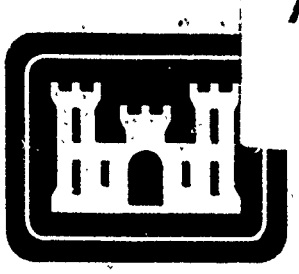

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Manitowoc Army Reserve Center Manitowoc, Wisconsin

Final Report Follow-On Site Investigation

February 1992

Prepared for:

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Aberdeen Proving Ground, Maryland 21010-5401

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FINAL REPORT OF
FOLLOW-ON SITE INVESTIGATION AT THE
MANITOWOC ARMY RESERVE CENTER (MARC)
REPORT NO. CETHA-IR-CR-92008
CONTRACT NO. DAAA15-90-D-0019
TASK ORDER NO. 002

Submitted to:

United States Army Toxic and
Hazardous Materials Agency
Aberdeen Proving Ground, Maryland

Submitted by:

OHM Remediation Services Corp.
Pittsburgh, Pennsylvania
A Subsidiary of OHM Corporation

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EXECUTIVE SUMMARY

This Follow-On Site Investigation (FSI) Report for the Manitowoc Army Reserve Center (MARC) has been prepared by OHM Remediation Services Corp. (OHM), a wholly owned subsidiary of OHM Corporation, as a requirement of Task Order 002 of Contract No. DAAA15-90-D-0019 with the United States Army Toxic and Hazardous Materials Agency (USATHAMA). This report summarizes the findings and conclusions of the FSI.

The objectives of the MARC FSI were to:

- Determine if the Reserve Center is the source of low-level trichloroethylene (TCE) contamination (i.e., 5 to 9 µg/l) detected in a nearby Ranney collector well (Collector "B") operated by Manitowoc Public Utilities (MPU)

- Determine if 1,2-dichloroethane contamination detected in MARC Well MW-6 by E. C. Jordan Co. (Jordan) has migrated off site toward Collector "B."

TCE was not found on site in any sampled soils or groundwater. However, very low concentrations [i.e., just above certified reporting limits (CRLs)] of four VOCs ranging from 0.505 µg/l to 1.15 µg/l were found in groundwater in the vicinity of the septic tank drainage field. These included 1,2-dichloroethane, 1,1-dichloroethane, 1,2-dichloroethylene, and tetrachloroethylene. Only one VOC, 1,2-dichloroethane, was detected at the same well (MW-6) in both rounds of groundwater sampling. This compound is not a transformation product of TCE, nor can it be transformed to TCE by natural processes.

The Wisconsin Department of Natural Resources (WDNR) discounted the wash rack/dry well, motor vehicle storage shed, and the POL shed as being sources of groundwater contamination at MARC. The WDNR, based on the first investigation, was concerned about:

- The potential migration of 1,2-dichloroethane to Collector "B"

- Potential migration of TCE (if present) to the lower aquifer.

The WDNR then requested that additional investigations be conducted in the septic tank/drainage field area and in the area between MARC and Collector "B." USATHAMA contracted OHM to conduct the additional investigations.

The field investigation program conducted by OHM between July and November 1991 focused on further evaluation of the septic tank/drainage field area as a contamination source of 1,2-dichloroethane, and potentially TCE, and defining the subsurface geology as well as assessing the groundwater flow direction and chemical quality just east of MARC to Collector "B." The field program consisted of an initial site reconnaissance; installation of five monitoring wells; and analysis of two soil, one sediment sample, and groundwater samples from the monitoring wells. Two rounds of groundwater sampling were performed. The first round of sampling included all wells (existing and new), and the second round of sampling included only newly installed wells.

Based on data evaluation, the following conclusions can be drawn:

- MARC is not the source of the TCE detected in the MPU collector "B." TCE has not been detected in any of the soil samples collected from the potential on-site source areas. In addition, TCE has never been detected in any of the groundwater samples from the perched system, clay till aquitard, or silts/sands aquifer.

- 1,2-Dichloroethane has not likely migrated off site toward Collector "B." 1,2-Dichloroethane was not detected in any of the groundwater samples in 1991 and was detected at concentrations only slightly above the detection limit in one well in 1989. Therefore, 1,2-dichloroethane possibly never a actually existed in groundwater on the MARC. If 1,2-dichloroethane ever did exist on the MARC, the concentration has decreased to below detection limits since it was not detected in any groundwater sample collected under this investigation.

1.0 INTRODUCTION

This FSI Report has been prepared by OHM to support Task Order No. 002 of Contract No. DAAA15-90-D-0019 for the requirement entitled "Follow-On Site Investigation at the Manitowoc Army Reserve Center (MARC)." This task order is being performed for USATHAMA under the aforementioned Total Environmental Program Support (TEPS) contract.

The purposes of this investigation were to:

- Determine if MARC was the source of low level TCE contamination detected in an off-site Ranney collector well (Collector "B") operated by MPU
- Determine if 1,2-dichloroethane, which was detected in previous sampling events, has migrated off site toward Collector "B."

The site background (i.e., location, history, and previous investigations) and project approach are presented in Section 2.0. Section 3.0 describes the field investigation. Results of the field investigation and the evaluation of the findings are presented in Section 4.0. The conclusions of the investigation are presented in Section 5.0.

2.0 BACKGROUND

This section discusses background information pertinent to the site investigation including location, history, and summary of previous investigations conducted at MARC.

2.1 SITE LOCATION AND HISTORY

MARC is located in the east-central portion of Wisconsin, approximately 75 miles north of Milwaukee and 35 miles southeast of Green Bay, and borders the western shore of Lake Michigan (Figure 2-1). The MARC is situated on a 5-acre parcel of land atop a small knoll, surrounded by Silver Creek Park, and is on the southern edge of the city limits of Manitowoc in Manitowoc County. The approximate surface elevation of the MARC is 650 feet above mean sea level (MSL). Collector "B" is located approximately 1,000 feet to the east on a bluff overlooking Lake Michigan. It has an approximate surface elevation of 610 feet (Jordan, 1990) and is on top of a small knoll.

MARC is a military training center for reserve troops and is supported by Fort McCoy (Sparta, Wisconsin). Since the mid-1950s, light industrial operations have been conducted at the MARC. The operations were primarily related to servicing and maintenance of U.S. Army motor vehicles, including trucks, jeeps, and armored combat vehicles.

The MPU Collector "B" is maintained on standby status for potential municipal supply use (Jordan, 1990).

2.2 PREVIOUS INVESTIGATIONS

TCE contamination in Collector "B" was first identified in 1985 by the WDNR. Six sampling events from 1985 to 1988 detected TCE in the groundwater at Collector "B" in concentrations ranging from 5.4 to 9.4 micrograms per liter (µg/l). These concentrations exceed the WDNR Groundwater Enforcement Standard for TCE of 1.8 µg/l and the U.S. Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) of 5 µg/l. In addition, the WDNR sampled nearby private water supply wells but found no detectable levels of TCE or other VOCs.

The WDNR findings prompted the MPU in 1986 to investigate their operations and maintenance practices for the pump station at Collector "B." These practices included cleaning of the pump motors and heads with a degreaser and the use of a petroleum-based oil in one of the station pumps. Both of these operations were potential contaminant sources. Subsequently, corrective action to existing maintenance practices was implemented with steam cleaning of the well pump motors and all associated equipment, and replacement of

the petroleum-based oil in the station pump with a food-grade oil. Repeated sampling events after the corrective action was taken resulted in consistent detectable levels of TCE in Collector "B."

Based on a review of these events and a review of potential sources of TCE contamination in the Collector "B" area, the WDNR concluded that the most likely source of the TCE contamination was MARC. This led to the U.S. Army contracting Jordan in 1989 to investigate the MARC as a potential source of TCE contamination.

2.2.1 Summary of Jordan Site Investigation

The Jordan site investigation (SI) focused on identifying potential on-site contamination sources, defining subsurface geology, and assessing the groundwater flow direction and chemical quality within the MARC boundaries which are upgradient of Collector "B."

Field activities conducted by Jordan during the fall of 1989 as part of this investigation included:

- An initial site reconnaissance to select soil/sediment sampling locations and monitoring well locations
- The field investigation program, consisted of geologic logging of ten exploration borings, conversion of seven test borings to monitoring wells (MW-1A, MW-2A, MW-2B, MW-3, MW-4, MW-5, and MW-6), completion of three test borings (TB-1, MW-2T, and MW-5T), collection of six soil samples, two sediment samples, and one surface water seep sample for chemical analysis, and completion of aquifer testing of the seven wells
- Horizontal location and vertical elevation surveys of the monitoring wells, test borings, and seep.

Figure 2-2 presents a site plan depicting monitoring well/borehole locations; soil, sediment, and seep sample locations; and the location of Collector "B." Cross Sections A-A, B-B, and C-C, indicated on Figure 2-2, present geologic interpretations by Jordan of the subsurface data gathered from the test borings. Sections A-A, B-B, and C-C are depicted on Figures 2-3, 2-4, and 2-5, respectively.

Five of the six soil samples were collected from Test Boring TB-1, which was advanced through the dry well. The dry well is the area where most of the cleaning of the mechanical equipment occurred. As such, the dry well was

considered to be the most likely source of groundwater contamination at MARC. The sixth soil sample was collected from the ground surface near Monitoring Well No. 2B (MW-2B) and served to provide background concentrations of naturally-occurring metals. Two sediment samples were also collected from the dry well. The seep sample was collected from one of two observed seeps northeast of the site. All samples including groundwater were analyzed for volatile organic compounds (VOCs), metals (including mercury), and total petroleum hydrocarbons, per USATHAMA-certified methods.

2.2.1.1 Geologic/Hydrogeologic Findings

As described in Jordan's Final SI Report (August 1990), the geologic setting beneath MARC is generally characterized by a fine- to medium-grain silty sand overlying a moderately to highly plastic clay till, beneath which is a fine- to medium-grain sand. The clay till is interpreted as being the Haven Till, and appears to be present from the eastern boundary of MARC to Collector "B" at the shore of Lake Michigan as shown in Section A-A on Figure 2-3.

The clay till layer beneath MARC acts as an aquitard and effectively creates a locally perched water-table aquifer in the upper silty sand. Jordan concluded that recharge to this perched system is a result of infiltration of precipitation. Jordan's interpretation of the water level data indicated a groundwater divide which trends north-south through MARC for this perched system. Groundwater discharge from this perched system occurs as seeps which trend north-south along the eastern side of the hill as shown on Figure 2-2. Horizontal groundwater velocities in the perched system on the eastern side of MARC, as determined by Jordan, are approximately 60 feet/year.

The lower sand aquifer (i.e., beneath the clay till layer) is saturated, as indicated by water level data. According to Jordan, the clay till aquitard is a confining aquifer for the saturated lower sand aquifer. The computed downward vertical hydraulic gradient is 0.53 foot per foot from the shallow to the deep aquifer (Jordan 1990). The low gradient and the fact that there is perched groundwater in the upper silty sand suggests that the clay till aquitard is relatively impermeable to the downward migration of water. Because of these conditions, the groundwater from the perched system is not interpreted to be in communication with or within the zone of influence of Collector "B."

2.2.1.2 Contamination Assessment

Based on actual and interpreted findings of the SI, Jordan prepared a contamination assessment which addressed the distribution, behavior, and significance of those chemicals considered to be site contaminants. The assessment

included changes in concentrations and distributions of contaminants over time. TCE was not found on site in any of the soil, sediment, or groundwater samples. VOCs were not found in the downgradient wells of three potential sources of groundwater contamination:

- o Vehicle/equipment wash rack and dry well
- o The motor vehicle storage shed
- o The Petroleum, Oil, and Lubricant (POL) shed.

However, sampling results from the septic tank/drainage field area (a fourth potential contaminant source) indicated very low concentrations of VOCs, ranging from 0.505 µg/L to 1.15 µg/L in groundwater during the two rounds of groundwater sampling. The VOCs found included 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, and 1,2-dichloroethylene. Only one VOC, 1,2-dichloroethane, was detected at the same well (MW-6 - a shallow well) in both rounds of groundwater sampling. This compound is not a transformation product of TCE, nor can it be transformed to TCE by natural processes (Jordan, August 1990). Jordan also estimated contaminant velocities in the perched groundwater system and predicted that if TCE were discharged from the septic tank area, it would have traveled 50 feet beyond the eastern boundary of MARC. This prediction is based on the discharge occurring since initial operations began at the site in the mid-1950s (Jordan, August 1990).

Analysis of soil and sediment samples for metals indicated concentrations at or above background for cadmium, copper, lead, and zinc. However, based on interpretation of analytical data and of the behavior of metals in soil, Jordan determined that these metals did not appear to be migrating through the soil column nor were they detected in groundwater (with the exception of copper at or below CRLs).

Based on the above findings and interpretations, Jordan concluded that the presence of TCE in MPU Collector "B" is not attributable to activities at MARC. The most common transformation product of TCE, 1,2-dichloroethylene, was detected in MW-6 just above the CRL of 0.5 µg/L at 0.741 µg/L only once in both rounds of groundwater sampling; and estimated contaminant velocities in the perched system indicated that TCE could have traveled only 50 feet beyond the eastern boundary of MARC since the time of initial operations at the Reserve Center (Jordan, August 1990).

More detailed information concerning the Jordan SI can be found in the Final Site Investigation Report prepared by Jordan for USATHAMA, August 1990.

2.2.2 Request for Additional Investigation

Upon review of Jordan's SI, the WDNR agreed that the vehicle/equipment wash rack and dry well, the motor vehicle storage shed, and POL shed are not likely contributors to groundwater contamination at MARC. However, the WDNR requested Fort McCoy, in a letter dated July 17, 1990, to perform additional work to better define groundwater quality and flow direction east of the septic tank and drainage field. This request was made out of concern for potential migration of 1,2-dichloroethane detected in MW-6, towards Collector "B." Detection of 1,2-dichloroethane at 0.83 µg/L and 0.653 µg/L in MW-6 was of particular concern since it exceeds WDNR groundwater standards of 0.5 µg/L. The WDNR requested that an additional monitoring well nest be installed about 300 and 600 feet east of MW-6, between MW-6 and Collector "B." The well nest would consist of at least one observation well and one deep aquifer piezometer well, each similar in construction to MW-6 and MW-2B, respectively. The deeper well would monitor the lower aquifer and would be screened at the same elevation as Collector "B." The observation well would monitor the upper water table aquifer for VOCs that did not penetrate the clay till layer.

2.3 PROJECT APPROACH AND RATIONALE

The purpose of the RI for MARC was to determine if MARC is the source of VOC at Collector "B" and if 1,2-dichloroethane, detected in MW-6, was present or if it migrated off site toward Collector "B." The following field activities were planned by OHM:

- An initial site reconnaissance to select soil and sediment sampling locations and monitoring well locations
- Installation of four monitoring wells (MW-7, MW-8, MW-9, and MW-10), collection of two soil samples (SB-1 and SB-2), and one sediment (SB-3, from septic tank) sample for chemical analysis
- Collection of two rounds of groundwater samples from the newly installed monitoring wells for chemical analysis
- Measurement of groundwater levels in all of the site wells (new and existing)
- Horizontal location and vertical elevation survey of the monitoring wells and soil/ sediment sample locations.

Field sampling and investigation activities were initiated in August 1991 and completed by November 16, 1990.

Monitoring well locations were selected to:

- Evaluate potential contamination sources (see Table 2-1 for project rationale)
- Assess groundwater chemical quality between the MARC site and Collector "B" to determine whether contamination is attributable to MARC
- Verify groundwater flow direction in the deep groundwater aquifer
- Provide subsurface soil profile information
- Provide information to evaluate groundwater contaminant migration pathways.

Monitoring well and soil/sediment sampling locations for the FSI are shown on Figure 2-2, and monitoring well and soil/sediment sampling rationale are presented in Table 2-1. Four monitoring wells, which included two deep groundwater wells (MW-9 and MW-10) and a two-well cluster (MW-7 and MW-8) were installed for groundwater quality evaluation. Monitoring Well MW-11 (scope change) was installed near the two-well cluster as an intermediate well to monitor the clay till aquitard. The rationale for these monitoring wells is discussed below.

A two-well cluster (MW-7 and MW-8) is located between the MARC and Collector "B." The cluster is located east of the drainage field, approximately 300 feet east of MW-6 and about 600 feet west of the municipal well. Monitoring Well MW-7 has a total depth of 16 feet, and is approximately 110 feet west of MW-8. The bottom of the well screen is at elevation 628.1 and the top of screen is at elevation 638.1. The cluster is located east of the drainage field. The purpose of the shallow well is to monitor the shallow groundwater table (i.e., perched system) to determine if 1,2-dichloroethane (detected in MW-6) migrated off site toward Collector "B."

Monitoring Well MW-8 has a total depth of 105 feet and is approximately 110 feet east (downgradient) of Monitoring Well MW-7. The bottom of the well screen is at elevation 529.7 and the top of screen is at elevation 544.7. The well screen is at the approximate elevation of the lowest water intake of Collector "B," which is at elevation 534 feet MSL (Jordan, August 1990). The purpose of MW-8 is to monitor the deeper silts/sands aquifer for TCE at approximately the same

elevation as the intake of Collector "B." Also, the boring will provide subsurface data to better define the geologic strata between MARC and Collector "B."

Monitoring Well MW-9 monitors the lower aquifer and is about 300 feet northeast of the wash rack and about 600 feet west of Lake Michigan (Figure 2-2). The total depth of MW-9 is 95 feet. The bottom of the well screen was set at elevation 521.5 and the top of screen is at elevation 536.5. The purpose of this well is to monitor the deeper silts/sands aquifer for TCE which may have migrated from the dry well. The bottom of the well is at approximately the same level as the Collector "B" intakes. In addition, the boring will provide information on the geologic conditions between MARC and Lake Michigan.

Monitoring Well MW-10 is located adjacent to existing MW-6, approximately 50 feet east of the septic tank and drainage field. The total depth of Monitoring Well MW-10 is 120 feet and is screened at approximately the same elevations as MW-8 and the lower intakes of Collector "B." The purpose of this well is to monitor the lower aquifer to determine whether 1,2-dichloroethane has migrated into the deeper silts/sands aquifer and to Collector "B" and whether MARC is the source of TCE at Collector "B."

Monitoring Well MW-11 is located between MW-7 and MW-8. The total depth of MW-11 is 69 feet and it is screened in the clay till aquitard below the perched system monitored by MW-7 and above the aquifer monitored by MW-8. The top of the 15-foot screen is at elevation 584.45 and the bottom is at elevation 569.45. The purpose of this well is to monitor the clay till aquitard for 1,2-dichloroethane and TCE, and determine if either is migrating, toward Collector "B."

Soil and sediment sampling locations were selected to investigate the septic tank/drainage field area as a potential source area of 1,2-dichloroethane and/or TCE.

Specific drilling and monitoring well installation/development procedures, soil/sediment sampling procedures, and groundwater sampling procedures are described in Section 3.0.

3.0 FOLLOW-ON INVESTIGATION

This section describes the field activities for this FSI from August 1990 to mid-November 1990. Soil borings and monitoring well installations were completed by Exploration Technology, Inc., of Milwaukee, Wisconsin. Boring logs were prepared by OHM and are presented in Appendix A. Well development data and field measurement data collected by OHM, and monitoring well diagrams prepared by OHM are presented in Appendix B. Physical analyses of the soil was performed by Geotechnics of Pittsburgh, Pennsylvania and data results are presented in Appendix C. Chemical analyses of the soil, sediment, and groundwater samples were performed by PACE, Inc. (a USATHAMA-certified laboratory), Minneapolis, Minnesota. Analytical data is presented in Appendix D. A summary of analytical methods is presented in Table 3-1. The laboratory and field quality assurance/quality control (QA/QC) procedures followed those presented in the Quality Control Plan, prepared by Jordan (June 1990). Approved water for drilling and decontamination activities was obtained from the Cleveland Water District (Village of Cleveland) Cleveland, Wisconsin. The field work was conducted in accordance with an Addendum to the Sampling Design Plan prepared by OHM. This addendum was submitted to USATHAMA and subsequently approved by USATHAMA.

3.1 SOILS AND SEDIMENT

Two soil samples, SB-1 and SB-2, were collected on August 28, 1991, from the drainage field area. These samples were collected from hand-augered holes completed to a depth of approximately 4.5 feet. A sediment sample, SB-3, from the bottom of the septic tank was collected remotely by a bucket. Sample locations are shown on Figure 2-2. Rationale for selecting these locations, as previously described in Section 2.3, is presented in Table 2-1. These samples were analyzed for those VOCs presented in Table 3-2. The corresponding USATHAMA Installation Restoration Data Management Information System (IRDMIS) test name is also listed in Table 3-2.

Physical soil testing was performed on 20 soil samples collected from borings for Monitoring Wells MW-7, MW-8, MW-9, MW-10, and MW-11. Tests included Atterberg limits, sieve grain-size distribution, and water content. Based on these test results, Unified Soil Classification System (USCS) symbols were assigned. This data is provided in Appendix C.

3.2 GROUNDWATER

Monitoring Wells MW-7, MW-8, MW-9, MW-10, and MW-11 were installed to evaluate water quality between MARC and Collector "B," and to further identify geologic and

hydrogeologic characteristics in the vicinity of the site. Monitoring well locations are shown on Figure 2-2. Rationale for these locations, as previously described in Section 2.3, is presented in Table 2-1. Two rounds of groundwater sampling were performed in September 1991 and November 1991, respectively. Samples were analyzed for the VOCs presented in Table 3-2.

3.2.1 Monitoring Well Installation and Development

Monitoring Well MW-7 was installed using a 6.25-inch inside-diameter (I.D.), hollow-stem auger with advancement being extremely slow due to hard clays and dense sands and gravels. In anticipation of difficult geologic conditions, MW-8, MW-9, MW-10, and MW-11 were installed using mud rotary drilling methods. All wells were constructed of 2-inch I.D., Schedule 80 polyvinyl chloride (PVC) pipe materials; 0.010-inch-wide machine-slotted PVC well screen; and PVC riser sections with threaded, flush joints. No glues or solvents were used in well construction. The total well screen length at Monitoring Well MW-7 is 10 feet, and the well screen length is 15 feet for the other wells. When installed, the water table intersected the well screens at all well locations. After a well was set at the designated elevation, a sand filter pack was placed in the annular space around each well screen. For MW-8, MW-9, MW-10, and MW-11, the sand filter packs extended a minimum of 7 feet above the top of the well screen (length varied from 7 to 25 feet); a bentonite pellet seal extended above the sand pack (length varied from 5 to 9 feet); and a bentonite slurry extended from the top of the bentonite pellet seal (length varied from 22 to 80 feet) to within 5 feet of the ground surface. Because MW-7 was shallow, the sand filter pack was extended only 1 foot above the top of the well screen, the bentonite pellet seal extended only 2 feet above the sand pack, and no bentonite slurry was added. Three feet of neat cement was placed in the annular space from the top of the bentonite seal to ground surface in all wells.

A 6-inch-diameter, protective steel casing with lockable cap was installed at each well. The protective steel casing extended 3 feet into the neat cement. Four 4-inch-diameter, protective steel guard posts and a 6-inch-thick concrete pad were placed around each well. A summary of well installation and construction details are presented in Table 3-3 and details are presented in Appendix B.

As per USATHAMA requirements, at least 48 hours elapsed before well development activities began. The monitoring wells were developed by pump-and-surge methods using a submersible pump and/or a hand-pump and bailer. Purge volumes varied depending on the recharge rate. Well development was considered complete when the water was relatively free of

fines/sediments and specific conductivity readings were stable. Well development data is presented in Appendix B.

Drill cuttings were placed on plastic sheeting and purge/development water and decontamination water was containerized in 55-gallon drums. The soil samples from the borings were initially screened with a PID. Since PID screening indicated no detectable VOC concentrations, the drill cuttings were spread on site as fill material. The drummed wastewater was temporarily stored on wooden pallets within the fenced area next to the POL shed. PID screening in the drummed water indicated no detectable VOC concentrations and the water was transported to the Manitowoc Water Authority for disposal/treatment.

3.2.2 Survey

On August 15 and 28, 1991, Brey, Stuewe & Braun, Inc., of Manitowoc, Wisconsin completed a horizontal location and vertical elevation of the five newly installed wells (MW-7, MW-8, MW-9, MW-10, and MW-11), and the two soil samples (SB-1 and SB-2). The sediment sample (SB-3) was located later by map coordinates given from the survey. Horizontal coordinates are based on the Wisconsin State Plane Coordinate System. Elevations are based on the National Geodectic Vertical Datum of 1983. This information is presented on the geologic logs of the boreholes in Appendix A.

3.2.3 Groundwater Sample Collection

Two rounds of groundwater sampling were performed. The first round of groundwater samples was collected from the 12 MARC wells (includes the seven existing and five newly installed) for chemical analysis of the parameters listed in Table 3-2. The second round of groundwater sampling was performed for MW-7, MW-8, MW-9, MW-10, and MW-11 only. The first round of sampling was performed on September 25 and 26, 1991, and the second round was performed on November 14 and 15, 1991. Each round of sampling included three quality assurance/quality control samples (i.e., one equipment blank, one field blank, and one trip blank). Prior to sample collection, water level measurements were obtained at each well. The wells were purged with a submersible pump or bailer and purge water was monitored for temperature, pH, and specific conductance, in accordance with USATHAMA requirements prior to sampling. Groundwater data is presented in Table B-1 of Appendix B.

3.3 DATA MANAGEMENT

Using the USATHAMA IRDMIS, data files were transmitted to the USATHAMA subcontractor, Potomac Research, Inc. (PRI). OHM submitted map sites for MW-7, MW-8, MW-9, MW-10, MW-11, SB-1, SB-2, and SB-3. PRI performed group and record checks

and upon passing these checks, the files were uploaded to the IRDMIS. PACE, Inc. submitted chemical data files for soil and groundwater to PRI by lot. Upon acceptance of the data, USATHAMA directed PRI to upload these files to the IRDMIS.

4.0 DATA PRESENTATION AND EVALUATION

The data presented in this section include the chemical analytical data from the three sampling events (one of soil borings and septic tank sediment and two of groundwater) and geotechnical data from the soil boring samples. An evaluation of the chemical and geotechnical data and hydrogeologic information is also presented in this section.

4.1 DATA PRESENTATION

The soil, sediment, and groundwater samples collected at the site were analyzed for the chemical parameters listed in Table 3-2 by PACE, Inc. Soil geotechnical analysis was conducted by Geotechnics. Analytical results and geological findings are discussed in the following sections.

4.1.1 Soil and Sediment

The analytical results of the sampling event for the soil borings and septic tank sediment are presented in Table 4-1. Soil samples SB-1 and SB-2 represent samples taken from the two soil borings in the MARC drainage field. Sample SB-3 represents the sediment sample from the septic tank.

4.1.2 Groundwater

The analytical results of the first groundwater sampling event are shown in Table 4-2. These results include analyses of groundwater from MW-1A, MW-2A, MW-2B, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, and MW-11.

Table 4-3 presents the analytical results of the second groundwater sampling event. These results include analyses of groundwater from MW-7, MW-8, MW-9, MW-10, and MW-11.

Figures 4-1 and 4-2 present groundwater contour maps for the perched system and lower silts/sands aquifer, respectively, based on water level readings taken from all wells during the second round of groundwater sampling (i.e., November 14 and 15, 1991). These water level readings are presented in Table B-2 of Appendix B.

4.1.3 Geological Data

The geology encountered by borings for MW-7, MW-8, MW-9, MW-10, and MW-11 is very similar to the general stratigraphic sequence observed by Jordan (Jordan, August 1990). The boring logs from the new well locations provide additional geologic information off site to the east between the MARC and the Ranney Collector "B" well, while the Jordan report could only infer geologic information beyond the MARC area.

The site geology, as interpreted by Jordan, is depicted on Figures 2-3, 2-4, and 2-5 for Cross Sections A-A, B-B, and C-C, respectively, of Figure 2-2. A new Section D-D, which passes through four of the new wells, has been created on Figure 2-2 to show the additional information gained. The subsurface profile for Cross Section D-D is interpreted on Figure 2-6.

As shown on Figures 2-3, 2-4, and 2-5, the principal strata correlate with the strata identified on Figure 2-6. Figure 2-6 shows the uppermost interval as silts/sands with clay lenses in the vicinity of MW-7, MW-8, and MW-11. The silts/sands aquifer is the perched system described by Jordan. Water in the perched zone may seasonally discharge near Well MW-7. The discharged volume would be fairly low since the recharge area is limited. The clay lenses, indicated on Figure 2-6 near MW-7, MW-8, and MW-11 may also create perched water conditions and result in additional low-volume discharges.

The perched system overlies a lower permeability zone which is the clay till aquitard described by Jordan. The information acquired from the deep monitoring wells indicates the clay till aquitard consists of clay layers, silts, and sands. Beneath the clay till aquitard is a silts/sands aquifer comparable to the sand aquifer identified by Jordan.

A clay or silty clay layer was identified in all boring logs which intersected the upper portion of the clay till aquitard. In Boring S-29, this same clay/silty clay layer is probably indicated as the "yellow clay." Although Jordan surmised that the clay till aquitard is probably the Haven Till and outcrops on the shoreline bluffs, the drilling logs for nearby Boring S-29 do not indicate low permeability layers except the "yellow clay." This apparent discrepancy can be resolved by considering that the purpose of Boring S-29 was to locate thick, highly-permeable zones for Collector "B" and not to detect relatively thin clays or silts. Therefore, although only the clay/silty clay upper portion of the clay till aquitard can be shown to extend from MARC to S-29, the complete clay till aquitard likely also extends across the site.

4.2 DATA EVALUATION

An evaluation of the analytical results for soil, sediment, and groundwater is presented in the following sections. The analytical results are presented in Tables 4-1, 4-2, and 4-3 for the chemical parameters listed in Table 3-2. In addition, an interpretation of the geological findings and a hydrogeologic evaluation are also presented as part of the geologic evaluation.

4.2.1 Soil and Sediment

The results of the chemical analyses for the soil samples and septic tank sediment sample (Table 4-1) were below detection limits (i.e., CRLs) for each of the analytes. This indicates that the soil and sediment samples were not contaminated with any of the chemicals in the list of parameters (Table 3-2).

4.2.2 Groundwater

The results of the chemical analyses for the first (Table 4-2) and second (Table 4-3) rounds of groundwater samples were below detection limits for each of the analytes. This indicates that the groundwater samples were not contaminated with any of the chemicals in the parameters list. Based on this FSI, the groundwater analyses also indicate that the groundwater quality at the time of sampling meets the MCLs of the federal primary drinking water standards for all of the analytes for which MCLs exist. Additionally, the groundwater analyses indicate that the groundwater quality meets Wisconsin groundwater standards for trichloroethylene and 1,2-dichloroethane.

4.2.3 Geological Evaluation

Three distinct water-bearing zones were identified from Cross Section D-D (Figure 2-6). These include the perched system (i.e., upper silts/sands unit) that overlies the clay till aquitard that in-turn overlies the lower silts/sands aquifer. The perched system was monitored by MW-7. The lower permeability zone was monitored by MW-11. The silts/sands aquifer is tapped by Collector "B" and was monitored by MW-10, MW-8, and MW-9. The significant ground-water zones are the perched system and the deeper silts/sands aquifer. The clay till aquitard is also saturated, however, due to the low permeability, the clay till aquitard is not considered a significant groundwater zone. Groundwater elevations are tabulated in Appendix B for November 14 and 15, 1991. Groundwater contour maps of the perched system and deeper silts/sands aquifer are shown on Figures 4-1 and 4-2, respectively.

The groundwater contour map of the perched system, Figure 4-1, shows a groundwater divide near MW-6. This same divide was shown in Jordan's water table contour map for October 1989. The divide could result from recharge from the drainage field, topography, surface permeability contrasts such as paved areas and ditches, or a combination of these factors. Since the perched system is thin and near the surface, the divide may also be affected by seasonal changes.

Surface drainage into the perched zone from the eastern portion of MARC towards Collector "B" is restricted by the divide. Since the recharge area is relatively small, any perched water discharged in the seeps would be a low volume.

The divide also affects the direction of the perched system groundwater gradient. As indicated on Figure 4-1, MW-6 is upgradient of MW-2A and MW-7. Therefore, even if seasonal factors significantly affect the divide (and the gradients) either MW-7 or MW-2A will always be downgradient of MW-6. Since 1,2-dichloroethane was detected only in MW-6 and never in MW-2A or MW-7, the source of the 1,2-dichloroethane possibly never existed, or is unique to MW-6, or has degraded to concentrations below detection limits prior to reaching MW-7 or MW-2A.

The groundwater contour map for the deeper silts/sands aquifer, Figure 4-2, indicates a local groundwater gradient to the southeast. Monitoring Wells MW-8, MW-9, and MW-10 monitor the deeper aquifer and are downgradient of MARC. Notably, MW-9 does not monitor the groundwater quality for TCE which may have migrated from the dry well (as was planned), due to the direction of the groundwater gradient. In addition, 1,2-dichloroethane and TCE were not detected in MW-8 and MW-10. Therefore, the deep aquifer in the vicinity of Wells MW-2B, MW-8, MW-9, and MW-10 does not contain detectable concentrations of 1,2-dichloroethane, TCE, or any of the analytes listed in Table 3-2.

4.3 DATA SUMMARY

The same type of geology identified by Jordan was found from this FSI; namely, three distinct water-bearing zones including the perched system, the clay till aquitard, and a deeper aquifer were identified. While Jordan's investigation included monitoring of the groundwater quality in the perched system and deeper aquifer within the MARC boundaries, OHM monitored the groundwater quality downgradient in those same units both within and beyond the Marc boundaries.

Analytical results from groundwater, soil, and sediment sampling during this FSI were not significant in defining limits/sources of contamination. In summary, analytical results of groundwater, soil, and sediment indicate that all analytes, in particular, TCE and 1,2-dichloroethane, are below detection limits. Therefore, the drainage field and septic tank areas where the soil and sediment samples were taken, respectively, are not sources of TCE or 1,2-dichloroethane contamination; or any such contamination which may have originated there has degraded. In addition, based on analytical results from MW-7, MW-8, MW-9, MW-10, and MW-11, groundwater data between MARC and Collector "B" does not indicate the presence of 1,2-dichloroethane or TCE.

Because of the groundwater divide identified at or near MW-6 and gradients of the perched system identified towards the east and west, it is not certain whether 1,2-dichloroethane detected in MW-6 by Jordan degraded in this vicinity or migrated east or west. It is appropriate to say, though, that if it migrated either way, it has degraded since analytical results from groundwater samples from MW-7 (to the east) and from MW-2A (to the west) did not contain detectable concentrations.

5.0 CONCLUSIONS

Based on the data presented and evaluated in the preceding sections and in response to the objectives, the following conclusions can be drawn:

- MARC is not the source of the TCE detected in the MPU Collector "B." TCE has not been detected in any of the soil samples collected from the potential on-site source areas. In addition, TCE has never been detected in any of the groundwater samples from the perched system, clay till aquitard, or silts/sands aquifer.

- 1,2-Dichloroethane has not likely migrated off site toward Collector "B." 1,2-Dichloroethane was not detected in any of the groundwater samples collected in 1991 and was detected at concentrations only slightly above the detection limit in one well in 1989. Therefore, 1,2-dichloroethane possibly never actually existed in groundwater on the MARC. If 1,2-dichloroethane ever did exist on the MARC, the concentration has decreased to below detection limits since it was not detected in any groundwater sample collected under this investigation.

TABLES

TABLE 2-1

MONITORING WELL AND SOIL SAMPLING
INFORMATION AND RATIONALE
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER

MONITORING WELL/ TEST BORING ID NO.	PROPOSED LOCATION	TOTAL DEPT OF WELL	SCREEN LENGTH	RATIONALE/COMMENTS
MW-7	East (downgradient) of septic tank and drainage field. On Silver Creek Park property.	16 feet	10 feet	Shallow well in a 2-well cluster (MW-8) downgradient of MW-6 screened in the shallow water table to determine if 1,2-dichloroethane (confirmed from MW-6 has migrated off site toward Collector Well "B."
MW-8	East (downgradient) of septic tank and drainage field. On Silver Creek Park property.	105 feet	15 feet	Deep well in 2-well cluster (MW-7) screened at the same elevation as Collector Well "B" to determine whether MARC is the source of TCE at Collector Well "B."
MW-9	East of vehicle wash rack and seeps. On Silver Creek Park property.	95 feet	15 feet	Deep well screened at the same elevation as Collector Well "B" to determine whether MARC is the source of TCE at Collector Well "B."
MW-10	East of septic tank and drainage field on MARC property next to MW-6.	120 feet	15 feet	Deep well in a 2-well cluster (MW-6 shallow) screened at the same elevation as Collector Well "B" to determine if 1,2-dichloroethane has migrated into deep zone and whether MARC is the source of TCE at Collector Well "B."
MW-11	Between MW-7 and MW-8	69 feet	15 feet	Intermediate well between a 2-well cluster (MW-7, MW-8) screened in an intermediate water table to determine if 1,2-dichloroethane (confirmed from MW-6) has migrated off site toward Collector Well "B."

TABLE 2-1
(CONTINUED)

SOIL SAMPLE NO.	PROPOSED LOCATION	TOTAL DEPTH	SCREEN LENGTH	RATIONALE/COMMENTS
SB-1	Drainage Field	5 feet	N/A	Determine if the septic system is the source of 1,2-dichloroethane.
SB-2	Drainage Field	5 feet	N/A	Determine if the septic system is the source of 1,2-dichloroethane.
SB-3	Septic Tank	Bottom of tank	N/A	Determine if the septic system is the source of 1,2-dichloroethane.

TABLE 3-1

ANALYTICAL METHODS SUMMARY
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER

USATHAMA METHOD NO.	USEPA METHOD NO.	CERTIFIED PARAMETERS	MATRIX
UG03	601/8010	Volatile halocarbons (e.g., trichloroethylene)	Water
LG03	8010	Volatile halocarbons	Soil/Sediment
UP01	602/8020	Volatile aromatic hydrocarbons (e.g., benzene)	Water
LP01	8020	Volatile aromatic hydrocarbons	Soil/Sediment

TABLE 3-2

VOLATILE ORGANIC COMPOUNDS
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER

TEST NAME	
VOLATILE HALOCARBONS	
111TCE	1,1,1-Trichloroethane
112TCE	1,1,2-Trichloroethane
11DCE	1,1-Dichloroethylene
11DCLE	1,1-Dichloroethane
12DCE	1,2-Dichloroethyenes (cis and trans isomers)
12DCLE	1,2-Dichloroethane
12DCLP	1,2-Dichloropropane
C2H3CL	Chloroethene/Vinyl Chloride
CCL4	Carbon Tetrachloride
CH2CL2	Methylene Chloride
CHCL3	Chloroform
TCLEE	Tetrachloroethylene
TCLTFE	1,1,2-Trichloro-1,1,2-trifluoroethane
TRCLE	Trichloroethylene
VOLATILE AROMATIC HYDROCARBONS	
C6H6	Benzene
MEC6H5	Toluene
TXYLEN	Total Xylene

Note: Test names correspond to the analytes presented in Appendix D, Analytical Results.

TABLE 3-3

SUMMARY OF MONITORING WELL INSTALLATION
AND CONSTRUCTION DETAILS
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER

MONITORING WELL	DIAMETER (INCHES)	TOTAL DEPTH (FEET)	SCREEN LENGTH (FEET)	ELEVATION (MSL)	
				GROUND	TOP OF PVC
7	2	16	10	644.09	646.33
8	2	105	15	634.69	636.95
9	2	95	15	616.47	619.02
10	2	120	15	650.62	652.99
11	2	69	15	638.45	640.18

TABLE 4-1

ANALYTICAL RESULTS
SOIL AND SEDIMENT SAMPLING
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER
SAMPLING DATE - AUGUST 28, 1991

PARAMETER	SB-1 (µg/g)	SB-2 (µg/g)	SB-3 (µg/g)
Benzene	<1.20	<1.20	<1.20
Toluene	<0.65	<0.65	<0.65
Xylenes	<4.94	<4.94	<4.94
1,1,1-Trichloroethane	<8.10	<8.10	<8.10
1,1,2-Trichloroethane	<7.00	<7.00	<7.00
1,1-Dichloroethylene	<8.50	<8.50	<8.50
1,1-Dichloroethane	<2.90	<2.90	<2.90
1,2-Dichloroethylenes	<3.30	<3.30	<3.30
1,2-Dichloroethane	<3.00	<3.00	<3.00
1,2-Dichloropropane	<5.90	<5.90	<5.90
Vinyl Chloride	<0.92	<0.92	<0.92
Carbon Tetrachloride	<1.70	<1.70	<1.70
Methylene Chloride	<3.60	<3.60	<3.60
Chloroform	<2.90	<2.90	<2.90
Tetrachloroethylene	<4.10	<4.10	<4.10
1,1,2-Trichloro-1,2,2-Trifluoroethane	<7.20	<7.20	<7.20
Trichloroethylene	<2.60	<2.60	<2.60

Notes:

1)SB-1 and SB-2 - Soil samples from the drainage field, hand-augered to approximately 4.5 feet.

2)SB-3 - A sediment sample from the septic tank.

