sampling Date 5.13.04
Weather SUN 80's
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) (57')
Water Level (ft below TIC) 11.95
Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval ____ to ____ feet below TIC
Well Headspace Reading (PID/FID) NOT FUNCTIONAL (NO FLAME)
Product Level-if present (ft below TIC) 0
Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ____ 2* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other Micro purge WW
Pump intake depth 56' Purge water discharged to ____ Ground X Drum ____ Other from 5 gal bucket.
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (__/__)	Cond. (____)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	Well FID	BG FID	Notes
0930						11.95						Purge Start
0935	15.9	6.32	9.16	.433	27.0	12.30		202				Filled Cell
0940	15.3	6.78	2.36	.578	10.0	12.45		183				~~water level stabilized~~
0945	15.4	6.84	1.70	.578	15.6	12.50		176				
0950	15.3	6.97	1.16	.581	21.0	12.55		161				(cell feel over)
0955	—	—	—	—	—	—		—				M-55ED / Tech Support Fld
1000	16.5	7.20	1.05	.575	13.2	12.65		140				
1005	16.7	7.23	.83	.571	5.1	12.75		131		0.0		
1010	16.7	7.24	.81	.569	5.2	12.78		127				100 ML/MIN
1016	16.5	7.30	2.3	.572	1.4	12.83		128		4.4	6.0	Post.
1014	—	7.37	—	.553	3.7	12.84		127		3.1	2.1	Post-sampling Measurements

Total Volume Purged 4.5 Liters
Water Quality Meter(s) Horiba U22 & S112

Sample Information

Groundwater Sample Field ID MW-16A
Lab Analysis Requested ____
Sampling Time 1010 Sampling End Time 1014 DTW before Sampling 12.78
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other: ____
Sampling Observations CUTTING GRASS on adjoining property.

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-17A (AS LABELED ON WELL)
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.13.04
Weather SUNNY 80'S H SLIGHT BREEZE.
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 4 Inches
Well Depth (ft below TIC) ____
Water Level (ft below TIC) ~~12.88~~ 13.10

Well Construction ____ PVC ____ Steel ____ Other ____
Well Screened Interval ____ to ____ feet below TIC
Well Headspace Reading (PID/FID) 2.2 (BG - 5.7)
Product Level-if present (ft below TIC) ____

Well Notes (Odor, well condition, etc.) ____

Volume of Water in Casing (gallons)

(____) - (____) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other ____
Pump intake depth ____ Purge water discharged to ____ Ground X Drum ____ Other collected into 5gal bucket
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. mg/L	Cond. S/CM	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV		WELL FID	BG FID	Notes
1147					1330	~~12.88~~				0.0	2.0	Purge Start
1150	16.8	7.01	5.0	.427	.331.	13.15		106		1.2	2.5	First Attempt pump had been clogged with mud
1155	16.5	6.73	2.37	.433	264.	13.41		87				200 ML/MN
1200	16.4	6.75	1.87	.439	257.	13.53		78				" "
1205	16.6	6.89	1.48	.454	184.	13.71		31				200 ML/MN
1210	16.7	6.99	1.52	.463	163.	13.85		25				200 ML/MN
1215	17.5	7.05	1.43	.466	165.	13.85		17				
1220	17.5	7.08	1.12	.469	165.	13.90		15		1.0	5.1	
1224	16.9	7.15	2.8	.480	141.	13.91		15		1.0	3.0	Post-sampling Measurements

Total Volume Purged 6.0 Liters
Water Quality Meter(s) HORIBA U22 # 5112

Sample Information

Groundwater Sample Field ID MW-17A
Lab Analysis Requested ____
Sampling Time 1220 Sampling End Time 1222 DTW before Sampling 13.90
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other: ____
Sampling Observations set pump @ 20 off Bottom (CLOUDY GREYISH color)
very silty clogged first attempt set pump higher.

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-18A
State Permit No.
Project Name ATT CLARK
Project Number 4185.002.01

Sampling Date 5/13/04
Weather SUNNY, 80°F, WIND 5 MPH
Sampled by: SGF 5/13 ~~SGF~~ SGF (initials)

Well Information

Well Type X Monitor ___ Other ___
Well Diameter 4 Inches
Well Depth (ft below TIC) 51 FT BGS / 49.35 FT TIC on 5/10/04
Water Level (ft below TIC) ~~7.78~~ 7.78 @ 0925
Well Construction X PVC ___ Steel ___ Other ___
Well Screened Interval 46 to 51 feet below TIC
Well Headspace Reading (PID/FID) 0 PPM
Product Level-if present (ft below TIC)
Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ___ ^{2}* 0.0408 = ___ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other ___
Pump ___ Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other WELL WIZARD MICRO PURGE
Pump intake depth 2 FT OFF BOTTOM Purge water discharged to ___ Ground X Drum ___ Other ___
Tubing X Polypropylene ___ Teflon-line ___ Other ___ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (ml/min)	ORP mV	___	PID (PPM)		Notes
0945						7.78						Purge Start
0950	17.94	6.47	3.53	7.60	87.3	8.64	370	184		0		DISCHARGE CLEAR W/ FINE
0955	18.18	6.64	2.91	7.60	37.3	8.84	200	173		0		SUSPENDED SAN. BLACK
1000	18.35	6.69	2.68	7.61	29.7	9.42		165		0		PARTICLES - RUST/SED.
1005	18.53	6.72	2.48	7.63	17.3	9.82	100	155		0		0952 - CUT RATE BACK
1010	19.34	6.73	2.43	7.61	10.9	10.18		148		0		1006 - CUT RATE BACK
1015	19.55	6.75	2.40	7.62	9.7	10.45		142		0		CLEAR, TRACE SEDIMENT
1021	20.01	6.76	2.35	7.62	6.2	10.67		135		0		AND ODOR
1035	20.27	6.82	2.70	7.68	4.9	11.32		121		0		Post-sampling Measurements

Total Volume Purged 2 GALLONS
Water Quality Meter(s) HORIBA # 03742

Sample Information

Groundwater Sample Field ID MW-18A
Lab Analysis Requested VOC ONLY
Sampling Time 1028 Sampling End Time 1033 DTW before Sampling 10.92
Sampling Method WW Bailer (type: ___) ___ Same as Above ___ Other: ___
Sampling Observations SEDIMENT/RUST SETTLED IN FLOW THROUGH CELL

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-19
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.14.04
Weather OVERCAST 60's
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____ Well Construction X PVC ____ Steel ____ Other ____
Well Diameter 2" Inches
Well Depth (ft below TIC) 80 FT BGS / 80.20 FT(TIC) ON 5/10/04
Well Screened Interval 70 to 80 feet below TIC
Well Headspace Reading (PID/FID) 0.0
Water Level (ft below TIC) 9.20
Product Level-if present (ft below TIC)
Well Notes (Odor, well condition, etc.) NO ODOR, WATER AROUND PVC OUTER CASING

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2} * 0.0408 = ____ gallons
Well Depth - Water Level * Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement X Other MICRO PURGE Well Wizard
Pump intake depth 78.25 Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	WELL FID	BG FID	Notes
1240						9.20				0.0	0.0	Purge Start
1245	15.1	7.07	2.96	.666	"999."	11.35		113		0	0	TURBID/REDDISH BRN
1250	—	—	—	—	—	—	—	—	—	—	—	MISSED
1255	15.3	6.93	1.11	.675	311.	11.86	0.25	81		0	0	Clear in tbe/ill empty cell
1300	15.8	7.00	2.09	.679	172.	12.15	0.25	74		0	0	250 ML/MN
1305	15.8	7.01	1.04	.680	98.	12.28	0.25	66		0	0	250 ML/MN
1310	16.0	7.03	.93	.680	74.2	12.30	0.25	64		0	0	150 ML/MN
1315	16.1	7.04	.90	.680	66.7	12.21	0.15	61		0	0	150 ML/MN
1320	16.1	7.04	.88	.679	25.4	12.20	0.10	59		0	0	100 ML/MN
1325	16.2	7.05	.87	.677	23.3	12.10	0.10	59		0	0	100 ML/MN
1330	16.2	7.04	.82	.679	14.9	12.10	0.10	59		0	0	100 ML/MN
1336	16.2	7.06	3.56	.678	8.9	12.10		77				Post-sampling Measurements

Total Volume Purged 5.5 LITERS Water Quality Meter(s) HORIBA U-22 #5112

Sample Information

Groundwater Sample Field ID MW-19 Lab Analysis Requested ____
Sampling Time 1330 Sampling End Time 1333 DTW before Sampling 12.10
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other: ____
Sampling Observations (GRASS WAS CUT 5/13/04) CLEAR, NO ODOR

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-19D
State Permit No. _____
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.14.04
Weather SUN 80°
Sampled by: RSW (initials)

Well Information

Well Type X Monitor _____ Other _____
Well Diameter 2 Inches
Well Depth (ft below TIC) 206 FT BGS / 186.53 FT (TIC) ON 5/10/04
Water Level (ft below TIC) 8.33

Well Construction X PVC ___ Steel ___ Other ___
Well Screened Interval 196 to 206 feet below TIC
Well Headspace Reading (PID/FID) 0.0ppm BG 0.0ppm
Product Level-if present (ft below TIC) _____
Well Notes (Odor, well condition, etc.) _____

Volume of Water in Casing (gallons)

(_____) - (_____) * _____ ^{2}* 0.0408 = _____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ___ NJDEP 3 Well Volumes ___ Not Purged ___ Other _____
Pump X Submersible Pump (___ inch) ___ Peristaltic ___ Positive displacement X Other MicroPurge
Pump intake depth * 184.15 Purge water discharged to ___ Ground ___ Drum ___ Other _____
Tubing X Polypropylene ___ Teflon-line ___ Other _____ / X New ___ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (___)	Cond. (___)	Turb (___)	DTW (feet)	Rate (___/min)	ORP mV	___	WELL FID	BG FID	Notes
420						8.33				0	0	Purge Start
1425	15.9	7.55	7.53	.416	103.	11.57	0.50	130		0	0	
1430	15.9	10.58	5.67	.421	113.	13.17	0.50	27		0		Lowered Rate
1435	16.4	10.72	2.96	.466	132.	14.33	0.50	-9		0		NO Recharge
1440	16.0	10.79	1.99	.550	49.1	15.26	0.30	-28		0		
1445	-	-	-	-	-	-	-	-	-	-	-	
1450	LUNCH											(Lunch in field)
1455	-	-	-	-	-	-	-	-	-	-	-	
1500	15.3	10.34	0.87	.464	368.	16.62	0.30	-57		0	0	300 ML/MN
1505	15.3	9.66	0.88	.384	325.	16.75	0.30	-35		0	0	Emptied cell.
1510	15.4	9.33	2.57	.362	217.	16.86	0.30	-15		0	0	
1515	15.4	9.11	1.11	.362	184.	16.89	0.30	-7		0	0	
1520	15.4	8.98	1.03	.363	141.	17.0	0.30	+1		0	0	
1525	15.3	8.92	0.99	.367	91.9	17.13	0.30	6		0	0	Air Comp. out of Gas! Filled
1530	15.1	8.91	1.03	.368	81.3	17.81	0.30	8		0	0	
1535	15.2	8.80	0.90	.367	84.0	18.24	0.30	15		0	0	
1540	15.2	8.82	2.25	.368	93.0	18.5	0.30	23		0	0	Post-sampling Measurements

Total Volume Purged 14.0 LITERS Water Quality Meter(s) HORIBA U-22 # 5112

Sample Information

Groundwater Sample Field ID MW-19D Lab Analysis Requested _____
Sampling Time 1535 Sampling End Time 1538 DTW before Sampling 18.33
Sampling Method ___ Bailer (type: ___) X Same as Above ___ Other: _____
Sampling Observations NO ODOR
(X Lower depth to water level meter into well and hit top of pump. only on 2" WELLS)

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-20D
State Permit No.
Project Name AT&T CLARK
Project Number 485-002.01
Sampling Date 5.13.04
Weather SUN 90
Sampled by: RJW (initials)

Well Information

Well Type ✓ Monitor ____ Other ____
Well Diameter 2 inches
Well Depth (ft below TIC) 198 FT BGS / 197.00 FT (TIC) ON 5/10/04
Water Level (ft below TIC) 13.55
Well Notes (Odor, well condition, etc.)

Well Construction ✓ PVC ____ Steel ____ Other ____
Well Screened Interval 188 to 198 feet below TIC
Well Headspace Reading (PID/FID) 0.0 ppm / BG 2.5
Product Level-if present (ft below TIC) 0

Volume of Water in Casing (gallons)

( ) - ( ) * ( ) ^{2} * 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method ✓ Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump ✓ Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ ✓ Other MICRO PURGE
Pump intake depth 192.5 Purge water discharged to ____ Ground ____ Drum ✗ Other ____
Tubing ✓ Polypropylene ____ Teflon-line ____ Other ____ / ✓ New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (S/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	FID	BG	Notes
540						13.55						
1545	20.3	10.30	6.17	.293	60.0	13.86		-16		0.0	0.0	Purge Start
1550	18.3	10.24	3.20	.334	865.0	13.85	0.15	48		0.0	0.0	150 mL/min
1555	18.7	10.19	2.98	.336	793.	13.62	0.15	61		0.0	1.2	"
1600	19.5	7.88	2.95	.333	691.	13.62	0.15	80		0.0	0.0	cut back Discharge
1610	18.3	7.79	3.18	.325	564.	13.62	0.15	90		0.0	0.0	"
1615	17.8	7.80	3.21	.321	512.	13.72	0.15	92		0.0	0.0	150 mL/min
												150 mL/min
1620	17.5	7.95	4.90	.319	468.	13.76		91		0.0	0.0	Post-sampling Measurements

Total Volume Purged 4.5 Liters
Water Quality Meter(s) HORIBA U-22 #5112

Sample Information

Groundwater Sample Field ID MW-20D
Lab Analysis Requested ____
Sampling Time 1615 Sampling End Time 1619 DTW before Sampling 13.72
Sampling Method ____ Bailer (type: ____) ____ Same as Above ____ Other: ____
Sampling Observations LT. ORANGISH color NO odor

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-21
State Permit No.
Project Name AT&T CLARK
Project Number 4185-002-01

Sampling Date 5.14.04
Weather OVERCAST 50'S
Sampled by: RW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 2" Inches
Well Depth (ft below TIC) 114 FT BGS / 114.12 FT (TIC) ON 5/10/04
Water Level (ft below TIC) 11.06
Well Notes (Odor, well condition, etc.)

Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval 104 to 114 feet below TIC
Well Headspace Reading (PID/FID) 0.0
Product Level-if present (ft below TIC)

Volume of Water in Casing (gallons)

(114.6) - (102.94) * .163 * 0.0408 = 16.7 gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other MICRO PURGE
Pump intake depth 111.65 Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. S/cm	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—	WBH FID	BG FID	Notes
0925						10.85				2.4	3.9	Purge Start
1030	14.0	7.91	2.19	.388	"999."	11.24		106				CLOUDY REDDISH COLOR
1035	M.S.S.D. control box WAS not functioning (HAD to REPLACE BATTERIES)											CLEARED CELL - STILL CLOUDY (control box not cycling)
1045	13.9	7.41	.95	.385	"999."	10.86		29				
1050	14.0	7.42	2.35	.386	444.	10.80	0.35	48		0.0	0.0	350 ml/min clear cell
1055	14.0	7.42	.81	.386	197.	10.67		42				
1100												
1105	/	/	/	/			/			/		control box problems
1120	14.0	7.45	1.27	.387	156.	10.31	0.35	56				replaced second set of batt.
1125	14.1	7.42	1.01	.386	194.	10.36	0.35	57				350 ml/min
1130	14.0	7.42	.66	.386	116.	10.30	0.35	49				
1135	14.0	7.42	.60	.385	63.3	10.30	0.35	42		0.0	0.0	
1140	14.1	7.43	.58	.385	29.4	10.30	0.35	38				
1145	14.1	7.44	.55	.385	18.9	10.30	0.35	32				
50	14.1	7.46	2.58	.386	10.0	10.30	0.35	48				Post-sampling Measurements

Total Volume Purged 18.5 Liters Water Quality Meter(s) HORIBA U-22 # S112

Sample Information

Groundwater Sample Field ID MW-21 Lab Analysis Requested
Sampling Time 11:46 Sampling End Time 1147 DTW before Sampling 10.30
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other:
Sampling Observations CLEAR SAMPLE, NO ODOR WELL Located along ROADWAY, HEAVY TRAFFIC.

GROUNDWATER SAMPLING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-21D
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.14.04
Weather OVERCAST FOG 50'S H
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 2" Inches
Well Depth (ft below TIC) 198 FT BGS / 198.20 FT TIC ON 5/10/04
Water Level (ft below TIC) 9.30 ~~10.30~~

Well Construction ____ PVC ____ Steel ____ Other ____
Well Screened Interval 188 to 198 feet below TIC
Well Headspace Reading (PID/FID) ____
Product Level-if present (ft below TIC) ____

Well Notes (Odor, well condition, etc.) ____

Volume of Water in Casing (gallons)

(____) - (____) * ____ ^{2}* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) X Peristaltic ____ Positive displacement X Other MICRO PURGE WELL WIZARD
Pump intake depth 186.' Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (MG/L)	Cond. S/CM	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	—			Notes
0903						~~9.30~~ +0.30						Purge Start
0905	13.9	10.47	3.26	.538	-10.0	10.10		70				(LOCAL HORIBA TURB -100 FORM)
0915	14.0	6.41	3.67	.275	80.0	9.98	0.25	202				250 ML/MN
0920	13.9	7.06	1.96	.423	78.6	10.05	0.25	159				250 ML/MN
0925	13.8	7.21	2.11	.420	39.1	10.05	0.25	136				250 ML/MN
0930	13.8	7.29	2.16	.420	36.7	10.06	0.25	122				
0935	13.8	7.31	2.17	.418	37.9	10.06	0.25	127				
0939	13.9	7.51	3.0	.416	39.0	10.10	0.25	98				Post-sampling Measurements

Total Volume Purged 9.0 LITERS
Water Quality Meter(s) HORIBA U-22 # 5112

Sample Information

Groundwater Sample Field ID MW-21D
Lab Analysis Requested ____
Sampling Time 0935 Sampling End Time 0938 DTW before Sampling 10.06
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other: ____
Sampling Observations GLASS WAS cut on 5.13.04 AFTERNOON.

GROUNDWATER SAM_LING FORM

GeoTrans, Inc. A TETRA TECH COMPANY

Well Number MW-22D
State Permit No.
Project Name AT&T CLARK
Project Number 4185.002.01

Sampling Date 5.12.04
Weather SUN L 80's CALM/BREEZY/STOR
Sampled by: RJW (initials)

Well Information

Well Type X Monitor ____ Other ____
Well Diameter 2 Inches
Well Depth (ft below TIC) 115 FTBGS (NEW TO CHART)
Water Level (ft below TIC) 11.93

Well Construction X PVC ____ Steel ____ Other ____
Well Screened Interval 105 to 115 feet below TIC
Well Headspace Reading (PID/FID) 38.0 / BG
Product Level-if present (ft below TIC) Ø
Well Notes (Odor, well condition, etc.)

Volume of Water in Casing (gallons)

( ) - ( ) * ____ 2* 0.0408 = ____ gallons
Well Depth | Water Level | Well Diameter (in)

Purging Information

Purge Method X Low Flow ____ NJDEP 3 Well Volumes ____ Not Purged ____ Other ____
Pump X Submersible Pump (___ inch) ____ Peristaltic ____ Positive displacement ____ Other MicroPurge Well Wizard
Pump intake depth 114 Purge water discharged to ____ Ground X Drum ____ Other ____
Tubing X Polypropylene ____ Teflon-line ____ Other ____ / X New ____ Dedicated

Time (HH:MM)	Temp (°C)	pH (pH units)	D.O. (mg/L)	Cond. (mS/cm)	Turb (NTU)	DTW (feet)	Rate (L/min)	ORP mV	FID			Notes
1425						11.93						
1440	21.2	7.85	4.80	.370	412.	15.27		109				Purge Start
1445	21.2	8.58	3.21	.377	357.	15.55		93				Storm comming!
1450	20.5	8.94	2.99	.381	325.	15.76		88	6.0			50 ML/MIN
1455	20.3	9.16	2.69	.385	239.	16.0		84				7.6 BG
1500		8.91		.381		16.47						
1505	20.0	8.91	2.33	.381	147.	16.47		74				MISSED READINGS Poor recharge
1510	19.9	9.35	2.22	.373	119.	16.67		68				
1515	20.1	9.51	2.22	.369	112.0	16.79		63				
1520	20.4	9.88	2.12	.367	105.0	16.98		55				
1525	19.9	10.0	2.10	.368	97.1	17.0		53				
1530	19.8	10.1	2.0	.373	86.0	17.11		51				
1535	19.7	10.2	2.0	.373	86.2	17.15		50				
1542	19.0	7.83	2.46	.383	144.0	17.25		50				Post-sampling Measurements

Total Volume Purged 3. Liters
Water Quality Meter(s) HORIBA U-22 #5112

Sample Information

Groundwater Sample Field ID MW-22D
Lab Analysis Requested ____
Sampling Time 1537 Sampling End Time 1540 DTW before Sampling 17.15
Sampling Method ____ Bailer (type: ____) X Same as Above ____ Other: ____
Sampling Observations VOC's only

Appendix H

Chain of Custody Forms

Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC.
Address: 1465 RT. 31 SOUTH, ANNANDALE, NJ 08801
Telephone #: 908-730-0014
Fax #: 908-230-0245
Project Name: AT+T CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.02 PO#: 4185.002.N ATT CLARK

REPORTING & BILLING

Fax to: STEVE FELDMANN
Fax #: 908-730-0245
EMail to: SFELDMANN@GEOTRANSINC.COM
Report to: STEVE FELDMANN
Address: 1465 RT. 31 S, ANNANDALE, NJ 08801
Invoice to: STEVE FELDMANN
Address: SAME AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* 2 wk/Std
Hard Copy: 72 hr* 1 wk* 2 wk* 3 wk/Std

Results needed by:

*Prior to sample arrival. Lab notification is required. RUSH Surcharge will apply

Report Format: Results Only; Reduced; Regulatory; SRP Disk**: dbf or wkl
Special Requirements:

SAMPLE INFORMATION

SAMPLE MATRIX: W - Waste, SL - Sludge, A - Aqueous, O - Oil, X - Other, S - Soil, GW - Groundwater, SOL - Solid

ANALYTICAL PARAMETERS / PRESERVATIVES ** Circle format required

Preservatives: 1. HCl 3. HNO_3 2. NaOH 4. H_2SO_4 5. MeOH 6. Other

COOLER TEMP: °C

Sample ID	Sample Depth (in Feet)	Date	Sampling Time	am	pm	Matrix	# of Containers	Lab ID	TCL VOA + 15	Comments/Area of Concern
GW-1A	21-24 FT	5/4/04	0930	X		A	2		X	CLOUDY
GW-2A	17-21 FT	5/4/04	1040	X		A	2		X	CLOUDY
GW-3A	21-24 FT	5/4/04	1130	X		A	2		X	CLOUDY
FB-1	—	5/4/04	1155	X		A	2		X	CLOUDY/TURBID
GW-4A	13-16 FT	5/4/04	1345	X		A	2		X	
GW-5A	16-19 FT	5/4/04	1530	X		A	2		X	CLOUDY
DUP-1		5/4/04		X		A	2		X	CLOUDY
GW-8A	9-12 FT	5/5/04	1120	X		A	2		X	CLOUDY/VERY TURBID
SOIL-1	1.5-2 FT	5/5/04	1315	X		S	2		X	
GW-10A	17-20 FT	5/5/04	1405	X		A	2		X	MEOH PRES. + UNPRESERVED

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

Known Hazard: Yes or No
Describe: TCE
Conc: Expected: Low Med High

MDL Req: GWQS or SCC

CUSTODY LOG

	Signature/Company	Date	Time	Signature/Company
Relinquished by:	S. GA / GEOTRANS	5/6/04	1120	Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:

Comments:

Lab Case #:

Describe

PAGE: OF

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Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

2 of 2

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC
Address: 1465 RT 31 South, ANNANDALE, NJ 08801
Telephone #: 908-730-0614
Fax #: 908-730-0245
Project Name: ATT CLARK
Project Manager: MARTHA MACHLE
Reference ID#: 4185.002.01 P.O#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: STEVE FELDMAN
Fax #: 908-730-0245
EMail to: SFELDMAN@GEOTRANSCORP.COM
Report to: STEVE FELDMAN
Address: 1465 RT 31 S, ANNANDALE, NJ 08801
Invoice to: STEVE FELDMAN
Address: SAME AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* 2 wk/Std
Hard Copy: 72 hr* 1 wk* 2 wk* 3 wk/Std
*Prior to sample arrival, Lab notification is required. RUSH Surcharge will apply

Results needed by:

Report Format

Results Only
Reduced
Regulatory
SRP Disk**: dbf or wk1
Special Requirements:

SAMPLE INFORMATION

SAMPLE MATRIX
W - Waste SL - Sludge A - Aqueous
O - Oil X - Other S - Soil
GW - Groundwater SOL - Solid

Sample ID	Sample Depth (in Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID
SOIL-2	1.0-1.5FT	5/5/04	1445		X	S	2	
GW-11A	13-16FT	5/5/04	1500		X	A	2	
GW-7A	13-16FT	5/5/04	1540		X	A	2	
GW-7B	20-23FT	5/5/04	1610		X	A	2	
FB-2	—	5/5/04	1620		X	A	2	
TRIP BLANK	—				X	A	2	
GW-8B	20-23FT	5/5/04	1200		X	A	2	