TABLE 4-2

ANALYTICAL RESULTS
GROUNDWATER SAMPLING
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER
SAMPLING DATE - SEPTEMBER 26, 1991

PARAMETER	MW-1A (µg/l)	MW-2A (µg/l)	MW-2B (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)
Benzene	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
Toluene	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87
Xylenes	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28	<8.28
1,1,1-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1,2-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethylene	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78
1,2-Dichloroethylenes	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Vinyl Chloride	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90	<1.90
Carbon Tetrachloride	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30
Methylene Chloride	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20	<3.20
Chloroform	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72	<0.72
Tetrachloroethylene	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,1,2-Trichloro-1,2,2-Trifluoroethane	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethylene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

TABLE 4-3

ANALYTICAL RESULTS
GROUNDWATER SAMPLING
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER
SAMPLING DATE - NOVEMBER 14 AND 15, 1991

PARAMETER	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)
Benzene	<0.41	<0.41	<0.41	<0.41	<0.41
Toluene	<0.87	<0.87	<0.87	<0.87	<0.87
Xylenes	<8.28	<8.28	<8.28	<8.28	<8.28
1,1,1-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00
1,1,2-Trichloroethane	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethylene	<1.00	<1.00	<1.00	<1.00	<1.00
1,1-Dichloroethane	<0.78	<0.78	<0.78	<0.78	<0.78
1,2-Dichloroethylenes	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	<1.00	<1.00	<1.00	<1.00	<1.00
Vinyl Chloride	<1.90	<1.90	<1.90	<1.90	<1.90
Carbon Tetrachloride	<1.30	<1.30	<1.30	<1.30	<1.30
Methylene Chloride	<3.20	<3.20	<3.20	<3.20	<3.20
Chloroform	<0.72	<0.72	<0.72	<0.72	<0.72
Tetrachloroethylene	<1.00	<1.00	<1.00	<1.00	<1.00
1,1,2-Trichloro-1,2,2-Trifluoroethane	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethylene	<0.50	<0.50	<0.50	<0.50	<0.50

FIGURES

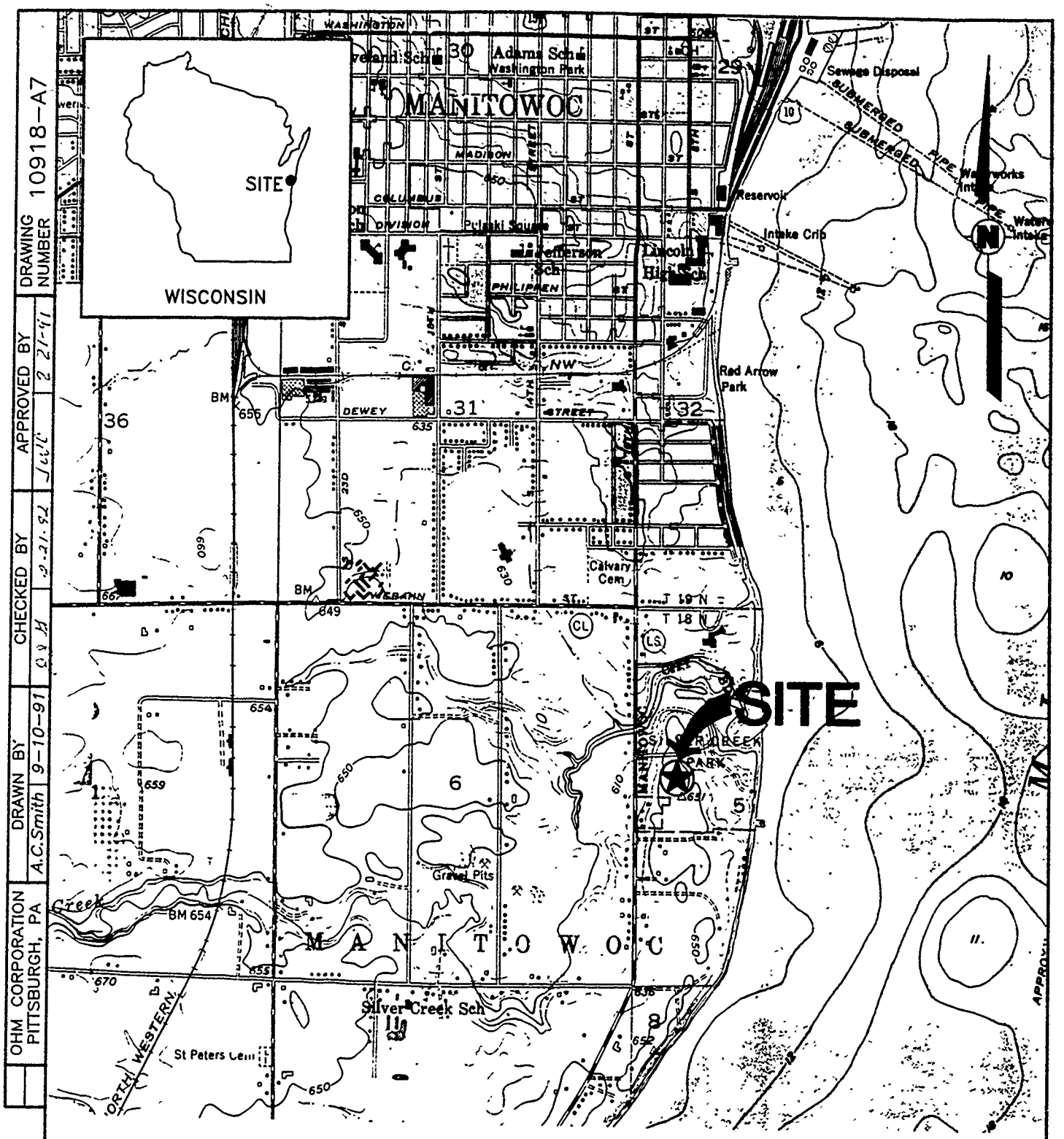


FIGURE 2–1

SITE LOCATION MAP
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

REFERENCE:
7.5 MIN. U.S.G.S. TOPOGRAPHIC MAP OF MANITOWOC, WISCONSIN QUADRANGLE, DATED: 1954, PHOTOREVISED 1973, SCALE: 1:24000

DRAWING NUMBER	10918–A7
APPROVED BY	2-27-91
CHECKED BY	9-21-92
DRAWN BY	A.C.Smith 9-10-91
OHM CORPORATION PITTSBURGH, PA	
PLOT SCALE: 1" = 1"	

DRAWING NUMBER 10918-B1

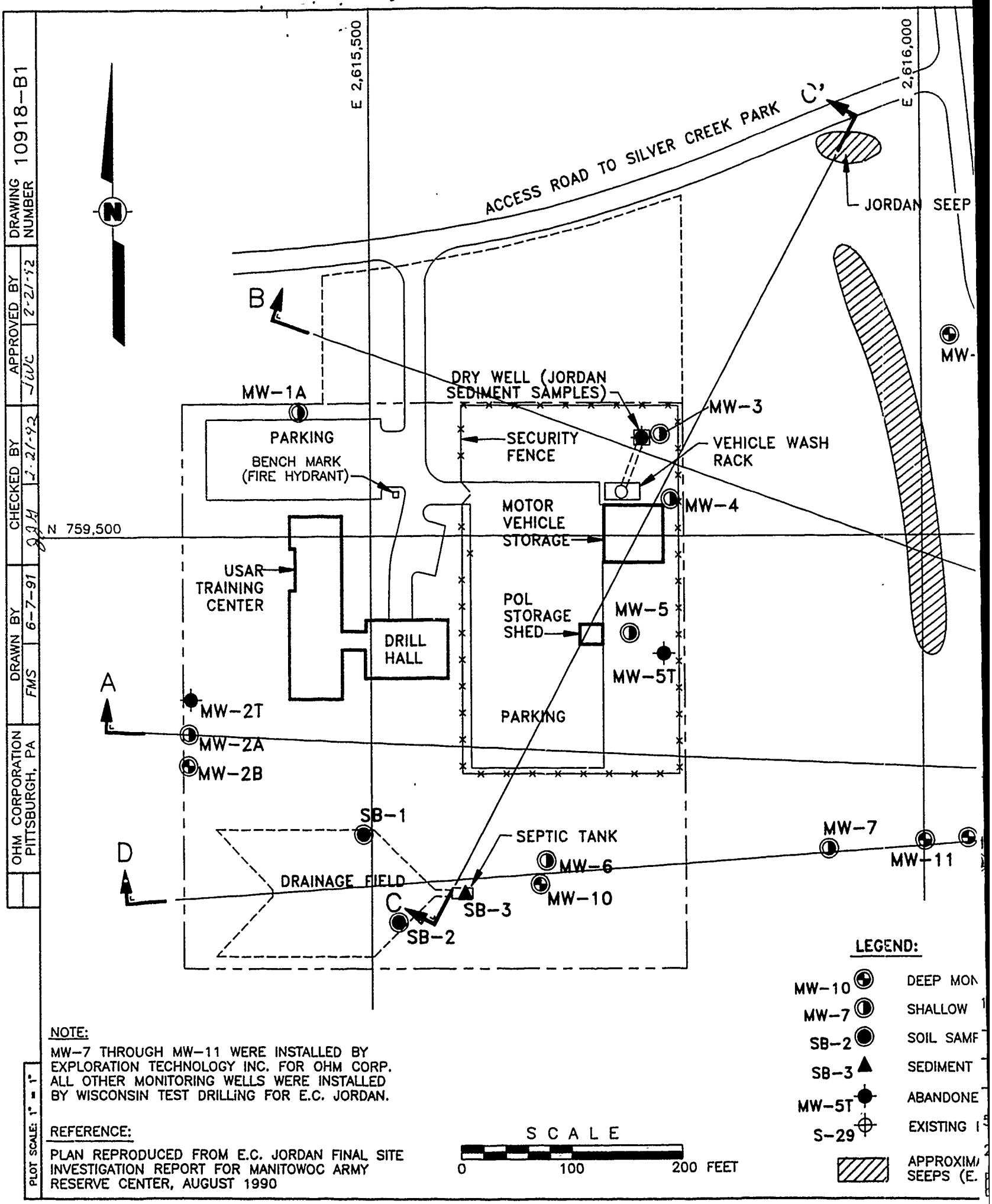
APPROVED BY JWC 2-21-92

CHECKED BY DJH 2-21-92

DRAWN BY FMS 6-7-91

OHM CORPORATION
PITTSBURGH, PA

PLOT SCALE: 1" = 1'

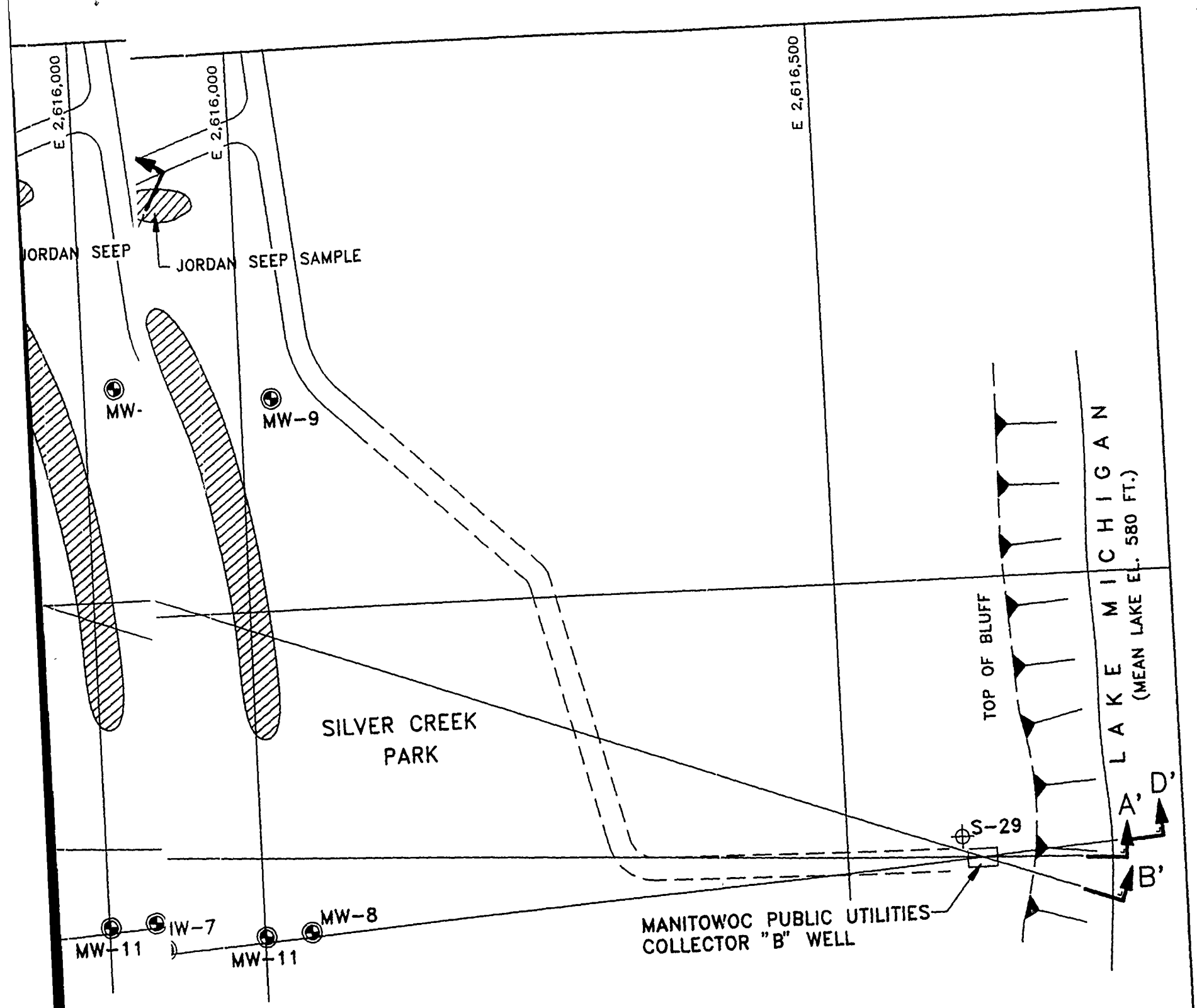


NOTE:

MW-7 THROUGH MW-11 WERE INSTALLED BY EXPLORATION TECHNOLOGY INC. FOR OHM CORP. ALL OTHER MONITORING WELLS WERE INSTALLED BY WISCONSIN TEST DRILLING FOR E.C. JORDAN.

REFERENCE:

PLAN REPRODUCED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990



GEND:

LEGEND:

DEEP MON	DEEP MONITORING WELL LOCATION AND DESIGNATION
SHALLOW 10	SHALLOW MONITORING WELL LOCATION AND DESIGNATION
SOIL SAMF -7	SOIL SAMPLE LOCATION AND DESIGNATION
SEDIMENT -2	SEDIMENT SAMPLE LOCATION AND DESIGNATION
ABANDONE -3	ABANDONED BORING AND DESIGNATION
EXISTING 15T	EXISTING BORING ASSOCIATED WITH COLLECTOR "B"
29	
APPROXIM/ SEEPS (E.	APPROXIMATE LOCATION OF VISUALLY OBSERVED SEEPS (E.C. JORDAN)

FIGURE 2-2

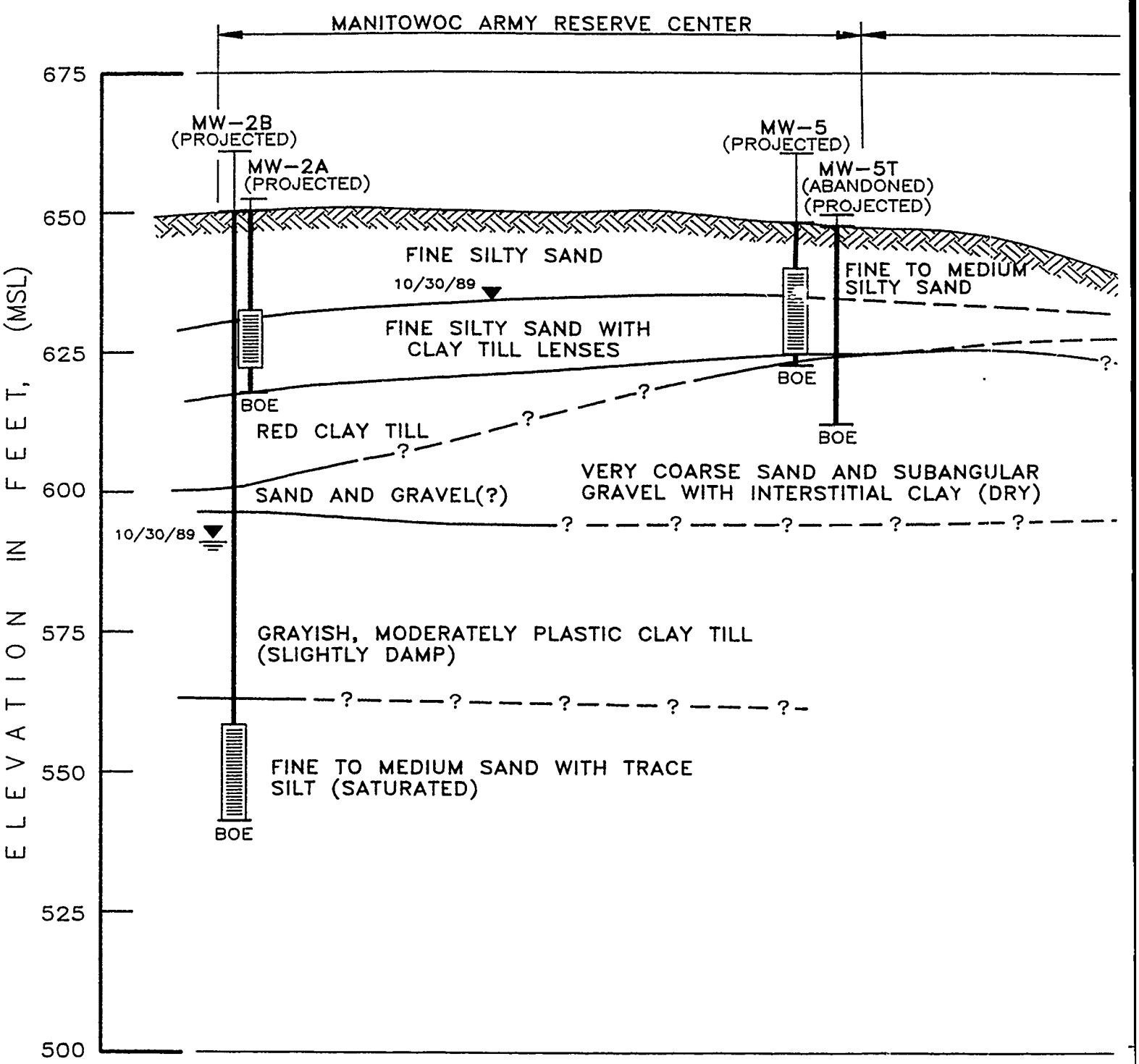
SITE PLAN
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

WEST A



LEGEND

MW-2A (PROJECTED)

MONITORED INTERVAL INCLUDES SCREEN AND SAND PACK

BOTTOM OF EXPLORATION

BOE

V.E. = 4X

VERTICAL SCALE

0 25 50 FEET

HORIZONTAL SCALE

0 100 200 FEET

REFERENCE:

SECTION A–A' PREPARED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990.

NOTES:

1. ALL PR CONTOU
2. OBSERV THE SAI

DRAWING NUMBER	10918-B2
APPROVED BY	2-21-92
CHECKED BY	2-21-92
DRAWN BY	10-11-91
OHM CORPORATION PITTSBURGH, PA	B.O'Connor
PLOT SCALE: 1" = 1'	

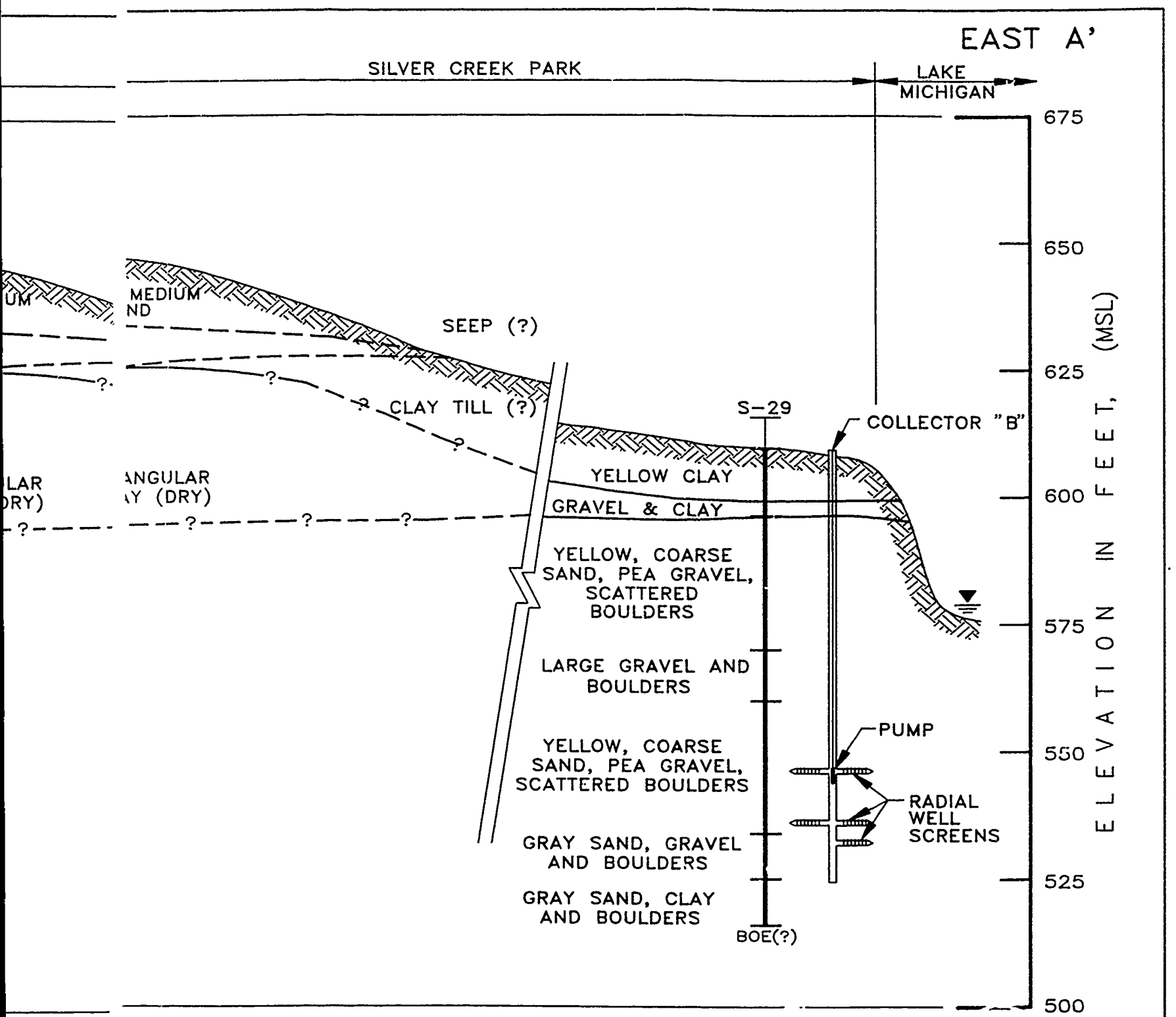


FIGURE 2-3

INTERPRETIVE GEOLOGIC CROSS-SECTION A-A'
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

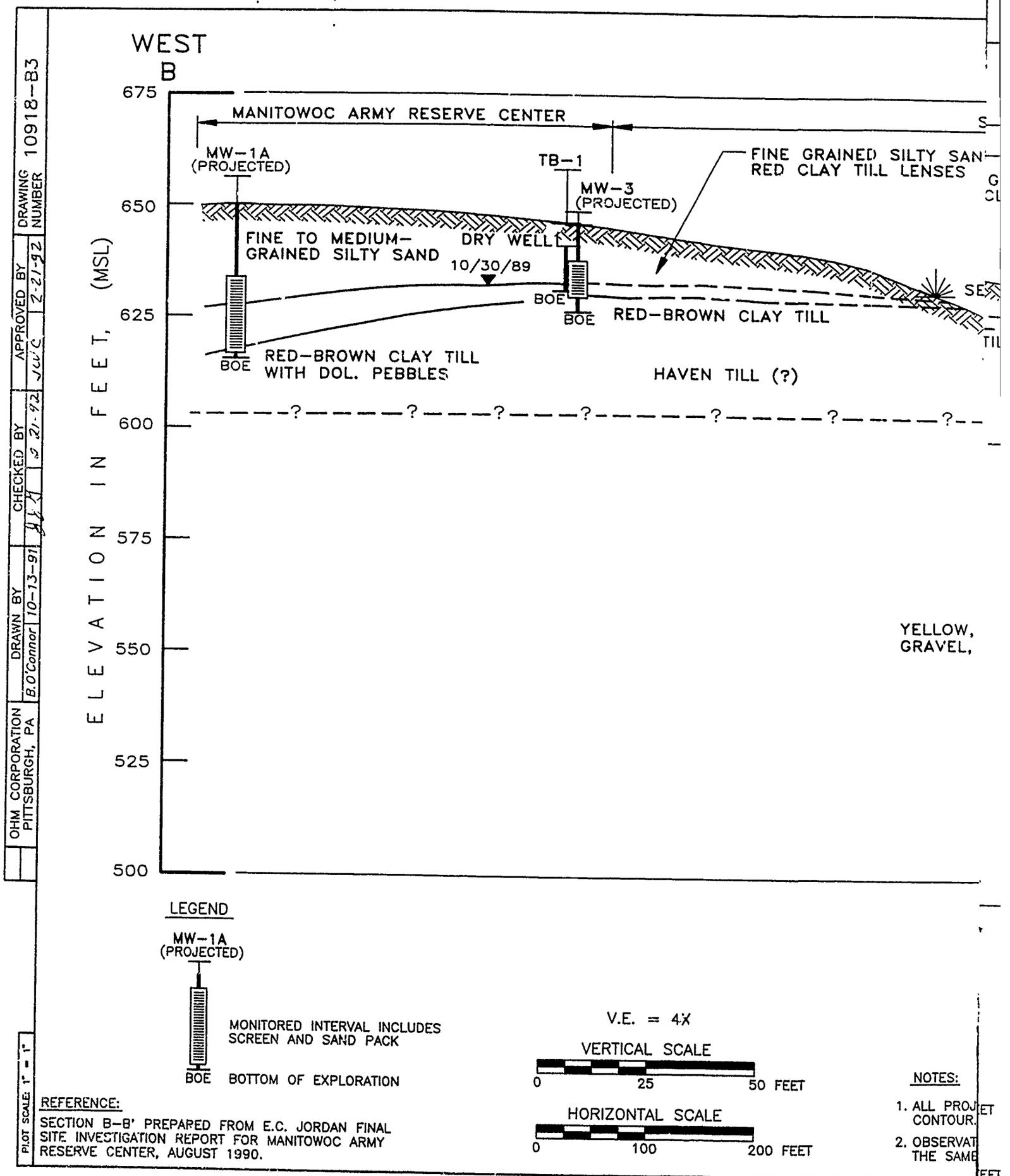
OHM Corporation

NOTES:

1. ALL PR
CONTOU
2. OBSERV
THE SA

NOTES:

1. ALL PROJECTED WELLS ARE PROJECTED ON TOPOGRAPHIC CONTOUR.
2. OBSERVATION WELL S-29 INSTALLED AT APPROXIMATELY THE SAME TIME AS COLLECTOR "B".



LEGEND

MW-1A
(PROJECTED)

MONITORED INTERVAL INCLUDES SCREEN AND SAND PACK

BOE BOTTOM OF EXPLORATION

V.E. = 4X

VERTICAL SCALE

0 25 50 FEET

HORIZONTAL SCALE

0 100 200 FEET

REFERENCE:

SECTION B-B' PREPARED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990.

NOTES:

1. ALL PROJ... CONTOUR.
2. OBSERVAT... THE SAME

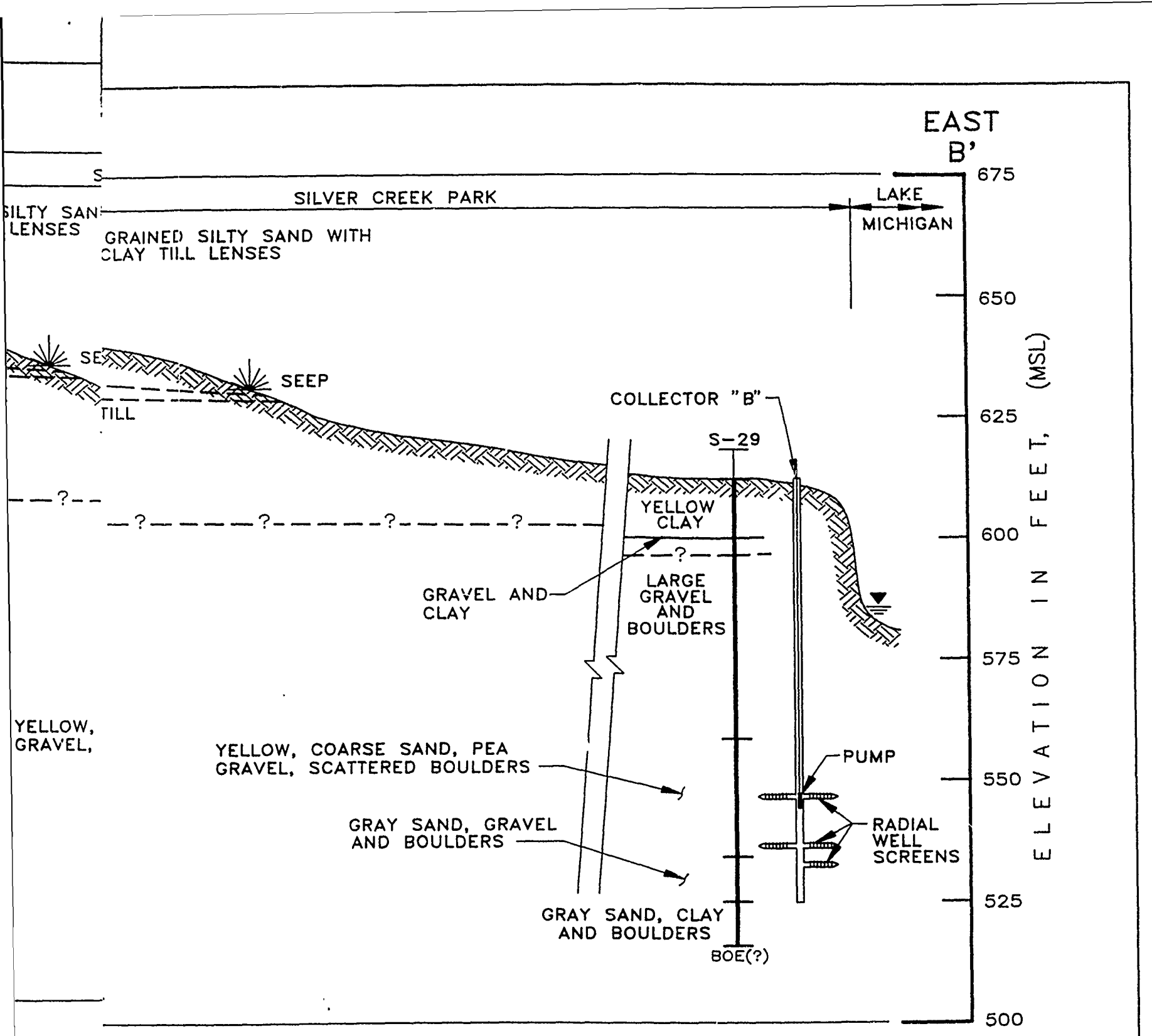


FIGURE 2-4

INTERPRETIVE GEOLOGIC
CROSS-SECTION B-B'
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

NOTES:

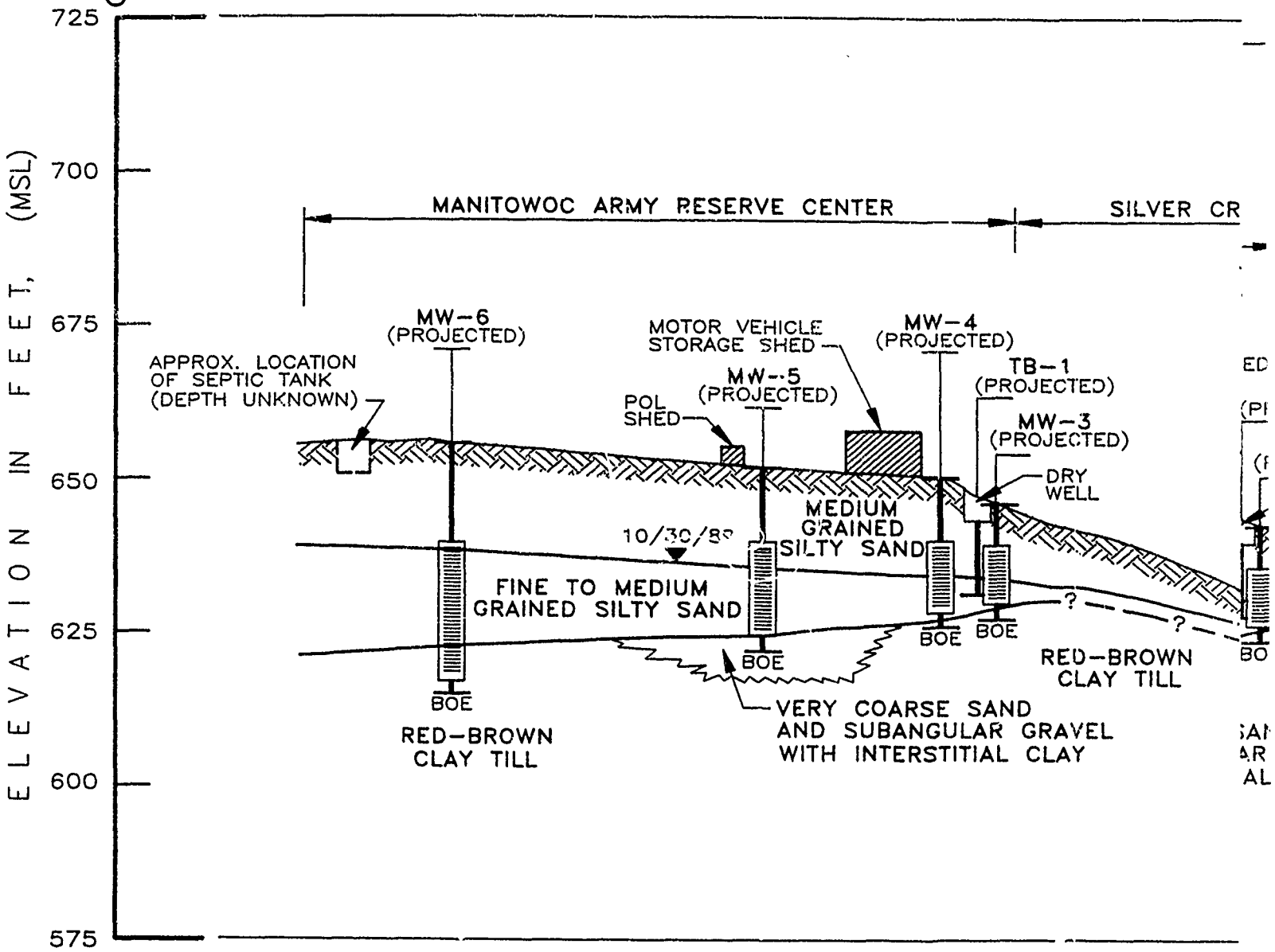
1. ALL PROJECTED WELLS ARE PROJECTED ON TOPOGRAPHIC CONTOUR.
2. OBSERVATION WELL S-29 INSTALLED AT APPROXIMATELY THE SAME TIME AS COLLECTOR "B".

NOTES:

1. ALL PROJ ET CONTOUR.
2. OBSERVAT THE SAM EET

SOUTH

C



DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
B.O'Connor 1-6-92	2-21-92	JWC 2-21-92	10918-B4

OHM CORPORATION
PITTSBURGH, PA

PLOT SCALE: 1" = 1'

REFERENCE:

SECTION C–C' PREPARED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990.

NOTES:

1. ALL PROJECTED WELLS ARE PROJECTED CONTOUR.

NORTH

C'

725

700

675

650

625

600

575

ELEVATION IN FEET, (MSL)

SILVER CR

SILVER CREEK PARK

ED)

TB-1
(PROJECTED)

MW-3
(PROJECTED)

DRY
WELL

BOE

SEEP

ROWN
TILL

RED-BROWN
CLAY TILL

SAND
AR GRAVEL
AL CLAY

LEGEND

MW-6
(PROJECTED)

MONITORED INTERVAL INCLUDES SCREEN AND SAND PACK

BOE BOTTOM OF EXPLORATION

V.E. = 4X

VERTICAL SCALE

0 25 50 FEET

HORIZONTAL SCALE

0 100 200 FEET

PROJECTED

TED WELLS ARE PROJECTED ON TOPOGRAPHIC

FIGURE 2-5

INTERPRETIVE GEOLOGIC
CROSS-SECTION C-C'
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

WEST D

MANITOWOC ARMY RESERVE CENTER

ELEVATION IN FEET, (MSL)

675
650
625
600
575
550
525
500

MW-2A
MW-2B
(PROJECTED)

MW-6
(PROJECTED)

MW-10
650.62'

MW-7
644.09'

MW-11
638.45'

SILTS/SANDS

CLAY/SILTY CLAY

CLAY LENSES

CLAY TILL

SAND/GRAVEL/
CLAY LENSES

CLAY TILL

SILTY CLAY

SILTS/SANDS

SILTS/SANDS

BOE

BOE

BOE

BOE

BOE

LEGEND

MW-10
650.62' — GROUND SURFACE ELEVATION

WELL SCREEN

BOTTOM OF EXPLORATION

V.E. = 4X

VERTICAL SCALE
0 25 50 FEET

HORIZONTAL SCALE
0 100 200 FEET

NOTES:
1. ALL PR(TOPOGR
2. STRATIG MW-2B

DRAWN BY	B.O'Connor	1-6-92	
CHECKED BY	[illegible]	[illegible]	
APPROVED BY	[illegible]	2-21-92	
DRAWING NUMBER	10918-B5		

OHM CORPORATION
PITTSBURGH, PA

PLOT SCALE: 1" = 1'

EAST D'

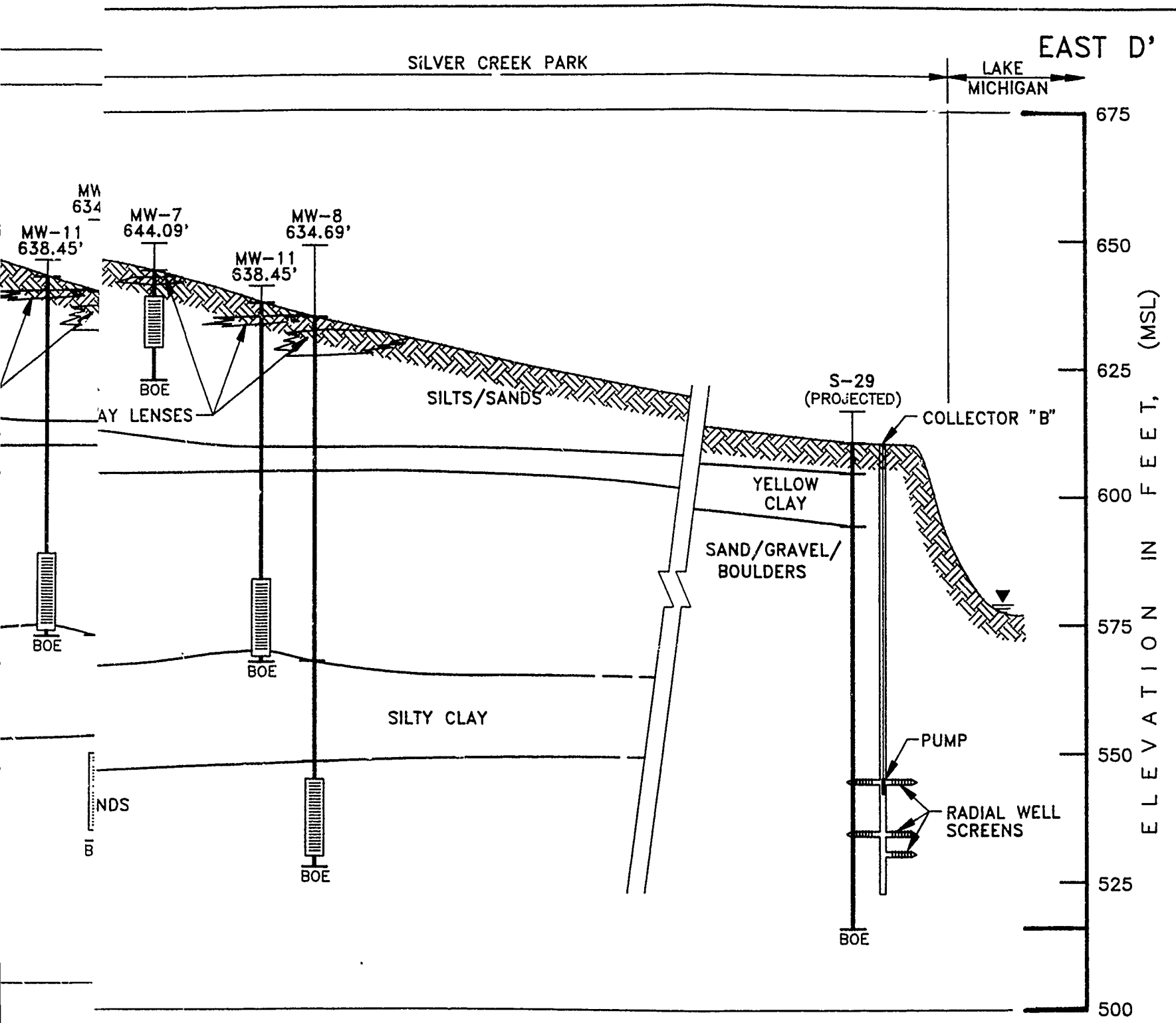


FIGURE 2-6

INTERPRETIVE GEOLOGIC
CROSS-SECTION D-D'
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

NOTES:

1. ALL PROJECTED WELLS ARE PROJECTED ON TOPOGRAPHIC CONTOUR.
2. STRATIGRAPHIC INTERPRETATION FOR WELLS MW-2B AND MW-6 BY E.C. JORDAN CO.

OHM Corporation

DRAWING NUMBER 10918-B7

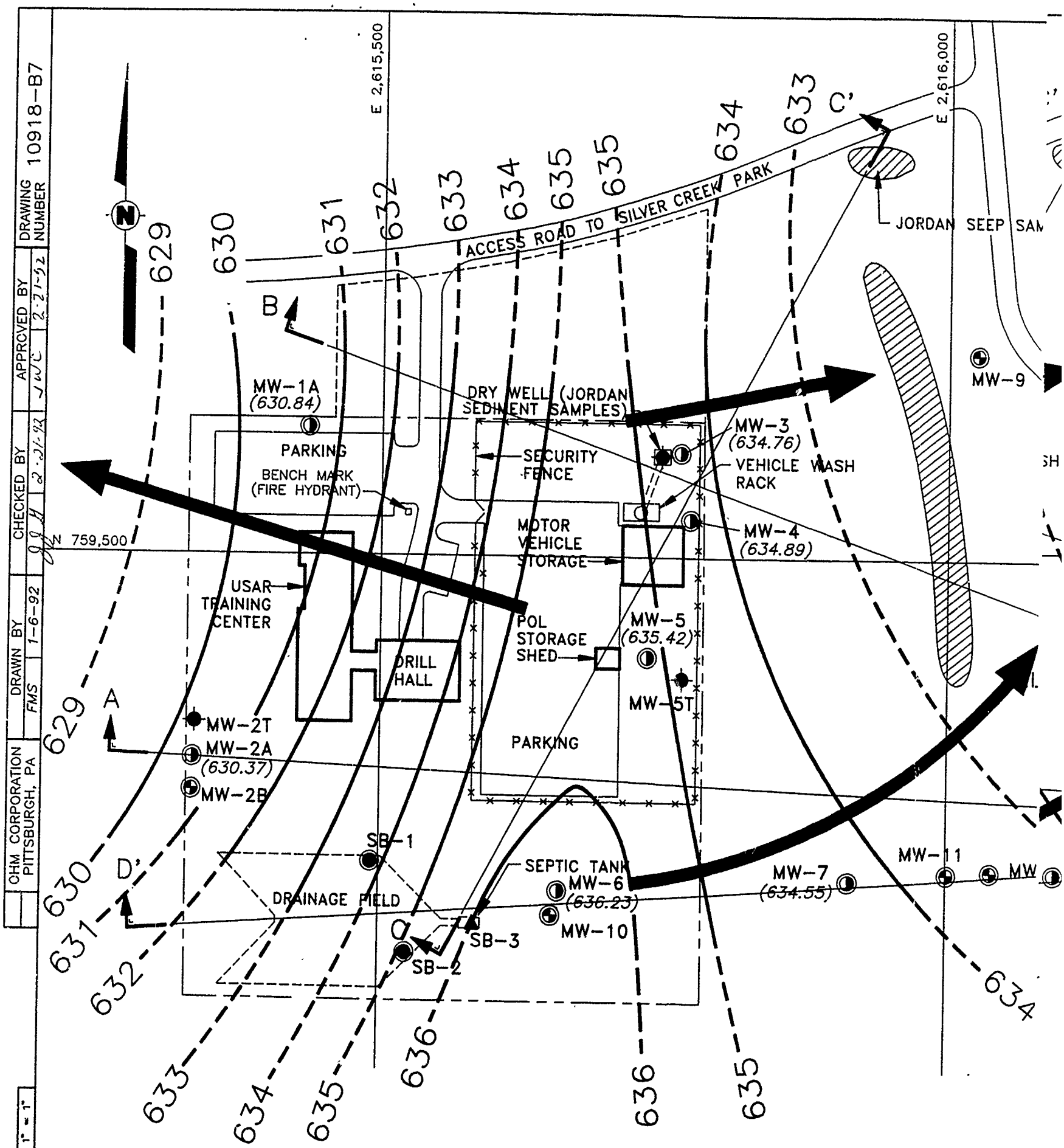
APPROVED BY JWC 2-21-92

CHECKED BY JJH 2-21-92

DRAWN BY FMS 1-6-92

CHM CORPORATION
PITTSBURGH, PA

PLOT SCALE: 1" = 1'



REFERENCE:

PLAN REPRODUCED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990

SCALE

0 100 200 FEET

NOTE:

MW-7
EXPLO
ALL O
BY WI
FEE

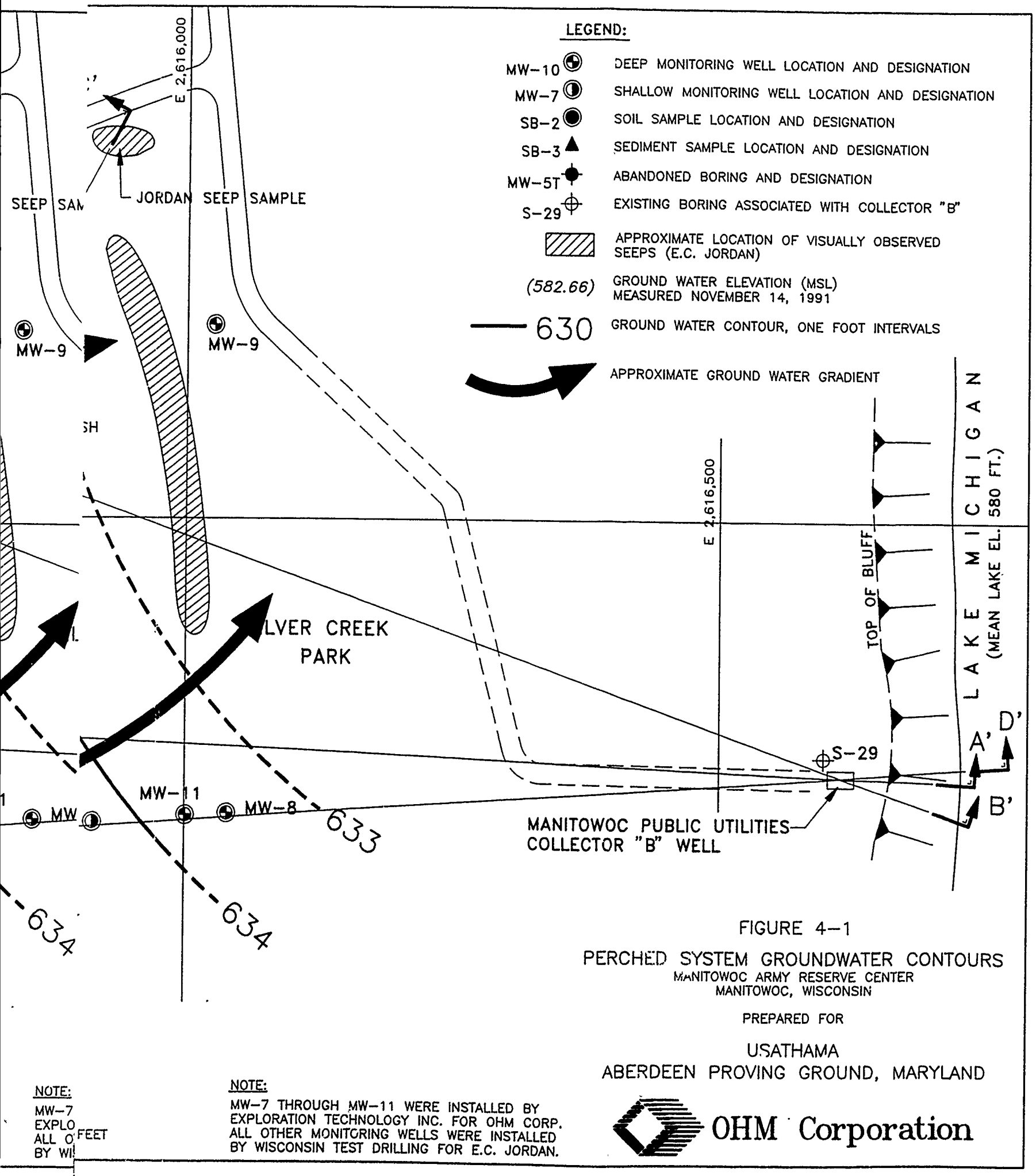


FIGURE 4-1

PERCHED SYSTEM GROUNDWATER CONTOURS
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

NOTE:
MW-7
EXPLO
ALL O FEET
BY WI

NOTE:
MW-7 THROUGH MW-11 WERE INSTALLED BY EXPLORATION TECHNOLOGY INC. FOR OHM CORP. ALL OTHER MONITORING WELLS WERE INSTALLED BY WISCONSIN TEST DRILLING FOR E.C. JORDAN.

DRAWING NUMBER 10918-B6

APPROVED BY 2-27-92

CHECKED BY 2-21-92

DRAWN BY FMS 1-6-92

OHM CORPORATION PITTSBURGH, PA

PLOT SCALE: 1" = 1'

E 2,615,500

E 2,616,000

N 759,500

ACCESS ROAD TO SILVER CREEK PARK

JORDAN SEEP SAM

MW-9 (587.74)

DRY WELL (JORDAN SEDIMENT SAMPLES)

MW-1A

MW-3

PARKING

BENCH MARK (FIRE HYDRANT)

SECURITY FENCE

VEHICLE WASH RACK

MOTOR VEHICLE STORAGE

MW-4

USAR TRAINING CENTER

DRILL HALL

POL STORAGE SHED

MW-5

MW-5T

PARKING

MW-2T

MW-2A

MW-2B (588.83)

SB-1

SEPTIC TANK

MW-6

MW-7

MW-11

MW-10 (587.05)

SB-3

SB-2

DRAINAGE FIELD

A

B

C

C'

D'

589

588

587

586

585

584

583

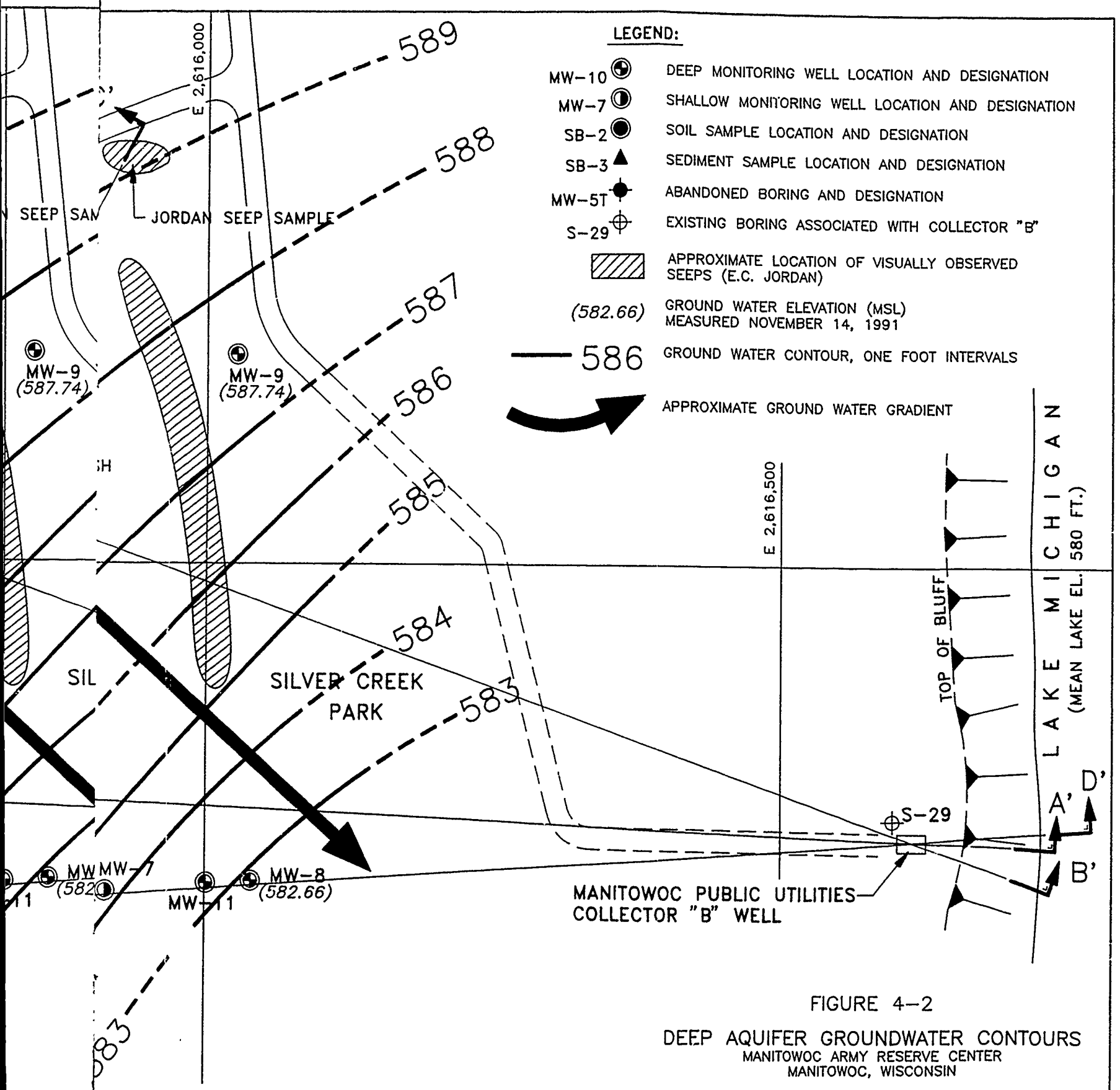
REFERENCE:

PLAN REPRODUCED FROM E.C. JORDAN FINAL SITE INVESTIGATION REPORT FOR MANITOWOC ARMY RESERVE CENTER, AUGUST 1990

SCALE

0 100 200 FEET

NOTE:



NOTE:
MW-7 THROUGH MW-11 WERE INSTALLED BY EXPLORATION TECHNOLOGY INC. FOR OHM CORP. ALL OTHER MONITORING WELLS WERE INSTALLED BY WISCONSIN TEST DRILLING FOR E.C. JORDAN.

FIGURE 4-2

DEEP AQUIFER GROUNDWATER CONTOURS
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation

APPENDIX A

BORING LOGS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Emergency Response
☐ Haz. Waste ☐ Underground Table
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
MANITOWOC ARMY RESERVE CENTER	N/A	MW-7

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
EXPLORATION TECHNOLOGY, INC. KEN TAYNOR	08/13/91	08/13/91	HOLLOW-STEM AUGER

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Dia.
		MW-7	~629 Feet MSL	644.09 Feet MSL	6 inches

Boring Location
State Plane 759,226.61 N, 2,615,913.24 E
SW 1/4 of NW 1/4 of Section 5, T 18 N, R 24 E
Lat 44° 03' 45" Long 87° 39' 35"

Local Grid Location (if applicable) ☐N ☐E
N/A Feet ☐S N/A Feet ☐W

County	DNR County Code	Civil Town/City/or Village
MANITOWOC	36	MANITOWOC

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
S-1	20	1 2 3 2	1	MEDIUM STIFF, DARK BROWN, ORGANIC SILT, SOME FINE SAND, MOIST 0.6'	ol			NEAT CEMENT	0					
				VERY LOOSE, BROWN, FINE SAND, SOME SILT 1.0'	sm									
S-2	22	0 1 1 2	2 3	VERY LOOSE, LIGHT BROWN, FINE SAND, TRACE SILT AND ROCK FRAGMENTS, MOIST 3.0'	sp				0					
				VERY SOFT, LIGHT BROWN, CLAY, SOME GRAVEL STRINGERS 4.0'	cl			BENTONITE PELLET SEAL						
S-3	17	2 3 4 5	4 5	LOOSE, DARK BROWN, MEDIUM TO COARSE SAND, MOIST 6.0'	sw				0					
S-4	20	3 6 4 7	6 7	LOOSE, LIGHT BROWN, FINE SAND, SOME SILT, TRACE GRAVEL, MOIST 7.0'	sm			SAND PACK	0					
			8	HARD, BROWN, SILT, MOIST	ml									
S-5	20	13 20 23 29	9 10	HARD, BROWN, SILT, MOIST	ML			WELL SCREEN	0	N/A	18.6%	N/A	N/A	99%
S-6	21	9 13 18 21	11 12	HARD, LIGHT BROWN, SILT, SOME SAND, MOIST	ml				0					

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature | Firm OHM Remediation Services Corp.

This Form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is separate offense, pursuant to ss 141.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400–122A 7–91

Boring Number MW–7

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			13											
			14											
			15					WELL SCREEN						
S–7	22	8 14 18 20	16	HARD, DARK BROWN, SILT, SOME SAND, MOIST	ml				0					
			17					SAND PACK						
			18											
			19											
			20											
S–8	22	9 21 36 37	21	VERY DENSE, LIGHT BROWN AND WHITE, SAND, SOME GRAVEL, MOIST	sw			BENTONITE SLURRY	0					
			22	22.0'										
				BOTTOM OF BORING 22.0'										

NOTE:

(1) USCS CLASSIFICATION IN CAPITAL LETTERS INDICATES GEOTECHNICAL LABORATORY ANALYSIS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Emergency Response
☐ Haz. Waste ☐ Underground Table
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
MANITOWOC ARMY RESERVE CENTER	N/A	MW-8

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
EXPLORATION TECHNOLOGY, INC. KEN TAYNOR	08/13/91 (M M/D D/Y Y)	08/15/91 (M M/D D/Y Y)	MUD ROTARY

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Dia.
		MW-8	~572 Feet MSL	634.69 Feet MSL	6 inches

Boring Location
State Plane 759,235.21 N, 2,616,040.05 E
SW 1/4 of NW 1/4 of Section 5, T 18 N, R 24 E
Lat 44° 03' 45" Long 87° 39' 35"

Local Grid Location (if applicable) ☐N ☐E
N/A Feet ☐S N/A Feet ☐W

County	DNR County Code	Civil Town/City/or Village
MANITOWOC	36	MANITOWOC

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
S-1	15	4 2 5 5	1	SOFT, DARK BROWN, ORGANIC SILT 0.8'	ol			NEAT CEMENT	0					
			2	LOOSE, BROWN, MEDIUM SAND, MOIST 2.2'	sp									
S-2	18	1 0 1 2	3	VERY SOFT, BROWN, SILT, SOME SAND, TRACE GRAVEL, MOIST 3.2'	ml				0					
			4											
S-3	18	3 4 10 17	5	STIFF, BROWN, SILTY CLAY, TRACE SAND, MOIST	cl				0					
			6											
S-4	22	8 16 25 26	7	HARD, BROWN, SILTY CLAY, MOIST 7.8'	cl			BENTONITE SLURRY	0					
			8											
S-5	20	7 15 20 23	9	HARD LIGHT BROWN, SILT, SOME FINE SAND	ml				0					
			10											
S-6	22	11 20 20 24	11	HARD LIGHT BROWN, SILT, SOME FINE SAND	ml				0					
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature | Firm OHM Remediation Services Corp.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-8

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			13											
			14											
			15											
S-7	23	10 27 27 27	16	VERY DENSE, LIGHT BROWN, SILTY SAND	sm				0					
			17											
			18											
			19											
			20											
S-8	23	14 25 27 31	21	VERY DENSE, BROWN, SILTY SAND, MOIST	sm				0					
			22											
			23											
			24											
			25											
				25.4'	sm									
S-9	22	10 17 24 27	26	DENSE, BROWN, MEDIUM SAND, SOME CLAY, MOIST	sc				N/A					
			27	(CLAY CONTENT INCREASING WITH DEPTH)										
			28											
			29											
			30											
S-10	20	18 23 31 32	31	VERY DENSE, LIGHT BROWN, COARSE SAND, TRACE SILT	SP				0	N/A	1.7%	N/A	N/A	7.3%
			32											

BENTONITE SLURRY

MW-8B

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-8

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			33											
			34											
			35											
S-11	20	14 27 36 40	36	VERY DENSE, LIGHT BROWN, MEDIUM SAND	sp				0					
			37											
			38											
			39											
			40											
S-12	22	14 37 42 55	41	VERY DENSE, LIGHT BROWN, MEDIUM SAND	sp				0					
			42											
			43											
			44											
			45											
S-13	20	16 30 31 51	46	VERY DENSE, GRAY AND BROWN, COARSE SAND AND GRAVEL, MOIST	gp				0					
			47											
			48											
			49											
			50											
S-14	19	21 32 33 27	51	VERY DENSE, GRAY AND BROWN, COARSE SAND AND GRAVEL, MOIST	gp				0					
			52											

BENTONITE SLURRY

MW-8C

State of Wisconsin
SOIL BORING LOG INFORMATION SUPPLEMENT

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-8

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			53											
			54	ENCOUNTERED GROUND WATER ⊖ ≅54.0'										
			55											
S-15	18	8 21 27 25	56	DENSE, GRAY TO BROWN, GRAVELLY COARSE SAND, WET (PARTICAL SIZE OF GRAVEL DECREASING WITH DEPTH)	gp				0					
			57											
			58											
			59											
			60											
S-16	14	14 57 73/0.5 -	61	VERY DENSE, GRAY TO BROWN, GRAVELLY COARSE SAND, WET (PARTICAL SIZE OF GRAVEL DECREASING WITH DEPTH)	gp			BENTONITE SLURRY	0					
			62											
			63											
			64											
			65											
S-17	14	25 45 43 47	66	VERY DENSE, GRAY TO BROWN, GRAVELLY COARSE SAND, WET (PARTICAL SIZE OF GRAVEL DECREASING WITH DEPTH)	gp				0					
			67											
			68											
			69											
			70											
S-18	20	22 42 50 50	71	HARD, BROWN, LEAN CLAY, SOME FINE SAND, WET	CL-ML			BENTONITE PELLET SEAL	0	N/A	12.4%	22%	11%	82.5%
			72											

MW-8D

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-8

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			73											
			74											
			75											
S-19	22	24 39 44 80/0.3"	76	HARD, BROWN, LEAN CLAY, TRACE SAND,WET	CL-ML			BENTONITE PELLET SEAL	0	N/A	15.2%	18%	13%	89.9%
			77											
			78											
			79											
			80											
S-20	22	21 31 45 31	81	81.0'	cl-ml				0					
			82	HARD, GRAY, SANDY CLAY	cl									
			83											
			84											
			85											
S-21	20	21 37 37 41	86	HARD, GRAY, SANDY CLAY 86.0'	cl			SAND PACK	0					
			87	VERY DENSE, GRAY, COARSE SAND, TRACE GRAVEL	sp									
			88											
			89											
			90											
S-22	20	27 34 31 38	91	VERY DENSE, GRAY, COARSE SAND, SOME CLAY LENSES THROUGHOUT	sc			WELL SCREEN	0					
			92											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-8

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			93											
			94											
			95											
S-23	10	29 47 38 47	96	VERY DENSE, GRAY, COARSE SAND	sp				0					
			97											
			98											
			99											
			100											
S-24	20	30 37 40 44	101	VERY DENSE, BROWN TO GRAY, SILTY FINE SAND	CL-ML				0	N/A	18.1%	N/A	N/A	27.6%
			102											
			103											
			104											
			105											
S-25	20	25 37 30 47	106	HARD, GRAY, SILTY CLAY, SOME FINE SAND	CL-ML			SAND PACK	0	N/A	15.7%	19%	12%	81.9%
			107											
				BOTTOM OF BORING 107.0'										

NOTE:

(1) USCS CLASSIFICATION IN CAPITAL LETTERS INDICATES GEOTECHNICAL LABORATORY ANALYSIS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Emergency Response
☐ Haz. Waste ☐ Underground Table
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name: MANITOWOC ARMY RESERVE CENTER	License/Permit/Monitoring Number: N/A		Boring Number: MW-9
Boring Drilled By (Firm name and name of crew chief): EXPLORATION TECHNOLOGY, INC. DAVE CREWS	Date Drilling Started: 08/22/91	Date Drilling Completed: 08/22/91	Drilling Method: MUD ROTARY
DNR Facility Well No.: ___	WI Unique Well No.: ___	Common Well Name: MW-9	Final Static Water Level: ~580 Feet MSL
Surface Elevation: 616.47 Feet MSL	Borehole Dia.: 6 inches		

Boring Location
State Plane 759,674.85 N, 2,616,026.04 E
SW 1/4 of NW 1/4 of Section 5, T 18 N, R 24 E
Lat 44° 03' 45" Long 87° 39' 35"

Local Grid Location (if applicable)
N/A Feet ☐S N/A Feet ☐W ☐N ☐E

County	DNR County Code	Civil Town/City/or Village
MANITOWOC	36	MANITOWOC

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			1	MEDIUM STIFF, DARK BROWN, ORGANIC SILT 0.6'	ol			NEAT CEMENT						
S-1	18	1 2 3 4	2	MEDIUM STIFF, BROWN, SANDY SILT 1.8'	ml				0					
S-2	16	7 5 6 7	3	STIFF, BROWN, SANDY SILT, SOME GRAVEL 2.6'	sm				0					
S-3	18	1 0 3 3	4 5 6	STIFF, BROWN, SANDY CLAY, SOME GRAVEL 3.8'	cl				0					
S-4	20	7 10 12 10	7 8	VERY SOFT, BROWN, LEAN CLAY, SOME GRAVEL	cl				0					
S-5	18	16 25 26 27	9 10	VERY STIFF, BROWN, LEAN CLAY, SOME GRAVEL	cl				0					
			11 12	HARD, DARK BROWN, LEAN CLAY	CL			BENTONITE SLURRY	0	N/A	15.6%	32%	14%	98.3%

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature | Firm: OHM Remediation Services Corp.

This Form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is separate offense, pursuant to ss 141.99 and 162.06, Wis. Stats.

MW-9A

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-9

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P 200
			13											
			14											
S-6	10	1 6 9 11	15 16	STIFF, GRAY, GRAVELLY CLAY	cl				0					
			17											
			18											
			19											
			20											
S-7	10	8 8 13 15	21	VERY STIFF, BROWN, SILTY CLAY, SOME GRAVEL	cl				0					
			22											
			23											
			24											
			25											
S-8	22	6 11 16 16	26	VERY STIFF, BROWN, SILTY CLAY, SOME GRAVEL	cl				0					
			27											
			28											
			29											
			30											
S-9	23	9 14 20 22	31	HARD, BROWN, SILTY CLAY, SOME GRAVEL	cl				0					
			32											

BENTONITE SLURRY

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-9

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			33											
			34											
			35											
S-10	18	8 7 10 11	36	VERY STIFF, BROWN, CLAYEY SILT, TRACE GRAVEL AND SAND	ml-gm				0					
			37											
			38											
			39											
			40											
S-11	22	9 13 20 20	41	HARD, BROWN, CLAYEY SILT, TRACE GRAVEL AND SAND, (SAND CONTENT INCREASING WITH DEPTH)	ml-gm			BENTONITE SLURRY	0					
			42											
			43											
			44											
			45											
S-12	22	10 15 23 28	46	HARD, BROWN, CLAYEY SILT, TRACE GRAVEL AND SAND, (SAND CONTENT INCREASING WITH DEPTH)	ml-gm				0					
			47											
			48											
			49											
			50											
S-13	22	6 11 13 16	51	HARD BROWN, CLAYEY SILT, SOME SAND, TRACE GRAVEL (SAND CONTENT INCREASING WITH DEPTH)	ml-gm				0					
			52											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A
7-91

Boring Number MW-9

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			53											
			54											
			55											
S-14	16	26 27 26 38	56	VERY DENSE, GRAY, COARSE SAND, SOME GRAVEL	sp				0					
			57											
			58											
			59											
			60											
S-15	16	32 37 44 44	61	VERY DENSE, GRAY, COARSE SAND, SOME GRAVEL (GRAVEL CONTENT INCREASING WITH DEPTH)	sp			BENTONITE SLURRY	0					
			62											
			63											
			64											
			65											
S-16	14	35 53 54 42	66	VERY DENSE, GRAY, COARSE SAND, SOME GRAVEL (GRAVEL CONTENT INCREASING WITH DEPTH)	sp				0					
			67											
			68											
			69											
			70											
S-17	22	19 22 30 34	71	HARD, BROWN, LEAN CLAY	CL			BENTONITE PELLET SEAL	0	N/A	17.4%	24%	10%	97.6%
			72											

MW-9D

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400–122A 7–91

Boring Number MW–9

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			73											
			74											
			75											
S–18	22	20 28 42 22	76	HARD, BROWN TO GRAY, LEAN CLAY	cl			SAND PACK	0					
			77											
			78											
			79											
			80											
S–19	18	25 21 40 40	81	HARD, BROWN, SILT, SOME FINE SAND	ML				0	N/A	18.1%	N/A	N/A	71.4%
			82											
			83											
			84											
			85											
S–20	16	25 21 35 29	86	HARD, BROWN, SILT, SOME FINE SAND	ml				0					
			87											
			88											
			89											
			90											
S–21	14	52 57 49 49	91	VERY DENSE, BROWN, SANDY GRAVEL, SOME SILT	gm				0					
			92											

WELL SCREEN

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-9

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			93					WELL SCREEN						
			94											
			95											
S-22	16	41 45 49 45	96	VERY DENSE, BROWN, SANDY GRAVEL, SOME SILT	GM			SAND PACK	0	N/A	7.8%	N/A	N/A	20.9%
			97	BOTTOM OF BORING 97.0'										

NOTE:

(1) USCS CLASSIFICATION IN CAPITAL LETTERS INDICATES GEOTECHNICAL LABORATORY ANALYSIS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Emergency Response
☐ Haz. Waste ☐ Underground Table
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
MANITOWOC ARMY RESERVE CENTER	N/A	MW-10

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
EXPLORATION TECHNOLOGY, INC. DAVE CREWS	08/20/91	08/21/91	MUD ROTARY

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Dia.
		MW-10	~580 Feet MSL	650.62 Feet MSL	6 inches

Boring Location
State Plane 759,199.19 N, 2,615,652.51 E
SW 1/4 of NW 1/4 of Section 5, T 18 N, R 24 E
Lat 44° 03' 45" Long 87° 39' 35"

Local Grid Location (if applicable)
N/A Feet ☐S N/A Feet ☐W ☐N ☐E

County	DNR County Code	Civil Town/City/or Village
MANITOWOC	36	MANITOWOC

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
S-1	18	3 4 4 4	1	MEDIUM STIFF, DARK BROWN, ORGANIC SILT 0.8'	OL			CEMENT	0					
S-2	19	6 9 11 16	2 3 4	MEDIUM DENSE, LIGHT BROWN, SAND, SOME PEBBLES 4.0'	SP				0					
S-3	19	1 1 1 2	5 6	VERY LOOSE, WELL-GRADED, SAND, TRACE SILT	SW-SM			BENTONITE SLURRY	0					
S-4	19	2 2 1 2	7 8	VERY LOOSE, WELL-GRADED, SAND, TRACE SILT	SW-SM				0					
S-5	18	1 1 0 1	9 10	VERY LOOSE, WELL-GRADED, SAND, TRACE SILT	SW-SM				0	N/A	6.8%	N/A	N/A	11.0%
			11 12											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature | Firm OHM Remediation Services Corp.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			13											
			14											
			15											
S-6	10	5 8 10 11	16	MEDIUM DENSE, LIGHT BROWN, SAND, SOME GRAVEL	sp				0					
			17											
			18											
			19											
			20											
S-7	10	8 10 11 15	21	VERY STIFF, BROWN, SILTY CLAY	cl				0					
			22											
			23											
			24											
			25											
S-8	18	11 14 16 16	26	MEDIUM DENSE, BROWN, SAND, SOME CLAY	sc				0					
			27											
			28											
			29											
			30											
S-9	20	6 4 14 14	31	vERY STIFF, BROWN, SILT AND CLAY	ml-cl				0					
			32											

BENTONITE SLURRY

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			33											
			34											
			35											
S-10	22	10 10 10 10	36	VERY STIFF, GRAY, SILTY CLAY	cl				0					
			37											
			38											
			39											
			40											
S-11	22	8 12 13 13	41	VERY STIFF, GRAY, SILTY CLAY	CL				0	N/A	19.2%	25%	14%	99.2%
			42											
			43											
			44											
			45											
S-12	6	100/0.5'	46	VERY DENSE, LIGHT GRAY GRAVEL, SOME PEBBLES	gp				0					
			47											
			48											
			49											
			50											
S-13	20	12 19 18 33	51	DENSE, LIGHT BROWN, SAND, SOME SILT	sm				0					
			52											

BENTONITE SLURRY

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P 200
			53											
			54											
			55											
S-14	18	25 20 25 80/0.0'	56	DENSE, LIGHT BROWN, SAND, SOME SILT	sm				0					
			57											
			58											
			59											
			60											
S-15	4	100/0.75'	61	VERY DENSE, LIGHT GRAY GRAVEL, SOME PEBBLES	gp				0					
			62											
			63											
			64											
			65											
S-16	10	12 14 15 17	66	VERY STIFF, BROWN, CLAY, SOME SILT 66.0' MEDIUM DENSE BROWN, COARSE, SAND, SOME GRAVEL	cl sp				0					
			67											
			68											
			69											
			70											
S-17	10	29 28 33 25	71	VERY DENSE, LIGHT GRAY, GRAVEL	gp				0					
			72											

BENTONITE SLURRY

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			73											
			74											
			75											
S-18	12	26 34 23 32	76	VERY DENSE, GRAY, GRAVEL	gp				0					
			77											
			78											
			79											
			80					BENTONITE SLURRY						
S-19	10	30 36 40 34	81	VERY DENSE, BROWN, CLAYEY GRAVEL, SOME SAND	GC				0	N/A	8.1%	N/A	N/A	25.0%
			82											
			83											
			84											
			85											
S-20	20	28 34 60 68	86	HARD, BROWN, SANDY CLAY	CL			BENTONITE PELLET SEAL	0	N/A	12.7%	22%	11%	71.9%
			87											
			88											
			89											
			90											
S-21	20	12 23 25 29	91	HARD, BROWN, SANDY CLAY	cl				0					
			92					SAND PACK						

MW-10E

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: LIQUID LIMIT	SOIL PROPERTIES: PLASTIC LIMIT	SOIL PROPERTIES: P 200
			93											
			94											
			95											
S-22	20	22 26 40 38	96	HARD, BROWN, SANDY CLAY	cl				0					
			97											
			98											
			99											
			100											
S-23	22	19 24 36 35	101	HARD, GRAY, SILT, SOME SAND	ml				0					
			102											
			103											
			104											
			105											
S-24	15	23 24 32 37	106	VERY DENSE, GRAY, SAND, SOME SILT	sm				0					
			107											
			108											
			109											
			110											
S-25	18	14 27 23 33	111	VERY DENSE, GRAY, SAND, SOME SILT	sm				0					
			112											

SAND PACK

WELL SCREEN

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-10

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			113											
			114											
			115											
S-26	15	27 31 33 35	116	VERY DENSE, GRAY, SAND, SOME SILT	SM			WELL SCREEN	0	N/A	16.1%	N/A	N/A	14.8%
			117											
			118											
			119											
			120											
S-27	16	30 29 30 43	121	VERY DENSE, GRAY, SAND, SOME SILT	SM			SAND PACK	0	N/A	13.3%	N/A	N/A	14.8%
			122	BOTTOM OF BORING 122.0'										

NOTE:

(1) USCS CLASSIFICATION IN CAPITAL LETTERS INDICATES GEOTECHNICAL LABORATORY ANALYSIS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Emergency Response
☐ Haz. Waste ☐ Underground Table
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION

Form 4400–122 7–91

Facility/Project Name: MANITOWOC ARMY RESERVE CENTER	License/Permit/Monitoring Number: N/A		Boring Number: MW–11
Boring Drilled By (Firm name and name of crew chief): EXPLORATION TECHNOLOGY, INC. DAVE CREWS	Date Drilling Started: 08/26/91	Date Drilling Completed: 08/27/91	Drilling Method: MUD ROTARY
DNR Facility Well No.: ___	WI Unique Well No.: ___	Common Well Name: MW–11	Final Static Water Level: ~590 Feet MSL
Surface Elevation: 638.45 Feet MSL	Borehole Dia.: 6 inches		
Boring Location: State Plane 759,232.52 N, 2,616,001.54 E; SW 1/4 of NW 1/4 of Section 5, T 18 N, R 24 E	Lat 44° 03' 45" Long 87° 39' 35"	Local Grid Location (if applicable): N/A Feet ☐N ☐S N/A Feet ☐E ☐W	
County: MANITOWOC	DNR County Code: 36	Civil Town/City/or Village: MANITOWOC	

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
S–1	15	3 4 4 5	1	MEDIUM STIFF, DARK BROWN, ORGANIC SILT 0.5'	ol			NEAT CEMENT	0					
			2	LOOSE, BROWN, SAND, SOME CLAY	sc									
S–2	15	2 3 6 8	3	LOOSE, BROWN, SAND, SOME CLAY 3.0'	sc				0					
			4	LOOSE, LIGHT BROWN, SAND, SOME SILT	sm									
S–3	NO SAMPLE OBTAINED		5	(ENCOUNTERED BOULDER AT 4.0 FEET DURING SAMPLING)					N/A					
			6											
S–4	15	12 16 36 27	7	VERY DENSE, SAND, SOME SILT	sm			BENTONITE SLURRY	0					
			8											
S–5	22	11 17 20 29	9	DENSE, BROWN, SAND, SOME SILT	sm				0					
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature | Firm: OHM Remediation Services Corp.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400–122A 7–91

Boring Number MW–11

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			13											
S–6	18	17 19 36 32	14	VERY DENSE, LIGHT BROWN, SAND AND SILT, TRACE CLAY	sm			BENTONITE SLURRY	0					
			15											
			16											
			17											
			18											
S–7	16	18 26 26 38	19	VERY DENSE, LIGHT BROWN, SAND AND SILT, TRACE CLAY	sm				0					
			20											
			21											
			22											
			23											
S–8	16	18 26 28 24	24	VERY DENSE, LIGHT BROWN, SAND AND SILT, TRACE CLAY	sm				0					
			25					BENTONITE PELLET SEAL						
			26											
			27											
			28											
S–9	16	11 22 34 43	29	HARD, BROWN, CLAY AND SILT	CL-ML				0	N/A	13.9%	18%	13%	94.2%
			30					SAND PACK						
			31											
			32											

MW–11B

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400–122A 7–91

Boring Number MW–11

SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW CLOUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	U S C S (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			33											
S–10	20	17 40 55 76	34	VERY DENSE, BROWN, SILTY, CLAYEY SAND, SOME GRAVEL	SC–SM				0	N/A	10.3%	N/A	N/A	13.2%
			35											
			36											
			37											
			38											
S–11	16	25 35 32 38	39	VERY DENSE, BROWN, SILTY, CLAYEY SAND, SOME GRAVEL	sc–sm				0					
			40											
			41											
			42											
			43											
S–12	18	13 18 38 43	44	VERY DENSE, BROWN, COARSE SAND, SOME SILT	sm				0					
			45											
			46											
			47											
			48											
S–13	18	34 50 34 50	49	VERY DENSE, GRAY TO BROWN, COARSE SAND, SOME GRAVEL	sw				0					
			50											
			51											
			52					SAND PACK						

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number MW-11

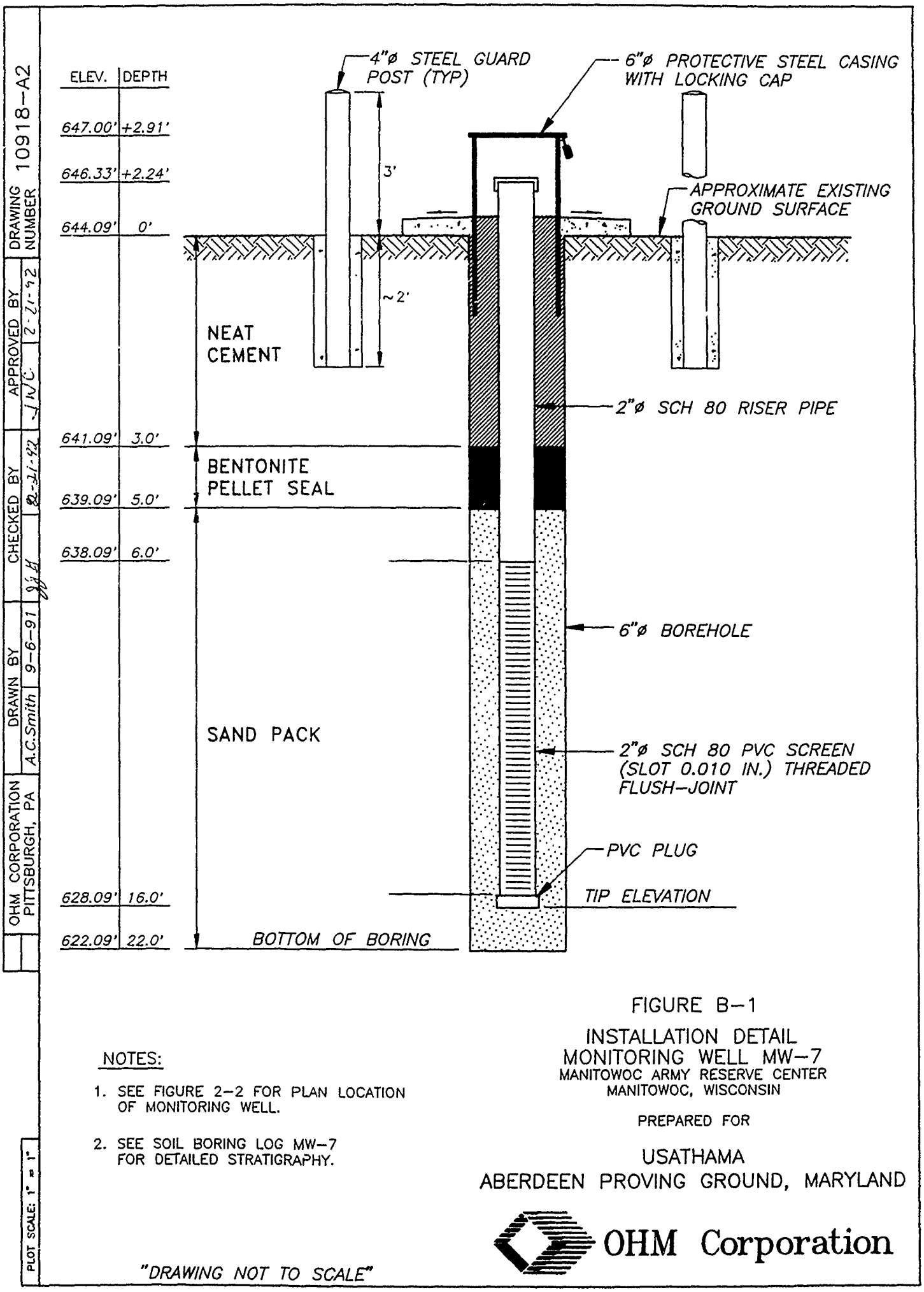
SAMPLE NUMBER	SAMPLE LENGTH REC. (in)	BLOW COUNTS	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS (1)	GRAPHIC LOG	WELL DIAGRAM	WELL DESCRIPTION	PID/FID (ppm)	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200
			53					SAND PACK						
S-14	18	41 70 44 67	54	VERY DENSE, BROWN, WELL-GRADED, GRAVEL, SOME SILT AND SAND	gw-gm				0					
			55											
			56											
			57											
			58											
S-15	14	36 40 40 43	59	VERY DENSE, BROWN, WELL-GRADED, GRAVEL, SOME SILT AND SAND	gw-gm				0					
			60											
			61											
			62											
			63											
S-16	14	24 34 26 23	64	VERY DENSE, BROWN, WELL-GRADED, GRAVEL, SOME SILT AND SAND	GW-GM				0	N/A	6.5%	N/A	N/A	10.0%
			65											
			66											
			67											
			68											
S-17	16	30 17 24 28	69	69.0'										
			70	HARD, BROWN, SILT	ML			SAND PACK	0	N/A	15.2%	N/A	N/A	87.4%
			72	BOTTOM OF BORING 70.0'										