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

624 + TICs	624	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	Preservatives
X											
X											
X											
X											
X											
X											

1. HCL 3. HNO_3
2. NaOH 4. H_2SO_4
5. MeOH 6. Other

COOLER TEMP: °C

Comments/Area of Concern: MEOH PRES. + UNPRESERVED

PID = 40-60 PPM TOTAL VOC
CLOUDY/FUMING PID = 30 PPM

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

CUSTODY LOG

Signature/Company	Date	Time	Signature/Company
Relinquished by: [illegible]/GEOTRANS	5/6/04	1120	Received by:
Relinquished by:			Received by:
Relinquished by:			Received by:
Relinquished by:			Received by:
Relinquished by:			Received by:

Known Hazard: Yes or No
Describe:
Conc: Expected: Low Med High

MDL Req:
GWQS or SCC

Comments:

Lab Case #

Describe

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Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC.
Address: 1465 ROUTE 31 SOUTH, ANNANDALE, NJ 08801
Telephone #: 908-730-0014
Fax #: 908-730-0245
Project Name: ~~MARTHA MACKIE~~ ATT CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.01 PO#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE MACKIE
Fax #: 908-730-0245
EMail to: SEELMANN@GEOTRANSINC.COM
Report to: MARTHA MACKIE
Address: 1465 RT. 31 S, ANNANDALE, NJ 08801
Invoice to: MARTHA MACKIE
Address: SAME AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC
24 hr* 48 hr 72 hr 1 wk NA

Verbal/Fax
24 hr* 48 hr* 72 hr* 1 wk* (2 wk/Std)

Hard Copy
72 hr* 1 wk* 2 wk* (3 wk/Std)

Results needed by: 5/25/04 ; 6/1/04

*Prior to sample arrival, Lab notification is required. RUSH Surcharge will apply

Report Format

Results Only
(Reduced)
Regulatory
HAZSITE EXCEL
SRP Disk *.dbf or wkl
Special Requirements:

SAMPLE INFORMATION

SAMPLE MATRIX
W - Waste SL - Sludge A - Aqueous
O - Oil X - Other S - Soil
GW - Groundwater SOL - Solid

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Sample ID	Sample Depth (in Feet)	Sampling Date	Time	am	pm	# Matrix (GW - GW)	of Containers	Lab ID	TCL VOC + 15 624	METHANE / ETHANE / ETHENE 3810	TOTAL Fe 3 MIN 208.8	DISSOLVED FERROUS Fe FIELD 2.00.8 FILTERED	COD HACH 8000	N-AMMONIA 350.1 (TOC 415)	DOC 415.1 FIELD FILTERED	BOD 405.1, TDS 160.1	ALK 2320B CL 325.1	SULFATE 375.4 O-PHOS 365.3 NITRATE 4500NO3 F	
SGP 5/11 5/10	MW-4	5/10/04	1623		X	AQGW	10		2	2	1	1	1	1	1	X 1	X 1		
	MW-3	5/11/04	1125	X		AGW	10		2	2					1	1			
	MW-10A	5/11/04	1157	X	X	AGW			2	2	1	1	1	1			1	1	
	FB 5/10/04	5/10/04	1810		X	AGW	20		2										
	DUPLICATE 1	5/11/04	215	X		GW		2	2		1	1	1		1	1			
	TB + SGP 5/11													SGP 5/11/04					
	TRIP BLANK-1	5/11/04				A	2		2										
	MW-8	5/11/04	1535		X	GW	10		2	2	1	1	1	1	1	1			

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

Preservatives
1. HCL 3. HNO_3
2. NaOH 4. H_2SO_4
5. MeOH 6. Other

COOLER TEMP. °C

Comments/Area of Concern
DO NOT FIELD FILTER
PLEASE RUN ON UNFILTERED BOTTLE
FOR MW-4

Known Hazard: Yes or No
Describe: TCE
Conc: Expected: Low Med High

MDL Req:
GWQS or SCC

Comments:

CUSTODY LOG

	Signature/Company	Date	Time		Signature/Company
Relinquished by:	SGP GT / GEOTRANS	5/11/04	1745	Received by:	Jim Lovell
Relinquished by:				Received by:	
Relinquished by:				Received by:	
Relinquished by:				Received by:	
Relinquished by:				Received by:	

Lab Case #

Describe

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Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC.
Address: 1465 ROUTE 31 SOUTH
ANNANDALE, NJ
08801
Telephone #: 908-730-0014
Fax #: 908-730-0245
Project Name: ATT CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4785.002.01 PO#: 4785-002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE
Fax #: 908-730-0245
EMail to: SFELDMAN@GEOTRANSINC.COM
Report to: MARTHA MACKIE
Address: 1465 RT. 31 S
ANNANDALE, NJ
08801
Invoice to:
Address: MARTHA MACKIE
AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* 2 wk/Std
Hard Copy: 72 hr* 1 wk* 2 wk* 3 wk/Std
*Prior to sample arrival. Lab notification is required. RUSH Surcharge will apply

Results needed by: 5/12/04 6/1/04

Report Format

Results Only
Reduced
Regulatory
NJ2 SRP Deliv. (add'l hr wk)
Special Requirements:

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Preservatives
1. HCL 3. HNO_3
2. NaOH 4. H_2SO_4
5. MeOH 6. Other

COOLER TEMP. °C

SAMPLE INFORMATION

SAMPLE MATRIX: W - Waste SL - Sludge A - Aqueous O - Oil X - Other S - Soil GW - Groundwater SOL - Solid

Sample ID	Sample Depth (in Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID	TCL VOC's	Methane/Ethane/Ethene 3810	Total Fe/Mn 200.7	Dissolved Fe/Mn 200.7 Field Filtered	COD Ammonia 350.1 TOC 415.1	DOC 415.1 Field Filtered	BOD 405.1 TDS 160.1 Alk 2320B Cl 325.1 Sulfate 375.4 Orthophos 365.3 Nitrate 353.2				Comments/Area of Concern
MW-6		5/4/04	1552		X	GW	10		2	2	1	1	1	1					
FB 51104		5/11/04	1640		X	A	2		2										
TRIP BLANK 2		5/11/04				A	2		2										

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

CUSTODY LOG

	Signature/Company	Date	Time	Signature/Company
Relinquished by:	S. Feldman / GeoTrans	5/11/04	17:10	Received by: Jim Powell
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:

Known Hazard? Yes or No
Describe: TCE
Conc. Expected: Low Med High

MDL Req: GWQS or SCC

Comments:

Lab Case #:

Describe

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Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEO TRANS
Address: 1465 ROUTE 31 SOUTH, ANNANDALE, NJ 08801
Telephone #: 908-730-0614
Fax #: 908-730-~~0611~~ 0245
Project Name: ATT CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.01 PO#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE
Fax #: 908-730-0245
EMail to: SEELOKARAN@GEOTRANSINC.COM
Report to: MARTHA MACKIE
Address: AS ABOVE
Invoice to: MARTHA MACKIE
Address: AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* (2 wk/Std)
Hard Copy: 72 hr* 1 wk* 2 wk* (1 wk/Std)
*Prior to sample arrival. Lab notification is required. RUSH Surcharge will apply

Results needed by: 5/26/04; 6/2/04

Report Format

Results Only
(Reduced)
Regular (EXCEL)
HAZSITE
SRP Disk**: dbf or wk1
Special Requirements:

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Sample ID	Sample Depth (in Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID	Tot VOCs 624	Methane/Ethane/Ethene 3810	Total Fe 200.7	Dissolved Fe, Mn 200.7 Filtered	COD Ammonia TOC Hardness 410.4 4500 350.1	DOC 415.1	Fecal Coliform 9222D	BOD 405.1	TDS 160.1	Sulfate 375.4	Ortho Phos 365.3	Nitrate 353.2	Preservatives
MW-5		~~5/12/04~~ 0935	0935	X		GW	10		2	2	1	1	1	1	1	1	1				1. HCL 3. HNO_3
MW-7		5/12/04	1107	X		GW	10		2	2	1	1	1	1	1	1	1				2. NaOH 4. H_2SO_4
MW-7A		5/12/04	1254		X	GW	10		2	2	1	1	1	1	1	1	1				5. MeOH 6. Other
MW-22D		5/12/04	1537		X	GW	2		2												
TRIPBLANK-3		5/12/04				A	2		2												

COOLER TEMP. °C

Comments/Area of Concern:

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

SAMPLE MATRIX

W - Waste SL - Sludge A - Aqueous
O - Oil X - Other S - Soil
GW - Groundwater SOL - Solid

CUSTODY LOG

	Signature/Company	Date	Time	Signature/Company
Relinquished by:	STG / GEO TRANS	5/12/04	1740	Received by: Fed Ex
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:

Known Hazard: Yes or No
Describe: TCE
Conc. Expected: Low/Med/High

MDL Req: GWQS or SCC

Comments:

Lab Case #:

Describe:

PAGE: 1 OF

LAB COPIES - WHITE; YELLOW; CLIENT COPY - PINK

Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GE OTRANS, INC.
Address: 1465 RT. 31 SOUTH
ANNANDALE, NJ
08801
Telephone #: 908-730-0014
Fax #: 908-730-0245
Project Name: ATT CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.01 PO#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE
Fax #: 908-730-0014 0245
EMail to: SFELDMANN
Report to: MARTHA MACKIE
Address: AS ABOVE

Invoice to: MARTHA MACKIE
Address: AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* (2 wk/Std)
Hard Copy: 72 hr* 1 wk* 2 wk* (3 wk/Std)
*Prior to sample arrival. Lab notification is required. RUSH Surcharge will apply

Results needed by: 5/26/04 ; 6/2/04

Report Format

Results Only
(Reduced)
Regulatory
HAZSITE / ACCESS
SRP Disk** .dbf or .wk1
Special Requirements:

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Sample ID	Sample Depth (in Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID	TCL VOCs 624	Methane (ethane) Ethene 3810	Total Petroleum Hydrocarbons 418.1	Dissolved Fe, Mn 200.7 & Field Filtered	COD High Level Ammonia TOC 415.1	DOC Field Filtered	BOD 405.1	TDS 160.1	Sulfate 375.4	Nitrate 353.2				
MW-13A		5/12/04	1015	X		GW	10		2	2	1	1	1	1	1	1	1					
MW-9A		5/12/04	1410		X	GW	10		2	2	1	1	1	1	1	1	1					
FB 51204		5/12/04	1530	X		A	2		2													
TP-19 BLANK-4		5/12/04				A	2		2													

Preservatives: 1. HCL 3. HNO_3 2. NaOH 4. H_2SO_4 5. MeOH 6. Other

COOLER TEMP. °C

Comments/Area of Concern

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

CUSTODY LOG

	Signature/Company	Date	Time		Signature/Company
Relinquished by:	GE OTRANS	5/12/04	1740	Received by:	
Relinquished by:				Received by:	
Relinquished by:				Received by:	
Relinquished by:				Received by:	
Relinquished by:				Received by:	

LAB COPIES - WF YELLOW; CLIENT COPY - PINK

Known Hazard: Yes or No
Describe: TCE
Conc. Expected: Low Med High

Comments:

MDL Req: GWQS or SCC

Lab Case #

Describe

PAGE: 2 of 2

Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC
Address: 1465 ROUTE 31 SOUTH, ANNANDALE, NJ 08801 ~~088~~
Telephone #: 908-730-0014
Fax #: 908-730-0245
Project Name: ATT C. CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.01 PO#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE
Fax #: 908-730-0245
EMail to: SELDMAN@GEOTRANS.com
Report to: MARTHA MACKIE
Address: SAME AS ABOVE
Invoice to: MARTHA MACKIE
Address: SAME AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC
24 hr* 48 hr 72 hr 1 wk NA

Verbal/Fax
24 hr* 48 hr* 72 hr* 1 wk* (2 wk/Std)

Hard Copy
72 hr* 1 wk* 2 wk* (3 wk/Std)

*Prior to sample arrival, Lab notification is required. RUSH Surcharge will apply

Results needed by: 5/20/04 6/3/04

Special Requirements:

Report Format

Results Only
(Reduced)
Regulatory
HARD COPY / NJ EXCEL
SRP Disk*: dbf or wkl

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Sample ID	Sample Depth (In Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID	TCL VOLS + 15 624	METHANE/ETHANE/ETHENE 3810	TOTAL Fe, Mn 200.8	DISSOLVED Fe, Mn 200.8 FILTERED	COD HIGH LEVEL N-AMMONIA TOC 350.1 415.1	DOC 415.1	FIELD FILTERED BOD 4051 ALK 310.1 CL 325.1	TDS 160.1 SULFATE 375.4 O-PHOS 365.3 NITRATE 353.2			Preservatives
MW-18A		5/13/04	1028	x		GW	2		2										1. HCL 3. HNO_3
~~MW-14A~~ FB 51304		5/13/04	1335		x	GW	10		2	2	1	1	1	1	1	1			2. NaOH 4. H_2SO_4
MW-20D		5/13/04	1453		x	A	2		2										5. MeOH 6. Other
MW-12A		5/13/04	1615		x	GW	2		2										
		5/13/04	1355		x	GW	10												COOLER TEMP. °C
MW-16A		5/13/04	1010	x		GW	2		2	2	1	1	1	1	1	1			
~~MW-17A~~		5/13/04	1220		x	GW	2		2										
TRIP BLANK-5		5/13/04				A	2		2										

Comments/Area of Concern

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

SAMPLE MATRIX
W - Waste SL - Sludge A - Aqueous
O - Oil X - Other S - Soil
GW - Groundwater SOL - Solid

SAMPLE INFORMATION

CUSTODY LOG

	Signature/Company	Date	Time	Signature/Company
Relinquished by:	GEOTRANS	5/13/04	1735	Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:

LAB COPIES - WHITE; YELLOW; CLIENT COPY - PINK

Known Hazard: Yes or No
Describe: TCE
Conc. Expected: Low Med High

MDL Req: GWQS or SCC

Comments:

Lab Case #

Describe

PAGE: 1

Phone # (973) 361-4252
Fax # (973) 989-5288

INTEGRATED ANALYTICAL LABORATORIES
CHAIN OF CUSTODY

273 Franklin Rd
Randolph, NJ 07869

CLIENT & PROJECT

Company: GEOTRANS, INC
Address: 1465 ROUTE 31 SOUTH, ANNANDALE, NJ 08801
Telephone #: 908-730-0014
Fax #: 908-730-~~0005~~ 0245
Project Name: ATT CLARK
Project Manager: MARTHA MACKIE
Reference ID#: 4185.002.01 PO#: 4185.002.01 ATT CLARK

REPORTING & BILLING

Fax to: MARTHA MACKIE
Fax #: 908-730-0245
EMail to: SFELDMAN@GEOTRANSINC.COM
Report to: MARTHA MACKIE
Address: SAME AS ABOVE
Invoice to: MARTHA MACKIE
Address: SAME AS ABOVE

Turnaround Time (starts the following day if samples rec'd at lab > 5PM)

Conditional / TPHC: 24 hr* 48 hr 72 hr 1 wk NA
Verbal/Fax: 24 hr* 48 hr* 72 hr* 1 wk* (2 wk/Std)
Hard Copy: 72 hr* 1 wk* 2 wk* (3 wk/Std)
*Prior to sample arrival. Lab notification is required. RUSH Surcharge will apply

Results needed by: 5/28/04 ; 6/4/04

Report Format

Results Only
(Reduced)
Regulatory
SRP Disk**: dbf or wkf
Special Requirements:

ANALYTICAL PARAMETERS / PRESERVATIVES

** Circle format required

Sample ID	Sample Depth (In Feet)	Sampling Date	Time	am	pm	Matrix	# of Containers	Lab ID	TCL VOC +15 624	METHANE/ETHANE/ETHENE 3810	TOTAL Fe, Mn 200.8	DISSOLVED Fe, Mn 200.8 FILTERED	COD HACH 8000 or Manual 410.4	TOC 415.1	DOC 415.1 FIELD FILTERED	BOD 405.1 AK	TDS 160.1 or 2320B	SULFATE 375.4 or 300.0	AMMONIA 350.3 or 350.1 or 4500-NH3 F	
MW-5A		5/14/04	0943	X		GW	10		2	2	1	1	1	1	1	1	1			
MW-11A		5/14/04	1215	X		GW	10		2	2	1	1	1	1	1	1	1			
MW-2A		5/14/04	1625	X		GW	10		2	2	1	1	1	1	1	1	1			
TRIPLICATE-6		5/14/04				A	2		2											
FIELD BLANK-514 04		5/14/04	1630	X		A	2		2											
DUPLICATE2		5/14/04	1618	X		GW	2		2											
MW-19D		5/14/04	1535	X		GW	2		2											
MW-19		5/14/04	1330	X		GW	2		2											
MW-21		5/14/04	1146	X		GW	2		2											
MW-21D		5/14/04	0935	X		GW	2		2											

SAMPLE MATRIX: W - Waste, SL - Sludge, A - Aqueous, O - Oil, X - Other, S - Soil, GW - Groundwater, SOL - Solid

Preservatives: 1. HCL 3. HNO_3 2. NaOH 4. H_2SO_4 5. MeOH 6. Other

COOLER TEMP. °C

Comments/Area of Concern

Please print legibly and fill out completely. Samples cannot be processed and the turnaround time will not start until any ambiguities have been resolved.

SAMPLE INFORMATION

Known Hazard: Yes or No
Describe: TCE
Conc. Expected: Low Med High

MDL Req: GWQS or SCC

Comments:

Lab Case #

Describe

PAGE: 1 OF-

CUSTODY LOG

	Signature/Company	Date	Time	Signature/Company
Relinquished by:	[signature] / GEOTRANS	5/14/04	1725	Received by: [signature]
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:
Relinquished by:				Received by:

LAB COPIES - WHITE; YELLOW; CLIENT COPY - PINK

Appendix I

1999 Groundwater Investigation Data

S

N

DB-12 | MW-19A | DB-6 | MW-2A | MW-2 | DB-8 | DB-5 | DB-4 (FORMER DRY WELL, APPROX. LOCATION) | DB-7 | DB-11

ELEVATION (BGS)

0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85

ND/200

450

2,500

57,000

18,000

5,350

41,000

30,000

6,400

10,000

67,000

65,000

300

7,300

BEDROCK

7,600

LEGEND

2700 — PRELIMINARY TCE DETECTION IN GROUNDWATER (ppb)

SAMPLE INTERVAL

ND / 200 — NOT DETECTED/ DETECTION LIMIT

ESTIMATED BOUNDARY

TCE CONCENTRATION

90,000 µg/L

>30,000 µg/L

>10,000 µg/L

>1,000 µg/L

SCALES:
HORIZ. 1" = 10'
VERT. 1" = 10'

0, 5, 10

SCALE IN FEET

FIGURE 1

VERTICLE DISTRIBUTION OF TCE DETECTIONS IN DISCRETE GROUNDWATER GRAB SAMPLES

AT&T CLARK SHOP
CLARK, NEW JERSEY

McLaren Hart INC.

DRWN: J.R.F.	CHK'D: D.T.H.
SCALE: AS SHOWN	DATE: 07/20/99

DWG: 66100109 07/20/99

LEHIGH VALLEY RAILROAD

POLYCHROME CORPORATION

BUILDING
BLOCK 58 LOT 4

TERMINAL AVENUE

MW-4
MW-5
MW-8
MW-10A
MW-1
MW-2
MW-2A
MW-11A
MW-5A
MW-7A
RW-1
MW-3
MW-9A
MW-6
MW-17A
MW-18A
MW-12A
US-2
US-1
MW-13A
MW-14A
MW-16A
MW-15A

52.00
53.00
52.11
51.49
51.89
53.41
51.00
50.75
52.36
52.12

LEGEND

- PROPERTY LINE
- FENCELINE
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- PRODUCT RECOVERY WELL
- GROUNDWATER CONTOUR
- 52.11 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION

SCALE
100 50 0 100 FEET

N W E S

FIGURE 1
GROUNDWATER SURFACE CONTOUR MAP
(SHALLOW OVERBURDEN MONITORING WELLS)
AT&T CLARK SHOP
CLARK, NEW JERSEY

McLaren® Hart INC.

DRWN: S.F.H.	CHK'D: C.F.
SCALE: AS SHOWN	DATE: 07/09/99

DWG: 83800120 07/09/99

LEHIGH VALLEY RAILROAD

POLYCHROME CORPORATION

BUILDING
BLOCK 58 LOT 4

TERMINAL AVENUE

MW-4
MW-5
MW-5A
MW-6
MW-7
MW-7A
MW-8
MW-9A
MW-10A
MW-11A
MW-12A
MW-13A
MW-14A
MW-15A
MW-16A
MW-17A
MW-18A
RW-1
MW-1
MW-2
MW-2A
MW-3
US-1
US-2

0.6
0
190
100
9.2
1.6
1.7
44
45
42
800
10,000
18,000
1000
100
1

LEGEND

- PROPERTY LINE
- FENCELINE
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- PRODUCT RECOVERY WELL
- TCE ISOCONCENTRATION CONTOUR
- INFERRED TCE ISOCONCENTRATION CONTOUR
- 800 TCE ISOCONCENTRATION (ppb)

SCALE
100 50 0 100 FEET

N W E S

FIGURE 1
TCE ISOCONCENTRATION MAP - DEEP OVERBURDEN (JULY 1999)
AT&T CLARK SHOP
CLARK, NEW JERSEY

McLaren Hart INC.

DRWN: S.F.H.	CHK'D: C.F.
SCALE: AS SHOWN	DATE: 07/09/99

DWG. B3800121 07/09/99

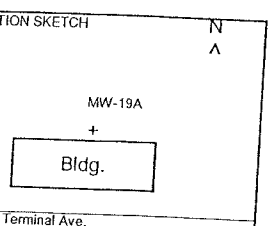
ROCK CORE LOG

McLaren Hart

BORING NO.:	PROJECT NO.:	PROJECT NAME:
RC-19A	120805661001.001	AT&T Clark
LOCATION:		**GEOLOGIST / OFFICE:**
100 Terminal Ave., Clark, NJ		S. Alderfer; M. Mackie/Warren

DRILLING EQUIPMENT:	CORE BIT SIZE:	DRILLING CONTRACTOR / DRILLER:	
Mobile B-80	NX - 10 ft. core barrel	Summit/Steve Yotcoski	
START/FINISH DATE:	TOTAL NO. CORE RUNS:	T.D. BOREHOLE:	WELL INSTALLED?
7/1/1999	4	80'	Yes - MW-19A

LOCATION SKETCH



THICKNESS AND TYPE OF OVERBURDEN:
Alternated back and forth between vf Sand and Silt, trace f Gravel, to 35' b.g. Weathered bedrock to 40'.

DEPTH (FT.)	RUN NO.	RUN TIME	REC. (ft.)	REC. (%.)	RQD (%.)	DESCRIPTION	REMARKS	FRACTURES Angle	FRACTURES Spacing	GRAPHIC LOG
46–55	1	3 min/ft	5.0	90	55.5	Red shale/siltstone	Mostly horizontal breaks with clay in-filling.	0		
							Calcite-filled horizontal fractures throughout 45' - 50'.			
							Highly weathered fracture with gravel deposition.	0		
							Poss. chlorite mineralization in fracture.			
							FeO_3 mineralization increasing toward 55'.			
56–65	2	3 min/ft	8.8	97	95		Dissolution cavities throughout mid-run.			
							Vertical fractures with FeO_3 staining.	90		
							Calcite veins and calcite in-fillings.			
							Unfilled dissolution cavities.			
66–74	3	3.5 min/ft	9.0	100	51		Heavily fractured (65'-67'). Remnant near-vertical fracturing apparent from 65'-67'.	<90		
							Clay-filled fracture.	0	2"	
							Clay-filled fracture.	0	2"	
							Calcite veins & nodules throughout run.			
							Clay-filled fracture.	0	2"	
75–80	4	3.5 min/ft	6.0	100	55		Low angle fracture with secondary mineralization.	<15		
							Highly weathered fracture with rounded fragments. Horiz. & vertical calcite veins.	0		
							Caly-filled fracture. Calcite-filled dissolution cavities and horiz. & angular fractures w/calcite in-filling.	0	1"	
						End of coring at 80' b.g.				

TABLE

Water Levels in Monitoring Wells on June 28, 1999
Former AT&T Clark Facility
Clark, New Jersey

Well ID	TIC Elevation (ft)	Depth to Water from TIC (feet)	Groundwater Elevation (ft)
MW-1	62.11	8.70	53.41
MW-2	61.85	9.96	51.89
MW-3	62.27	9.91	52.36
MW-4*	59.58	9.60	49.98
MW-5	59.72	7.61	52.11
MW-6	59.02	6.90	52.12
MW-7	60.33	9.58	50.75
MW-8	59.73	8.24	51.49
MW-2A	61.43	9.69	51.74
MW-5A	59.40	9.85	49.55
MW-7A	60.62	10.71	49.91
MW-9A	58.41	5.54	52.87
MW-10A	60.55	11.23	49.32
MW-11A	59.31	10.06	49.25
MW-12A	58.32	10.10	48.22
MW-13A	56.82	8.62	48.20
MW-14A	58.29	8.87	49.42
MW-15A	55.91	10.02	45.89
MW-16A	55.46	10.13	45.33
MW-17A	59.05	11.07	47.98
MW-18A	53.93	8.46	45.47
RW-1	58.89	8.83	50.06

*: Water level measured on 4/29/99.
TIC: Top of Inner Casing
Elevations are from a survey performed in November 1998,
except for MW-4 and MW-7 elevations which are from a previous survey.