NOTE:
(1) JSCS CLASSIFICATION IN CAPITAL LETTERS INDICATES GEOTECHNICAL LABORATORY ANALYSIS

WELL SCREEN

APPENDIX B

WELL CONSTRUCTION LOGS, WELL DEVELOPMENT DATA, AND OTHER FIELD DATA



"DRAWING NOT TO SCALE"

NOTES:

1. SEE FIGURE 2-2 FOR PLAN LOCATION OF MONITORING WELL.
2. SEE SOIL BORING LOG MW-7 FOR DETAILED STRATIGRAPHY.

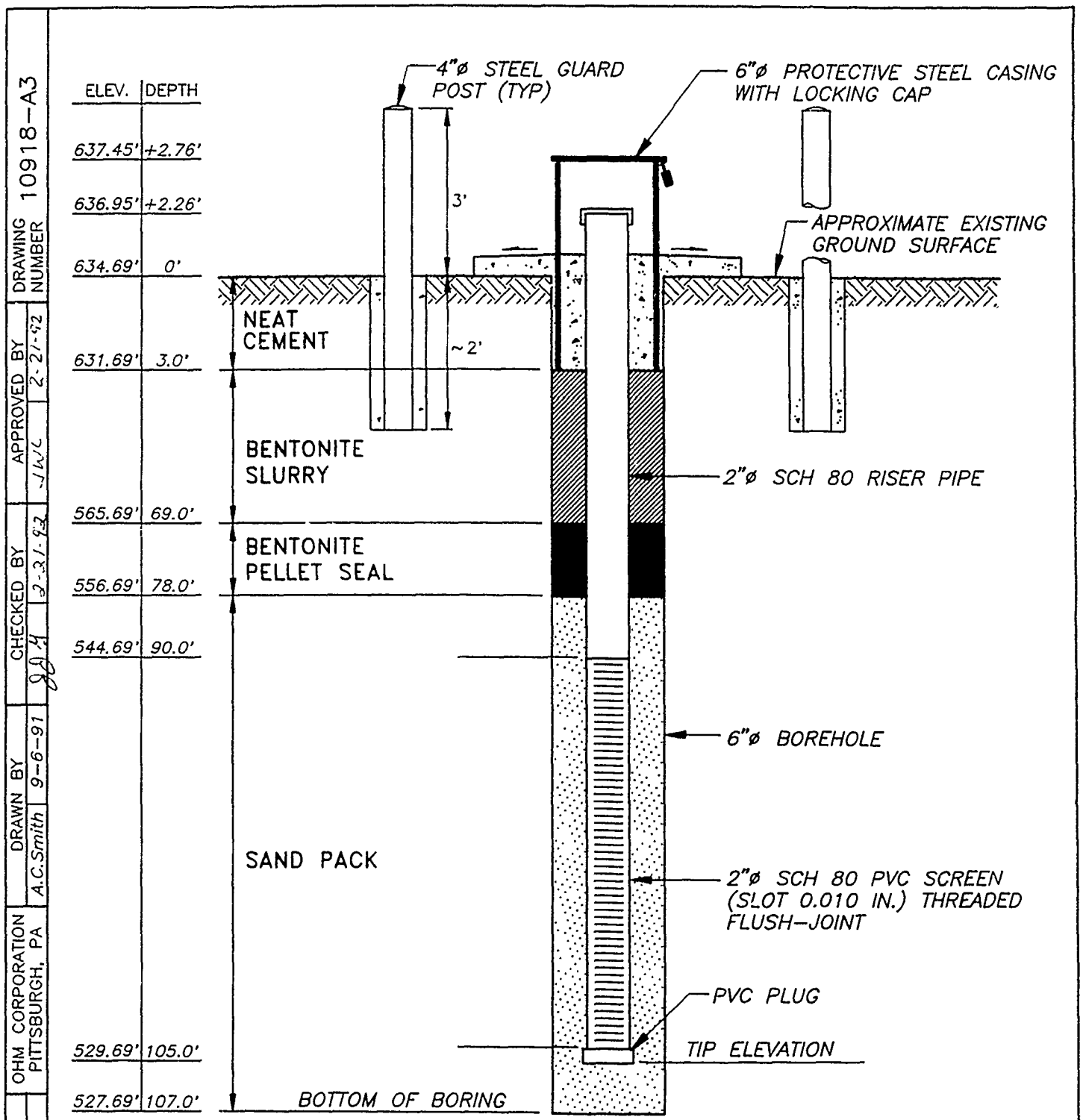
FIGURE B-1

INSTALLATION DETAIL
MONITORING WELL MW-7
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation



"DRAWING NOT TO SCALE"

NOTES:

1. SEE FIGURE 2-2 FOR PLAN LOCATION OF MONITORING WELL.
2. SEE SOIL BORING LOG MW-8 FOR DETAILED STRATIGRAPHY.

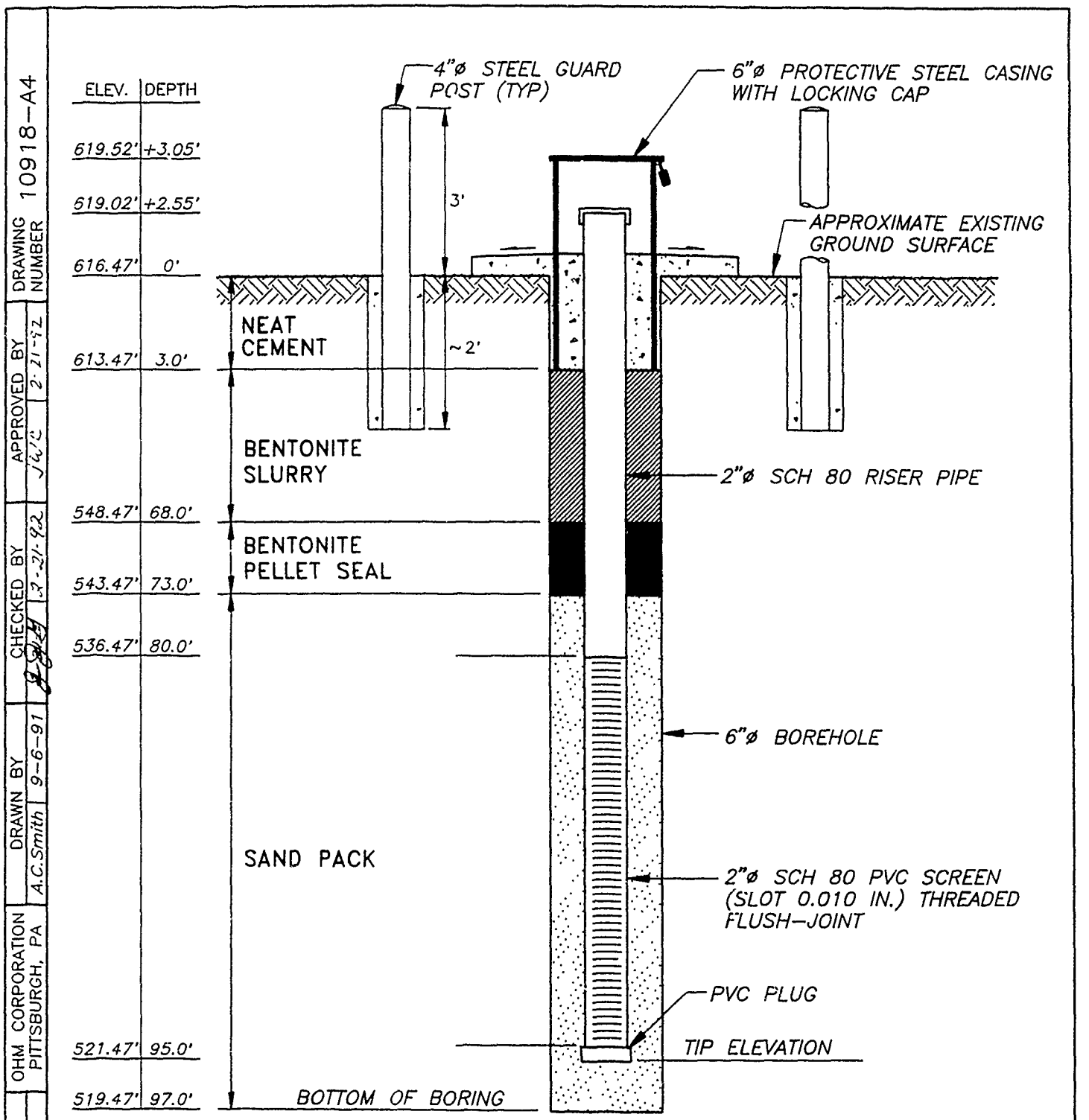
FIGURE B-2

INSTALLATION DETAIL
MONITORING WELL MW-8
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation



NOTES:

1. SEE FIGURE 2-2 FOR PLAN LOCATION OF MONITORING WELL.
2. SEE SOIL BORING LOG MW-9 FOR DETAILED STRATIGRAPHY.

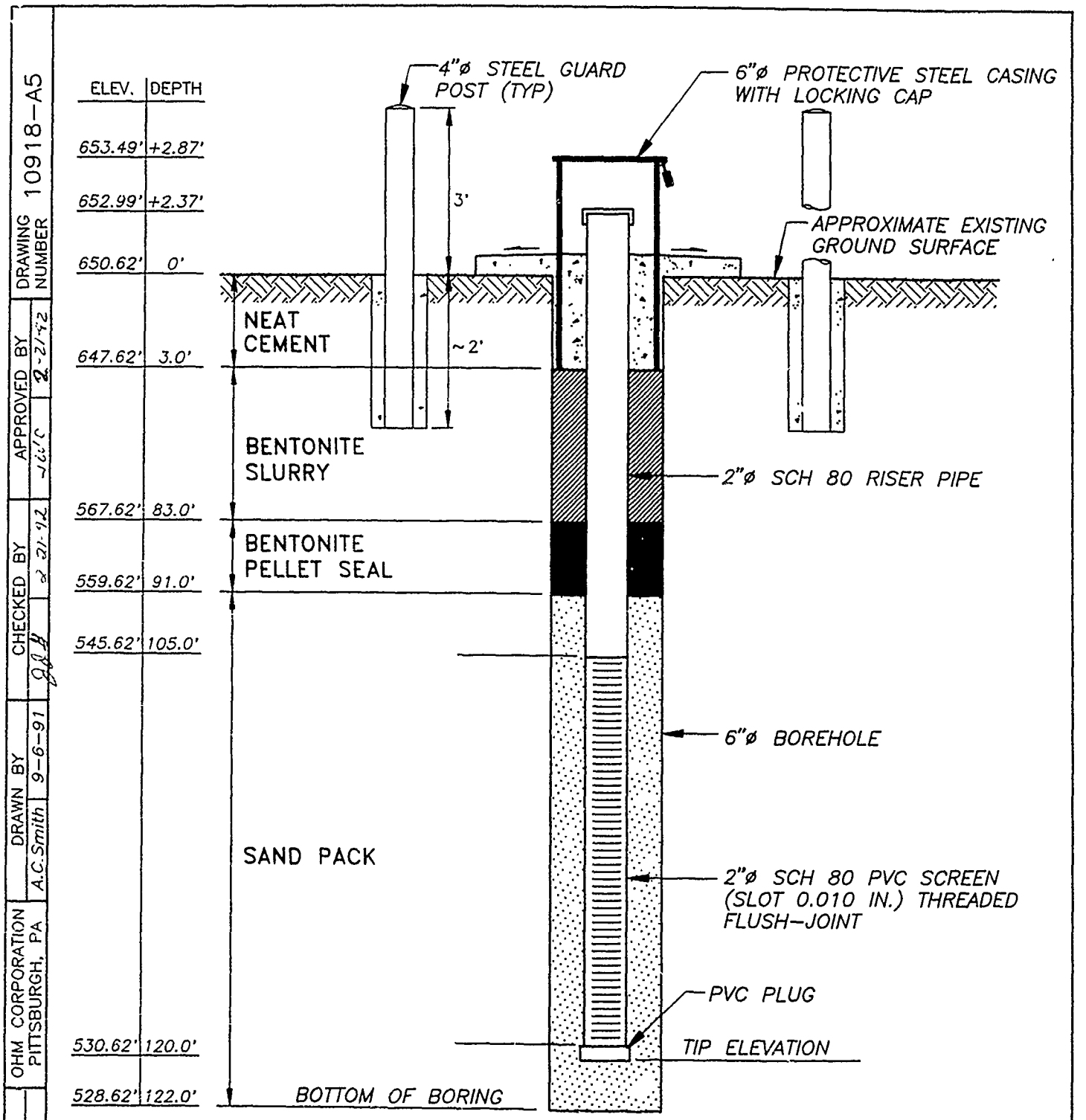
FIGURE B-3

INSTALLATION DETAIL
MONITORING WELL MW-9
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation



NOTES:

1. SEE FIGURE 2-2 FOR PLAN LOCATION OF MONITORING WELL.
2. SEE SOIL BORING LOG MW-10 FOR DETAILED STRATIGRAPHY.

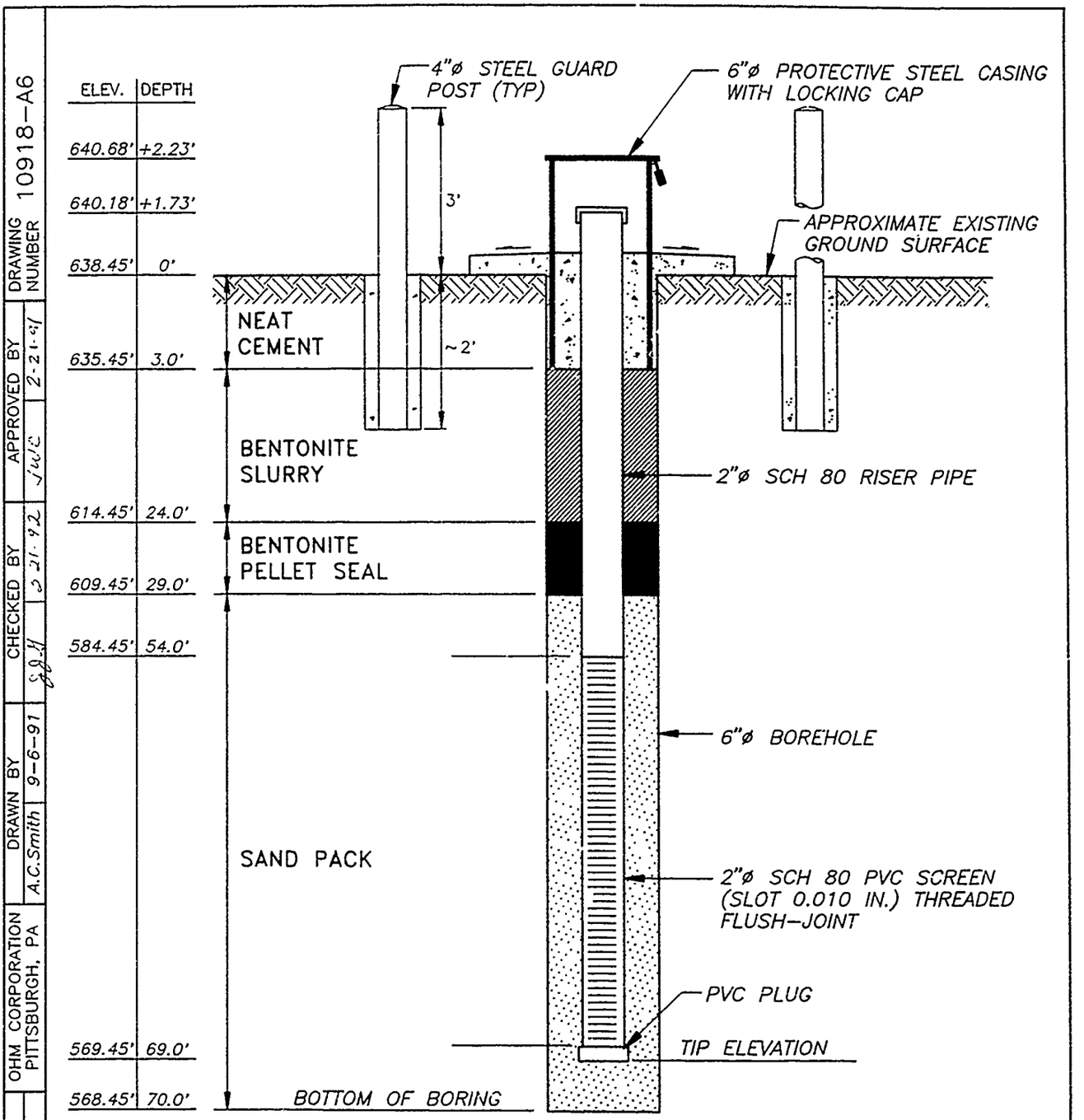
FIGURE B-4

INSTALLATION DETAIL
MONITORING WELL MW-10
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

OHM Corporation



"DRAWING NOT TO SCALE"

FIGURE B-5

INSTALLATION DETAIL
MONITORING WELL MW-11
MANITOWOC ARMY RESERVE CENTER
MANITOWOC, WISCONSIN

PREPARED FOR

USATHAMA
ABERDEEN PROVING GROUND, MARYLAND

NOTES:

1. SEE FIGURE 2-2 FOR PLAN LOCATION OF MONITORING WELL.
2. SEE SOIL BORING LOG MW-11 FOR DETAILED STRATIGRAPHY.

OHM Corporation

MARC WELL DEVELOPMENT DATA

MONITORING WELL NUMBER.....MW-7

DATE INSTALLED.....8/13/91

DATE DEVELOPED.....8/20/91

STATIC WATER LEVEL (BEFORE DEVELOPMENT).....~636 MEAN SEA LEVEL (MSL)

STATIC WATER LEVEL (AFTER DEVELOPMENT).....~629 MSL

FLUID LOSS DURING DRILLING.....N/A

QUANTITY OF WATER IN WELL AND ANNULUS.....4.5 gallons

(BOTTOM DEPTH (FEET) - STATIC WATER LEVEL (FEET)) x 0.163 GAL/FEET] + [(AREA OF BOREHOLE (FT^2) - AREA OF MW (FT^2)) x DEPTH OF SANDPACK (FT) x POROSITY 0.30 x 7.48 GAL/FT^3] = STANDING VOLUME

(16 - 8) x 0.163] + [(0.20 - 0.02) x 8 x 0.30 x 7.48] = 4.5 GALLONS

SAMPLE NUMBER	SPECIFIC CONDUCTIVITY (µmho/cm) (x1000)	pH	TEMPERATURE (°F)	CUMULATIVE GALLONS REMOVED	DEVELOPMENT WATER COMMENTS
1	0.51	7.70	65.3	0	Brown
2	0.31	7.69	65.1	3.5	Brown
3	0.31	7.81	64.2	5.0	Brown
4	0.33	7.84	63.9	7.0	Brown
5	0.33	7.88	63.7	8.0	Milky
6	0.31	7.90	63.5	11.0	Milky "Dry"

TOTAL DEPTH OF WELL.....16 feet

SCREEN LENGTH.....10 feet

DEPTH TO SEDIMENT (BEFORE DEVELOPMENT).....~15.5 feet

DEPTH TO SEDIMENT (AFTER DEVELOPMENT).....~15.9 feet

TYPE OF DEVELOPMENT METHOD.....Bottom Bailer

CAPACITY OF BAILER.....~0.33 gallon

LENGTH OF CASING STICK-UP.....2.91 feet

TYPICAL BAILING RATE.....~1 gallon/hour

ESTIMATE OF RECHARGE RATE.....<0.5 gallon/hour

QUANTITY OF WATER REMOVED.....11.0 gallons

TOTAL DEVELOPMENT TIME.....4 hours

STANDING WATER TIMES FIVE WELL VOLUMES.....22.7 gallons

MARC WELL DEVELOPMENT DATA

MONITORING WELL NUMBER.....MW-8

DATE INSTALLED.....8/15/91

DATE DEVELOPED.....8/20/91

STATIC WATER LEVEL (BEFORE DEVELOPMENT)..... .....~582 MEAN SEA LEVEL (MSL)

STATIC WATER LEVEL (AFTER DEVELOPMENT).....~572 MSL

FLUID LOSS DURING DRILLING.....~30 gallons

QUANTITY OF WATER IN WELL AND ANNULUS.....19.38 gallons

(BOTTOM DEPTH (FEET) - STATIC WATER LEVEL (FEET)) x 0.163 GAL/FEET] + [(AREA OF BOREHOLE (FT^2) - AREA OF MW (FT^2)) x DEPTH OF SANDPACK (FT) x POROSITY 0.30 x 7.48 GAL/FT^3] = STANDING VOLUME

(105 - 53) x 0.163] + [(0.20 - 0.02) x 27 x 0.30 x 7.48] = 19.38 GALLONS

SAMPLE NUMBER	SPECIFIC CONDUCTIVITY (µmho/cm) (x1000)	pH	TEMPERATURE o (F)	CUMULATIVE GALLONS REMOVED	DEVELOPMENT WATER COMMENTS
1	0.72	8.29	64.9	0	Murky Brown
2	0.67	8.35	64.5	25	Brown
3	0.58	8.22	64.0	35	Cloudy
4	0.67	8.27	63.7	55	Milky
5	0.66	8.29	63.4	62	Clear
6	0.65	8.29	63.5	67	Clear
7	0.66	8.29	63.4	70	Clear

TOTAL DEPTH OF WELL.....105 feet

SCREEN LENGTH.....15 feet

DEPTH TO SEDIMENT (BEFORE DEVELOPMENT).....~104 feet

DEPTH TO SEDIMENT (AFTER DEVELOPMENT).....~104.5 feet

TYPE OF DEVELOPMENT METHOD.....BK Pump

CAPACITY OF PUMP.....~50 gallons/hour

LENGTH OF CASING STICK-UP.....2.76 feet

TYPICAL PUMPING RATE.....~30 gallons/hour

ESTIMATE OF RECHARGE RATE.....~60 gallons/hour

QUANTITY OF WATER REMOVED.....70 gallons

TOTAL DEVELOPMENT TIME.....3 hours

STANDING WATER TIMES FIVE WELL VOLUMES.....96.90 gallons

MARC WELL DEVELOPMENT DATA

MONITORING WELL NUMBER.....MW-9

DATE INSTALLED.....8/22/91

DATE DEVELOPED.....8/28/91

STATIC WATER LEVEL (BEFORE DEVELOPMENT).....~586 MEAN SEA LEVEL (MSL)

STATIC WATER LEVEL (AFTER DEVELOPMENT).....~580 MSL

FLUID LOSS DURING DRILLING.....~20 gallons

QUANTITY OF WATER IN WELL AND ANNULUS.....19.48 gallons

[(BOTTOM DEPTH (FEET) - STATIC WATER LEVEL (FEET)) x 0.163 GAL/FEET] + [(AREA OF BOREHOLE (FT^2) - AREA OF MW (FT^2)) x DEPTH OF SANDPACK (FT) x POROSITY 0.30 x 7.48 GAL/FT^3] = STANDING VOLUME

[(95 - 30) x 0.163] + [(0.20 - 0.02) x 22 x 0.30 x 7.48] = 19.48 GALLONS

SAMPLE NUMBER	SPECIFIC CONDUCTIVITY (µmho/cm) (x1000)	pH	TEMPERATURE (°F)	CUMULATIVE GALLONS REMOVED	DEVELOPMENT WATER COMMENTS
1	No readings recorded.	8.26	67.3	0	Muddy
2	Equipment failure.	8.83	67.0	25	Brown
3		7.80	65.9	50	Brown
4		7.78	65.4	75	Gray
5		7.75	65.3	100	Milky
6		7.74	65.1	125	Milky
7		7.74	64.9	150	Clear
8		7.74	64.9	175	Clear
9		7.74	64.7	200	Clear

TOTAL DEPTH OF WELL.....95 feet

SCREEN LENGTH.....15 feet

DEPTH TO SEDIMENT (BEFORE DEVELOPMENT).....~93 feet

DEPTH TO SEDIMENT (AFTER DEVELOPMENT).....~94 feet

TYPE OF DEVELOPMENT METHOD.....BK Pump

CAPACITY OF PUMP.....~50 gallons/hour

LENGTH OF CASING STICK-UP.....3.05 feet

TYPICAL PUMPING RATE.....~30 gallons/hour

ESTIMATE OF RECHARGE RATE.....~20 gallons/hour

QUANTITY OF WATER REMOVED.....200 gallons

TOTAL DEVELOPMENT TIME.....~5 hours

STANDING WATER TIMES FIVE WELL VOLUMES.....97.40 gallons

MARC WELL DEVELOPMENT DATA

MONITORING WELL NUMBER.....MW-10

DATE INSTALLED.....8/21/91

DATE DEVELOPED.....8/26/91

STATIC WATER LEVEL (BEFORE DEVELOPMENT).....~585 MEAN SEA LEVEL (MSL)

STATIC WATER LEVEL (AFTER DEVELOPMENT).....~580 MSL

FLUID LOSS DURING DRILLING.....~30 gallons

QUANTITY OF WATER IN WELL AND ANNULUS.....20.68 gallons

(BOTTOM DEPTH (FEET)	- STATIC WATER LEVEL (FEET))	x 0.163 GAL/FEET] + [(AREA OF BOREHOLE (FT^2)	- AREA OF MW (FT^2))	x DEPTH OF SANDPACK (FT)	x POROSITY 0.30	x 7.48 GAL/FT^3]	= STANDING VOLUME
(120	- 65)	x 0.163] + [(0.20	- 0.02)	x 29	x 0.30	x 7.48]	= 20.68 GALLONS

SAMPLE NUMBER	SPECIFIC CONDUCTIVITY (µmho/cm) (x1000)	pH	TEMPERATURE (^{o}F)	CUMULATIVE GALLONS REMOVED	DEVELOPMENT WATER COMMENTS
1	0.84	7.79	67.0	0	Brown
2	0.82	7.97	69.5	50	Brown
3	0.81	7.83	68.9	100	Milky
4	0 81	7.80	68.2	150	Clear
5	0.81	7.80	68.2	200	Clear

TOTAL DEPTH OF WELL.....120 feet

SCREEN LENGTH.....15 feet

DEPTH TO SEDIMENT (BEFORE DEVELOPMENT).....~118 feet

DEPTH TO SEDIMENT (AFTER DEVELOPMENT).....~119 feet

TYPE OF DEVELOPMENT METHOD.....BK Pump

CAPACITY OF PUMP.....~50 gallons/hour

LENGTH OF CASINC STICK-UP.....2.87 feet

TYPICAL PUMPING RATE.....~30 gallons/hour

ESTIMATE OF RECHARGE RATE.....~20 gallons/hour

QUANTITY OF WATER REMOVED.....200 gallons

TOTAL DEVELOPMENT TIME.....~5 hours

STANDING WATER TIMES FIVE WELL VOLUMES.....103.40 gallons

MARC WELL DEVELOPMENT DATA

MONITORING WELL NUMBER.....MW-11

DATE INSTALLED.....8/27/91

DATE DEVELOPED.....8/29/91

STATIC WATER LEVEL (BEFORE DEVELOPMENT).....~598 MEAN SEA LEVEL (MSL)

STATIC WATER LEVEL (AFTER DEVELOPMENT).....~590 MSL

FLUID LOSS DURING DRILLING.....~20 gallons

QUANTITY OF WATER IN WELL AND ANNULUS.....16.44 gallons

[(BOTTOM DEPTH (FEET) - STATIC WATER LEVEL (FEET)) x 0.163 GAL/FEET] + [(AREA OF BOREHOLE (FT^2) - AREA OF MW (FT^2)) x DEPTH OF SANDPACK (FT) x POROSITY 0.30 x 7.48 GAL/FT^3] = STANDING VOLUME

[(69 - 40) x 0.163] + [(0.20 - 0.02) x 29 x 0.30 x 7.48] = 16.44 GALLONS

SAMPLE NUMBER	SPECIFIC CONDUCTIVITY (µmho/cm) (x1000)	pH	TEMPERATURE (°F)	CUMULATIVE GALLONS REMOVED	DEVELOPMENT WATER COMMENTS
1	1.04	7.84	64.3	0	Brown
2	1.14	7.76	67.6	25	Cloudy
3	0.78	7.75	61.8	50	Cloudy
4	0.66	7.75	61.2	75	Milky
5	0.65	7.76	61.6	100	Milky
6	0.66	7.77	62.0	110	Clear
7	0.65	7.77	64.0	150	Clear

TOTAL DEPTH OF WELL.....69 feet

SCREEN LENGTH.....15 feet

DEPTH TO SEDIMENT (BEFORE DEVELOPMENT).....~67 feet

DEPTH TO SEDIMENT (AFTER DEVELOPMENT).....~68 feet

TYPE OF DEVELOPMENT METHOD.....BK Pump

CAPACITY OF PUMP.....~50 gallons/hour

LENGTH OF CASING STICK-UP.....2.23 feet

TYPICAL PUMPING RATE.....~30 gallons/hour

ESTIMATE OF RECHARGE RATE.....~20 gallons/hour

QUANTITY OF WATER REMOVED.....150 gallons

TOTAL DEVELOPMENT TIME.....5 hours

STANDING WATER TIMES FIVE WELL VOLUMES.....82.20 gallons

FIELD MEASUREMENT OF PRE-SAMPLING PARAMETERS OF GROUND WATER

TABLE B-1

FIELD MEASUREMENT OF PRE-SAMPLE
PARAMETERS OF GROUND WATER
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER

MONITORING WELL NO.	DATE	TOTAL PURGE VOLUME (gal)	TEMPERATURE (°F)	CONDUCTIVITY (x100 ohm/cm)	pH
MW-7	11/14/91	11	48.8	7.12	7.70
			49.9	6.90	7.80
			47.3	7.25	8.29
			46.6	7.11	8.10
MW-8	11/15/91	60	50.1	9.46	7.12
			49.7	9.73	7.50
			48.7	9.71	7.53
MW-9	11/15/91	96	48.7	11.64	7.55
			48.8	12.08	7.55
			48.9	12.28	7.54
			48.5	12.50	7.55
			48.5	12.62	7.54
MW-10	11/14/91	103	47.2	8.64	7.40
			47.8	8.09	7.67
			47.6	8.06	7.82
			47.7	8.13	7.51
			47.5	8.13	7.63
			47.4	8.11	7.65
MW-11	11/14/91	66	48.0	10.55	7.49
			47.6	10.68	7.50
			47.4	10.67	7.46
			47.4	10.69	7.47
			47.5	10.71	7.47
			47.3	10.60	7.48

GROUND WATER LEVEL READINGS

TABLE B-2

GROUND WATER LEVEL READINGS
FOLLOW-ON SITE INVESTIGATION
MANITOWOC ARMY RESERVE CENTER
NOVEMBER 14 AND 15, 1991

MONITORING WELL NO.	READING (FEET)	CORRESPONDING ELEVATION (FEET ABOVE MEAN SEA LEVEL)
MW-1A	21.52	630.84
MW-2A	21.70	630.37
MW-2B	63.40	588.83
MW-3	12.46	634.76
MW-4	16.02	634.89
MW-5	15.80	635.42
MW-6	16.49	636.23
MW-7	11.78	634.55
MW-8	54.29	582.66
MW-9	31.28	587.74
MW-10	65.94	587.05
MW-11	59.99	580.19

APPENDIX C

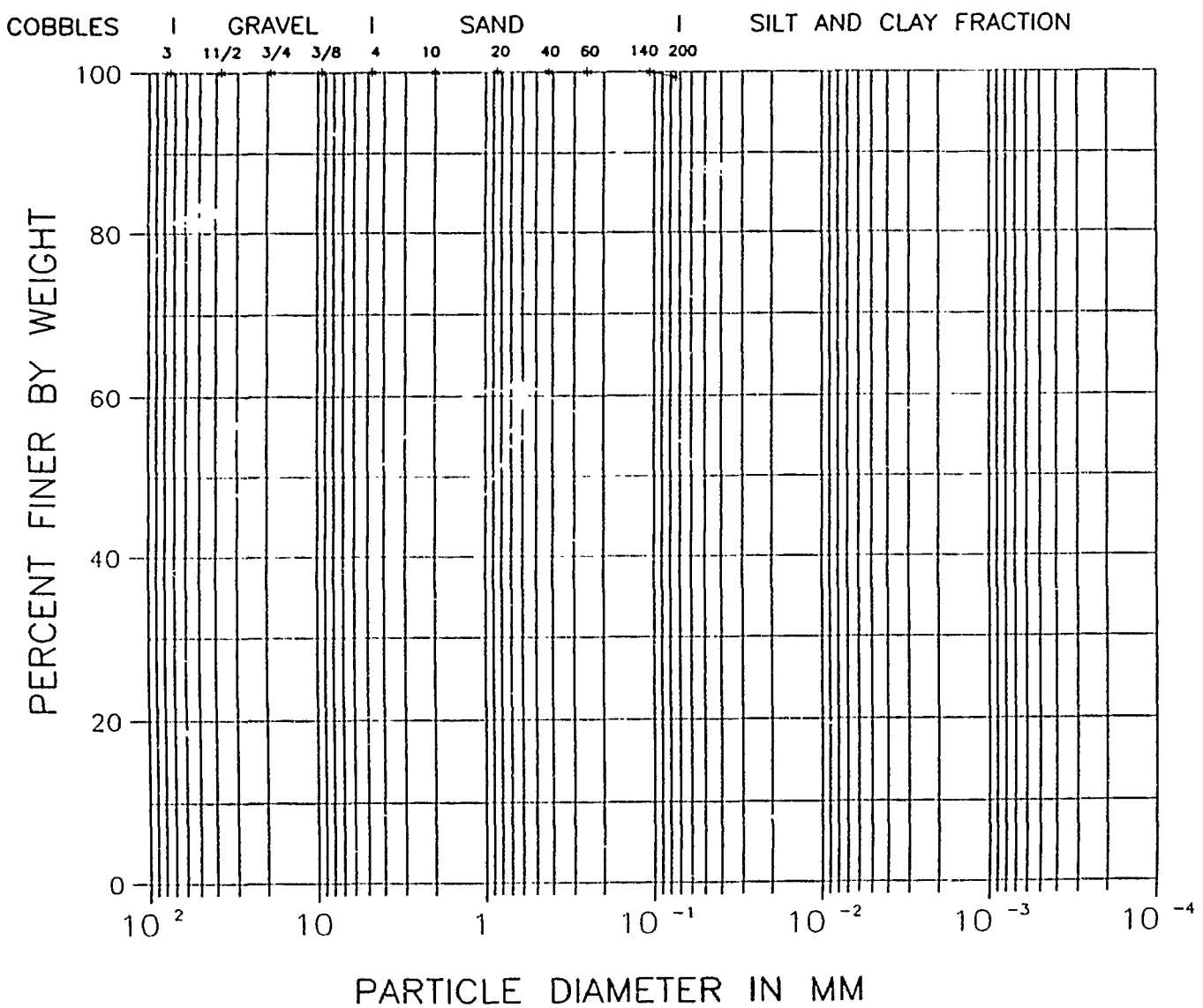
PHYSICAL SOIL TESTING RESULTS

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: LIGHT BROWN SILT (NON-PLASTIC FINES)
USCS CLASSIFICATION: NP

BORING NO.: MW-7
DEPTH: 8-10
SAMPLE NO.: S-5

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-7
Depth(ft.) 8-10
Sample No. S-5
Visual Description LIGHT BROWN SILT (NON-PLASTIC FINES)

Tested By SVG Date 9-20-91
Checked By [illegible] Date 9 27 91

Wt. of Total Sample(Dry) 182.95gm.
Wt. of +#200 Sample 1.13gm.
Wt. of -#200 Sample 181.82gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percen Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.00	0.0	0.0	100.00
#20	0.85	0.00	0.0	0.0	100.00
#40	0.425	0.00	0.0	0.0	100.00
#60	0.250	0.00	0.0	0.0	100.00
#140	0.106	0.05	0.0	0.0	99.97
#200	0.075	1.08	0.6	0.6	99.38
Pan	-	181.82	99.4	100.0	-

Water Content

Tare No.	673
Wgt. Tare + WS.	290.18
Wgt. Tare + DS.	256.07
Wgt. Tare	73.12
Wgt. Of Water	34.11
Wgt. Of DS.	182.95
% Water	18.6

Geotechnics

ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SVL	Date	9-27-91
Project No.	91154				
Boring No.	MW-7				
Depth(ft.)	8-10				
Sample No.	S-5				
Soil Description	NON PLASTIC (-40)				

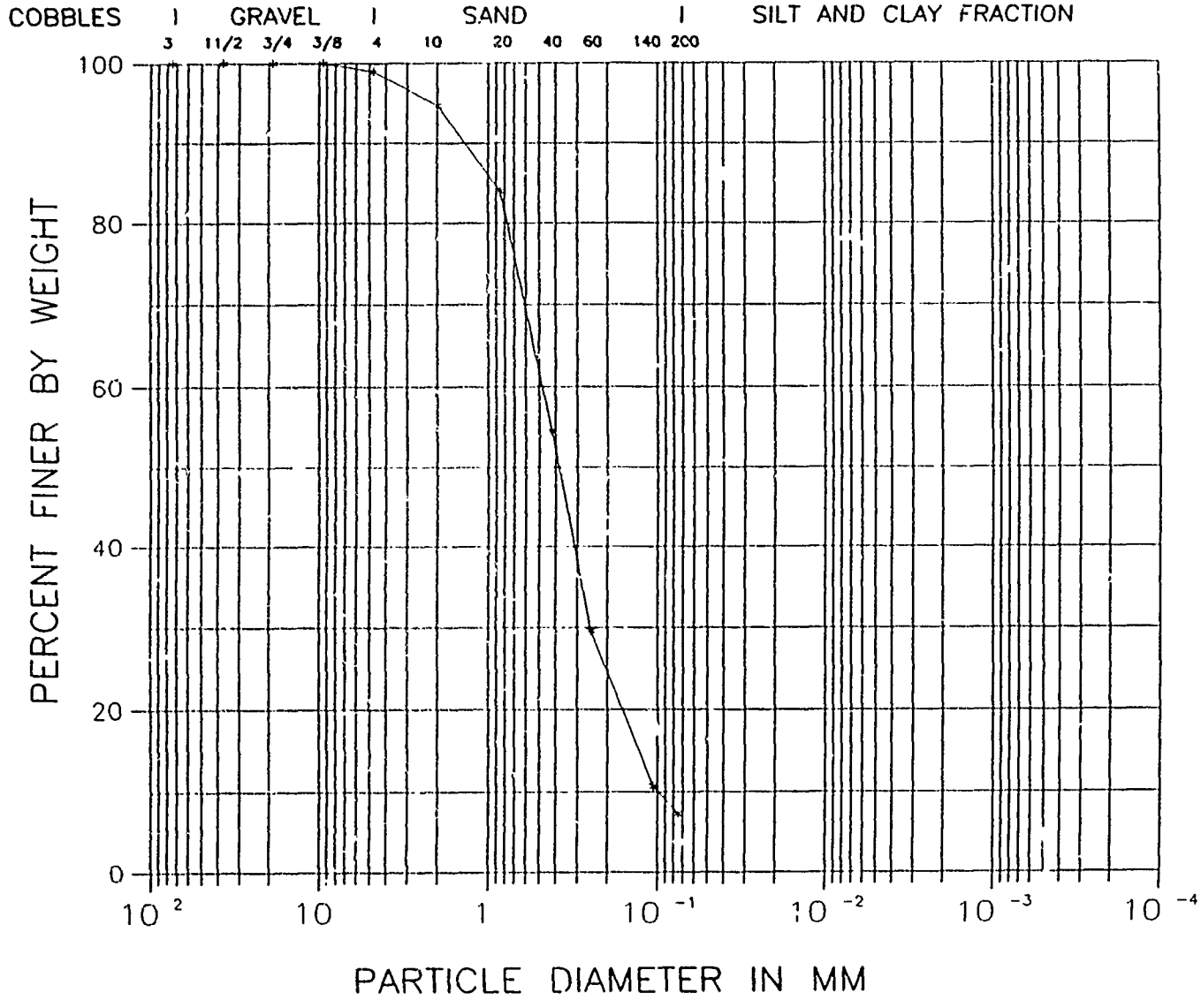
LIQUID LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	
NO. OF BLOWS	

PLASTIC LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	NON PLASTIC
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: LIGHT BROWN POORLY GRADED SAND WITH SILT
USCS CLASSIFICATION: sp-sm

BORING NO.: MW-8
DEPTH: 30-32
SAMPLE NO.: S-10

SIEVE ANALYSIS HYDROMETER



Geotechnics

Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-8
Depth(ft.) 30-32
Sample No. S-10
Visual Description LIGHT BROWN POORLY GRADED SAND WITH SILT

Tested By SVG Date 9-20-91
Checked By JCM Date 9 27 91

Wt. of Total Sample(dry) 208.19gm.
Wt. of +#200 Sample 193.08gm.
Wt. of -#200 Sample 15.11gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	2.21	1.1	1.1	98.94
#10	2.00	8.77	4.2	5.3	94.73
#20	0.85	22.44	10.8	16.1	83.95
#40	0.425	61.20	29.4	45.4	54.55
#60	0.250	51.97	25.0	70.4	29.59
#140	0.106	39.33	18.9	89.3	10.70
#200	0.075	7.16	3.4	92.7	7.26
Pan	-	15.11	7.3	100.0	-

Water Content
Tare No. 675
Wgt. Tare + WS. 285.56
Wgt. Tare + DS. 281.96
Wgt. Tare 73.77
Wgt. Of Water 3.60
Wgt. Of DS. 208.19

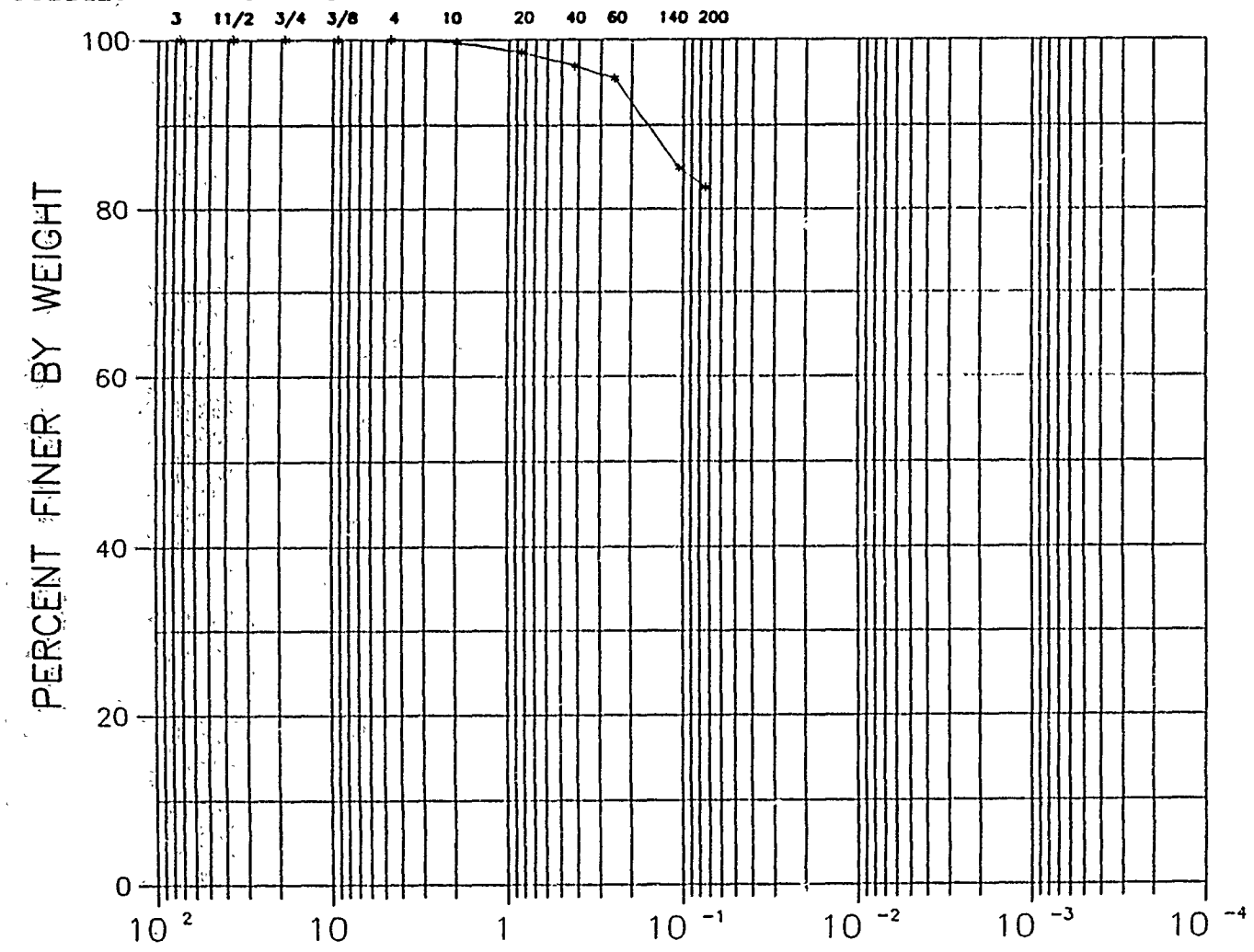
% Water 1.7

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN LEAN CLAY WITH SAND
USCS CLASSIFICATION: CL

BORING NO.: MW-8
DEPTH: 70-72
SAMPLE NO.: S-18

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-8
Depth(ft.) 70-72
Sample No. S-18
Visual Description BROWN LEAN CLAY WITH SAND

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 107.13gm.
Wt. of +#200 Sample 18.71gm.
Wt. of -#200 Sample 88.42gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.32	0.3	0.3	99.70
#20	0.85	1.29	1.2	1.5	98.50
#40	0.425	1.70	1.6	3.1	96.91
#60	0.250	1.53	1.4	4.5	95.48
#140	0.106	11.32	10.6	15.1	84.92
#200	0.075	2.55	2.4	17.5	82.54
Pan	-	88.42	82.5	100.0	-

Water Content

Tare No.	783
Wgt. Tare + WS.	206.19
Wgt. Tare + DS.	192.90
Wgt. Tare	85.77
Wgt. Of Water	13.29
Wgt. Of DS.	107.13
% Water	12.4

Geotechnics

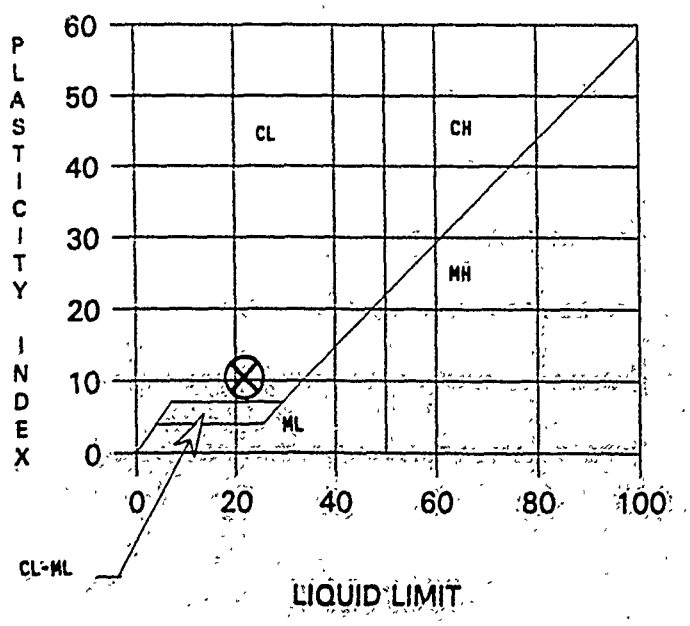
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SJG	Date	9-27-91
Project No.	91154				
Boring No.	MW-8				
Depth(ft.)	70-72				
Sample No.	S-18				
Soil Description	BROWN LEAN CLAY		(-40)		

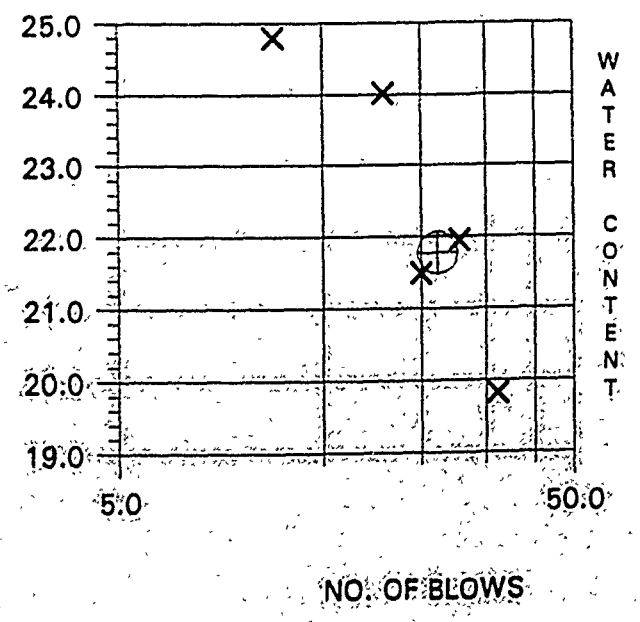
LIQUID LIMIT					
Tare Number	453	456	110	924	753
Wt. Tare & WS(gm.)	105.28	105.96	99.55	37.87	39.44
Wt. Tare & DS(gm.)	104.36	104.79	98.77	37.20	38.23
Wt. Water(gm.)	0.92	1.17	0.78	0.67	1.21
Wt. Tare(gm.)	99.72	99.46	95.14	34.41	33.35
Wt. DS(gm.)	4.64	5.33	3.63	2.79	4.88
NO. OF BLOWS	34	28	23	19	11
Moisture Content(%)	19.8	22.0	21.5	24.0	24.8

PLASTIC LIMIT					
Tare Number	813	806	659	Summary	
Wt. Tare & WS(gm.)	41.09	42.15	38.56	Liquid Limit %	22
Wt. Tare & DS(gm.)	40.58	41.67	38.04	Plastic Limit %	11
Wt. Water(gm.)	0.51	0.48	0.52	Plasticity Index	10
Wt. Tare(gm.)	36.56	37.05	33.27	USCS Symbol	CL
Wt. DS(gm.)	4.02	4.62	4.77		
Moisture Content(%)	12.7	10.4	10.9		

PLASTICITY CHART



FLOW CURVE

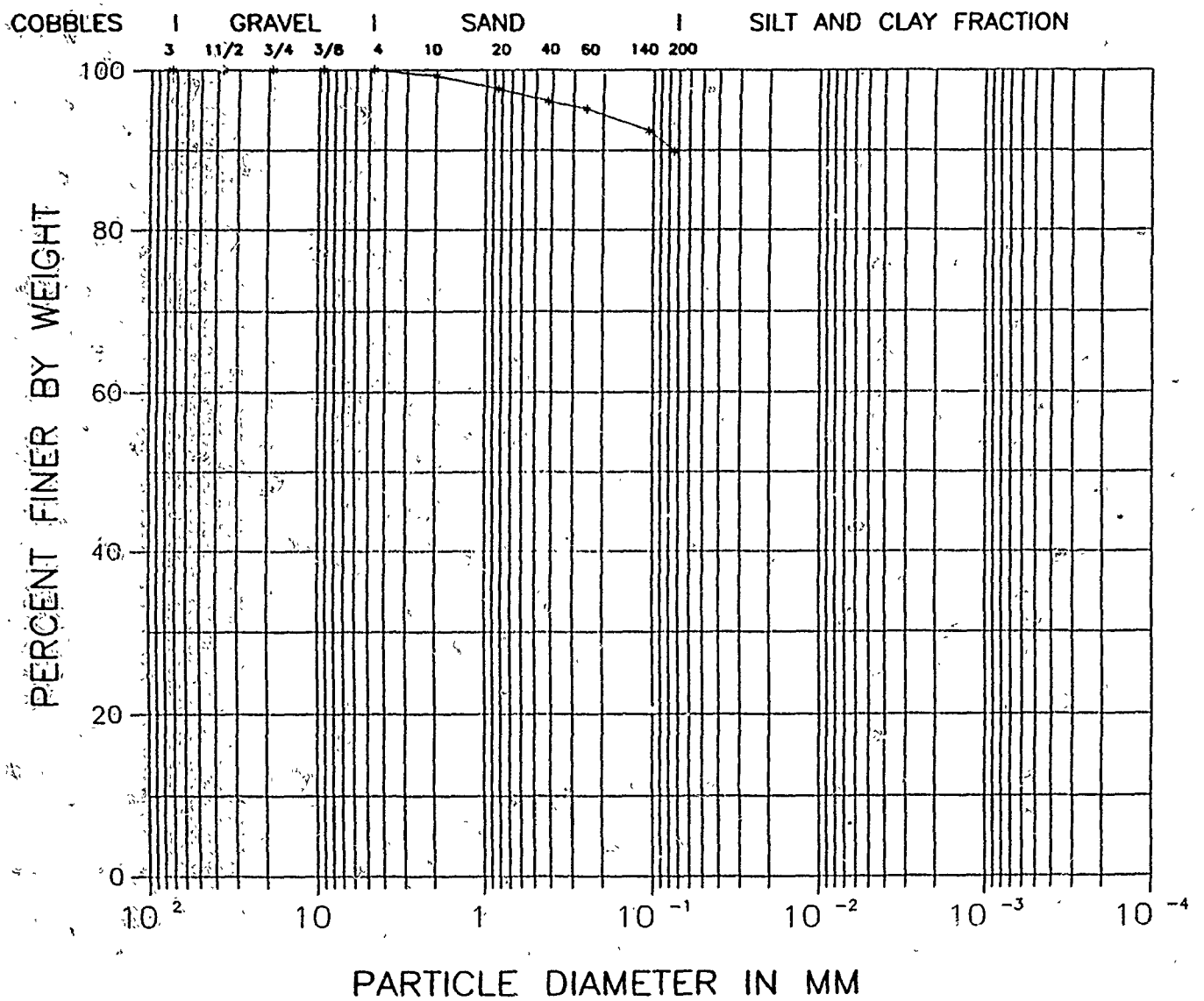


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILTY CLAY
USCS CLASSIFICATION: CL-ML

BORING NO.: MW-8
DEPTH: 75-77
SAMPLE NO.: S-19

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-8
Depth(ft.) 75-77
Sample No. S-19
Visual Description BROWN SILTY CLAY

Tested By SVG Date 9-20-91
Checked By JCM Date 9 27 91

Wt. of Total Sample(dry) 120.38gm.
Wt. of +#200 Sample 12.16gm.
Wt. of -#200 Sample 108.22gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.90	0.7	0.7	99.25
#20	0.85	1.95	1.6	2.4	97.63
#40	0.425	1.81	1.5	3.9	96.13
#60	0.250	1.14	0.9	4.8	95.18
#140	0.106	3.28	2.7	7.5	92.46
#200	0.075	3.08	2.6	10.1	89.90
Pan	-	108.22	89.9	100.0	-

Water Content

Tare No.	729
Wgt. Tare + WS.	225.35
Wgt. Tare + DS.	207.00
Wgt. Tare	86.62
Wgt. Of Water	18.35
Wgt. Of DS.	120.38
% Water	15.2

Geotechnics

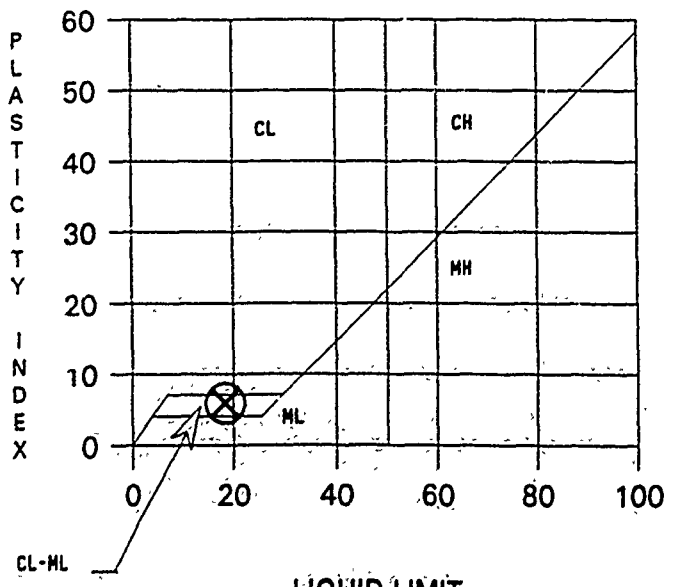
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SVG	Date	9-27-91
Project No	91154				
Boring No.	MW-8				
Depth(ft.)	75-77				
Sample No.	S-19				
Soil Description	BROWN SILTY CLAY		(-40)		

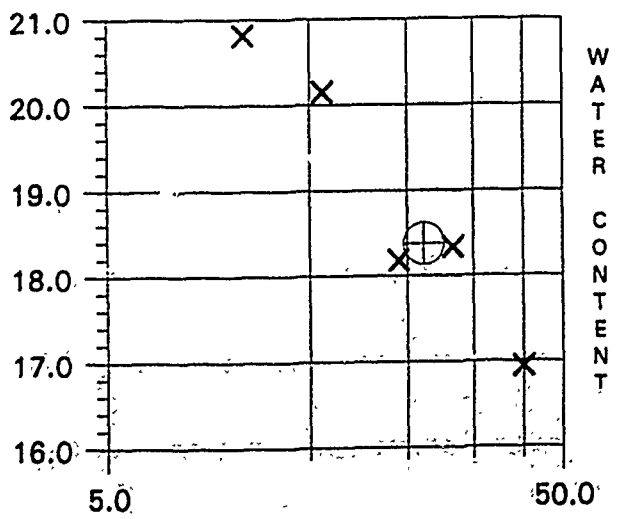
LIQUID LIMIT					
Tare Number	1301	640	741	734	1902
Wt. Tare & WS(gm.)	106.65	43.76	37.04	40.63	43.00
Wt. Tare & DS(gm.)	106.13	42.99	36.58	40.08	42.23
Wt. Water(gm.)	0.52	0.77	0.46	0.55	0.77
Wt. Tare(gm.)	103.06	38.79	34.05	37.35	38.53
Wt. DS(gm.)	3.07	4.20	2.53	2.73	3.70
NO. OF BLOWS	41	29	22	15	10
Moisture Content(%)	16.9	18.3	18.2	20.1	20.8

PLASTIC LIMIT					
Tare Number	903	821	822	Summary	
Wt. Tare & WS(gm.)	38.09	35.01	41.45	Liquid Limit %	18
Wt. Tare & DS(gm.)	37.55	34.49	40.87	Plastic Limit %	13
Wt. Water(gm.)	0.54	0.52	0.58	Plasticity Index	6
Wt. Tare(gm.)	33.36	30.35	36.09	USCS Symbol	CL-ML
Wt. DS(gm.)	4.19	4.14	4.78		
Moisture Content(%)	12.9	12.6	12.1		

PLASTICITY CHART



FLOW CURVE

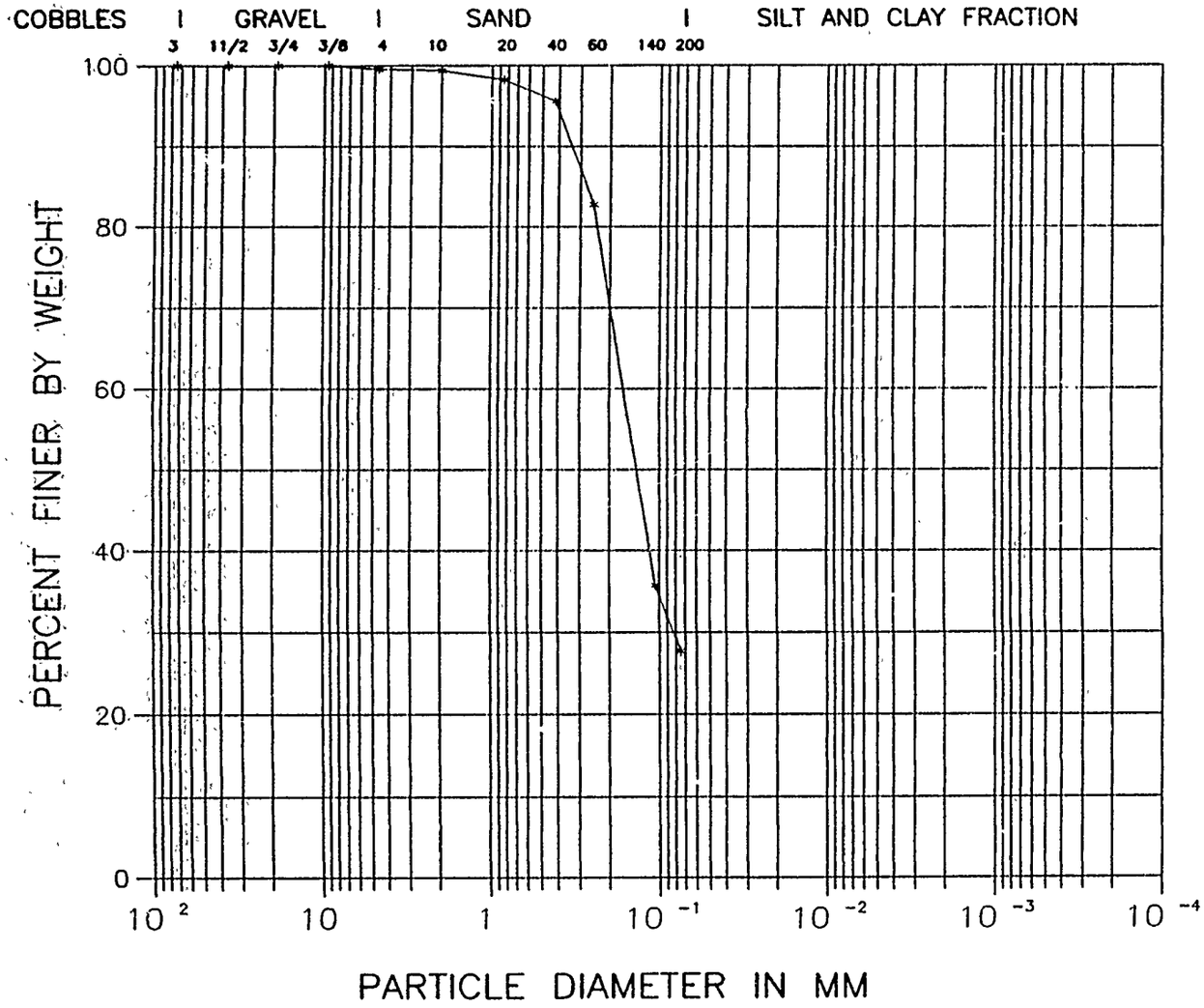


CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILTY, CLAYEY SAND
USCS CLASSIFICATION: cl-ml

BORING NO.: MW-8
DEPTH: 100-102
SAMPLE NO.: S-24

Geotechnics

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-8
Depth(ft.) 100-102
Sample No. S-24
Visual Description BROWN SILTY, CLAYEY SAND

Tested By SVG Date 9-20-91
Checked By JCW Date 9 27 91

Wt. of Total Sample(dry) 203.82gm.
Wt. of +#200 Sample 147.48gm.
Wt. of -#200 Sample 56.34gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.95	0.5	0.5	99.53
#10	2.00	0.33	0.2	0.6	99.37
#20	0.85	2.39	1.2	1.8	98.20
#40	0.425	5.36	2.6	4.4	95.57
#60	0.250	26.19	12.8	17.3	82.72
#140	0.106	95.75	47.0	64.3	35.74
#200	0.075	16.51	8.1	72.4	27.64
Pan	-	56.34	27.6	100.0	-

Water Content

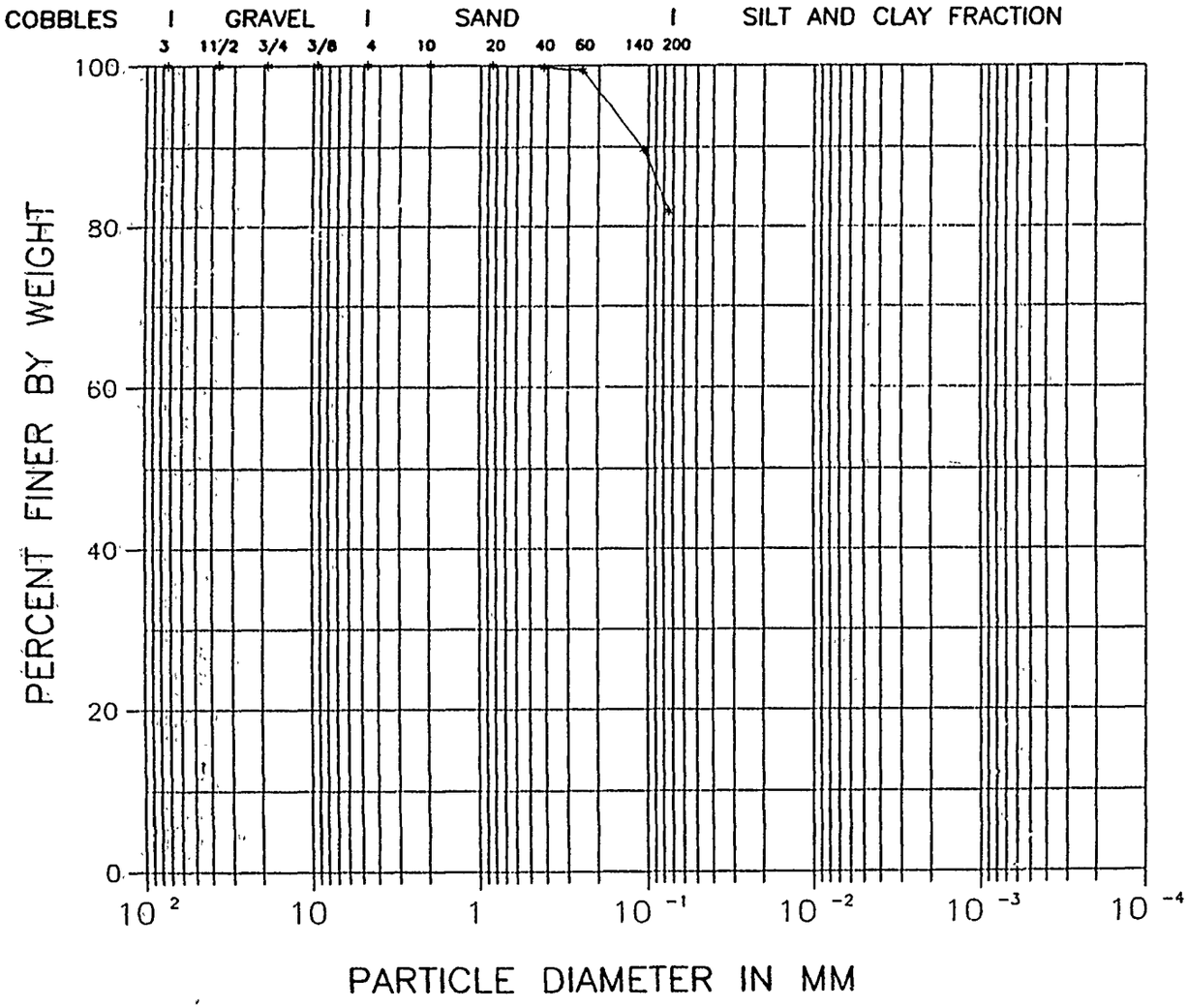
Tare No.	731
Wgt. Tare + WS.	325.25
Wgt. Tare + DS.	288.28
Wgt. Tare	84.46
Wgt. Of Water	36.97
Wgt. Of DS.	203.82
% Water	18.1

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: GRAY SILTY CLAY WITH SAND
USCS CLASSIFICATION: CL-ML

BORING NO.: MW-8
DEPTH: 105-107
SAMPLE NO.: S-25

Geotechnics

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-8
Depth(ft.) 105-107
Sample No. S-25
Visual Description GRAY SILTY CLAY WITH SAND

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 112.14gm.
Wt. of +#200 Sample 20.32gm.
Wt. of -#200 Sample 91.82gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.00	0.0	0.0	100.00
#20	0.85	0.00	0.0	0.0	100.00
#40	0.425	0.22	0.2	0.2	99.80
#60	0.250	0.45	0.4	0.6	99.40
#140	0.106	10.88	9.7	10.3	89.70
#200	0.075	8.77	7.8	18.1	81.88
Pan	-	91.82	81.9	100.0	-

Water Content

Tare No.	784
Wgt. Tare + WS.	215.12
Wgt. Tare + DS.	197.50
Wgt. Tare	85.36
Wgt. Of Water	17.62
Wgt. Of DS.	112.14
% Water	15.7

Geotechnics

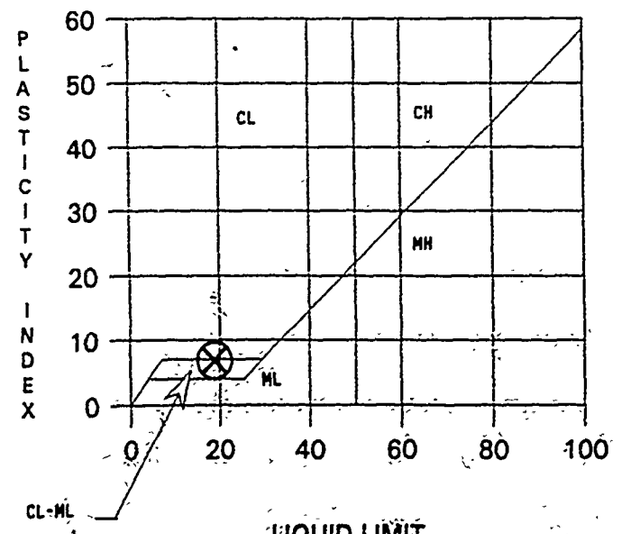
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	MM	Date	09-25-91
Client Project	MARC	Checked By	SVL	Date	9-27-91
Project No.	91154				
Boring No.	MW-8				
Depth(ft.)	105-107				
Sample No.	S-25				
Soil Description	GRAYISH BROWN SILTY CLAY (-40)				

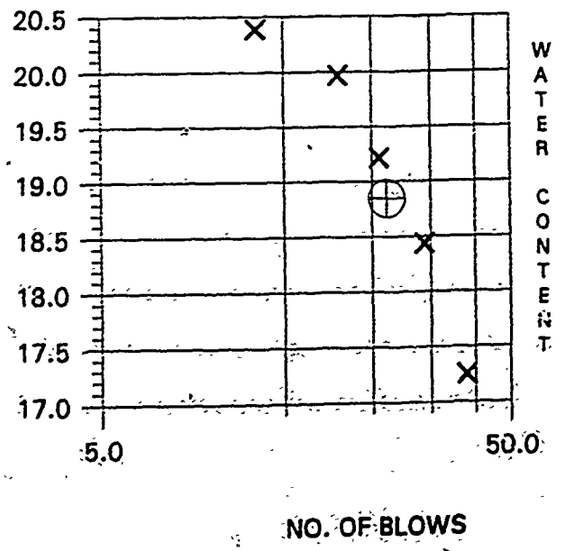
LIQUID LIMIT					
Tare Number	717	631	788	746	918
Wt. Tare & WS(gm.)	42.11	41.23	42.05	43.37	36.00
Wt. Tare & DS(gm.)	41.02	40.12	41.02	42.21	35.05
Wt. Water(gm.)	1.09	1.11	1.03	1.16	0.95
Wt. Tare(gm.)	34.70	34.10	35.66	36.40	30.39
Wt. DS(gm.)	6.32	6.02	5.36	5.81	4.66
NO. OF BLOWS	39	31	24	19	12
Moisture Content(%)	17.2	18.4	19.2	20.0	20.4

PLASTIC LIMIT					
Tare Number	118	442	93	Summary	
Wt. Tare & WS(gm.)	110.67	106.09	100.72	Liquid Limit %	19
Wt. Tare & DS(gm.)	110.00	105.45	100.06	Plastic Limit %	12
Wt. Water(gm.)	0.67	0.64	0.66	Plasticity Index	7
Wt. Tare(gm.)	104.42	99.98	94.71	USCS Symbol	CL-ML
Wt. DS(gm.)	5.58	5.47	5.35		
Moisture Content(%)	12.0	11.7	12.3		

PLASTICITY CHART



FLOW CURVE

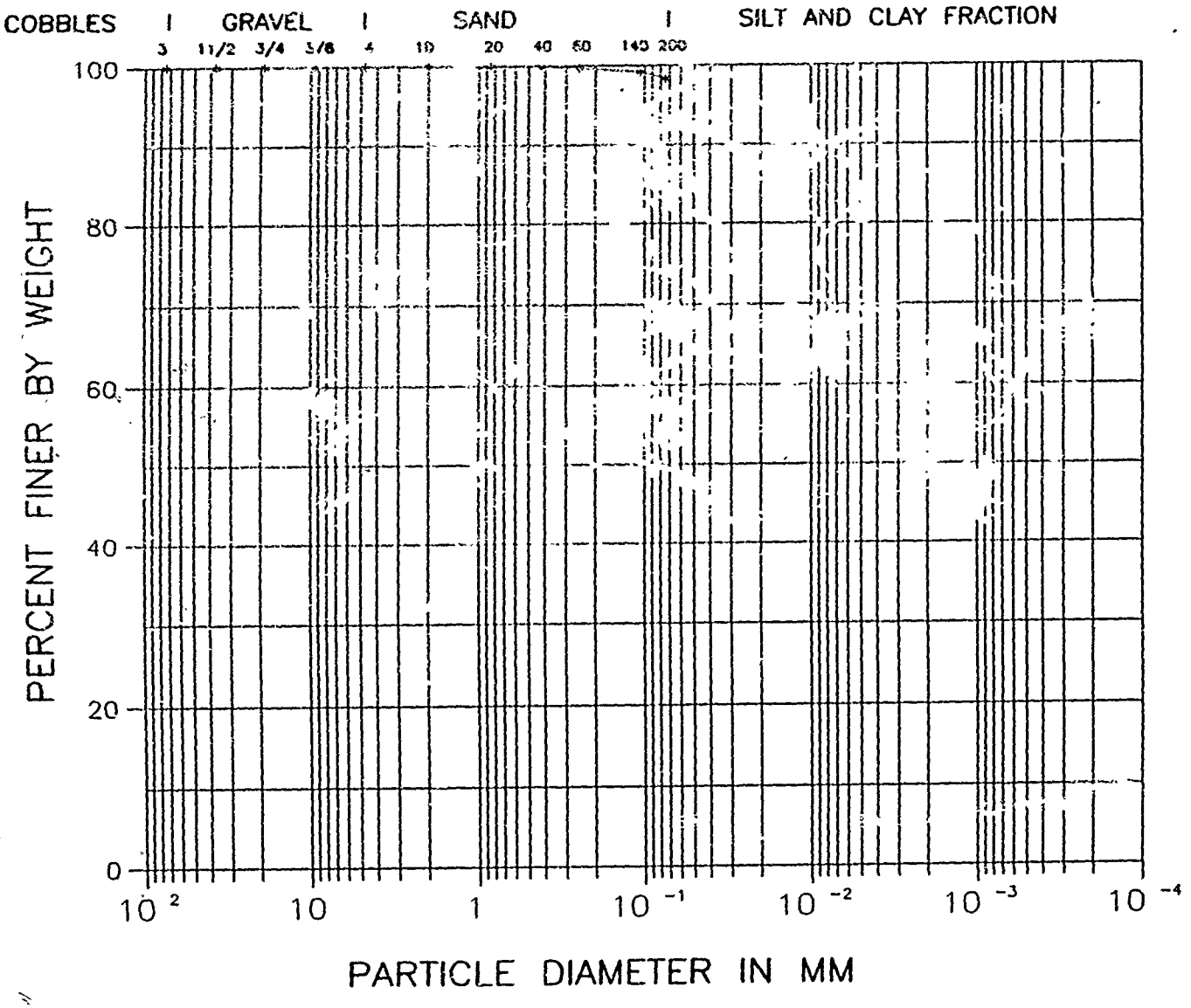


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN LEAN CLAY
USCS CLASSIFICATION: CL

BORING NO.: MW-3
DEPTH: 8-10
SAMPLE NO.: S-5

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-9
Depth(ft.) 8-10
Sample No. S-5
Visual Description BROWN LEAN CLAY

Tested By SVG Date 9-20-91
Checked By JCM Date 9.27.91

Wt. of Total Sample(dry) 129.12gm.
Wt. of +#200 Sample 2.18gm.
Wt. of -#200 Sample 126.94gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.00	0.0	0.0	100.00
#20	0.85	0.08	0.1	0.1	99.94
#40	0.425	0.08	0.1	0.1	99.88
#60	0.250	0.24	0.2	0.3	99.69
#140	0.106	0.67	0.5	0.8	99.17
#200	0.075	1.11	0.9	1.7	98.31
Pan	-	126.94	98.3	100.0	-

Water Content

Tare No.	677
Wgt. Tare + WS.	223.96
Wgt. Tare + DS.	203.80
Wgt. Tare	74 68
Wgt. Of Water	20.16
Wgt. Of DS.	129.12
% Water	15.6

Geotechnics

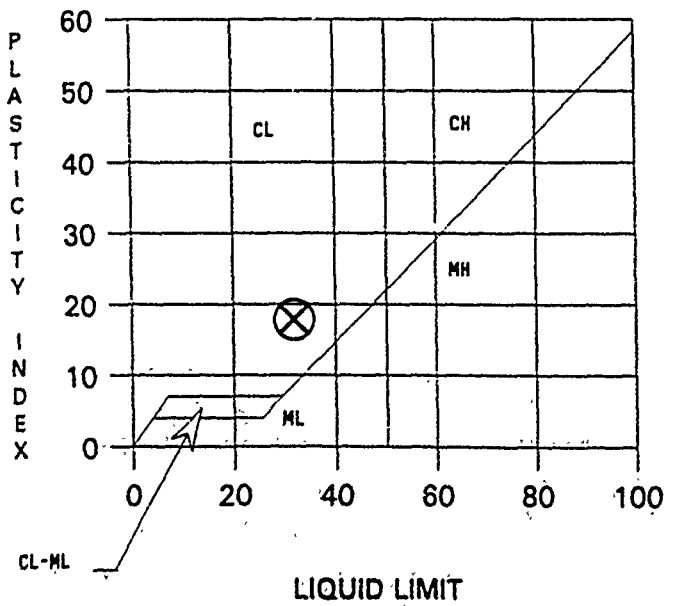
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-25-91
Client Project	MARC	Checked By	SVG	Date	9-27-91
Project No.	91154				
Boring No.	MW-9				
Depth(ft.)	8-10				
Sample No.	S-5				
Soil Description	BROWN LEAN CLAY		(-40)		

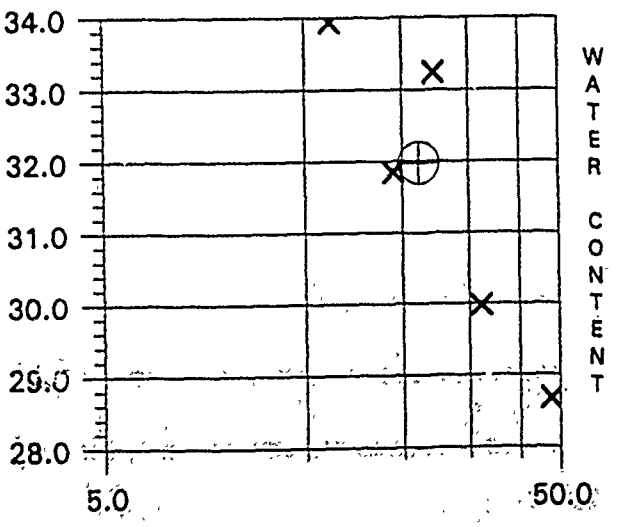
LIQUID LIMIT					
Tare Number	932	655	925	602	791
Wt. Tare & WS(gm.)	38.45	43.96	35.63	43.54	38.57
Wt. Tare & DS(gm.)	37.30	42.92	34.50	42.03	37.26
Wt. Water(gm.)	1.15	1.04	1.13	1.51	1.31
Wt. Tare(gm.)	33.29	39.45	31.10	37.29	33.40
Wt. DS(gm.)	4.01	3.47	3.40	4.74	3.86
NO OF BLOWS	48	34	27	22	16
Moisture Content(%)	28.7	30.0	33.2	31.9	33.9

PLASTIC LIMIT					
Tare Number	834	621	789	Summary	
Wt. Tare & WS(gm.)	37.50	40.53	35.17	Liquid Limit %	32
Wt. Tare & DS(gm.)	36.93	39.87	34.64	Plastic Limit %	14
Wt. Water(gm.)	0.57	0.66	0.53	Plasticity Index	18
Wt. Tare(gm.)	32.96	35.25	30.82	USCS Symbol	CL
Wt. DS(gm.)	3.97	4.62	3.82		
Moisture Content(%)	14.4	14.3	13.9		

PLASTICITY CHART



FLOW CURVE



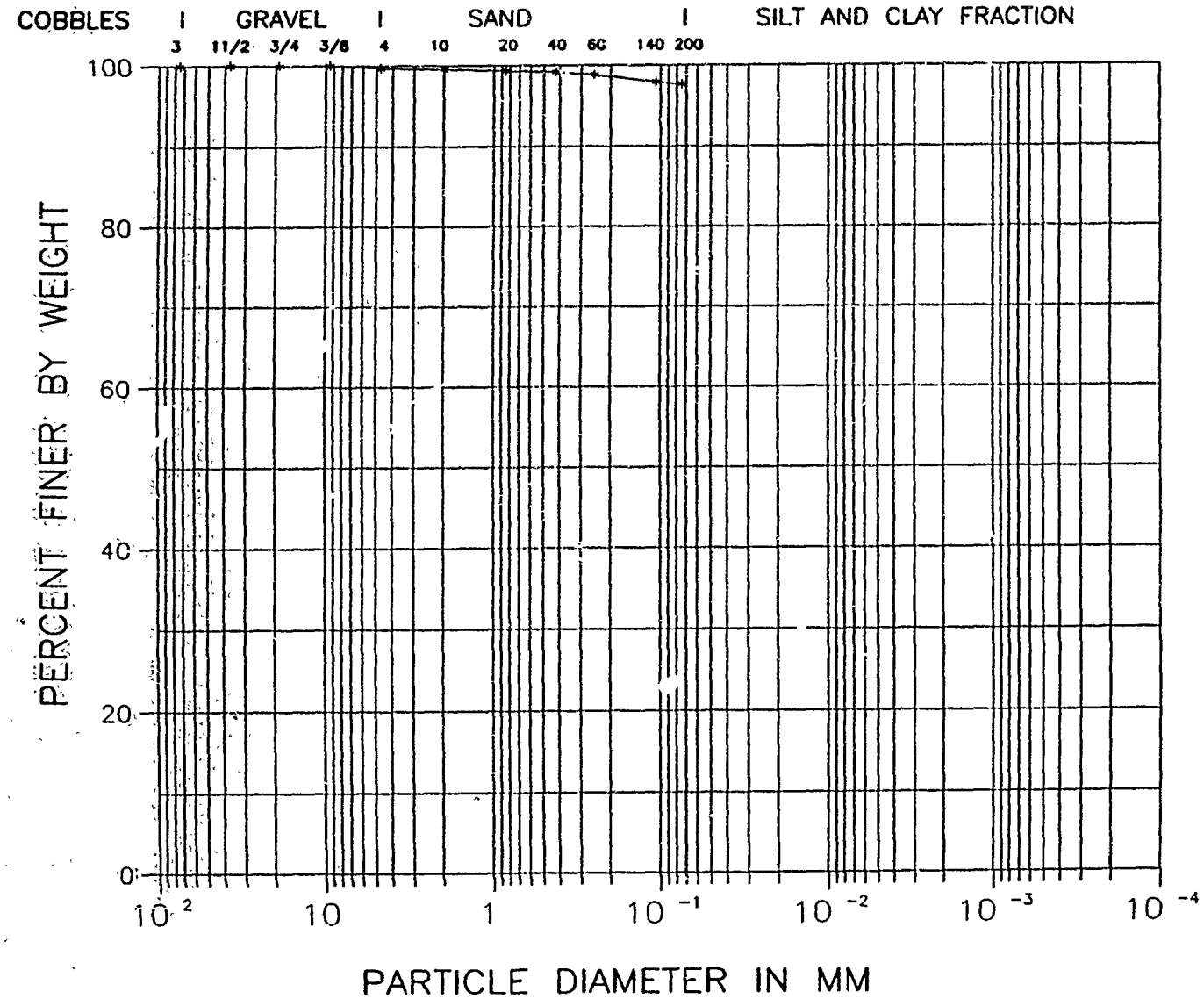
Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN LEAN CLAY
USCS CLASSIFICATION: CL