ATT CLARK SHOP
SUPPLEMENTAL REMEDIAL INVESTIGATION
SOURCE AREA DELINEATION

GROUNDWATER GRAB SAMPLING RESULTS

Delineation Boring	Depth (bgs)	TCE Concentration (ppb)
DB-1	20-23	**12,000**
	25-28	**15,000**
DB-2	20-23	**14,000**
	25-28	**16,000**
DB-3	20-23	**11,000**
	25-28	8,900
DB-4	20-23	**110,000**
	25-28	12,000
DB-5	20-23	**31,000**
	25-28	7,400
DB-6	20-23	1,400
	25-28	**62,000**
DB-7	20-23	**130,000**
	23.5-27.5	**72,000**
DB-8	20-23	5,300
	25-28	**34,000**
DB-9	20-23	870
	25-28	2,300
	30-32	**12,000**
DB-10	17-20	9,600
	25-26.5	2,400
DB-11	20-23	220
	25-26.5	7,700
DB-12	20-23	180
	25-28	470

Note: Concentrations listed in bold indicate exceedance of 1% of TCE solubility in water (11,000 ppb)

GEOPROBE SOIL SAMPLING RESULTS

Geoprobe Boring	Depth (bgs)	TCE Concentration (ppb)
GT-2	21-21.5	650 U
	25-26	**2,100**
	27-27.5	**1,200**
	29-29.5	720 U
	30.5-31	670 U

Note: Concentrations listed in bold indicate exceedance of NJDEP's Impact to Groundwater Soil Cleanup Criteria (1,000 ppb)

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-1
Sample Date:	6/28/1999

Well Details

Type:	Stickup
Depth (feet):	22
Diameter (inches)	2"
Depth to Water (feet)	8.7
Water Column (feet)	13.3
Water Volume (gal)	2.128

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	15
Pump Rate (mL/min)	450
Purge Start	1145
Purge Stop	1220
Volume Pumped (gal)	4.16

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1145	9.06	5.16	19.84	0.141	13.15	168.0	7.9	Before purge
1150	9.10	4.60	20.49	0.139	6.38	197.8	28.8	
1155	NS	NS	NS	NS	NS	NS	NS	
1200	9.52	4.52	22.04	0.137	1.35	195.2	28.4	
1205	9.58	4.83	21.98	0.137	1.24	193.8	16.2	
1210	9.62	4.53	21.95	0.137	1.07	192.2	11.4	
1215	9.68	4.54	21.97	0.137	1.04	180.5	6.1	
1220	9.72	4.55	21.82	0.138	0.82	186.5	3.8	After purge
1225	9.78	4.55	21.44	0.138	0.84	186.8	2.9	After sample

NS: Not measured due to equipment malfunction.

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-2
Sample Date:	6/28/1999

Well Details

Type:	Stickup
Depth (feet):	23
Diameter (inches)	2"
Depth to Water (feet)	9.96
Water Column (feet)	13.04
Water Volume (gal)	2.0864

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	20
Pump Rate (mL/min)	450
Purge Start	1600
Purge Stop	1645
Volume Pumped (gal)	5.35

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1600	NA	5.16	17.30	0.266	0.54	148.8	100.2	Before purge
1605	NA	5.18	17.35	0.263	0.47	152.2	80.6	
1610	10.96	5.17	17.79	0.263	0.35	160.6	93.0	
1615	11.10	5.19	17.91	0.264	0.35	166.4	113.1	
1620	11.14	5.23	17.76	0.273	0.44	172	123.3	
1625	11.18	5.27	17.83	0.281	0.45	172.9	148.6	
1630	11.16	5.30	17.98	0.286	0.45	173.8	162.6	
1635	11.19	5.34	17.65	0.297	0.45	174.4	172.3	
1640	11.20	5.39	17.86	0.302	0.44	174.0	198.0	
1645	11.21	5.40	17.66	0.304	0.43	173.8	198.0	After purge
1648	11.23	5.41	17.39	0.308	0.36	174.1	203.5	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-2A
Sample Date:	6/28/1999

Well Details

Type:	Stickup
Depth (feet):	30
Diameter (inches)	4"
Depth to Water (feet)	10.54
Water Column (feet)	19.46
Water Volume (gal)	12.649

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	27
Pump Rate (mL/min)	240
Purge Start	1722
Purge Stop	1802
Volume Pumped (gal)	2.54

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
1722	10.54	4.69	18.40	1.009	18.06	155.7	141.9	Before purge
1727	10.86	3.74	18.56	1.053	37.8	187.3	NS	
1732	11.03	3.87	20.09	1.043	41.29	208.2	NS	
1737	11.05	4.47	20.41	1.048	22.74	206.8	NS	
1742	11.05	3.90	20.08	1.055	42.2	196.6	NS	
1747	11.05	4.02	21.00	1.056	61.91	217.6	NS	
1752	11.06	3.96	20.45	1.058	60.52	218.6	NS	
1757	11.06	4.21	20.96	1.047	62.26	209.1	294.0	After purge
1802	11.06	4.24	20.91	1.062	62.94	216.3	330.0	After sample

*: Dissolved oxygen sensor not working; values are not absolute.
NS: Not measured

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-3
Sample Date:	6/28/1999

Well Details

Type:	Stickup
Depth (feet):	23
Diameter (inches)	2"
Depth to Water (feet)	9.91
Water Column (feet)	13.09
Water Volume (gal)	2.0944

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	16
Pump Rate (mL/min)	450
Purge Start	1800
Purge Stop	1850
Volume Pumped (gal)	5.94

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1800	10.28	5.96	19.55	0.332	2.93	71.7	18.3	Before purge
1805	10.37	5.79	18.15	0.325	2.26	32.1	13.8	
1810	10.54	5.78	18.76	0.322	1.88	17.2	4.3	
1815	11.08	5.77	19.21	0.323	1.57	8.8	3.5	
1820	11.43	5.79	19.44	0.323	1.29	-23.8	4.3	
1825	11.48	5.79	19.53	0.326	0.95	-36.9	6.0	
1830	11.52	5.79	19.41	0.326	0.80	-36.2	3.4	
1835	11.59	5.80	19.41	0.321	0.38	-18.7	3.4	
1840	11.68	5.81	19.15	0.322	0.26	-10.1	6.8	
1845	11.69	5.81	19.14	0.322	0.23	-3.3	6.8	
1850	11.8	5.81	18.72	0.322	0.19	2.3	>700*	After purge
1855	NS	NS	NS	NS	NS	NS	NS	After sample

NS: After sample parameters not measured.
*: Water became turbid at 1848, but cleared up again before samples were taken.

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-4
Sample Date:	6/29/1999

Well Details

Type:	Stickup
Depth (feet):	24.5
Diameter (inches)	4"
Depth to Water (feet)	9.6
Water Column (feet)	14.9
Water Volume (gal)	9.685

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	18.5
Pump Rate (mL/min)	300
Purge Start	1505
Purge Stop	1540
Volume Pumped (gal)	2.77

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1505	9.6	6.85	14.10	0.719	-2.28	-130.7	23.7	Before purge
1510	10.86	7.01	14.28	0.719	-1.82	-142.3	40.2	
1515	12.72	7.31	14.47	0.721	-1.86	-185.0	44.8	
1520	14.02	7.36	15.81	0.720	-1.03	-190.4	86.2	Pump rate changed to 300 ml/min.
1525	14.13	7.37	16.62	0.720	-0.58	-192.9	145.7	
1530	14.3	7.38	16.52	0.725	-0.54	-193.8	149.8	
1535	14.36	7.35	17.00	0.721	-0.55	-194.2	161.0	
1540	14.48	7.35	17.23	0.715	-0.54	-186.4	183.0	After purge
1550	14.56	7.39	17.82	0.723	-0.54	-185.8	400.2	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-5
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	19
Diameter (inches)	4"
Depth to Water (feet)	7.61
Water Column (feet)	11.39
Water Volume (gal)	7.4035

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	12
Pump Rate (mL/min)	200
Purge Start	1110
Purge Stop	1150
Volume Pumped (gal)	2.11

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1100	7.68	7.47	21.36	0.190	12.06	90.1	26.1	Before purge
1115	8.28	6.61	18.75	0.195	11.7	115.1	55.7	
1120	8.62	5.95	19.38	0.172	9.24	116.5	52.9	
1125	8.92	5.92	19.52	0.170	8.2	117.1	50.3	Pump rate changed to <200 ml/min
1130	8.92	5.87	20.25	0.170	6.35	115.0	44.0	
1135	8.96	5.89	20.47	0.167	7.76	114.9	40.1	
1140	9.04	5.90	20.56	0.165	6.32	115.6	35.4	
1145	9.02	5.89	20.69	0.165	6.94	115.1	29.2	
1150	9.03	5.90	20.57	0.165	6.98	115.1	31.0	After purge
1210	9.04	6.38	21.66	0.185	6.98	110.4	31.9	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-5A
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	33
Diameter (inches)	4"
Depth to Water (feet)	9.85
Water Column (feet)	23.15
Water Volume (gal)	15.0475

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	30
Pump Rate (mL/min)	200
Purge Start	1015
Purge Stop	1055
Volume Pumped (gal)	2.11

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1015	8.73	9.07	17.20	1.036	3.85	122.5	6.9	Before purge
1020	9.91	9.06	17.93	1.062	4.94	150.6	4.2	
1025	10.03	11.73	18.24	1.060	4.82	83.1	3.9	
1030	10.09	12.00	19.41	1.038	4.79	22.6	2.9	
1035	10.12	12.00	19.99	1.042	4.82	2.5	2.4	
1040	10.17	9.56	20.62	1.038	5.61	145.6	2.0	
1045	10.22	11.92	21.07	1.037	5.39	59.0	2.1	
1050	10.24	11.96	21.40	1.069	5.37	26.2	1.5	
1055	10.25	11.95	21.75	1.070	5.36	4.2	2.2	After purge
1105	10.76	11.91	22.11	1.026	5.86	26.4	1.7	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-6
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	20
Diameter (inches)	4"
Depth to Water (feet)	6.90
Water Column (feet)	13.1
Water Volume (gal)	8.515

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	13
Pump Rate (mL/min)	200
Purge Start	1510
Purge Stop	1545
Volume Pumped (gal)	1.85

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1510	7.12	8.00	21.56	0.168	10.62	65.6	13.7	Before purge
1515	7.18	5.12	17.33	0.185	14.37	161.4	10.1	
1520	7.18	4.94	18.02	0.187	11.86	156.3	4.0	
1525	7.19	5.01	18.23	0.186	9.03	151.5	3.4	
1530	7.19	5.16	18.91	0.187	7.51	145.2	1.9	
1535	7.19	5.38	19.19	0.187	6.96	140.7	1.1	
1540	7.19	5.35	19.19	0.186	6.64	141.4	1.1	
1545	7.20	5.48	19.81	0.186	6.50	137.3	0.7	After purge
1605	7.19	5.44	20.14	0.149	2.13	138.4	2.3	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-7
Sample Date:	6/29/1999

Well Details

Type:	Stickup
Depth (feet):	24
Diameter (inches)	4"
Depth to Water (feet)	9.59
Water Column (feet)	14.41
Water Volume (gal)	9.3665

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	18
Pump Rate (mL/min)	260
Purge Start	925
Purge Stop	1005
Volume Pumped (gal)	2.75

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
0925	9.59	6.36	18.35	0.440	25.25	131.3	100.2	Before purge
0930	10.38	7.17	15.77	0.422	21.52	116.4	80.6	
0935	10.26	7.45	16.00	0.421	20.76	112.0	93.0	
0940	10.26	7.57	16.26	0.419	20.85	107.5	113.1	
0945	10.27	7.69	16.49	0.418	17.33	95.0	123.3	
0955	10.35	7.72	16.51	0.418	16.63	94.8	148.6	
1000	10.5	7.73	16.52	0.418	16.63	95.4	162.6	
1005	10.59	7.73	16.75	0.419	14.55	90.6	172.3	After purge
1010	10.66	7.75	16.87	0.416	12.28	86.0	198.0	After sample

*: Dissolved oxygen sensor not working; values are not absolute.

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-7A
Sample Date:	6/29/1999

Well Details

Type:	Stickup
Depth (feet):	34
Diameter (inches)	4"
Depth to Water (feet)	11.03
Water Column (feet)	22.97
Water Volume (gal)	14.93

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	27
Pump Rate (mL/min)	280
Purge Start	1020
Purge Stop	1100
Volume Pumped (gal)	2.96

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
1020	11.03	10.15	17.79	2.087	NS	25.6	42.3	Before purge
1025	11.03	11.65	18.16	2.119	NS	14.4	47.3	
1030	11.03	7.81	19.05	2.057	NS	93.4	27.7	
1035	11.04	7.76	19.35	2.020	NS	100.9	27.2	
1040	11.05	7.89	19.74	1.876	NS	109.3	23.8	
1045	11.05	9.82	20.05	1.762	NS	91.6	24.1	
1050	11.04	8.92	20.16	1.602	10.72	94.4	25.5	
1055	11.06	11.65	20.12	1.460	5.10	58.4	27.2	
1100	11.07	11.78	20.15	1.334	5.21	46.4	29.1	
1105	11.07	11.80	20.29	1.218	4.95	39.5	34.0	After purge
1125	NS	11.34	19.09	0.716	5.09	43.7	51.9	After sample

*: Dissolved oxygen sensor not working; values are not absolute.
NS: Not measured

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-8
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	20
Diameter (inches)	4"
Depth to Water (feet)	8.24
Water Column (feet)	11.76
Water Volume (gal)	7.644

Purge Details

Pump Type	Peristaltic
Pump Intake Depth (ft)	13
Pump Rate (mL/min)	200
Purge Start	0923
Purge Stop	0945
Volume Pumped (gal)	1.16

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
0923	8.60	6.22	16.44	0.128	5.61	127.0	1.2	Before purge
0925	8.68	5.80	16.68	0.130	5.11	133.9	0.9	
0930	9.01	5.61	17.07	0.132	5.81	131.2	0.6	
0935	9.08	5.61	17.15	0.131	6.41	128.6	0.6	
0940	9.16	5.58	17.38	0.130	6.42	129.3	0.7	
0945	9.20	5.60	17.45	0.129	6.41	128.6	1.4	After purge
1005	9.96	5.71	17.31	0.114	-0.02	118.6	2.4	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-9A
Sample Date:	6/29/1999

Well Details

Type:	Flushmount
Depth (feet):	20
Diameter (inches)	4"
Depth to Water (feet)	5.54
Water Column (feet)	14.46
Water Volume (gal)	9.399

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	17
Pump Rate (mL/min)	280
Purge Start	1650
Purge Stop	1740
Volume Pumped (gal)	3.70

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
1650	6.39	9.29	25.44	0.677	32.29	24.6	328.3	Before purge
1655	6.63	6.96	20.00	0.671	26.71	3.4	38.5	
1700	6.72	6.53	20.91	0.630	28.3	-14.9	37.7	
1705	6.82	6.48	20.83	0.610	29.22	-26.9	41.8	
1715	6.87	6.43	21.29	0.606	29.06	-30.8	46.6	
1720	6.91	6.42	21.36	0.598	28.97	-35.8	52.1	
1725	6.92	6.39	21.10	0.594	28.62	-36.5	58.8	
1730	6.93	6.37	21.27	0.591	26.04	-36.3	61.3	
1735	6.98	6.41	21.64	0.590	25.12	-35.8	68.4	
1740	6.98	6.39	21.80	0.589	25.64	-35.7	77.4	After purge
1800	6.99	6.31	19.31	0.589	30.09	-25.7	778.5	After sample

*: Dissolved oxygen sensor not working; values are not absolute.

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-10A
Sample Date:	6/29/1999

Well Details

Type:	Stickup
Depth (feet):	24
Diameter (inches)	4"
Depth to Water (feet)	11.23
Water Column (feet)	12.77
Water Volume (gal)	8.3005

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	21
Pump Rate (mL/min)	280
Purge Start	1400
Purge Stop	1440
Volume Pumped (gal)	2.96

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
1400	11.9	8.56	19.96	0.532	27.2	18.9	4.7	Before purge
1405	11.94	7.83	21.71	0.544	22.63	31.1	11.2	
1410	11.98	7.79	22.75	0.542	29.29	39.2	17.9	
1415	12.40	7.52	20.20	0.520	26.45	40.2	2.6	
1420	12.44	7.74	22.46	0.523	22.45	27.3	4.0	
1425	12.46	7.80	23.64	0.527	22.57	22.0	3.7	
1430	12.46	7.83	23.92	0.528	23.13	24.4	8.9	
1435	12.47	7.75	23.92	0.524	23.53	26.0	20.2	
1440	NS	NS	NS	NS	NS	NS	NS	After purge
1455	12.60	7.39	21.87	0.416	25.75	49.0	92.5	After sample

*: Dissolved oxygen sensor not working; values are not absolute.
NS: Not measured due to equipment malfuntion

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-11A
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	32
Diameter (inches)	4"
Depth to Water (feet)	10.06
Water Column (feet)	21.94
Water Volume (gal)	14.261

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	29
Pump Rate (mL/min)	100
Purge Start	1408
Purge Stop	1443
Volume Pumped (gal)	0.92

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1408	11.07	8.36	15.52	2.658	3.16	183.9	6.4	Before purge
1413	11.17	12.15	17.11	2.630	4.19	68.6	7.1	
1418	11.21	12.26	17.91	2.648	4.48	35.5	7.1	
1423	11.23	12.29	18.85	2.637	4.75	5.5	8.6	
1428	11.24	12.30	20.07	2.623	5.01	-20.4	9.8	
1433	11.24	12.30	20.72	2.625	5.14	-38.9	11.9	
1438	11.24	12.30	20.72	2.630	5.18	-52.5	14.4	
1443	11.50	12.37	19.52	2.628	5.04	-65.7	18.8	After purge
1500	12.52	12.20	19.29	2.233	4.81	-67.9	0.2	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-12A
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	40
Diameter (inches)	4"
Depth to Water (feet)	10.10
Water Column (feet)	29.9
Water Volume (gal)	19.435

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	37
Pump Rate (mL/min)	100
Purge Start	1645
Purge Stop	1730
Volume Pumped (gal)	1.19

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1645	10.66	8.35	16.17	0.296	2.3	254.6	184.7	Before purge
1650	10.68	8.71	17.09	0.292	2.19	232.9	188.5	
1655	10.74	8.66	18.10	0.292	3.5	206.4	191.1	
1700	10.75	8.57	18.87	0.292	3.74	190.6	192.2	
1705	10.76	8.53	19.35	0.292	3.51	178.9	194.2	
1710	10.82	8.48	19.83	0.293	3.29	167.8	199.0	
1715	10.83	8.42	17.30	0.295	1.42	161.8	195.6	
1720	10.80	8.42	17.88	0.294	2.82	155.8	196.1	
1725	10.77	8.41	18.35	0.293	2.89	148.8	197.4	
1730	10.77	8.39	17.05	0.291	3.19	142.4	199.3	After purge
1745	10.96	NS	NS	NS	NS	NS	NS	After sample

NS: Not measured due to equipment malfunction

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-13A
Sample Date:	6/30/1999

Well Details

Type:	Stickup
Depth (feet):	34
Diameter (inches)	4"
Depth to Water (feet)	8.62
Water Column (feet)	25.38
Water Volume (gal)	16.497

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	31
Pump Rate (mL/min)	120
Purge Start	1810
Purge Stop	1845
Volume Pumped (gal)	1.11

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1810	8.64	8.03	15.22	1.289	3.91	209.9	3.2	Before purge
1815	9.06	11.98	15.29	1.341	4.34	95.2	10.4	Change in pump rate
1820	9.36	11.99	15.98	1.330	4.72	78.1	7.5	
1825	9.68	21.01	15.98	1.342	4.90	63.7	6.6	Change in pump rate
1830	9.84	12.00	16.61	1.335	5.19	52.2	4.9	
1835	10.07	11.99	17.05	1.342	5.30	44.2	5.8	Change in pump rate
1840	NS	12.02	16.04	1.341	5.35	40.3	5.2	
1845	10.50	12.00	16.64	1.336	5.57	30.4	4.2	After purge
1857	12.26	11.90	18.57	1.316	7.09	17.5	3.1	After sample

NS: Not measured due to equipment malfunction

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-14A
Sample Date:	7/1/1999

Well Details

Type:	Flushmount
Depth (feet):	32
Diameter (inches)	4"
Depth to Water (feet)	8.87
Water Column (feet)	23.13
Water Volume (gal)	15.0345

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	29
Pump Rate (mL/min)	120
Purge Start	0927
Purge Stop	0952
Volume Pumped (gal)	0.79

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
0927	8.84	6.82	15.79	0.613	8.92	96.6	27.0	Before purge
0932	9.56	6.72	16.83	0.610	7.43	96.7	53.6	
0937	9.53	6.79	17.13	0.604	7.37	93.8	43.5	
0942	9.53	6.94	17.52	0.592	6.94	89.3	37.7	
0947	9.55	7.03	17.92	0.574	6.86	87.6	28.2	
0952	9.56	7.08	18.02	0.571	7.08	87.1	19.5	After purge
1008	9.83	6.87	20.31	0.572	6.23	84.1	9.5	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-15A
Sample Date:	7/1/1999

Well Details

Type:	Flushmount
Depth (feet):	58
Diameter (inches)	4"
Depth to Water (feet)	10.02
Water Column (feet)	47.98
Water Volume (gal)	31.187

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	55
Pump Rate (mL/min)	220
Purge Start	1418
Purge Stop	1510
Volume Pumped (gal)	3.02

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1418	10.31	7.55	16.70	0.551	8.76	84.3	12.9	Before purge
1423	10.56	7.34	16.71	0.554	7.02	86.9	33.3	
1428	10.62	7.67	16.40	0.547	3.71	53.8	41.0	
1433	NS	NS	NS	NS	NS	NS	NS	
1441	10.68	6.94	17.29	0.543	5.92	88.4	25.3	
1445	10.69	NS	NS	NS	NS	NS	NS	
1455	10.70	7.25	17.80	0.544	6.98	72.0	20.9	
1500	10.70	7.36	17.65	0.545	5.39	69.4	20.4	
1505	10.72	7.34	17.72	0.545	5.14	69.2	18.2	
1510	10.73	7.37	17.74	0.545	5.12	67.8	17.6	After purge
1522	10.90	8.20	18.65	0.587	3.79	52.3	27.7	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-16A
Sample Date:	7/1/1999

Well Details

Type:	Flushmount
Depth (feet):	57
Diameter (inches)	4"
Depth to Water (feet)	10.13
Water Column (feet)	46.87
Water Volume (gal)	30.4655

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	52
Pump Rate (mL/min)	150
Purge Start	1315
Purge Stop	1345
Volume Pumped (gal)	1.19

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1315	10.58	6.28	16.17	0.318	1.08	173.7	148.2	Before purge
1320	10.97	6.72	16.30	0.318	0.71	162.7	149.0	
1325	11.05	6.38	16.64	0.319	0.74	133.1	151.6	
1330	11.07	6.35	16.67	0.324	0.72	117.1	133.5	
1335	11.08	6.25	16.79	0.339	0.73	121.6	115.9	
1340	11.09	6.31	16.62	0.353	0.78	113.1	100.9	
1345	11.09	6.45	16.58	0.373	0.63	115.9	92.3	After purge
1405	11.14	7.01	18.71	0.408	1.01	140.7	76.5	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-17A
Sample Date:	7/1/1999

Well Details

Type:	Flushmount
Depth (feet):	37.5
Diameter (inches)	4"
Depth to Water (feet)	11.07
Water Column (feet)	26.43
Water Volume (gal)	17.1795

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	34
Pump Rate (mL/min)	150
Purge Start	1553
Purge Stop	1623
Volume Pumped (gal)	1.19

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1553	11.76	11.10	18,75	0.296	2.12	57.0	60.4	Before purge
1558	11.88	11.31	19,56	0.311	2.56	39.0	38.8	
1603	11.96	11.37	21.56	0.316	3.16	24.4	61.4	Pump rate changed to 150 mL/min
1608	12.10	11.40	21.87	0.35	3.28	18.70	60.5	
1613	12.19	11.43	21.09	0.359	3.37	17.3	33.9	
1618	12.24	11.41	21.55	0.36	3.49	16.70	24.5	
1623	12.27	11.38	22.46	0.352	3.63	17.0	27.4	After purge
1640	13.47	11.05	22.50	0.312	3.12	31.3	10.3	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	MW-18A
Sample Date:	7/1/1999

Well Details

Type:	Flushmount
Depth (feet):	51
Diameter (inches)	4"
Depth to Water (feet)	8.46
Water Column (feet)	42.54
Water Volume (gal)	27.651

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	48
Pump Rate (mL/min)	100
Purge Start	1050
Purge Stop	1120
Volume Pumped (gal)	0.79

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)	ORP	Turbidity	Notes
1050	9.16	6.29	19.01	0.497	5.17	111.5	23.0	Before purge
1055	9.83	7.35	19.65	0.513	3.93	83.3	39.2	
1100	9.85	7.44	20.72	0.536	4.26	69.7	99.0	
1105	9.93	7.46	22.08	0.557	4.04	64.0	93.1	
1110	10.03	7.50	21.49	0.562	3.89	64.0	64.1	
1115	10.16	7.51	21.27	0.564	4.11	62.7	57.5	
1120	10.20	7.47	21.77	0.562	3.89	59.3	45.3	After purge
1138	10.89	7.65	22.34	0.542	3.65	73.2	68.6	After sample

TABLE
Low-Flow Purge Parameters, July 1998
AT&T Clark Facility
Clark, New Jersey

Monitoring Well ID:	RW-1
Sample Date:	6/28/1999

Well Details

Type:	Flushmount
Depth (feet):	40
Diameter (inches)	8"
Depth to Water (feet)	8.79
Water Column (feet)	31.21
Water Volume (gal)	81.46

Purge Details

Pump Type	Grundfos
Pump Intake Depth (ft)	20
Pump Rate (mL/min)	140
Purge Start	1522
Purge Stop	1557
Volume Pumped (gal)	1.29

Time	Depth to Water (ft)	pH	Temp (deg.C)	Specific Conductivity	DO (mg/L)*	ORP	Turbidity	Notes
1522	8.79	7.87	19.45	0.476	NA	31.5	9.6	Before purge
1527	8.96	6.88	22.15	0.48	NA	34.7	13.3	
1532	8.96	7.13	23.7	0.481	10.57	22	20	
1537	8.93	7.23	24.13	0.482	11	22.8	27.2	
1542	8.95	7.27	24.28	0.481	11.89	27.3	40.1	
1547	8.98	7.25	21.72	0.475	12.91	33.8	55	
1552	9	7.05	21	0.473	12.9	38.7	71.3	
1557	9	7.03	21.35	0.473	12.72	36.8	81.3	After purge
1600	8.96	7.09	21.59	0.472	12.55	35.5	137.5	After sample

*: Dissolved oxygen sensor not working; values are not absolute.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	RW-1-35 [a] 140509 06/28/99 WATER 1.0 ug/L	RW-1-20 [b] 140510 06/28/99 WATER 1.0 ug/L	MW-1 140856 06/29/99 WATER 1.0 ug/L	MW-2 140511 06/28/99 WATER 1.0 ug/L	MW-2A 140512 06/28/99 WATER 100.0 ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	0.4 U	0.4 U	42 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	0.6 U	55 U
VinylChloride	5	0.5 U	0.5 U	0.5 U	0.5 U	45 U
Chloroethane	NA	0.4 U	0.4 U	0.4 U	0.4 U	41 U
MethyleneChloride	3^	1.0 U	1.0 U	1.0 U	1.0 U	99 U
Trichlorofluoromethane	NA	8.6	11	0.3 U	0.3 U	35 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	0.5 U	49 U
1,1-Dichloroethane	50^	0.3 U	0.3 U	0.3 U	0.3 U	29 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.5 U	0.5 U	45 U
cis-1,2-Dichloroethene	70^	0.4 U	0.4 U	0.4 U	0.4 U	**490**
Chloroform	6	0.4 U	0.4 U	0.4 U	0.4 U	37 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	0.3 U	29 U
1,1,1-Trichloroethane	30	0.3 U	0.4	0.3 U	0.3 U	30 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	0.4 U	44 U
Bromodichloromethane	1	0.2 U	0.2 U	0.2 U	0.2 U	23 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	0.1 U	14 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	27 U
Trichloroethene	1	0.3 U	0.3 U	0.3 U	**5.0**	**18000**
Dibromochloromethane	10	0.3 U	0.3 U	0.3 U	0.3 U	32 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	0.3 U	35 U
Benzene	1	0.3 U	0.3 U	0.3 U	0.3 U	33 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	31 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	0.4 U	0.4 U	42 U
Bromoform	4	0.3 U	0.3 U	0.3 U	0.3 U	33 U
Tetrachloroethene	1	0.1 U	0.1 U	0.1 U	0.1 U	**40**
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	0.3 U	0.3 U	32 U
Toluene	1,000	0.3 U	0.3 U	0.3 U	0.3 U	26 U
Chlorobenzene	50^	0.2 U	0.2 U	0.2 U	0.2 U	19 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	0.2 U	25 U
Xylene(Total)	NA	0.3 U	0.3 U	0.3 U	0.3 U	35 U
Total Confident Conc. VOAs (s)		8.6	11	0	5.0	18530
Total Estimated Conc. VOA TICs (s)		0	0	0	0	450

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name.
Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-3 140515 06/28/99 WATER 1.0 ug/L	MW-4 140858 06/29/99 WATER 1.0 ug/L	MW-5 141275 06/30/99 WATER 1.0 ug/L	MW-5A 141276 06/30/99 WATER 5.0 ug/L	MW-6 141278 06/30/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	0.4 U	2.1 U	0.4 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	2.8 U	0.6 U
VinylChloride	5	0.5 U	0.5 U	0.5 U	2.2 U	0.5 U
Chloroethane	NA	0.4 U	0.4 U	0.4 U	2.0 U	0.4 U
MethyleneChloride	3^	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
Trichlorofluoromethane	NA	0.3 U	0.3 U	0.3 U	360	0.3 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	**20**	0.5 U
1,1-Dichloroethane	50^	0.3 U	0.3 U	0.7	7.2	0.3 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.5 U	2.2 U	0.5 U
cis-1,2-Dichloroethene	70^	0.4 U	0.4 U	0.4 U	1.8 U	0.4 U
Chloroform	6	0.4 U	0.4 U	0.4 U	1.8 U	0.4 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	1.4 U	0.3 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	1.4	**35**	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	2.2 U	0.4 U
Bromodichloromethane	1	0.2 U	0.2 U	0.2 U	1.2 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	0.7 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	1.4 U	0.3 U
Trichloroethene	1	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
Dibromochloromethane	10	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	1.8 U	0.3 U
Benzene	1	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	0.4 U	2.1 U	0.4 U
Bromoform	4	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
Tetrachloroethene	1	0.1 U	0.1 U	0.1 U	0.7 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	0.3 U	1.6 U	0.3 U
Toluene	1,000	0.3 U	0.3 U	0.3 U	1.3 U	0.3 U
Chlorobenzene	50^	0.2 U	0.2 U	0.2 U	0.9 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	1.2 U	0.2 U
Xylene(Total)	NA	0.3 U	0.3 U	0.3 U	1.8 U	0.3 U
Total Confident Conc. VOAs (s)		0	0	2.1	422	0
Total Estimated Conc. VOA TICs (s)		0	0	0	250	18

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-7 140854 06/29/99 WATER 1.0 ug/L	MW-7A 140855 06/29/99 WATER 1.0 ug/L	MW-8 141274 06/30/99 WATER 1.0 ug/L	MW-9A 140859 06/29/99 WATER 1.0 ug/L	MW-9A-D 140860 06/29/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
VinylChloride	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	NA	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MethyleneChloride	3^	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	NA	5.8	1.3	0.3 U	0.3 U	0.3 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	50^	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	0.5 U	3.0	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70^	0.4 U	15	0.4 U	0.4 U	0.4 U
Chloroform	6	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethene	1	0.3 U	**100**	0.3 U	0.3 U	0.3 U
Dibromochloromethane	10	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	1	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromoform	4	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Tetrachloroethene	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Toluene	1,000	0.3 U	1.2	0.3 U	0.3 U	0.3 U
Chlorobenzene	50^	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylene(Total)	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Total Confident Conc. VOAs (s)		5.8	121	0	0	0
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
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J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-10A 140857 06/29/99 WATER 1.0 ug/L	MW-11A 141277 06/30/99 WATER 1.0 ug/L	MW-12A 141279 06/30/99 WATER 2.0 ug/L	MW-13A 141280 06/30/99 WATER 1.0 ug/L	MW-14A 141646 07/01/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	0.8 U	0.4 U	0.4 U
Bromomethane	10	0.6 U	0.6 U	1.1 U	0.6 U	0.6 U
VinylChloride	5	0.5 U	0.5 U	0.9 U	0.5 U	0.5 U
Chloroethane	NA	0.4 U	0.4 U	0.8 U	0.4 U	0.4 U
MethyleneChloride	3^	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U
Trichlorofluoromethane	NA	0.3 U	28	190	0.3 U	0.3 U
1,1-Dichloroethene	2	0.5 U	**3.5**	1.0 U	0.5 U	0.5 U
1,1-Dichloroethane	50^	0.3 U	5.8	0.6 U	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.9 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70^	0.4 U	3.0	12	0.4 U	0.4 U
Chloroform	6	0.4 U	0.4 U	0.7 U	0.4 U	0.4 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.6 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.3 U	3.4	0.6 U	0.3 U	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.9 U	0.4 U	0.4 U
Bromodichloromethane	1	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
Trichloroethene	1	0.6	**190**	**9.2**	**1.6**	**1.7**
Dibromochloromethane	10	0.3 U	0.3 U	0.6 U	0.3 U	0.3 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.7 U	0.3 U	0.3 U
Benzene	1	0.3 U	0.3 U	0.7 U	0.3 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.6 U	0.3 U	0.3 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	0.8 U	0.4 U	0.4 U
Bromoform	4	0.3 U	0.3 U	0.7 U	0.3 U	0.3 U
Tetrachloroethene	1	0.1 U	0.1 U	0.3 U	0.1 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	0.6 U	0.3 U	0.3 U
Toluene	1,000	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
Chlorobenzene	50^	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
Xylene(Total)	NA	0.3 U	0.3 U	0.7 U	0.3 U	0.3 U
Total Confident Conc. VOAs (s)		0.6	234	211	1.6	1.7
Total Estimated Conc. VOA TICs (s)		0	280	130	16	7.8

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

packer Test

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-15A 141647 07/01/99 WATER 1.0 ug/L	MW-16A 141648 07/01/99 WATER 1.0 ug/L	MW-17A 141649 07/01/99 WATER 5.0 ug/L	MW-18A 141650 07/01/99 WATER 1.0 ug/L	MW-19_45-52 141804 07/02/99 WATER 100.0 ug/l
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	2.1 U	0.4 U	42 U
Bromomethane	10	0.6 U	0.6 U	2.8 U	0.6 U	55 U
VinylChloride	5	0.5 U	0.5 U	2.2 U	0.5 U	45 U
Chloroethane	NA	0.4 U	0.4 U	2.0 U	0.4 U	41 U
MethyleneChloride	3^	1.0 U	1.0 U	5.0 U	1.0 U	99 U
Trichlorofluoromethane	NA	16	0.3 U	260	140	35 U
1,1-Dichloroethene	2	1.0	1.7	**7.0**	**4.1**	49 U
1,1-Dichloroethane	50^	0.3 U	1.4	1.4 U	18	29 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	2.2 U	0.5 U	45 U
cis-1,2-Dichloroethene	70^	1.6	7.4	13	5.0	**93**
Chloroform	6	1.2	0.4 U	1.8 U	0.4 U	37 U
1,2-Dichloroethane	2	0.3 U	0.3 U	1.4 U	0.3 U	29 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	8.0	0.9	30 U
CarbonTetrachloride	2	0.4 U	0.4 U	2.2 U	0.4 U	44 U
Bromodichloromethane	1	0.2 U	0.2 U	1.2 U	0.2 U	23 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.7 U	0.1 U	14 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	1.4 U	0.3 U	27 U
Trichloroethene	1	**44**	**45**	**800**	**42**	**5900**
Dibromochloromethane	10	0.3 U	0.3 U	1.6 U	0.3 U	32 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	1.8 U	0.3 U	35 U
Benzene	1	0.3 U	0.3 U	1.6 U	0.3 U	33 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	1.6 U	0.3 U	31 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	2.1 U	0.4 U	42 U
Bromoform	4	0.3 U	0.3 U	1.6 U	0.3 U	33 U
Tetrachloroethene	1	0.1 U	0.1 U	0.7 U	**1.7**	14 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	1.6 U	0.3 U	32 U
Toluene	1,000	0.3 U	0.3 U	1.3 U	0.3 U	26 U
Chlorobenzene	50^	0.2 U	0.2 U	0.9 U	0.3	19 U
Ethylbenzene	700	0.2 U	0.2 U	1.2 U	0.2 U	25 U
Xylene(Total)	NA	0.3 U	0.3 U	1.8 U	0.3 U	35 U
Total Confident Conc. VOAs (s)		64	56	1088	212	5993
Total Estimated Conc. VOA TICs (s)		4.9	0	0	0	0

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Packer Test — well install

Sample ID	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-19_51.5-62	MW-19_61.5-72	MW-19_71-80	MW-19A	FB062899
Lab Sample Number		141805	141806	141809	143117	140513
Sampling Date		07/02/99	07/02/99	07/02/99	07/12/99	06/28/99
Matrix		WATER	WATER	WATER	WATER	WATER
Dilution Factor		50.0	50.0	100.0	100.0	1.0
Units		ug/l	ug/l	ug/l	ug/L	ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	21 U	21 U	42 U	42 U	0.4 U
Bromomethane	10	28 U	28 U	55 U	55 U	0.6 U
VinylChloride	5	22 U	22 U	45 U	45 U	0.5 U
Chloroethane	NA	20 U	20 U	41 U	41 U	0.4 U
MethyleneChloride	3^	50 U	50 U	99 U	99 U	1.0 U
Trichlorofluoromethane	NA	18 U	18 U	35 U	35 U	0.3 U
1,1-Dichloroethene	2	24 U	24 U	49 U	49 U	0.5 U
1,1-Dichloroethane	50^	14 U	14 U	29 U	29 U	0.3 U
trans-1,2-Dichloroethene	100	22 U	22 U	45 U	45 U	0.5 U
cis-1,2-Dichloroethene	70^	**93**	**96**	**93**	**90**	0.4 U
Chloroform	6	18 U	18 U	37 U	37 U	0.4 U
1,2-Dichloroethane	2	14 U	14 U	29 U	29 U	0.3 U
1,1,1-Trichloroethane	30	15 U	15 U	30 U	30 U	0.3 U
CarbonTetrachloride	2	22 U	22 U	44 U	44 U	0.4 U
Bromodichloromethane	1	12 U	12 U	23 U	23 U	0.2 U
1,2-Dichloropropane	1	7.0 U	7.0 U	14 U	14 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	14 U	14 U	27 U	27 U	0.3 U
Trichloroethene	1	**8600**	**8700**	**9400**	**7600**	0.3 U
Dibromochloromethane	10	16 U	16 U	32 U	32 U	0.3 U
1,1,2-Trichloroethane	3	18 U	18 U	35 U	35 U	0.3 U
Benzene	1	16 U	16 U	33 U	33 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	16 U	16 U	31 U	31 U	0.3 U
2-ChloroethylVinylEther	NA	21 U	21 U	42 U	42 U	0.4 U
Bromoform	4	16 U	16 U	33 U	33 U	0.3 U
Tetrachloroethene	1	7.0 U	7.0 U	14 U	14 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	16 U	16 U	32 U	32 U	0.3 U
Toluene	1,000	13 U	13 U	26 U	26 U	0.3 U
Chlorobenzene	50^	9.5 U	9.5 U	19 U	19 U	0.2 U
Ethylbenzene	700	12 U	12 U	25 U	25 U	0.2 U
Xylene(Total)	NA	18 U	18 U	35 U	35 U	0.3 U
Total Confident Conc. VOAs (s)		8693	8796	9493	7690	0
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	TB062899 140514 06/28/99 WATER 1.0 ug/L	FB062999 140861 06/29/99 WATER 1.0 ug/L	TB062999 140862 06/29/99 WATER 1.0 ug/L	FB063099 141281 06/30/99 WATER 1.0 ug/L	TB063099 141282 06/30/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)						
Chloromethane	30	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
VinylChloride	5	2.3	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	NA	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MethyleneChloride	3^	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	50^	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70^	8.9	0.4 U	0.4 U	0.4 U	0.4 U
Chloroform	6	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethene	1	2.8	0.3 U	0.3 U	0.3 U	0.3 U
Dibromochloromethane	10	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	1	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromoform	4	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Tetrachloroethene	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Toluene	1,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorobenzene	50^	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylene(Total)	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Total Confident Conc. VOAs (s)		14	0	0	0	0
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Volatile Organic Compounds
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	FB070199 141651 07/01/99 WATER 1.0 ug/L	TB070199 141652 07/01/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)			
Chloromethane	30	0.4 U	0.4 U
Bromomethane	10	0.6 U	0.6 U
VinylChloride	5	0.5 U	0.5 U
Chloroethane	NA	0.4 U	0.4 U
MethyleneChloride	3^	1.0 U	1.0 U
Trichlorofluoromethane	NA	0.3 U	0.3 U
1,1-Dichloroethene	2	0.5 U	0.5 U
1,1-Dichloroethane	50^	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	0.5 U	0.5 U
cis-1,2-Dichloroethene	70^	0.4 U	0.4 U
Chloroform	6	0.4 U	0.4 U
1,2-Dichloroethane	2	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U
Bromodichloromethane	1	0.2 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U
(1) cis-1,3-Dichloropropene	NA	0.3 U	0.3 U
Trichloroethene	1	0.3 U	0.3 U
Dibromochloromethane	10	0.3 U	0.3 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U
Benzene	1	0.3 U	0.3 U
(1) trans-1,3-Dichloropropene	NA	0.3 U	0.3 U
2-ChloroethylVinylEther	NA	0.4 U	0.4 U
Bromoform	4	0.3 U	0.3 U
Tetrachloroethene	1	0.1 U	0.1 U
1,1,2,2-Tetrachloroethane	1^	0.3 U	0.3 U
Toluene	1,000	0.3 U	0.3 U
Chlorobenzene	50^	0.2 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U
Xylene(Total)	NA	0.3 U	0.3 U
Total Confident Conc. VOAs (s)		0	0
Total Estimated Conc. VOA TICs (s)		0	0

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
^ Value is a revision to the Class !IA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.
Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name. Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Volatile Organic Compound Analytical Results from Soil Samples, July 1999
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residentia Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	GT-2_21-21.5 B9919001 7/9/1999 SOIL 1.0 mg/kg	GT-2_25.5-26 B9919002 7/9/1999 SOIL 1.0 mg/kg	GT-2_27-27.5 B9919003 7/9/1999 SOIL 1.0 mg/kg
VOLATILE COMPOUNDS (GC/MS)						
VinylChloride	2	7	10	0.65 U	0.6 U	0.67 U
trans-1,2-Dichloroethene	1000	1000	50	0.65 U	0.6 U	0.67 U
cis-1,2-Dichloroethene	79	1000	1	0.65 U	0.6 U	0.67 U
Trichloroethene	23	54	1	0.65 U	**2.1**	**1.2**

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residentia Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	GT-2_29-29.5 B9919004 7/9/1999 SOIL 1.0 mg/kg	GT-2_30.5-31 B9919005 7/9/1999 SOIL 1.0 mg/kg
VOLATILE COMPOUNDS (GC/MS)					
VinylChloride	2	7	10	0.72 U	0.67 U
trans-1,2-Dichloroethene	1000	1000	50	0.72 U	0.67 U
cis-1,2-Dichloroethene	79	1000	1	0.72 U	0.67 U
Trichloroethene	23	54	1	0.72 U	0.67 U

Notes
U : The compound was not detected at the indicated concentration.
Concentrations outlined and bolded are in exceedance of applicable Soil Cleanup Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	RW-1-35 [a] 140509 06/28/99 WATER 1.0 ug/L	RW-1-20 [b] 140510 06/28/99 WATER 1.0 ug/L	MW-1 140856 06/29/99 WATER 1.0 ug/L	MW-2 140511 06/28/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	5.00 U	5.00 U	250	39.8
Ethene	NA	5.00 U	5.00 U	25 U	5.00 U
Ethane	NA	5.00 U	5.00 U	25 U	5.00 U
METALS					
Iron	300	37.4	23.5	338	16.0 U
Manganese	50	3.9	3.2	618	649
WET CHEMISTRY					
Alkalinity	NA	164	160	6.1	48.5
BOD	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloride	250,000	6.5	5.5	9.5	11.5
COD	NA	10.0 U	10.0 U	21.8	11.0
Nitrate	10,000	14.3	14.5	0.1 U	1.8
TotalOrganicCarbon	NA	1.0 U	1.0 U	4.1	2.3

U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
NA - No regulatory criteria have been established for this constituent.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.

Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name.
Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-2A 140512 06/28/99 WATER 100.0 ug/L	MW-3 140515 06/28/99 WATER 1.0 ug/L	MW-4 140858 06/29/99 WATER 1.0 ug/L	MW-5 141275 06/30/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	461	108	1350	5.0 U
Ethene	NA	25.0 U	10.0 U	100 U	5.0 U
Ethane	NA	25.0 U	10.0 U	100 U	5.0 U
METALS					
Iron	300	95.5	675	22300	16.0 U
Manganese	50	4800	1380	1550	4.2
WET CHEMISTRY					
Alkalinity	NA	416	116	382	53.5
BOD	NA	2.0 U	2.0 U	6.0	2.0 U
Chloride	250,000	21.0	7.0	5.0 U	5.0 U
COD	NA	23.4	50.2	26.1	10.0 U
Nitrate	10,000	0.1 U	0.1 U	0.1 U	0.7
TotalOrganicCarbon	NA	3.7	4.0	8.9	2.4

U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concetration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
NA - No regulatory criteria have been established for this constituent.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.

Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name.
Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-5A 141276 06/30/99 WATER 5.0 ug/L	MW-6 141278 06/30/99 WATER 1.0 ug/L	MW-7 140854 06/29/99 WATER 1.0 ug/L	MW-7A 140855 06/29/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	574	5.0 U	5.0 U	40.2
Ethene	NA	50 U	5.0 U	5.0 U	5.0 U
Ethane	NA	50 U	5.0 U	5.0 U	5.0 U
METALS					
Iron	300	16.0 U	16.0 U	16.0 U	16.0 U
Manganese	50	0.90 U	55.7	0.92	1.2
WET CHEMISTRY					
Alkalinity	NA	232	21.2	162	279
BOD	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloride	250,000	9.0	5.0 U	5.0 U	5.0 U
COD	NA	10.0 U	10.0 U	10.0 U	10.0 U
Nitrate	10,000	0.26	0.98	10.1	2.9
TotalOrganicCarbon	NA	3.5	3.3	1.0 U	2.0

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B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
NA - No regulatory criteria have been established for this constituent.
a - Sample was collected from well RW-1 with pump inlet at 35 feet below grade. RW-1 was abandoned on 7/2/99.
b - Sample was collected from well RW-1 with pump inlet at 20 feet below grade. RW-1 was abandoned on 7/2/99.

Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name.
Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-8 141274 06/30/99 WATER 1.0 ug/L	MW-9A 140859 06/29/99 WATER 1.0 ug/L	MW-9A-D 140860 06/29/99 WATER 1.0 ug/L	MW-10A 140857 06/29/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	5.0 U	31.2	21.8	5.0 U
Ethene	NA	5.0 U	5.0 U	5.0 U	5.0 U
Ethane	NA	5.0 U	5.0 U	5.0 U	5.0 U
METALS					
Iron	300	72.1	3690	3460	20.2
Manganese	50	361	7690	7900	4.2
WET CHEMISTRY					
Alkalinity	NA	32.3	314	313	207
BOD	NA	2.0 U	4.0	4.0	2.0 U
Chloride	250,000	5.0 U	23.0	23.5	13.0
COD	NA	10.0 U	62.4	60.3	10.0 U
Nitrate	10,000	0.1 U	0.1 U	0.1 U	9.6
TotalOrganicCarbon	NA	3.2	16.4	16.9	1.0 U

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Note: Samples were collected from discrete intervals in MW-19 through a straddle packer assembly. Depth intervals are indicated as part of sample identification name.
Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-11A 141277 06/30/99 WATER 1.0 ug/L	MW-12A 141279 06/30/99 WATER 2.0 ug/L	MW-13A 141280 06/30/99 WATER 1.0 ug/L	MW-14A 141646 07/01/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	14.1	116	10.6	6.58
Ethene	NA	5.0 U	5.0 U	5.0 U	5.00 U
Ethane	NA	5.0 U	5.03	5.0 U	5.00 U
METALS					
Iron	300	16.0 U	106	16.0 U	22.5
Manganese	50	0.90 U	321	1.4	19.1
WET CHEMISTRY					
Alkalinity	NA	577	139	366	288
BOD	NA	2.0 U	4.0	2.0 U	2.0 U
Chloride	250,000	5.0 U	33.0	13.0	20.5
COD	NA	10.0 U	11.1	15.4	10.0 U
Nitrate	10,000	0.39	0.1 U	0.67	0.28
TotalOrganicCarbon	NA	4.5	3.5	4.9	1.7

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Table x-x
Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-15A 141647 07/01/99 WATER 1.0 ug/L	MW-16A 141648 07/01/99 WATER 1.0 ug/L	MW-17A 141649 07/01/99 WATER 5.0 ug/L	MW-18A 141650 07/01/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	5.00 U	28.7	5.00 U	7.98
Ethene	NA	5.00 U	5.00 U	5.00 U	5.00 U
Ethane	NA	5.00 U	5.00 U	5.00 U	5.00 U
METALS					
Iron	300	16.0 U	227	16.0 U	16.0 U
Manganese	50	562	560	0.90 U	510
WET CHEMISTRY					
Alkalinity	NA	237	165	45.5	206
BOD	NA	2.0 U	2.0	2.0 U	12.0
Chloride	250,000	27.5	23.5	5.0 U	46.0
COD	NA	17.8	32.4	10.0 U	47.1
Nitrate	10,000	2.7	0.37	1.6	0.24
TotalOrganicCarbon	NA	2.1	7.4	1.0 U	6.9

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Summary of Analytical Results from Site Monitoring Wells
Natural Attenuation Parameters
Former ATT Clark Shop
Clark, New Jersey

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	FB062899 140513 06/28/99 WATER 1.0 ug/L	FB062999 140861 06/29/99 WATER 1.0 ug/L	FB063099 141281 06/30/99 WATER 1.0 ug/L	FB070199 141651 07/01/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)					
Methane	NA	5.00 U	5.0 U	5.0 U	5.00 U
Ethene	NA	5.00 U	5.0 U	5.0 U	5.00 U
Ethane	NA	5.00 U	5.0 U	5.0 U	5.00 U
METALS					
Iron	300	16.0 U	16.0 U	16.0 U	42.6
Manganese	50	0.90 U	0.90 U	0.90 U	0.90 U
WET CHEMISTRY					
Alkalinity	NA	5.0 U	5.0 U	5.0 U	5.0 U
BOD	NA	2.0 U	2.0 U	2.0 U	2.0 U
Chloride	250,000	5.0 U	5.0 U	5.0 U	5.0 U
COD	NA	10.0 U	10.0 U	10.0 U	10.0 U
Nitrate	10,000	0.1 U	0.1 U	0.1 U	0.1 U
TotalOrganicCarbon	NA	1.0 U	1.0 U	1.0 U	1.0 U

U - The compound was not detected at the indicated concentration.
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Concentrations outlined and bolded are in exceedance of applicable Groundwater Quality Standard.