BORING NO.: MW-9
DEPTH: 70-72
SAMPLE NO.: S-17

SIEVE ANALYSIS

HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-9
Depth(ft.) 70-72
Sample No. S-17
Visual Description BROWN LEAN CLAY

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27 91

Wt. of Total Sample(dry) 131.53gm.
Wt. of +#200 Sample 3.19gm.
Wt. of -#200 Sample 128.34gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.42	0.3	0.3	99.68
#10	2.00	0.22	0.2	0.5	99.51
#20	0.85	0.25	0.2	0.7	99.32
#40	0.425	0.24	0.2	0.9	99.14
#60	0.250	0.44	0.3	1.2	98.81
#140	0.106	1.23	0.9	2.1	97.87
#200	0.075	0.39	0.3	2.4	97.57
Pan	-	128.34	97.6	100.0	-

Water Content

Tare No.	ZY
Wgt. Tare + WS.	240.10
Wgt. Tare + DS.	217.19
Wgt. Tare	85.66
Wgt. Of Water	22.91
Wgt. Of DS.	131.53
% Water	17.4

Geotechnics

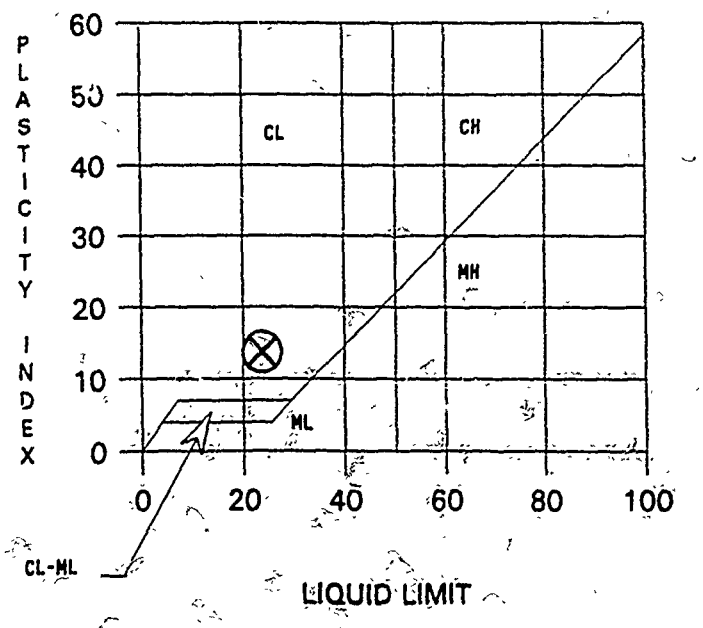
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SVC	Date	9-27-91
Project No.	91154				
Boring No.	MW-9				
Depth(ft.)	70-72				
Sample No.	S-17				
Soil Description	BROWN LEAN CLAY		(-40)		

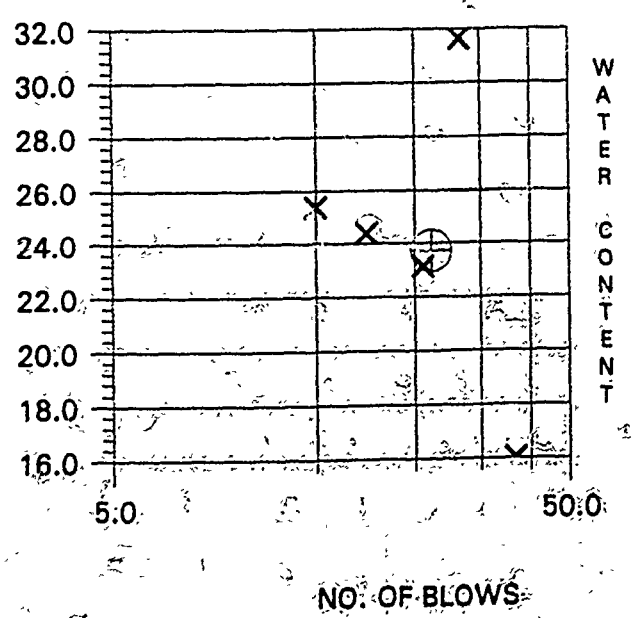
LIQUID LIMIT					
Tare Number	139	19	795	789	912
Wt. Tare & WS(gm.)	101.44	94.09	33.42	35.82	38.30
Wt. Tare & DS(gm.)	100.53	93.34	32.74	34.84	37.48
Wt. Water(gm.)	0.91	0.75	0.68	0.98	0.82
Wt. Tare(gm.)	94.85	90.97	29.80	30.82	34.25
Wt. DS(gm.)	5.68	2.37	2.94	4.02	3.23
NO. OF BLOWS	38	29	24	18	14
Moisture Content(%)	16.0	31.6	23.1	24.4	25.4

PLASTIC LIMIT				Summary	
Tare Number	638	766	646	Liquid Limit %	24
Wt. Tare & WS(gm.)	45.10	38.51	44.79	Plastic Limit %	10
Wt. Tare & DS(gm.)	44.54	38.09	44.36	Plasticity Index	14
Wt. Water(gm.)	0.56	0.42	0.43	USCS Symbol	CL
Wt. Tare(gm.)	39.19	33.94	39.79		
Wt. DS(gm.)	5.35	4.15	4.57		
Moisture Content(%)	10.5	10.1	9.4		

PLASTICITY CHART



FLOW CURVE

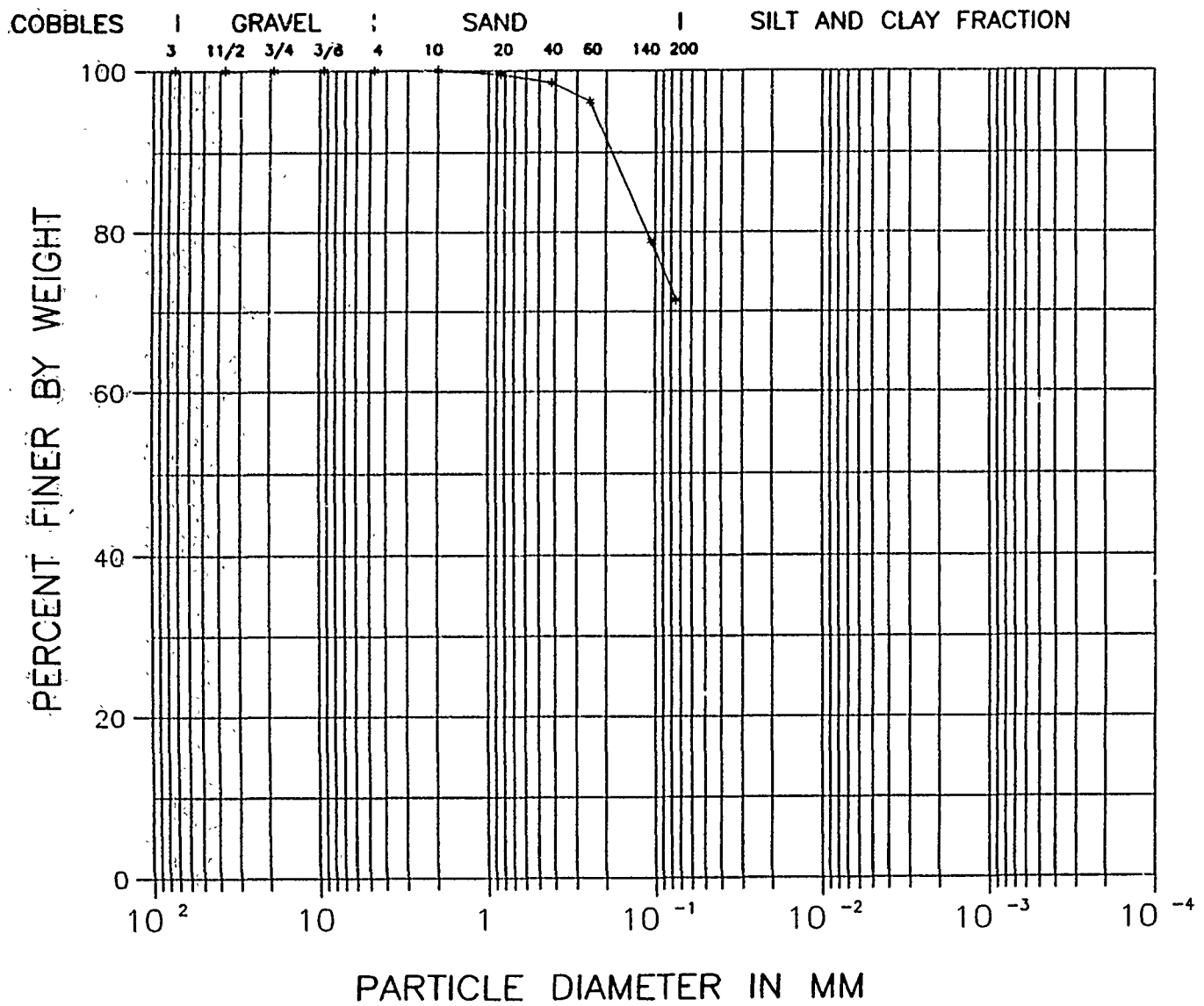


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILT WITH SAND (NON-PLASTIC FINES)
USCS CLASSIFICATION: NP

BORING NO.: MW-9
DEPTH: 80-82
SAMPLE NO.: S-19

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-9
Depth(ft.) 80-82
Sample No. S-19
Visual Description BROWN SILT WITH SAND (NON-PLASTIC FINES)

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 145.01gm.
Wt. of +#200 Sample 41.49gm.
Wt. of -#200 Sample 103.52gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.00	0.0	0.0	100.00
#20	0.85	0.67	0.5	0.5	99.54
#40	0.425	1.56	1.1	1.5	98.46
#60	0.250	3.23	2.2	3.8	96.23
#140	0.106	25.10	17.3	21.1	78.93
#200	0.075	10.93	7.5	28.6	71.39
Pan	-	103.52	71.4	100.0	-

Water Content
Tare No. 730
Wgt. Tare + WS. 257.78
Wgt. Tare + DS. 231.60
Wgt. Tare 86.59
Wgt. Of Water 26.18
Wgt. Of DS. 145.01

% Water 18.1

Geotechnics

ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MAPC	Checked By	SJG	Date	9-27-91
Project No.	91154				
Boring No.	MW-9				
Depth(ft.)	80-82				
Sample No.	S-19				
Soil Description	NON PLASTIC (-40)				

LIQUID LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	
NO. OF BLOWS	

PLASTIC LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	

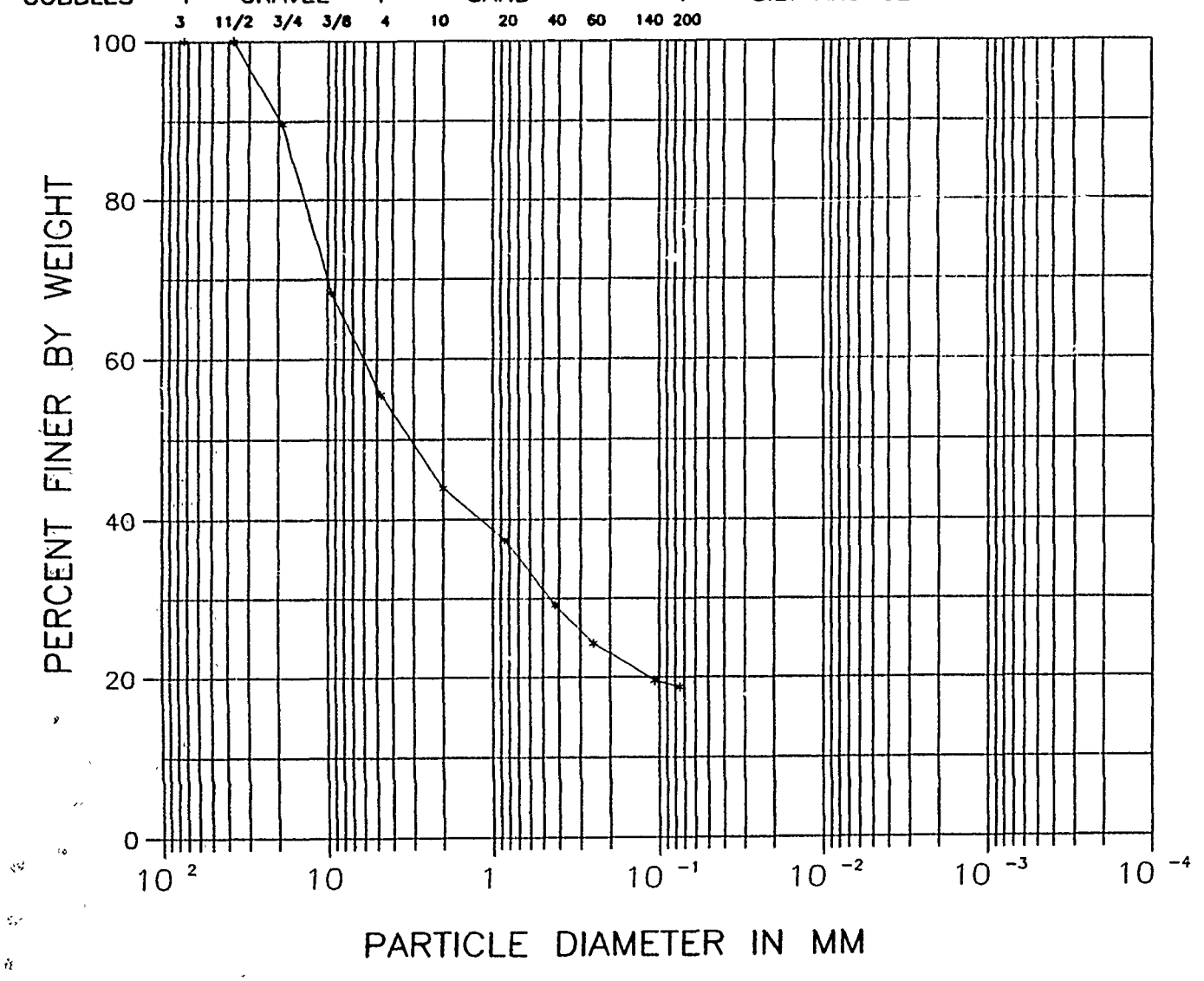
NON PLASTIC

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILTY GRAVEL WITH SAND
USCS CLASSIFICATION: gm

BORING NO.: MW-9
DEPTH: 95-97
SAMPLE NO.: S-22

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-9
Depth(ft.) 95-97
Sample No. S-22
Visual Description BROWN SILTY GRAVEL WITH SAND

Tested By SVG Date 9-27-91
Checked By JCM Date 9-27-91

Wt. of Dry Split Sample	253.45gm.	Wt. of Grand Total	255
Wt. of +#200 Sample	200.44gm.		
Wt. of -#200 Sample	53.01gm.	J Factor	0.896

Sieve	Sieve Opening (mm)	Wt of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer	Final Percent Finer
3"	75.00	0.00	0.00	0.00	100.0	100.0
1 1/2"	37.50	0.00	0.00	0.00	100.0	100.0
3/4"	19.00	26.51	10.38	10.38	89.6	89.6
3/8"	9.50	60.33	23.80	23.80	76.2	68.3
#4	4.75	35.99	14.20	38.00	62.0	55.6
#10	2.00	32.92	12.99	50.99	49.0	43.9
#20	0.85	18.29	7.22	58.21	41.8	37.5
#40	0.425	23.53	9.28	67.49	32.5	29.1
#60	0.250	13.71	5.41	72.90	27.1	24.3
#140	0.106	13.33	5.26	78.16	21.8	19.6
#200	0.075	2.34	0.92	79.08	20.9	18.7
Pan	-	53.01	20.92	100.0	-	-

TARE NO.	700
WGT. TARE +WS.	349.36
WGT. TARE +DS.	329.50
WGT. OF TARE	76.05
WGT. OF WATER	19.86
WGT. OF DS	253.45
% WATER	7.8

TOTAL WET WGT.-3/4 SIEVE
246.8

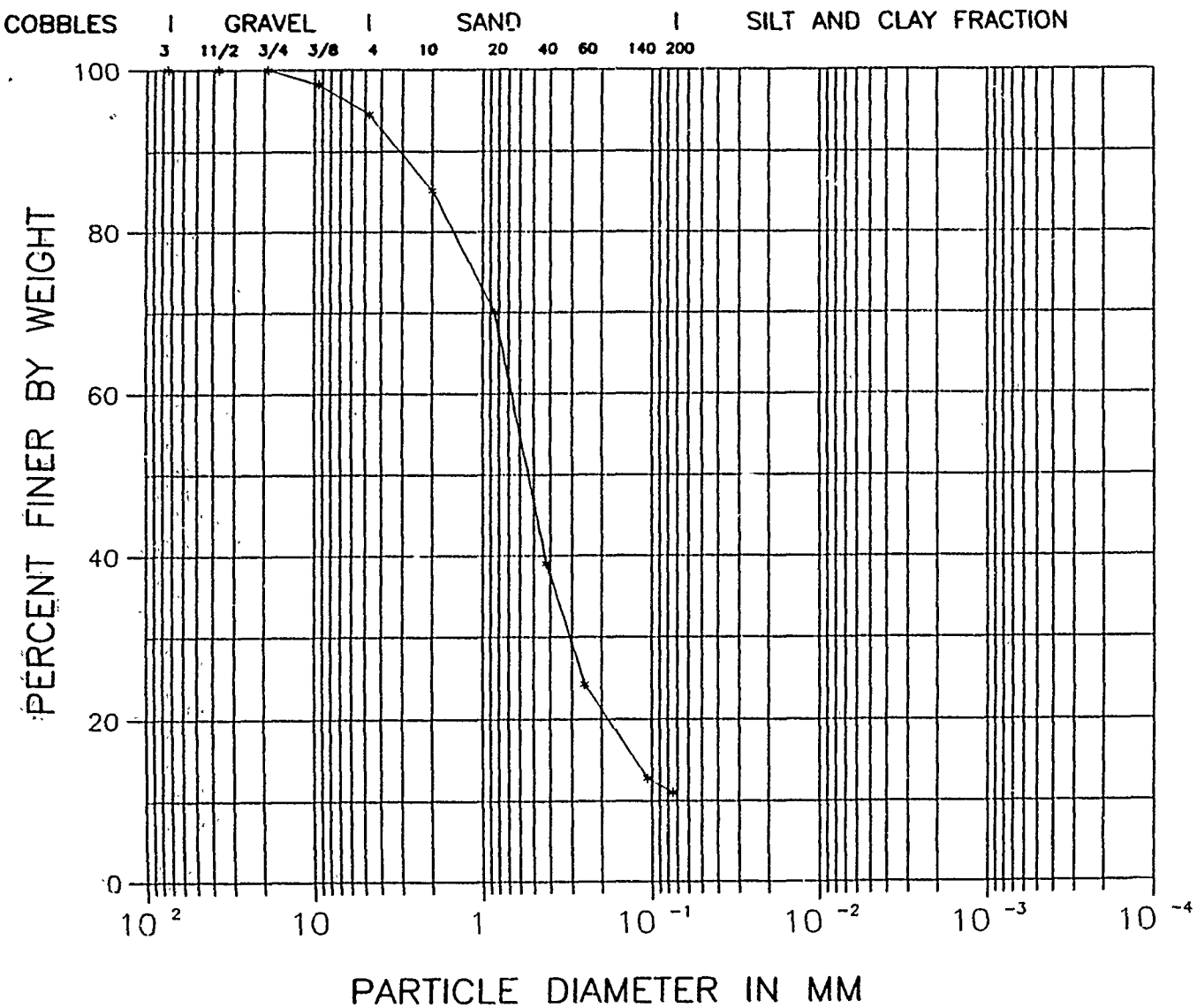
TOTAL DRY WGT.-3/4 SIEVE
228.9

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN WELL-GRADED SAND WITH SILT
USCS CLASSIFICATION: sw-sm

BORING NO.: MW-10
DEPTH: 8-10
SAMPLE NO.: S-5

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 8-10
Sample No. S-5
Visual Description BROWN WELL-GRADED SAND WITH SILT

Tested By SVG Date 9-20-91
Checked By JCM Date 9.27.91

Wt. of Total Sample(dry) 168.57gm.
Wt. of +#200 Sample 149.99gm.
Wt. of -#200 Sample 18.58gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	3.04	1.8	1.8	98.20
#4	4.75	6.11	3.6	5.4	94.57
#10	2.00	15.91	9.4	14.9	85.13
#20	0.85	25.36	15.0	29.9	70.09
#40	0.425	52.30	31.0	60.9	39.06
#60	0.250	24.99	14.8	75.8	24.24
#140	0.106	19.21	11.4	87.2	12.84
#200	0.075	3.07	1.8	89.0	11.02
Pan	-	18.58	11.0	100.0	-

Water Content

Tare No.	726
Wgt. Tare + WS.	266.03
Wgt. Tare + DS.	254.53
Wgt. Tare	85.96
Wgt. Of Water	11.50
Wgt. Of DS.	168.57
% Water	6.8

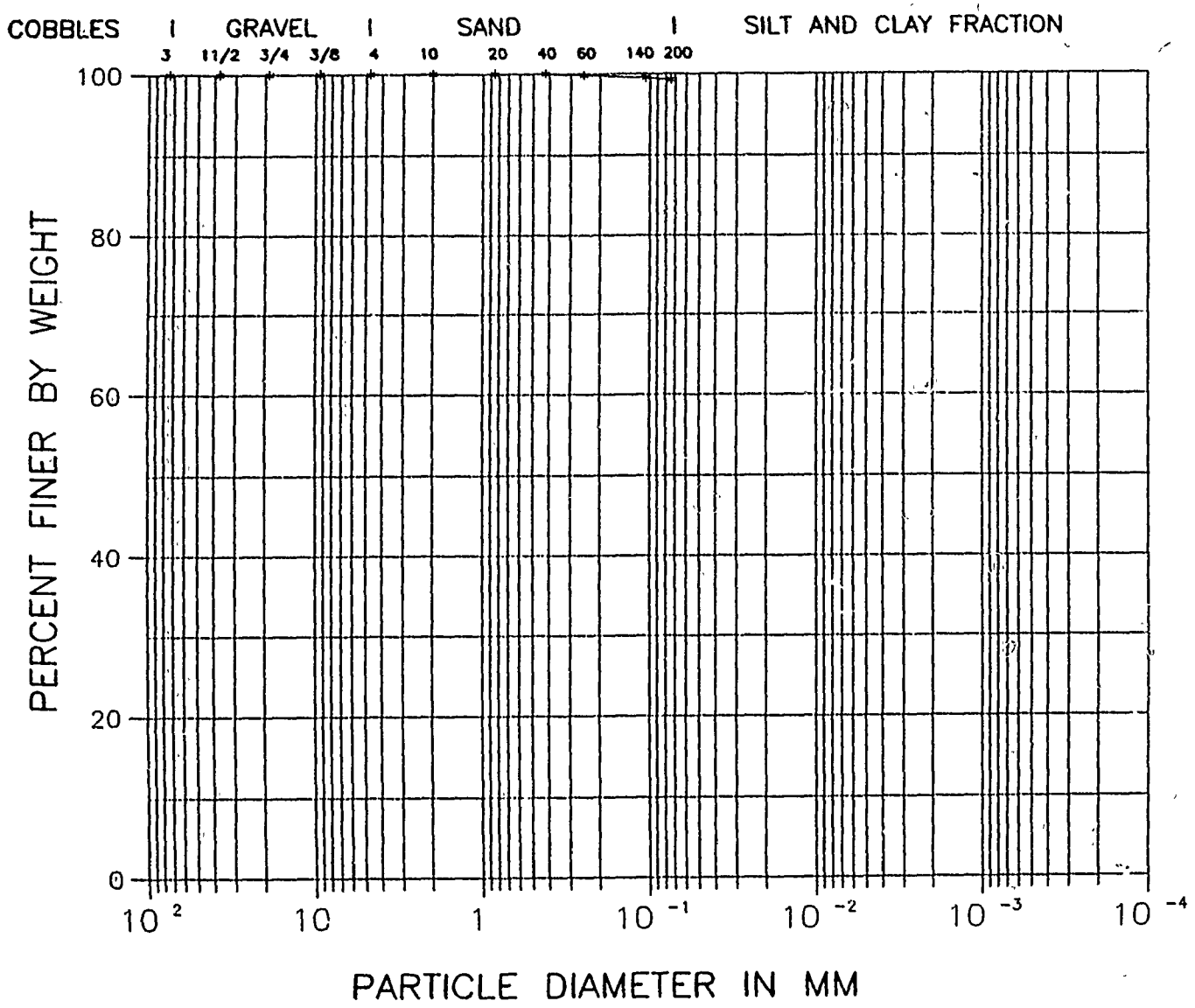
Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN LEAN CLAY
USCS CLASSIFICATION: CL

BORING NO.: MW-10
DEPTH: 40-42
SAMPLE NO.: S-11

SIEVE ANALYSIS

HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 40-42
Sample No. S-11
Visual Description BROWN LEAN CLAY

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 96.67gm.
Wt. of +#200 Sample 0.76gm.
Wt. of -#200 Sample 95.91gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.00	0.0	0.0	100.00
#20	0.85	0.00	0.0	0.0	100.00
#40	0.425	0.00	0.0	0.0	100.00
#60	0.250	0.20	0.2	0.2	99.79
#140	0.106	0.29	0.3	0.5	99.49
#200	0.075	0.27	0.3	0.8	99.21
Pan	-	95.91	99.2	100.0	-

Water Content

Tare No.	725
Wgt. Tare + WS.	202.20
Wgt. Tare + DS.	183.61
Wgt. Tare	86.94
Wgt. Of Water	18.59
Wgt. Of DS.	96.67
% Water	19.2

Geotechnics

Geotechnics

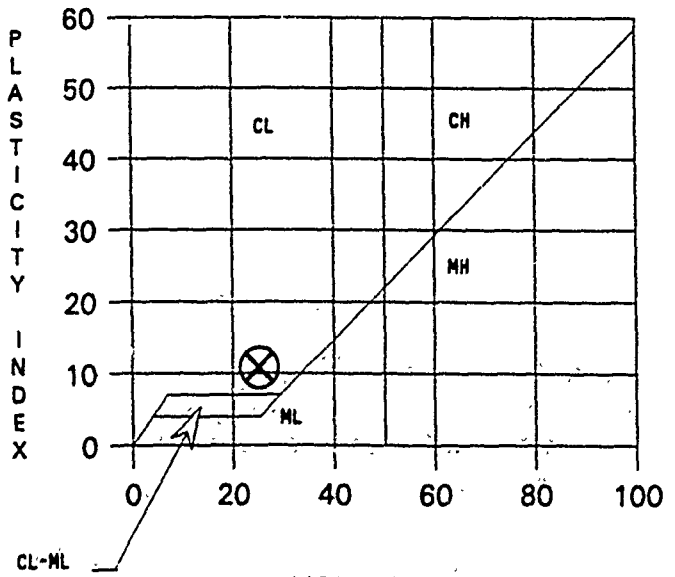
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	MM	Date	09-25-91
Client Project	MARC	Checked By	SJC	Date	9-27-91
Project No.	91154				
Boring No.	MW-10				
Depth(ft.)	40-42				
Sample No.	S-11				
Soil Description	BROWN LEAN CLAY		(-40)		

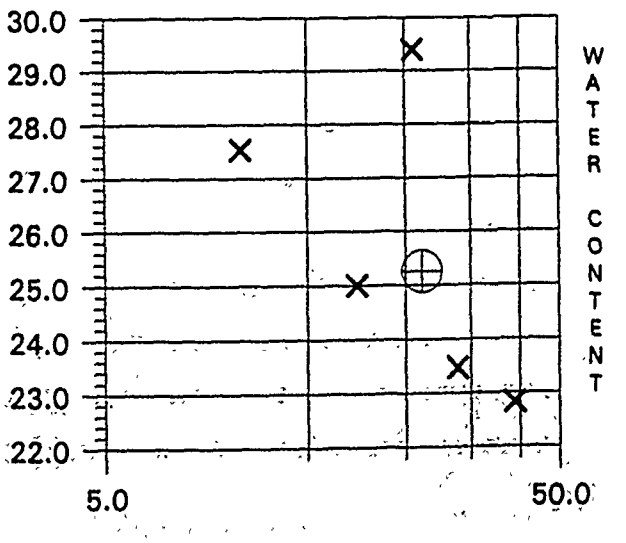
LIQUID LIMIT					
Tare Number	757	908	761	716	810
Wt. Tare & WS(gm.)	42.20	39.42	41.10	40.41	43.22
Wt. Tare & DS(gm.)	40.73	38.08	39.98	39.00	41.75
Wt. Water(gm.)	1.47	1.34	1.12	1.41	1.47
Wt. Tare(gm.)	34.29	32.37	36.17	33.36	36.41
Wt. DS(gm.)	6.44	5.71	3.81	5.64	5.34
NO. OF BLOWS	40	30	24	18	10
Moisture Content(%)	22.8	23.5	29.4	25.0	27.5

PLASTIC LIMIT					
Tare Number	1013	90	829	Summary	
Wt. Tare & WS(gm.)	96.25	107.23	38.05	Liquid Limit %	25
Wt. Tare & DS(gm.)	95.48	106.43	37.25	Plastic Limit %	14
Wt. Water(gm.)	0.77	0.80	0.80	Plasticity Index	11
Wt. Tare(gm.)	90.19	100.94	31.63	USCS Symbol	CL
Wt. DS(gm.)	5.29	5.49	5.62		
Moisture Content(%)	14.6	14.6	14.2		

PLASTICITY CHART



FLOW CURVE

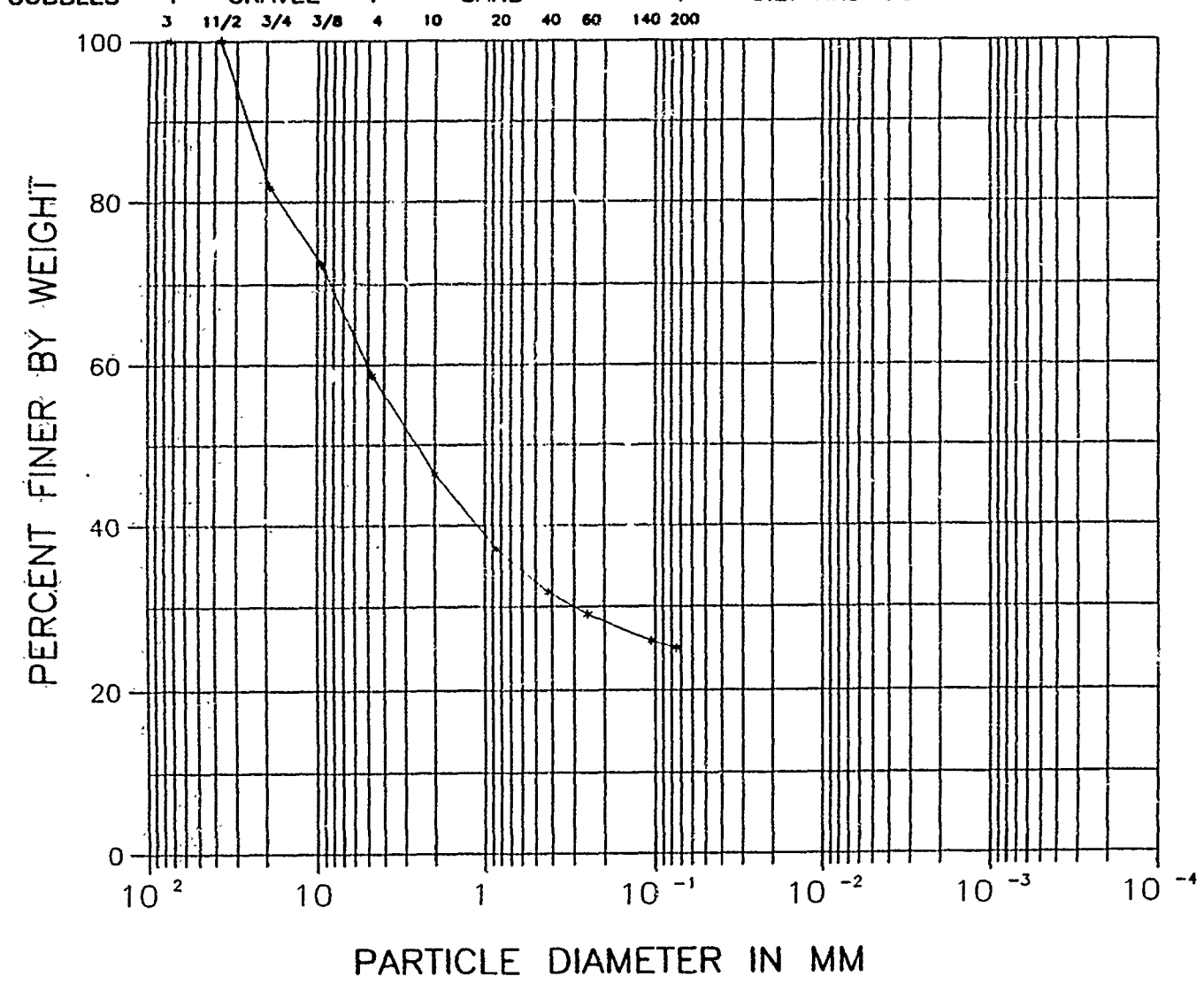


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN CLAYEY GRAVEL WITH SAND
USCS CLASSIFICATION: gc

BORING NO.: MW-10
DEPTH: 80-82
SAMPLE NO.: S-19

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 80-82
Sample No. S-19
Visual Description BROWN CLAYEY GRAVEL WITH SAND

Tested By SVG Date 9-20-91
Checked By JCM Date 9.27.91

Wt. of Dry Split Sample	302.97gm.	Wt. of Grand Total	307
Wt. of +#200 Sample	210.23gm.		
Wt. of -#200 Sample	92.74gm.	J Factor	0.818

Sieve	Sieve Opening (mm)	Wt of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer	Final Percent Finer
3"	75.00	0.00	0.00	0.00	100.0	100.0
1 1/2"	37.50	0.00	0.00	0.00	100.0	100.0
3/4"	19.00	55.95	18.22	18.22	81.8	81.8
3/8"	9.50	34.55	11.40	11.40	88.6	72.5
#4	4.75	50.88	16.79	28.20	71.8	58.7
#10	2.00	45.54	15.03	43.23	56.8	46.4
#20	0.85	34.64	11.43	54.66	45.3	37.1
#40	0.425	19.46	6.42	61.09	38.9	31.8
#60	0.250	10.19	3.36	64.45	35.6	29.1
#140	0.106	11.86	3.91	68.36	31.6	25.9
#200	0.075	3.11	1.03	69.39	30.6	25.0
Pan	-	92.74	30.61	100.0	-	-

TARE NO.	672
WGT. TARE +WS.	401.26
WGT. TARE +DS.	376.85
WGT. OF TARE	73.88
WGT. OF WATER	24.41
WGT. OF DS	302.97
% WATER	8.1

TOTAL WET WGT.-3/4 SIEVE
271.4

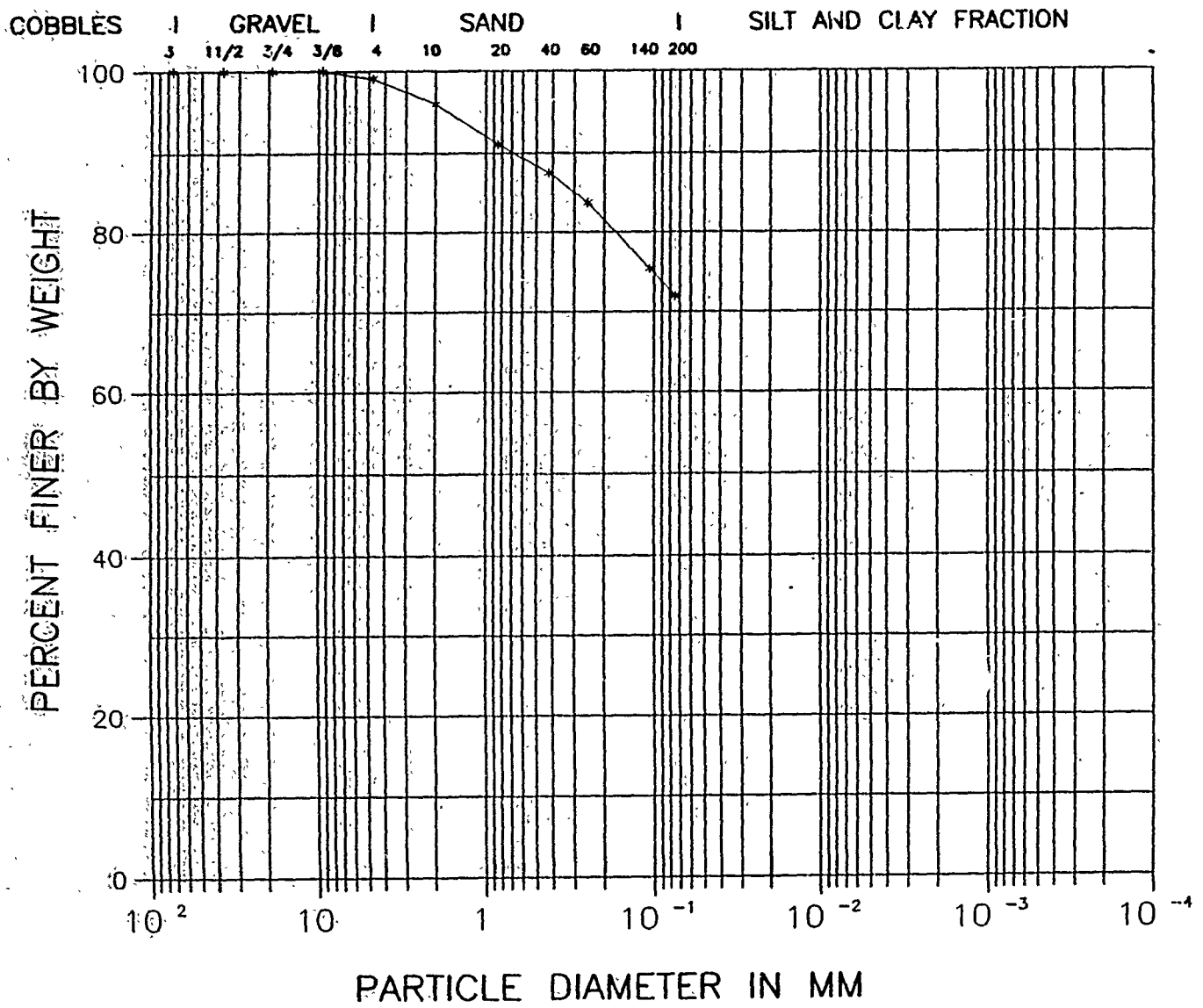
TOTAL DRY WGT.-3/4 SIEVE
251.2

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SANDY LEAN CLAY
USCS CLASSIFICATION: CL

BORING NO.: MW-10
DEPTH: 85-87
SAMPLE NO.: S-20

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 85-87
Sample No. S-20
Visual Description BROWN SANDY LEAN CLAY

Tested By SVG Date 9-20-91
Checked By J Cm Date 9-27-91

Wt. of Total Sample(dry) 117.95gm.
Wt. of +#200 Sample 33.10gm.
Wt. of -#200 Sample 84.85gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	1.08	0.9	0.9	99.08
#10	2.00	3.66	3.1	4.0	95.98
#20	0.85	5.74	4.9	8.9	91.11
#40	0.425	4.26	3.6	12.5	87.50
#60	0.250	4.41	3.7	16.2	83.76
#140	0.106	9.90	8.4	24.6	75.37
#200	0.075	4.05	3.4	28.1	71.94
Pan	-	84.85	71.9	100.0	-

Water Content
Tare No. K-15
Wgt. Tare + WS. 207.10
Wgt. Tare + DS. 192.10
Wgt. Tare 74.15
Wgt. Of Water 15.00
Wgt. Of DS. 117.95

% Water 12.7

Geotechnics

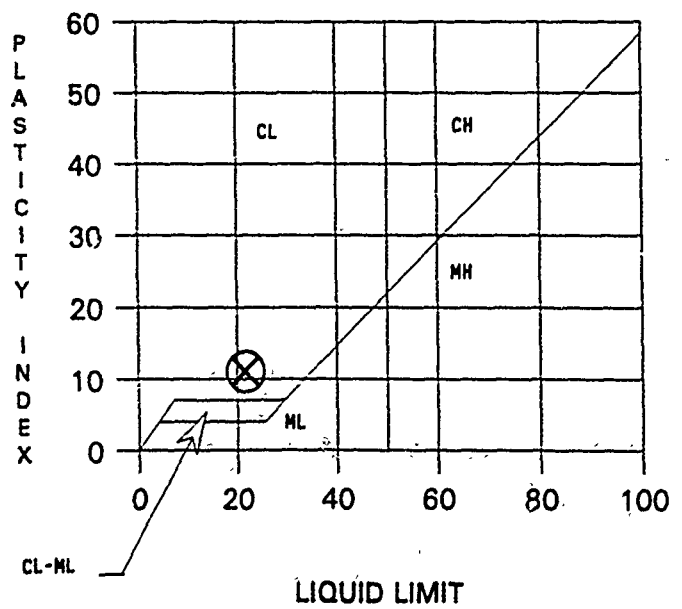
ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-23-91
Client Project	MARC	Checked By	SJG	Date	9-27-91
Project No.	91154				
Boring No.	MW-10				
Depth(ft.)	85-87				
Sample No.	S-20				
Soil Description	BROWN LEAN CLAY		(-40)		

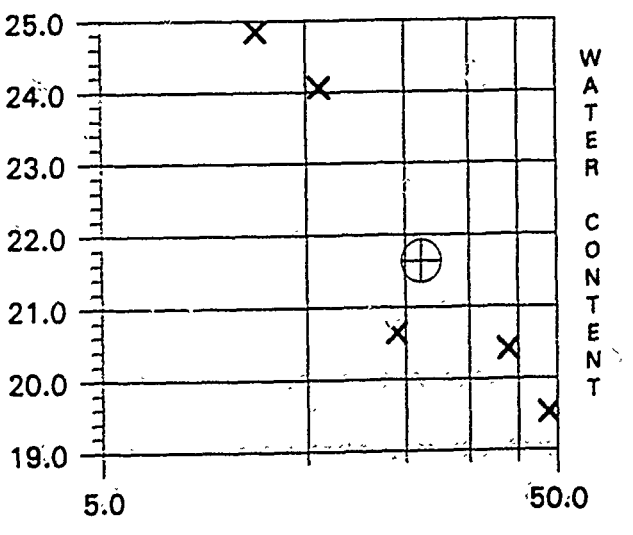
LIQUID LIMIT					
Tare Number	55	1309	1306	441	439
Wt. Tare & WS(gm.)	111.81	106.55	105.94	102.42	103.68
Wt. Tare & DS(gm.)	110.97	105.86	105.43	101.65	102.85
Wt. Water(gm.)	0.84	0.69	0.51	0.77	0.83
Wt. Tare(gm.)	106.67	102.48	102.96	98.45	99.51
Wt. DS(gm.)	4.30	3.38	2.47	3.20	3.34
NO. OF BLOWS	48	39	22	15	11
Moisture Content(%)	19.5	20.4	20.6	24.1	24.9

PLASTIC LIMIT					
Tare Number	759	800	809	Summary	
Wt. Tare & WS(gm.)	41.45	46.61	39.15	Liquid Limit %	22
Wt. Tare & DS(gm.)	40.98	46.11	38.64	Plastic Limit %	11
Wt. Water(gm.)	0.47	0.50	0.51	Plasticity Index	11
Wt. Tare(gm.)	36.47	41.30	34.04	USCS Symbol	CL
Wt. DS(gm.)	4.51	4.81	4.60		
Moisture Content(%)	10.4	10.4	11.1		

PLASTICITY CHART



FLOW CURVE

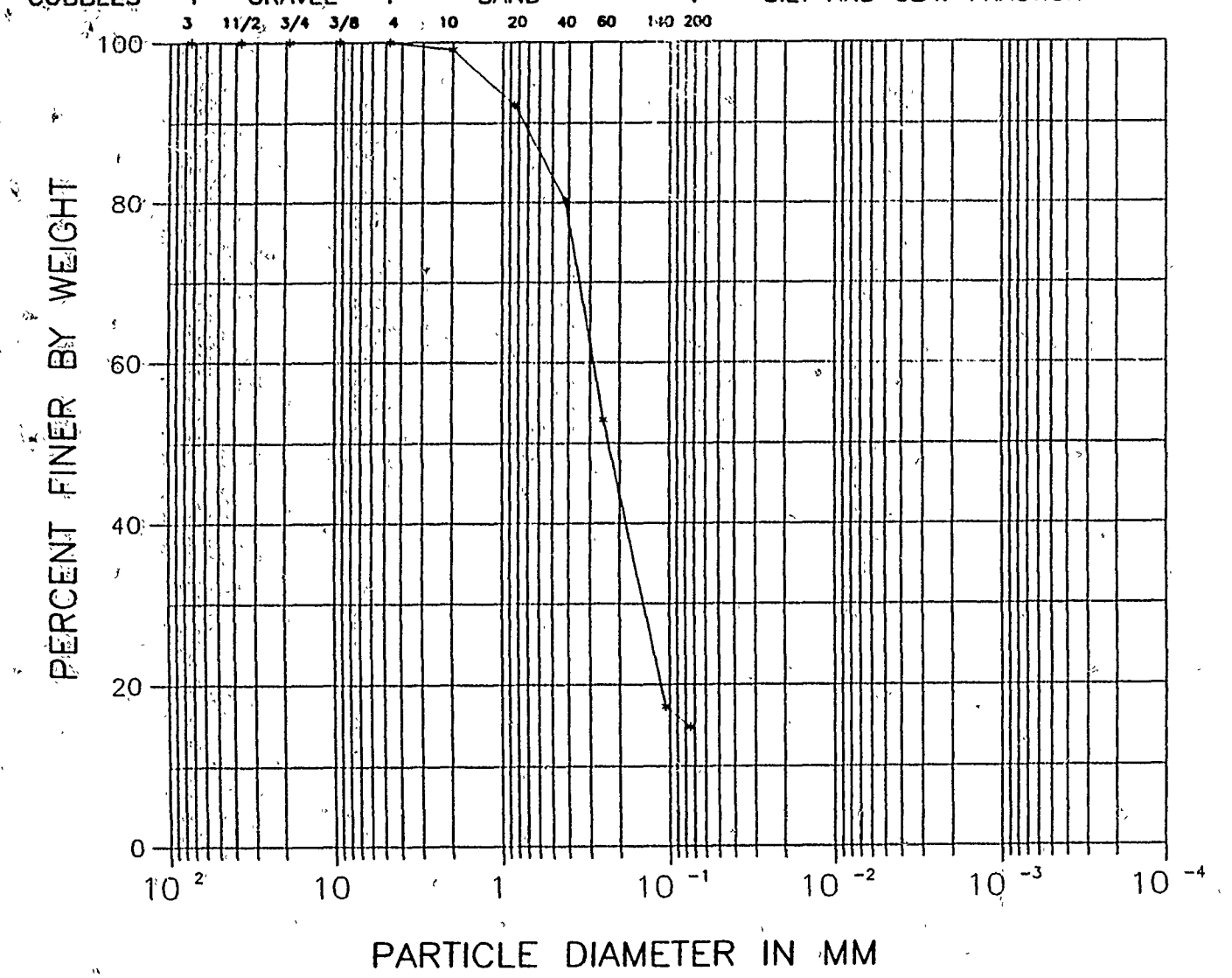


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: GRAY SILTY SAND (NON-PLASTIC FINES)
USCS CLASSIFICATION: NP

BORING NO.: MW-10
DEPTH: 115-117
SAMPLE NO.: S-26

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 115-117
Sample No. S-26
Visual Description GRAY SILTY SAND (NON-PLASTIC FINES)

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 240.69gm.
Wt. of +#200 Sample 205.06gm.
Wt. of -#200 Sample 35.63gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	2.25	0.9	0.9	99.07
#20	0.85	16.26	6.8	7.7	92.31
#40	0.425	28.91	12.0	19.7	80.30
#60	0.250	65.74	27.3	47.0	52.99
#140	0.106	85.81	35.7	82.7	17.33
#200	0.075	6.09	2.5	85.2	14.80
Pan	-	35.63	14.8	100.0	-

Water Content
Tare No. Z
Wgt. Tare + WS. 353.38
Wgt. Tare + DS. 314.56
Wgt. Tare 73.87
Wgt. Of Water 38.82
Wgt. Of DS. 240.69

% Water 16.1

Geotechnics

ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SVL	Date	9-27-91
Project No.	91154				
Boring No.	MW-10				
Depth(ft.)	115-117				
Sample No.	S-26				
Soil Description	NON PLASTIC (-40)				

LIQUID LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	
NO. OF BLOWS	

PLASTIC LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	

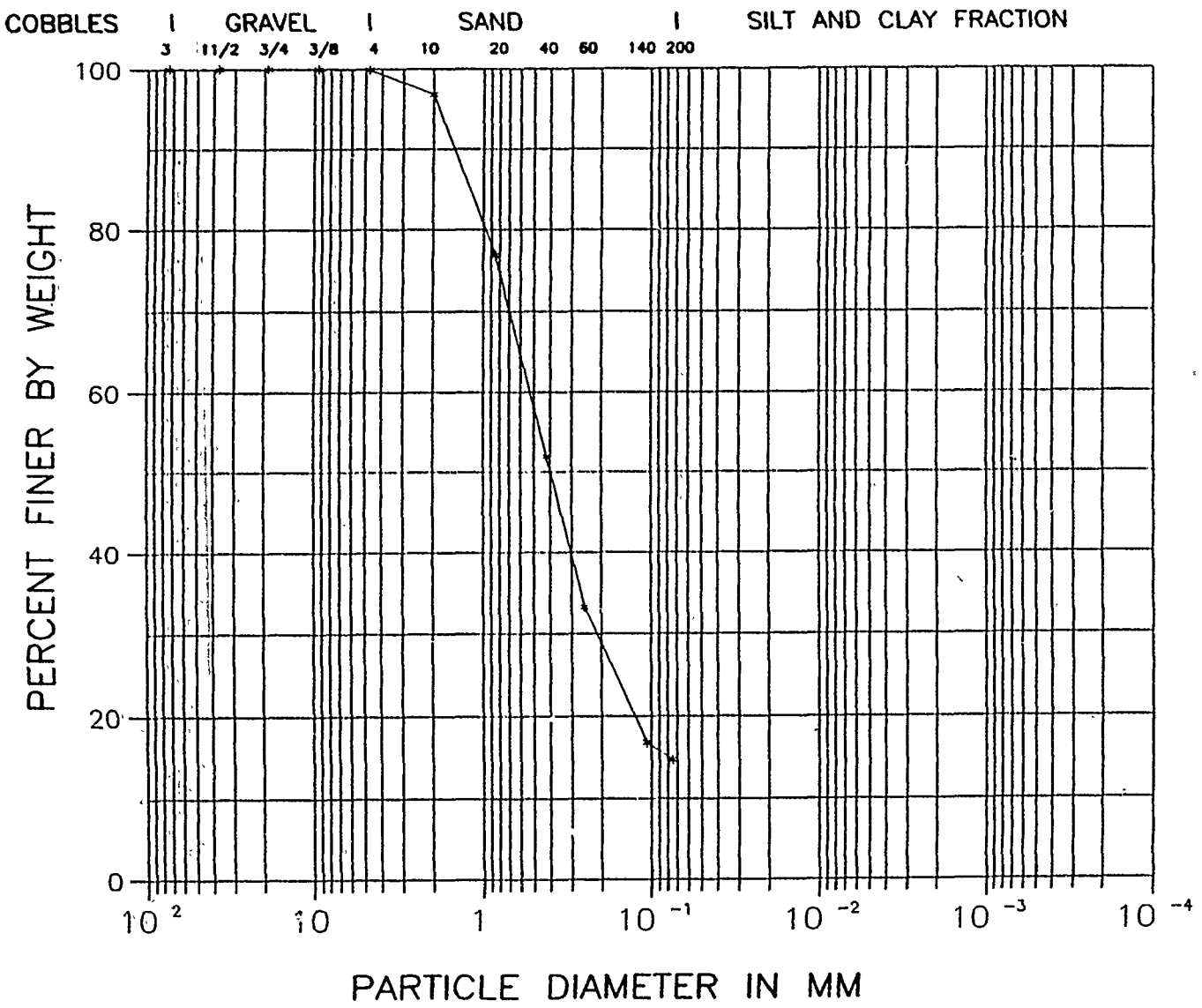
NON PLASTIC

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: GRAY SILTY SAND
USCS CLASSIFICATION: sm

BORING NO.: MW-10
DEPTH: 120-122
SAMPLE NO.: S-27

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-10
Depth(ft.) 120-122
Sample No. S-27
Visual Description GRAY SILTY SAND

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 259.25gm.
Wt. of +#200 Sample 220.98gm.
Wt. of -#200 Sample 38.27gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.25	0.1	0.1	99.90
#10	2.00	8.06	3.1	3.2	96.79
#20	0.85	51.70	19.9	23.1	76.85
#40	0.425	64.54	24.9	48.0	51.96
#60	0.250	48.65	18.8	66.8	33.19
#140	0.106	42.39	16.4	83.2	16.84
#200	0.075	5.39	2.1	85.2	14.76
Pan	-	38.27	14.8	100.0	-

Water Content
Tare No. 782
Wgt. Tare + WS. 379.45
Wgt. Tare + DS. 344.90
Wgt. Tare 85.65
Wgt. Of Water 34.55
Wgt. Of DS. 259.25

% Water 13.3

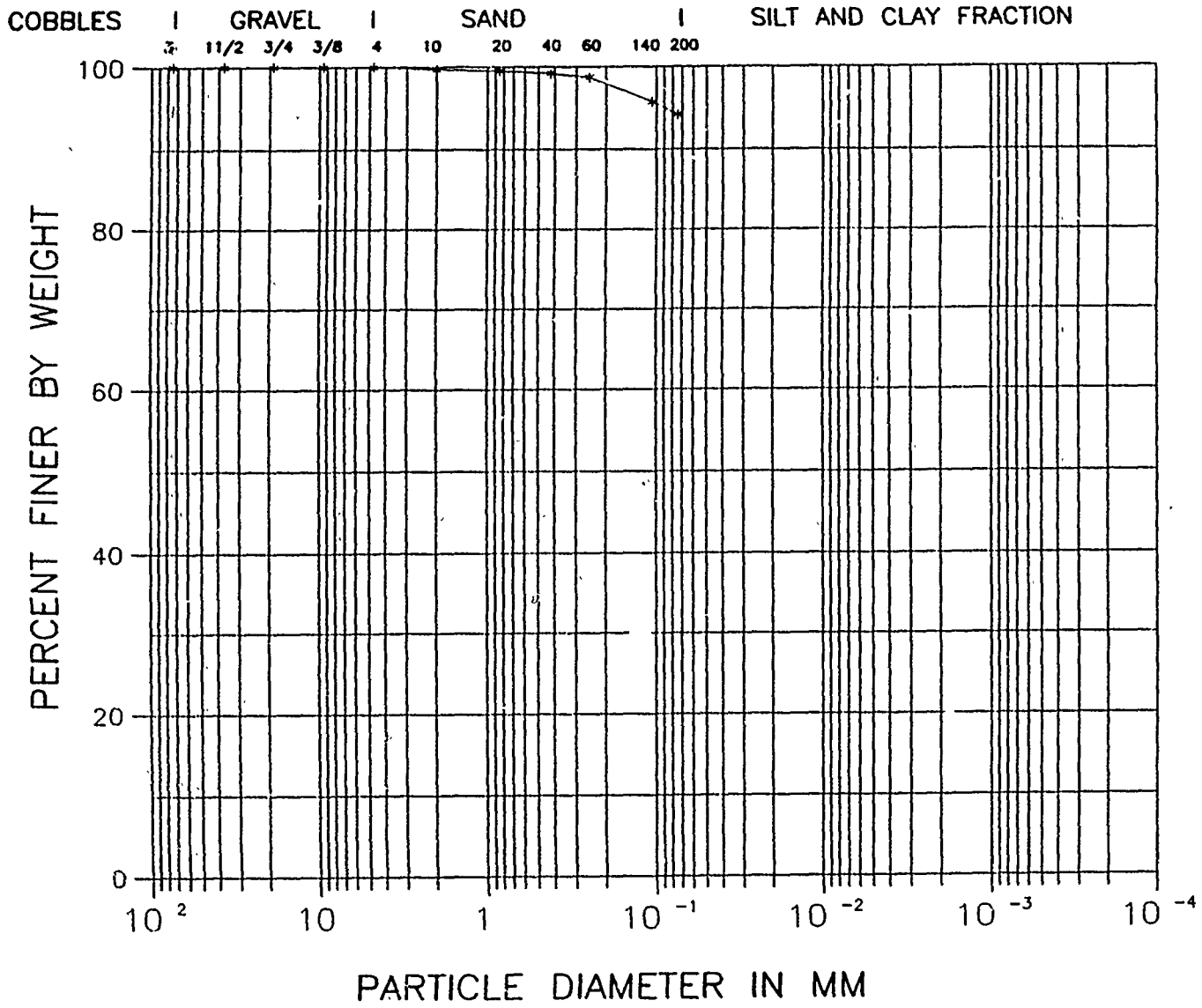
Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILTY CLAY
USCS CLASSIFICATION: CL-ML

BORING NO.: MW-11
DEPTH: 28-30
SAMPLE NO.: S-9

SIEVE ANALYSIS

HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-11
Depth(ft.) 28-30
Sample No. S-9
Visual Description BROWN SILTY CLAY

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 83.22gm.
Wt. of +#200 Sample 4.82gm.
Wt. of -#200 Sample 78.40gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.24	0.3	0.3	99.71
#20	0.85	0.16	0.2	0.5	99.52
#40	0.425	0.26	0.3	0.8	99.21
#60	0.250	0.41	0.5	1.3	98.71
#140	0.106	2.48	3.0	4.3	95.73
#200	0.075	1.27	1.5	5.8	94.21
Pan	-	78.40	94.2	100.0	-

Water Content

Tare No.	727
Wgt. Tare + WS.	180.42
Wgt. Tare + DS.	168.83
Wgt. Tare	85.61
Wgt. Of Water	11.59
Wgt. Of DS.	83.22
% Water	13.9

Geotechnics

ATTERBERG LIMITS TEST

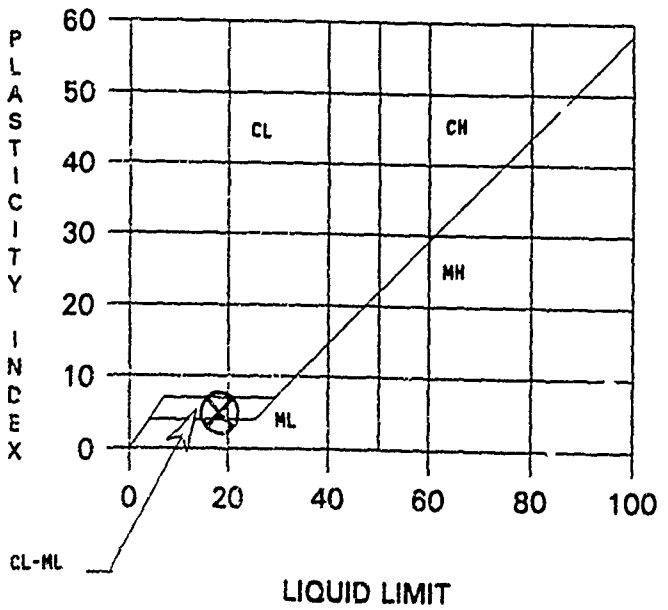
Client	OH MATERIALS	Tested By	TO	Date	09-25-91
Client Project	MARC	Checked By	SVG	Date	9-27-91
Project No.	91154				
Boring No.	MW-11				
Depth(ft.)	28-30				
Sample No.	S-9				
Soil Description	BROWN SILTY CLAY		(-40)		

LIQUID LIMIT			
Tare Number	801	749	794
Wt. Tare & WS(gm.)	37.39	39.11	38.76
Wt. Tare & DS(gm.)	36.81	38.37	38.24
Wt. Water(gm.)	0.58	0.74	0.52
Wt. Tare(gm.)	33.60	34.31	35.52
Wt. DS(gm.)	3.21	4.06	2.72
NO. OF BLOWS	33	23	10
Moisture Content(%)	18.1	18.2	19.1

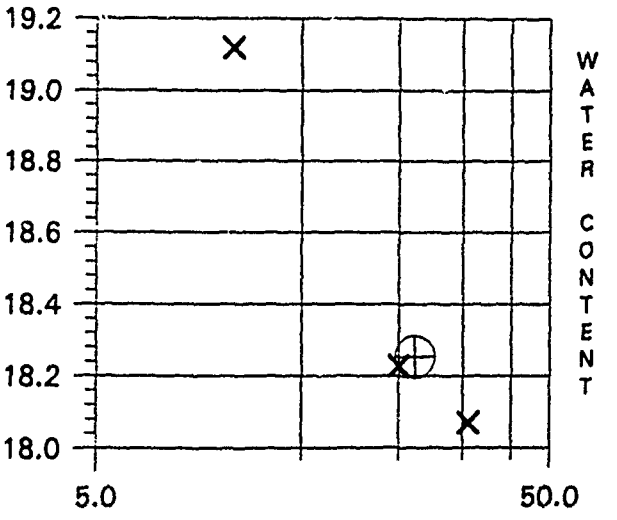
PLASTIC LIMIT			
Tare Number	814	826	760
Wt. Tare & WS(gm.)	33.95	37.22	41.27
Wt. Tare & DS(gm.)	33.23	36.61	40.67
Wt. Water(gm.)	0.72	0.61	0.60
Wt. Tare(gm.)	28.01	32.11	36.05
Wt. DS(gm.)	5.22	4.50	4.62
Moisture Content(%)	13.8	13.6	13.0

Summary	
Liquid Limit %	18
Plastic Limit %	13
Plasticity Index	5
USCS Symbol	CL-ML

PLASTICITY CHART



FLOW CURVE

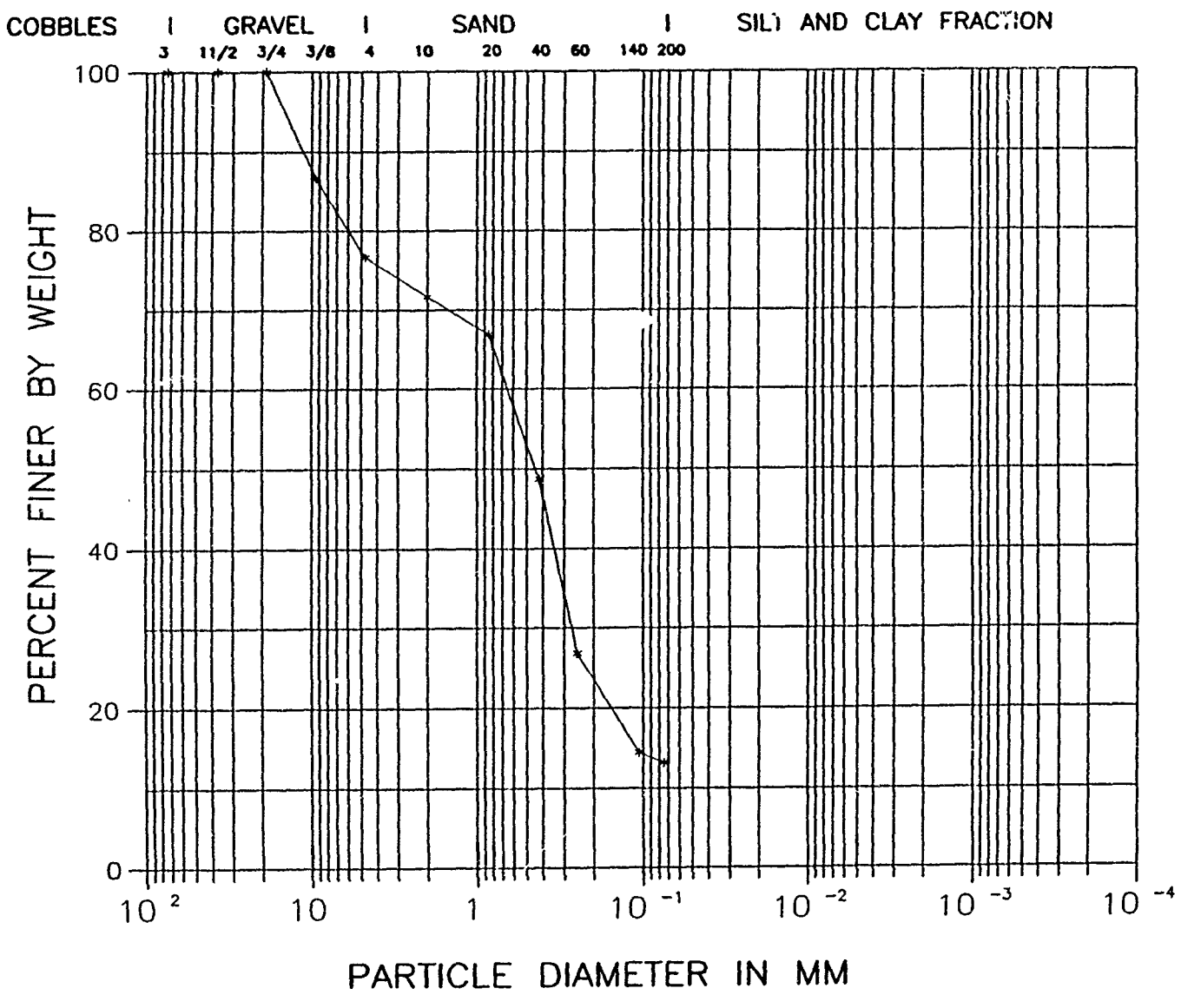


Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILTY, CLAYEY SAND WITH GRAVEL
USCS CLASSIFICATION: sc-sm

BORING NO.: MW-11
DEPTH: 33-35
SAMPLE NO.: S-10

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-11
Depth(ft.) 33-35
Sample No. S-10
Visual Description BROWN SILTY, CLAYEY SAND WITH GRAVEL

Tested By SVG Date 9-20-91
Checked By JCM Date 9 27-91

Wt. of Total Sample(dry) 248.24gm.
Wt. of +#200 Sample 215.50gm.
Wt. of -#200 Sample 32.74gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	33.14	13.3	13.3	86.65
#4	4.75	24.91	10.0	23.4	76.62
#10	2.00	12.32	5.0	28.3	71.65
#20	0.85	11.85	4.8	33.1	66.88
#40	0.425	45.15	18.2	51.3	48.69
#60	0.250	54.42	21.9	73.2	26.77
#140	0.106	30.42	12.3	85.5	14.51
#200	0.075	3.29	1.3	86.8	13.19
Pan	-	32.74	13.2	100.0	-

Water Content

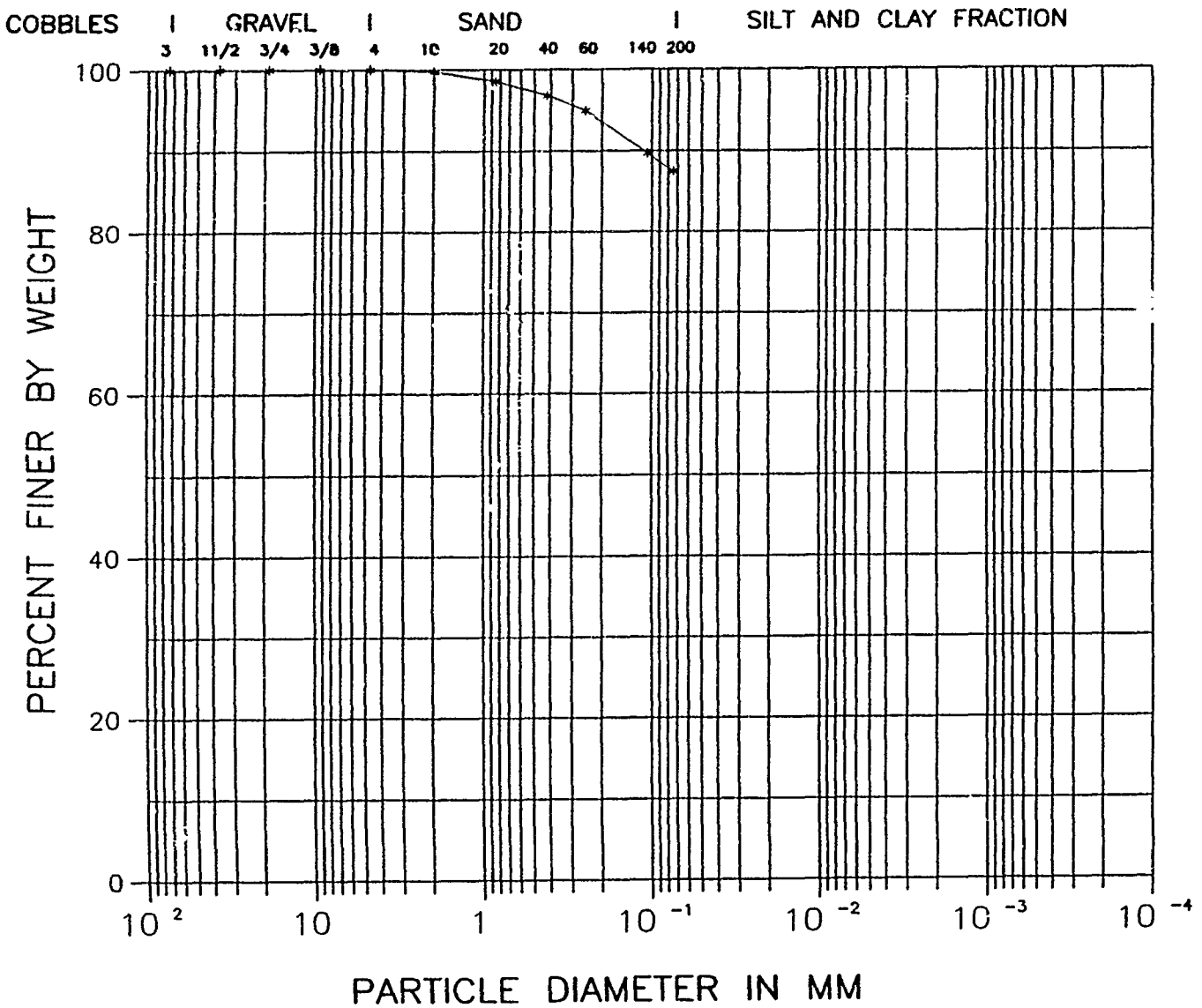
Tare No.	786
Wgt. Tare + WS.	359.82
Wgt. Tare + DS.	334.14
Wgt. Tare	85.90
Wgt. Of Water	25.68
Wgt. Of DS.	248.24
% Water	10.3

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN SILT (NON-PLASTIC FINES)
USCS CLASSIFICATION: NP

BORING NO.: MW-11
DEPTH: 68-70
SAMPLE NO.: S-17

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-11
Depth(ft.) 68-70
Sample No. S-17
Visual Description BROWN SILT (NON-PLASTIC FINES)

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 155.28gm.
Wt. of +#200 Sample 19.54gm.
Wt. of -#200 Sample 135.74gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	0.00	0.0	0.0	100.00
#4	4.75	0.00	0.0	0.0	100.00
#10	2.00	0.36	0.2	0.2	99.77
#20	0.85	1.85	1.2	1.4	98.58
#40	0.425	2.70	1.7	3.2	96.84
#60	0.250	2.92	1.9	5.0	94.96
#140	0.106	8.16	5.3	10.3	89.70
#200	0.075	3.55	2.3	12.6	87.42
Pan	-	135.74	87.4	100.0	-

Water Content

Tare No.	674
Wgt. Tare + WS.	253.90
Wgt. Tare + DS.	230.26
Wgt. Tare	74.98
Wgt. Of Water	23.64
Wgt. Of DS.	155.28
% Water	15.2

Geotechnics

ATTERBERG LIMITS TEST

Client	OH MATERIALS	Tested By	TO	Date	09-24-91
Client Project	MARC	Checked By	SVG	Date	9-27-91
Project No.	91154				
Boring No.	MW-11				
Depth(ft.)	68-70				
Sample No.	S-17				
Soil Description	NON PLASTIC (-40)				

LIQUID LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	
NO. OF BLOWS	

PLASTIC LIMIT	
Tare Number	
Wt. Tare & WS(gm.)	
Wt. Tare & DS(gm.)	
Wt. Water(gm.)	
Wt. Tare(gm.)	
Wt. DS(gm.)	
Moisture Content(%)	

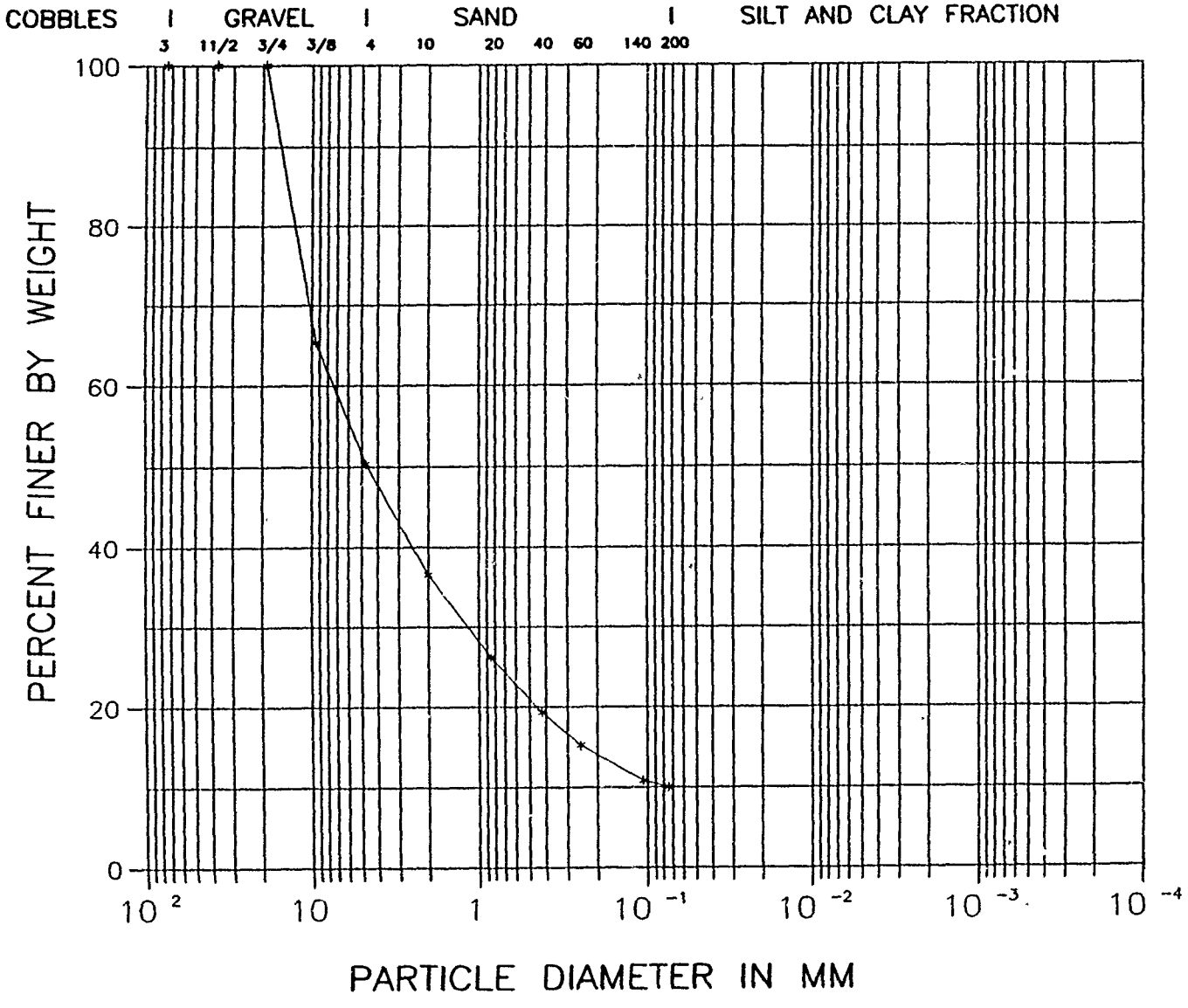
NON PLASTIC

Geotechnics

CLIENT: OH MATERIALS
CLIENT PROJECT: MARC
PROJECT NO.: 91154
DESCRIPTION: BROWN WELL-GRADED GRAVEL WITH SILT AND SAND
USCS CLASSIFICATION: gw-gm

BORING NO.: MW-11
DEPTH: 63-65
SAMPLE NO.: S-16

SIEVE ANALYSIS HYDROMETER



Geotechnics

WASH SIEVE ANALYSIS

Client OH MATERIALS
Client Project MARC
Project No. 91154
Boring No. MW-11
Depth(ft.) 63-65
Sample No. S-16
Visual Description BROWN WELL-GRADED GRAVEL WITH SILT AND SAND

Tested By SVG Date 9-20-91
Checked By JCM Date 9-27-91

Wt. of Total Sample(dry) 230.59gm.
Wt. of +#200 Sample 207.47gm.
Wt. of -#200 Sample 23.12gm.

Sieve	Sieve Opening (mm)	Wt. of Soil Retained (gm.)	Percent Retained	Accumulated Percent Retained	Percent Finer
3"	75.00	0.00	0.0	0.0	100.00
1 1/2"	37.50	0.00	0.0	0.0	100.00
3/4"	19.00	0.00	0.0	0.0	100.00
3/8"	9.50	79.88	34.6	34.6	65.36
#4	4.75	34.53	15.0	49.6	50.38
#10	2.00	32.01	13.9	63.5	36.50
#20	0.85	23.69	10.3	73.8	26.23
#40	0.425	15.98	6.9	80.7	19.30
#60	0.250	9.43	4.1	84.8	15.21
#140	0.106	10.08	4.4	89.2	10.84
#200	0.075	1.87	0.8	90.0	10.03
Pan	-	23.12	10.0	100.0	-

Water Content

Tare No.	GEO
Wgt. Tare + WS.	330.22
Wgt. Tare + DS.	315.19
Wgt. Tare	84.60
Wgt. Of Water	15.03
Wgt. Of DS.	230.59
% Water	6.5

APPENDIX D

ANALYTICAL RESULTS

IRDMIS DATA ELEMENT LEGEND

CQC	= Chemical Quality Control
CSO	= Chemical Soil
CSE	= Chemical Sediment
BOOL	= Boolean Measurement
Unc Mant	= Uncorrected Mantissa
Unc Exp	= Uncorrected Exponent
Dil Mant	= Dilution Mantissa
Dil Exp	= Dilution Exponent
Moist	= Moisture
FC	= Flagging Code
QC	= Quality Control
S	= Standard Matrix Spike (QC test code)
M	= Method Blank (QC test code)
T	= Trip Blank (QC test code)
P	= Results less than Certified Reporting Limit (CRL) but greater than criteria of detection (COD)[1]
R	= Rinse Blank (QC test code)
F	= Field Blank (QC test code)

[1]Criteria of detection = 1/2 CRL.

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	DHC	LP01	UGG	LJH	N	OH

Sample:
Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	1.20	0				M		0.00	0
MEC6H5	LT	6.50	-1				M		0.00	0
TXYLEN	LT	4.94	0				M		0.00	0

Sample:
Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		1.54	0				S		2.00	0
MEC6H5		1.93	0				S		2.00	0
TXYLEN		9.80	0				S		9.70	0

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		9.91	0				S		1.00	1
MEC6H5		1.07	1				S		1.01	1
TXYLEN		4.79	1				S		4.51	1

Sample:
Samp Anal No: 004 File: CSO Site Type: BORE
Site ID: SB1 Field Samp No: Samp Date: 08/28/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 30855.2 Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	1.20	0			11.6			.	

MEC6H5	LT	6.50	-1	11.6	

/91

* - Indicates that the data is either in error or has not been validated

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
TXYLEN	LT	4.94	0			11.6			.	

Sample:

Samp Anal No:	005	File:	CSO	Site Type:	BORE
Site ID:	SB2	Field Samp No:		Samp Date:	08/28/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	30856.0	Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	1.20	0			17.1			.	
MEC6H5	LT	6.50	-1			17.1			.	
TXYLEN	LT	4.94	0			17.1			.	

Sample:

Samp Anal No:	006	File:	CSO	Site Type:	BORE
Site ID:	SB3	Field Samp No:		Samp Date:	08/28/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	30857.9	Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	1.20	0			25.6			.	
MEC6H5	LT	6.50	-1			25.6			.	
TXYLEN	LT	4.94	0			25.6			.	

Sample:

Samp Anal No:	007	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:	0.0	Samp Tech:	
Lab Samp No:		Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		9.82	0			.	S		1.00	1
MEC6H5		1.04	1			.	S		1.01	1
TXYLEN		4.72	1			.	S		4.51	1

* - Indicates that the data is in error or that it has not been validated

Group checking process 11/18/91
Installation: MW Lab: PC Lot: DHC 17:14:32

Map file \irmap\MWCOORDB.DBF does not exist
Map file \irmap\MWCOORDB.NTX does not exist
Map file \irmap\MWLSMP.DBF does not exist
Map file \irmap\MWLSMP.NTX does not exist

Quality Control Acceptance - Certification Level C1

Test Name	Standard Matrix QC: Blank Required	Blank Found	Low Spike Required	Low Spike Found	High Spike Required	High Spike Found
C6H6	1	1	1	1	2	2
MEC6H5	1	1	1	1	2	2
TXYLEN	1	1	1	1	2	2

QC Test parameters as determined from Lot data:

Test Name	Low Spike Concentration Mantissa	Low Spike Concentration Exponent	High Spike Concentration Mantissa	High Spike Concentration Exponent
C6H6	2.00	0	1.00	1
MEC6H5	2.00	0	1.01	1
TXYLEN	9.70	0	4.51	1

Data in the lot - Installation: MW Lab: PC Lot: DHC
contains errors even though record check is correct.