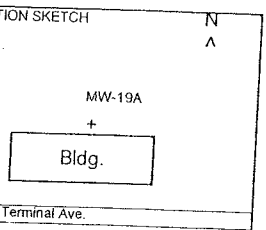
ROCK CORE LOG

McLaren Hart

BORING NO.:	PROJECT NO.:	PROJECT NAME:
RC-19A	120805661001.001	AT&T Clark
LOCATION:		GEOLOGIST / OFFICE:
100 Terminal Ave., Clark, NJ		S. Alderfer; M. Mackie/Warren

DRILLING EQUIPMENT:	CORE BIT SIZE:	DRILLING CONTRACTOR / DRILLER:	
Mobile B-80	NX - 10 ft. core barrel	Summit/Steve Yotcoski	
START/FINISH DATE:	TOTAL NO. CORE RUNS:	T.D. BOREHOLE:	WELL INSTALLED?
7/1/1999	4	80'	Yes - MW-19A

LOCATION SKETCH



THICKNESS AND TYPE OF OVERBURDEN:
Alternated back and forth between vf Sand and Silt, trace f Gravel, to 35' b.g. Weathered bedrock to 40'.

DEPTH (FT.)	RUN NO.	RUN TIME	REC. (ft.)	REC. (%.)	RQD (%.)	DESCRIPTION	REMARKS	FRACTURES Angle	FRACTURES Spacing	GRAPHIC LOG
46–55	1	3 min/ft	5.0	90	55.5	Red shale/siltstone	Mostly horizontal breaks with clay in-filling.	0		
							Calcite-filled horizontal fractures throughout 45' - 50'. Highly weathered fracture with gravel deposition.	0		
							Poss. chlorite mineralization in fracture.			
							FeO_3 mineralization increasing toward 55'.			
56–65	2	3 min/ft	8.8	97	95		Dissolution cavities throughout mid-run.			
							Vertical fractures with FeO_3 staining.	90		
							Calcite veins and calcite in-fillings.			
							Unfilled dissolution cavities.			
66–74	3	3.5 min/ft	9.0	100	51		Heavily fractured (65'-67'). Remnant near-vertical fracturing apparent from 65'-67'.	<90		
							Clay-filled fracture.	0	2"	
							Clay-filled fracture.	0	2"	
							Calcite veins & nodules throughout run.			
							Clay-filled fracture.	0	2"	
75–80	4	3.5 min/ft	6.0	100	55		Low angle fracture with secondary mineralization.	<15		
							Highly weathered fracture with rounded fragments. Horiz. & vertical calcite veins.	0		
							Caly-filled fracture. Calcite-filled dissolution cavities and horiz. & angular fractures w/calcite in-filling.	0	1"	
						End of coring at 80' b.g.				

STL
Committed To *Your* Success

STL Envirotech
777 New Durham Road
Edison, New Jersey 08817

Tel: (732) 549-3900
Fax: (732) 549-3679

FACSIMILE COVER SHEET

To: Scott Alderfer

Fax #: 908-647-8162

From: BIANCA R. BUCKWALTER

Phone #:
Fax #:

Date: 8/4/99

# of Pages: 3

GRAIN SIZE

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STL - Envirotech
777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice): DARREN HOOPER
Company: McLAREN/HART, INC.
Address: 25 INDEPENDENCE BLVD.
City: WARREN, State: NJ 07059
Phone: (908) 647-8111 Fax: 647-8162

Samplers Name (Printed): SCOTT ALDERFER
P.O. #:

Site/Project Identification: AT&T CLARK
State (Location of site): NJ: X NY: Other:
Regulatory Program: ISRA

Analysis Turnaround Time
Standard: X
Rush Charges Authorized For:
2 Week:
1 Week:
Other:

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:
Job No: R316

Sample Identification	Date	Time	Matrix	No. of Cont.	GRAIN SIZE	Sample Numbers
GT-1 (15-16)	7/8/99	0850	SOIL	1	X	142786
GT-1 (17-18)		0935			X	142787
GT-1 (21-22)		0955			X	142788
GT-1 (23-24)		0955			X	142789
GT-1 (25-26)		1005			X	142790
GT-1 (27-28)		1015			X	142791
GT-1 (30-31)		1045			X	142792
GT-1 (32-33)		1120			X	142793
GT-1 (35-36)		1150			X	142794
GT-1 (38-39)		1340			X	142795

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____
Soil:
Water:

Special Instructions

Water Metals Filtered (Yes/No)?

	Relinquished by	Company	Date / Time	Received by	Company
1)	[signature]	McLaren/Hart	7/9/99 3:00 PM	K. CHALOKA	STL-ENVIROTECH KEN CHALOKA
2)	K. CHALOKA	STL-ENVIROTECH KEN CHALOKA	7/9/99 5:25 PM	[signature]	
3)					
4)					

Laboratory Certifications: New Jersey (12543), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No 578)

STL - Envirotech
777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice): DARREN HOPPER
Company: MCLAREN/HART, INC.
Address: SEE PAGE 1
City: State:
Phone: Fax:

Samplers Name (Printed): SCOTT ALDERFER
P.O. #:

Site/Project Identification: AT&T CLARK
State (Location of site): NJ: [X] NY: [ ] Other:
Regulatory Program: ISRA

Analysis Turnaround Time
Standard [X]
Rush Charges Authorized For:
2 Week [ ]
1 Week [ ]
Other [ ]

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:
Job No: R316

Sample Identification	Date	Time	Matrix	No. of Cont.	GRAIN SIZE	Sample Numbers
GT-1 (39-40)	7/8/99	1340	SOIL	1	X	142796
GT-1 (41-42)	7/8/99	1825			X	142797
GT-2 (15-16)	7/9/99	0830			X	142798
GT-2 (19-20)		0845			X	142799
GT-2 (22-23)		0855			X	142800
GT-2 (23-24)		0855			X	142801
GT-2 (27-28)		1030			X	142802
GT-2 (29-30)		1130			X	142803
GT-2 (30-31)		1150			X	142804
		—			X	~~142805~~

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____
Soil:
Water:

Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1)	McLaren/Hart	7/9/99 3PM	1) K. CHALOKA	STL-ENVIROTECH KEN CHALOKA
2) K. CHALOKA	STL-ENVIROTECH KEN CHALOKA	7/9/99 5PM	2)	
3)			3)	
4)			4)	

Laboratory Certifications: New Jersey (12543), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

Committed To *Your* Success

Severn Trent Envirotech
777 New Durham Road
Edison, New Jersey 08817

Tel: (732) 549-3900
Fax: (732) 549-3679

FACSIMILE COVER SHEET

To:	Mr. Scott Alderfer	**Fax #:**	**908-647-8162**
From:	Bianca R. Buckwalter	**Phone #:** **Fax #:**	
Date:	August 3, 1999	**# of Pages:**	**39**

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PARTICLE-SIZE ANALYSIS OF SOILS
ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142786 GT-1 (15-16)

MOISTURE CONTENT (Delivered Moisture): 11.97%

	MECHANICAL SIEVE	
	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	95.87%
	0.375"	71.70%
coarse sand	#4	55.37%
medium sand	#10	41.88%
	#20	31.85%
fine sand	#40	24.18%
	#60	20.71%
	#100	18.43%
fines	#200	15.50%

HYDROMETER ANALYSIS	
PARTICLE DIAMETER (mm)	% FINER
0.034	10.87%
0.024	9.24%
0.017	9.24%
0.013	8.70%
0.009	7.61%
0.006	5.44%
0.005	4.35%
0.003	3.80%
0.002	3.80%
0.001	2.72%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	4.13%
Fine Gravel:	40.51%
Coarse Sand:	13.48%
Medium Sand:	17.70%
Fine Sand:	8.69%
Fines:	15.50%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Dark reddish brown

Description: f Gravel and c-m Sand, some fines

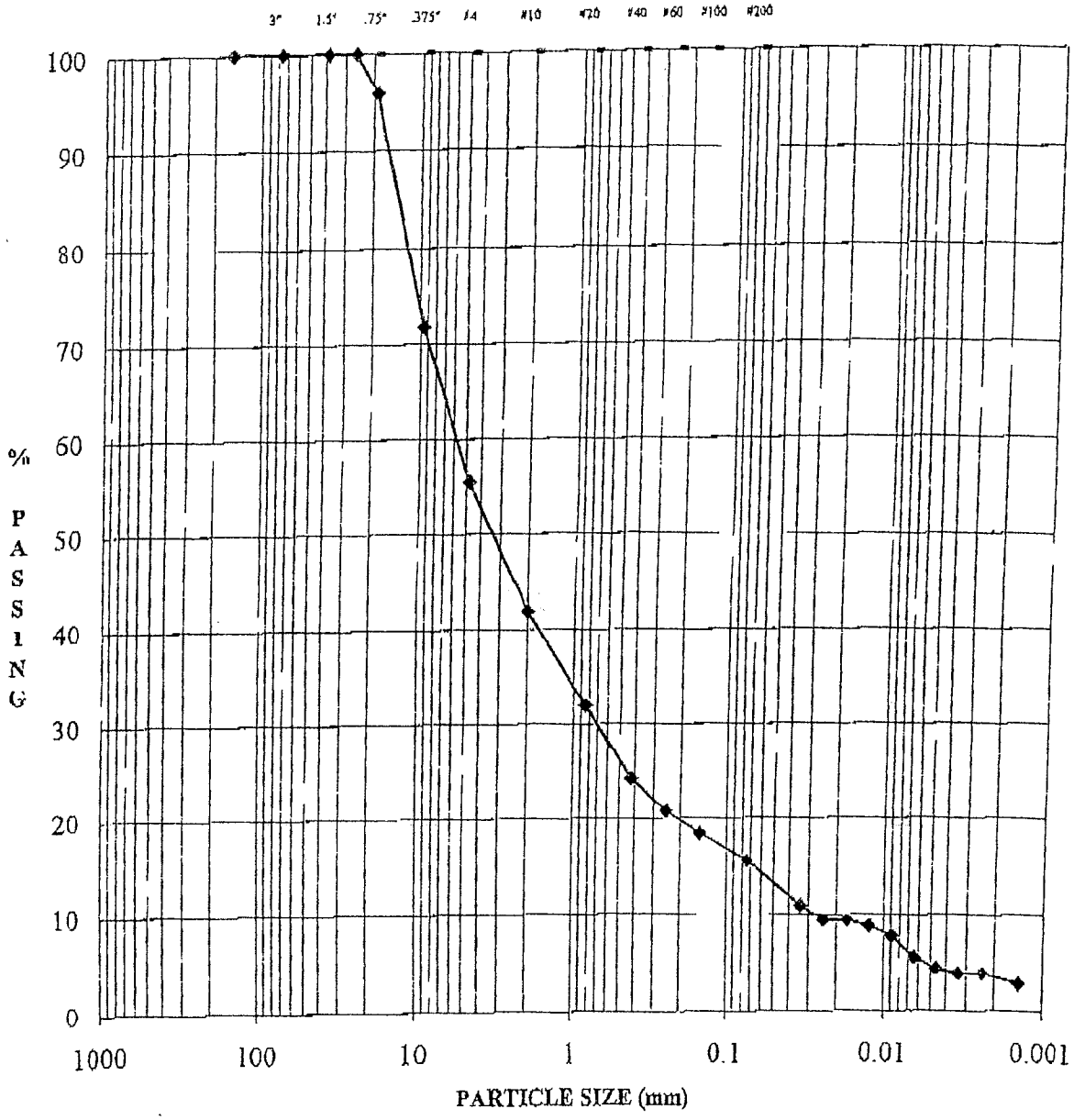
DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142786	Mc:	11.97%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Dark reddish brown	LL:	-		
DESCRIPTION:	f Gravel and c-m Sand, some fines	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142787 GT-1 (17-18)

MOISTURE CONTENT (Delivered Moisture): 11.32%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	94.03%
	0.375"	88.66%
coarse sand	#4	85.09%
medium sand	#10	79.14%
	#20	73.75%
fine sand	#40	68.83%
	#60	63.42%
	#100	57.28%
fines	#200	47.89%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.030	32.79%
0.021	29.62%
0.015	26.44%
0.012	22.21%
0.008	19.04%
0.006	16.92%
0.004	13.75%
0.003	11.11%
0.002	10.58%
0.001	8.99%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	5.97%
Fine Gravel:	8.95%
Coarse Sand:	5.95%
Medium Sand:	10.31%
Fine Sand:	20.93%
Fines:	47.89%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color:	Reddish brown
Description:	Fines and m-f Sand, some gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

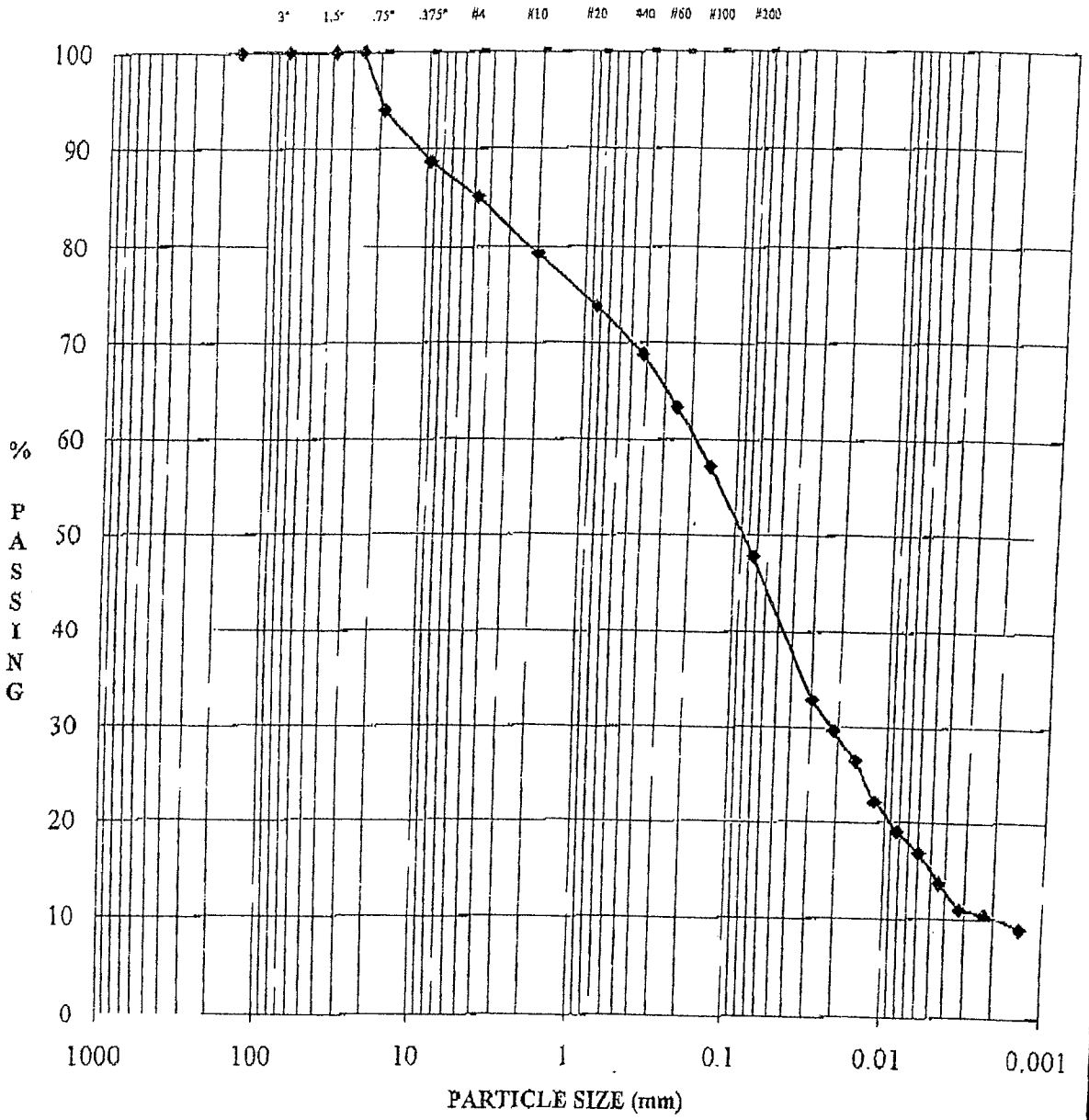
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142787	Mc:	11.32%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines and m-f Sand, some gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142788 GT-1 (21-22)

MOISTURE CONTENT (Delivered Moisture): 11.45%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	93.02%
coarse sand	#4	87.80%
medium sand	#10	79.37%
	#20	74.04%
fine sand	#40	66.51%
	#60	59.98%
	#100	52.32%
fines	#200	41.68%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	24.02%
0.022	21.93%
0.016	18.80%
0.012	16.71%
0.009	14.10%
0.006	11.49%
0.005	7.31%
0.003	6.79%
0.002	5.74%
0.001	4.70%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	12.20%
Coarse Sand:	8.43%
Medium Sand:	12.86%
Fine Sand:	24.83%
Fines:	41.68%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color:	Reddish brown
Description:	Fines and m-f Sand, little f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

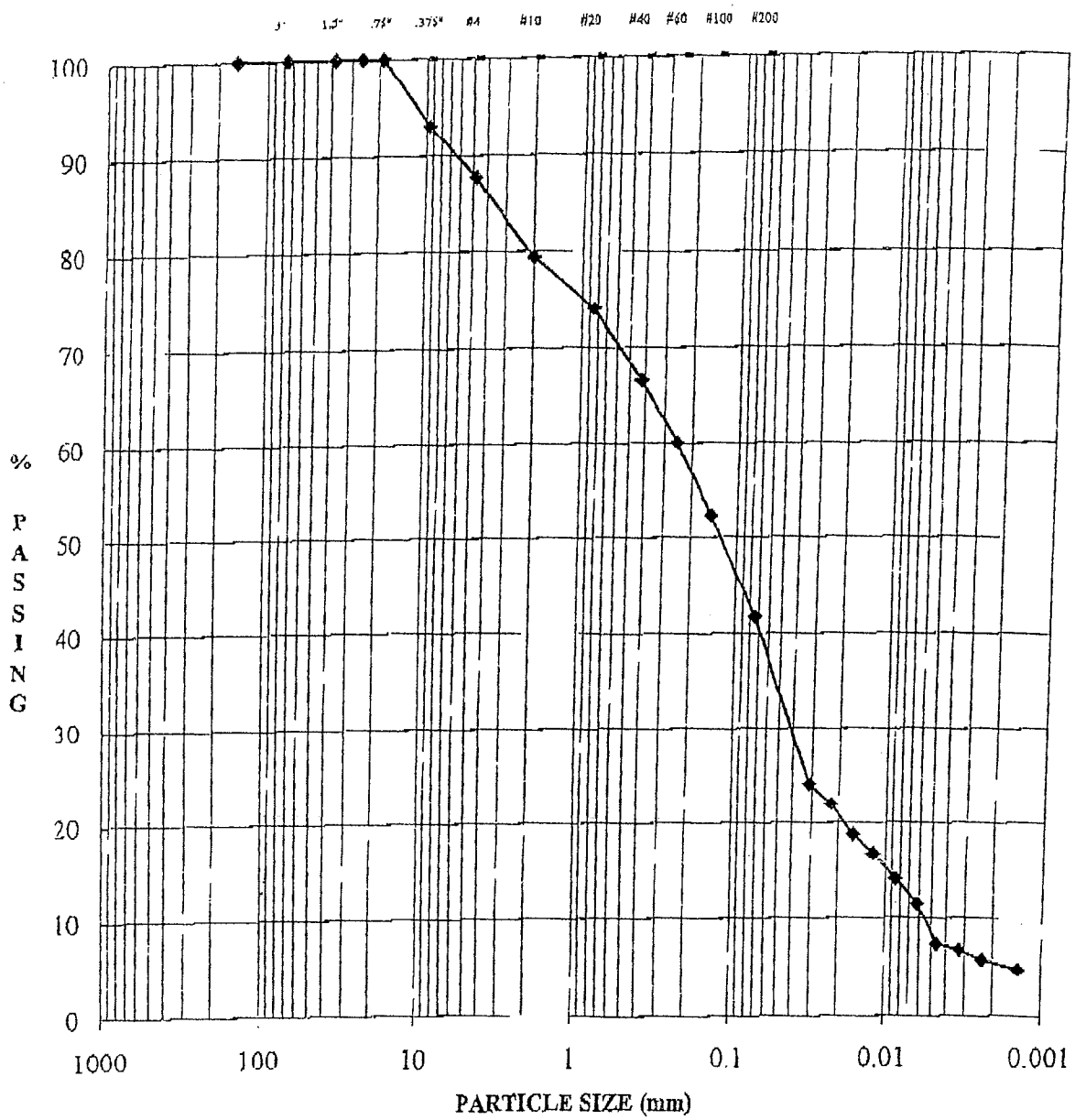
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142788	Mc:	11.45%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines and m-f Sand, little f gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142789 GT-1 (23-24)

MOISTURE CONTENT (Delivered Moisture): 9.95%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	94.32%
coarse sand	#4	87.24%
medium sand	#10	79.15%
	#20	72.78%
fine sand	#40	67.09%
	#60	61.56%
	#100	56.34%
fines	#200	50.04%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.029	35.07%
0.021	32.95%
0.015	27.63%
0.012	22.32%
0.008	18.60%
0.006	14.35%
0.005	10.63%
0.003	10.10%
0.002	7.97%
0.001	6.38%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	12.76%
Coarse Sand:	8.09%
Medium Sand:	12.06%
Fine Sand:	17.05%
Fines:	50.04%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: Fines and m-f Sand, little f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

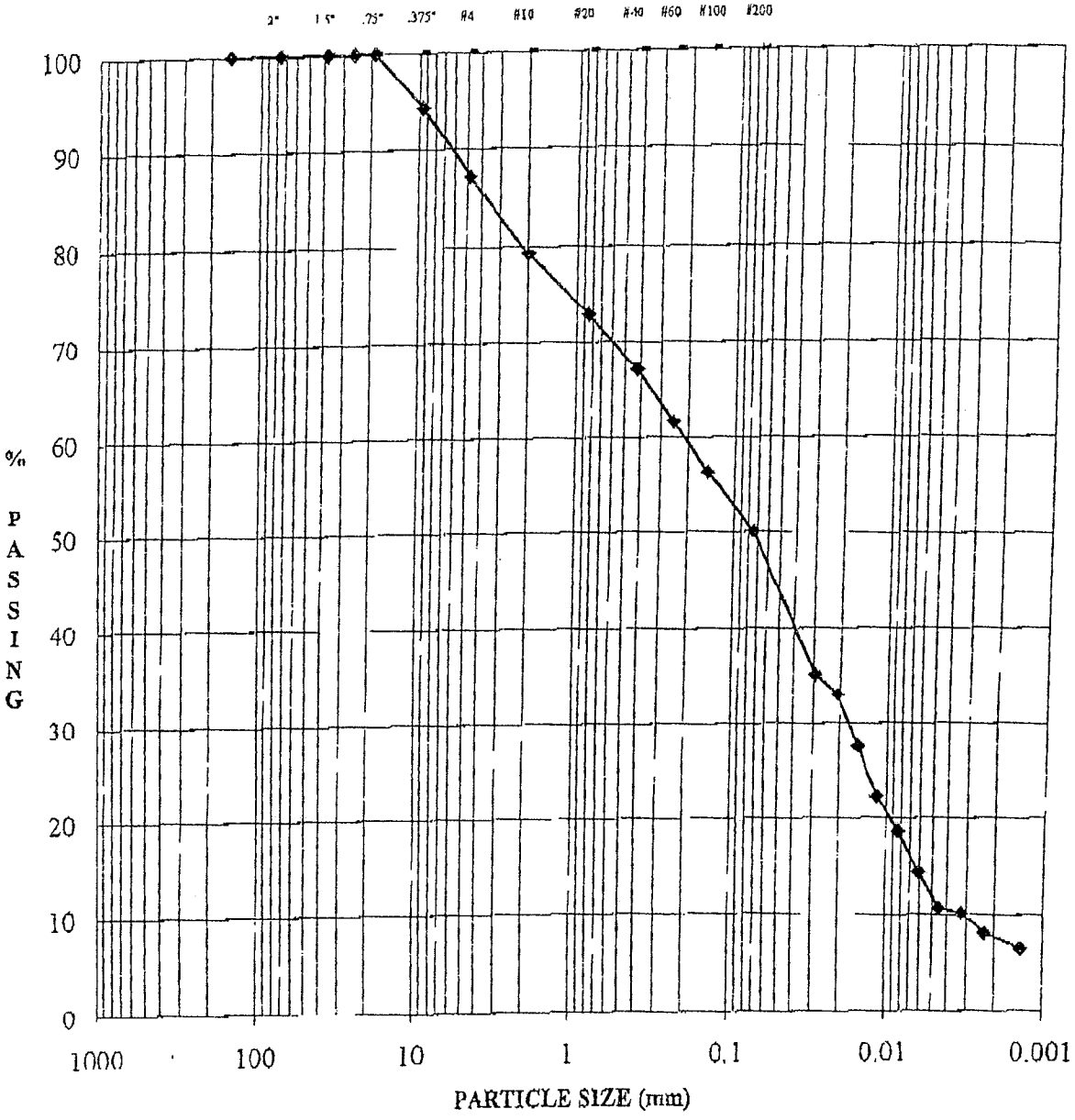
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142789	Mc:	9.95%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines and m-f Sand, little f gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142790 GT-1 (25-26)

MOISTURE CONTENT (Delivered Moisture): 15.84%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	99.19%
coarse sand	#4	96.08%
medium sand	#10	87.87%
	#20	70.74%
fine sand	#40	47.90%
	#60	29.96%
	#100	17.81%
fines	#200	10.50%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.035	6.92%
0.025	6.34%
0.017	5.77%
0.013	5.77%
0.009	4.61%
0.006	3.46%
0.005	2.31%
0.003	1.73%
0.002	1.73%
0.001	1.73%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	3.92%
Coarse Sand:	8.20%
Medium Sand:	39.97%
Fine Sand:	37.40%
Fines:	10.50%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Dark reddish brown

Description: m-f Sand, little fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

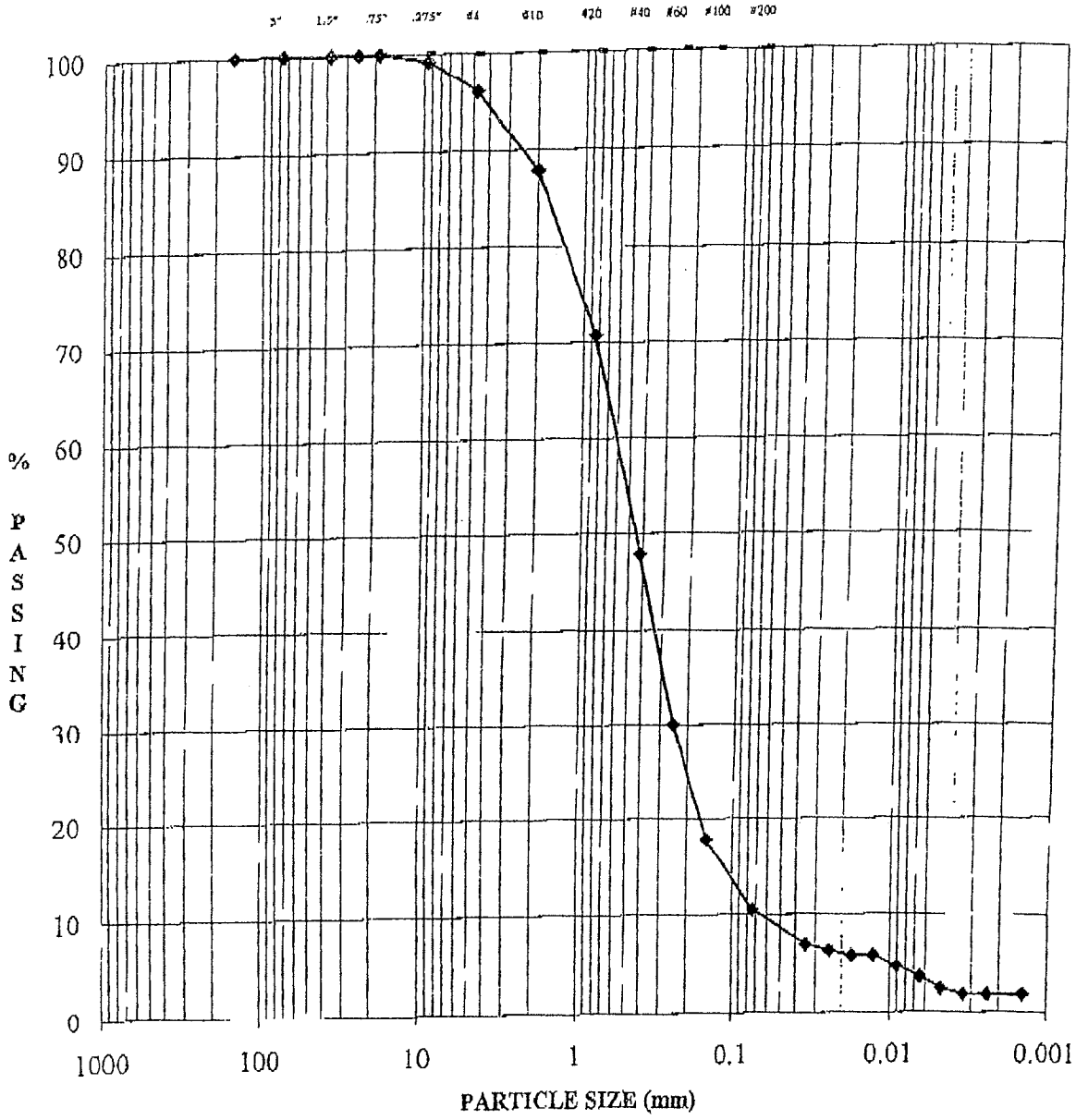
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142790	Mc:	15.84%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Dark reddish brown	LL:	-		
DESCRIPTION:	m-f Sand, little fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142791 GT-1 (27-28)

MOISTURE CONTENT (Delivered Moisture): 12.85%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	95.74%
	0.375"	94.24%
coarse sand	#4	89.17%
medium sand	#10	84.10%
	#20	80.20%
fine sand	#40	76.27%
	#60	71.37%
	#100	65.47%
fines	#200	58.50%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.029	36.44%
0.022	29.82%
0.016	23.74%
0.012	17.67%
0.009	14.36%
0.006	12.15%
0.005	9.39%
0.003	7.18%
0.002	6.07%
0.001	5.52%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	4.26%
Fine Gravel:	6.57%
Coarse Sand:	5.07%
Medium Sand:	7.83%
Fine Sand:	17.77%
Fines:	58.50%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color:	Reddish brown
Description:	Fines, some f sand, little gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.
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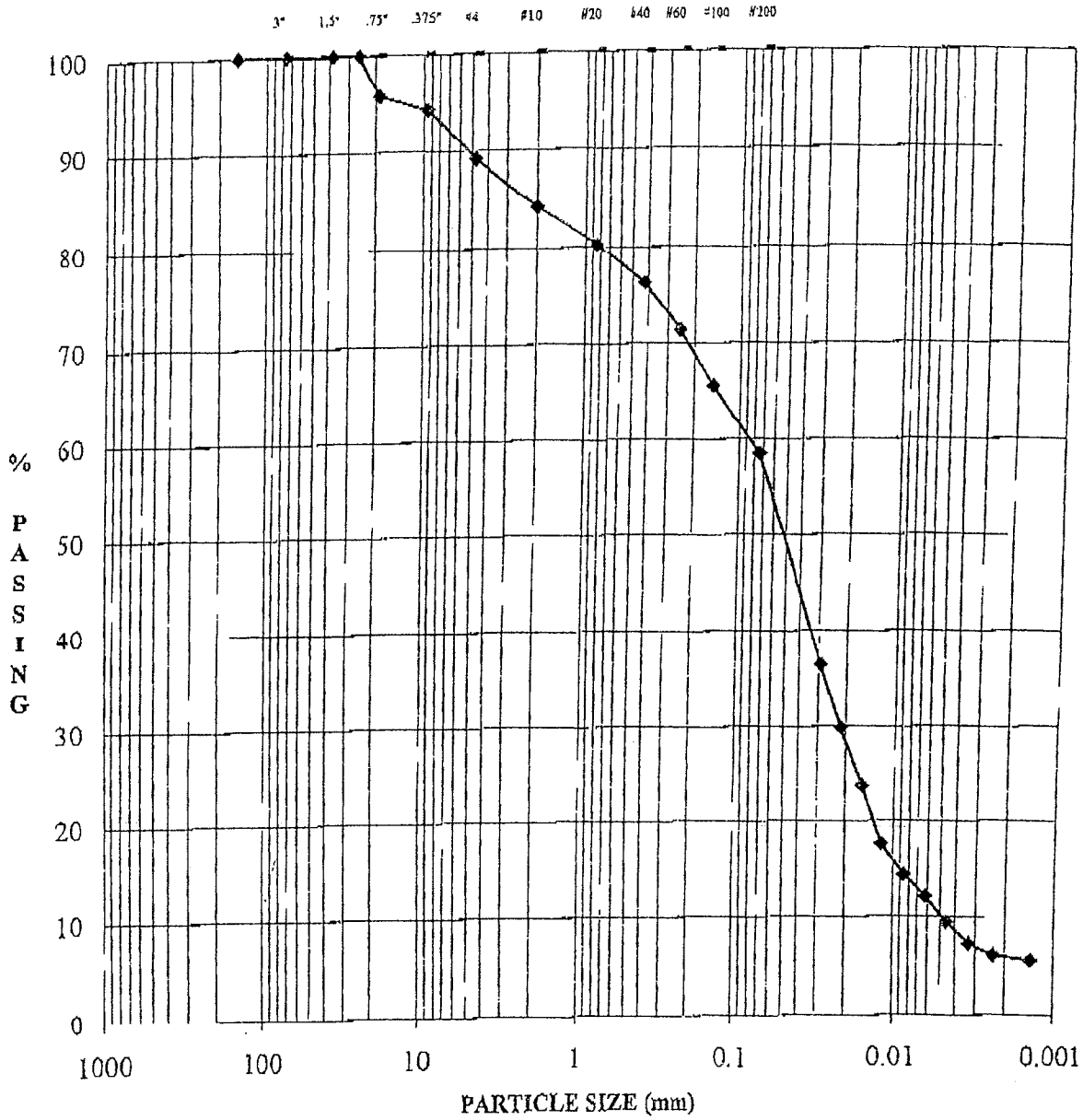
PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142791	Mc:	12.85%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines, some f sand, little gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142792 GT-1 (30-31)

MOISTURE CONTENT (Delivered Moisture): 13.54%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	97.23%
coarse sand	#4	96.42%
medium sand	#10	92.28%
	#20	86.04%
fine sand	#40	71.02%
	#60	48.37%
	#100	37.08%
fines	#200	29.73%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.032	21.50%
0.023	17.92%
0.017	16.73%
0.012	14.34%
0.009	11.95%
0.006	10.75%
0.005	8.36%
0.003	7.17%
0.002	5.97%
0.001	4.78%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	3.58%
Coarse Sand:	4.14%
Medium Sand:	21.25%
Fine Sand:	41.29%
Fines:	29.73%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: m-f Sand, some fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

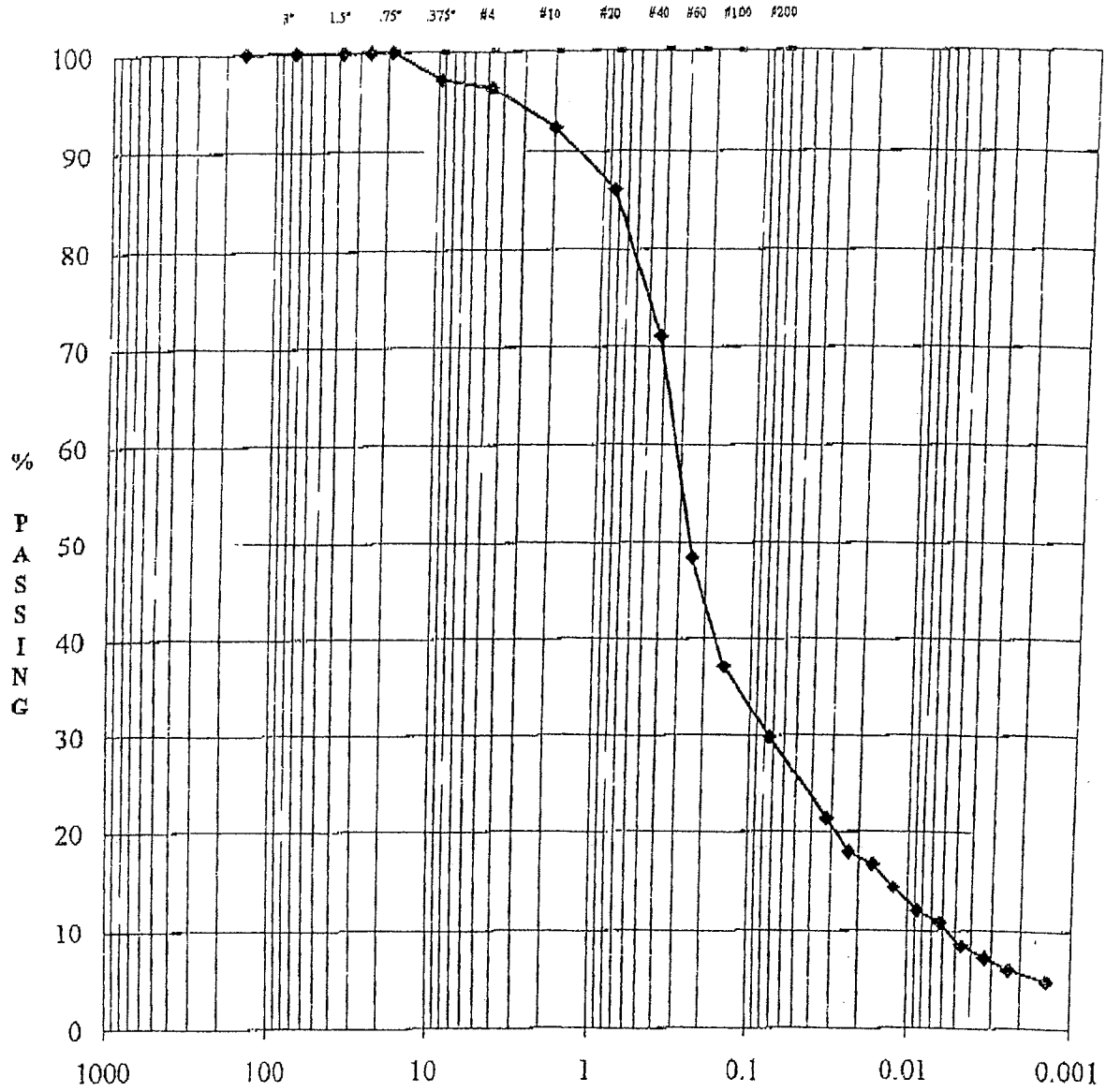
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142792	Mc:	13.5d%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	m-f Sand, some fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142793 GT-1 (32-33)

MOISTURE CONTENT (Delivered Moisture): 12.38%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	99.75%
	0.375"	99.75%
coarse sand	#4	96.45%
medium sand	#10	86.77%
	#20	77.36%
fine sand	#40	64.47%
	#60	47.67%
	#100	39.34%
fines	#200	34.49%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	25.96%
0.023	22.58%
0.016	21.45%
0.012	18.06%
0.009	15.80%
0.006	12.42%
0.005	10.72%
0.003	10.16%
0.002	7.34%
0.001	6.21%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.25%
Fine Gravel:	3.30%
Coarse Sand:	9.68%
Medium Sand:	22.31%
Fine Sand:	29.98%
Fines:	34.49%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: m-f Sand and Fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

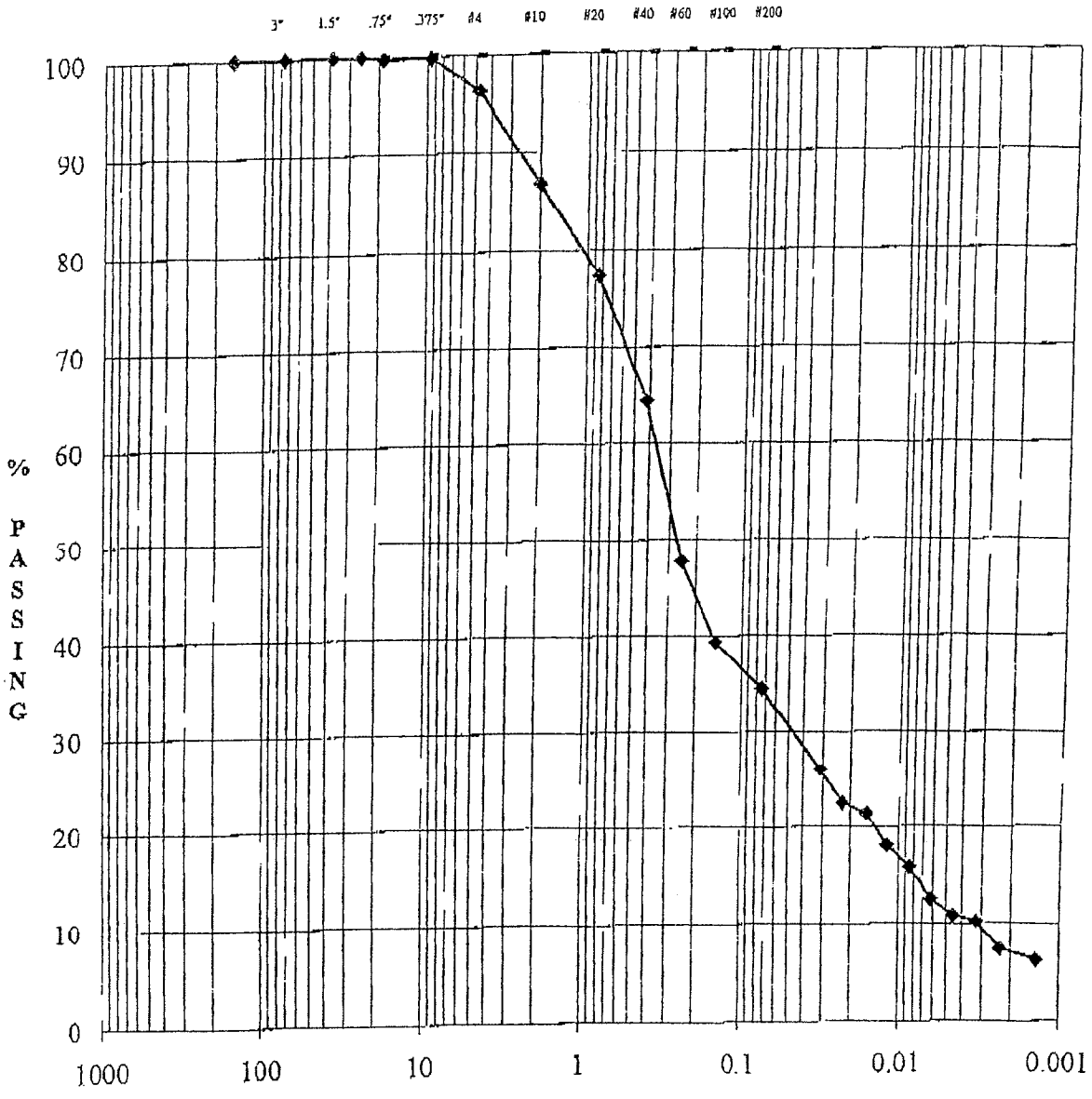
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142793	Mc:	12.38%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	m-f Sand and Fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142794 GT-1 (35-36)

MOISTURE CONTENT (Delivered Moisture): 11.81%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	99.21%
coarse sand	#4	97.90%
medium sand	#10	88.52%
	#20	78.15%
fine sand	#40	66.65%
	#60	51.75%
	#100	44.17%
fines	#200	38.93%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	27.27%
0.023	23.72%
0.016	22.53%
0.012	18.97%
0.009	15.42%
0.006	14.23%
0.005	10.67%
0.003	8.89%
0.002	7.11%
0.001	6.52%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	2.10%
Coarse Sand:	9.38%
Medium Sand:	21.87%
Fine Sand:	27.72%
Fines:	38.93%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: m-f Sand and Fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

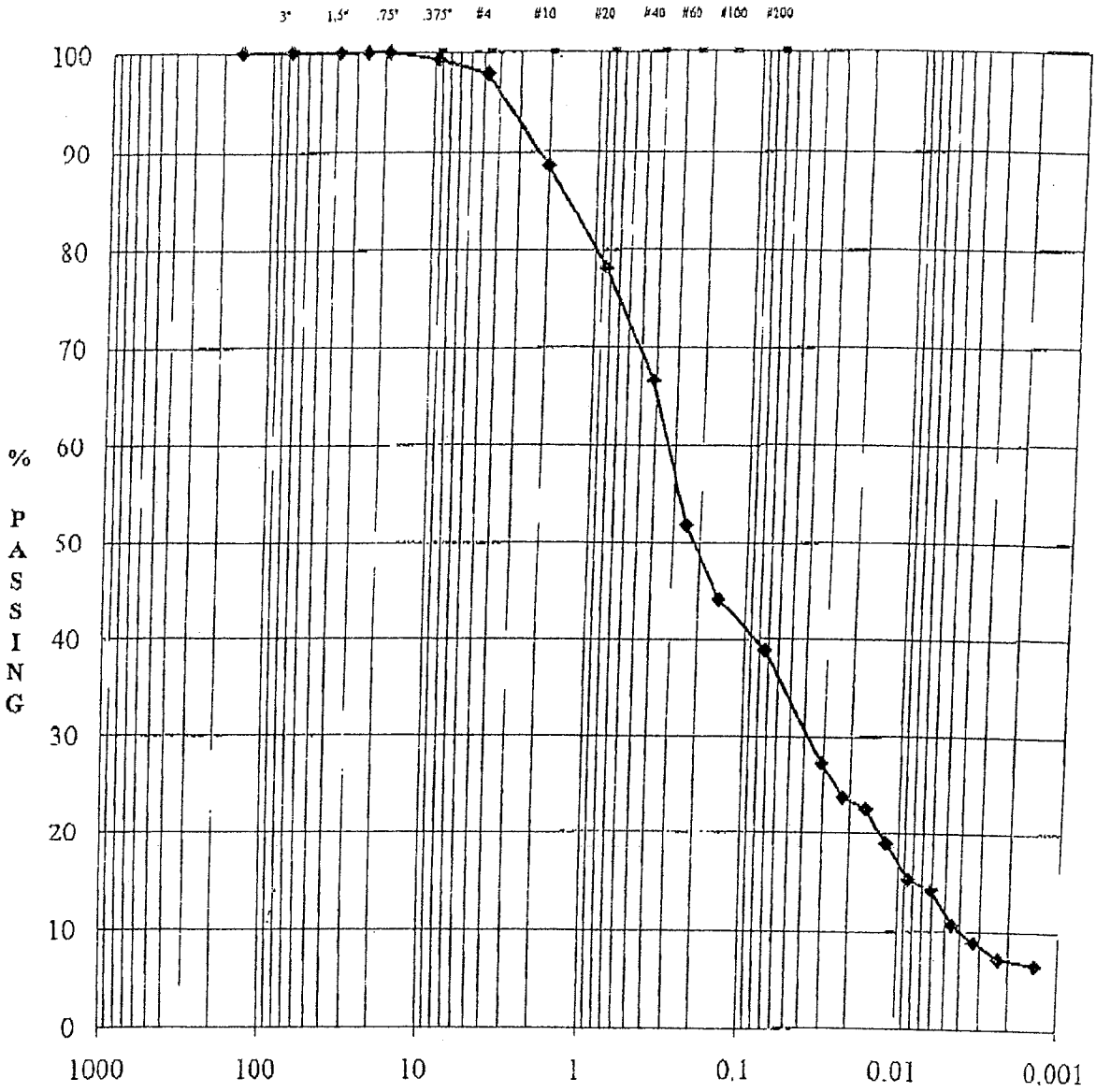
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142794	Mc:	11.81%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	m-f Sand and Fines, trace gravel	PL:	-		
		PI :	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142795 GT-1 (38-39)

MOISTURE CONTENT (Delivered Moisture): 17.78%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	100.00%
coarse sand	#4	97.66%
medium sand	#10	88.89%
	#20	80.32%
fine sand	#40	69.61%
	#60	53.48%
	#100	44.63%
fines	#200	39.21%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	28.40%
0.023	23.67%
0.016	21.30%
0.012	18.94%
0.009	15.98%
0.006	12.43%
0.005	10.65%
0.003	9.47%
0.002	7.69%
0.001	5.92%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	2.34%
Coarse Sand:	8.77%
Medium Sand:	19.28%
Fine Sand:	30.40%
Fines:	39.21%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: m-f Sand and Fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