Completion time - 17:14:34

Lot: Page - 1 Date - 11/18/91

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	DGA	LG03	UGG	LJH	N	OH

Sample:

Samp Anal No:	001	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:	0.0	Samp Tech:	
Lab Samp No:		Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	8.10	0					M	0.00	0
112TCE	LT	7.00	0					M	0.00	0
11DCE	LT	8.50	0					M	0.00	0
11DCLE	LT	2.90	0					M	0.00	0
12DCE	LT	3.30	0					M	0.00	0
12DCLE	LT	3.00	0					M	0.00	0
12DCLP	LT	5.90	0					M	0.00	0
C2H3CL	LT	9.20	-1					M	0.00	0
CCL4	LT	1.70	0					M	0.00	0
CH2CL2	LT	3.60	0					M	0.00	0
CHCL3	LT	2.90	0					M	0.00	0
TCLEE	LT	4.10	0					M	0.00	0
TCLTFE	LT	7.20	0					M	0.00	0
TRCLE	LT	2.60	0					M	0.00	0

Sample:

Samp Anal No:	002	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:	0.0	Samp Tech:	
Lab Samp No:		Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		1.83	1					S	1.49	1
112TCE		1.55	1					S	1.50	1
11DCE		1.50	1					S	1.50	1
11DCLE	LT	2.90	0					S	0.00	0
12DCE		1.08	1					S	8.38	0
12DCLE		7.47	0					S	7.50	0
12DCLP	LT	5.90	0					S	0.00	0
C2H3CL	LT	9.20	-1					S	0.00	0
CCL4	LT	1.70	0					S	0.00	0
CH2CL2	LT	3.60	0					S	0.00	0
CHCL3	LT	2.90	0					S	0.00	0
TCLEE		8.20	0					S	7.62	0
TCLTFE	LT	7.20	0					S	0.00	0
TRCLE		9.76	0					S	7.62	0

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		4.84	1					S	4.00	1
112TCE		4.60	1					S	4.00	1
11DCE		3.90	1					S	3.99	1
11DCLE	LT	2.90	0					S	0.00	0
12DCE		2.49	1					S	1.99	1
12DCLE		2.18	1					S	2.00	1
12DCLP	LT	5.90	0					S	0.00	0
C2H3CL	LT	9.20	-1					S	0.00	0
CCL4	LT	1.70	0					S	0.00	0
CH2CL2	LT	3.60	0					S	0.00	0
CHCL3	LT	2.90	0					S	0.00	0
TCLEE		5.05	1				X	S	3.98	1
TCLTFE	LT	7.20	0					S	0.00	0
TRCLE		2.56	1				X	S	2.00	1

Sample:
Samp Anal No: 004 File: CSO Site Type: BORE
Site ID: SB1 Field Samp No: Samp Date: 08/28/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 30855.2 Samp Prep Date: 09/09/91 Anal Date: 09/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	8.10	0			11.6			.	
112TCE	LT	7.00	0			11.6			.	
11DCE	LT	8.50	0			11.6			.	
11DCLE	LT	2.90	0			11.6			.	
12DCE	LT	3.30	0			11.6			.	
12DCLE	LT	3.00	0			11.6			.	
12DCLP	LT	5.90	0			11.6			.	
C2H3CL	LT	9.20	-1			11.6			.	
CCL4	LT	1.70	0			11.6			.	
CH2CL2	LT	3.60	0			11.6			.	
CHCL3	LT	2.90	0			11.6			.	
TCLEE	LT	4.10	0			11.6			.	
TCLTFE	LT	7.20	0			11.6			.	
TRCLE	LT	2.60	0			11.6			.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	005	File:	CSO	Site Type:	BORE
Site ID:	SB2	Field Samp No:		Samp Date:	08/28/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	30856.0	Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	8.10	0			17.1			.	
112TCE	LT	7.00	0			17.1			.	
11DCE	LT	8.50	0			17.1			.	
11DCLE	LT	2.90	0			17.1			.	
12DCE	LT	3.30	0			17.1			.	
12DCLE	LT	3.00	0			17.1			.	
12DCLP	LT	5.90	0			17.1			.	
C2H3CL	LT	9.20	-1			17.1			.	
CCL4	LT	1.70	0			17.1			.	
CH2CL2	LT	3.60	0			17.1			.	
CHCL3	LT	2.90	0			17.1			.	
TCLEE	LT	4.10	0			17.1			.	
TCLTFE	LT	7.20	0			17.1			.	
TRCLE	LT	2.60	0			17.1			.	

Sample:

Samp Anal No:	006	File:	CSO	Site Type:	BORE
Site ID:	SB3	Field Samp No:		Samp Date:	08/28/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	30857.9	Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	8.10	0			25.6			.	
112TCE	LT	7.00	0			25.6			.	
11DCE	LT	8.50	0			25.6			.	
11DCLE	LT	2.90	0			25.6			.	
12DCE	LT	3.30	0			25.6			.	
12DCLE	LT	3.00	0			25.6			.	
12DCLP	LT	5.90	0			25.6			.	
C2H3CL	LT	9.20	-1			25.6			.	
CCL4	LT	1.70	0			25.6			.	
CH2CL2	LT	3.60	0			25.6			.	
CHCL3	LT	2.90	0			25.6			.	
TCLEE	LT	4.10	0			25.6			.	
TCLTFE	LT	7.20	0			25.6			.	
TRCLE	LT	2.60	0			25.6			.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	007	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:	0.0	Samp Tech:	
Lab Samp No:		Samp Prep Date:	09/09/91	Anal Date:	09/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		4.78	1			.		S	4.00	1
112TCE		4.41	1			.		S	4.00	1
11DCE		3.98	1			.		S	3.99	1
11DCLE	LT	2.90	0					S	0.00	0
12DCE		2.44	1			.		S	1.99	1
12DCLE		2.06	1			.		S	2.00	1
12DCLP	LT	5.90	0					S	0.00	0
C2H3CL	LT	9.20	-1					S	0.00	0
CCL4	LT	1.70	0					S	0.00	0
CH2CL2	LT	3.60	0					S	0.00	0
CHCL3	LT	2.90	0					S	0.00	0
TCLEE		4.94	1			.		S	3.98	1
TCLTFE	LT	7.20	0					S	0.00	0
TRCLE		2.51	1			.	X	S	2.00	1

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91

Group checking process 11/18/91
Installation: MW Lab: PC Lot: DGA 17:14:28

Map file \irmap\MWCOORDB.DBF does not exist
Map file \irmap\MWCOORDB.NTX does not exist
Map file \irmap\MWLSMP.DBF does not exist
Map file \irmap\MWLSMP.NTX does not exist

Quality Control Acceptance - Certification Level C1

Test Name	Standard Matrix QC: Blank Required	Blank Found	Low Spike Required	Low Spike Found	High Spike Required	High Spike Found
111TCE	1	1	1	1	2	2
112TCE	1	1	1	1	2	2
11DCE	1	1	1	1	2	2
12DCE	1	1	1	1	2	2
12DCLE	1	1	1	1	2	2
TCLEE	1	1	1	1	2	2
TRCLE	1	1	1	1	2	2

QC Test parameters as determined from Lot data:

Test Name	Low Spike Concentration Mantissa	Low Spike Concentration Exponent	High Spike Concentration Mantissa	High Spike Concentration Exponent
111TCE	1.49	1	4.00	1
112TCE	1.50	1	4.00	1
11DCE	1.50	1	3.99	1
12DCE	8.38	0	1.99	1
12DCLE	7.50	0	2.00	1
TCLEE	7.62	0	3.98	1
TRCLE	7.62	0	2.00	1

Data in the lot - Installation: MW Lab: PC Lot: DGA
contains errors even though record check is correct.

Completion time - 17:14:32

Instl	Lab	Lot No	Meth No	Units	Meas Analyst	Class	Prime Contr
MW	PC	FLS	UP01	UGL	LJH	N	OH

Sample:
Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Lab	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		2.06	-1				S	1.00	0	
MEC6H5		1.04	0				S	2.00	0	
TXYLEN		1.36	1				S	1.50	1	

Sample:
Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.16	0				S	5.00	0	
MEC6H5		9.50	0				S	1.00	1	
TXYLEN		7.06	1				S	7.50	1	

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				M	0.00	0	
MEC6H5	LT	8.70	-1				M	0.00	0	
TXYLEN	LT	8.28	0				M	0.00	0	

Sample:
Samp Anal No: 004 File: CGW Site Type: TRIP
Site ID: MARC Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34890.2 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				T	0.00	0	
MEC6H5	LT	8.70	-1				T	0.00	0	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
TXYLEN	LT	8.28	0					T	0.00	0

Sample:

Samp Anal No:	005				
Site ID:	MARC	File:	CGW	Site Type:	WELL
Samp Program:	RAS	Field Samp No:	MW-2B	Samp Date:	09/26/91
Lab Samp No:	34891.0	Samp Depth:	80.0	Samp Tech:	G
Base Closure:	N	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
		Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	006				
Site ID:	MARC	File:	CGW	Site Type:	WELL
Samp Program:	RAS	Field Samp No:	MW-1A	Samp Date:	09/26/91
Lab Samp No:	34877.5	Samp Depth:	20.0	Samp Tech:	G
Base Closure:	N	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
		Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	007				
Site ID:	MARC	File:	CGW	Site Type:	WELL
Samp Program:	RAS	Field Samp No:	MW-2A	Samp Date:	09/26/91
Lab Samp No:	34878.3	Samp Depth:	20.0	Samp Tech:	G
Base Closure:	N	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
		Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	008	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-3	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	16.0	Samp Tech:	G
Lab Samp No:	34879.1	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:

Samp Anal No:	009	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-4	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	18.0	Samp Tech:	G
Lab Samp No:	34880.5	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:

Samp Anal No:	010	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-5	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	25.0	Samp Tech:	G
Lab Samp No:	34881.3	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:

Samp Anal No:	011	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-6	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34882.1	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 012 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-7 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 16.0 Samp Tech: G
Lab Samp No: 34883.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 013 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-8 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 90.0 Samp Tech: G
Lab Samp No: 34884.8 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 014 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-9 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 90.0 Samp Tech: G
Lab Samp No: 34885.6 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 015 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-10 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34886.4 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 016 File: CGW Site Type: WELL
Site ID: MAFC Field Samp No: MW 11 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 75.0 Samp Tech: J
Lab Samp No: 34887.2 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 017 File: CGW Site Type: FBLK
Site ID: FIELDBLANK Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34888.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				F	0.00	0	
MEC6H5	LT	8.70	-1				F	0.00	0	
TXYLEN	LT	8.28	0				F	0.00	0	

Sample:
Samp Anal No: 018 File: CGW Site Type: RNSW
Site ID: DIWATER Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34889.9 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				R	0.00	0	
MEC6H5	LT	8.70	-1				R	0.00	0	
TXYLEN	LT	8.28	0				R	0.00	0	

Sample:
Samp Anal No: 019 File: CCC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.41	0				S	0.00	0	
MEC6H5		1.01	1				S	1.00	1	
TXYLEN		7.84	1				S	7.50	1	

* - Indicates that the data is in error or that it has not been validated

Lot:

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	GEQ	UG03	UGL	LJH	N	OH

Sample:

Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/11/91 Anal Date: 09/11/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0	.			M		0.00	0
112TCE	LT	1.00	0	.			M		0.00	0
11DCE	LT	1.00	0	.			M		0.00	0
11DCLE	LT	7.80	-1	.			M		0.00	0
12DCE	LT	5.00	-1	.			M		0.00	0
12DCLE	LT	5.00	-1	.			M		0.00	0
12DCLP	LT	1.00	0	.			M		0.00	0
C2H3CL	LT	1.90	0	.			M		0.00	0
CCL4	LT	1.30	0	.			M		0.00	0
CH2CL2	LT	3.20	0	.			M		0.00	0
CHCL3	LT	7.20	-1	.			M		0.00	0
TCLEE	LT	1.00	0	.			M		0.00	0
TCLTFE	LT	1.00	0	.			M		0.00	0
TRCLE	LT	5.00	-1	.			M		0.00	0

Sample:

Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: 0.0 Samp Tech:
Lab Samp No: Samp Prep Date: 09/11/91 Anal Date: 09/11/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		2.27	0	.			S		2.00	0
112TCE		1.90	0	.			S		2.00	0
11DCE		1.33	0	.			S		2.00	0
11DCLE	LT	7.80	-1	.			S		0.00	0
12DCE		1.01	0	.			S		1.00	0
12DCLE		6.90	-1	.			S		1.00	0
12DCLP	LT	1.00	0	.			S		0.00	0
C2H3CL	LT	1.90	0	.			S		0.00	0
CCL4	LT	1.30	0	.			S		0.00	0
CH2CL2	LT	3.20	0	.			S		0.00	0
CHCL3	LT	7.20	-1	.			S		0.00	0
TCLEE		2.33	0	.			S		2.00	0
TCLTFE	LT	1.00	0	.			S		0.00	0
TRCLE		1.24	0	.			S		1.00	0

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	003	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:	0.0	Samp Tech:	
Lab Samp No:		Samp Prep Date:	09/11/91	Anal Date:	09/11/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		9.58	0	.			S		1.00	1
112TCE		1.09	1	.			S		1.00	1
11DCE		8.05	0	.			S		1.00	1
11DCLE	LT	7.80	-1	.			S		0.00	0
12DCE		5.51	0	.			S		5.00	0
12DCLE		4.54	0	.			S		5.00	0
12DCLP	LT	1.00	0	.			S		0.00	0
C2H3CL	LT	1.90	0	.			S		0.00	0
CCL4	LT	1.30	0	.			S		0.00	0
CH2CL2	LT	3.20	0	.			S		0.00	0
CHCL3	LT	7.20	-1	.			S		0.00	0
TCLEE		1.00	1	.			S		1.00	1
TCLTFE	LT	1.00	0	.			S		0.00	0
TRCLE		5.74	0	.			S		5.00	0

Sample:

Samp Anal No:	004	File:	CSO	Site Type:	TRIP
Site ID:	TRIPBLANK	Field Samp No:		Samp Date:	08/28/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	30858.7	Samp Prep Date:	09/11/91	Anal Date:	09/11/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0	.			T		0.00	0
112TCE	LT	1.00	0	.			T		0.00	0
11DCE	LT	1.00	0	.			T		0.00	0
11DCLE	LT	7.80	-1	.			T		0.00	0
12DCE	LT	5.00	-1	.			T		0.00	0
12DCLE	LT	5.00	-1	.			T		0.00	0
12DCLP	LT	1.00	0	.			T		0.00	0
C2H3CL	LT	1.90	0	.			T		0.00	0
CCL4	LT	1.30	0	.			T		0.00	0
CH2CL2	LT	3.20	0	.			T		0.00	0
CHCL3	LT	7.20	-1	.			T		0.00	0
TCLEE	LT	1.00	0	.			T		0.00	0
TCLTFE	LT	1.00	0	.			T		0.00	0
TRCLE	LT	5.00	-1	.			T		0.00	0

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	005	File: CQC	Site Type:
Site ID:		Field Samp No:	Samp Date: / /
Samp Program:		Samp Depth: 0.0	Samp Tech:
Lab Samp No:		Samp Prep Date: 09/11/91	Anal Date: 09/11/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		9.58	0	.			S		1.00	1
112TCE		1.14	1	.			S		1.00	1
11DCE		8.93	0	.			S		1.00	1
11DCLE	LT	7.80	-1	.			S		0.00	0
12DCE		5.76	0	.			S		5.00	0
12DCLE		4.69	0	.			S		5.00	0
12DCLP	LT	1.00	0	.			S		0.00	0
C2H3CL	LT	1.90	0	.			S		0.00	0
CCL4	LT	1.30	0	.			S		0.00	0
CH2CL2	LT	3.20	0	.			S		0.00	0
CHCL3	LT	7.20	-1	.			S		0.00	0
TCLEE		1.04	1	.			S		1.00	1
TCLTFE	LT	1.00	0	.			S		0.00	0
TRCLE		5.98	0	.			S		5.00	0

* - Indicates that the data is in error or that it has not been validated

/93

Group checking process 11/18/91
Installation: MW Lab: PC Lot: GEQ 17:14:34

Map file \irmap\MWCOORDB.DBF does not exist
Map file \irmap\MWCOORDB.NTX does not exist
Map file \irmap\MWLSMP.DBF does not exist
Map file \irmap\MWLSMP.NTX does not exist

Quality Control Acceptance - Certification Level C1

Test Name	Standard Matrix QC Blank Required	Blank Found	Low Spike Required	Low Spike Found	High Spike Required	High Spike Found
111TCE	1	1	1	1	2	2
112TCE	1	1	1	1	2	2
11DCE	1	1	1	1	2	2
12DCE	1	1	1	1	2	2
12DCLE	1	1	1	1	2	2
TCLEE	1	1	1	1	2	2
TRCLE	1	1	1	1	2	2

QC Test parameters as determined from Lot data:

Test Name	Low Spike Concentration Mantissa	Low Spike Concentration Exponent	High Spike Concentration Mantissa	High Spike Concentration Exponent
111TCE	2.00	0	1.00	1
112TCE	2.00	0	1.00	1
11DCE	2.00	0	1.00	1
12DCE	1.00	0	5.00	0
12DCLE	1.00	0	5.00	0
TCLEE	2.00	0	1.00	1
TRCLE	1.00	0	5.00	0

Data in the lot - Installation: MW Lab: PC Lot: GEQ
contains errors even though record check is correct.

Completion time - 17:14:38

Lot:

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	GEW	UG03	UGL	LJH	N	OH

Sample:
Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		2.13	0					S	2.00	0
112TCE		1.98	0					S	2.00	0
11DCE		9.74	-1				F	S	2.00	0
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		8.32	-1					S	1.00	0
12DCLE		6.11	-1					S	1.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		1.79	0					S	2.00	0
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		8.43	-1					S	1.00	0

Sample:
Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		9.66	0					S	1.00	1
112TCE		1.05	1					S	1.00	1
11DCE		6.90	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		5.15	0					S	5.00	0
12DCLE		4.10	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		9.03	0					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		5.64	0					S	5.00	0

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0				M		0.00	0
112TCE	LT	1.00	0				M		0.00	0
11DCE	LT	1.00	0				M		0.00	0
11DCLE	LT	7.80	-1				M		0.00	0
12DCE	LT	5.00	-1				M		0.00	0
12DCLE	LT	5.00	-1				M		0.00	0
12DCLP	LT	1.00	0				M		0.00	0
C2HCL	LT	1.90	0				M		0.00	0
CCL4	LT	1.30	0				M		0.00	0
CH2CL2	LT	3.20	0				M		0.00	0
CHCL3	LT	7.20	-1				M		0.00	0
TCLEE	LT	1.00	0				M		0.00	0
TCLTFE	LT	1.00	0				M		0.00	0
TRCLE	LT	5.00	-1				M		0.00	0

Sample:
Samp Anal No: 004 File: CGW Site Type: TRIP
Site ID: MARC Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34890.2 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2HCL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

- Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No:* 005 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-2B Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 80.0 Samp Tech: G
Lab Samp No: 34891.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:
Samp Anal No:* 006 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-1A Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 20.0 Samp Tech: G
Lab Samp No: 34877.5 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	007	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-2A	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 78.3	Samp Tech: G
Lab Samp No:	34878.3	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	008	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-3	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 16.0	Samp Tech: G
Lab Samp No:	34879.1	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	009	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-4	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	18.0	Samp Tech:	G
Lab Samp No:	34880.5	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	010	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-5	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	25.0	Samp Tech:	G
Lab Samp No:	34881.3	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	011	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-6	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34882.1	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	012	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-7	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	83.0	Samp Tech:	G
Lab Samp No:	34883.0	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No:* 013 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-8 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 84.8 Samp Tech: G
Lab Samp No: 34884.8 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:
Samp Anal No:* 014 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-9 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 85.6 Samp Tech: G
Lab Samp No: 34885.6 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	015	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-10	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34886.4	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.60	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	016	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-11	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	75.0	Samp Tech:	G
Lab Samp No:	34887.2	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	017	File:	CGW	Site Type:	FBLK
Site ID:	FIELDBLNAK	Field Samp No:		Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34888.0	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:	018	File:	CGW	Site Type:	RNSW
Site ID:	DIWATER	Field Samp No:		Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34889.9	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3		7.21	0						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validate

Sample:

Samp Anal No:	019	File:	CQC	Site Type:	
Site ID:		Field Samp No:		Samp Date:	/ /
Samp Program:		Samp Depth:		Samp Tech:	
Lab Samp No:		Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		1.27	1					S	1.00	1
112TCE		1.15	1					S	1.00	1
11DCE		9.14	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		6.52	0					S	5.00	0
12DCLE		4.57	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		1.23	1					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		7.47	0					S	5.00	0

* - Indicates that the data is in error or that it has not been validated

Lot:

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	GEZ	UG03	UGL	LJH	N	OH

Sample:

Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0				M	0.00		0
112TCE	LT	1.00	0				M	0.00		0
11DCE	LT	1.00	0				M	0.00		0
11DCLE	LT	7.80	-1				M	0.00		0
12DCE	LT	5.00	-1				M	0.00		0
12DCLE	LT	5.00	-1				M	0.00		0
12DCLP	LT	1.00	0				M	0.00		0
C2H3CL	LT	1.90	0				M	0.00		0
CCL4	LT	1.30	0				M	0.00		0
CH2CL2	LT	3.20	0				M	0.00		0
CHCL3	LT	7.20	-1				M	0.00		0
TCLEE	LT	1.00	0				M	0.00		0
TCLTFE	LT	1.00	0				M	0.00		0
TRCLE	LT	5.00	-1				M	0.00		0

Sample:

Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		3.01	0				S	2.00		0
112TCE		1.93	0				S	2.00		0
11DCE		1.20	0				S	2.00		0
11DCLE	LT	7.80	-1				S	0.00		0
12DCE		1.27	0				S	1.00		0
12DCLE		8.14	-1				S	1.00		0
12DCLP	LT	1.00	0				S	0.00		0
C2H3CL	LT	1.90	0				S	0.00		0
CCL4	LT	1.30	0				S	0.00		0
CH2CL2	LT	3.20	0				S	0.00		0
CHCL3	LT	7.20	-1				S	0.00		0
TCLEE		2.16	0				S	2.00		0
TCLTFE	LT	1.00	0				S	0.00		0
TRCLE		1.39	0				S	1.00		0

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		1.15	1					S	1.00	1
112TCE		1.02	1					S	1.00	1
11DCE		7.57	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		5.78	0					S	5.00	0
12DCLE		4.50	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		1.02	1					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		6.24	0					S	5.00	0

Sample:
Samp Anal No:* 004 File: CGW Site Type: WELL
Site ID: MW-7 Field Samp No: Samp Date: 11/14/91
Samp Program: GQA Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 40996.0 Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	005	File:	CGW	Site Type:	WELL
Site ID:	MW-8	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40997.9	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	006	File:	CGW	Site Type:	WELL
Site ID:	MW-9	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40998.7	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	007	File:	CGW	Site Type:	WELL
Site ID:	MW-10	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40999.5	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0							
112TCE	LT	1.00	0							
11DCE	LT	1.00	0							
11DCLE	LT	7.80	-1							
12DCE	LT	5.00	-1							
12DCLE	LT	5.00	-1							
12DCLP	LT	1.00	0							
C2H3CL	LT	1.90	0							
CCL4	LT	1.30	0							
CH2CL2	LT	3.20	0							
CHCL3	LT	7.20	-1							
TCLEE	LT	1.00	0							
TCLTFE	LT	1.00	0							
TRCLE	LT	5.00	-1							

Sample:

Samp Anal No:*	008	File:	CGW	Site Type:	WELL
Site ID:	MW-11	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	41000.4	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0							
112TCE	LT	1.00	0							
11DCE	LT	1.00	0							
11DCLE	LT	7.80	-1							
12DCE	LT	5.00	-1							
12DCLE	LT	5.00	-1							
12DCLP	LT	1.00	0							
C2H3CL	LT	1.90	0							
CCL4	LT	1.30	0							
CH2CL2	LT	3.20	0							
CHCL3	LT	7.20	-1							
TCLEE	LT	1.00	0							
TCLTFE	LT	1.00	0							
TRCLE	LT	5.00	-1							

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	009	File:	CGW	Site Type:	RNSW
Site ID:	DIWATER	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	41001.2	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0					R	0.00	0
112TCE	LT	1.00	0					R	0.00	0
11DCE	LT	1.00	0					R	0.00	0
11DCLE	LT	7.80	-1					R	0.00	0
12DCE	LT	5.00	-1					R	0.00	0
12DCLE	LT	5.00	-1					R	0.00	0
12DCLP	LT	1.00	0					R	0.00	0
C2H3CL	LT	1.90	0					R	0.00	0
CCL4	LT	1.30	0					R	0.00	0
CH2CL2	LT	3.20	0					R	0.00	0
CHCL3	LT	7.20	-1					R	0.00	0
TCLEE	LT	1.00	0					R	0.00	0
TCLTFE	LT	1.00	0					R	0.00	0
TRCLE	LT	3.00	-1					R	0.00	0

Sample:

Samp Anal No:	010	File:	CGW	Site Type:	TRIP
Site ID:	TRIPBLANK	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	41002.0	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0					T	0.00	0
112TCE	LT	1.00	0					T	0.00	0
11DCE	LT	1.00	0					T	0.00	0
11DCLE	LT	7.80	-1					T	0.00	0
12DCE	LT	5.00	-1					T	0.00	0
12DCLE	LT	5.00	-1					T	0.00	0
12DCLP	LT	1.00	0					T	0.00	0
C2H3CL	LT	1.90	0					T	0.00	0
CCL4	LT	1.30	0					T	0.00	0
CH2CL2	LT	3.20	0					T	0.00	0
CHCL3	LT	7.20	-1					T	0.00	0
TCLEE	LT	1.00	0					T	0.00	0
TCLTFE	LT	1.00	0					T	0.00	0
TRCLE	LT	5.00	-1					T	0.00	0

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	011	File: CQC	Site Type:
Site ID:		Field Samp No:	Samp Date: / /
Samp Program:		Samp Depth:	Samp Tech:
Lab Samp No:		Samp Prep Date: 11/26/91	Anal Date: 11/26/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		1.11	1					S	1.00	1
112TCE		9.80	0					S	1.00	1
11DCE		7.43	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		5.59	0					S	5.00	0
12DCLE		4.39	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		9.91	0					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		6.03	0					S	5.00	0

* - Indicates that the data is in error or that it has not been validated

Group checking process 01/07/92
Installation: MW Lab: PC Lot: GEZ 11:38:29

The following sites have no map records:

WELL MW-7 does not exist for sample 004
WELL MW-8 does not exist for sample 005
WELL MW-9 does not exist for sample 006
WELL MW-10 does not exist for sample 007
WELL MW-11 does not exist for sample 008

Quality Control Acceptance - Certification Level C1

Test Name	Standard Matrix QC: Blank Required	Blank Found	Low Spike Required	Low Spike Found	High Spike Required	High Spike Found
111TCE	1	1	1	1	2	2
112TCE	1	1	1	1	2	2
11DCE	1	1	1	1	2	2
12DCE	1	1	1	1	2	2
12DCLE	1	1	1	1	2	2
TCLEE	1	1	1	1	2	2
TRCLE	1	1	1	1	2	2

QC Test parameters as determined from Lot data:

Test Name	Low Spike Concentration Mantissa	Low Spike Concentration Exponent	High Spike Concentration Mantissa	High Spike Concentration Exponent
111TCE	2.00	0	1.00	1
112TCE	2.00	0	1.00	1
11DCE	2.00	0	1.00	1
12DCE	1.00	0	5.00	0
12DCLE	1.00	0	5.00	0
TCLEE	2.00	0	1.00	1
TRCLE	1.00	0	5.00	0

Data in the lot - Installation: MW Lab: PC Lot: GEZ
has not record or group checked correctly.

Completion time - 11:38:32

Lot:

Instl	Lab	Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC	FLT	UP01	UGL	LJH	N	OH

Sample:
Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1					M	0.00	0
MEC6H5	LT	8.70	-1					M	0.00	0
TXYLEN	LT	8.28	0					M	0.00	0

Sample:
Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		9.87	-1					S	1.00	0
MEC6H5		2.03	0					S	2.00	0
TXYLEN		1.39	1					S	1.50	1

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.22	0					S	5.00	0
MEC6H5		1.04	1					S	1.00	1
TXYLEN		7.42	1					S	7.50	1

Sample:
Samp Anal No: 004 File: CGW Site Type: WELL
Site ID: MW7 Field Samp No: Samp Date: 11/14/91
Samp Program: GQA Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 40996.0 Samp Prep Date: 11/26/91 Anal Date: 11/26/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	

* - Indicates that the data is either in error or has not been validated

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	005	File:	CGW	Site Type:	WELL
Site ID:	MW8	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40997.9	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	006	File:	CGW	Site Type:	WELL
Site ID:	MW9	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40998.7	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Deliver. Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	007	File:	CGW	Site Type:	WELL
Site ID:	MW10	Field Samp No:		Samp Date:	11/14/91
Samp Program:	GQA	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	40999.5	Samp Prep Date:	11/26/91	Anal Date:	11/26/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	008	File: CGW	Site Type: WELL
Site ID:	MW11	Field Samp No:	Samp Date: 11/14/91
Samp Program:	GQA	Samp Depth: 0.0	Samp Tech: G
Lab Samp No:	41000.4	Samp Prep Date: 11/26/91	Anal Date: 11/26/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	009	File: CGW	Site Type: RNSW
Site ID:	DIWATER	Field Samp No:	Samp Date: 11/14/91
Samp Program:	GQA	Samp Depth: 0.0	Samp Tech: G
Lab Samp No:	41001.2	Samp Prep Date: 11/26/91	Anal Date: 11/26/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1					R	0.00	0
MEC6H5	LT	8.70	-1					R	0.00	0
TXYLEN	LT	8.28	0					R	0.00	0

Sample:

Samp Anal No:	010	File: CGW	Site Type: TRIP
Site ID:	TRIPBLAN	Field Samp No:	Samp Date: 11/14/91
Samp Program:	GQA	Samp Depth: 0.0	Samp Tech: G
Lab Samp No:	41002.0	Samp Prep Date: 11/26/91	Anal Date: 11/26/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1					T	0.00	0
MEC6H5	LT	8.70	-1					T	0.00	0
TXYLEN	LT	8.28	0					T	0.00	0

Sample:

Samp Anal No:	011	File: CQC	Site Type:
Site ID:		Field Samp No:	Samp Date: / /
Samp Program:		Samp Depth:	Samp Tech:
Lab Samp No:		Samp Prep Date: 11/26/91	Anal Date: 11/26/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.01	0					S	5.00	0
MEC6H5		1.01	1					S	1.00	1
TXYLEN		7.31	1					S	7.50	1

* - Indicates that the data is in error or that it has not been validated

Lot:

Instl	Lab Lot No	Meth No	Units	Meas Analyst	Class	Prime Contr
MW	PC FLS	UP01	UGL	LJH	N	OH

Sample:
Samp Anal No: 001 File: COC Site Type:
Site ID: Field Samp No: Samp Date: /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/9
Base Closure: N Delivery Order No:

Analysis:

Test Name	Lab	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		9.06	-1				S	1.00		0
MEC6H5		1.04	0				S	2.00		0
TXYLEN		1.36	1				S	1.50		1

Sample:
Samp Anal No: 002 File: COC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.16	0				S	5.00		0
MEC6H5		9.50	0				S	1.00		1
TXYLEN		7.06	1				S	7.50		1

Sample:
Samp Anal No: 003 File: COC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				M	0.00		0
MEC6H5	LT	8.70	-1				M	0.00		0
TXYLEN	LT	8.28	0				M	0.00		0

Sample:
Samp Anal No: 004 File: C6W Site Type: TRIP
Site ID: MARC Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 342990.2 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				T	0.00		0
MEC6H5	LT	8.70	-1				T	0.00		0

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
TXYLEN	LT	8.28	0				T	0.00		0

Sample:

Samp Anal No:	005	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-2B	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	80.0	Samp Tech:	G
Lab Samp No:	34891.0	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	006	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-1A	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	30.0	Samp Tech:	G
Lab Samp No:	34877.5	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:

Samp Anal No:	007	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-2A	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	20.0	Samp Tech:	G
Lab Samp No:	34878.3	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 008 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-3 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 16.0 Samp Tech: G
Lab Samp No: 34879.1 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:
Samp Anal No: 009 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-4 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 16.0 Samp Tech: G
Lab Samp No: 34880.5 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:
Samp Anal No: 010 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-5 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 25.0 Samp Tech: G
Lab Samp No: 34881.3 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

Sample:
Samp Anal No: 011 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-6 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34882.1 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1						.	
MEC6H5	LT	8.70	-1						.	
TXYLEN	LT	8.28	0						.	

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 012 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-7 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 16.0 Samp Tech: G
Lab Samp No: 34883.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 013 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-8 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 90.0 Samp Tech: G
Lab Samp No: 34884.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 014 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-9 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 90.0 Samp Tech: G
Lab Samp No: 34885.6 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

Sample:
Samp Anal No: 015 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-10 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34886.4 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	8.28	0							

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 016 File: [illegible] Site Type: WELL
Site ID: MARC Field Samp No: [illegible] Samp Date: 09/26/91
Samp Program: RAS Samp Depth: [illegible] Samp Tech: [illegible]
Lab Samp No: 74887.2 Samp Prep Date: [illegible] 10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1							
MEC6H5	LT	8.70	-1							
TXYLEN	LT	[illegible].28	0							

Sample:
Samp Anal No: 017 File: CS[illegible] Site Type: [illegible]
Site ID: FIELDBLANK Field Samp No: Samp Date: [illegible]
Samp Program: RAS Samp Depth: [illegible] Samp Tech: [illegible]
Lab Samp No: 74888.[illegible] Samp Prep Date: 10/10/91 Anal Date: 10/1[illegible]/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				F		0.0[illegible]	0
MEC6H5	LT	8.70	-1				F		0.0[illegible]	0
TXYLEN	LT	8.28	0				F		0.00	0

Sample:
Samp Anal No: 018 File: CSW Site Type: RNSW
Site ID: DIWATER Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 74889.9 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6	LT	4.10	-1				R		0.00	0
MEC6H5	LT	8.70	-1				R		0.00	0
TXYLEN	LT	8.28	0				R		0.00	0

Sample:
Samp Anal No: 019 File: CCC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
C6H6		4.41	0				[illegible]		[illegible]	[illegible]
MEC6H5		1.01	1						1.00	[illegible]
TXYLEN		7.84	1				[illegible]		[illegible]	[illegible]

* - Indicates that the data [illegible] or that [illegible] not [illegible]

Lot:

Instl	Lab Lot No	Meth No	Units Meas	Analyst	Class	Prime Contr
MW	PC GEW	UG03	UGL	LJH	N	OH

Sample:

Samp Anal No: 001 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		2.13	0					S	2.00	0
112TCE		1.98	0					S	2.00	0
11DCE		9.74	-1				P	S	2.00	0
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		8.32	-1					S	1.00	0
12DCLE		6.11	-1					S	1.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		1.79	0					S	2.00	0
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		8.43	-1					S	1.00	0

Sample:

Samp Anal No: 002 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		9.66	0					S	1.00	1
112TCE		1.05	1					S	1.00	1
11DCE		6.90	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		5.15	0					S	5.00	0
12DCLE		4.10	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		9.63	0					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		8.43	0					S	5.00	0

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No: 003 File: CQC Site Type:
Site ID: Field Samp No: Samp Date: / /
Samp Program: Samp Depth: Samp Tech:
Lab Samp No: Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0				M		0.00	0
112TCE	LT	1.00	0				M		0.00	0
11DCE	LT	1.00	0				M		0.00	0
11DCLE	LT	7.80	-1				M		0.00	0
12DCE	LT	5.00	-1				M		0.00	0
12DCLE	LT	5.00	-1				M		0.00	0
12DCLP	LT	1.00	0				M		0.00	0
C2H3CL	LT	1.90	0				M		0.00	0
CCL4	LT	1.30	0				M		0.00	0
CH2CL2	LT	3.20	0				M		0.00	0
CHCL3	LT	7.20	-1				M		0.00	0
TCLEE	LT	1.00	0				M		0.00	0
TCLTFE	LT	1.00	0				M		0.00	0
TRCLE	LT	5.00	-1				M		0.00	0

Sample:
Samp Anal No: 004 File: CGW Site Type: TRIP
Site ID: MARC Field Samp No: Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34890.2 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0							
112TCE	LT	1.00	0							
11DCE	LT	1.00	0							
11DCLE	LT	7.80	-1							
12DCE	LT	5.00	-1							
12DCLE	LT	5.00	-1							
12DCLP	LT	1.00	0							
C2H3CL	LT	1.90	0							
CCL4	LT	1.30	0							
CH2CL2	LT	3.20	0							
CHCL3	LT	7.20	-1							
TCLEE	LT	1.00	0							
TCLTFE	LT	1.00	0							
TRCLE	LT	5.00	-1							

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	005	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-2B	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 80.0	Samp Tech: G
Lab Samp No:	34891.0	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC QC	QC Mant	QC Exp
111TCE	LT	1.00	0					.	
112TCE	LT	1.00	0					.	
11DCE	LT	1.00	0					.	
11DCLE	LT	7.80	-1					.	
12DCE	LT	5.00	-1					.	
12DCLE	LT	5.00	-1					.	
12DCLP	LT	1.00	0					.	
C2HCL	LT	1.90	0					.	
CCL4	LT	1.30	0					.	
CH2CL2	LT	3.20	0					.	
CHCL3	LT	7.20	-1					.	
TCLEE	LT	1.00	0					.	
TCLTFE	LT	1.00	0					.	
TRCLE	LT	5.00	-1					.	

Sample:

Samp Anal No:	006	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-1A	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 20.0	Samp Tech: G
Lab Samp No:	34877.5	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC QC	QC Mant	QC Exp
111TCE	LT	1.00	0					.	
112TCE	LT	1.00	0					.	
11DCE	LT	1.00	0					.	
11DCLE	LT	7.80	-1					.	
12DCE	LT	5.00	-1					.	
12DCLE	LT	5.00	-1						
12DCLP	LT	1.00	0					.	
C2HCL	LT	1.90	0					.	
CCL4	LT	1.30	0					.	
CH2CL2	LT	3.20	0					.	
CHCL3	LT	7.20	-1					.	
TCLEE	LT	1.00	0					.	
TCLTFE	LT	1.00						.	
TRCLE	LT	5.00	-1					.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	007	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-3A	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	78.3	Samp Tech:	G
Lab Samp No:	34878.3	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	008	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-7	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	16.0	Samp Tech:	G
Lab Samp No:	34879.1	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	009	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-4	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 18.0	Samp Tech: G
Lab Samp No:	34880.5	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	010	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-5	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 25.0	Samp Tech: G
Lab Samp No:	34881.3	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:
Samp Anal No:* 011 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-6 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 0.0 Samp Tech: G
Lab Samp No: 34882.1 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0							
112TCE	LT	1.00	0							
11DCE	LT	1.00	0							
11DCLE	LT	7.80	-1							
12DCE	LT	5.00	-1							
12DCLE	LT	5.00	-1							
12DCLP	LT	1.00	0							
C2H3CL	LT	1.90	0							
CCL4	LT	1.30	0							
CH2CL2	LT	3.20	0							
CHCL3	LT	7.20	-1							
TCLEE	LT	1.00	0							
TCLTFE	LT	1.00	0							
TRCLE	LT	5.00	-1							

Sample:
Samp Anal No:* 012 File: CGW Site Type: WELL
Site ID: MARC Field Samp No: MW-7 Samp Date: 09/26/91
Samp Program: RAS Samp Depth: 83.0 Samp Tech: G
Lab Samp No: 34883.0 Samp Prep Date: 10/10/91 Anal Date: 10/10/91
Base Closure: N Delivery Order No:

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0							
112TCE	LT	1.00	0							
11DCE	LT	1.00	0							
11DCLE	LT	7.80	-1							
12DCE	LT	5.00	-1							
12DCLE	LT	5.00	-1							
12DCLP	LT	1.00	0							
C2H3CL	LT	1.90	0							
CCL4	LT	1.30	0							
CH2CL2	LT	3.20	0							
CHCL3	LT	7.20	-1							
TCLEE	LT	1.00	0							
TCLTFE	LT	1.00	0							
TRCLE	LT	5.00	-1							

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	013	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-8	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	84.8	Samp Tech:	G
Lab Samp No:	34884.8	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	014	File:	CGW	Site Type:	WELL
Site ID:	MARC	Field Samp No:	MW-9	Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	85.6	Samp Tech:	G
Lab Samp No:	34895.6	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:*	015	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-10	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 0.0	Samp Tech: G
Lab Samp No:	34886.4	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:*	016	File: CGW	Site Type: WELL
Site ID:	MARC	Field Samp No: MW-11	Samp Date: 09/26/91
Samp Program:	RAS	Samp Depth: 75.0	Samp Tech: G
Lab Samp No:	34887.2	Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validated

Sample:

Samp Anal No:	017	File:	CGW	Site Type:	FBLK
Site ID:	FIELDBLNAK	Field Samp No:		Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34888.0	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3	LT	7.20	-1						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

Sample:

Samp Anal No:	018	File:	CGW	Site Type:	RNSW
Site ID:	DIWATER	Field Samp No:		Samp Date:	09/26/91
Samp Program:	RAS	Samp Depth:	0.0	Samp Tech:	G
Lab Samp No:	34889.9	Samp Prep Date:	10/10/91	Anal Date:	10/10/91
Base Closure:	N	Delivery Order No:			

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE	LT	1.00	0						.	
112TCE	LT	1.00	0						.	
11DCE	LT	1.00	0						.	
11DCLE	LT	7.80	-1						.	
12DCE	LT	5.00	-1						.	
12DCLE	LT	5.00	-1						.	
12DCLP	LT	1.00	0						.	
C2H3CL	LT	1.90	0						.	
CCL4	LT	1.30	0						.	
CH2CL2	LT	3.20	0						.	
CHCL3		7.21	0						.	
TCLEE	LT	1.00	0						.	
TCLTFE	LT	1.00	0						.	
TRCLE	LT	5.00	-1						.	

* - Indicates that the data is either in error or has not been validate

Sample:

Samp Anal No:	019	File: CQC	Site Type:
Site ID:		Field Samp No:	Samp Date: / /
Samp Program:		Samp Depth:	Samp Tech:
Lab Samp No:		Samp Prep Date: 10/10/91	Anal Date: 10/10/91
Base Closure:	N	Delivery Order No:	

Analysis:

Test Name	Bool	Unc Mant	Unc Exp	Dil Mant	Dil Exp	Moist	FC	QC	QC Mant	QC Exp
111TCE		1.27	1					S	1.00	1
112TCE		1.15	1					S	1.00	1
11DCE		9.14	0					S	1.00	1
11DCLE	LT	7.80	-1					S	0.00	0
12DCE		6.52	0					S	3.00	0
12DCLE		4.57	0					S	5.00	0
12DCLP	LT	1.00	0					S	0.00	0
C2H3CL	LT	1.90	0					S	0.00	0
CCL4	LT	1.30	0					S	0.00	0
CH2CL2	LT	3.20	0					S	0.00	0
CHCL3	LT	7.20	-1					S	0.00	0
TCLEE		1.23	1					S	1.00	1
TCLTFE	LT	1.00	0					S	0.00	0
TRCLE		7.47	0					S	5.00	0

* - Indicates that the data is in error or that it has not been validated