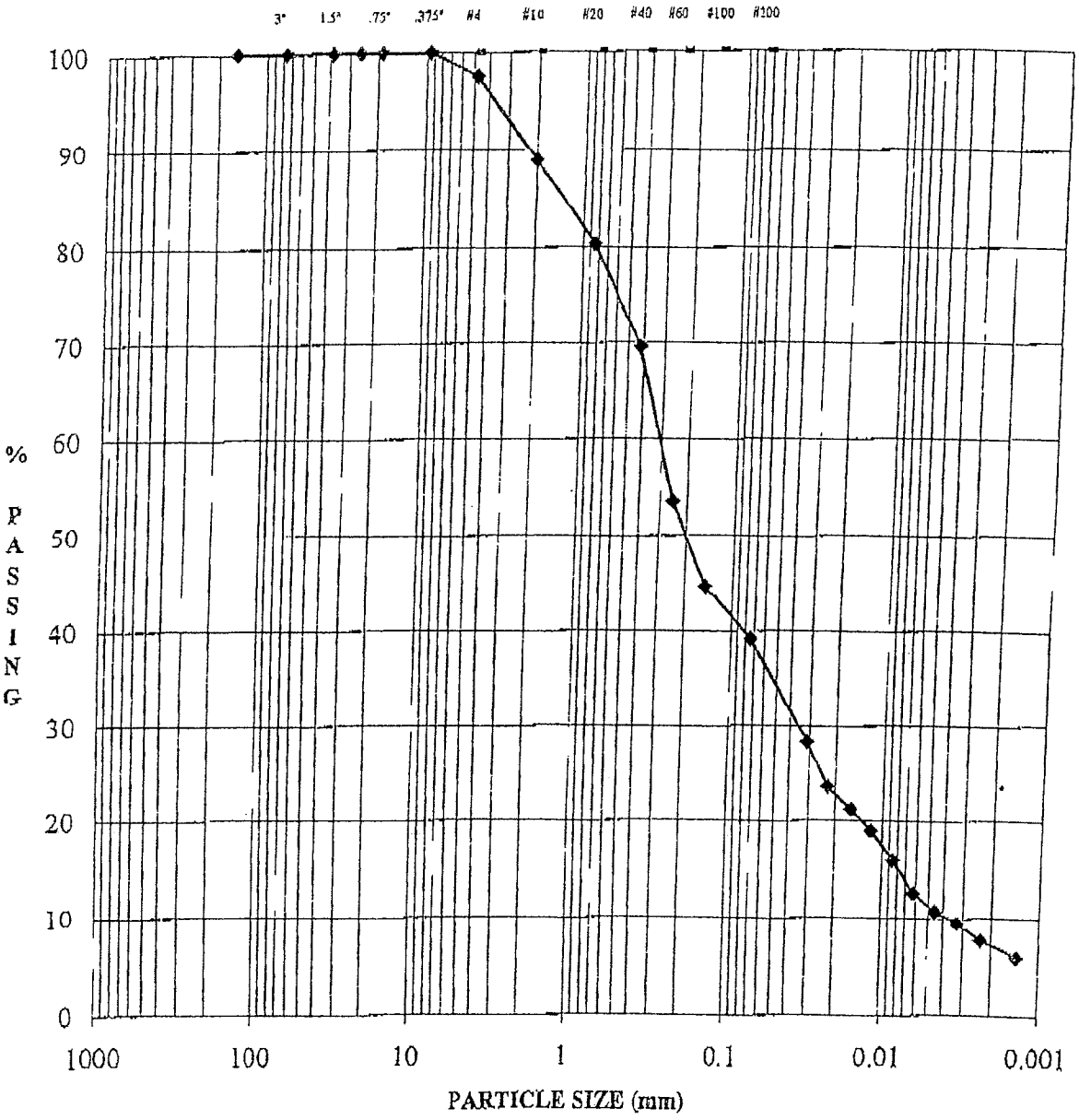
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142795	Mc:	17.78%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	m-f Sand and Fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142796 GT-1 (39-40)

MOISTURE CONTENT (Delivered Moisture): 14.35%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	98.53%
coarse sand	#4	95.13%
medium sand	#10	85.79%
	#20	78.77%
fine sand	#40	62.94%
	#60	39.88%
	#100	29.14%
fines	#200	23.82%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.033	18.59%
0.023	16.90%
0.017	14.65%
0.012	13.52%
0.009	11.27%
0.006	9.58%
0.005	7.89%
0.003	6.20%
0.002	5.07%
0.001	3.94%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	4.87%
Coarse Sand:	9.34%
Medium Sand:	22.85%
Fine Sand:	39.11%
Fines:	23.82%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Dark reddish brown

Description: m-f Sand, some fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

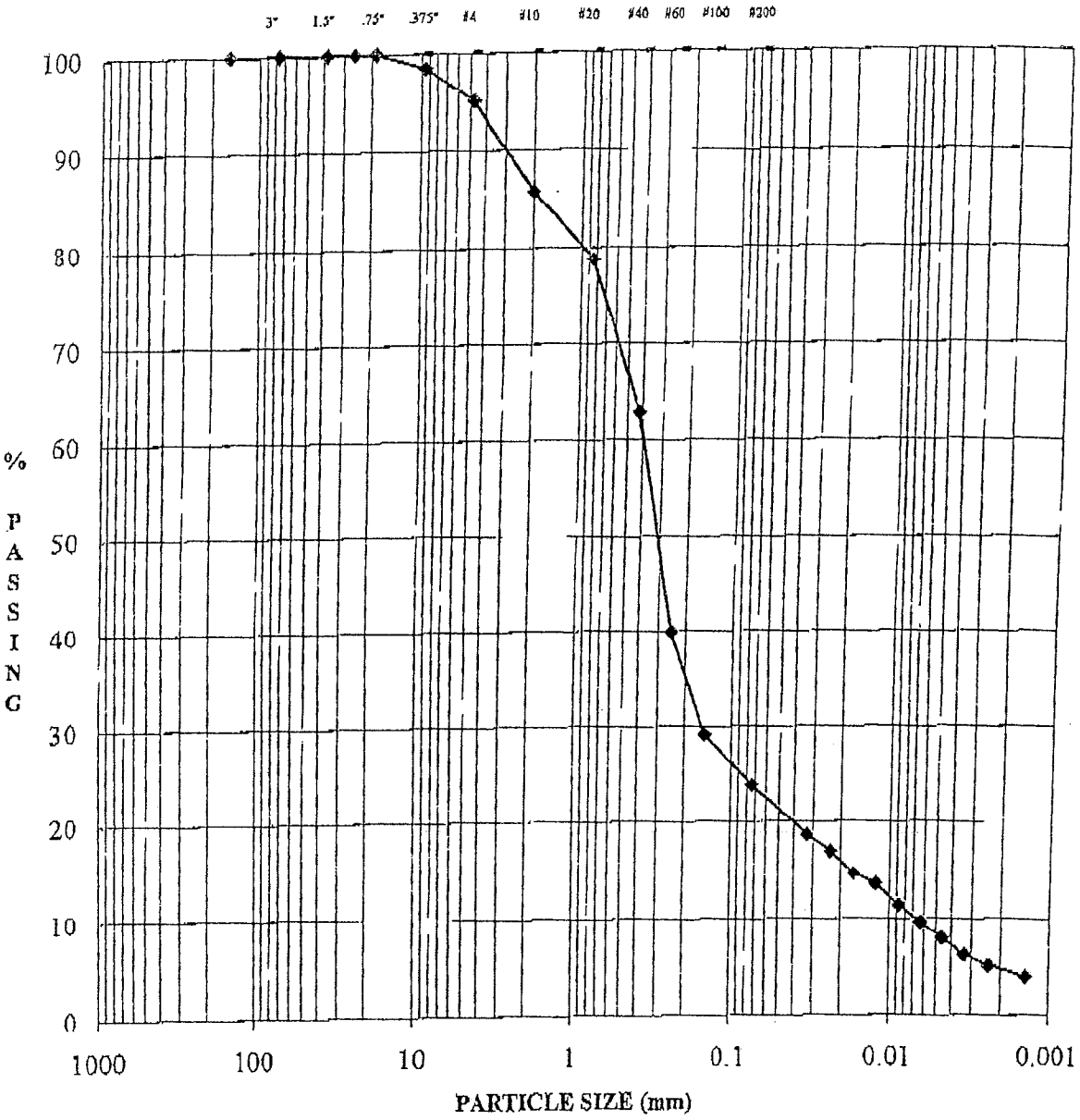
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142796	Mc:	14.35%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	KMW
WET COLOR:	Dark reddish brown	LL:	-		
DESCRIPTION:	m-f Sand, some fines, trace gravel	PL:	-		
		PI :	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142797 GT-1 (41-42)

MOISTURE CONTENT (Delivered Moisture): 11.61%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	97.12%
coarse sand	#4	89.71%
medium sand	#10	77.09%
	#20	67.21%
fine sand	#40	58.93%
	#60	52.07%
	#100	47.50%
fines	#200	42.54%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.030	33.79%
0.022	30.41%
0.016	27.03%
0.012	24.78%
0.008	20.84%
0.006	18.02%
0.004	15.21%
0.003	12.95%
0.002	11.83%
0.001	10.14%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	10.29%
Coarse Sand:	12.62%
Medium Sand:	18.16%
Fine Sand:	16.39%
Fines:	42.54%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: c-f Sand and Fines, little f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

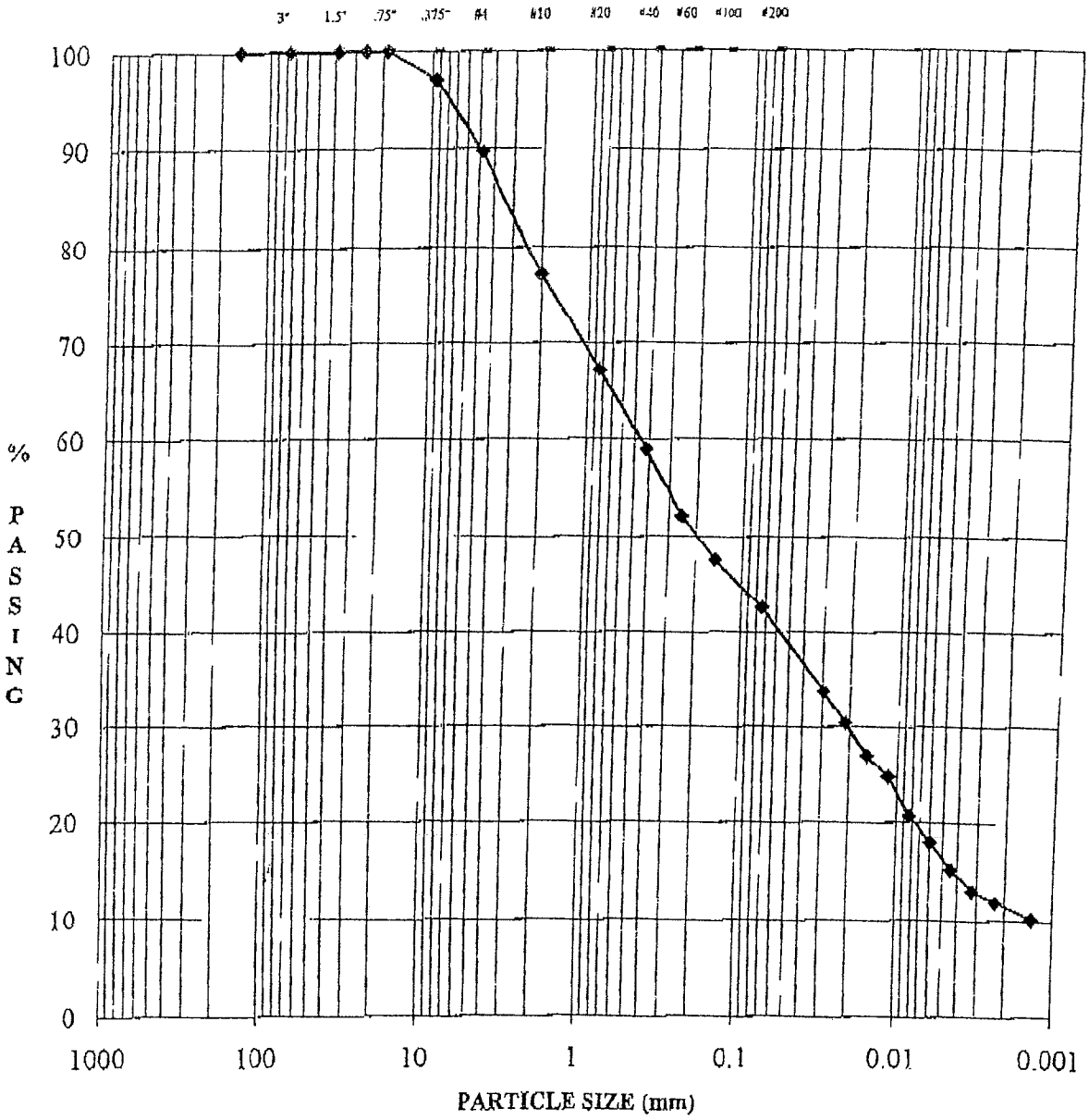
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142797	Mc:	11.61%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	c-f Sand and Fines, little f gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142798 GT-2(15-16)

MOISTURE CONTENT (Delivered Moisture): 12.91%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	95.17%
	0.375"	87.39%
coarse sand	#4	81.77%
medium sand	#10	76.04%
	#20	71.65%
fine sand	#40	66.88%
	#60	60.85%
	#100	53.62%
fines	#200	41.18%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.032	20.72%
0.023	17.18%
0.017	14.15%
0.012	11.12%
0.009	9.09%
0.006	8.08%
0.005	6.06%
0.003	5.05%
0.002	3.54%
0.001	3.03%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	4.83%
Fine Gravel:	13.40%
Coarse Sand:	5.73%
Medium Sand:	9.16%
Fine Sand:	25.71%
Fines:	41.18%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: Fines and f Sand, some f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

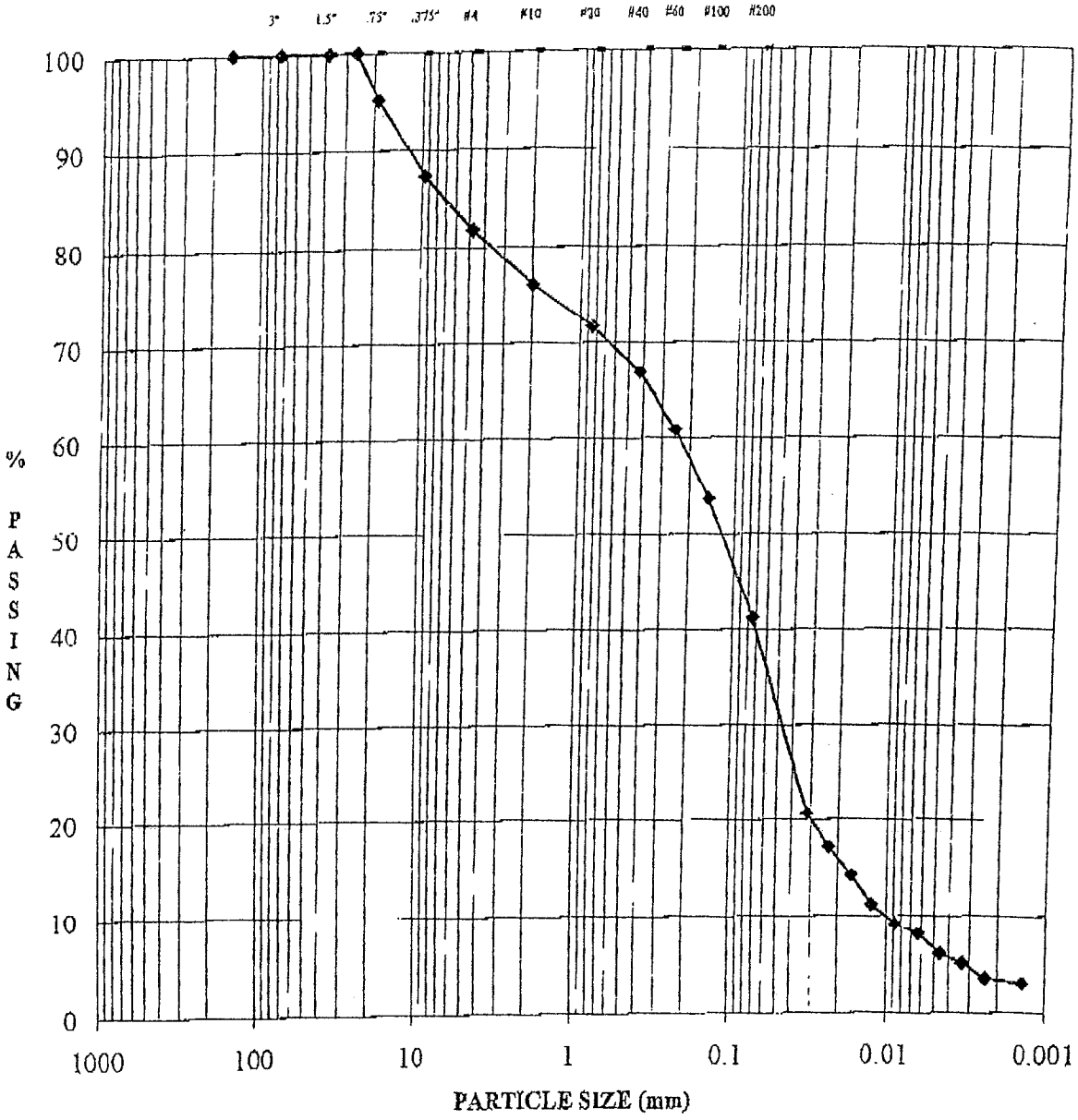
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142798	Mc:	12.91%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines and f Sand, some f gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142799 GT-2 (19-20)

MOISTURE CONTENT (Delivered Moisture): 12.82%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	99.34%
coarse sand	#4	96.42%
medium sand	#10	87.91%
	#20	80.72%
fine sand	#40	63.85%
	#60	42.76%
	#100	32.26%
fines	#200	25.55%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.033	18.49%
0.023	17.34%
0.017	15.03%
0.012	12.72%
0.009	11.56%
0.006	10.40%
0.005	8.09%
0.003	7.51%
0.002	5.20%
0.001	5.20%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	3.58%
Coarse Sand:	8.51%
Medium Sand:	24.05%
Fine Sand:	38.31%
Fines:	25.55%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: m-f Sand, some fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

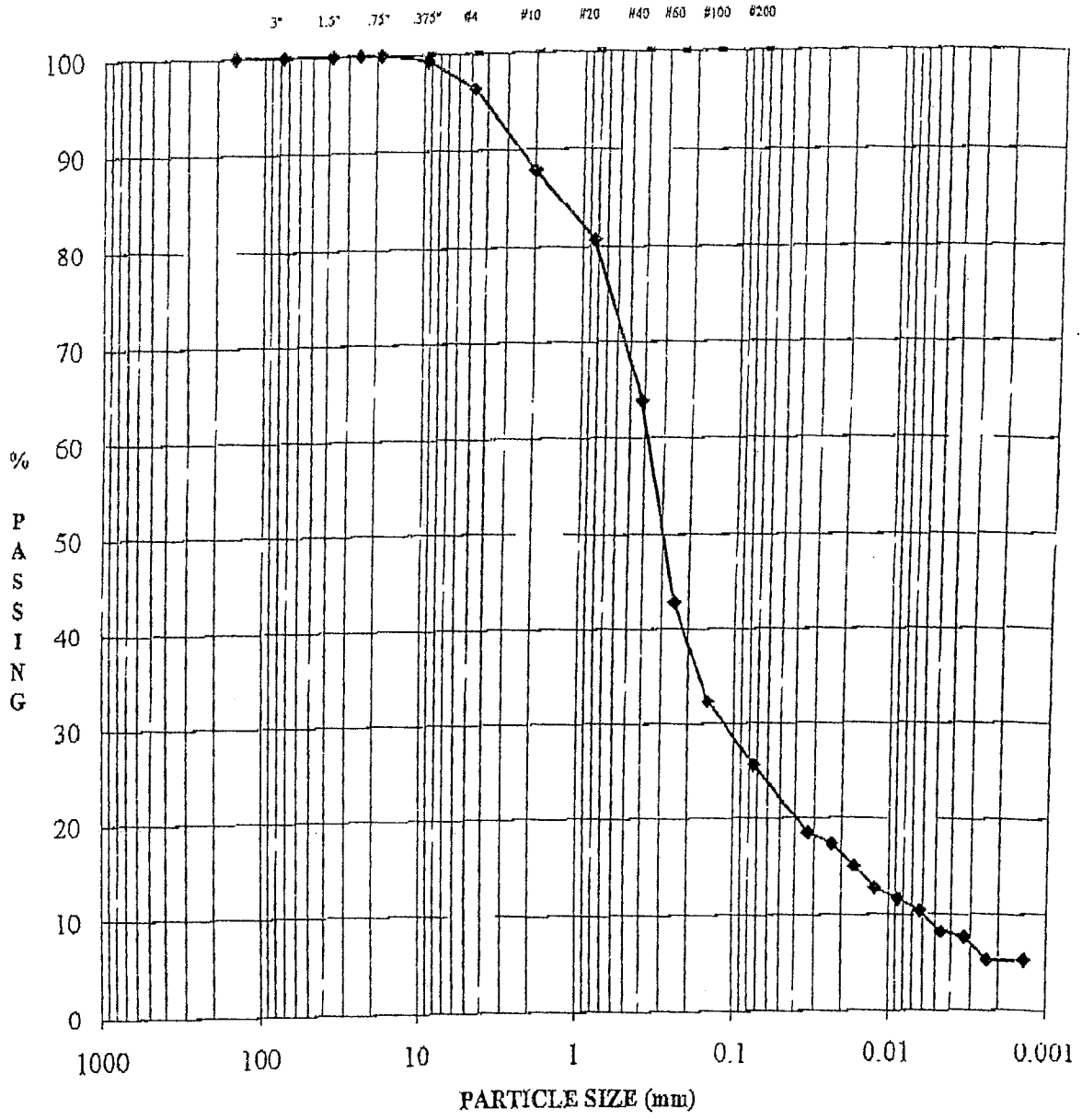
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142799	Mc:	12.82%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	m-f Sand, some fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142800 GT-2 (22-23)

MOISTURE CONTENT (Delivered Moisture): 11.40%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	94.70%
coarse sand	#4	85.57%
medium sand	#10	71.90%
	#20	62.39%
fine sand	#40	52.32%
	#60	39.16%
	#100	30.97%
fines	#200	25.73%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.032	20.32%
0.023	18.38%
0.016	16.45%
0.012	14.51%
0.009	11.61%
0.006	10.64%
0.005	8.71%
0.003	6.29%
0.002	5.81%
0.001	5.32%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	14.43%
Coarse Sand:	13.68%
Medium Sand:	19.57%
Fine Sand:	26.59%
Fines:	25.73%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: c-f Sand, some fines, some f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

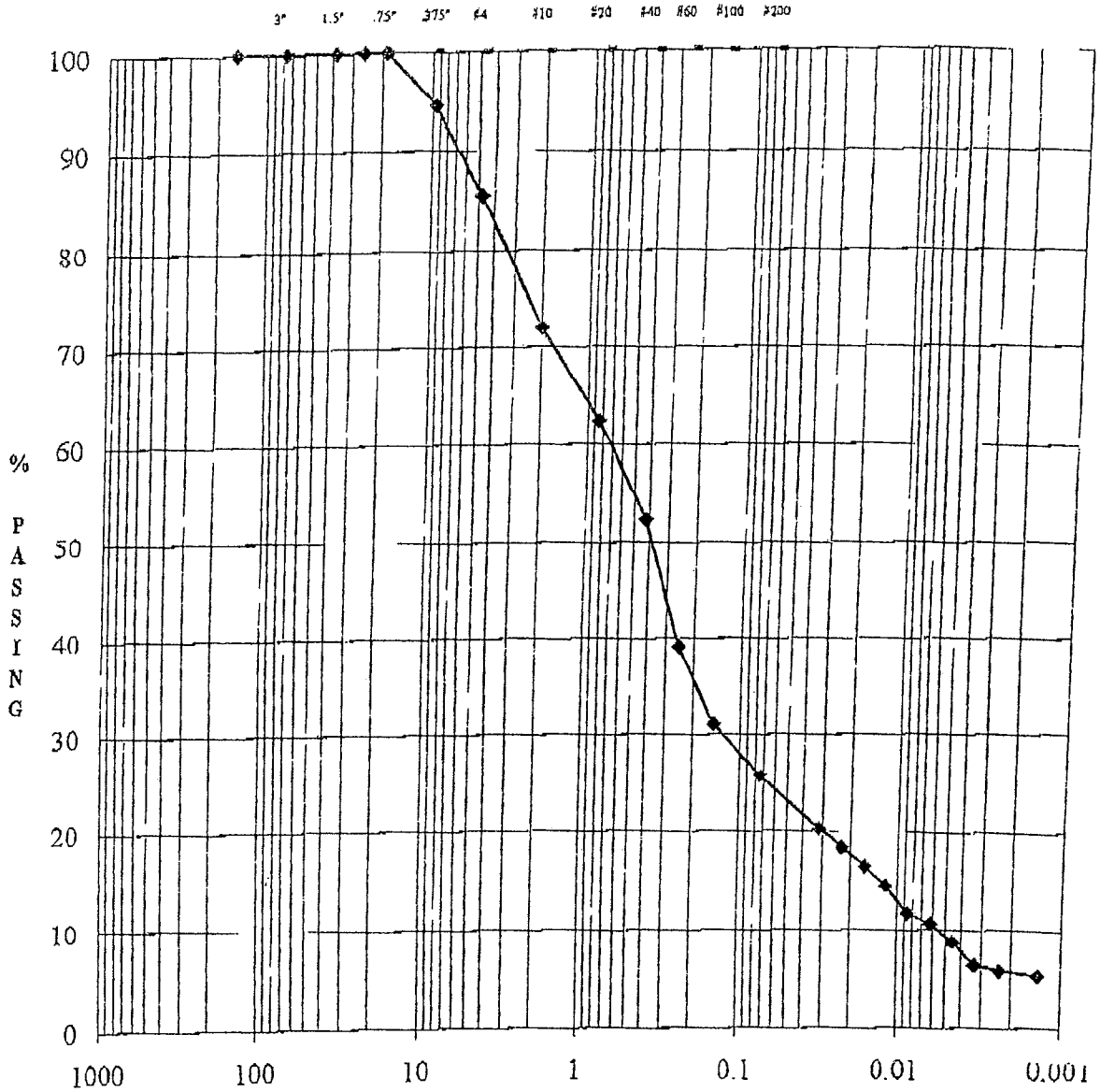
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142800	Mc:	11.40%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	c-f Sand, some fines, some f gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

SAMPLE # R316-142801 GT-2(23-24)

MOISTURE CONTENT (Delivered Moisture): 14.35%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	99.67%
coarse sand	#4	96.33%
medium sand	#10	87.29%
	#20	78.30%
fine sand	#40	61.64%
	#60	40.05%
	#100	29.96%
fines	#200	23.08%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.033	17.59%
0.023	16.42%
0.017	14.07%
0.012	12.31%
0.009	10.55%
0.006	9.38%
0.005	7.04%
0.003	6.45%
0.002	5.28%
0.001	4.69%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	3.67%
Coarse Sand:	9.04%
Medium Sand:	25.64%
Fine Sand:	38.57%
Fines:	23.08%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Dark reddish brown
Description: m-f Sand, some fines, trace gravel

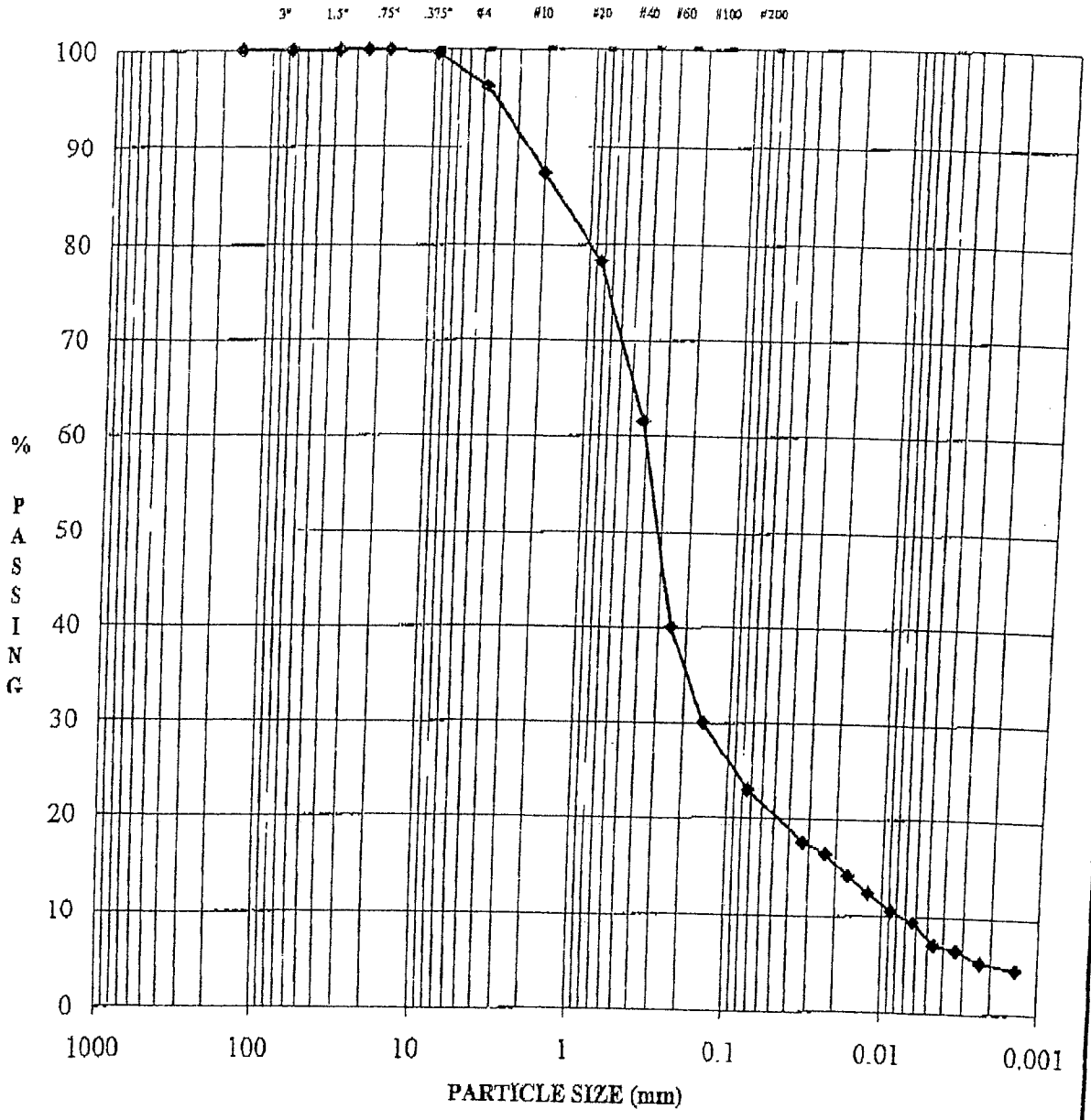
DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142801	Mc:	14.35%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Dark reddish brown	LL:	-		
DESCRIPTION:	m-f Sand, some fines, trace gravel	PL:	-		
		PI :	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142802 GT-2 (27-28)

MOISTURE CONTENT (Delivered Moisture): 10.92%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	100.00%
coarse sand	#4	95.81%
medium sand	#10	85.38%
	#20	77.93%
fine sand	#40	67.09%
	#60	52.14%
	#100	43.58%
fines	#200	38.46%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	27.75%
0.022	23.79%
0.016	22.66%
0.012	19.26%
0.008	16.99%
0.006	15.29%
0.005	11.33%
0.003	9.63%
0.002	7.93%
0.001	7.36%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	4.19%
Coarse Sand:	10.43%
Medium Sand:	18.29%
Fine Sand:	28.63%
Fines:	38.46%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: c-f Sand and Fines, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

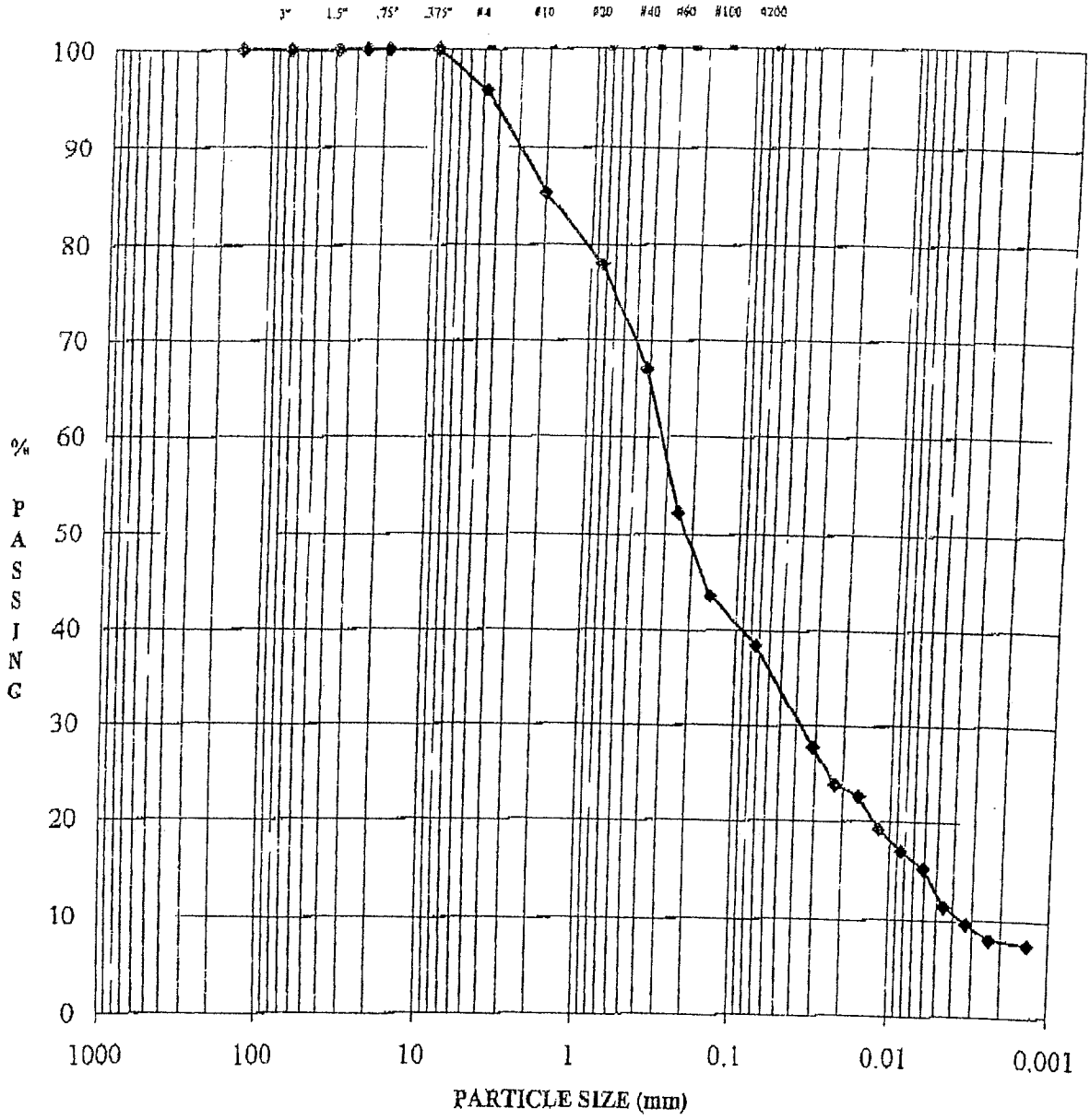
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
COBBLE	GRAVEL		SAND			FINES

SAMPLE #:	R316-142802	Mc:	10.92%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/RDD
		ATTERBERG LIMITS		REVIEW:	RMW
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	c-f Sand and Fines, trace gravel	PL:	-		
		PI:	-		

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ 983-6496-001	SAMPLE # R316-142803 GT-2 (29-30)

MOISTURE CONTENT (Delivered Moisture): 12.53%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	99.15%
coarse sand	#4	95.55%
medium sand	#10	87.67%
	#20	80.12%
fine sand	#40	72.87%
	#60	65.08%
	#100	60.86%
fines	#200	56.88%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.028	47.00%
0.020	43.99%
0.015	39.77%
0.011	36.15%
0.008	32.54%
0.006	30.13%
0.004	26.51%
0.003	22.30%
0.002	21.09%
0.001	18.68%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	4.45%
Coarse Sand:	7.87%
Medium Sand:	14.80%
Fine Sand:	15.99%
Fines:	56.88%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown

Description: Fines and m-f Sand, trace gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

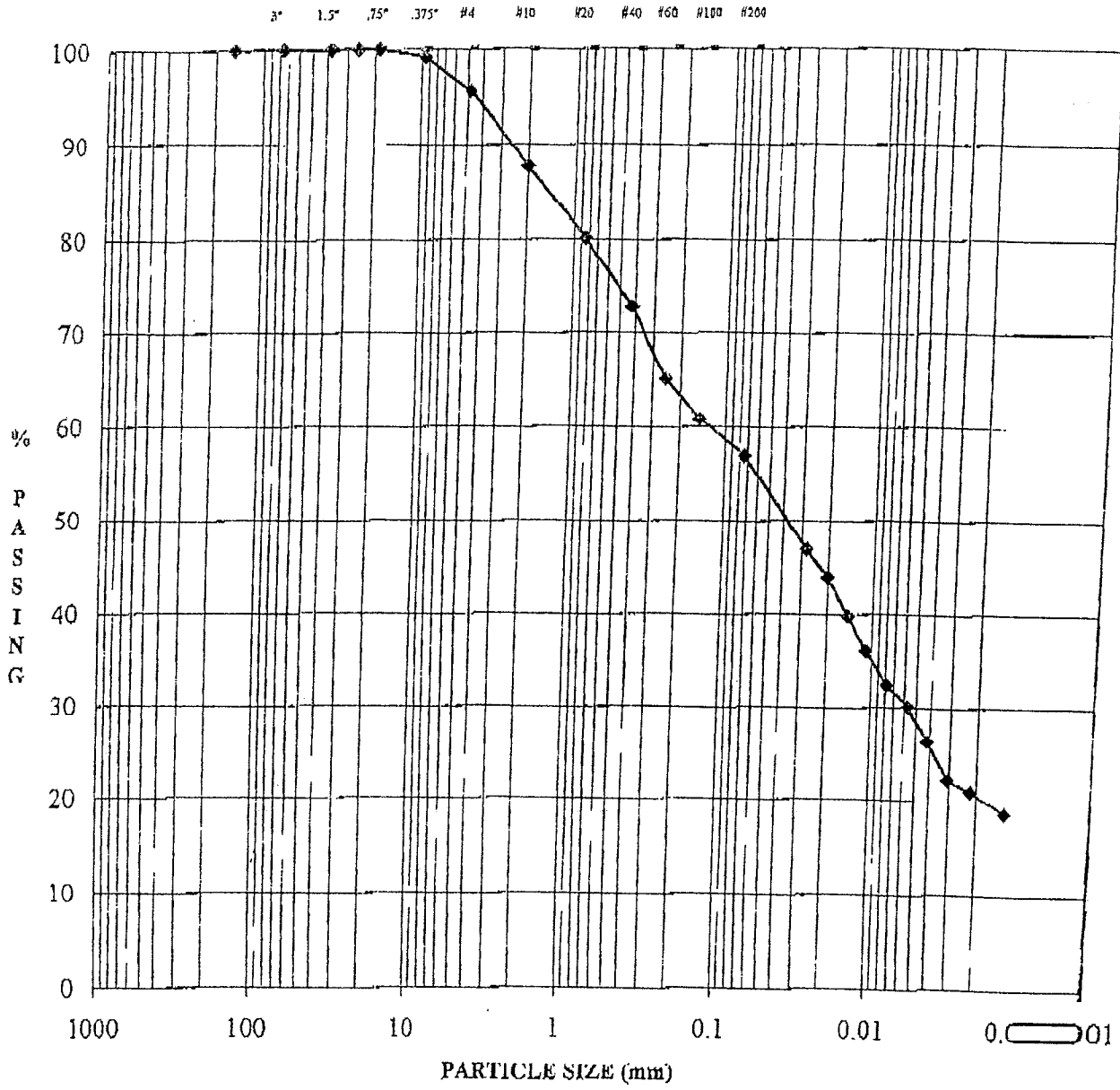
Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE DISTRIBUTION ASTM D 421 AND D 422

US STANDARD SIEVE OPENING SIZES



COBBLE	Coarse	Fine	Cor	Med	Fine	Silt or Clay Size
	GRAVEL		SAND			FINES

SAMPLE #:	R316-142803	Mc:	12.53%	DATE:	7/20/99
		Gs:	2.65 (ASSUMED)	TECH:	AC/R DD
		ATTERBERG LIMITS		REVIEW:	RM W
WET COLOR:	Reddish brown	LL:	-		
DESCRIPTION:	Fines and m-f Sand, trace gravel	PL:	-		
		PI :	-		

STL-ENVIROTECH/LAB GEOTECH/NJ

983-6496-001

GOLDER ASSOCIATES INC.

MT. LAUREL, NEW JERSEY

PARTICLE-SIZE ANALYSIS OF SOILS

ASTM D 421, D 422, D 1140, D 2216, D 2217

STL-ENVIROTECH/LAB GEOTECH/NJ
983-6496-001

SAMPLE # R316-142804
GT-2 (30-31)

MOISTURE CONTENT (Delivered Moisture): 11.14%

MECHANICAL SIEVE

	SIEVE SIZE	PERCENT PASSING
coarse gravel	3.000"	100.00%
	1.500"	100.00%
	1.000"	100.00%
fine gravel	0.750"	100.00%
	0.375"	90.16%
coarse sand	#4	75.93%
medium sand	#10	57.61%
	#20	48.14%
fine sand	#40	41.16%
	#60	36.79%
	#100	33.81%
fines	#200	30.15%

HYDROMETER ANALYSIS

PARTICLE DIAMETER (mm)	% FINER
0.031	24.87%
0.023	22.61%
0.016	21.48%
0.012	16.96%
0.009	13.57%
0.006	11.30%
0.005	8.48%
0.003	7.35%
0.002	6.22%
0.001	4.52%

ATTERBERG LIMITS

LL:	-
PL:	-
PI:	-

Coarse Gravel:	0.00%
Fine Gravel:	24.07%
Coarse Sand:	18.32%
Medium Sand:	16.45%
Fine Sand:	11.01%
Fines:	30.15%
Total:	100.00%

Specific Gravity: 2.65 (ASSUMED)

Wet Color: Reddish brown
Description: c-f Sand, some fines, some f gravel

DESCRIPTIVE TERMS	RANGE OF PROPORTION
trace	0 - 5 %
little	6 - 12 %
some	13 - 30 %
and	≥ 31 %

Date:	7/20/99
Technician:	AC/RDD
Reviewer:	RMW

GOLDER ASSOCIATES INC.
MT. LAUREL, NEW JERSEY

McLaren Hart INC.

Site: AT&T Clark	Location: Clark, New Jersey	Boring ID: GT-1
Client: AT&T	Boring Location:	Northing: Easting:
Start - Finish Date: 7/8/99 - 7/8/99		
Drilling Contractor: S2C2	Driller: Todd Morgan	Logged By: Scott Alderfer
Boring Permit:		
Drilling Method: Direct-Push Sampling	Drilling Equipment: Geoprobe	Location Sketch
Total Depth (ft): 41.8	Ground Elevation (ft):	Vertical Datum:
Horiz Coor Sys:		
Sampling Method: Acetate Liner	Borehole Diameter (in): 4	
Memo:		

Depth (ft)	Geoprobe Sample	Recovery (ft)	Soil Description	Lithology	PID/FID (ppm)	Sample ID
2		3.5/4	Medium brown SILT, trace organic debris. Dry.		0	
			Reddish brown SILT, trace Clay. Slightly moist.			
4			Reddish brown to dark brown SILT, trace Clay, trace, vf Sand, trace f Gravel. Moist.			
		3.5/4	Medium brown m-c GRAVEL. Dry.		0	
			Gray SILT, little Clay. Moist.			
6			Gray grading to reddish brown vf SAND, little Silt, little Clay. Moist.			
			Same as above, trace f-m Gravel.			
8		3.1/4			0	
			Reddish brown SILT, some vf Sand, trace f-c Gravel. Moist.			
10			Reddish brown SILT, some Clay, tace f Gravel. Moist.			
12		1.9/4	Reddish brown SILT, little vf Gravel, trace vf Sand. Moist.		0	
14			Reddish brown SILT, some f-m Gravel, little vf Sand. Moist.			
			Reddish brown vf SAND, some vf Gravel, little Silt. Wet.			

GT-1 (15-16)

BASIC GEOPROBE.LAS CLARK.GPJ MH_WAR.GDT 7/7/99

McLaren Hart INC.

Site: AT&T Clark

Location: Clark, New Jersey

Boring ID: **GT-1**

Depth (ft)	Geoprobe Sample	Recovery (ft)	Soil Description	Lithology	PID/FID (ppm)	Sample ID
		2/4	Reddish brown vf SAND, some Silt, little Clay, trace f-m Gravel. Very moist.		0	
			Reddish brown SILT, little vf Sand, little Clay, trace f Gravel. Very tight. Moist.			GT-1 (17-18)
18						
20		3.5/4			0	
			Reddish brown vf SAND, little Silt, little Clay. Very moist.			GT-1 (21-22)
22			Reddish brown vf SAND, little Silt, trace f-m Gravel. Very moist.			
			Reddish brown SILT, trace f Gravel. Very tight. Slightly moist.			GT-1 (23-24)
24		1.6/2			0	
			Reddish brown f SAND, little Silt. Wet.			
26		1.5/2	Reddish brown vf SAND, some Silt. Wet.		0	
			Reddish brown SILT, trace Clay, trace f Gravel. Moist.			GT-1 (27-28)
28		1.6/2	Same as above, trace vf Sand. Very moist.		0	
			Reddish brown vf SAND, little Silt, trace f Gravel. Wet.			
30		1.6/2			0	GT-1 (30-31)
32		2/2	Reddish brown SILT and vf SAND, trace f Gravel. Wet.			
			Reddish brown vf SAND, some Silt, trace f Gravel. Very moist.		0	GT-1 (32-33)
			Reddish brown SILT, some vf Sand, trace f Gravel. Very tight. Moist.			
34		1.3/2			0	GT-1 (35-36)

BASIC GEOPROBE LOG CLARK.GPJ MH_WAR.GDT 1/7/99

McLaren Hart INC.

Site:	Boring ID:
AT&T Clark	GT-1
Location:	
Clark , New Jersey	

Depth (ft)	Geoprobe Sample	Recovery (ft)	Soil Description	Lithology	PID/FID (ppm)	Sample ID
		1.9/2			0	
			Reddish brown vf SAND, little Silt. Wet.			
38		2/2	Reddish brown vf SAND, some Silt. Wet.		0	GT-1 (38-39)
			Reddish brown vf SAND, little Silt. Wet.			GT-1 (39-40)
40		1/2	Reddish brown vf SAND, some Silt.Very tight. Moist.		0	
			Reddish brown SILT, trace f Gravel, trace vf Sand.Weathered bedrock. Moist.			
42			Refusal at 41.8' bgs.			
44						
46						
48						
50						
52						
54						

BASIC GEOPROBE LOG CLARK GPJ MH_WAR GDT 7/20/99

McLaren Hart INC.

Site: AT&T Clark		Boring ID: **GT-2**
Location: Clark , New Jersey		
Client: AT&T	Boring Location: Northing: Easting:	Start - Finish Date: 7/9/99 - 7/9/99
Drilling Contractor: S2C2	Driller: Todd Morgan / Logged By: Scott Alderfer	Boring Permit:
Drilling Method: Direct-Push Sampling	Drilling Equipment: Geoprobe	Location Sketch
Total Depth (ft): 31.2 / Ground Elevation (ft):	Vertical Datum: / Horiz Coor Sys:	
Sampling Method: Acetate Liner	Borehole Diameter (in): 4	
Memo:		

Depth (ft)	Geoprobe Sample	Recovery (ft)	Soil Description	Lithology	PID/FID (ppm)	Sample ID
0			Boring advanced to 12' bgs.			
12		2.2/4	Gray SILT and CLAY. Moist.		0	
14			Reddish brown SILT and vf SAND, trace f Gravel. Moist.			
			Reddish brown vf SAND, some Silt, trace f-c Gravel. Wet.			GT-2 (15-16)

BASIC GEOPROBE.LOG CLARK.GPJ MH_WAR.GDT 7/20/99

McLaren Hart INC.

Site: AT&T Clark

Location: Clark , New Jersey

Boring ID: **GT-2**

Depth (ft)	Geoprobe Sample	Recovery (ft)	Soil Description	Lithology	PID/FID (ppm)	Sample ID
18		3.7/4	Tighter from 17' to 19' bgs.		0	
			Reddish brown vf SAND, little Silt, trace f Gravel. Slightly moist.			GT-2 (19-20)
20		4/4			0	
			Reddish brown SILT, some vf Sand, trace f Gravel. Wet.			GT-2 (21-21.5)
22						GT-2 (22-23)
			Reddish brown vf SAND, some Silt, trace f-m Gravel. Wet.			GT-2 (23-24)
24		1.2/2	Reddish brown SILT, trace vf Sand, trace f Gravel. Moist.			
			Reddish brown vf SAND, little Silt. Wet.			
			Reddish brown SILT, trace vf Sand, trace f Gravel. Moist.		20	
26		1.3/2	Reddish brown vf SAND, some Silt, trace f Gravel. Wet.		47	GT-2 (25.5-26)
					24	
			Reddish brown SILT, little vf Sand grading to trace vf Sand with depth, trace f Gravel. Moist.		54	GT-2 (27-28)
28		1.9/2	Reddish brown vf SAND, little Silt. Wet.		34	
			Reddish brown SILT, little vf Sand, trace f Gravel. Moist.		0	
			Reddish brown SILT, trace f Gravel. Very tight. Slightly moist.		9	
					32	GT-2 (29-30)
30		1.2/1	Reddish brown SILT, some f-m Gravel. Weathered bedrock. Dry.		5	
						GT-2 (30-31)
			Refusal at 31.2' bgs.			
32						
34						

BASIC GEOPROBE ... CLARK.GPJ MH_WAR.GDT 1/20/09